

## TR-20 Run Summary -Proposed Conditions Models

TR20 was run with various combinations of subareas, rainfall data, and curve numbers. The following summarizes the TR20 runs provided in the appendix for the north watershed model (Hudson Branch) and for the south watershed model (Tiber and New Cut Branches).

### Sub-SubAreas (35 North model, 24 South Model)

TR model	Description	Rainfall	
<b>South Watershed</b>			
POND5	T1 ONLY, South Watershed	NOAA depth; NOAA_C dist	2, 5, 10, 25, 50, 100 yr
POND 6	NC1 ONLY, South Watershed	NOAA depth; NOAA_C dist	2, 5, 10, 25, 50, 100 yr
POND 7	NC2 ONLY, South Watershed	NOAA depth; NOAA_C dist	2, 5, 10, 25, 50, 100 yr
POND 8	NC3 ONLY, South Watershed	NOAA depth; NOAA_C dist	2, 5, 10, 25, 50, 100 yr
POND13	NC4 ONLY, South Watershed	NOAA depth; NOAA_C dist	2, 5, 10, 25, 50, 100 yr
CONOWO11	Combined Concepts-T1,NC1,NC2,NC3,NC4, South Watershed	NOAA depth; NOAA_C dist	2, 5, 10, 25, 50, 100 yr
SCOJUL1	Combined Concepts-T1,NC1,NC2,NC3,NC4, South Watershed	July 30, 2016event	July 30, 2016event
NC3T1	Combined NC3+T1, South watershed	NOAA depth; NOAA_C dist	2, 5, 10, 25, 50, 100 yr
<b>North Watershed</b>			
H1UG2	H1-UG Only, North Watershed	NOAA depth; NOAA_C dist	2, 5, 10, 25, 50, 100 yr
PONDH5	H5 Only, North Watershed	NOAA depth; NOAA_C dist	2, 5, 10, 25, 50, 100 yr
PONDH6	H6 Only, North Watershed	NOAA depth; NOAA_C dist	2, 5, 10, 25, 50, 100 yr
PONDH7	H7 Only, North Watershed	NOAA depth; NOAA_C dist	2, 5, 10, 25, 50, 100 yr
POND1	H4 Only, North Watershed	NOAA depth; NOAA_C dist	2, 5, 10, 25, 50, 100 yr
POND2	H3 Only, North Watershed	NOAA depth; NOAA_C dist	2, 5, 10, 25, 50, 100 yr
POND3	H2 Only, North Watershed	NOAA depth; NOAA_C dist	2, 5, 10, 25, 50, 100 yr
H8UG	H8 Only, North Watershed	NOAA depth; NOAA_C dist	2, 5, 10, 25, 50, 100 yr
NCOM1	All above ground improvements combined, North Watershed	NOAA depth; NOAA_C dist	2, 5, 10, 25, 50, 100 yr
COMUG3	All improvements combined (underground and above ground), North Watershed	NOAA depth; NOAA_C dist	2, 5, 10, 25, 50, 100 yr
NCOJUL1	All above ground improvements combined, North Watershed	July 30, 2016event	July 30, 2016event
H7H8	H7+H8 ONLY, North Watershed	NOAA depth; NOAA_C dist	2, 5, 10, 25, 50, 100 yr

\*Combined Concept model runs also estimate improvements of proposed Underground facilities at George Howard Parking lot and Court House Ave parking lot. using curve number reduction methodology.

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\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20  
HYDROLOGY\*\*\*\*\*

JOB	TR-20	NOPLOTS				
TITLE	Ellicott City Flood Study-Tiber/South Sub-Drainage Areas					
TITLE	27 Subareas MGMT-STD NOAA_C 2,5,10,50,100WITHMGMT					
5	RAINFL	1	.1			
8	0.0000	0.0013	0.0023	0.0034	0.0044	
8	0.0055	0.0065	0.0076	0.0087	0.0098	
8	0.0109	0.0121	0.0132	0.0143	0.0155	
8	0.0167	0.0178	0.0190	0.0202	0.0214	
8	0.0226	0.0238	0.0251	0.0263	0.0276	
8	0.0288	0.0301	0.0314	0.0327	0.0340	
8	0.0353	0.0366	0.0379	0.0393	0.0406	
8	0.0420	0.0434	0.0447	0.0461	0.0475	
8	0.0489	0.0504	0.0518	0.0532	0.0547	
8	0.0562	0.0576	0.0591	0.0606	0.0621	
8	0.0636	0.0651	0.0667	0.0682	0.0697	
8	0.0713	0.0729	0.0745	0.0760	0.0776	
8	0.0793	0.0809	0.0826	0.0843	0.0861	
8	0.0879	0.0898	0.0916	0.0936	0.0955	
8	0.0975	0.0996	0.1017	0.1038	0.1060	
8	0.1082	0.1104	0.1127	0.1150	0.1174	
8	0.1198	0.1223	0.1247	0.1273	0.1298	
8	0.1324	0.1351	0.1378	0.1405	0.1432	
8	0.1461	0.1490	0.1521	0.1554	0.1588	
8	0.1623	0.1660	0.1699	0.1739	0.1780	
8	0.1823	0.1868	0.1914	0.1961	0.2010	
8	0.2061	0.2117	0.2179	0.2247	0.2321	
8	0.2400	0.2490	0.2591	0.2702	0.2825	
8	0.2955	0.3157	0.3370	0.3662	0.4067	
8	0.4766	0.5933	0.6338	0.6630	0.6843	
8	0.7045	0.7176	0.7298	0.7409	0.7510	
8	0.7600	0.7679	0.7753	0.7821	0.7883	
8	0.7939	0.7990	0.8039	0.8086	0.8132	
8	0.8177	0.8220	0.8261	0.8301	0.8340	
8	0.8377	0.8412	0.8446	0.8479	0.8510	
8	0.8540	0.8568	0.8595	0.8622	0.8649	
8	0.8676	0.8702	0.8727	0.8753	0.8778	
8	0.8802	0.8826	0.8850	0.8873	0.8896	
8	0.8918	0.8940	0.8962	0.8983	0.9004	
8	0.9025	0.9045	0.9064	0.9084	0.9103	
8	0.9121	0.9139	0.9157	0.9174	0.9191	
8	0.9208	0.9224	0.9240	0.9256	0.9271	
8	0.9287	0.9303	0.9318	0.9334	0.9349	
8	0.9364	0.9379	0.9394	0.9409	0.9424	
8	0.9439	0.9453	0.9468	0.9482	0.9496	
8	0.9511	0.9525	0.9539	0.9553	0.9566	
8	0.9580	0.9594	0.9607	0.9621	0.9634	
8	0.9647	0.9660	0.9673	0.9686	0.9699	
8	0.9712	0.9724	0.9737	0.9749	0.9762	
8	0.9774	0.9786	0.9798	0.9810	0.9822	
8	0.9834	0.9845	0.9857	0.9868	0.9879	

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
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8	0.9891	0.9902	0.9913	0.9924	0.9935
8	0.9945	0.9956	0.9967	0.9977	0.9987
8	1.0000	1.0000	1.0000	1.0000	1.0000

9 ENDTBL

3 STRUCT 58

8		424.00	0.00	0.00
8		429.09	2.00	0.72
8		429.59	4.00	0.85
8		430.00	6.00	0.96
8		430.21	8.00	1.02
8		430.36	10.00	1.06
8		430.49	12.00	1.10
8		430.64	14.00	1.15
8		430.74	15.00	1.18
8		431.22	17.09	1.33
8		431.68	33.53	1.49
8		432.18	80.87	1.67
8		432.37	108.22	1.74

9 ENDTBL

2 XSECTN 007

8		1.0	319.00	
8		318.00	0.00	0.00
8		318.25	10.19	3.39
8		318.50	32.80	7.08
8		318.75	65.48	11.07
8		319.00	107.54	15.35
8		320.00	367.34	35.47
8		321.00	663.16	60.18
8		322.00	1052.26	89.31
8		323.00	1529.69	131.30

9 ENDTBL

3 STRUCT 52

8		451.90	0.00	0.00
8		454.05	0.34	0.73
8		454.30	0.36	0.85
8		455.60	18.83	1.65
8		456.10	41.43	2.00
8		456.50	72.96	2.28

9 ENDTBL

2 XSECTN 011

8		1.0	415.00	
8		414.00	0.00	0.00
8		414.25	7.22	1.98
8		414.50	23.69	4.29
8		414.75	48.28	6.93
8		415.00	81.00	9.89
8		416.00	299.51	25.08
8		417.00	488.53	45.33
8		418.00	779.05	70.44
8		419.00	809.36	107.84

9 ENDTBL

3 STRUCT 51

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
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8		396.00	0.00	0.00
8		396.50	4.38	0.27
8		397.00	12.40	0.65
8		397.50	22.78	1.07
8		398.00	35.07	1.54
8		398.50	49.45	2.05
8		399.00	64.75	2.59

8			399.45	86.12	3.10
9	ENDTBL				
2	XSECTN	016	1.0	331.00	
8			330.00	0.00	0.00
8			330.25	5.94	1.92
8			330.50	21.34	4.68
8			330.75	47.19	8.28
8			331.00	85.01	12.73
8			332.00	385.16	38.91
8			333.00	704.29	76.97
8			334.00	1202.25	125.34
8			335.00	1592.91	187.47
9	ENDTBL				
2	XSECTN	020	1.0	235.00	
8			234.00	0.00	0.00
8			234.25	9.06	3.27
8			234.50	29.33	6.89
8			234.75	58.86	10.87
8			235.00	97.22	15.19
8			236.00	339.40	36.03
8			237.00	586.83	61.50
8			238.00	902.53	90.59
8			239.00	1290.91	123.25
8			240.00	1750.59	159.40
8			241.00	1985.66	201.02
8			242.00	2381.26	250.13
9	ENDTBL				
3	STRUCT	47			
8			410.00	0.00	0.00
8			413.89	5.00	0.05
8			414.04	10.00	0.15
8			414.17	15.00	0.24
8			414.28	20.00	0.27
8			415.00	30.68	0.38
8			415.27	39.01	0.42
8			415.52	52.87	0.45
8			415.79	71.61	0.49
8			416.07	95.27	0.54
9	ENDTBL				
3	STRUCT	32			
8			367.00	0.00	0.00
8			367.37	10.00	0.29
8			367.59	20.00	0.47

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
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8			367.78	30.00	0.62
8			367.94	40.00	0.76
8			368.09	50.00	0.89
8			368.44	75.00	1.18
8			368.82	88.96	1.52
8			369.30	142.54	1.95
8			369.79	219.99	2.41
8			370.11	280.10	2.72
8			370.33	326.70	2.93
8			370.56	378.34	3.15
9	ENDTBL				
3	STRUCT	34			
8			329.00	0.00	0.00
8			332.62	30.00	0.72



8			336.99	50.00	2.59
8			337.92	70.00	3.17
8			338.11	90.00	3.29
8			338.19	100.00	3.34
8			338.26	109.00	3.39
8			338.55	150.00	3.58
8			338.61	160.00	3.63
8			338.64	165.00	3.65
8			338.70	175.00	3.69
8			338.73	179.50	3.71
8			343.01	310.00	7.34
8			343.91	680.58	8.20
9	ENDTBL				
3	STRUCT	64			
9	ENDTBL				
2	XSECTN	030	1.0	357.00	
8			356.00	0.00	0.00
8			356.25	11.94	4.48
8			356.50	38.65	9.42
8			356.75	77.59	14.83
8			357.00	128.16	20.70
8			358.00	446.97	48.84
8			359.00	544.48	91.80
8			360.00	941.05	156.94
8			361.00	1597.14	242.00
9	ENDTBL				
2	XSECTN	035	1.0	317.00	
8			316.00	0.00	0.00
8			316.25	12.78	5.64
8			316.50	44.21	13.12
8			316.75	94.71	22.44
8			317.00	166.16	33.59
8			318.00	703.03	96.58
8			319.00	1203.58	187.92
8			320.00	2039.69	306.56
8			321.00	3441.07	443.04

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
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9	ENDTBL				
3	STRUCT	33			
8			323.00	0.00	0.00
8			323.20	5.00	0.01
8			324.01	10.00	0.06
8			325.62	15.00	0.19
8			326.73	18.00	0.29
8			327.09	20.00	0.33
8			327.38	25.00	0.36
8			327.54	28.00	0.38
8			327.63	30.00	0.39
8			328.16	38.10	0.46
8			328.84	73.25	0.54
8			329.21	106.03	0.59
9	ENDTBL				
3	STRUCT	29			
8			266.00	0.00	0.00
8			273.38	10.00	2.49
8			273.62	20.00	2.64
8			273.91	35.00	2.82
8			274.10	46.00	2.94

8			274.35	55.00	3.10
8			274.51	58.00	3.20
8			274.61	60.00	3.28
8			274.90	65.00	3.47
8			275.21	98.51	3.68
8			275.54	139.16	3.92
8			275.89	189.97	4.18
8			276.27	253.87	4.48
8			276.50	299.40	4.67
9	ENDTBL				
2	XSECTN	042	1.0	223.00	
8			222.00	0.00	0.00
8			222.25	2.73	0.83
8			222.50	10.35	2.16
8			222.75	23.82	3.97
8			223.00	44.24	6.28
8			224.00	215.28	20.42
8			225.00	406.10	41.61
8			226.00	702.08	67.86
8			227.00	890.97	103.46
9	ENDTBL				
2	XSECTN	045	1.0	223.00	
8			222.00	0.00	0.00
8			222.25	2.28	0.83
8			222.50	8.62	2.16
8			222.75	19.85	3.97
8			223.00	36.86	6.28
8			224.00	179.35	20.41
8			225.00	338.28	41.30

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
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8			226.00	584.84	67.85
8			227.00	830.09	103.44
8			228.00	1249.11	151.47
8			229.00	1307.14	232.37
8			230.00	2023.03	366.57
9	ENDTBL				
3	STRUCT	07			
9	ENDTBL				
3	STRUCT	40			
8			333.00	000.00	0.00
8			334.00	15.15	0.40
8			334.25	16.92	0.47
8			334.50	18.53	0.55
8			334.75	20.02	0.63
8			335.00	21.40	0.68
8			335.50	23.92	0.77
8			335.86	25.59	0.80
8			336.00	27.61	0.82
8			336.25	33.80	0.84
8			336.50	42.02	0.93
8			336.75	51.79	1.01
8			336.86	56.51	1.05
8			337.00	57.30	1.08
8			337.50	58.38	1.31
8			338.00	59.45	1.68
9	ENDTBL				
2	XSECTN	049	1.0	317.00	
8			316.00	0.00	0.00

8			316.25	3.06	1.70
8			316.50	11.11	4.19
8			316.75	24.79	7.47
8			317.00	44.94	11.55
8			318.00	206.80	35.78
8			319.00	333.28	74.89
8			320.00	609.60	131.05
9	ENDTBL				
3	STRUCT	43			
8			317.30	0.00	0.00
8			318.00	0.19	0.08
8			319.00	0.24	0.27
8			320.75	0.30	0.79
8			321.00	3.22	0.85
8			321.75	23.58	1.09
8			322.00	32.83	1.17
8			322.20	40.94	1.20
8			322.40	49.63	1.27
8			322.80	68.56	1.45
8			322.90	73.60	1.49
9	ENDTBL				
2	XSECTN	052	1.0	279.00	

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
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8			276.00	0.00	0.00
8			276.25	15.37	5.56
8			276.50	49.97	11.77
8			276.75	100.75	18.63
8			277.00	167.09	26.14
8			278.00	591.48	62.65
8			279.00	793.41	115.06
8			280.00	1313.82	188.91
8			281.00	2138.14	282.44
9	ENDTBL				
3	STRUCT	05			
8			256.00	0.00	0.00
8			257.31	25.00	2.040
8			258.61	50.00	4.248
8			259.92	75.00	6.631
8			261.23	100.00	9.193
8			262.74	125.00	12.396
8			265.08	150.00	17.872
8			267.43	175.00	24.009
8			269.77	200.00	30.850
8			274.91	250.00	48.522
8			276.30	260.00	53.975
8			277.00	265.00	56.814
8			277.70	319.90	59.729
8			279.13	415.88	65.974
8			280.67	569.65	73.359
9	ENDTBL				
3	STRUCT	06			
9	ENDTBL				
2	XSECTN	059	1.0	128.00	
8			129.00	0.00	0.00
8			129.25	1.13	0.50
8			129.50	5.18	1.55
8			129.75	13.39	3.16
8			130.00	26.84	5.32

8					131.00	191.72	26.64		
8					132.00	508.02	58.78		
8					133.00	945.51	95.90		
8					134.00	1449.27	136.08		
8					135.00	2016.68	178.64		
8					138.00	4199.86	314.48		
9	ENDTBL								
6	RUNOFF	1	001	1	0.2101	77.19	0.319	1	1 141
6	RUNOFF	1	002	2	0.0292	74.00	0.232	1	1 142
6	RESVOR	2	58 2	3				1	1
	SWMF58								
6	ADDHYD	4	003	1 3 4				1	
	1+2+58								
6	RUNOFF	1	004	1	0.0617	81.09	0.170	1	1 143
6	ADDHYD	4	005	4 1 2				1	1+2+3
6	RUNOFF	1	006	1	0.0799	74.51	0.216	1	1 144
6	REACH	3	007	2 3	2055.0			1	

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
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6	ADDHYD	4	008	1 3 2				1	SA14
6	RUNOFF	1	009	1	0.0604	78.12	0.220	1	1 153
6	RUNOFF	1	010	3	0.0264	78.36	0.290	1	1 151
6	RESVOR	2	52 3	4				1	1
	SWMF52								
6	REACH	3	011	4 5	1396.5			1	
6	ADDHYD	4	012	1 5 6				1	1
	153+151								
6	RUNOFF	1	013	1	0.0447	83.97	0.210	1	1 152
6	RESVOR	2	51 1	3				1	1
	SWMF51								
6	ADDHYD	4	014	6 3 1				1	
	012+51								
6	RUNOFF	1	015	3	0.0815	76.80	0.176	1	1 154
6	REACH	3	016	1 4	2448.6			1	
6	ADDHYD	4	017	3 4 5				1	1 SA15
6	ADDHYD	4	018	2 5 1				1	1
	SA14+15								
6	RUNOFF	1	019	2	0.2701	73.58	0.425	1	1 131
6	REACH	3	020	1 3	4470.1			1	1 SA13
6	ADDHYD	4	021	2 3 4				1	1
	14+15+13								
6	RUNOFF	1	022	1	0.0185	83.00	0.283	1	1 121
6	RESVOR	2	47 1	2				1	1
	SWMF47								
6	RUNOFF	1	023	3	0.0812	83.00	0.245	1	1 122
6	RESVOR	2	32 3	5				1	1
	SWMF32								
6	ADDHYD	4	024	2 5 1				1	
	121+122								
6	RUNOFF	1	025	2	0.0465	82.74	0.236	1	1 123
6	ADDHYD	4	026	1 2 5				1	
	024+123								
6	RESVOR	2	34 5	3				1	1
	SWMF34								
6	RUNOFF	1	027	2	0.0126	76.91	0.100	1	1 124
6	ADDHYD	4	028	3 2 5				1	1 SA12
6	RUNOFF	1	029	2	0.0499	87.76	0.100	1	1 111
6	RESVOR	2	64 2	3				1	1
	SWMF64								

6 REACH	3	030	3	6	1561.1			1	
6 RUNOFF	1	031		7	0.1745	85.00	0.449	1	1 112
6 ADDHYD	4	032	6	7	3			1	
111+112									
6 RUNOFF	1	033		1	0.0477	83.06	0.258	1	1 113
6 ADDHYD	4	034	3	1	2			1	
032+113									
6 REACH	3	035	2	3	2077.3			1	
6 RUNOFF	1	036		6	0.0244	83.54	0.370	1	1 114
6 RESVOR	2		33	6	7			1	1
SWMF33									
6 ADDHYD	4	037	3	7	1			1	
111-114									
6 RUNOFF	1	038		2	0.0684	79.13	0.136	1	1 115
6 ADDHYD	4	039	1	2	3			1	1 SA11
6 ADDHYD	4	040	5	3	6			1	12+11
6 RUNOFF	1	041		1	0.0236	82.59	0.200	1	1 101
6 RESVOR	2		29	1	3			1	1
SWMF29									
6 REACH	3	042	3	5	2112.0			1	
6 RUNOFF	1	043		1	0.1211	62.77	0.263	1	1 102
6 ADDHYD	4	044	5	1	2			1	1 SA10
6 REACH	3	045	6	3	3147.6			1	
6 ADDHYD	4	046	2	3	7			1	1
10+12+11									
6 RESVOR	2		07	7	1			1	1 PROP7
6 RUNOFF	1	047		2	0.2822	80.17	0.434	1	1 81
6 RUNOFF	1	048		3	0.0248	85.45	0.190	1	1 82

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

6 RESVOR	2		40	3	5			1	1
SWMF40									
6 REACH	3	049	5	6	1829.0			1	
6 ADDHYD	4	050	2	6	7			1	81+82
6 RUNOFF	1	051		2	0.0218	81.19	0.220	1	1 83
6 RESVOR	2		43	2	3			1	1
SWMF43									
6 ADDHYD	4	052	7	3	2			1	1
81+82+83									
6 REACH	3	052	2	3	4744.2			1	
6 RUNOFF	1	053		5	0.2083	62.56	0.262	1	1 84
6 ADDHYD	4	054	3	5	2			1	1 SA8
6 RESVOR	2		05	2	5			1	1 PROP5
6 ADDHYD	4	055	4	1	3			1	1 13+10
6 RUNOFF	1	056		6	0.0166	65.36	0.134	1	1 92
6 ADDHYD	4	057	3	6	7			1	1
13+10+92									
6 RESVOR	2		06	7	4			1	1 PROP6
6 RUNOFF	1	058		1	0.0357	81.76	0.141	1	1 93
6 REACH	3	059	4	3	1670.5			1	
6 ADDHYD	4	060	5	3	4			1	
SA8+93									
6 ADDHYD	4	061	7	4	1			1	92+93
6 RUNOFF	1	062		2	0.0233	86.98	0.186	1	1 91
6 ADDHYD	4	063	1	2	3			1	1
OUTFALL									
ENDATA									
7 INCREM	6				.06				
7 COMPUT	7	001	063		0.0		3.19	1.01	2 1 2

```

ENDCMP 1
7 COMPUT 7 001 063 0.0 4.10 1.01 2 1 05
ENDCMP 1
7 COMPUT 7 001 063 0.0 4.91 1.01 2 1 10
ENDCMP 1
7 COMPUT 7 001 063 0.0 7.23 1.01 2 1 50
ENDCMP 1
7 COMPUT 7 001 063 0.0 8.47 1.01 2 1 99
ENDCMP 1
ENDCMP 1
ENDJOB 2

```

\*\*\*\*\*END OF 80-80

LIST\*\*\*\*\*

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TR20 ----- SCS

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-
Ellicott City Flood Study-Tiber/South Sub-Drainage Areas
VERSION
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2.04TEST
11:17:50 PASS 1 JOB NO. 1 PAGE
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```

EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .060 HOURS

```

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63
STARTING TIME = .00 RAIN DEPTH = 3.19 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS
ALTERNATE NO. = 1 STORM NO. = 2 RAIN TABLE NO. = 1

```

OPERATION RUNOFF XSECTION 1

```

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.26 136.6 (RUNOFF)
20.68 4.2 (RUNOFF)
24.01 3.3 (RUNOFF)

```

```

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.22 WATERSHED INCHES; 165 CFS-HRS; 13.6 ACRE-
FEET.

```

OPERATION RUNOFF XSECTION 2

```

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.20 18.2 (RUNOFF)

```

```

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.03 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-
FEET.

```

OPERATION RESVOR STRUCTURE 58

```

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
13.47 2.2 429.15

```

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.02 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	137.7	(NULL)
20.65	5.2	(NULL)
23.76	4.0	(NULL)
24.00	4.0	(NULL)

1

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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 2.04TEST  
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 2

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.19 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.16	63.3	(RUNOFF)
15.84	2.4	(RUNOFF)
24.00	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	189.4	(NULL)
18.63	7.5	(NULL)
20.63	6.5	(NULL)
23.74	5.1	(NULL)
24.00	5.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.25 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	53.1	(RUNOFF)
17.33	2.0	(RUNOFF)

24.02 1.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.06 WATERSHED INCHES; 55 CFS-HRS; 4.5 ACRE-
FEET.

OPERATION REACH XSECTION 7

Table with 3 columns: PEAK TIME(HRS) ELEVATION(FEET), PEAK DISCHARGE(CFS), PEAK. Rows include values like 12.29, 183.8, 319.29.

1

TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas
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2.04TEST

11:17:50

PASS 1 JOB NO. 1

PAGE

3

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.25 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 8

Table with 3 columns: PEAK TIME(HRS) ELEVATION(FEET), PEAK DISCHARGE(CFS), PEAK. Rows include values like 12.26, 228.3, (NULL).

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.21 WATERSHED INCHES; 297 CFS-HRS; 24.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 9

Table with 3 columns: PEAK TIME(HRS) ELEVATION(FEET), PEAK DISCHARGE(CFS), PEAK. Rows include values like 12.19, 49.0, (RUNOFF).

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.27 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 10

Table with 3 columns: PEAK TIME(HRS) ELEVATION(FEET), PEAK DISCHARGE(CFS), PEAK



12.23 19.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.29 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
13.33 2.8 454.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.86 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-
FEET.

1

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas
VERSION
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2.04TEST
11:17:50 PASS 1 JOB NO. 1 PAGE
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\*\*\* WARNING - XSECTION 11, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,
UNLESS NEW RATING TABLE VALUES ARE INSERTED.
\*\*\*

OPERATION REACH XSECTION 11

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
13.47 2.7 414.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.86 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-
FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.19 49.1 (NULL)
18.82 2.0 (NULL)
24.02 1.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.15 WATERSHED INCHES; 64 CFS-HRS; 5.3 ACRE-
FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	49.3	(RUNOFF)
20.86	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.67 WATERSHED INCHES; 48 CFS-HRS; 4.0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	22.2	397.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.67 WATERSHED INCHES; 48 CFS-HRS; 4.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 14

1

TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 03/23/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT  
 2.04TEST  
 11:17:50 PASS 1 JOB NO. 1 PAGE  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	65.4	(NULL)
20.06	3.0	(NULL)
24.02	2.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.32 WATERSHED INCHES; 112 CFS-HRS; 9.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	66.3	(RUNOFF)
17.35	2.2	(RUNOFF)
24.01	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.19 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	59.8	330.83
24.09	2.3	330.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.32 WATERSHED INCHES; 112 CFS-HRS; 9.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	109.9	(NULL)
21.94	4.1	(NULL)
24.01	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.27 WATERSHED INCHES; 175 CFS-HRS; 14.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 18

1  
 TR20 ----- SCS  
 -  
 Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 03/23/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,50,100WITHMGMT  
 2.04TEST  
 11:17:50 PASS 1 JOB NO. 1 PAGE  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.25	333.7	(NULL)
20.09	13.1	(NULL)
20.63	12.5	(NULL)
21.94	11.4	(NULL)
23.09	10.5	(NULL)
24.03	9.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.23 WATERSHED INCHES; 471 CFS-HRS; 38.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.33	121.9	(RUNOFF)
20.13	5.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.01 WATERSHED INCHES; 175 CFS-HRS; 14.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	305.7	235.86
23.13	10.5	234.27
24.09	9.8	234.26

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.23 WATERSHED INCHES; 471 CFS-HRS; 38.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	426.1	(NULL)
23.13	14.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.16 WATERSHED INCHES; 646 CFS-HRS; 53.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	17.1	(RUNOFF)

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 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

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 2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.60 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	12.3	414.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.60 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	80.0	(RUNOFF)
19.47	2.0	(RUNOFF)
24.02	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.60 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	61.0	368.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.60 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	73.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.60 WATERSHED INCHES; 103 CFS-HRS; 8.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	46.1	(RUNOFF)
21.45	1.0	(RUNOFF)

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 03/23/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT  
 2.04TEST  
 11:17:50 PASS 1 JOB NO. 1 PAGE  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.58 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	110.3	(NULL)
20.62	3.4	(NULL)
24.01	2.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.59 WATERSHED INCHES; 150 CFS-HRS; 12.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	54.3	337.19

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.59 WATERSHED INCHES; 150 CFS-HRS; 12.4 ACRE-

FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	12.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.19 WATERSHED INCHES; 10 CFS-HRS; .8 ACRE-FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.3%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	44.1	(NULL)
12.67	56.2	(NULL)
23.98	2.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 160 CFS-HRS; 13.2 ACRE-FEET.

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	80.5	(RUNOFF)
15.82	2.3	(RUNOFF)
23.02	1.1	(RUNOFF)
23.68	1.0	(RUNOFF)
23.99	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.5%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	80.5	(NULL)
15.82	2.3	(NULL)
23.02	1.1	(NULL)
23.68	1.0	(NULL)
23.99	1.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	74.0	356.73
15.89	2.3	356.05
23.09	1.1	356.02
23.75	1.0	356.02
24.05	1.1	356.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.97 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	141.6	(RUNOFF)

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 03/23/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,50,100WITHMGMT  
 2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.75 WATERSHED INCHES; 197 CFS-HRS; 16.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	191.3	(NULL)
18.86	6.1	(NULL)
21.75	5.0	(NULL)
24.04	4.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.80 WATERSHED INCHES; 260 CFS-HRS; 21.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	46.0	(RUNOFF)
21.76	1.0	(RUNOFF)
21.97	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES; 49 CFS-HRS; 4.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	236.3	(NULL)
18.86	7.4	(NULL)
21.75	6.0	(NULL)
24.04	5.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.76 WATERSHED INCHES; 310 CFS-HRS; 25.6 ACRE-FEET.

OPERATION REACH XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	221.5	317.10
20.68	6.5	316.13
24.10	5.1	316.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.76 WATERSHED INCHES; 309 CFS-HRS; 25.6 ACRE-FEET.

1

TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION  
03/23/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,50,100WITHMGMT  
2.04TEST  
11:17:50 PASS 1 JOB NO. 1 PAGE  
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OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	20.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.64 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .047 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES



FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	15.2	325.68
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.64 WATERSHED INCHES;	26 CFS-HRS;	2.1 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	235.8	(NULL)
20.68	7.1	(NULL)
24.10	5.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.75 WATERSHED INCHES;	335 CFS-HRS;	27.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	69.3	(RUNOFF)
15.84	2.6	(RUNOFF)
17.34	2.0	(RUNOFF)
24.00	1.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.33 WATERSHED INCHES;	59 CFS-HRS;	4.9 ACRE-
FEET.		

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TR20 ----- SCS

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OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	265.4	(NULL)
23.99	6.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.67 WATERSHED INCHES;	394 CFS-HRS;	32.6 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	312.0	(NULL)
23.99	9.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 554 CFS-HRS; 45.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	24.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.57 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.00	3.6	268.66

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.17	3.6	222.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	26.2	(RUNOFF)
24.03	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .51 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-

FEET.

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	27.9	(NULL)
20.62	2.4	(NULL)
24.02	1.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .68 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.45	298.1	224.75
24.04	9.6	222.52

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 554 CFS-HRS; 45.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.44	319.9	(NULL)
24.03	11.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 617 CFS-HRS; 51.0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.44	319.9	(NULL)
24.03	11.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 617 CFS-HRS; 51.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	185.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 256 CFS-HRS; 21.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	29.9	(RUNOFF)
15.84	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	16.5	334.19

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	15.5	316.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 28 CFS-HRS; 2.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	197.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 284 CFS-HRS; 23.5 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.19	20.7	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 21 CFS-HRS; 1.7 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.86	3.8	321.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .97 WATERSHED INCHES; 14 CFS-HRS; 1.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	198.1	277.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 297 CFS-HRS; 24.6 ACRE-FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	177.7	277.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 297 CFS-HRS; 24.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	43.9	(RUNOFF)
23.11	2.1	(RUNOFF)
23.76	2.0	(RUNOFF)
24.03	2.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.50 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	207.7	(NULL)
24.00	7.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.05 WATERSHED INCHES; 364 CFS-HRS; 30.1 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.07	92.9	260.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.05 WATERSHED INCHES; 364 CFS-HRS; 30.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	739.3	(NULL)
24.03	24.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.28 WATERSHED INCHES; 1263 CFS-HRS; 104.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	6.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.61 WATERSHED INCHES; 7 CFS-HRS; .5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	742.1	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.27 WATERSHED INCHES; 1270 CFS-HRS; 104.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.39 742.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.27 WATERSHED INCHES; 1270 CFS-HRS; 104.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.14 40.7 (RUNOFF)  
17.34 1.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.51 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.46 736.8 132.52

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.27 WATERSHED INCHES; 1270 CFS-HRS; 104.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.47 795.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.21 WATERSHED INCHES; 1633 CFS-HRS; 135.0 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 61  
NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	795.3	(NULL)

1

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.19 WATERSHED INCHES; 1599 CFS-HRS; 132.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	30.3	(RUNOFF)
15.85	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	805.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.20 WATERSHED INCHES; 1627 CFS-HRS; 134.5 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
 STARTING TIME = .00 RAIN DEPTH = 4.10 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. = 5 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	217.7	(RUNOFF)
20.12	6.2	(RUNOFF)
21.93	5.5	(RUNOFF)
24.02	4.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 258 CFS-HRS; 21.3 ACRE-  
 FEET.



OPERATION RUNOFF XSECTION 2  
1

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.20 30.4 (RUNOFF)  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.67 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.68 8.3 430.23  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.64 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.25 219.8 (NULL)  
18.65 8.3 (NULL)  
20.66 7.2 (NULL)  
23.11 6.0 (NULL)  
24.01 5.6 (NULL)  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.87 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.15 95.7 (RUNOFF)  
15.84 3.4 (RUNOFF)  
19.47 2.0 (RUNOFF)  
24.00 1.5 (RUNOFF)  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.21 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 5

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.21	299.6	(NULL)
18.63	10.4	(NULL)
20.63	9.1	(NULL)
21.95	8.3	(NULL)
23.74	7.2	(NULL)
24.01	7.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.94 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.19	87.6	(RUNOFF)
15.83	3.8	(RUNOFF)
21.46	2.0	(RUNOFF)
24.02	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.70 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 7

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.28	292.4	319.71
18.70	10.4	318.25
20.69	9.1	318.22
22.00	8.3	318.20
23.80	7.2	318.18
24.07	7.1	318.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.94 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.26	368.5	(NULL)
18.66	12.8	(NULL)
20.67	11.3	(NULL)
21.99	10.3	(NULL)
23.12	9.4	(NULL)
24.04	8.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.89 WATERSHED INCHES; 465 CFS-HRS; 38.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	77.2	(RUNOFF)
15.82	3.1	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.98 WATERSHED INCHES; 77 CFS-HRS; 6.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	30.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.99 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.72	8.9	454.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.54 WATERSHED INCHES; 26 CFS-HRS; 2.2 ACRE-  
FEET.

OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	8.8	414.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.54 WATERSHED INCHES;      26 CFS-HRS;      2.2 ACRE-  
FEET.

OPERATION ADDHYD    XSECTION    12

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	77.4	(NULL)
23.08	2.1	(NULL)
23.73	2.0	(NULL)
24.03	2.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.84 WATERSHED INCHES;      103 CFS-HRS;      8.5 ACRE-  
FEET.

OPERATION RUNOFF    XSECTION    13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	71.9	(RUNOFF)
17.33	2.0	(RUNOFF)
24.02	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.45 WATERSHED INCHES;      71 CFS-HRS;      5.9 ACRE-  
FEET.

OPERATION RESVOR    STRUCTURE    51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	34.2	397.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.45 WATERSHED INCHES;      71 CFS-HRS;      5.9 ACRE-  
FEET.

OPERATION ADDHYD    XSECTION    14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	103.2	(NULL)
20.62	4.1	(NULL)
24.02	3.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.04 WATERSHED INCHES;      173 CFS-HRS;      14.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 15  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	106.0	(RUNOFF)
15.85	4.1	(RUNOFF)
17.34	3.2	(RUNOFF)
22.46	2.0	(RUNOFF)
24.01	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.87 WATERSHED INCHES; 99 CFS-HRS; 8.1 ACRE-  
FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	95.7	331.04
20.67	4.0	330.17
24.09	3.2	330.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.04 WATERSHED INCHES; 173 CFS-HRS; 14.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	178.2	(NULL)
20.80	6.3	(NULL)
23.72	5.0	(NULL)
24.01	5.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.98 WATERSHED INCHES; 272 CFS-HRS; 22.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	539.2	(NULL)
20.10	18.4	(NULL)
20.64	17.6	(NULL)
21.95	16.1	(NULL)
23.10	14.7	(NULL)
24.03	13.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.92 WATERSHED INCHES; 737 CFS-HRS; 60.9 ACRE-  
 FEET.

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	207.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 286 CFS-HRS; 23.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	486.7	236.60
23.13	14.7	234.32
24.09	13.7	234.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.92 WATERSHED INCHES; 736 CFS-HRS; 60.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	690.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.83 WATERSHED INCHES; 1022 CFS-HRS; 84.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	25.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
12.33                                    21.0                                    414.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.37 WATERSHED INCHES;            28 CFS-HRS;            2.3 ACRE-  
FEET.

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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OPERATION RUNOFF    XSECTION    23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	119.0	(RUNOFF)
23.10	2.1	(RUNOFF)
23.75	2.0	(RUNOFF)
24.02	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.37 WATERSHED INCHES;            124 CFS-HRS;            10.3 ACRE-  
FEET.

OPERATION RESVOR    STRUCTURE    32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	86.1	368.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.37 WATERSHED INCHES;            124 CFS-HRS;            10.3 ACRE-  
FEET.

OPERATION ADDHYD    XSECTION    24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	107.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.37 WATERSHED INCHES;            153 CFS-HRS;            12.6 ACRE-  
FEET.

OPERATION RUNOFF    XSECTION    25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	68.4	(RUNOFF)
24.03	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.35 WATERSHED INCHES;            70 CFS-HRS;            5.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	162.5	(NULL)
20.62	4.6	(NULL)
24.02	3.6	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.36 WATERSHED INCHES; 223 CFS-HRS; 18.4 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.46	127.1	338.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.36 WATERSHED INCHES; 223 CFS-HRS; 18.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	20.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.88 WATERSHED INCHES; 15 CFS-HRS; 1.3 ACRE-  
FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%.  
\*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.46	131.8	(NULL)
23.98	4.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.33 WATERSHED INCHES; 238 CFS-HRS; 19.7 ACRE-  
FEET.



OPERATION RUNOFF XSECTION 29

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.11	113.0	(RUNOFF)
15.82	3.1	(RUNOFF)
17.32	2.4	(RUNOFF)
23.99	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 90 CFS-HRS; 7.4 ACRE-  
 FEET.

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\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.11	113.0	(NULL)
15.82	3.1	(NULL)
17.32	2.4	(NULL)
23.99	1.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 90 CFS-HRS; 7.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	105.9	356.89
15.89	3.1	356.06
17.39	2.4	356.05
24.05	1.4	356.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.80 WATERSHED INCHES; 90 CFS-HRS; 7.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.32	206.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.55 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.23	276.5	(NULL)
18.86	8.3	(NULL)
20.87	7.3	(NULL)
23.09	6.1	(NULL)
24.04	5.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.60 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.20	68.1	(RUNOFF)
24.03	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.38 WATERSHED INCHES; 73 CFS-HRS; 6.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.22	343.4	(NULL)
18.63	10.1	(NULL)
20.09	9.3	(NULL)
21.97	8.1	(NULL)
23.09	7.4	(NULL)
24.04	7.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.56 WATERSHED INCHES; 450 CFS-HRS; 37.2 ACRE-  
FEET.

OPERATION REACH XSECTION 35

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.33	326.6	317.30
20.16	9.3	316.18
22.00	8.1	316.16

23.15	7.4	316.14
24.10	6.9	316.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.56 WATERSHED INCHES; 450 CFS-HRS; 37.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.27	30.0	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
 FEET.

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\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .047 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	23.6	327.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	343.7	(NULL)
20.16	10.1	(NULL)
20.68	9.6	(NULL)
23.15	8.0	(NULL)
24.10	7.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.55 WATERSHED INCHES; 488 CFS-HRS; 40.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	107.3	(RUNOFF)
15.84	3.7	(RUNOFF)
20.04	2.1	(RUNOFF)
20.60	2.0	(RUNOFF)
20.83	2.0	(RUNOFF)
24.00	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.05 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	390.1	(NULL)
23.99	9.1	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.46 WATERSHED INCHES; 578 CFS-HRS; 47.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	489.7	(NULL)
23.99	13.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES; 817 CFS-HRS; 67.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	36.9	(RUNOFF)
17.34	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.34 WATERSHED INCHES; 36 CFS-HRS; 2.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
 12.93    5.5    270.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.32 WATERSHED INCHES;                  35 CFS-HRS;                  2.9 ACRE-  
 FEET.

OPERATION REACH                  XSECTION    42

PEAK TIME(HRS)                                  PEAK DISCHARGE(CFS)                                  PEAK  
 ELEVATION(FEET)  
 13.09    5.5    222.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.32 WATERSHED INCHES;                  35 CFS-HRS;                  2.9 ACRE-  
 FEET.

OPERATION RUNOFF                  XSECTION    43

PEAK TIME(HRS)                                  PEAK DISCHARGE(CFS)                                  PEAK  
 ELEVATION(FEET)  
 12.23    60.9    (RUNOFF)  
 21.98    2.2    (RUNOFF)  
 24.03    1.9    (RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .96 WATERSHED INCHES;                  75 CFS-HRS;                  6.2 ACRE-  
 FEET.

OPERATION ADDHYD                  XSECTION    44

PEAK TIME(HRS)                                  PEAK DISCHARGE(CFS)                                  PEAK  
 ELEVATION(FEET)  
 12.24    63.5    (NULL)  
 20.62    3.8    (NULL)  
 24.03    2.8    (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.18 WATERSHED INCHES;                  110 CFS-HRS;                  9.1 ACRE-  
 FEET.

OPERATION REACH                  XSECTION    45

PEAK TIME(HRS)                                  PEAK DISCHARGE(CFS)                                  PEAK  
 ELEVATION(FEET)  
 12.56    470.1    225.53  
 24.10    13.1    222.60

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES;                  817 CFS-HRS;                  67.5 ACRE-

FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	504.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.15 WATERSHED INCHES; 927 CFS-HRS; 76.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	504.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.15 WATERSHED INCHES; 927 CFS-HRS; 76.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	285.2	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.14 WATERSHED INCHES; 389 CFS-HRS; 32.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	43.5	(RUNOFF)
17.34	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.59 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	21.9	335.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.59 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	20.8	316.68

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.58 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	303.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.17 WATERSHED INCHES; 430 CFS-HRS; 35.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	31.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.22 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-  
 FEET.

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\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	14.9	321.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.69 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	315.4	277.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.14 WATERSHED INCHES; 454 CFS-HRS; 37.5 ACRE-FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	287.9	277.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.14 WATERSHED INCHES; 454 CFS-HRS; 37.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	103.1	(RUNOFF)
20.11	4.2	(RUNOFF)
20.66	4.0	(RUNOFF)
24.02	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .95 WATERSHED INCHES; 127 CFS-HRS; 10.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 54

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	350.5	(NULL)
23.99	11.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.68 WATERSHED INCHES; 581 CFS-HRS; 48.0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.08	136.9	263.85



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.68 WATERSHED INCHES; 581 CFS-HRS; 48.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.40 1132.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.97 WATERSHED INCHES; 1948 CFS-HRS; 161.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.14 13.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.11 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.39 1136.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 1960 CFS-HRS; 162.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.39 1136.8 (NULL)

1 TR20 ----- SCS

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 1960 CFS-HRS; 162.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)

12.13	60.8	(RUNOFF)
15.45	2.1	(RUNOFF)
15.84	2.0	(RUNOFF)
21.45	1.0	(RUNOFF)
21.73	1.0	(RUNOFF)
21.94	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.27 WATERSHED INCHES; 52 CFS-HRS; 4.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	1133.9	133.37

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 1960 CFS-HRS; 162.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	1237.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.89 WATERSHED INCHES; 2540 CFS-HRS; 209.9 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	1237.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.85 WATERSHED INCHES; 2494 CFS-HRS; 206.1 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	42.9	(RUNOFF)

17.34 1.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.72 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-
FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.48 1250.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.86 WATERSHED INCHES; 2535 CFS-HRS; 209.5 ACRE-
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63
STARTING TIME = .00 RAIN DEPTH = 4.91 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS
ALTERNATE NO. = 1 STORM NO. =10 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.25 295.0 (RUNOFF)
18.67 8.6 (RUNOFF)
20.67 7.5 (RUNOFF)
23.12 6.3 (RUNOFF)
24.01 5.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.56 WATERSHED INCHES; 347 CFS-HRS; 28.7 ACRE-
FEET.

OPERATION RUNOFF XSECTION 2

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.19 42.1 (RUNOFF)
20.09 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.29 WATERSHED INCHES; 43 CFS-HRS; 3.6 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	16.1	430.98
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.25 WATERSHED INCHES;	42 CFS-HRS;	3.5 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	303.4	(NULL)
18.66	10.3	(NULL)
20.66	9.0	(NULL)
23.76	7.1	(NULL)
24.01	7.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.52 WATERSHED INCHES;	390 CFS-HRS;	32.2 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	125.5	(RUNOFF)
15.84	4.3	(RUNOFF)
17.34	3.3	(RUNOFF)
21.95	2.2	(RUNOFF)
24.00	1.9	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.91 WATERSHED INCHES;	116 CFS-HRS;	9.6 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 5

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	404.6	(NULL)
18.64	13.0	(NULL)
20.63	11.4	(NULL)
21.95	10.4	(NULL)
23.08	9.5	(NULL)
24.00	8.9	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.60 WATERSHED INCHES;	505 CFS-HRS;	41.8 ACRE-

FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	121.4	(RUNOFF)
15.83	4.9	(RUNOFF)
18.87	3.1	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.33 WATERSHED INCHES; 120 CFS-HRS; 9.9 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.28	397.0	320.10
18.70	13.0	318.28
20.69	11.4	318.26
22.00	10.4	318.25
23.15	9.5	318.23
24.07	8.9	318.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.60 WATERSHED INCHES; 505 CFS-HRS; 41.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.25	500.5	(NULL)
18.66	16.1	(NULL)
20.67	14.1	(NULL)
21.99	12.9	(NULL)
23.77	11.2	(NULL)
24.04	11.1	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.55 WATERSHED INCHES; 626 CFS-HRS; 51.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	103.4	(RUNOFF)

21.97	2.0	(RUNOFF)
24.02	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.64 WATERSHED INCHES; 103 CFS-HRS; 8.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	40.4	(RUNOFF)
18.66	1.1	(RUNOFF)
20.12	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.67 WATERSHED INCHES; 45 CFS-HRS; 3.8 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	15.5	455.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.20 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	15.4	414.37

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.20 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	103.7	(NULL)

20.86	3.2	(NULL)
24.01	2.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.51 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	92.4	(RUNOFF)
15.84	3.2	(RUNOFF)
17.32	2.5	(RUNOFF)
18.64	2.0	(RUNOFF)
24.01	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.18 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	45.7	398.37

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.18 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	138.8	(NULL)
20.62	5.1	(NULL)
23.07	4.2	(NULL)
23.71	4.0	(NULL)
24.01	3.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 15

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	143.3	(RUNOFF)

15.84	5.3	(RUNOFF)
17.34	4.1	(RUNOFF)
19.75	3.1	(RUNOFF)
20.06	3.1	(RUNOFF)
24.01	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.53 WATERSHED INCHES; 133 CFS-HRS; 11.0 ACRE-FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	130.3	331.15
20.68	5.1	330.21
23.77	4.0	330.17
24.08	3.9	330.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	243.4	(NULL)
20.06	8.4	(NULL)
20.62	8.0	(NULL)
21.94	7.3	(NULL)
24.01	6.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.65 WATERSHED INCHES; 365 CFS-HRS; 30.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.24	732.9	(NULL)
18.63	25.4	(NULL)
20.10	23.1	(NULL)
20.64	22.1	(NULL)
21.95	20.2	(NULL)
23.10	18.5	(NULL)
24.03	17.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.58 WATERSHED INCHES; 990 CFS-HRS; 81.8 ACRE-FEET.



FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	289.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.26 WATERSHED INCHES; 393 CFS-HRS; 32.5 ACRE-FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	658.4	237.23
23.13	18.5	234.37
24.09	17.3	234.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.58 WATERSHED INCHES; 990 CFS-HRS; 81.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	941.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.48 WATERSHED INCHES; 1383 CFS-HRS; 114.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	32.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	27.2	414.77

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	154.3	(RUNOFF)
20.87	3.1	(RUNOFF)
24.03	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 162 CFS-HRS; 13.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	122.8	369.12

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 162 CFS-HRS; 13.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	149.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 199 CFS-HRS; 16.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	89.1	(RUNOFF)
18.87	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.07 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	223.0	(NULL)
20.08	6.0	(NULL)
20.61	5.8	(NULL)
24.01	4.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.08 WATERSHED INCHES; 291 CFS-HRS; 24.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	184.8	338.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.08 WATERSHED INCHES; 291 CFS-HRS; 24.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	26.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.54 WATERSHED INCHES; 21 CFS-HRS; 1.7 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -1.0%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	192.2	(NULL)
23.98	4.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.04 WATERSHED INCHES; 311 CFS-HRS; 25.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 29

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	141.9	(RUNOFF)
15.82	3.8	(RUNOFF)
20.02	2.2	(RUNOFF)
20.58	2.1	(RUNOFF)
20.82	2.1	(RUNOFF)
23.99	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.56 WATERSHED INCHES; 115 CFS-HRS; 9.5 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .3%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	141.9	(NULL)
15.82	3.8	(NULL)
20.02	2.2	(NULL)
20.58	2.1	(NULL)
20.82	2.1	(NULL)
23.99	1.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.56 WATERSHED INCHES; 115 CFS-HRS; 9.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	134.5	357.02
15.89	3.8	356.08
20.09	2.2	356.05
20.65	2.1	356.04
20.88	2.0	356.04
24.05	1.8	356.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.54 WATERSHED INCHES; 114 CFS-HRS; 9.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	264.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.28 WATERSHED INCHES; 370 CFS-HRS; 30.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	351.7	(NULL)
18.86	10.2	(NULL)
20.62	9.1	(NULL)
21.97	8.3	(NULL)
23.74	7.1	(NULL)
24.04	7.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.34 WATERSHED INCHES; 484 CFS-HRS; 40.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	88.5	(RUNOFF)
18.65	2.1	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.10 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	439.0	(NULL)
18.86	12.3	(NULL)
20.09	11.4	(NULL)
21.75	10.1	(NULL)
23.09	9.1	(NULL)
24.04	8.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.30 WATERSHED INCHES; 579 CFS-HRS; 47.9 ACRE-  
FEET.

OPERATION REACH XSECTION 35

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.32	419.8	317.47
20.16	11.4	316.22
20.91	10.8	316.21
23.15	9.1	316.18
24.10	8.5	316.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.30 WATERSHED INCHES; 579 CFS-HRS; 47.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.27	38.8	(RUNOFF)
20.14	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 49 CFS-HRS; 4.1 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .047 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.39	33.7	327.87
20.15	1.0	323.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.32	452.2	(NULL)
20.16	12.4	(NULL)
20.91	11.7	(NULL)
22.01	10.8	(NULL)
24.10	9.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.29 WATERSHED INCHES; 629 CFS-HRS; 52.0 ACRE-  
 FEET.

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 2.04TEST  
 11:17:50 PASS 3 JOB NO. 1  
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OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	142.5	(RUNOFF)
15.84	4.6	(RUNOFF)
17.34	3.6	(RUNOFF)
23.04	2.2	(RUNOFF)
23.70	2.0	(RUNOFF)
24.00	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.74 WATERSHED INCHES; 121 CFS-HRS; 10.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	511.7	(NULL)
23.99	11.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.18 WATERSHED INCHES; 750 CFS-HRS; 61.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	708.9	(NULL)
23.99	16.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 1061 CFS-HRS; 87.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	47.7	(RUNOFF)
18.86	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 29

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PASS 3 JOB NO. 1

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.89	7.2	271.34
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.02 WATERSHED INCHES;		46 CFS-HRS;
FEET.		3.8 ACRE-

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.04	7.2	222.40
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.02 WATERSHED INCHES;		46 CFS-HRS;
FEET.		3.8 ACRE-

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	96.2	(RUNOFF)
21.46	3.0	(RUNOFF)
24.02	2.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.43 WATERSHED INCHES;		112 CFS-HRS;
FEET.		9.3 ACRE-

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	99.7	(NULL)
20.07	5.3	(NULL)
20.62	5.0	(NULL)
24.02	3.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.69 WATERSHED INCHES;		158 CFS-HRS;
FEET.		13.1 ACRE-

OPERATION REACH XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	648.3	226.26
24.04	16.2	222.67
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.14 WATERSHED INCHES;		1061 CFS-HRS;
FEET.		87.7 ACRE-



FEET.

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 2.04TEST  
 11:17:50 PASS 3 JOB NO. 1 PAGE  
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OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	711.6	(NULL)
24.03	19.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.82 WATERSHED INCHES; 1219 CFS-HRS; 100.7 ACRE-FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	711.6	(NULL)
24.03	19.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.82 WATERSHED INCHES; 1219 CFS-HRS; 100.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	378.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 515 CFS-HRS; 42.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	55.0	(RUNOFF)
20.07	1.1	(RUNOFF)
20.63	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.32 WATERSHED INCHES; 53 CFS-HRS; 4.4 ACRE-FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
 12.31    35.5    336.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.32 WATERSHED INCHES;                  53 CFS-HRS;                  4.4 ACRE-FEET.

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 2.04TEST  
 11:17:50                                  PASS    3    JOB NO.    1                                  PAGE  
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OPERATION REACH      XSECTION    49

PEAK TIME(HRS)                                  PEAK DISCHARGE(CFS)                                  PEAK  
 ELEVATION(FEET)  
 12.41    30.8    316.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.32 WATERSHED INCHES;                  53 CFS-HRS;                  4.4 ACRE-FEET.

OPERATION ADDHYD      XSECTION    50

PEAK TIME(HRS)                                  PEAK DISCHARGE(CFS)                                  PEAK  
 ELEVATION(FEET)  
 12.33    404.6    (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.87 WATERSHED INCHES;                  568 CFS-HRS;                  47.0 ACRE-FEET.

OPERATION RUNOFF      XSECTION    51

PEAK TIME(HRS)                                  PEAK DISCHARGE(CFS)                                  PEAK  
 ELEVATION(FEET)  
 12.18    40.9    (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.92 WATERSHED INCHES;                  41 CFS-HRS;                  3.4 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
                                 STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT    320.75.  
                                 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR      STRUCTURE    43

PEAK TIME(HRS)                                  PEAK DISCHARGE(CFS)                                  PEAK  
 ELEVATION(FEET)  
 12.32    27.6    321.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.37 WATERSHED INCHES; 33 CFS-HRS; 2.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	432.2	277.62

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.83 WATERSHED INCHES; 601 CFS-HRS; 49.7 ACRE-  
FEET.

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2.04TEST  
11:17:50 PASS 3 JOB NO. 1 PAGE  
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OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	397.7	277.54

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.83 WATERSHED INCHES; 601 CFS-HRS; 49.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	163.6	(RUNOFF)
18.87	6.1	(RUNOFF)
21.98	5.0	(RUNOFF)
24.03	4.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.42 WATERSHED INCHES; 191 CFS-HRS; 15.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	497.3	(NULL)
24.01	14.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.29 WATERSHED INCHES; 792 CFS-HRS; 65.5 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.10	168.1	266.78
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.28 WATERSHED INCHES;	792 CFS-HRS;	65.4 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	1633.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.63 WATERSHED INCHES;	2601 CFS-HRS;	214.9 ACRE-
FEEET.		

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2.04TEST  
11:17:50 PASS 3 JOB NO. 1 PAGE  
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OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	20.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.62 WATERSHED INCHES;	17 CFS-HRS;	1.4 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	1640.2	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.62 WATERSHED INCHES;	2618 CFS-HRS;	216.3 ACRE-
FEEET.		

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	1640.2	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.62 WATERSHED INCHES;	2618 CFS-HRS;	216.3 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	79.3	(RUNOFF)
15.84	2.5	(RUNOFF)
24.00	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.97 WATERSHED INCHES; 68 CFS-HRS; 5.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	1635.7	134.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.62 WATERSHED INCHES; 2618 CFS-HRS; 216.3 ACRE-  
 FEET.

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 2.04TEST  
 11:17:50 PASS 3 JOB NO. 1 PAGE  
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OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	1764.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.53 WATERSHED INCHES; 3409 CFS-HRS; 281.7 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	1764.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.49 WATERSHED INCHES; 3354 CFS-HRS; 277.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	54.0	(RUNOFF)

19.43	1.0	(RUNOFF)
19.75	1.0	(RUNOFF)
20.07	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 52 CFS-HRS; 4.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	1782.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.50 WATERSHED INCHES; 3406 CFS-HRS; 281.5 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

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 2.04TEST  
 11:17:50 PASS 4 JOB NO. 1 PAGE  
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EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
 STARTING TIME = .00 RAIN DEPTH = 7.23 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =50 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	526.5	(RUNOFF)
18.67	13.8	(RUNOFF)
20.68	12.1	(RUNOFF)
21.94	11.1	(RUNOFF)
23.13	10.1	(RUNOFF)
24.01	9.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.59 WATERSHED INCHES; 622 CFS-HRS; 51.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	78.1	(RUNOFF)
24.02	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.24 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE-

FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	70.8	432.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.15 WATERSHED INCHES; 78 CFS-HRS; 6.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 3

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 2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	595.9	(NULL)
18.65	15.9	(NULL)
20.12	14.6	(NULL)
20.67	14.0	(NULL)
23.76	11.2	(NULL)
24.00	11.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.53 WATERSHED INCHES; 700 CFS-HRS; 57.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	212.7	(RUNOFF)
15.84	6.8	(RUNOFF)
17.34	5.2	(RUNOFF)
19.44	4.0	(RUNOFF)
22.75	3.1	(RUNOFF)
23.06	3.1	(RUNOFF)
24.00	3.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.03 WATERSHED INCHES; 200 CFS-HRS; 16.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	761.2	(NULL)
18.63	20.1	(NULL)
20.09	18.5	(NULL)

20.64	17.7	(NULL)
21.95	16.3	(NULL)
23.09	14.9	(NULL)
23.74	14.1	(NULL)
24.00	14.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.63 WATERSHED INCHES; 900 CFS-HRS; 74.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	223.3	(RUNOFF)
15.83	8.2	(RUNOFF)
17.32	6.3	(RUNOFF)
18.86	5.0	(RUNOFF)
21.97	4.1	(RUNOFF)
24.02	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.30 WATERSHED INCHES; 222 CFS-HRS; 18.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 7

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.28	752.6	321.23
18.69	20.1	318.36
20.15	18.5	318.34
20.70	17.7	318.33
22.01	16.3	318.32
23.80	14.1	318.29
24.07	13.9	318.29

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.63 WATERSHED INCHES; 900 CFS-HRS; 74.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.26	933.8	(NULL)
18.65	25.2	(NULL)
20.12	23.2	(NULL)
20.68	22.2	(NULL)
21.99	20.4	(NULL)
23.12	18.6	(NULL)



24.04 17.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.56 WATERSHED INCHES; 1122 CFS-HRS; 92.7 ACRE-
FEET.

OPERATION RUNOFF XSECTION 9

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2.04TEST

11:17:50

PASS 4 JOB NO. 1

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Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows show values for 12.18, 18.64, 21.97, and 24.02 hours.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.69 WATERSHED INCHES; 183 CFS-HRS; 15.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 10

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows show values for 12.22 and 24.02 hours.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.72 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 52

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Row shows values for 12.38 hours.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.21 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-
FEET.

OPERATION REACH XSECTION 11

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET)

12.44 50.4 414.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.21 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-
FEET.

OPERATION ADDHYD XSECTION 12

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2.04TEST

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Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.19, 20.86, 23.08, 23.73, 24.01 and discharge values like 195.9, 5.0, 4.3, 4.0, 4.0.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.55 WATERSHED INCHES; 255 CFS-HRS; 21.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 13

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.17, 15.83, 18.86, 24.02 and discharge values like 153.2, 5.0, 3.1, 2.1.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.35 WATERSHED INCHES; 154 CFS-HRS; 12.8 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 51

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Row includes values 12.35, 83.1, 399.39.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.35 WATERSHED INCHES; 154 CFS-HRS; 12.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 14

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.21, 20.06, 21.94 and discharge values like 258.0, 8.3, 7.3.

24.01 6.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.81 WATERSHED INCHES; 409 CFS-HRS; 33.8 ACRE-
FEET.

OPERATION RUNOFF XSECTION 15

1 TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas
VERSION

03/23/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT

2.04TEST

11:17:50

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Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows show peak data at 12.16, 15.84, 17.34, 19.47, 21.96, and 24.01 hours.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.55 WATERSHED INCHES; 239 CFS-HRS; 19.8 ACRE-
FEET.

OPERATION REACH XSECTION 16

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows show peak data at 12.31, 20.13, 20.68, and 24.07 hours.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.81 WATERSHED INCHES; 409 CFS-HRS; 33.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 17

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows show peak data at 12.20, 20.06, 20.62, 21.94, 23.06, and 24.01 hours.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.71 WATERSHED INCHES; 648 CFS-HRS; 53.5 ACRE-
FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	1360.9	(NULL)
20.10	36.4	(NULL)
20.64	34.9	(NULL)
21.95	31.9	(NULL)
23.10	29.2	(NULL)
23.75	27.6	(NULL)
24.03	27.5	(NULL)

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TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.61 WATERSHED INCHES; 1768 CFS-HRS; 146.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	541.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.19 WATERSHED INCHES; 731 CFS-HRS; 60.4 ACRE-  
FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.37	1235.0	238.86
20.14	36.4	234.56
23.14	29.2	234.50
24.09	27.3	234.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.61 WATERSHED INCHES; 1769 CFS-HRS; 146.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	1761.3	(NULL)
20.13	52.1	(NULL)
23.13	41.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.48 WATERSHED INCHES; 2499 CFS-HRS; 206.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	54.7	(RUNOFF)
21.96	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.24 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 47

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TR20 ----- SCS

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2.04TEST  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	55.3	415.55
20.15	1.2	410.91

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.24 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	256.8	(RUNOFF)
20.10	5.2	(RUNOFF)
23.10	4.1	(RUNOFF)
24.03	3.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.24 WATERSHED INCHES; 275 CFS-HRS; 22.7 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	229.1	369.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.24 WATERSHED INCHES; 275 CFS-HRS; 22.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	284.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 337 CFS-HRS; 27.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	148.7	(RUNOFF)
18.87	3.2	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.21 WATERSHED INCHES; 156 CFS-HRS; 12.9 ACRE-  
 FEET.

1 TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.24	418.0	(NULL)
20.08	9.3	(NULL)
20.61	8.9	(NULL)
23.71	7.0	(NULL)
24.01	6.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.23 WATERSHED INCHES; 494 CFS-HRS; 40.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.41	283.6	342.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 494 CFS-HRS; 40.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.11	47.2	(RUNOFF)
17.32	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-

FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27. THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .9%. \*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.39	295.1	(NULL)
23.98	7.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.18 WATERSHED INCHES; 531 CFS-HRS; 43.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 29

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TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.11	220.3	(RUNOFF)
15.45	6.0	(RUNOFF)
15.82	5.8	(RUNOFF)
17.32	4.4	(RUNOFF)
20.02	3.3	(RUNOFF)
20.58	3.1	(RUNOFF)
20.82	3.1	(RUNOFF)
23.99	2.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.78 WATERSHED INCHES; 186 CFS-HRS; 15.4 ACRE-  
FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29. THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .1%. \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.11	220.3	(NULL)
15.45	6.0	(NULL)
15.82	5.8	(NULL)
17.32	4.4	(NULL)
20.02	3.3	(NULL)
20.58	3.1	(NULL)
20.82	3.1	(NULL)

23.99 2.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.78 WATERSHED INCHES; 186 CFS-HRS; 15.4 ACRE-
FEET.

OPERATION REACH XSECTION 30

Table with 3 columns: PEAK TIME(HRS) ELEVATION(FEET), PEAK DISCHARGE(CFS), PEAK. Rows include values like 12.18, 15.88, 17.38, 20.88, 24.05 and 213.3, 5.8, 4.4, 3.1, 2.7.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.76 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-
FEET.

OPERATION RUNOFF XSECTION 31

1 TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas
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2.04TEST
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Table with 3 columns: PEAK TIME(HRS) ELEVATION(FEET), PEAK DISCHARGE(CFS), PEAK. Row includes values 12.31, 433.4, (RUNOFF).

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.47 WATERSHED INCHES; 616 CFS-HRS; 50.9 ACRE-
FEET.

OPERATION ADDHYD XSECTION 32

Table with 3 columns: PEAK TIME(HRS) ELEVATION(FEET), PEAK DISCHARGE(CFS), PEAK. Rows include values like 12.22, 18.86, 20.08, 20.86, 21.96, 23.08, 24.04 and 572.7, 15.7, 14.5, 13.7, 12.6, 11.5, 10.9.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.53 WATERSHED INCHES; 801 CFS-HRS; 66.2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 33

Table with 3 columns: PEAK TIME(HRS) ELEVATION(FEET), PEAK DISCHARGE(CFS), PEAK



12.20	148.2	(RUNOFF)
18.65	3.3	(RUNOFF)
20.10	3.0	(RUNOFF)
24.03	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.25 WATERSHED INCHES; 162 CFS-HRS; 13.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	729.7	(NULL)
18.61	19.2	(NULL)
18.85	18.9	(NULL)
20.09	17.5	(NULL)
20.86	16.6	(NULL)
21.97	15.3	(NULL)
23.74	13.1	(NULL)
24.04	13.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.48 WATERSHED INCHES; 963 CFS-HRS; 79.6 ACRE-  
 FEET.

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 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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OPERATION REACH XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	694.0	317.98
20.15	17.5	316.29
20.92	16.6	316.28
22.01	15.3	316.27
23.80	13.1	316.25
24.10	13.0	316.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.49 WATERSHED INCHES; 963 CFS-HRS; 79.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	65.4	(RUNOFF)
23.76	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.30 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .047 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	64.5	328.67
23.78	1.2	323.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.31 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 37

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 TR20 ----- SCS  
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 Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	758.3	(NULL)
20.15	19.1	(NULL)
20.91	18.0	(NULL)
22.01	16.6	(NULL)
23.15	15.1	(NULL)
23.80	14.3	(NULL)
24.10	14.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.47 WATERSHED INCHES; 1047 CFS-HRS; 86.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	246.6	(RUNOFF)
15.84	7.4	(RUNOFF)
17.34	5.7	(RUNOFF)
20.04	4.3	(RUNOFF)
20.60	4.1	(RUNOFF)
23.70	3.2	(RUNOFF)
24.00	3.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.81 WATERSHED INCHES; 212 CFS-HRS; 17.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	869.0	(NULL)
23.99	17.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.35 WATERSHED INCHES; 1259 CFS-HRS; 104.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	1147.4	(NULL)
23.99	25.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.30 WATERSHED INCHES; 1791 CFS-HRS; 148.0 ACRE-FEET.

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 TR20 ----- SCS  
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 Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	79.8	(RUNOFF)
17.34	2.0	(RUNOFF)
24.01	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.19 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	28.4	273.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.12 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.57 27.2 222.79

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.11 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-
FEET.

OPERATION RUNOFF XSECTION 43

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.22, 19.47, 20.11, 21.98, 24.02 and corresponding discharge and peak labels.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.05 WATERSHED INCHES; 238 CFS-HRS; 19.7 ACRE-
FEET.

OPERATION ADDHYD XSECTION 44

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2.04TEST
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Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.22, 20.63, 24.02 and corresponding discharge and peak labels.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.38 WATERSHED INCHES; 316 CFS-HRS; 26.1 ACRE-
FEET.

OPERATION REACH XSECTION 45

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.43, 24.04 and corresponding discharge and peak labels.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.29 WATERSHED INCHES; 1789 CFS-HRS; 147.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 46

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.40, 24.03 and corresponding discharge and peak labels.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.88 WATERSHED INCHES; 2104 CFS-HRS; 173.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	1223.5	(NULL)
24.03	31.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.88 WATERSHED INCHES; 2104 CFS-HRS; 173.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	655.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.93 WATERSHED INCHES; 897 CFS-HRS; 74.1 ACRE-  
 FEET.

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	89.2	(RUNOFF)
17.34	2.2	(RUNOFF)
24.01	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.52 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	58.1	337.36
24.03	1.2	333.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.52 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	57.3	317.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.52 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	707.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.97 WATERSHED INCHES; 985 CFS-HRS; 81.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	69.7	(RUNOFF)
23.74	1.0	(RUNOFF)
24.02	1.0	(RUNOFF)

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.04 WATERSHED INCHES; 71 CFS-HRS; 5.9 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	58.5	322.59
24.03	1.0	320.81

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.45 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	763.5	278.85
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	4.94 WATERSHED INCHES;	1048 CFS-HRS;
	FEET.	86.6 ACRE-

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	686.4	278.47
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	4.94 WATERSHED INCHES;	1048 CFS-HRS;
	FEET.	86.6 ACRE-

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	369.6	(RUNOFF)
18.87	11.0	(RUNOFF)
20.11	10.3	(RUNOFF)
21.97	9.1	(RUNOFF)
23.11	8.3	(RUNOFF)
24.03	7.9	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	3.03 WATERSHED INCHES;	407 CFS-HRS;
	FEET.	33.6 ACRE-

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2.04TEST  
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OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	904.7	(NULL)
24.01	23.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	4.20 WATERSHED INCHES;	1454 CFS-HRS;
	FEET.	120.2 ACRE-

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.21	246.2	274.52

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.19 WATERSHED INCHES; 1453 CFS-HRS; 120.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.36 2973.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.65 WATERSHED INCHES; 4602 CFS-HRS; 380.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.13 42.2 (RUNOFF)  
 17.34 1.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.31 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.36 2988.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.64 WATERSHED INCHES; 4638 CFS-HRS; 383.3 ACRE-  
 FEET.

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2.04TEST

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OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.36 2988.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.64 WATERSHED INCHES; 4638 CFS-HRS; 383.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)



12.13	133.5	(RUNOFF)
17.34	3.0	(RUNOFF)
21.45	2.0	(RUNOFF)
24.00	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 117 CFS-HRS; 9.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	2988.1	136.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.64 WATERSHED INCHES; 4638 CFS-HRS; 383.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	3178.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.52 WATERSHED INCHES; 6091 CFS-HRS; 503.3 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	3178.7	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.46 WATERSHED INCHES; 6007 CFS-HRS; 496.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	86.7	(RUNOFF)
17.34	2.1	(RUNOFF)
24.01	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.70 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.43 3208.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.48 WATERSHED INCHES; 6092 CFS-HRS; 503.5 ACRE-
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63
STARTING TIME = .00 RAIN DEPTH = 8.47 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS
ALTERNATE NO. = 1 STORM NO. =99 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.24 652.9 (RUNOFF)
18.67 16.6 (RUNOFF)
20.13 15.2 (RUNOFF)
20.67 14.5 (RUNOFF)
21.93 13.3 (RUNOFF)
23.12 12.1 (RUNOFF)
24.01 11.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.72 WATERSHED INCHES; 776 CFS-HRS; 64.1 ACRE-
FEET.

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2.04TEST
11:17:50 PASS 5 JOB NO. 1 PAGE
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OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.19 97.8 (RUNOFF)
20.09 2.1 (RUNOFF)
24.02 1.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.34 WATERSHED INCHES; 101 CFS-HRS; 8.3 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	93.7	432.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.24 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	746.6	(NULL)
18.65	19.1	(NULL)
20.12	17.4	(NULL)
20.67	16.6	(NULL)
23.12	14.0	(NULL)
23.77	13.3	(NULL)
24.01	13.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.66 WATERSHED INCHES; 874 CFS-HRS; 72.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	259.5	(RUNOFF)
15.84	8.1	(RUNOFF)
17.34	6.2	(RUNOFF)
18.62	5.0	(RUNOFF)
21.45	4.1	(RUNOFF)
21.75	4.0	(RUNOFF)
21.95	4.0	(RUNOFF)
24.00	3.5	(RUNOFF)

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2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.19 WATERSHED INCHES; 247 CFS-HRS; 20.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	961.0	(NULL)
18.63	24.2	(NULL)

20.08	22.0	(NULL)
20.63	21.0	(NULL)
21.95	19.3	(NULL)
23.09	17.7	(NULL)
24.00	16.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 1120 CFS-HRS; 92.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	278.1	(RUNOFF)
15.82	9.9	(RUNOFF)
17.31	7.6	(RUNOFF)
18.86	6.1	(RUNOFF)
21.45	5.1	(RUNOFF)
24.02	4.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.40 WATERSHED INCHES; 279 CFS-HRS; 23.0 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	943.1	321.72
18.69	24.1	318.40
20.15	22.0	318.38
20.70	21.0	318.37
22.01	19.3	318.35
23.15	17.7	318.33
24.07	16.5	318.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 1120 CFS-HRS; 92.6 ACRE-FEET.

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	1174.5	(NULL)
18.65	30.3	(NULL)
20.12	27.6	(NULL)
20.67	26.4	(NULL)
21.99	24.2	(NULL)
23.12	22.2	(NULL)

24.04 20.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.69 WATERSHED INCHES; 1399 CFS-HRS; 115.6 ACRE-
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.18 223.2 (RUNOFF)
20.87 4.2 (RUNOFF)
24.02 3.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.84 WATERSHED INCHES; 227 CFS-HRS; 18.8 ACRE-
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.22 87.2 (RUNOFF)
18.66 2.1 (RUNOFF)
24.02 1.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.86 WATERSHED INCHES; 100 CFS-HRS; 8.3 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.34 70.3 456.47

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.35 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-
FEET.

OPERATION REACH XSECTION 11

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)

12.40 70.0 414.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.34 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-
FEET.

OPERATION ADDHYD XSECTION 12

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.20, 18.61, 20.86, 23.08, 24.01 and discharge values like 250.4, 7.1, 6.0, 5.1, 4.8.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.69 WATERSHED INCHES; 318 CFS-HRS; 26.3 ACRE-
FEET.

OPERATION RUNOFF XSECTION 13

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.17, 15.83, 17.33, 20.86, 24.02 and discharge values like 185.0, 6.0, 4.6, 3.2, 2.5.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.54 WATERSHED INCHES; 189 CFS-HRS; 15.6 ACRE-
FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 51,
VALUE EXTRAPOLATED.
\*\*\*

OPERATION RESVOR STRUCTURE 51

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Row includes values 12.34, 105.1, 399.85.

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.54 WATERSHED INCHES; 189 CFS-HRS; 15.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	335.1	(NULL)
20.62	9.5	(NULL)
21.94	8.7	(NULL)
24.01	7.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.97 WATERSHED INCHES; 507 CFS-HRS; 41.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	316.5	(RUNOFF)
15.84	10.3	(RUNOFF)
17.34	8.0	(RUNOFF)
19.44	6.1	(RUNOFF)
21.95	5.2	(RUNOFF)
24.01	4.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.68 WATERSHED INCHES; 299 CFS-HRS; 24.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	328.0	331.81
20.68	9.5	330.31
24.08	7.4	330.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.97 WATERSHED INCHES; 507 CFS-HRS; 41.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 17

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 2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	565.4	(NULL)
18.58	17.7	(NULL)
20.62	15.2	(NULL)
21.94	13.8	(NULL)
23.07	12.7	(NULL)
24.01	11.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.86 WATERSHED INCHES; 805 CFS-HRS; 66.6 ACRE-

FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	1717.2	(NULL)
18.63	48.0	(NULL)
20.10	43.5	(NULL)
20.64	41.6	(NULL)
21.95	38.0	(NULL)
23.10	34.8	(NULL)
24.03	32.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.75 WATERSHED INCHES; 2204 CFS-HRS; 182.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	683.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.30 WATERSHED INCHES; 923 CFS-HRS; 76.3 ACRE-  
FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	1564.9	239.60
20.14	43.5	234.62
23.15	34.8	234.55
24.09	32.5	234.53

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.75 WATERSHED INCHES; 2203 CFS-HRS; 182.1 ACRE-  
FEET.

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2.04TEST  
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OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	2231.6	(NULL)
20.13	62.4	(NULL)
23.14	49.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)



5.61 WATERSHED INCHES; 3127 CFS-HRS; 258.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.22	66.5	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.42 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.24	65.7	415.70
23.14	1.1	410.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.42 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.19	311.9	(RUNOFF)
20.10	6.1	(RUNOFF)
21.97	5.3	(RUNOFF)
24.03	4.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.42 WATERSHED INCHES; 336 CFS-HRS; 27.8 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.26	284.3	370.13

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2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.42 WATERSHED INCHES; 336 CFS-HRS; 27.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	349.9	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.42 WATERSHED INCHES; FEET.	413 CFS-HRS;	34.1 ACRE-

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	180.8	(RUNOFF)
21.97	3.0	(RUNOFF)
24.02	2.6	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.39 WATERSHED INCHES; FEET.	192 CFS-HRS;	15.9 ACRE-

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	515.5	(NULL)
20.08	11.1	(NULL)
20.61	10.6	(NULL)
24.01	8.2	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.41 WATERSHED INCHES; FEET.	605 CFS-HRS;	50.0 ACRE-

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	429.8	343.30
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.42 WATERSHED INCHES; FEET.	605 CFS-HRS;	50.0 ACRE-

OPERATION RUNOFF XSECTION 27

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TR20 ----- SCS

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2.04TEST  
11:17:50 PASS 5 JOB NO. 1 PAGE  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	58.8	(RUNOFF)
17.32	1.2	(RUNOFF)

18.58 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.67 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-
FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.6%.
\*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.35 446.1 (NULL)
23.98 9.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.36 WATERSHED INCHES; 652 CFS-HRS; 53.9 ACRE-
FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.11 261.8 (RUNOFF)
15.45 7.1 (RUNOFF)
15.82 6.8 (RUNOFF)
17.32 5.2 (RUNOFF)
18.82 4.2 (RUNOFF)
22.41 3.2 (RUNOFF)
22.72 3.1 (RUNOFF)
23.02 3.1 (RUNOFF)
23.99 3.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.96 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-
FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT 1.1%.
\*\*\*

OPERATION RESVOR STRUCTURE 64

1
TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas
VERSION

03/23/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,50,100WITHMGMT

2.04TEST

11:17:50

PASS 5 JOB NO. 1

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.11 261.8 (NULL)
15.45 7.1 (NULL)

15.82	6.8	(NULL)
17.32	5.2	(NULL)
18.82	4.2	(NULL)
22.41	3.2	(NULL)
22.72	3.1	(NULL)
23.02	3.1	(NULL)
23.99	3.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.96 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	255.4	357.40
15.88	6.8	356.14
17.38	5.2	356.11
18.88	4.2	356.09
21.98	3.4	356.07
22.78	3.1	356.07
23.09	3.1	356.07
24.05	3.2	356.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.99 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	521.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.66 WATERSHED INCHES; 750 CFS-HRS; 62.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 32

1 TR20 ----- SCS  
 -

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

03/23/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT

2.04TEST

11:17:50

PASS 5 JOB NO. 1

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	686.9	(NULL)
18.85	18.6	(NULL)
20.08	17.2	(NULL)
20.87	16.2	(NULL)
21.75	15.1	(NULL)
21.97	15.0	(NULL)
23.08	13.6	(NULL)
24.04	12.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.73 WATERSHED INCHES; 975 CFS-HRS; 80.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	178.4	(RUNOFF)
21.97	3.1	(RUNOFF)
24.03	2.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.43 WATERSHED INCHES; 198 CFS-HRS; 16.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	876.5	(NULL)
18.85	22.4	(NULL)
20.09	20.8	(NULL)
20.87	19.6	(NULL)
21.97	18.1	(NULL)
23.09	16.5	(NULL)
24.04	15.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 1173 CFS-HRS; 96.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 35

1  
 TR20 ----- SCS  
 -  
 Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 03/23/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,50,100WITHMGMT  
 2.04TEST  
 11:17:50 PASS 5 JOB NO. 1 PAGE  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	825.2	318.24
20.15	20.7	316.31
20.91	19.6	316.30
22.01	18.1	316.29
23.15	16.5	316.28
24.10	15.5	316.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 1173 CFS-HRS; 96.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	78.9	(RUNOFF)
18.64	2.0	(RUNOFF)
23.76	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.49 WATERSHED INCHES; 102 CFS-HRS; 8.4 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .047 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	78.4	328.90
23.77	1.4	323.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.47 WATERSHED INCHES; 102 CFS-HRS; 8.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	903.1	(NULL)
20.15	22.6	(NULL)
20.91	21.3	(NULL)
22.01	19.7	(NULL)
23.15	17.9	(NULL)
24.10	16.8	(NULL)

1

TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 03/23/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,50,100WITHMGMT  
 2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.66 WATERSHED INCHES; 1275 CFS-HRS; 105.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	303.7	(RUNOFF)
15.45	9.3	(RUNOFF)
15.84	8.9	(RUNOFF)

17.34	6.8	(RUNOFF)
19.74	5.1	(RUNOFF)
20.04	5.1	(RUNOFF)
22.42	4.2	(RUNOFF)
22.74	4.1	(RUNOFF)
23.04	4.1	(RUNOFF)
24.00	4.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 263 CFS-HRS; 21.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	1035.2	(NULL)
23.99	20.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.53 WATERSHED INCHES; 1537 CFS-HRS; 127.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	1443.0	(NULL)
23.99	29.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.47 WATERSHED INCHES; 2188 CFS-HRS; 180.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 41

1  
 TR20 ----- SCS  
 -

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

03/23/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT  
 2.04TEST  
 11:17:50 PASS 5 JOB NO. 1 PAGE  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	97.1	(RUNOFF)
15.84	3.1	(RUNOFF)
17.34	2.4	(RUNOFF)
24.02	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.37 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION (FEET)			
12.36	49.7		274.20
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)			
6.25 WATERSHED INCHES;	95 CFS-HRS;		7.9 ACRE-
FEET.			

OPERATION REACH XSECTION 42

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)		PEAK
ELEVATION (FEET)			
12.46	47.8		223.02
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)			
6.26 WATERSHED INCHES;	95 CFS-HRS;		7.9 ACRE-
FEET.			

OPERATION RUNOFF XSECTION 43

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)		PEAK
ELEVATION (FEET)			
12.21	289.3		(RUNOFF)
18.87	8.0		(RUNOFF)
20.86	7.1		(RUNOFF)
21.97	6.6		(RUNOFF)
23.10	6.0		(RUNOFF)
24.03	5.7		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)			
4.01 WATERSHED INCHES;	313 CFS-HRS;		25.9 ACRE-
FEET.			

OPERATION ADDHYD XSECTION 44

1  
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-

TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION

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2.04TEST  
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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)		PEAK
ELEVATION (FEET)			
12.22	297.1		(NULL)
18.59	12.3		(NULL)
20.63	10.2		(NULL)
23.09	8.2		(NULL)
24.03	7.7		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)			
4.38 WATERSHED INCHES;	409 CFS-HRS;		33.8 ACRE-
FEET.			

OPERATION REACH XSECTION 45

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)		PEAK
ELEVATION (FEET)			



12.50	1290.5	228.71
24.09	29.6	222.89

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.48 WATERSHED INCHES; 2189 CFS-HRS; 180.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	1468.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.02 WATERSHED INCHES; 2597 CFS-HRS; 214.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	1468.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.02 WATERSHED INCHES; 2597 CFS-HRS; 214.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	802.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.09 WATERSHED INCHES; 1108 CFS-HRS; 91.6 ACRE-  
 FEET.

1

TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 03/23/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT  
 2.04TEST  
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OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	107.1	(RUNOFF)
15.84	3.3	(RUNOFF)
18.85	2.0	(RUNOFF)
24.01	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.72 WATERSHED INCHES; 107 CFS-HRS; 8.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	59.2	337.87
24.03	1.4	333.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.72 WATERSHED INCHES; 108 CFS-HRS; 8.9 ACRE-  
FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.51	58.6	317.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.71 WATERSHED INCHES; 107 CFS-HRS; 8.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	858.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.14 WATERSHED INCHES; 1216 CFS-HRS; 100.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	84.8	(RUNOFF)
24.02	1.2	(RUNOFF)

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.20 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	71.1	322.85
24.03	1.2	320.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.60 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	926.8	279.26

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.10 WATERSHED INCHES; 1294 CFS-HRS; 107.0 ACRE-FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	800.3	279.01

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.10 WATERSHED INCHES; 1294 CFS-HRS; 107.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	494.4	(RUNOFF)
19.46	13.3	(RUNOFF)
20.86	12.1	(RUNOFF)
21.97	11.3	(RUNOFF)
23.10	10.3	(RUNOFF)
24.03	9.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.99 WATERSHED INCHES; 536 CFS-HRS; 44.3 ACRE-FEET.

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION  
03/23/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT  
2.04TEST  
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OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	1077.6	(NULL)

24.01 27.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.28 WATERSHED INCHES; 1830 CFS-HRS; 151.2 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
13.18 333.5 277.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.27 WATERSHED INCHES; 1828 CFS-HRS; 151.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.38 3563.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.79 WATERSHED INCHES; 5722 CFS-HRS; 472.9 ACRE-
FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.13 55.0 (RUNOFF)
20.04 1.1 (RUNOFF)
20.60 1.0 (RUNOFF)
20.83 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.31 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.38 3581.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.77 WATERSHED INCHES; 5769 CFS-HRS; 476.7 ACRE-
FEET.

1

TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas
VERSION
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2.04TEST
11:17:50 PASS 5 JOB NO. 1 PAGE
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OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	3581.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.77 WATERSHED INCHES; 5769 CFS-HRS; 476.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	162.6	(RUNOFF)
15.84	4.7	(RUNOFF)
17.34	3.6	(RUNOFF)
23.04	2.2	(RUNOFF)
23.70	2.0	(RUNOFF)
24.00	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.26 WATERSHED INCHES; 144 CFS-HRS; 11.9 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 59.  
\*\*\*

OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	3581.2	137.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.77 WATERSHED INCHES; 5769 CFS-HRS; 476.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	3788.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.64 WATERSHED INCHES; 7595 CFS-HRS; 627.7 ACRE-FEET.

\*\*\* WARNING - XSECTION 61  
NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
\*\*\*

1  
TR20 ----- SCS  
-

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION  
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2.04TEST  
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OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	3788.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.57 WATERSHED INCHES;	7499 CFS-HRS;	619.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	103.9	(RUNOFF)
15.84	3.2	(RUNOFF)
17.34	2.4	(RUNOFF)
24.01	1.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.90 WATERSHED INCHES;	104 CFS-HRS;	8.6 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	3829.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.58 WATERSHED INCHES;	7602 CFS-HRS;	628.3 ACRE-
FEET.		

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 5

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 6

1 TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 03/23/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT  
 2.04TEST  
 11:17:50 SUMMARY, JOB NO. 1 PAGE  
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE
------------------------	---------------------	----------	--------	----------------

ID            OPERATION            AREA            AMOUNT            ELEVATION            TIME            RATE            RATE  
    (SQ MI)            (IN)            (FT)            (HR)            (CFS)            (CSM)

RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.  
 RAINTABLE NUMBER 1,            ARC 2  
 MAIN TIME INCREMENT .060 HOURS

ALTERNATE		1	STORM	2				
XSECTION	1	RUNOFF	.21	1.22	---	12.26	137	652.4
XSECTION	2	RUNOFF	.03	1.03	---	12.20	18	600.0
STRUCTURE	58	RESVOR	.03	1.02	429.15	13.47	2	66.7
XSECTION	4	RUNOFF	.06	1.47	---	12.16	63	1050.0
XSECTION	6	RUNOFF	.08	1.06	---	12.19	53	662.5
XSECTION	9	RUNOFF	.06	1.27	---	12.19	49	816.7
XSECTION	10	RUNOFF	.03	1.29	---	12.23	19	633.3
STRUCTURE	52	RESVOR	.03	.86	454.47	13.33T	3T	100.0
XSECTION	12	ADDHYD	.09	1.15	---	12.19	49	544.4
XSECTION	13	RUNOFF	.04	1.67	---	12.18	49	1225.0
STRUCTURE	51	RESVOR	.04	1.67	397.47	12.42	22	550.0
XSECTION	15	RUNOFF	.08	1.19	---	12.16	66	825.0
XSECTION	17	ADDHYD	.21	1.27	---	12.21	110	523.8
XSECTION	18	ADDHYD	.59	1.23	---	12.25	334	566.1
XSECTION	19	RUNOFF	.27	1.01	---	12.33	122	451.9
XSECTION	20	REACH	.59	1.23	235.86	12.38	306	518.6
XSECTION	21	ADDHYD	.86	1.16	---	12.36	426	495.3
XSECTION	22	RUNOFF	.02	1.60	---	12.22	17	850.0
STRUCTURE	47	RESVOR	.02	1.60	414.10	12.37	12	600.0
XSECTION	23	RUNOFF	.08	1.60	---	12.20	80	1000.0
STRUCTURE	32	RESVOR	.08	1.60	368.24	12.32	61	762.5
XSECTION	25	RUNOFF	.05	1.58	---	12.19	46	920.0
STRUCTURE	34	RESVOR	.15	1.59	337.19	12.68	54	360.0
XSECTION	27	RUNOFF	.01	1.19	---	12.12	13	1300.0
XSECTION	28	ADDHYD	.16	1.56	---	12.67	56	350.0
XSECTION	29	RUNOFF	.05	1.96	---	12.11	81	1620.0
STRUCTURE	64	RESVOR	.05	1.96	---	12.11	81	1620.0
XSECTION	31	RUNOFF	.17	1.75	---	12.33	142	835.3

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 SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
ID	OPERATION	AREA	AMOUNT	ELEVATION	TIME	RATE	RATE

			(SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)
ALTERNATE	1	STORM	2					
XSECTION	33	RUNOFF	.05	1.60	---	12.21	46	920.0
XSECTION	36	RUNOFF	.02	1.64	---	12.27	21	1050.0
STRUCTURE	33	RESVOR	.02	1.64	325.68	12.45	15	750.0
XSECTION	38	RUNOFF	.07	1.33	---	12.13	69	985.7
XSECTION	39	ADDHYD	.36	1.67	---	12.32	265	736.1
XSECTION	41	RUNOFF	.02	1.57	---	12.18	25	1250.0
STRUCTURE	29	RESVOR	.02	1.56	268.66	13.00	4	200.0
XSECTION	43	RUNOFF	.12	.51	---	12.26	26	216.7
XSECTION	44	ADDHYD	.14	.68	---	12.26	28	200.0
XSECTION	46	ADDHYD	.67	1.43	---	12.44	320	477.6
STRUCTURE	7	RESVOR	.67	1.43	---	12.44	320	477.6
XSECTION	47	RUNOFF	.28	1.40	---	12.32	185	660.7
XSECTION	48	RUNOFF	.02	1.78	---	12.17	30	1500.0
STRUCTURE	40	RESVOR	.02	1.78	334.19	12.33	16	800.0
XSECTION	51	RUNOFF	.02	1.47	---	12.19	21	1050.0
STRUCTURE	43	RESVOR	.02	.97	321.02	12.86	4	200.0
XSECTION	52	ADDHYD	.33	1.40	277.07	12.33	198	600.0
XSECTION	53	RUNOFF	.21	.50	---	12.26	44	209.5
XSECTION	54	ADDHYD	.54	1.05	---	12.46	208	385.2
STRUCTURE	5	RESVOR	.54	1.05	260.86	13.07	93	172.2
XSECTION	55	ADDHYD	1.53	1.28	---	12.39	739	483.0
XSECTION	56	RUNOFF	.02	.61	---	12.14	6	300.0
XSECTION	57	ADDHYD	1.55	1.27	---	12.39	742	478.7
STRUCTURE	6	RESVOR	1.55	1.27	---	12.39	742	478.7
XSECTION	58	RUNOFF	.04	1.51	---	12.14	41	1025.0
XSECTION	62	RUNOFF	.02	1.90	---	12.17	30	1500.0
XSECTION	63	ADDHYD	2.11	1.20	---	12.47	805	381.5

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SUMMARY TABLE 1

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 SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

RAINFALL OF 4.10 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.



	ALTERNATE		1	STORM	5				
XSECTION	1	RUNOFF	.21	1.90	---	12.25	218	1038.1	
XSECTION	2	RUNOFF	.03	1.67	---	12.20	30	1000.0	
STRUCTURE	58	RESVOR	.03	1.64	430.23	12.68	8	266.7	
XSECTION	4	RUNOFF	.06	2.21	---	12.15	96	1600.0	
XSECTION	6	RUNOFF	.08	1.70	---	12.19	88	1100.0	
XSECTION	9	RUNOFF	.06	1.98	---	12.19	77	1283.3	
XSECTION	10	RUNOFF	.03	1.99	---	12.23	30	1000.0	
STRUCTURE	52	RESVOR	.03	1.54	454.90	12.72	9	300.0	
XSECTION	12	ADDHYD	.09	1.84	---	12.19	77	855.6	
XSECTION	13	RUNOFF	.04	2.45	---	12.18	72	1800.0	
STRUCTURE	51	RESVOR	.04	2.45	397.96	12.39	34	850.0	
XSECTION	15	RUNOFF	.08	1.87	---	12.16	106	1325.0	
XSECTION	17	ADDHYD	.21	1.98	---	12.20	178	847.6	
XSECTION	18	ADDHYD	.59	1.92	---	12.24	539	913.6	
XSECTION	19	RUNOFF	.27	1.64	---	12.32	208	770.4	
XSECTION	20	REACH	.59	1.92	236.60	12.37	487	825.4	
XSECTION	21	ADDHYD	.86	1.83	---	12.36	691	803.5	
XSECTION	22	RUNOFF	.02	2.37	---	12.22	25	1250.0	
STRUCTURE	47	RESVOR	.02	2.37	414.35	12.33	21	1050.0	
XSECTION	23	RUNOFF	.08	2.37	---	12.20	119	1487.5	
STRUCTURE	32	RESVOR	.08	2.37	368.74	12.32	86	1075.0	
XSECTION	25	RUNOFF	.05	2.35	---	12.19	68	1360.0	
STRUCTURE	34	RESVOR	.15	2.36	338.39	12.46	127	846.7	
XSECTION	27	RUNOFF	.01	1.88	---	12.12	20	2000.0	

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF		PEAK DISCHARGE			
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ALTERNATE	1	STORM	5					
XSECTION	28	ADDHYD	.16	2.33	---	12.46	132	825.0
XSECTION	29	RUNOFF	.05	2.79	---	12.11	113	2260.0
STRUCTURE	64	RESVOR	.05	2.79	---	12.11	113	2260.0
XSECTION	31	RUNOFF	.17	2.55	---	12.32	207	1217.6
XSECTION	33	RUNOFF	.05	2.38	---	12.20	68	1360.0

XSECTION	36	RUNOFF	.02	2.42	---	12.27	30	1500.0
STRUCTURE	33	RESVOR	.02	2.42	327.30	12.44	24	1200.0
XSECTION	38	RUNOFF	.07	2.05	---	12.13	107	1528.6
XSECTION	39	ADDHYD	.36	2.46	---	12.31	390	1083.3
XSECTION	41	RUNOFF	.02	2.34	---	12.17	37	1850.0
STRUCTURE	29	RESVOR	.02	2.32	270.05	12.93	5	250.0
XSECTION	43	RUNOFF	.12	.96	---	12.23	61	508.3
XSECTION	44	ADDHYD	.14	1.18	---	12.24	63	450.0
XSECTION	46	ADDHYD	.67	2.15	---	12.55	505	753.7
STRUCTURE	7	RESVOR	.67	2.15	---	12.55	505	753.7
XSECTION	47	RUNOFF	.28	2.14	---	12.32	285	1017.9
XSECTION	48	RUNOFF	.02	2.59	---	12.17	44	2200.0
STRUCTURE	40	RESVOR	.02	2.59	335.09	12.35	22	1100.0
XSECTION	51	RUNOFF	.02	2.22	---	12.18	31	1550.0
STRUCTURE	43	RESVOR	.02	1.69	321.43	12.41	15	750.0
XSECTION	52	ADDHYD	.33	2.14	277.35	12.33	315	954.5
XSECTION	53	RUNOFF	.21	.95	---	12.23	103	490.5
XSECTION	54	ADDHYD	.54	1.68	---	12.43	351	650.0
STRUCTURE	5	RESVOR	.54	1.68	263.85	13.08	137	253.7
XSECTION	55	ADDHYD	1.53	1.97	---	12.40	1132	739.9
XSECTION	56	RUNOFF	.02	1.11	---	12.14	13	650.0
XSECTION	57	ADDHYD	1.55	1.96	---	12.39	1137	733.5
STRUCTURE	6	RESVOR	1.55	1.96	---	12.39	1137	733.5
XSECTION	58	RUNOFF	.04	2.27	---	12.13	61	1525.0
XSECTION	62	RUNOFF	.02	2.72	---	12.16	43	2150.0

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD			PEAK DISCHARGE			
	CONTROL	DRAINAGE	RUNOFF	ELEVATION	TIME	RATE	RATE
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	(FT)	(HR)	(CFS)	(CSM)

ALTERNATE 1 STORM 5

XSECTION	63	ADDHYD	2.11	1.86	---	12.48	1251	592.9
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RAINFALL OF 4.91 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 10

XSECTION	1	RUNOFF	.21	2.56	---	12.25	295	1404.8
XSECTION	2	RUNOFF	.03	2.29	---	12.19	42	1400.0
STRUCTURE	58	RESVOR	.03	2.25	430.98	12.52	16	533.3
XSECTION	4	RUNOFF	.06	2.91	---	12.15	125	2083.3
XSECTION	6	RUNOFF	.08	2.33	---	12.18	121	1512.5
XSECTION	9	RUNOFF	.06	2.64	---	12.18	103	1716.7
XSECTION	10	RUNOFF	.03	2.67	---	12.23	40	1333.3
STRUCTURE	52	RESVOR	.03	2.20	455.36	12.60	15	500.0
XSECTION	12	ADDHYD	.09	2.51	---	12.19	104	1155.6
XSECTION	13	RUNOFF	.04	3.18	---	12.18	92	2300.0
STRUCTURE	51	RESVOR	.04	3.18	398.37	12.38	46	1150.0
XSECTION	15	RUNOFF	.08	2.53	---	12.16	143	1787.5
XSECTION	17	ADDHYD	.21	2.65	---	12.20	243	1157.1
XSECTION	18	ADDHYD	.59	2.58	---	12.24	733	1242.4
XSECTION	19	RUNOFF	.27	2.26	---	12.32	290	1074.1
XSECTION	20	REACH	.59	2.58	237.23	12.37	658	1115.3
XSECTION	21	ADDHYD	.86	2.48	---	12.35	942	1095.3
XSECTION	22	RUNOFF	.02	3.09	---	12.22	33	1650.0
STRUCTURE	47	RESVOR	.02	3.09	414.77	12.32	27	1350.0
XSECTION	23	RUNOFF	.08	3.09	---	12.20	154	1925.0
STRUCTURE	32	RESVOR	.08	3.09	369.12	12.30	123	1537.5
XSECTION	25	RUNOFF	.05	3.07	---	12.19	89	1780.0
STRUCTURE	34	RESVOR	.15	3.08	338.90	12.39	185	1233.3
XSECTION	27	RUNOFF	.01	2.54	---	12.12	27	2700.0
XSECTION	28	ADDHYD	.16	3.04	---	12.37	192	1200.0

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)
ALTERNATE	1	STORM	10					
XSECTION	29	RUNOFF	.05	3.56	---	12.11	142	2840.0
STRUCTURE	64	RESVOR	.05	3.56	---	12.11	142	2840.0
XSECTION	31	RUNOFF	.17	3.28	---	12.32	264	1552.9
XSECTION	33	RUNOFF	.05	3.10	---	12.20	89	1780.0
XSECTION	36	RUNOFF	.02	3.14	---	12.27	39	1950.0
STRUCTURE	33	RESVOR	.02	3.14	327.87	12.39	34	1700.0

XSECTION	38	RUNOFF	.07	2.74	---	12.13	143	2042.9
XSECTION	39	ADDHYD	.36	3.18	---	12.30	512	1422.2
XSECTION	41	RUNOFF	.02	3.05	---	12.17	48	2400.0
STRUCTURE	29	RESVOR	.02	3.02	271.34	12.89	7	350.0
XSECTION	43	RUNOFF	.12	1.43	---	12.23	96	800.0
XSECTION	44	ADDHYD	.14	1.69	---	12.23	100	714.3
XSECTION	46	ADDHYD	.67	2.82	---	12.44	712	1062.7
STRUCTURE	7	RESVOR	.67	2.82	---	12.44	712	1062.7
XSECTION	47	RUNOFF	.28	2.83	---	12.32	379	1353.6
XSECTION	48	RUNOFF	.02	3.32	---	12.17	55	2750.0
STRUCTURE	40	RESVOR	.02	3.32	336.30	12.31	36	1800.0
XSECTION	51	RUNOFF	.02	2.92	---	12.18	41	2050.0
STRUCTURE	43	RESVOR	.02	2.37	321.86	12.32	28	1400.0
XSECTION	52	ADDHYD	.33	2.83	277.62	12.33	432	1309.1
XSECTION	53	RUNOFF	.21	1.42	---	12.22	164	781.0
XSECTION	54	ADDHYD	.54	2.29	---	12.41	497	920.4
STRUCTURE	5	RESVOR	.54	2.28	266.78	13.10	168	311.1
XSECTION	55	ADDHYD	1.53	2.63	---	12.39	1633	1067.3
XSECTION	56	RUNOFF	.02	1.62	---	12.14	20	1000.0
XSECTION	57	ADDHYD	1.55	2.62	---	12.38	1640	1058.1
STRUCTURE	6	RESVOR	1.55	2.62	---	12.38	1640	1058.1
XSECTION	58	RUNOFF	.04	2.97	---	12.13	79	1975.0
XSECTION	62	RUNOFF	.02	3.48	---	12.16	54	2700.0
XSECTION	63	ADDHYD	2.11	2.50	---	12.45	1782	844.5

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
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HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)

RAINFALL OF 7.23 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 50

XSECTION	1	RUNOFF	.21	4.59	---	12.24	526	2504.8
XSECTION	2	RUNOFF	.03	4.24	---	12.19	78	2600.0
STRUCTURE	58	RESVOR	.03	4.15	432.07	12.26	71	2366.7
XSECTION	4	RUNOFF	.06	5.03	---	12.15	213	3550.0
XSECTION	6	RUNOFF	.08	4.30	---	12.18	223	2787.5
XSECTION	9	RUNOFF	.06	4.69	---	12.18	181	3016.7

XSECTION	10	RUNOFF	.03	4.72	---	12.22	71	2366.7
STRUCTURE	52	RESVOR	.03	4.21	456.22	12.38	51	1700.0
XSECTION	12	ADDHYD	.09	4.55	---	12.19	196	2177.8
XSECTION	13	RUNOFF	.04	5.35	---	12.17	153	3825.0
STRUCTURE	51	RESVOR	.04	5.35	399.39	12.35	83	2075.0
XSECTION	15	RUNOFF	.08	4.55	---	12.16	255	3187.5
XSECTION	17	ADDHYD	.21	4.71	---	12.20	450	2142.9
XSECTION	18	ADDHYD	.59	4.61	---	12.25	1361	2306.8
XSECTION	19	RUNOFF	.27	4.19	---	12.31	541	2003.7
XSECTION	20	REACH	.59	4.61	238.86	12.37	1235	2093.2
XSECTION	21	ADDHYD	.86	4.48	---	12.35	1761	2047.7
XSECTION	22	RUNOFF	.02	5.24	---	12.22	55	2750.0
STRUCTURE	47	RESVOR	.02	5.24	415.55	12.26	55	2750.0
XSECTION	23	RUNOFF	.08	5.24	---	12.19	257	3212.5
STRUCTURE	32	RESVOR	.08	5.24	369.84	12.26	229	2862.5
XSECTION	25	RUNOFF	.05	5.21	---	12.19	149	2980.0
STRUCTURE	34	RESVOR	.15	5.24	342.14	12.41	284	1893.3
XSECTION	27	RUNOFF	.01	4.57	---	12.11	47	4700.0

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)
	ALTERNATE	1	STORM	50				
XSECTION	28	ADDHYD	.16	5.18	---	12.39	295	1843.8
XSECTION	29	RUNOFF	.05	5.78	---	12.11	220	4400.0
STRUCTURE	64	RESVOR	.05	5.78	---	12.11	220	4400.0
XSECTION	31	RUNOFF	.17	5.47	---	12.31	433	2547.1
XSECTION	33	RUNOFF	.05	5.25	---	12.20	148	2960.0
XSECTION	36	RUNOFF	.02	5.30	---	12.26	65	3250.0
STRUCTURE	33	RESVOR	.02	5.31	328.67	12.29	65	3250.0
XSECTION	38	RUNOFF	.07	4.81	---	12.13	247	3528.6
XSECTION	39	ADDHYD	.36	5.35	---	12.27	869	2413.9
XSECTION	41	RUNOFF	.02	5.19	---	12.17	80	4000.0
STRUCTURE	29	RESVOR	.02	5.12	273.78	12.45	28	1400.0
XSECTION	43	RUNOFF	.12	3.05	---	12.22	217	1808.3
XSECTION	44	ADDHYD	.14	3.38	---	12.22	224	1600.0

XSECTION	46	ADDHYD	.67	4.88	---	12.40	1223	1825.4
STRUCTURE	7	RESVOR	.67	4.88	---	12.40	1223	1825.4
XSECTION	47	RUNOFF	.28	4.93	---	12.31	655	2339.3
XSECTION	48	RUNOFF	.02	5.52	---	12.16	89	4450.0
STRUCTURE	40	RESVOR	.02	5.52	337.36	12.29	58	2900.0
XSECTION	51	RUNOFF	.02	5.04	---	12.18	70	3500.0
STRUCTURE	43	RESVOR	.02	4.45	322.59	12.26	59	2950.0
XSECTION	52	ADDHYD	.33	4.94	278.85	12.31	764	2315.2
XSECTION	53	RUNOFF	.21	3.03	---	12.21	370	1761.9
XSECTION	54	ADDHYD	.54	4.20	---	12.38	905	1675.9
STRUCTURE	5	RESVOR	.54	4.19	274.52	13.21	246	455.6
XSECTION	55	ADDHYD	1.53	4.65	---	12.36	2973	1943.1
XSECTION	56	RUNOFF	.02	3.31	---	12.13	42	2100.0
XSECTION	57	ADDHYD	1.55	4.64	---	12.36	2988	1927.7
STRUCTURE	6	RESVOR	1.55	4.64	---	12.36	2988	1927.7
XSECTION	58	RUNOFF	.04	5.09	---	12.13	134	3350.0
XSECTION	62	RUNOFF	.02	5.70	---	12.16	87	4350.0

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SUMMARY TABLE 1

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AMOUNT	ELEVATION	TIME	RATE	RATE
ID	OPERATION	AREA (SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	50					
XSECTION	63	ADDHYD	2.11	4.48	---	12.43	3209	1520.9
RAINFALL OF	8.47 inches AND		24.00 hr DURATION,		BEGINS AT .0 hrs.			
ALTERNATE	1	STORM	99					
XSECTION	1	RUNOFF	.21	5.72	---	12.24	653	3109.5
XSECTION	2	RUNOFF	.03	5.34	---	12.19	98	3266.7
STRUCTURE	58	RESVOR	.03	5.24	432.27	12.24	94	3133.3
XSECTION	4	RUNOFF	.06	6.19	---	12.15	259	4316.7
XSECTION	6	RUNOFF	.08	5.40	---	12.18	278	3475.0
XSECTION	9	RUNOFF	.06	5.84	---	12.18	223	3716.7
XSECTION	10	RUNOFF	.03	5.86	---	12.22	87	2900.0
STRUCTURE	52	RESVOR	.03	5.35	456.47	12.34	70	2333.3
XSECTION	12	ADDHYD	.09	5.69	---	12.20	250	2777.8

XSECTION	13	RUNOFF	.04	6.54	---	12.17	185	4625.0
STRUCTURE	51	RESVOR	.04	6.54	399.85	12.34	105	2625.0
XSECTION	15	RUNOFF	.08	5.68	---	12.16	317	3962.5
XSECTION	17	ADDHYD	.21	5.86	---	12.20	565	2690.5
XSECTION	18	ADDHYD	.59	5.75	---	12.24	1717	2910.2
XSECTION	19	RUNOFF	.27	5.30	---	12.31	684	2533.3
XSECTION	20	REACH	.59	5.75	239.60	12.36	1565	2652.5
XSECTION	21	ADDHYD	.86	5.61	---	12.35	2232	2595.3
XSECTION	22	RUNOFF	.02	6.42	---	12.22	67	3350.0
STRUCTURE	47	RESVOR	.02	6.42	415.70	12.24	66	3300.0
XSECTION	23	RUNOFF	.08	6.42	---	12.19	312	3900.0
STRUCTURE	32	RESVOR	.08	6.42	370.13	12.26	284	3550.0
XSECTION	25	RUNOFF	.05	6.39	---	12.19	181	3620.0
STRUCTURE	34	RESVOR	.15	6.42	343.30	12.36	430	2866.7
XSECTION	27	RUNOFF	.01	5.67	---	12.11	59	5900.0
XSECTION	28	ADDHYD	.16	6.36	---	12.35	446	2787.5

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AMOUNT	ELEVATION	TIME	RATE	RATE
ID	OPERATION	AREA (SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	99					
XSECTION	29	RUNOFF	.05	6.96	---	12.11	262	5240.0
STRUCTURE	64	RESVOR	.05	6.96	---	12.11	262	5240.0
XSECTION	31	RUNOFF	.17	6.66	---	12.31	522	3070.6
XSECTION	33	RUNOFF	.05	6.43	---	12.20	178	3560.0
XSECTION	36	RUNOFF	.02	6.49	---	12.26	79	3950.0
STRUCTURE	33	RESVOR	.02	6.47	328.90	12.29	78	3900.0
XSECTION	38	RUNOFF	.07	5.96	---	12.13	304	4342.9
XSECTION	39	ADDHYD	.36	6.53	---	12.28	1035	2875.0
XSECTION	41	RUNOFF	.02	6.37	---	12.17	97	4850.0
STRUCTURE	29	RESVOR	.02	6.25	274.20	12.36	50	2500.0
XSECTION	43	RUNOFF	.12	4.01	---	12.21	289	2408.3
XSECTION	44	ADDHYD	.14	4.38	---	12.22	297	2121.4
XSECTION	46	ADDHYD	.67	6.02	---	12.49	1469	2192.5
STRUCTURE	7	RESVOR	.67	6.02	---	12.49	1469	2192.5
XSECTION	47	RUNOFF	.28	6.09	---	12.31	803	2867.9

XSECTION	48	RUNOFF	.02	6.72	---	12.16	107	5350.0
STRUCTURE	40	RESVOR	.02	6.72	337.87	12.32	59	2950.0
XSECTION	51	RUNOFF	.02	6.20	---	12.18	85	4250.0
STRUCTURE	43	RESVOR	.02	5.60	322.85	12.26	71	3550.0
XSECTION	52	ADDHYD	.33	6.10	279.26	12.31	927	2809.1
XSECTION	53	RUNOFF	.21	3.99	---	12.21	494	2352.4
XSECTION	54	ADDHYD	.54	5.28	---	12.36	1078	1996.3
STRUCTURE	5	RESVOR	.54	5.27	277.90	13.18	334	618.5
XSECTION	55	ADDHYD	1.53	5.79	---	12.38	3563	2328.8
XSECTION	56	RUNOFF	.02	4.31	---	12.13	55	2750.0
XSECTION	57	ADDHYD	1.55	5.77	---	12.38	3581	2310.3
STRUCTURE	6	RESVOR	1.55	5.77	---	12.38	3581	2310.3
XSECTION	58	RUNOFF	.04	6.26	---	12.13	163	4075.0
XSECTION	62	RUNOFF	.02	6.90	---	12.16	104	5200.0
XSECTION	63	ADDHYD	2.11	5.58	---	12.38	3830	1815.2

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.

QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION

ROUTING PARAMETERS

XSEC	REACH	FLOOD PLAIN		INFLOW		OUTFLOW		Q-A EQ.		PEAK RATIO Q/I	ATT-KIN	
		LENGTH	COEFF	PEAK	TIME	PEAK	TIME	COEFF	POWER			
		(FT)	(FT)	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)	(Q*)	(C)

BASEFLOW IS .0 CFS

ALTERNATE	1	STORM	2							
7	2055		186	12.2	184	12.3	1.65	1.52	.011	.988
.80?										
11	1397		3	13.3	3	13.5	2.53	1.54	.004	.990
.47										
16	2449		64	12.2	59	12.3	2.42	1.40	.021	.928
.55										
20	4470		333	12.2	305	12.4	1.73	1.47	.031	.916
.50										
30	1561		80	12.1	74	12.2	1.16	1.56	.030	.920
.73?										
35	2077		236	12.2	221	12.4	1.15	1.41	.029	.936
.57										



42	2112	4	13.0	4	13.1	3.54	1.39	.006	.996
.40									
45	3148	310	12.3	297	12.5	4.57	1.16	.037	.958
.50									
49	1829	16	12.4	15	12.5	1.44	1.42	.038	.937
.40									
52	4744	197	12.4	178	12.5	1.16	1.52	.045	.903
.38									
59	1671	738	12.4	734	12.5	3.23	1.24	.012	.995
.86?									

ALTERNATE 1 STORM 5

7	2055	295	12.2	291	12.3	1.75	1.50	.010	.984
.86?									
11	1397	9	12.7	9	12.8	2.53	1.54	.005	.990
.64									
16	2449	102	12.2	96	12.3	2.47	1.39	.019	.940
.60									
20	4470	539	12.2	486	12.4	2.57	1.33	.043	.902
.47									
30	1561	113	12.1	106	12.2	1.20	1.54	.025	.940
.77?									
35	2077	342	12.2	324	12.3	1.19	1.40	.026	.946
.61									
42	2112	5	12.9	5	13.1	3.54	1.39	.005	.997
.44									
45	3148	488	12.4	469	12.5	5.06	1.13	.043	.961
.49									
49	1829	22	12.4	21	12.5	1.46	1.41	.030	.948
.42									
52	4744	313	12.4	288	12.5	1.23	1.50	.040	.919
.42									
59	1671	1134	12.4	1133	12.5	3.20	1.25	.011	.999
.90?									

ALTERNATE 1 STORM 10

7	2055	398	12.2	395	12.3	1.91	1.47	.010	.993
.89?									
11	1397	15	12.6	15	12.7	2.53	1.54	.005	.993
.72?									

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;  
 LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

		HYDROGRAPH INFORMATION				ROUTING PARAMETERS					
XSEC ID	REACH LENGTH COEFF	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT- KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
		ALTERNATE	1	STORM	10						
16	2449		137	12.2	130	12.3	2.50	1.38	.017	.952	
.63											
20	4470		733	12.2	658	12.4	3.29	1.25	.052	.898	
.46											
30	1561		141	12.1	135	12.2	1.23	1.53	.022	.952	
.81?											
35	2077		436	12.2	418	12.3	1.22	1.39	.024	.959	
.63											
42	2112		7	12.9	7	13.0	3.54	1.39	.005	.998	
.47											
45	3148		701	12.3	647	12.5	5.71	1.09	.054	.922	
.48											
49	1829		35	12.3	31	12.4	1.49	1.40	.036	.869	
.46											
52	4744		429	12.3	396	12.5	1.29	1.48	.038	.922	
.45											
59	1671		1631	12.4	1623	12.4	3.32	1.24	.011	.995	
.93?											
		ALTERNATE	1	STORM	50						
7	2055		752	12.2	749	12.3	3.07	1.31	.016	.996	
.87?											
11	1397		50	12.4	50	12.4	2.60	1.51	.007	.988	
.90?											
16	2449		256	12.2	251	12.3	2.57	1.37	.016	.978	
.70?											
20	4470		1360	12.2	1234	12.4	3.92	1.20	.055	.908	
.47											
30	1561		219	12.1	213	12.2	1.29	1.51	.018	.971	
.87?											
35	2077		713	12.2	693	12.3	1.32	1.37	.021	.972	
.68?											
42	2112		28	12.5	27	12.5	3.56	1.38	.009	.956	
.61											
45	3148		1147	12.3	1076	12.4	6.54	1.05	.060	.938	
.45											
49	1829		58	12.3	57	12.5	1.51	1.38	.031	.979	
.51											
52	4744		763	12.3	683	12.5	1.85	1.33	.059	.895	
.39											
59	1671		2988	12.4	2988	12.4	3.13	1.25	.010	1.000	
1.00?											
		ALTERNATE	1	STORM	99						
7	2055		946	12.2	936	12.3	3.39	1.28	.017	.989	
.88?											
11	1397		70	12.4	70	12.4	2.65	1.49	.008	.999	
.95?											

16 2449 335 12.2 327 12.3 2.62 1.36 .015 .977  
 .73?

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.

QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION

ROUTING PARAMETERS

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT- KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
	ALTERNATE	1	STORM	99							
20	4470		1717	12.2	1565	12.4	3.99	1.20	.054	.911	
.48											
30	1561		261	12.1	255	12.2	1.32	1.50	.016	.978	
.89?											
35	2077		859	12.2	823	12.3	1.76	1.29	.027	.958	
.63											
42	2112		50	12.4	48	12.5	3.60	1.36	.013	.958	
.67?											
45	3148		1424	12.4	1283	12.5	5.69	1.02	.087	.901	
.36											
49	1829		59	12.3	59	12.5	1.52	1.38	.024	.990	
.51											
52	4744		927	12.3	800	12.5	2.57	1.21	.089	.863	
.32											
59	1671		3570	12.4	3570	12.4	3.00	1.26	.008	1.000	
1.00?											

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99
STRUCTURE 64	.05					
----- ALTERNATE 262	1	81	113	142	220	
STRUCTURE 58	.03					
----- ALTERNATE 94	1	2	8	16	71	
STRUCTURE 52	.03					
----- ALTERNATE 70	1	3	9	15	51	
STRUCTURE 51	.04					
----- ALTERNATE 105	1	22	34	46	83	
STRUCTURE 47	.02					
----- ALTERNATE 66	1	12	21	27	55	
STRUCTURE 43	.02					
----- ALTERNATE 71	1	4	15	28	59	
STRUCTURE 40	.02					
----- ALTERNATE 59	1	16	22	36	58	
STRUCTURE 34	.15					
----- ALTERNATE 430	1	54	127	185	284	
STRUCTURE 33	.02					
----- ALTERNATE 78	1	15	24	34	65	
STRUCTURE 32	.08					
----- ALTERNATE 284	1	61	86	123	229	
STRUCTURE 29	.02					
----- ALTERNATE 50	1	4	5	7	28	
STRUCTURE 7	.67					
----- ALTERNATE	1	320	505	712	1223	

1469

STRUCTURE 6 1.55

-----  
 ALTERNATE 1 742 1137 1640 2988  
 3581

STRUCTURE 5 .54

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99
STRUCTURE 5	.54					
----- ALTERNATE 1 334		93	137	168	246	
XSECTION 1	.21					
----- ALTERNATE 1 653		137	218	295	526	
XSECTION 2	.03					
----- ALTERNATE 1 98		18	30	42	78	
XSECTION 4	.06					
----- ALTERNATE 1 259		63	96	125	213	
XSECTION 6	.08					
----- ALTERNATE 1 278		53	88	121	223	
XSECTION 9	.06					
----- ALTERNATE 1 223		49	77	103	181	
XSECTION 10	.03					
----- ALTERNATE 1 87		19	30	40	71	

XSECTION 12 .09

-----  
 ALTERNATE 1 49 77 104 196  
 250

XSECTION 13 .04

-----  
 ALTERNATE 1 49 72 92 153  
 185

XSECTION 15 .08

-----  
 ALTERNATE 1 66 106 143 255  
 317

XSECTION 17 .21

-----  
 ALTERNATE 1 110 178 243 450  
 565

XSECTION 18 .59

-----  
 ALTERNATE 1 334 539 733 1361  
 1717

XSECTION 19 .27

-----  
 ALTERNATE 1 122 208 290 541  
 684

XSECTION 20 .59

-----  
 ALTERNATE 1 306 487 658 1235  
 1565

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STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99

XSECTION 21 .86

-----  
 ALTERNATE 1 426 691 942 1761  
 2232

XSECTION 22 .02

-----  
 ALTERNATE 1 17 25 33 55

67

XSECTION 23 .08

-----  
ALTERNATE 1 80 119 154 257  
312

XSECTION 25 .05

-----  
ALTERNATE 1 46 68 89 149  
181

XSECTION 27 .01

-----  
ALTERNATE 1 13 20 27 47  
59

XSECTION 28 .16

-----  
ALTERNATE 1 56 132 192 295  
446

XSECTION 29 .05

-----  
ALTERNATE 1 81 113 142 220  
262

XSECTION 31 .17

-----  
ALTERNATE 1 142 207 264 433  
522

XSECTION 33 .05

-----  
ALTERNATE 1 46 68 89 148  
178

XSECTION 36 .02

-----  
ALTERNATE 1 21 30 39 65  
79

XSECTION 38 .07

-----  
ALTERNATE 1 69 107 143 247  
304

XSECTION 39 .36

-----  
ALTERNATE 1 265 390 512 869  
1035

XSECTION 41 .02

-----  
ALTERNATE 1 25 37 48 80  
97

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99
XSECTION 43	.12					
----- ALTERNATE 289	1	26	61	96	217	
XSECTION 44	.14					
----- ALTERNATE 297	1	28	63	100	224	
XSECTION 46	.67					
----- ALTERNATE 1469	1	320	505	712	1223	
XSECTION 47	.28					
----- ALTERNATE 803	1	185	285	379	655	
XSECTION 48	.02					
----- ALTERNATE 107	1	30	44	55	89	
XSECTION 51	.02					
----- ALTERNATE 85	1	21	31	41	70	
XSECTION 52	.33					
----- ALTERNATE 927	1	198	315	432	764	
XSECTION 53	.21					
----- ALTERNATE 494	1	44	103	164	370	
XSECTION 54	.54					
----- ALTERNATE 1078	1	208	351	497	905	
XSECTION 55	1.53					
----- ALTERNATE 3563	1	739	1132	1633	2973	
XSECTION 56	.02					



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ALTERNATE 1
55

```

```

6 13 20 42

```

```

XSECTION 57 1.55
-----

```

```

ALTERNATE 1 742 1137 1640 2988
3581

```

```

XSECTION 58 .04
-----

```

```

ALTERNATE 1 41 61 79 134
163

```

```

1
TR20 ----- SCS
-
```

```

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas
VERSION
03/23/** 27 Subareas MGMT-STD NOAA_C 2,5,10,50,100WITHMGMT
2.04TEST
11:17:50 SUMMARY, JOB NO. 1 PAGE
112
```

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99

```

XSECTION 62 .02
-----

```

```

ALTERNATE 1 30 43 54 87
104

```

```

XSECTION 63 2.11
-----

```

```

ALTERNATE 1 805 1251 1782 3209
3830

```

```

1
TR20 ----- SCS
-
```

```

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas
VERSION
03/23/** 27 Subareas MGMT-STD NOAA_C 2,5,10,50,100WITHMGMT
2.04TEST
```

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST  
FILES

INPUT = pond5.dat , GIVEN DATA FILE  
OUTPUT = pond5.OUT , DATED  
03/23/\*\*,11:17:50

FILES GENERATED - DATED 03/23/\*\*,11:17:50

NONE!

TOTAL NUMBER OF WARNINGS = 28, MESSAGES = 10

\*\*\* TR-20 RUN COMPLETED \*\*\*

1

\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20  
HYDROLOGY\*\*\*\*\*

JOB	TR-20	NOPLOTS				
TITLE	Ellicott City Flood Study-Tiber/South Sub-Drainage Areas					
TITLE	27 Subareas MGMT-STD NOAA_C 2,5,10,50,100WITHMGMT					
5	RAINFL	1	.1			
8	0.0000	0.0013	0.0023	0.0034	0.0044	
8	0.0055	0.0065	0.0076	0.0087	0.0098	
8	0.0109	0.0121	0.0132	0.0143	0.0155	
8	0.0167	0.0178	0.0190	0.0202	0.0214	
8	0.0226	0.0238	0.0251	0.0263	0.0276	
8	0.0288	0.0301	0.0314	0.0327	0.0340	
8	0.0353	0.0366	0.0379	0.0393	0.0406	
8	0.0420	0.0434	0.0447	0.0461	0.0475	
8	0.0489	0.0504	0.0518	0.0532	0.0547	
8	0.0562	0.0576	0.0591	0.0606	0.0621	
8	0.0636	0.0651	0.0667	0.0682	0.0697	
8	0.0713	0.0729	0.0745	0.0760	0.0776	
8	0.0793	0.0809	0.0826	0.0843	0.0861	
8	0.0879	0.0898	0.0916	0.0936	0.0955	
8	0.0975	0.0996	0.1017	0.1038	0.1060	
8	0.1082	0.1104	0.1127	0.1150	0.1174	
8	0.1198	0.1223	0.1247	0.1273	0.1298	
8	0.1324	0.1351	0.1378	0.1405	0.1432	
8	0.1461	0.1490	0.1521	0.1554	0.1588	
8	0.1623	0.1660	0.1699	0.1739	0.1780	
8	0.1823	0.1868	0.1914	0.1961	0.2010	
8	0.2061	0.2117	0.2179	0.2247	0.2321	
8	0.2400	0.2490	0.2591	0.2702	0.2825	
8	0.2955	0.3157	0.3370	0.3662	0.4067	
8	0.4766	0.5933	0.6338	0.6630	0.6843	
8	0.7045	0.7176	0.7298	0.7409	0.7510	
8	0.7600	0.7679	0.7753	0.7821	0.7883	
8	0.7939	0.7990	0.8039	0.8086	0.8132	
8	0.8177	0.8220	0.8261	0.8301	0.8340	
8	0.8377	0.8412	0.8446	0.8479	0.8510	
8	0.8540	0.8568	0.8595	0.8622	0.8649	
8	0.8676	0.8702	0.8727	0.8753	0.8778	
8	0.8802	0.8826	0.8850	0.8873	0.8896	
8	0.8918	0.8940	0.8962	0.8983	0.9004	
8	0.9025	0.9045	0.9064	0.9084	0.9103	
8	0.9121	0.9139	0.9157	0.9174	0.9191	
8	0.9208	0.9224	0.9240	0.9256	0.9271	
8	0.9287	0.9303	0.9318	0.9334	0.9349	
8	0.9364	0.9379	0.9394	0.9409	0.9424	
8	0.9439	0.9453	0.9468	0.9482	0.9496	
8	0.9511	0.9525	0.9539	0.9553	0.9566	
8	0.9580	0.9594	0.9607	0.9621	0.9634	
8	0.9647	0.9660	0.9673	0.9686	0.9699	
8	0.9712	0.9724	0.9737	0.9749	0.9762	
8	0.9774	0.9786	0.9798	0.9810	0.9822	
8	0.9834	0.9845	0.9857	0.9868	0.9879	

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8	0.9891	0.9902	0.9913	0.9924	0.9935
8	0.9945	0.9956	0.9967	0.9977	0.9987
8	1.0000	1.0000	1.0000	1.0000	1.0000

9 ENDTBL  
3 STRUCT

58

8		424.00	0.00	0.00
8		429.09	2.00	0.72
8		429.59	4.00	0.85
8		430.00	6.00	0.96
8		430.21	8.00	1.02
8		430.36	10.00	1.06
8		430.49	12.00	1.10
8		430.64	14.00	1.15
8		430.74	15.00	1.18
8		431.22	17.09	1.33
8		431.68	33.53	1.49
8		432.18	80.87	1.67
8		432.37	108.22	1.74

9 ENDTBL  
2 XSECTN

007

8		1.0	319.00	
8		318.00	0.00	0.00
8		318.25	10.19	3.39
8		318.50	32.80	7.08
8		318.75	65.48	11.07
8		319.00	107.54	15.35
8		320.00	367.34	35.47
8		321.00	663.16	60.18
8		322.00	1052.26	89.31
8		323.00	1529.69	131.30

9 ENDTBL  
3 STRUCT

52

8		451.90	0.00	0.00
8		454.05	0.34	0.73
8		454.30	0.36	0.85
8		455.60	18.83	1.65
8		456.10	41.43	2.00
8		456.50	72.96	2.28

9 ENDTBL  
2 XSECTN

011

8		1.0	415.00	
8		414.00	0.00	0.00
8		414.25	7.22	1.98
8		414.50	23.69	4.29
8		414.75	48.28	6.93
8		415.00	81.00	9.89
8		416.00	299.51	25.08
8		417.00	488.53	45.33
8		418.00	779.05	70.44
8		419.00	809.36	107.84

9 ENDTBL  
3 STRUCT

51

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8		396.00	0.00	0.00
8		396.50	4.38	0.27
8		397.00	12.40	0.65
8		397.50	22.78	1.07
8		398.00	35.07	1.54
8		398.50	49.45	2.05
8		399.00	64.75	2.59

8			399.45	86.12	3.10
9	ENDTBL				
2	XSECTN	016	1.0	331.00	
8			330.00	0.00	0.00
8			330.25	5.94	1.92
8			330.50	21.34	4.68
8			330.75	47.19	8.28
8			331.00	85.01	12.73
8			332.00	385.16	38.91
8			333.00	704.29	76.97
8			334.00	1202.25	125.34
8			335.00	1592.91	187.47
9	ENDTBL				
2	XSECTN	020	1.0	235.00	
8			234.00	0.00	0.00
8			234.25	9.06	3.27
8			234.50	29.33	6.89
8			234.75	58.86	10.87
8			235.00	97.22	15.19
8			236.00	339.40	36.03
8			237.00	586.83	61.50
8			238.00	902.53	90.59
8			239.00	1290.91	123.25
8			240.00	1750.59	159.40
8			241.00	1985.66	201.02
8			242.00	2381.26	250.13
9	ENDTBL				
3	STRUCT	47			
8			410.00	0.00	0.00
8			413.89	5.00	0.05
8			414.04	10.00	0.15
8			414.17	15.00	0.24
8			414.28	20.00	0.27
8			415.00	30.68	0.38
8			415.27	39.01	0.42
8			415.52	52.87	0.45
8			415.79	71.61	0.49
8			416.07	95.27	0.54
9	ENDTBL				
3	STRUCT	32			
8			367.00	0.00	0.00
8			367.37	10.00	0.29
8			367.59	20.00	0.47

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			367.78	30.00	0.62
8			367.94	40.00	0.76
8			368.09	50.00	0.89
8			368.44	75.00	1.18
8			368.82	88.96	1.52
8			369.30	142.54	1.95
8			369.79	219.99	2.41
8			370.11	280.10	2.72
8			370.33	326.70	2.93
8			370.56	378.34	3.15
9	ENDTBL				
3	STRUCT	34			
8			329.00	0.00	0.00
8			332.62	30.00	0.72

8			336.99	50.00	2.59
8			337.92	70.00	3.17
8			338.11	90.00	3.29
8			338.19	100.00	3.34
8			338.26	109.00	3.39
8			338.55	150.00	3.58
8			338.61	160.00	3.63
8			338.64	165.00	3.65
8			338.70	175.00	3.69
8			338.73	179.50	3.71
8			343.01	310.00	7.34
8			343.91	680.58	8.20
9	ENDTBL				
3	STRUCT	64			
9	ENDTBL				
2	XSECTN	030	1.0	357.00	
8			356.00	0.00	0.00
8			356.25	11.94	4.48
8			356.50	38.65	9.42
8			356.75	77.59	14.83
8			357.00	128.16	20.70
8			358.00	446.97	48.84
8			359.00	544.48	91.80
8			360.00	941.05	156.94
8			361.00	1597.14	242.00
9	ENDTBL				
2	XSECTN	035	1.0	317.00	
8			316.00	0.00	0.00
8			316.25	12.78	5.64
8			316.50	44.21	13.12
8			316.75	94.71	22.44
8			317.00	166.16	33.59
8			318.00	703.03	96.58
8			319.00	1203.58	187.92
8			320.00	2039.69	306.56
8			321.00	3441.07	443.04

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

9	ENDTBL				
3	STRUCT	33			
8			323.00	0.00	0.00
8			323.20	5.00	0.01
8			324.01	10.00	0.06
8			325.62	15.00	0.19
8			326.73	18.00	0.29
8			327.09	20.00	0.33
8			327.38	25.00	0.36
8			327.54	28.00	0.38
8			327.63	30.00	0.39
8			328.16	38.10	0.46
8			328.84	73.25	0.54
8			329.21	106.03	0.59
9	ENDTBL				
3	STRUCT	29			
8			266.00	0.00	0.00
8			273.38	10.00	2.49
8			273.62	20.00	2.64
8			273.91	35.00	2.82
8			274.10	46.00	2.94

8			274.35	55.00	3.10
8			274.51	58.00	3.20
8			274.61	60.00	3.28
8			274.90	65.00	3.47
8			275.21	98.51	3.68
8			275.54	139.16	3.92
8			275.89	189.97	4.18
8			276.27	253.87	4.48
8			276.50	299.40	4.67
9	ENDTBL				
2	XSECTN	042	1.0	223.00	
8			222.00	0.00	0.00
8			222.25	2.73	0.83
8			222.50	10.35	2.16
8			222.75	23.82	3.97
8			223.00	44.24	6.28
8			224.00	215.28	20.42
8			225.00	406.10	41.61
8			226.00	702.08	67.86
8			227.00	890.97	103.46
9	ENDTBL				
3	STRUCT	07			
9	ENDTBL				
2	XSECTN	045	1.0	223.00	
8			222.00	0.00	0.00
8			222.25	2.28	0.83
8			222.50	8.62	2.16
8			222.75	19.85	3.97
8			223.00	36.86	6.28

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			224.00	179.35	20.41
8			225.00	338.28	41.30
8			226.00	584.84	67.85
8			227.00	830.09	103.44
8			228.00	1249.11	151.47
8			229.00	1307.14	232.37
8			230.00	2023.03	366.57
9	ENDTBL				
3	STRUCT	40			
8			333.00	000.00	0.00
8			334.00	15.15	0.40
8			334.25	16.92	0.47
8			334.50	18.53	0.55
8			334.75	20.02	0.63
8			335.00	21.40	0.68
8			335.50	23.92	0.77
8			335.86	25.59	0.80
8			336.00	27.61	0.82
8			336.25	33.80	0.84
8			336.50	42.02	0.93
8			336.75	51.79	1.01
8			336.86	56.51	1.05
8			337.00	57.30	1.08
8			337.50	58.38	1.31
8			338.00	59.45	1.68
9	ENDTBL				
2	XSECTN	049	1.0	317.00	
8			316.00	0.00	0.00

8			316.25	3.06	1.70
8			316.50	11.11	4.19
8			316.75	24.79	7.47
8			317.00	44.94	11.55
8			318.00	206.80	35.78
8			319.00	333.28	74.89
8			320.00	609.60	131.05
9	ENDTBL				
3	STRUCT	43			
8			317.30	0.00	0.00
8			318.00	0.19	0.08
8			319.00	0.24	0.27
8			320.75	0.30	0.79
8			321.00	3.22	0.85
8			321.75	23.58	1.09
8			322.00	32.83	1.17
8			322.20	40.94	1.20
8			322.40	49.63	1.27
8			322.80	68.56	1.45
8			322.90	73.60	1.49
9	ENDTBL				
2	XSECTN	052	1.0	279.00	

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			276.00	0.00	0.00
8			276.25	15.37	5.56
8			276.50	49.97	11.77
8			276.75	100.75	18.63
8			277.00	167.09	26.14
8			278.00	591.48	62.65
8			279.00	793.41	115.06
8			280.00	1313.82	188.91
8			281.00	2138.14	282.44
9	ENDTBL				
3	STRUCT	05			
9	ENDTBL				
3	STRUCT	06			
8			138.00	0.00	0.00
8			140.50	200.00	0.06
8			142.72	400.00	0.21
8			145.47	800.00	0.60
8			146.68	1000.00	0.86
8			147.48	1137.00	1.07
8			147.86	1200.00	1.17
8			150.46	1631.00	2.02
8			151.53	1800.00	2.44
8			152.93	2000.00	3.07
8			156.96	2500.00	5.82
8			158.84	2700.00	9.89
8			161.96	3000.00	18.44
8			163.03	3100.00	21.74
8			164.18	3283.92	25.46
8			166.59	3969.22	34.45
9	ENDTBL				
2	XSECTN	059	1.0	128.00	
8			129.00	0.00	0.00
8			129.25	1.13	0.50
8			129.50	5.18	1.55
8			129.75	13.39	3.16



8				130.00	26.84	5.32		
8				131.00	191.72	26.64		
8				132.00	508.02	58.78		
8				133.00	945.51	95.90		
8				134.00	1449.27	136.08		
8				135.00	2016.68	178.64		
8				138.00	4199.86	314.48		
9	ENDTBL							
6	RUNOFF	1 001	1	0.2101	77.19	0.319	1	1 141
6	RUNOFF	1 002	2	0.0292	74.00	0.232	1	1 142
6	RESVOR	2 58 2	3				1	1
	SWMF58							
6	ADDHYD	4 003	1 3 4				1	
	1+2+58							
6	RUNOFF	1 004	1	0.0617	81.09	0.170	1	1 143
6	ADDHYD	4 005	4 1 2				1	1+2+3
6	RUNOFF	1 006	1	0.0799	74.51	0.216	1	1 144

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

6	REACH	3 007	2 3	2055.0			1	
6	ADDHYD	4 008	1 3 2				1	SA14
6	RUNOFF	1 009	1	0.0604	78.12	0.220	1	1 153
6	RUNOFF	1 010	3	0.0264	78.36	0.290	1	1 151
6	RESVOR	2 52 3	4				1	1
	SWMF52							
6	REACH	3 011	4 5	1396.5			1	
6	ADDHYD	4 012	1 5 6				1	1
	153+151							
6	RUNOFF	1 013	1	0.0447	83.97	0.210	1	1 152
6	RESVOR	2 51 1	3				1	1
	SWMF51							
6	ADDHYD	4 014	6 3 1				1	
	012+51							
6	RUNOFF	1 015	3	0.0815	76.80	0.176	1	1 154
6	REACH	3 016	1 4	2448.6			1	
6	ADDHYD	4 017	3 4 5				1	1 SA15
6	ADDHYD	4 018	2 5 1				1	1
	SA14+15							
6	RUNOFF	1 019	2	0.2701	73.58	0.425	1	1 131
6	REACH	3 020	1 3	4470.1			1	1 SA13
6	ADDHYD	4 021	2 3 4				1	1
	14+15+13							
6	RUNOFF	1 022	1	0.0185	83.00	0.283	1	1 121
6	RESVOR	2 47 1	2				1	1
	SWMF47							
6	RUNOFF	1 023	3	0.0812	83.00	0.245	1	1 122
6	RESVOR	2 32 3	5				1	1
	SWMF32							
6	ADDHYD	4 024	2 5 1				1	
	121+122							
6	RUNOFF	1 025	2	0.0465	82.74	0.236	1	1 123
6	ADDHYD	4 026	1 2 5				1	
	024+123							
6	RESVOR	2 34 5	3				1	1
	SWMF34							
6	RUNOFF	1 027	2	0.0126	76.91	0.100	1	1 124
6	ADDHYD	4 028	3 2 5				1	1 SA12
6	RUNOFF	1 029	2	0.0499	87.76	0.100	1	1 111
6	RESVOR	2 64 2	3				1	1

SWMF64									
6	REACH	3	030	3	6	1561.1			1
6	RUNOFF	1	031		7	0.1745	85.00	0.449	1 112
6	ADDHYD	4	032	6	7	3			1
111+112									
6	RUNOFF	1	033		1	0.0477	83.06	0.258	1 113
6	ADDHYD	4	034	3	1	2			1
032+113									
6	REACH	3	035	2	3	2077.3			1
6	RUNOFF	1	036		6	0.0244	83.54	0.370	1 114
6	RESVOR	2		33	6	7			1 1
SWMF33									
6	ADDHYD	4	037	3	7	1			1
111-114									
6	RUNOFF	1	038		2	0.0684	79.13	0.136	1 115
6	ADDHYD	4	039	1	2	3			1 SA11
6	ADDHYD	4	040	5	3	6			1 12+11
6	RUNOFF	1	041		1	0.0236	82.59	0.200	1 101
6	RESVOR	2		29	1	3			1 1
SWMF29									
6	REACH	3	042	3	5	2112.0			1
6	RUNOFF	1	043		1	0.1211	62.77	0.263	1 102
6	RESVOR	2		07	1	7			1 PROP7
6	ADDHYD	4	044	5	7	2			1 SA10
6	REACH	3	045	6	3	3147.6			1
6	ADDHYD	4	046	2	3	1			1 1
10+12+11									
6	RUNOFF	1	047		2	0.2822	80.17	0.434	1 1 81

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

6	RUNOFF	1	048		3	0.0248	85.45	0.190	1 1 82
6	RESVOR	2		40	3	5			1 1
SWMF40									
6	REACH	3	049	5	6	1829.0			1
6	ADDHYD	4	050	2	6	7			1 81+82
6	RUNOFF	1	051		2	0.0218	81.19	0.220	1 1 83
6	RESVOR	2		43	2	3			1 1
SWMF43									
6	ADDHYD	4	052	7	3	2			1 1
81+82+83									
6	REACH	3	052	2	3	4744.2			1
6	RUNOFF	1	053		5	0.2083	62.56	0.262	1 1 84
6	ADDHYD	4	054	3	5	2			1 SA8
6	RESVOR	2		05	2	5			1 PROP5
6	ADDHYD	4	055	4	1	3			1 13+10
6	RUNOFF	1	056		6	0.0166	65.36	0.134	1 1 92
6	ADDHYD	4	057	3	6	7			1 1
13+10+92									
6	RESVOR	2		06	7	4			1 1 PROP6
6	RUNOFF	1	058		1	0.0357	81.76	0.141	1 1 93
6	REACH	3	059	4	3	1670.5			1
6	ADDHYD	4	060	5	3	4			1
SA8+93									
6	ADDHYD	4	061	7	4	1			1 92+93
6	RUNOFF	1	062		2	0.0233	86.98	0.186	1 1 91
6	ADDHYD	4	063	1	2	3			1 1
OUTFALL									
ENDATA									
7	INCREM	6				.06			

```

7 COMPUT 7 001 063 0.0 3.19 1.01 2 1 2
  ENDCMP 1
7 COMPUT 7 001 063 0.0 4.10 1.01 2 1 05
  ENDCMP 1
7 COMPUT 7 001 063 0.0 4.91 1.01 2 1 10
  ENDCMP 1
7 COMPUT 7 001 063 0.0 7.23 1.01 2 1 50
  ENDCMP 1
7 COMPUT 7 001 063 0.0 8.47 1.01 2 1 99
  ENDCMP 1
  ENDCMP 1
  ENDJOB 2

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\*\*\*\*\*END OF 80-80

LIST\*\*\*\*\*

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EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .060 HOURS

```

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63
  STARTING TIME = .00 RAIN DEPTH = 3.19 RAIN DURATION = 1.00
  ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS
  ALTERNATE NO. = 1 STORM NO. = 2 RAIN TABLE NO. = 1

```

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	136.6	(RUNOFF)
20.68	4.2	(RUNOFF)
24.01	3.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.22 WATERSHED INCHES; 165 CFS-HRS; 13.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	18.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.03 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

13.47 2.2 429.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.02 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 3

Table with 3 columns: PEAK TIME(HRS) ELEVATION(FEET), PEAK DISCHARGE(CFS), PEAK. Rows: 12.26, 20.65, 23.76, 24.00 with corresponding discharge values and (NULL) for peak.

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.19 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 4

Table with 3 columns: PEAK TIME(HRS) ELEVATION(FEET), PEAK DISCHARGE(CFS), PEAK. Rows: 12.16, 15.84, 24.00 with corresponding discharge values and (RUNOFF) for peak.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.47 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 5

Table with 3 columns: PEAK TIME(HRS) ELEVATION(FEET), PEAK DISCHARGE(CFS), PEAK. Rows: 12.21, 18.63, 20.63, 23.74, 24.00 with corresponding discharge values and (NULL) for peak.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.25 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 6

Table with 3 columns: PEAK TIME(HRS) ELEVATION(FEET), PEAK DISCHARGE(CFS), PEAK. Row: 12.19 with discharge 53.1 and (RUNOFF) for peak.

17.33	2.0	(RUNOFF)
24.02	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.06 WATERSHED INCHES; 55 CFS-HRS; 4.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	183.8	319.29
18.69	7.5	318.18
20.69	6.5	318.16
23.80	5.1	318.13
24.07	5.1	318.12

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.25 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	228.3	(NULL)
18.65	9.2	(NULL)
20.12	8.4	(NULL)
21.96	7.3	(NULL)
24.04	6.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.21 WATERSHED INCHES; 297 CFS-HRS; 24.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	49.0	(RUNOFF)
15.83	2.2	(RUNOFF)
23.09	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.27 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
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OPERATION RUNOFF XSECTION 13

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.18	49.3	(RUNOFF)
20.86	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.67 WATERSHED INCHES; 48 CFS-HRS; 4.0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 51

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.42	22.2	397.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.67 WATERSHED INCHES; 48 CFS-HRS; 4.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 14

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.21	65.4	(NULL)
20.06	3.0	(NULL)
24.02	2.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.32 WATERSHED INCHES; 112 CFS-HRS; 9.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.16	66.3	(RUNOFF)
17.35	2.2	(RUNOFF)
24.01	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.19 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

OPERATION REACH XSECTION 16

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.32	59.8	330.83

24.09 2.3 330.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.32 WATERSHED INCHES; 112 CFS-HRS; 9.2 ACRE-
FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.21 109.9 (NULL)
21.94 4.1 (NULL)
24.01 3.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.27 WATERSHED INCHES; 175 CFS-HRS; 14.4 ACRE-
FEET.

OPERATION ADDHYD XSECTION 18

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.25 333.7 (NULL)
20.09 13.1 (NULL)
20.63 12.5 (NULL)
21.94 11.4 (NULL)
23.09 10.5 (NULL)
24.03 9.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.23 WATERSHED INCHES; 471 CFS-HRS; 38.9 ACRE-
FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.33 121.9 (RUNOFF)
20.13 5.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.01 WATERSHED INCHES; 175 CFS-HRS; 14.5 ACRE-
FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.38 305.7 235.86
23.13 10.5 234.27



24.09 9.8 234.26

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.23 WATERSHED INCHES; 471 CFS-HRS; 38.9 ACRE-
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.36 426.1 (NULL)
23.13 14.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.16 WATERSHED INCHES; 646 CFS-HRS; 53.4 ACRE-
FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.22 17.1 (RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.60 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.37 12.3 414.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.60 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-
FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.20 80.0 (RUNOFF)
19.47 2.0 (RUNOFF)
24.02 1.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.60 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	61.0	368.24
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.60 WATERSHED INCHES;	84 CFS-HRS;	6.9 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	73.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.60 WATERSHED INCHES;	103 CFS-HRS;	8.5 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	46.1	(RUNOFF)
21.45	1.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.58 WATERSHED INCHES;	47 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	110.3	(NULL)
20.62	3.4	(NULL)
24.01	2.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.59 WATERSHED INCHES;	150 CFS-HRS;	12.4 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	54.3	337.19
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		

1.59 WATERSHED INCHES; 150 CFS-HRS; 12.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	12.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.19 WATERSHED INCHES; 10 CFS-HRS; .8 ACRE-  
FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.3%.  
\*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	44.1	(NULL)
12.67	56.2	(NULL)
23.98	2.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.56 WATERSHED INCHES; 160 CFS-HRS; 13.2 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	80.5	(RUNOFF)
15.82	2.3	(RUNOFF)
23.02	1.1	(RUNOFF)
23.68	1.0	(RUNOFF)
23.99	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.96 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.5%.  
\*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	80.5	(NULL)
15.82	2.3	(NULL)
23.02	1.1	(NULL)
23.68	1.0	(NULL)
23.99	1.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	74.0	356.73
15.89	2.3	356.05
23.09	1.1	356.02
23.75	1.0	356.02
24.05	1.1	356.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.97 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	141.6	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.75 WATERSHED INCHES; 197 CFS-HRS; 16.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	191.3	(NULL)
18.86	6.1	(NULL)
21.75	5.0	(NULL)
24.04	4.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.80 WATERSHED INCHES; 260 CFS-HRS; 21.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	46.0	(RUNOFF)
21.76	1.0	(RUNOFF)
21.97	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES; 49 CFS-HRS; 4.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	236.3	(NULL)
18.86	7.4	(NULL)
21.75	6.0	(NULL)
24.04	5.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.76 WATERSHED INCHES; 310 CFS-HRS; 25.6 ACRE-  
FEET.

OPERATION REACH XSECTION 35

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.34	221.5	317.10
20.68	6.5	316.13
24.10	5.1	316.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.76 WATERSHED INCHES; 309 CFS-HRS; 25.6 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	20.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.64 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .047 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.45 15.2 325.68  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.64 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.34 235.8 (NULL)  
20.68 7.1 (NULL)  
24.10 5.5 (NULL)  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.75 WATERSHED INCHES; 335 CFS-HRS; 27.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.13 69.3 (RUNOFF)  
15.84 2.6 (RUNOFF)  
17.34 2.0 (RUNOFF)  
24.00 1.2 (RUNOFF)  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.33 WATERSHED INCHES; 59 CFS-HRS; 4.9 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.32 265.4 (NULL)  
23.99 6.7 (NULL)  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.67 WATERSHED INCHES; 394 CFS-HRS; 32.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	312.0	(NULL)
23.99	9.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 554 CFS-HRS; 45.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	24.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.57 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.00	3.6	268.66

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.17	3.6	222.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	26.2	(RUNOFF)
24.03	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

.51 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.26	26.2	(NULL)
24.03	1.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.51 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 44

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.26	27.9	(NULL)
20.62	2.4	(NULL)
24.02	1.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.68 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION REACH XSECTION 45

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.45	298.1	224.75
24.04	9.6	222.52

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.64 WATERSHED INCHES; 554 CFS-HRS; 45.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.44	319.9	(NULL)
24.03	11.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.43 WATERSHED INCHES; 617 CFS-HRS; 51.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 47



PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	185.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 256 CFS-HRS; 21.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	29.9	(RUNOFF)
15.84	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	16.5	334.19

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	15.5	316.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 28 CFS-HRS; 2.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	197.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 284 CFS-HRS; 23.5 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	20.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 21 CFS-HRS; 1.7 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.86	3.8	321.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .97 WATERSHED INCHES; 14 CFS-HRS; 1.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	198.1	277.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 297 CFS-HRS; 24.6 ACRE-FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	177.7	277.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 297 CFS-HRS; 24.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	43.9	(RUNOFF)
23.11	2.1	(RUNOFF)
23.76	2.0	(RUNOFF)
24.03	2.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.50 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	207.7	(NULL)
24.00	7.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.05 WATERSHED INCHES; 364 CFS-HRS; 30.1 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	207.7	(NULL)
24.00	7.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.05 WATERSHED INCHES; 364 CFS-HRS; 30.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	739.3	(NULL)
24.03	24.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.28 WATERSHED INCHES; 1263 CFS-HRS; 104.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	6.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.61 WATERSHED INCHES; 7 CFS-HRS; .5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	742.1	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.27 WATERSHED INCHES; 1270 CFS-HRS; 104.9 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 6, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .006 HOURS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	740.2	145.06

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.27 WATERSHED INCHES; 1270 CFS-HRS; 104.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	40.7	(RUNOFF)
17.34	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.51 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	736.5	132.52

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.27 WATERSHED INCHES; 1270 CFS-HRS; 104.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	944.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.21 WATERSHED INCHES; 1634 CFS-HRS; 135.0 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 61

NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 61  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	944.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	1.19 WATERSHED INCHES;	1607 CFS-HRS;
	FEET.	132.8 ACRE-

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	30.3	(RUNOFF)
15.85	1.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	1.90 WATERSHED INCHES;	29 CFS-HRS;
	FEET.	2.4 ACRE-

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	954.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	1.20 WATERSHED INCHES;	1636 CFS-HRS;
	FEET.	135.2 ACRE-

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT	FROM XSECTION 1 TO XSECTION 63
STARTING TIME = .00	RAIN DEPTH = 4.10 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2	MAIN TIME INCREMENT = .060 HOURS
ALTERNATE NO. = 1	STORM NO. = 5 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	217.7	(RUNOFF)
20.12	6.2	(RUNOFF)
21.93	5.5	(RUNOFF)

24.02 4.6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.90 WATERSHED INCHES; 258 CFS-HRS; 21.3 ACRE-
FEET.

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OPERATION RUNOFF XSECTION 2
PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.20 30.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.67 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 58
PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.68 8.3 430.23

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.64 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 3
PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.25 219.8 (NULL)
18.65 8.3 (NULL)
20.66 7.2 (NULL)
23.11 6.0 (NULL)
24.01 5.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.87 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-
FEET.

OPERATION RUNOFF XSECTION 4
PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.15 95.7 (RUNOFF)
15.84 3.4 (RUNOFF)
19.47 2.0 (RUNOFF)
24.00 1.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.21 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 5

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	299.6	(NULL)
18.63	10.4	(NULL)
20.63	9.1	(NULL)
21.95	8.3	(NULL)
23.74	7.2	(NULL)
24.01	7.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.94 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	87.6	(RUNOFF)
15.83	3.8	(RUNOFF)
21.46	2.0	(RUNOFF)
24.02	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.70 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.28	292.4	319.71
18.70	10.4	318.25
20.69	9.1	318.22
22.00	8.3	318.20
23.80	7.2	318.18
24.07	7.1	318.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.94 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
----------------	---------------------	----------------------

12.26	368.5	(NULL)
18.66	12.8	(NULL)
20.67	11.3	(NULL)
21.99	10.3	(NULL)
23.12	9.4	(NULL)
24.04	8.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.89 WATERSHED INCHES; 465 CFS-HRS; 38.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	77.2	(RUNOFF)
15.82	3.1	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.98 WATERSHED INCHES; 77 CFS-HRS; 6.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	30.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.99 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.72	8.9	454.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.54 WATERSHED INCHES; 26 CFS-HRS; 2.2 ACRE-  
FEET.

OPERATION REACH XSECTION 11



PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.82	8.8	414.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.54 WATERSHED INCHES; 26 CFS-HRS; 2.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	77.4	(NULL)
23.08	2.1	(NULL)
23.73	2.0	(NULL)
24.03	2.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.84 WATERSHED INCHES; 103 CFS-HRS; 8.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	71.9	(RUNOFF)
17.33	2.0	(RUNOFF)
24.02	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.45 WATERSHED INCHES; 71 CFS-HRS; 5.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.39	34.2	397.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.45 WATERSHED INCHES; 71 CFS-HRS; 5.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	103.2	(NULL)
20.62	4.1	(NULL)

24.02 3.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.04 WATERSHED INCHES; 173 CFS-HRS; 14.3 ACRE-
FEET.

OPERATION RUNOFF XSECTION 15

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Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.16, 15.85, 17.34, 22.46, 24.01 and 106.0, 4.1, 3.2, 2.0, 1.9.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.87 WATERSHED INCHES; 99 CFS-HRS; 8.1 ACRE-
FEET.

OPERATION REACH XSECTION 16

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.31, 20.67, 24.09 and 95.7, 4.0, 3.2 and 331.04, 330.17, 330.13.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.04 WATERSHED INCHES; 173 CFS-HRS; 14.3 ACRE-
FEET.

OPERATION ADDHYD XSECTION 17

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.20, 20.80, 23.72, 24.01 and 178.2, 6.3, 5.0, 5.0 and (NULL), (NULL), (NULL), (NULL).

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.98 WATERSHED INCHES; 272 CFS-HRS; 22.5 ACRE-
FEET.

OPERATION ADDHYD XSECTION 18

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Row includes values 12.24, 539.2 and (NULL).

20.10	18.4	(NULL)
20.64	17.6	(NULL)
21.95	16.1	(NULL)
23.10	14.7	(NULL)
24.03	13.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.92 WATERSHED INCHES; 737 CFS-HRS; 60.9 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	207.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 286 CFS-HRS; 23.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	486.7	236.60
23.13	14.7	234.32
24.09	13.7	234.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.92 WATERSHED INCHES; 736 CFS-HRS; 60.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	690.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.83 WATERSHED INCHES; 1022 CFS-HRS; 84.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	25.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-

FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	21.0	414.35
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.37 WATERSHED INCHES;	28 CFS-HRS;	2.3 ACRE-
FEET.		

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OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	119.0	(RUNOFF)
23.10	2.1	(RUNOFF)
23.75	2.0	(RUNOFF)
24.02	2.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.37 WATERSHED INCHES;	124 CFS-HRS;	10.3 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	86.1	368.74
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.37 WATERSHED INCHES;	124 CFS-HRS;	10.3 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	107.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.37 WATERSHED INCHES;	153 CFS-HRS;	12.6 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.19	68.4	(RUNOFF)
24.03	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.35 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	162.5	(NULL)
20.62	4.6	(NULL)
24.02	3.6	(NULL)

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.36 WATERSHED INCHES; 223 CFS-HRS; 18.4 ACRE-FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.46	127.1	338.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.36 WATERSHED INCHES; 223 CFS-HRS; 18.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	20.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.88 WATERSHED INCHES; 15 CFS-HRS; 1.3 ACRE-FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.46	131.8	(NULL)
23.98	4.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.33 WATERSHED INCHES; 238 CFS-HRS; 19.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	113.0	(RUNOFF)
15.82	3.1	(RUNOFF)
17.32	2.4	(RUNOFF)
23.99	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 90 CFS-HRS; 7.4 ACRE-  
 FEET.

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\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	113.0	(NULL)
15.82	3.1	(NULL)
17.32	2.4	(NULL)
23.99	1.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 90 CFS-HRS; 7.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	105.9	356.89
15.89	3.1	356.06
17.39	2.4	356.05
24.05	1.4	356.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.80 WATERSHED INCHES; 90 CFS-HRS; 7.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	206.7	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.55 WATERSHED INCHES;	287 CFS-HRS;	23.7 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	276.5	(NULL)
18.86	8.3	(NULL)
20.87	7.3	(NULL)
23.09	6.1	(NULL)
24.04	5.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.60 WATERSHED INCHES;	377 CFS-HRS;	31.1 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	68.1	(RUNOFF)
24.03	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.38 WATERSHED INCHES;	73 CFS-HRS;	6.0 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	343.4	(NULL)
18.63	10.1	(NULL)
20.09	9.3	(NULL)
21.97	8.1	(NULL)
23.09	7.4	(NULL)
24.04	7.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.56 WATERSHED INCHES;	450 CFS-HRS;	37.2 ACRE-
FEET.		

OPERATION REACH XSECTION 35

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	326.6	317.30
20.16	9.3	316.18
22.00	8.1	316.16
23.15	7.4	316.14
24.10	6.9	316.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.56 WATERSHED INCHES; 450 CFS-HRS; 37.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	30.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
 FEET.

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\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .047 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.44	23.6	327.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	343.7	(NULL)
20.16	10.1	(NULL)
20.68	9.6	(NULL)
23.15	8.0	(NULL)
24.10	7.5	(NULL)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.55 WATERSHED INCHES; 488 CFS-HRS; 40.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.13	107.3	(RUNOFF)
15.84	3.7	(RUNOFF)
20.04	2.1	(RUNOFF)
20.60	2.0	(RUNOFF)
20.83	2.0	(RUNOFF)
24.00	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.05 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	390.1	(NULL)
23.99	9.1	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.46 WATERSHED INCHES; 578 CFS-HRS; 47.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.40	489.7	(NULL)
23.99	13.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES; 817 CFS-HRS; 67.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.17	36.9	(RUNOFF)
17.34	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.34 WATERSHED INCHES; 36 CFS-HRS; 2.9 ACRE-

FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.93	5.5	270.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.32 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.09	5.5	222.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.32 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	60.9	(RUNOFF)
21.98	2.2	(RUNOFF)
24.03	1.9	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .96 WATERSHED INCHES; 75 CFS-HRS; 6.2 ACRE-FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	60.9	(NULL)
21.98	2.2	(NULL)
24.03	1.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .96 WATERSHED INCHES; 75 CFS-HRS; 6.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		
12.24	63.5	(NULL)
20.62	3.8	(NULL)
24.03	2.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.18 WATERSHED INCHES; 110 CFS-HRS; 9.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	470.1	225.53
24.10	13.1	222.60

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES; 817 CFS-HRS; 67.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	504.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.15 WATERSHED INCHES; 927 CFS-HRS; 76.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	285.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.14 WATERSHED INCHES; 389 CFS-HRS; 32.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	43.5	(RUNOFF)
17.34	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.59 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
 FEET.

OPERATION RESVOR    STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	21.9	335.09
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.59 WATERSHED INCHES;	41 CFS-HRS;	3.4 ACRE-
FEET.		

OPERATION REACH    XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	20.8	316.68
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.58 WATERSHED INCHES;	41 CFS-HRS;	3.4 ACRE-
FEET.		

OPERATION ADDHYD    XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	303.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.17 WATERSHED INCHES;	430 CFS-HRS;	35.6 ACRE-
FEET.		

OPERATION RUNOFF    XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	31.3	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.22 WATERSHED INCHES;	31 CFS-HRS;	2.6 ACRE-
FEET.		

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE

STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.

\*\*\*

OPERATION RESVOR    STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	14.9	321.43
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.69 WATERSHED INCHES;	24 CFS-HRS;	2.0 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	315.4	277.35
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.14 WATERSHED INCHES;	454 CFS-HRS;	37.5 ACRE-
FEET.		

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	287.9	277.28
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.14 WATERSHED INCHES;	454 CFS-HRS;	37.5 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	103.1	(RUNOFF)
20.11	4.2	(RUNOFF)
20.66	4.0	(RUNOFF)
24.02	3.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.95 WATERSHED INCHES;	127 CFS-HRS;	10.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 54

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	350.5	(NULL)
23.99	11.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.68 WATERSHED INCHES;	581 CFS-HRS;	48.0 ACRE-

FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	350.5	(NULL)
23.99	11.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.68 WATERSHED INCHES; 581 CFS-HRS; 48.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	1132.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.97 WATERSHED INCHES; 1948 CFS-HRS; 161.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	13.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.11 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	1136.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 1960 CFS-HRS; 162.0 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 6, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .006 HOURS.  
 \*\*\*

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OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	1136.2	147.48
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.96 WATERSHED INCHES;	1960 CFS-HRS;	162.0 ACRE-
FEEET.		FEEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	60.8	(RUNOFF)
15.45	2.1	(RUNOFF)
15.84	2.0	(RUNOFF)
21.45	1.0	(RUNOFF)
21.73	1.0	(RUNOFF)
21.94	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.27 WATERSHED INCHES;	52 CFS-HRS;	4.3 ACRE-
FEEET.		FEEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	1133.5	133.37
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.96 WATERSHED INCHES;	1960 CFS-HRS;	162.0 ACRE-
FEEET.		FEEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	1479.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.89 WATERSHED INCHES;	2540 CFS-HRS;	209.9 ACRE-
FEEET.		FEEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
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ELEVATION(FEET)  
12.47 1479.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.86 WATERSHED INCHES; 2506 CFS-HRS; 207.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.16 42.9 (RUNOFF)  
17.34 1.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.72 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.47 1493.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.87 WATERSHED INCHES; 2546 CFS-HRS; 210.4 ACRE-  
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
STARTING TIME = .00 RAIN DEPTH = 4.91 RAIN DURATION = 1.00  
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. =10 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.25 295.0 (RUNOFF)  
18.67 8.6 (RUNOFF)  
20.67 7.5 (RUNOFF)  
23.12 6.3 (RUNOFF)  
24.01 5.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.56 WATERSHED INCHES; 347 CFS-HRS; 28.7 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	42.1	(RUNOFF)
20.09	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.29 WATERSHED INCHES; 43 CFS-HRS; 3.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	16.1	430.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.25 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	303.4	(NULL)
18.66	10.3	(NULL)
20.66	9.0	(NULL)
23.76	7.1	(NULL)
24.01	7.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.52 WATERSHED INCHES; 390 CFS-HRS; 32.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	125.5	(RUNOFF)
15.84	4.3	(RUNOFF)
17.34	3.3	(RUNOFF)
21.95	2.2	(RUNOFF)
24.00	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.91 WATERSHED INCHES; 116 CFS-HRS; 9.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 5

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.21	404.6	(NULL)
18.64	13.0	(NULL)
20.63	11.4	(NULL)
21.95	10.4	(NULL)
23.08	9.5	(NULL)
24.00	8.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.60 WATERSHED INCHES; 505 CFS-HRS; 41.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	121.4	(RUNOFF)
15.83	4.9	(RUNOFF)
18.87	3.1	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.33 WATERSHED INCHES; 120 CFS-HRS; 9.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 7

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.28	397.0	320.10
18.70	13.0	318.28
20.69	11.4	318.26
22.00	10.4	318.25
23.15	9.5	318.23
24.07	8.9	318.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.60 WATERSHED INCHES; 505 CFS-HRS; 41.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.25	500.5	(NULL)
18.66	16.1	(NULL)
20.67	14.1	(NULL)
21.99	12.9	(NULL)
23.77	11.2	(NULL)
24.04	11.1	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.55 WATERSHED INCHES; 626 CFS-HRS; 51.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	103.4	(RUNOFF)
21.97	2.0	(RUNOFF)
24.02	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.64 WATERSHED INCHES; 103 CFS-HRS; 8.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	40.4	(RUNOFF)
18.66	1.1	(RUNOFF)
20.12	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.67 WATERSHED INCHES; 45 CFS-HRS; 3.8 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	15.5	455.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.20 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	15.4	414.37

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.20 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	103.7	(NULL)
20.86	3.2	(NULL)
24.01	2.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.51 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	92.4	(RUNOFF)
15.84	3.2	(RUNOFF)
17.32	2.5	(RUNOFF)
18.64	2.0	(RUNOFF)
24.01	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.18 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	45.7	398.37

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.18 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	138.8	(NULL)
20.62	5.1	(NULL)
23.07	4.2	(NULL)
23.71	4.0	(NULL)
24.01	3.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 15

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.16	143.3	(RUNOFF)
15.84	5.3	(RUNOFF)
17.34	4.1	(RUNOFF)
19.75	3.1	(RUNOFF)
20.06	3.1	(RUNOFF)
24.01	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.53 WATERSHED INCHES; 133 CFS-HRS; 11.0 ACRE-FEET.

OPERATION REACH XSECTION 16

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.30	130.3	331.15
20.68	5.1	330.21
23.77	4.0	330.17
24.08	3.9	330.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.20	243.4	(NULL)
20.06	8.4	(NULL)
20.62	8.0	(NULL)
21.94	7.3	(NULL)
24.01	6.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.65 WATERSHED INCHES; 365 CFS-HRS; 30.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.24	732.9	(NULL)
18.63	25.4	(NULL)
20.10	23.1	(NULL)
20.64	22.1	(NULL)
21.95	20.2	(NULL)
23.10	18.5	(NULL)
24.03	17.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.58 WATERSHED INCHES; 990 CFS-HRS; 81.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	289.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.26 WATERSHED INCHES; 393 CFS-HRS; 32.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	658.4	237.23
23.13	18.5	234.37
24.09	17.3	234.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.58 WATERSHED INCHES; 990 CFS-HRS; 81.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	941.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.48 WATERSHED INCHES; 1383 CFS-HRS; 114.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	32.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	27.2	414.77

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	154.3	(RUNOFF)
20.87	3.1	(RUNOFF)
24.03	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 162 CFS-HRS; 13.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	122.8	369.12

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 162 CFS-HRS; 13.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	149.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 199 CFS-HRS; 16.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	89.1	(RUNOFF)
18.87	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.07 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-

FEET.

OPERATION ADDHYD XSECTION 26

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	223.0	(NULL)
20.08	6.0	(NULL)
20.61	5.8	(NULL)
24.01	4.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.08 WATERSHED INCHES; 291 CFS-HRS; 24.0 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	184.8	338.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.08 WATERSHED INCHES; 291 CFS-HRS; 24.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	26.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.54 WATERSHED INCHES; 21 CFS-HRS; 1.7 ACRE-  
FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -1.0%.  
\*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	192.2	(NULL)
23.98	4.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.04 WATERSHED INCHES; 311 CFS-HRS; 25.7 ACRE-  
FEET.



OPERATION RUNOFF XSECTION 29  
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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.11	141.9	(RUNOFF)
15.82	3.8	(RUNOFF)
20.02	2.2	(RUNOFF)
20.58	2.1	(RUNOFF)
20.82	2.1	(RUNOFF)
23.99	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.56 WATERSHED INCHES; 115 CFS-HRS; 9.5 ACRE-  
FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .3%.  
\*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.11	141.9	(NULL)
15.82	3.8	(NULL)
20.02	2.2	(NULL)
20.58	2.1	(NULL)
20.82	2.1	(NULL)
23.99	1.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.56 WATERSHED INCHES; 115 CFS-HRS; 9.5 ACRE-  
FEET.

OPERATION REACH XSECTION 30

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	134.5	357.02
15.89	3.8	356.08
20.09	2.2	356.05
20.65	2.1	356.04
20.88	2.0	356.04
24.05	1.8	356.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.54 WATERSHED INCHES; 114 CFS-HRS; 9.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	264.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.28 WATERSHED INCHES; 370 CFS-HRS; 30.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	351.7	(NULL)
18.86	10.2	(NULL)
20.62	9.1	(NULL)
21.97	8.3	(NULL)
23.74	7.1	(NULL)
24.04	7.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.34 WATERSHED INCHES; 484 CFS-HRS; 40.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	88.5	(RUNOFF)
18.65	2.1	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.10 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	439.0	(NULL)
18.86	12.3	(NULL)
20.09	11.4	(NULL)
21.75	10.1	(NULL)
23.09	9.1	(NULL)
24.04	8.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.30 WATERSHED INCHES; 579 CFS-HRS; 47.9 ACRE-  
 FEET.

FEET.

OPERATION REACH XSECTION 35

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.32	419.8	317.47
20.16	11.4	316.22
20.91	10.8	316.21
23.15	9.1	316.18
24.10	8.5	316.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.30 WATERSHED INCHES; 579 CFS-HRS; 47.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.27	38.8	(RUNOFF)
20.14	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.14 WATERSHED INCHES; 49 CFS-HRS; 4.1 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .047 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.39	33.7	327.87
20.15	1.0	323.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.14 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
-------------------------------------	----------------------	------

12.32	452.2	(NULL)
20.16	12.4	(NULL)
20.91	11.7	(NULL)
22.01	10.8	(NULL)
24.10	9.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.29 WATERSHED INCHES; 629 CFS-HRS; 52.0 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 38

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.13	142.5	(RUNOFF)
15.84	4.6	(RUNOFF)
17.34	3.6	(RUNOFF)
23.04	2.2	(RUNOFF)
23.70	2.0	(RUNOFF)
24.00	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.74 WATERSHED INCHES; 121 CFS-HRS; 10.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.30	511.7	(NULL)
23.99	11.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.18 WATERSHED INCHES; 750 CFS-HRS; 61.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.32	708.9	(NULL)
23.99	16.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 1061 CFS-HRS; 87.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
-----------------	----------------------	------

ELEVATION(FEET)			
12.17	47.7		(RUNOFF)
18.86	1.0		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 29

1 TR20 ----- SCS  
 -

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.89	7.2	271.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.04	7.2	222.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	96.2	(RUNOFF)
21.46	3.0	(RUNOFF)
24.02	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 112 CFS-HRS; 9.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	96.2	(NULL)
21.46	3.0	(NULL)
24.02	2.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 112 CFS-HRS; 9.3 ACRE-

FEET.

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	99.7	(NULL)
20.07	5.3	(NULL)
20.62	5.0	(NULL)
24.02	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.69 WATERSHED INCHES; 158 CFS-HRS; 13.1 ACRE-  
 FEET.

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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OPERATION REACH XSECTION 45

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.46	648.3	226.26
24.04	16.2	222.67

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 1061 CFS-HRS; 87.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.44	711.6	(NULL)
24.03	19.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.82 WATERSHED INCHES; 1219 CFS-HRS; 100.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	378.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 515 CFS-HRS; 42.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	55.0	(RUNOFF)
20.07	1.1	(RUNOFF)
20.63	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.32 WATERSHED INCHES; 53 CFS-HRS; 4.4 ACRE-FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	35.5	336.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.32 WATERSHED INCHES; 53 CFS-HRS; 4.4 ACRE-FEET.

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 TR20 ----- SCS

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OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	30.8	316.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.32 WATERSHED INCHES; 53 CFS-HRS; 4.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	404.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.87 WATERSHED INCHES; 568 CFS-HRS; 47.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	40.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.92 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	27.6	321.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 33 CFS-HRS; 2.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	432.2	277.62

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 601 CFS-HRS; 49.7 ACRE-FEET.

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	397.7	277.54

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 601 CFS-HRS; 49.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	163.6	(RUNOFF)
18.87	6.1	(RUNOFF)
21.98	5.0	(RUNOFF)
24.03	4.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.42 WATERSHED INCHES; 191 CFS-HRS; 15.8 ACRE-FEET.



OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	497.3	(NULL)
24.01	14.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.29 WATERSHED INCHES; 792 CFS-HRS; 65.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	497.3	(NULL)
24.01	14.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.29 WATERSHED INCHES; 792 CFS-HRS; 65.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	1633.0	(NULL)

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TR20 ----- SCS

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.63 WATERSHED INCHES; 2601 CFS-HRS; 214.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	20.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.62 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	1640.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.62 WATERSHED INCHES; 2618 CFS-HRS; 216.3 ACRE-

FEET.

\*\*\* WARNING - STRUCTURE 6, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .006 HOURS. \*\*\*

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.41 1630.5 150.46 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.62 WATERSHED INCHES; 2618 CFS-HRS; 216.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.13 79.3 (RUNOFF) 15.84 2.5 (RUNOFF) 24.00 1.2 (RUNOFF) RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.97 WATERSHED INCHES; 68 CFS-HRS; 5.7 ACRE-FEET.

OPERATION REACH XSECTION 59

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.48 1626.9 134.31 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.62 WATERSHED INCHES; 2618 CFS-HRS; 216.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.47 2112.8 (NULL) RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.53 WATERSHED INCHES; 3410 CFS-HRS; 281.8 ACRE-FEET.

\*\*\* WARNING - XSECTION 61 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.

\*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	2112.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.50 WATERSHED INCHES;	3369 CFS-HRS;	278.4 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	54.0	(RUNOFF)
19.43	1.0	(RUNOFF)
19.75	1.0	(RUNOFF)
20.07	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.48 WATERSHED INCHES;	52 CFS-HRS;	4.3 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	2130.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.51 WATERSHED INCHES;	3421 CFS-HRS;	282.7 ACRE-
FEET.		

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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PASS 4 JOB NO. 1 PAGE

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

EXECUTIVE CONTROL COMPUT	FROM XSECTION 1 TO XSECTION 63
STARTING TIME = .00	RAIN DEPTH = 7.23 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2	MAIN TIME INCREMENT = .060 HOURS
ALTERNATE NO. = 1	STORM NO. =50 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	526.5	(RUNOFF)
18.67	13.8	(RUNOFF)

20.68	12.1	(RUNOFF)
21.94	11.1	(RUNOFF)
23.13	10.1	(RUNOFF)
24.01	9.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.59 WATERSHED INCHES; 622 CFS-HRS; 51.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	78.1	(RUNOFF)
24.02	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.24 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	70.8	432.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.15 WATERSHED INCHES; 78 CFS-HRS; 6.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 3

1 TR20 ----- SCS  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	595.9	(NULL)
18.65	15.9	(NULL)
20.12	14.6	(NULL)
20.67	14.0	(NULL)
23.76	11.2	(NULL)
24.00	11.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.53 WATERSHED INCHES; 700 CFS-HRS; 57.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	212.7	(RUNOFF)

15.84	6.8	(RUNOFF)
17.34	5.2	(RUNOFF)
19.44	4.0	(RUNOFF)
22.75	3.1	(RUNOFF)
23.06	3.1	(RUNOFF)
24.00	3.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.03 WATERSHED INCHES; 200 CFS-HRS; 16.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	761.2	(NULL)
18.63	20.1	(NULL)
20.09	18.5	(NULL)
20.64	17.7	(NULL)
21.95	16.3	(NULL)
23.09	14.9	(NULL)
23.74	14.1	(NULL)
24.00	14.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.63 WATERSHED INCHES; 900 CFS-HRS; 74.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

1 TR20 ----- SCS

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	223.3	(RUNOFF)
15.83	8.2	(RUNOFF)
17.32	6.3	(RUNOFF)
18.86	5.0	(RUNOFF)
21.97	4.1	(RUNOFF)
24.02	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.30 WATERSHED INCHES; 222 CFS-HRS; 18.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	752.6	321.23
18.69	20.1	318.36
20.15	18.5	318.34
20.70	17.7	318.33

22.01	16.3	318.32
23.80	14.1	318.29
24.07	13.9	318.29

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.63 WATERSHED INCHES; 900 CFS-HRS; 74.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	933.8	(NULL)
18.65	25.2	(NULL)
20.12	23.2	(NULL)
20.68	22.2	(NULL)
21.99	20.4	(NULL)
23.12	18.6	(NULL)
24.04	17.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.56 WATERSHED INCHES; 1122 CFS-HRS; 92.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

1 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	180.9	(RUNOFF)
18.64	4.0	(RUNOFF)
21.97	3.2	(RUNOFF)
24.02	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.69 WATERSHED INCHES; 183 CFS-HRS; 15.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	70.7	(RUNOFF)
24.02	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.72 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.

THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR     STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	50.8	456.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.21 WATERSHED INCHES;     72 CFS-HRS;     5.9 ACRE-FEET.

OPERATION REACH     XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	50.4	414.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.21 WATERSHED INCHES;     72 CFS-HRS;     5.9 ACRE-FEET.

OPERATION ADDHYD     XSECTION 12

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2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	195.9	(NULL)
20.86	5.0	(NULL)
23.08	4.3	(NULL)
23.73	4.0	(NULL)
24.01	4.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.55 WATERSHED INCHES;     255 CFS-HRS;     21.0 ACRE-FEET.

OPERATION RUNOFF     XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	153.2	(RUNOFF)
15.83	5.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.02	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.35 WATERSHED INCHES;     154 CFS-HRS;     12.8 ACRE-FEET.

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	83.1	399.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.35 WATERSHED INCHES; 154 CFS-HRS; 12.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	258.0	(NULL)
20.06	8.3	(NULL)
21.94	7.3	(NULL)
24.01	6.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.81 WATERSHED INCHES; 409 CFS-HRS; 33.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	255.3	(RUNOFF)
15.84	8.6	(RUNOFF)
17.34	6.6	(RUNOFF)
19.47	5.1	(RUNOFF)
21.96	4.3	(RUNOFF)
24.01	3.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.55 WATERSHED INCHES; 239 CFS-HRS; 19.8 ACRE-FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	251.1	331.55
20.13	8.3	330.29
20.68	8.0	330.28
24.07	6.2	330.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.81 WATERSHED INCHES; 409 CFS-HRS; 33.8 ACRE-FEET.



OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	449.9	(NULL)
20.06	13.3	(NULL)
20.62	12.7	(NULL)
21.94	11.6	(NULL)
23.06	10.6	(NULL)
24.01	9.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.71 WATERSHED INCHES; 648 CFS-HRS; 53.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	1360.9	(NULL)
20.10	36.4	(NULL)
20.64	34.9	(NULL)
21.95	31.9	(NULL)
23.10	29.2	(NULL)
23.75	27.6	(NULL)
24.03	27.5	(NULL)

1

TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 02/06/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,50,100WITHMGMT  
 2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.61 WATERSHED INCHES; 1768 CFS-HRS; 146.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	541.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.19 WATERSHED INCHES; 731 CFS-HRS; 60.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.37	1235.0	238.86
20.14	36.4	234.56
23.14	29.2	234.50
24.09	27.3	234.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.61 WATERSHED INCHES; 1769 CFS-HRS; 146.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.35	1761.3	(NULL)
20.13	52.1	(NULL)
23.13	41.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 2499 CFS-HRS; 206.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.22	54.7	(RUNOFF)
21.96	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 47

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 02/06/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,50,100WITHMGMT  
 2.04TEST  
 12:11:18 PASS 4 JOB NO. 1 PAGE  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	55.3	415.55
20.15	1.2	410.91

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	256.8	(RUNOFF)
20.10	5.2	(RUNOFF)
23.10	4.1	(RUNOFF)
24.03	3.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 275 CFS-HRS; 22.7 ACRE-

FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	229.1	369.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.24 WATERSHED INCHES; 275 CFS-HRS; 22.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	284.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.24 WATERSHED INCHES; 337 CFS-HRS; 27.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	148.7	(RUNOFF)
18.87	3.2	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.21 WATERSHED INCHES; 156 CFS-HRS; 12.9 ACRE-FEET.

1 TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2.04TEST  
12:11:18 PASS 4 JOB NO. 1 PAGE  
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OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	418.0	(NULL)
20.08	9.3	(NULL)
20.61	8.9	(NULL)
23.71	7.0	(NULL)
24.01	6.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.23 WATERSHED INCHES; 494 CFS-HRS; 40.8 ACRE-FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	283.6	342.14
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.24 WATERSHED INCHES;	494 CFS-HRS;	40.8 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	47.2	(RUNOFF)
17.32	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.57 WATERSHED INCHES;	37 CFS-HRS;	3.1 ACRE-
FEET.		

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27. THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .9%.  
\*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	295.1	(NULL)
23.98	7.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.18 WATERSHED INCHES;	531 CFS-HRS;	43.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 29

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	220.3	(RUNOFF)
15.45	6.0	(RUNOFF)
15.82	5.8	(RUNOFF)
17.32	4.4	(RUNOFF)
20.02	3.3	(RUNOFF)
20.58	3.1	(RUNOFF)
20.82	3.1	(RUNOFF)
23.99	2.7	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.78 WATERSHED INCHES;	186 CFS-HRS;	15.4 ACRE-

FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29. THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .1%. \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	220.3	(NULL)
15.45	6.0	(NULL)
15.82	5.8	(NULL)
17.32	4.4	(NULL)
20.02	3.3	(NULL)
20.58	3.1	(NULL)
20.82	3.1	(NULL)
23.99	2.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.78 WATERSHED INCHES; 186 CFS-HRS; 15.4 ACRE-FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	213.3	357.27
15.88	5.8	356.12
17.38	4.4	356.09
20.88	3.1	356.06
24.05	2.7	356.06

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.76 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 31

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION

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2.04TEST  
12:11:18 PASS 4 JOB NO. 1 PAGE  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	433.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.47 WATERSHED INCHES; 616 CFS-HRS; 50.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	572.7	(NULL)
18.86	15.7	(NULL)
20.08	14.5	(NULL)
20.86	13.7	(NULL)
21.96	12.6	(NULL)
23.08	11.5	(NULL)
24.04	10.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.53 WATERSHED INCHES; 801 CFS-HRS; 66.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	148.2	(RUNOFF)
18.65	3.3	(RUNOFF)
20.10	3.0	(RUNOFF)
24.03	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.25 WATERSHED INCHES; 162 CFS-HRS; 13.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	729.7	(NULL)
18.61	19.2	(NULL)
18.85	18.9	(NULL)
20.09	17.5	(NULL)
20.86	16.6	(NULL)
21.97	15.3	(NULL)
23.74	13.1	(NULL)
24.04	13.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.48 WATERSHED INCHES; 963 CFS-HRS; 79.6 ACRE-  
 FEET.

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TR20 ----- SCS

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2.04TEST

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OPERATION REACH XSECTION 35

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	694.0	317.98
20.15	17.5	316.29
20.92	16.6	316.28

22.01	15.3	316.27
23.80	13.1	316.25
24.10	13.0	316.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.49 WATERSHED INCHES; 963 CFS-HRS; 79.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	65.4	(RUNOFF)
23.76	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.30 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .047 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	64.5	328.67
23.78	1.2	323.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.31 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 37

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 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2.04TEST

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	758.3	(NULL)
20.15	19.1	(NULL)
20.91	18.0	(NULL)
22.01	16.6	(NULL)
23.15	15.1	(NULL)
23.80	14.3	(NULL)
24.10	14.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

5.47 WATERSHED INCHES; 1047 CFS-HRS; 86.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.13	246.6	(RUNOFF)
15.84	7.4	(RUNOFF)
17.34	5.7	(RUNOFF)
20.04	4.3	(RUNOFF)
20.60	4.1	(RUNOFF)
23.70	3.2	(RUNOFF)
24.00	3.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.81 WATERSHED INCHES; 212 CFS-HRS; 17.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.27	869.0	(NULL)
23.99	17.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.35 WATERSHED INCHES; 1259 CFS-HRS; 104.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.29	1147.4	(NULL)
23.99	25.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.30 WATERSHED INCHES; 1791 CFS-HRS; 148.0 ACRE-FEET.

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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 2.04TEST  
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OPERATION RUNOFF XSECTION 41

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.17	79.8	(RUNOFF)
17.34	2.0	(RUNOFF)
24.01	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)



5.19 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	28.4	273.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.12 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-  
FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	27.2	222.79

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.11 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	217.1	(RUNOFF)
19.47	6.2	(RUNOFF)
20.11	6.0	(RUNOFF)
21.98	5.3	(RUNOFF)
24.02	4.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.05 WATERSHED INCHES; 238 CFS-HRS; 19.7 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 7

1  
TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION

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2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	217.1	(NULL)
19.47	6.2	(NULL)
20.11	6.0	(NULL)
21.98	5.3	(NULL)
24.02	4.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.05 WATERSHED INCHES; 238 CFS-HRS; 19.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	224.0	(NULL)
20.63	8.5	(NULL)
24.02	6.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.38 WATERSHED INCHES; 316 CFS-HRS; 26.1 ACRE-FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	1075.9	227.59
24.04	24.9	222.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.29 WATERSHED INCHES; 1789 CFS-HRS; 147.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	1223.5	(NULL)
24.03	31.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.88 WATERSHED INCHES; 2104 CFS-HRS; 173.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	655.1	(RUNOFF)

1 TR20 ----- SCS

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 Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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 2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.93 WATERSHED INCHES; 897 CFS-HRS; 74.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.16	89.2	(RUNOFF)
17.34	2.2	(RUNOFF)
24.01	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.52 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	58.1	337.36
24.03	1.2	333.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.52 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	57.3	317.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.52 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	707.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.97 WATERSHED INCHES; 985 CFS-HRS; 81.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 51

1 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

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 2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	69.7	(RUNOFF)
23.74	1.0	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.04 WATERSHED INCHES; 71 CFS-HRS; 5.9 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	58.5	322.59
24.03	1.0	320.81

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.45 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	763.5	278.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.94 WATERSHED INCHES; 1048 CFS-HRS; 86.6 ACRE-FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.45	686.4	278.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.94 WATERSHED INCHES; 1048 CFS-HRS; 86.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 53

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 TR20 ----- SCS  
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 Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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 2.04TEST  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	369.6	(RUNOFF)
18.87	11.0	(RUNOFF)
20.11	10.3	(RUNOFF)
21.97	9.1	(RUNOFF)
23.11	8.3	(RUNOFF)
24.03	7.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

3.03 WATERSHED INCHES; 407 CFS-HRS; 33.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	904.7	(NULL)
24.01	23.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.20 WATERSHED INCHES; 1454 CFS-HRS; 120.2 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	904.7	(NULL)
24.01	23.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.20 WATERSHED INCHES; 1454 CFS-HRS; 120.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	2973.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.65 WATERSHED INCHES; 4602 CFS-HRS; 380.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	42.2	(RUNOFF)
17.34	1.2	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.31 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
12.36 2988.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.64 WATERSHED INCHES; 4638 CFS-HRS; 383.3 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 6, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .006 HOURS.  
\*\*\*

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.49 2711.4 158.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.64 WATERSHED INCHES; 4635 CFS-HRS; 383.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.13 133.5 (RUNOFF)  
17.34 3.0 (RUNOFF)  
21.45 2.0 (RUNOFF)  
24.00 1.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.09 WATERSHED INCHES; 117 CFS-HRS; 9.7 ACRE-FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.55 2711.1 135.95

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.64 WATERSHED INCHES; 4641 CFS-HRS; 383.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 60

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.48 3548.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 6095 CFS-HRS; 503.7 ACRE-
FEET.

\*\*\* WARNING - XSECTION 61
NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.
\*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.48 3548.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.48 WATERSHED INCHES; 6029 CFS-HRS; 498.2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.16 86.7 (RUNOFF)
17.34 2.1 (RUNOFF)
24.01 1.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.70 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.48 3573.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.49 WATERSHED INCHES; 6114 CFS-HRS; 505.3 ACRE-
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63
STARTING TIME = .00 RAIN DEPTH = 8.47 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS
ALTERNATE NO. = 1 STORM NO. =99 RAIN TABLE NO. = 1

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OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	652.9	(RUNOFF)
18.67	16.6	(RUNOFF)
20.13	15.2	(RUNOFF)
20.67	14.5	(RUNOFF)
21.93	13.3	(RUNOFF)
23.12	12.1	(RUNOFF)
24.01	11.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.72 WATERSHED INCHES; 776 CFS-HRS; 64.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	97.8	(RUNOFF)
20.09	2.1	(RUNOFF)
24.02	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.34 WATERSHED INCHES; 101 CFS-HRS; 8.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	93.7	432.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	746.6	(NULL)
18.65	19.1	(NULL)
20.12	17.4	(NULL)
20.67	16.6	(NULL)
23.12	14.0	(NULL)
23.77	13.3	(NULL)
24.01	13.0	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.66 WATERSHED INCHES; 874 CFS-HRS; 72.3 ACRE-



FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.15	259.5	(RUNOFF)
15.84	8.1	(RUNOFF)
17.34	6.2	(RUNOFF)
18.62	5.0	(RUNOFF)
21.45	4.1	(RUNOFF)
21.75	4.0	(RUNOFF)
21.95	4.0	(RUNOFF)
24.00	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.19 WATERSHED INCHES; 247 CFS-HRS; 20.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 5

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.21	961.0	(NULL)
18.63	24.2	(NULL)
20.08	22.0	(NULL)
20.63	21.0	(NULL)
21.95	19.3	(NULL)
23.09	17.7	(NULL)
24.00	16.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.77 WATERSHED INCHES; 1120 CFS-HRS; 92.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	278.1	(RUNOFF)
15.82	9.9	(RUNOFF)
17.31	7.6	(RUNOFF)
18.86	6.1	(RUNOFF)
21.45	5.1	(RUNOFF)
24.02	4.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.40 WATERSHED INCHES; 279 CFS-HRS; 23.0 ACRE-  
FEET.

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OPERATION REACH XSECTION 7

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.28	943.1	321.72
18.69	24.1	318.40
20.15	22.0	318.38
20.70	21.0	318.37
22.01	19.3	318.35
23.15	17.7	318.33
24.07	16.5	318.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 1120 CFS-HRS; 92.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.25	1174.5	(NULL)
18.65	30.3	(NULL)
20.12	27.6	(NULL)
20.67	26.4	(NULL)
21.99	24.2	(NULL)
23.12	22.2	(NULL)
24.04	20.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 1399 CFS-HRS; 115.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	223.2	(RUNOFF)
20.87	4.2	(RUNOFF)
24.02	3.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.84 WATERSHED INCHES; 227 CFS-HRS; 18.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.22	87.2	(RUNOFF)
18.66	2.1	(RUNOFF)
24.02	1.4	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.86 WATERSHED INCHES; 100 CFS-HRS; 8.3 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	70.3	456.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.35 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	70.0	414.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.34 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	250.4	(NULL)
18.61	7.1	(NULL)
20.86	6.0	(NULL)
23.08	5.1	(NULL)
24.01	4.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 318 CFS-HRS; 26.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	185.0	(RUNOFF)
15.83	6.0	(RUNOFF)
17.33	4.6	(RUNOFF)
20.86	3.2	(RUNOFF)
24.02	2.5	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.54 WATERSHED INCHES; 189 CFS-HRS; 15.6 ACRE-  
FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 51,  
VALUE EXTRAPOLATED.  
\*\*\*

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.34	105.1	399.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.54 WATERSHED INCHES; 189 CFS-HRS; 15.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	335.1	(NULL)
20.62	9.5	(NULL)
21.94	8.7	(NULL)
24.01	7.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.97 WATERSHED INCHES; 507 CFS-HRS; 41.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.16	316.5	(RUNOFF)
15.84	10.3	(RUNOFF)
17.34	8.0	(RUNOFF)
19.44	6.1	(RUNOFF)
21.95	5.2	(RUNOFF)
24.01	4.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.68 WATERSHED INCHES; 299 CFS-HRS; 24.7 ACRE-  
FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	328.0	331.81
20.68	9.5	330.31
24.08	7.4	330.27

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.97 WATERSHED INCHES; 507 CFS-HRS; 41.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	565.4	(NULL)
18.58	17.7	(NULL)
20.62	15.2	(NULL)
21.94	13.8	(NULL)
23.07	12.7	(NULL)
24.01	11.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.86 WATERSHED INCHES; 805 CFS-HRS; 66.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.24	1717.2	(NULL)
18.63	48.0	(NULL)
20.10	43.5	(NULL)
20.64	41.6	(NULL)
21.95	38.0	(NULL)
23.10	34.8	(NULL)
24.03	32.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.75 WATERSHED INCHES; 2204 CFS-HRS; 182.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	683.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.30 WATERSHED INCHES; 923 CFS-HRS; 76.3 ACRE-  
FEET.

OPERATION REACH XSECTION 20

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.36	1564.9	239.60
20.14	43.5	234.62
23.15	34.8	234.55
24.09	32.5	234.53

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.75 WATERSHED INCHES; 2203 CFS-HRS; 182.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.35	2231.6	(NULL)
20.13	62.4	(NULL)
23.14	49.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.61 WATERSHED INCHES; 3127 CFS-HRS; 258.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.22	66.5	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.24	65.7	415.70
23.14	1.1	410.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.19	311.9	(RUNOFF)
20.10	6.1	(RUNOFF)
21.97	5.3	(RUNOFF)
24.03	4.5	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 336 CFS-HRS; 27.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	284.3	370.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 336 CFS-HRS; 27.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	349.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 413 CFS-HRS; 34.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	180.8	(RUNOFF)
21.97	3.0	(RUNOFF)
24.02	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.39 WATERSHED INCHES; 192 CFS-HRS; 15.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	515.5	(NULL)
20.08	11.1	(NULL)
20.61	10.6	(NULL)
24.01	8.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.41 WATERSHED INCHES; 605 CFS-HRS; 50.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	429.8	343.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.42 WATERSHED INCHES; 605 CFS-HRS; 50.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	58.8	(RUNOFF)
17.32	1.2	(RUNOFF)
18.58	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.67 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.6%.  
\*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	446.1	(NULL)
23.98	9.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.36 WATERSHED INCHES; 652 CFS-HRS; 53.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	261.8	(RUNOFF)
15.45	7.1	(RUNOFF)
15.82	6.8	(RUNOFF)
17.32	5.2	(RUNOFF)
18.82	4.2	(RUNOFF)
22.41	3.2	(RUNOFF)
22.72	3.1	(RUNOFF)
23.02	3.1	(RUNOFF)
23.99	3.2	(RUNOFF)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.96 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-  
 FEET.

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\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT 1.1%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	261.8	(NULL)
15.45	7.1	(NULL)
15.82	6.8	(NULL)
17.32	5.2	(NULL)
18.82	4.2	(NULL)
22.41	3.2	(NULL)
22.72	3.1	(NULL)
23.02	3.1	(NULL)
23.99	3.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.96 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	255.4	357.40
15.88	6.8	356.14
17.38	5.2	356.11
18.88	4.2	356.09
21.98	3.4	356.07
22.78	3.1	356.07
23.09	3.1	356.07
24.05	3.2	356.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.99 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	521.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.66 WATERSHED INCHES; 750 CFS-HRS; 62.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 32

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	686.9	(NULL)
18.85	18.6	(NULL)
20.08	17.2	(NULL)
20.87	16.2	(NULL)
21.75	15.1	(NULL)
21.97	15.0	(NULL)
23.08	13.6	(NULL)
24.04	12.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.73 WATERSHED INCHES; 975 CFS-HRS; 80.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	178.4	(RUNOFF)
21.97	3.1	(RUNOFF)
24.03	2.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.43 WATERSHED INCHES; 198 CFS-HRS; 16.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	876.5	(NULL)
18.85	22.4	(NULL)
20.09	20.8	(NULL)
20.87	19.6	(NULL)
21.97	18.1	(NULL)
23.09	16.5	(NULL)
24.04	15.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.68 WATERSHED INCHES; 1173 CFS-HRS; 96.9 ACRE-  
FEET.

OPERATION REACH XSECTION 35

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	825.2	318.24
20.15	20.7	316.31
20.91	19.6	316.30
22.01	18.1	316.29
23.15	16.5	316.28
24.10	15.5	316.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 1173 CFS-HRS; 96.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.26	78.9	(RUNOFF)
18.64	2.0	(RUNOFF)
23.76	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.49 WATERSHED INCHES; 102 CFS-HRS; 8.4 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .047 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.29	78.4	328.90
23.77	1.4	323.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.47 WATERSHED INCHES; 102 CFS-HRS; 8.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	903.1	(NULL)
20.15	22.6	(NULL)

20.91	21.3	(NULL)
22.01	19.7	(NULL)
23.15	17.9	(NULL)
24.10	16.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.66 WATERSHED INCHES; 1275 CFS-HRS; 105.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	303.7	(RUNOFF)
15.45	9.3	(RUNOFF)
15.84	8.9	(RUNOFF)
17.34	6.8	(RUNOFF)
19.74	5.1	(RUNOFF)
20.04	5.1	(RUNOFF)
22.42	4.2	(RUNOFF)
22.74	4.1	(RUNOFF)
23.04	4.1	(RUNOFF)
24.00	4.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 263 CFS-HRS; 21.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	1035.2	(NULL)
23.99	20.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.53 WATERSHED INCHES; 1537 CFS-HRS; 127.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	1443.0	(NULL)
23.99	29.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.47 WATERSHED INCHES; 2188 CFS-HRS; 180.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 41

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	97.1	(RUNOFF)
15.84	3.1	(RUNOFF)
17.34	2.4	(RUNOFF)
24.02	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.37 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	49.7	274.20

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.25 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-  
FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	47.8	223.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.26 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	289.3	(RUNOFF)
18.87	8.0	(RUNOFF)
20.86	7.1	(RUNOFF)
21.97	6.6	(RUNOFF)
23.10	6.0	(RUNOFF)
24.03	5.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.01 WATERSHED INCHES; 313 CFS-HRS; 25.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 7

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.21	289.3	(NULL)
18.87	8.0	(NULL)
20.86	7.1	(NULL)
21.97	6.6	(NULL)
23.10	6.0	(NULL)
24.03	5.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.01 WATERSHED INCHES; 313 CFS-HRS; 25.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 44

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.22	297.1	(NULL)
18.59	12.3	(NULL)
20.63	10.2	(NULL)
23.09	8.2	(NULL)
24.03	7.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.38 WATERSHED INCHES; 409 CFS-HRS; 33.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 45

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.50	1290.5	228.71
24.09	29.6	222.89

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.48 WATERSHED INCHES; 2189 CFS-HRS; 180.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.49	1468.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.02 WATERSHED INCHES; 2597 CFS-HRS; 214.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	802.9	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.09 WATERSHED INCHES; 1108 CFS-HRS; 91.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	107.1	(RUNOFF)
15.84	3.3	(RUNOFF)
18.85	2.0	(RUNOFF)
24.01	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.72 WATERSHED INCHES; 107 CFS-HRS; 8.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	59.2	337.87
24.03	1.4	333.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.72 WATERSHED INCHES; 108 CFS-HRS; 8.9 ACRE-  
FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	58.6	317.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.71 WATERSHED INCHES; 107 CFS-HRS; 8.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	858.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.14 WATERSHED INCHES; 1216 CFS-HRS; 100.5 ACRE-

FEET.

OPERATION RUNOFF XSECTION 51

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	84.8	(RUNOFF)
24.02	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.20 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	71.1	322.85
24.03	1.2	320.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.60 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	926.8	279.26

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.10 WATERSHED INCHES; 1294 CFS-HRS; 107.0 ACRE-FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	800.3	279.01

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.10 WATERSHED INCHES; 1294 CFS-HRS; 107.0 ACRE-FEET.



OPERATION RUNOFF XSECTION 53  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	494.4	(RUNOFF)
19.46	13.3	(RUNOFF)
20.86	12.1	(RUNOFF)
21.97	11.3	(RUNOFF)
23.10	10.3	(RUNOFF)
24.03	9.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.99 WATERSHED INCHES; 536 CFS-HRS; 44.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	1077.6	(NULL)
24.01	27.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.28 WATERSHED INCHES; 1830 CFS-HRS; 151.2 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	1077.6	(NULL)
24.01	27.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.28 WATERSHED INCHES; 1830 CFS-HRS; 151.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	3563.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.79 WATERSHED INCHES; 5722 CFS-HRS; 472.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	55.0	(RUNOFF)
20.04	1.1	(RUNOFF)
20.60	1.0	(RUNOFF)
20.83	1.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.31 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	3581.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.77 WATERSHED INCHES; 5769 CFS-HRS; 476.7 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 6, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .006 HOURS.  
\*\*\*

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	3052.9	162.53

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.77 WATERSHED INCHES; 5770 CFS-HRS; 476.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	162.6	(RUNOFF)
15.84	4.7	(RUNOFF)
17.34	3.6	(RUNOFF)
23.04	2.2	(RUNOFF)
23.70	2.0	(RUNOFF)
24.00	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.26 WATERSHED INCHES; 144 CFS-HRS; 11.9 ACRE-  
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,

CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 59.  
 \*\*\*

OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	3052.9	136.42

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 5770 CFS-HRS; 476.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	4051.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.65 WATERSHED INCHES; 7600 CFS-HRS; 628.1 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	4051.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.59 WATERSHED INCHES; 7528 CFS-HRS; 622.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	103.9	(RUNOFF)
15.84	3.2	(RUNOFF)
17.34	2.4	(RUNOFF)
24.01	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.90 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET)  
 12.49 4081.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.61 WATERSHED INCHES; 7631 CFS-HRS; 630.7 ACRE-  
 FEET.

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EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 5

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 6

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				AMOUNT	ELEVATION	TIME	RATE
ID	OPERATION	AREA (SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)
RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT							.0 hrs.
RAINTABLE NUMBER 1, ARC 2							
MAIN TIME INCREMENT .060 HOURS							
ALTERNATE		1	STORM	2			
XSECTION	1	RUNOFF	.21	1.22	---	12.26	137 652.4
XSECTION	2	RUNOFF	.03	1.03	---	12.20	18 600.0
STRUCTURE	58	RESVOR	.03	1.02	429.15	13.47	2 66.7
XSECTION	4	RUNOFF	.06	1.47	---	12.16	63 1050.0
XSECTION	6	RUNOFF	.08	1.06	---	12.19	53 662.5
XSECTION	9	RUNOFF	.06	1.27	---	12.19	49 816.7
XSECTION	10	RUNOFF	.03	1.29	---	12.23	19 633.3

STRUCTURE	52	RESVOR	.03	.86	454.47	13.33T	3T	100.0
XSECTION	12	ADDHYD	.09	1.15	---	12.19	49	544.4
XSECTION	13	RUNOFF	.04	1.67	---	12.18	49	1225.0
STRUCTURE	51	RESVOR	.04	1.67	397.47	12.42	22	550.0
XSECTION	15	RUNOFF	.08	1.19	---	12.16	66	825.0
XSECTION	17	ADDHYD	.21	1.27	---	12.21	110	523.8
XSECTION	18	ADDHYD	.59	1.23	---	12.25	334	566.1
XSECTION	19	RUNOFF	.27	1.01	---	12.33	122	451.9
XSECTION	20	REACH	.59	1.23	235.86	12.38	306	518.6
XSECTION	21	ADDHYD	.86	1.16	---	12.36	426	495.3
XSECTION	22	RUNOFF	.02	1.60	---	12.22	17	850.0
STRUCTURE	47	RESVOR	.02	1.60	414.10	12.37	12	600.0
XSECTION	23	RUNOFF	.08	1.60	---	12.20	80	1000.0
STRUCTURE	32	RESVOR	.08	1.60	368.24	12.32	61	762.5
XSECTION	25	RUNOFF	.05	1.58	---	12.19	46	920.0
STRUCTURE	34	RESVOR	.15	1.59	337.19	12.68	54	360.0
XSECTION	27	RUNOFF	.01	1.19	---	12.12	13	1300.0
XSECTION	28	ADDHYD	.16	1.56	---	12.67	56	350.0
XSECTION	29	RUNOFF	.05	1.96	---	12.11	81	1620.0
STRUCTURE	64	RESVOR	.05	1.96	---	12.11	81	1620.0
XSECTION	31	RUNOFF	.17	1.75	---	12.33	142	835.3

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SUMMARY TABLE 1

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION	TIME	RATE	RATE	
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	2					
XSECTION	33	RUNOFF	.05	1.60	---	12.21	46	920.0
XSECTION	36	RUNOFF	.02	1.64	---	12.27	21	1050.0
STRUCTURE	33	RESVOR	.02	1.64	325.68	12.45	15	750.0
XSECTION	38	RUNOFF	.07	1.33	---	12.13	69	985.7
XSECTION	39	ADDHYD	.36	1.67	---	12.32	265	736.1
XSECTION	41	RUNOFF	.02	1.57	---	12.18	25	1250.0
STRUCTURE	29	RESVOR	.02	1.56	268.66	13.00	4	200.0
XSECTION	43	RUNOFF	.12	.51	---	12.26	26	216.7
STRUCTURE	7	RESVOR	.12	.51	---	12.26	26	216.7
XSECTION	44	ADDHYD	.14	.68	---	12.26	28	200.0

XSECTION	46	ADDHYD	.67	1.43	---	12.44	320	477.6
XSECTION	47	RUNOFF	.28	1.40	---	12.32	185	660.7
XSECTION	48	RUNOFF	.02	1.78	---	12.17	30	1500.0
STRUCTURE	40	RESVOR	.02	1.78	334.19	12.33	16	800.0
XSECTION	51	RUNOFF	.02	1.47	---	12.19	21	1050.0
STRUCTURE	43	RESVOR	.02	.97	321.02	12.86	4	200.0
XSECTION	52	ADDHYD	.33	1.40	277.07	12.33	198	600.0
XSECTION	53	RUNOFF	.21	.50	---	12.26	44	209.5
XSECTION	54	ADDHYD	.54	1.05	---	12.46	208	385.2
STRUCTURE	5	RESVOR	.54	1.05	---	12.46	208	385.2
XSECTION	55	ADDHYD	1.53	1.28	---	12.39	739	483.0
XSECTION	56	RUNOFF	.02	.61	---	12.14	6	300.0
XSECTION	57	ADDHYD	1.55	1.27	---	12.39	742	478.7
STRUCTURE	6	RESVOR	1.55	1.27	145.06	12.40	740	477.4
XSECTION	58	RUNOFF	.04	1.51	---	12.14	41	1025.0
XSECTION	62	RUNOFF	.02	1.90	---	12.17	30	1500.0
XSECTION	63	ADDHYD	2.11	1.20	---	12.47	954	452.1

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE AREA	RUNOFF AMOUNT	ELEVATION (FT)	PEAK DISCHARGE		
					TIME (HR)	RATE (CFS)	RATE (CSM)

RAINFALL OF 4.10 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE	1	STORM	5					
XSECTION	1	RUNOFF	.21	1.90	---	12.25	218	1038.1
XSECTION	2	RUNOFF	.03	1.67	---	12.20	30	1000.0
STRUCTURE	58	RESVOR	.03	1.64	430.23	12.68	8	266.7
XSECTION	4	RUNOFF	.06	2.21	---	12.15	96	1600.0
XSECTION	6	RUNOFF	.08	1.70	---	12.19	88	1100.0
XSECTION	9	RUNOFF	.06	1.98	---	12.19	77	1283.3
XSECTION	10	RUNOFF	.03	1.99	---	12.23	30	1000.0
STRUCTURE	52	RESVOR	.03	1.54	454.90	12.72	9	300.0
XSECTION	12	ADDHYD	.09	1.84	---	12.19	77	855.6
XSECTION	13	RUNOFF	.04	2.45	---	12.18	72	1800.0
STRUCTURE	51	RESVOR	.04	2.45	397.96	12.39	34	850.0
XSECTION	15	RUNOFF	.08	1.87	---	12.16	106	1325.0

XSECTION	17	ADDHYD	.21	1.98	---	12.20	178	847.6
XSECTION	18	ADDHYD	.59	1.92	---	12.24	539	913.6
XSECTION	19	RUNOFF	.27	1.64	---	12.32	208	770.4
XSECTION	20	REACH	.59	1.92	236.60	12.37	487	825.4
XSECTION	21	ADDHYD	.86	1.83	---	12.36	691	803.5
XSECTION	22	RUNOFF	.02	2.37	---	12.22	25	1250.0
STRUCTURE	47	RESVOR	.02	2.37	414.35	12.33	21	1050.0
XSECTION	23	RUNOFF	.08	2.37	---	12.20	119	1487.5
STRUCTURE	32	RESVOR	.08	2.37	368.74	12.32	86	1075.0
XSECTION	25	RUNOFF	.05	2.35	---	12.19	68	1360.0
STRUCTURE	34	RESVOR	.15	2.36	338.39	12.46	127	846.7
XSECTION	27	RUNOFF	.01	1.88	---	12.12	20	2000.0

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)					
ALTERNATE	1	STORM	5					
XSECTION	28	ADDHYD	.16	2.33	---	12.46	132	825.0
XSECTION	29	RUNOFF	.05	2.79	---	12.11	113	2260.0
STRUCTURE	64	RESVOR	.05	2.79	---	12.11	113	2260.0
XSECTION	31	RUNOFF	.17	2.55	---	12.32	207	1217.6
XSECTION	33	RUNOFF	.05	2.38	---	12.20	68	1360.0
XSECTION	36	RUNOFF	.02	2.42	---	12.27	30	1500.0
STRUCTURE	33	RESVOR	.02	2.42	327.30	12.44	24	1200.0
XSECTION	38	RUNOFF	.07	2.05	---	12.13	107	1528.6
XSECTION	39	ADDHYD	.36	2.46	---	12.31	390	1083.3
XSECTION	41	RUNOFF	.02	2.34	---	12.17	37	1850.0
STRUCTURE	29	RESVOR	.02	2.32	270.05	12.93	5	250.0
XSECTION	43	RUNOFF	.12	.96	---	12.23	61	508.3
STRUCTURE	7	RESVOR	.12	.96	---	12.23	61	508.3
XSECTION	44	ADDHYD	.14	1.18	---	12.24	63	450.0
XSECTION	46	ADDHYD	.67	2.15	---	12.55	505	753.7
XSECTION	47	RUNOFF	.28	2.14	---	12.32	285	1017.9
XSECTION	48	RUNOFF	.02	2.59	---	12.17	44	2200.0
STRUCTURE	40	RESVOR	.02	2.59	335.09	12.35	22	1100.0
XSECTION	51	RUNOFF	.02	2.22	---	12.18	31	1550.0

STRUCTURE	43	RESVOR	.02	1.69	321.43	12.41	15	750.0
XSECTION	52	ADDHYD	.33	2.14	277.35	12.33	315	954.5
XSECTION	53	RUNOFF	.21	.95	---	12.23	103	490.5
XSECTION	54	ADDHYD	.54	1.68	---	12.43	351	650.0
STRUCTURE	5	RESVOR	.54	1.68	---	12.43	351	650.0
XSECTION	55	ADDHYD	1.53	1.97	---	12.40	1132	739.9
XSECTION	56	RUNOFF	.02	1.11	---	12.14	13	650.0
XSECTION	57	ADDHYD	1.55	1.96	---	12.39	1137	733.5
STRUCTURE	6	RESVOR	1.55	1.96	147.48	12.42	1136	732.9
XSECTION	58	RUNOFF	.04	2.27	---	12.13	61	1525.0
XSECTION	62	RUNOFF	.02	2.72	---	12.16	43	2150.0

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL DRAINAGE			RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE		
	OPERATION	AREA (SQ MI)				TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1		STORM	5					
XSECTION	63	ADDHYD	2.11	1.87	---	12.47	1493	707.6
RAINFALL OF		4.91 inches AND	24.00 hr	DURATION,	BEGINS AT	.0 hrs.		
ALTERNATE 1		STORM	10					
XSECTION	1	RUNOFF	.21	2.56	---	12.25	295	1404.8
XSECTION	2	RUNOFF	.03	2.29	---	12.19	42	1400.0
STRUCTURE	58	RESVOR	.03	2.25	430.98	12.52	16	533.3
XSECTION	4	RUNOFF	.06	2.91	---	12.15	125	2083.3
XSECTION	6	RUNOFF	.08	2.33	---	12.18	121	1512.5
XSECTION	9	RUNOFF	.06	2.64	---	12.18	103	1716.7
XSECTION	10	RUNOFF	.03	2.67	---	12.23	40	1333.3
STRUCTURE	52	RESVOR	.03	2.20	455.36	12.60	15	500.0
XSECTION	12	ADDHYD	.09	2.51	---	12.19	104	1155.6
XSECTION	13	RUNOFF	.04	3.18	---	12.18	92	2300.0
STRUCTURE	51	RESVOR	.04	3.18	398.37	12.38	46	1150.0
XSECTION	15	RUNOFF	.08	2.53	---	12.16	143	1787.5
XSECTION	17	ADDHYD	.21	2.65	---	12.20	243	1157.1
XSECTION	18	ADDHYD	.59	2.58	---	12.24	733	1242.4
XSECTION	19	RUNOFF	.27	2.26	---	12.32	290	1074.1



XSECTION	20	REACH	.59	2.58	237.23	12.37	658	1115.3
XSECTION	21	ADDHYD	.86	2.48	---	12.35	942	1095.3
XSECTION	22	RUNOFF	.02	3.09	---	12.22	33	1650.0
STRUCTURE	47	RESVOR	.02	3.09	414.77	12.32	27	1350.0
XSECTION	23	RUNOFF	.08	3.09	---	12.20	154	1925.0
STRUCTURE	32	RESVOR	.08	3.09	369.12	12.30	123	1537.5
XSECTION	25	RUNOFF	.05	3.07	---	12.19	89	1780.0
STRUCTURE	34	RESVOR	.15	3.08	338.90	12.39	185	1233.3
XSECTION	27	RUNOFF	.01	2.54	---	12.12	27	2700.0
XSECTION	28	ADDHYD	.16	3.04	---	12.37	192	1200.0

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AMOUNT	ELEVATION	TIME	RATE	RATE
ID	OPERATION	AREA (SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	10					
XSECTION	29	RUNOFF	.05	3.56	---	12.11	142	2840.0
STRUCTURE	64	RESVOR	.05	3.56	---	12.11	142	2840.0
XSECTION	31	RUNOFF	.17	3.28	---	12.32	264	1552.9
XSECTION	33	RUNOFF	.05	3.10	---	12.20	89	1780.0
XSECTION	36	RUNOFF	.02	3.14	---	12.27	39	1950.0
STRUCTURE	33	RESVOR	.02	3.14	327.87	12.39	34	1700.0
XSECTION	38	RUNOFF	.07	2.74	---	12.13	143	2042.9
XSECTION	39	ADDHYD	.36	3.18	---	12.30	512	1422.2
XSECTION	41	RUNOFF	.02	3.05	---	12.17	48	2400.0
STRUCTURE	29	RESVOR	.02	3.02	271.34	12.89	7	350.0
XSECTION	43	RUNOFF	.12	1.43	---	12.23	96	800.0
STRUCTURE	7	RESVOR	.12	1.43	---	12.23	96	800.0
XSECTION	44	ADDHYD	.14	1.69	---	12.23	100	714.3
XSECTION	46	ADDHYD	.67	2.82	---	12.44	712	1062.7
XSECTION	47	RUNOFF	.28	2.83	---	12.32	379	1353.6
XSECTION	48	RUNOFF	.02	3.32	---	12.17	55	2750.0
STRUCTURE	40	RESVOR	.02	3.32	336.30	12.31	36	1800.0
XSECTION	51	RUNOFF	.02	2.92	---	12.18	41	2050.0
STRUCTURE	43	RESVOR	.02	2.37	321.86	12.32	28	1400.0
XSECTION	52	ADDHYD	.33	2.83	277.62	12.33	432	1309.1

XSECTION	53	RUNOFF	.21	1.42	---	12.22	164	781.0
XSECTION	54	ADDHYD	.54	2.29	---	12.41	497	920.4
STRUCTURE	5	RESVOR	.54	2.29	---	12.41	497	920.4
XSECTION	55	ADDHYD	1.53	2.63	---	12.39	1633	1067.3
XSECTION	56	RUNOFF	.02	1.62	---	12.14	20	1000.0
XSECTION	57	ADDHYD	1.55	2.62	---	12.38	1640	1058.1
STRUCTURE	6	RESVOR	1.55	2.62	150.46	12.41	1630	1051.6
XSECTION	58	RUNOFF	.04	2.97	---	12.13	79	1975.0
XSECTION	62	RUNOFF	.02	3.48	---	12.16	54	2700.0
XSECTION	63	ADDHYD	2.11	2.51	---	12.46	2130	1009.5

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
RAINFALL OF 7.23 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.								
ALTERNATE 1 STORM 50								
XSECTION	1	RUNOFF	.21	4.59	---	12.24	526	2504.8
XSECTION	2	RUNOFF	.03	4.24	---	12.19	78	2600.0
STRUCTURE	58	RESVOR	.03	4.15	432.07	12.26	71	2366.7
XSECTION	4	RUNOFF	.06	5.03	---	12.15	213	3550.0
XSECTION	6	RUNOFF	.08	4.30	---	12.18	223	2787.5
XSECTION	9	RUNOFF	.06	4.69	---	12.18	181	3016.7
XSECTION	10	RUNOFF	.03	4.72	---	12.22	71	2366.7
STRUCTURE	52	RESVOR	.03	4.21	456.22	12.38	51	1700.0
XSECTION	12	ADDHYD	.09	4.55	---	12.19	196	2177.8
XSECTION	13	RUNOFF	.04	5.35	---	12.17	153	3825.0
STRUCTURE	51	RESVOR	.04	5.35	399.39	12.35	83	2075.0
XSECTION	15	RUNOFF	.08	4.55	---	12.16	255	3187.5
XSECTION	17	ADDHYD	.21	4.71	---	12.20	450	2142.9
XSECTION	18	ADDHYD	.59	4.61	---	12.25	1361	2306.8
XSECTION	19	RUNOFF	.27	4.19	---	12.31	541	2003.7
XSECTION	20	REACH	.59	4.61	238.86	12.37	1235	2093.2
XSECTION	21	ADDHYD	.86	4.48	---	12.35	1761	2047.7
XSECTION	22	RUNOFF	.02	5.24	---	12.22	55	2750.0
STRUCTURE	47	RESVOR	.02	5.24	415.55	12.26	55	2750.0
XSECTION	23	RUNOFF	.08	5.24	---	12.19	257	3212.5

STRUCTURE	32	RESVOR	.08	5.24	369.84	12.26	229	2862.5
XSECTION	25	RUNOFF	.05	5.21	---	12.19	149	2980.0
STRUCTURE	34	RESVOR	.15	5.24	342.14	12.41	284	1893.3
XSECTION	27	RUNOFF	.01	4.57	---	12.11	47	4700.0

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
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HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AMOUNT	ELEVATION	TIME	RATE	RATE
ID	OPERATION	AREA (SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	50					
XSECTION	28	ADDHYD	.16	5.18	---	12.39	295	1843.8
XSECTION	29	RUNOFF	.05	5.78	---	12.11	220	4400.0
STRUCTURE	64	RESVOR	.05	5.78	---	12.11	220	4400.0
XSECTION	31	RUNOFF	.17	5.47	---	12.31	433	2547.1
XSECTION	33	RUNOFF	.05	5.25	---	12.20	148	2960.0
XSECTION	36	RUNOFF	.02	5.30	---	12.26	65	3250.0
STRUCTURE	33	RESVOR	.02	5.31	328.67	12.29	65	3250.0
XSECTION	38	RUNOFF	.07	4.81	---	12.13	247	3528.6
XSECTION	39	ADDHYD	.36	5.35	---	12.27	869	2413.9
XSECTION	41	RUNOFF	.02	5.19	---	12.17	80	4000.0
STRUCTURE	29	RESVOR	.02	5.12	273.78	12.45	28	1400.0
XSECTION	43	RUNOFF	.12	3.05	---	12.22	217	1808.3
STRUCTURE	7	RESVOR	.12	3.05	---	12.22	217	1808.3
XSECTION	44	ADDHYD	.14	3.38	---	12.22	224	1600.0
XSECTION	46	ADDHYD	.67	4.88	---	12.40	1223	1825.4
XSECTION	47	RUNOFF	.28	4.93	---	12.31	655	2339.3
XSECTION	48	RUNOFF	.02	5.52	---	12.16	89	4450.0
STRUCTURE	40	RESVOR	.02	5.52	337.36	12.29	58	2900.0
XSECTION	51	RUNOFF	.02	5.04	---	12.18	70	3500.0
STRUCTURE	43	RESVOR	.02	4.45	322.59	12.26	59	2950.0
XSECTION	52	ADDHYD	.33	4.94	278.85	12.31	764	2315.2
XSECTION	53	RUNOFF	.21	3.03	---	12.21	370	1761.9
XSECTION	54	ADDHYD	.54	4.20	---	12.38	905	1675.9
STRUCTURE	5	RESVOR	.54	4.20	---	12.38	905	1675.9
XSECTION	55	ADDHYD	1.53	4.65	---	12.36	2973	1943.1
XSECTION	56	RUNOFF	.02	3.31	---	12.13	42	2100.0
XSECTION	57	ADDHYD	1.55	4.64	---	12.36	2988	1927.7

STRUCTURE	6	RESVOR	1.55	4.64	158.96	12.49	2711	1749.0
XSECTION	58	RUNOFF	.04	5.09	---	12.13	134	3350.0
XSECTION	62	RUNOFF	.02	5.70	---	12.16	87	4350.0

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F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ALTERNATE	1	STORM	50					
XSECTION	63	ADDHYD	2.11	4.49	---	12.48	3574	1693.8
RAINFALL OF 8.47 inches AND 24.00 hr DURATION, BEGINS AT						.0 hrs.		
ALTERNATE	1	STORM	99					
XSECTION	1	RUNOFF	.21	5.72	---	12.24	653	3109.5
XSECTION	2	RUNOFF	.03	5.34	---	12.19	98	3266.7
STRUCTURE	58	RESVOR	.03	5.24	432.27	12.24	94	3133.3
XSECTION	4	RUNOFF	.06	6.19	---	12.15	259	4316.7
XSECTION	6	RUNOFF	.08	5.40	---	12.18	278	3475.0
XSECTION	9	RUNOFF	.06	5.84	---	12.18	223	3716.7
XSECTION	10	RUNOFF	.03	5.86	---	12.22	87	2900.0
STRUCTURE	52	RESVOR	.03	5.35	456.47	12.34	70	2333.3
XSECTION	12	ADDHYD	.09	5.69	---	12.20	250	2777.8
XSECTION	13	RUNOFF	.04	6.54	---	12.17	185	4625.0
STRUCTURE	51	RESVOR	.04	6.54	399.85	12.34	105	2625.0
XSECTION	15	RUNOFF	.08	5.68	---	12.16	317	3962.5
XSECTION	17	ADDHYD	.21	5.86	---	12.20	565	2690.5
XSECTION	18	ADDHYD	.59	5.75	---	12.24	1717	2910.2
XSECTION	19	RUNOFF	.27	5.30	---	12.31	684	2533.3
XSECTION	20	REACH	.59	5.75	239.60	12.36	1565	2652.5
XSECTION	21	ADDHYD	.86	5.61	---	12.35	2232	2595.3
XSECTION	22	RUNOFF	.02	6.42	---	12.22	67	3350.0
STRUCTURE	47	RESVOR	.02	6.42	415.70	12.24	66	3300.0
XSECTION	23	RUNOFF	.08	6.42	---	12.19	312	3900.0
STRUCTURE	32	RESVOR	.08	6.42	370.13	12.26	284	3550.0
XSECTION	25	RUNOFF	.05	6.39	---	12.19	181	3620.0
STRUCTURE	34	RESVOR	.15	6.42	343.30	12.36	430	2866.7

XSECTION	27	RUNOFF	.01	5.67	---	12.11	59	5900.0
XSECTION	28	ADDHYD	.16	6.36	---	12.35	446	2787.5

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:

F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ALTERNATE	1	STORM	99					
XSECTION	29	RUNOFF	.05	6.96	---	12.11	262	5240.0
STRUCTURE	64	RESVOR	.05	6.96	---	12.11	262	5240.0
XSECTION	31	RUNOFF	.17	6.66	---	12.31	522	3070.6
XSECTION	33	RUNOFF	.05	6.43	---	12.20	178	3560.0
XSECTION	36	RUNOFF	.02	6.49	---	12.26	79	3950.0
STRUCTURE	33	RESVOR	.02	6.47	328.90	12.29	78	3900.0
XSECTION	38	RUNOFF	.07	5.96	---	12.13	304	4342.9
XSECTION	39	ADDHYD	.36	6.53	---	12.28	1035	2875.0
XSECTION	41	RUNOFF	.02	6.37	---	12.17	97	4850.0
STRUCTURE	29	RESVOR	.02	6.25	274.20	12.36	50	2500.0
XSECTION	43	RUNOFF	.12	4.01	---	12.21	289	2408.3
STRUCTURE	7	RESVOR	.12	4.01	---	12.21	289	2408.3
XSECTION	44	ADDHYD	.14	4.38	---	12.22	297	2121.4
XSECTION	46	ADDHYD	.67	6.02	---	12.49	1469	2192.5
XSECTION	47	RUNOFF	.28	6.09	---	12.31	803	2867.9
XSECTION	48	RUNOFF	.02	6.72	---	12.16	107	5350.0
STRUCTURE	40	RESVOR	.02	6.72	337.87	12.32	59	2950.0
XSECTION	51	RUNOFF	.02	6.20	---	12.18	85	4250.0
STRUCTURE	43	RESVOR	.02	5.60	322.85	12.26	71	3550.0
XSECTION	52	ADDHYD	.33	6.10	279.26	12.31	927	2809.1
XSECTION	53	RUNOFF	.21	3.99	---	12.21	494	2352.4
XSECTION	54	ADDHYD	.54	5.28	---	12.36	1078	1996.3
STRUCTURE	5	RESVOR	.54	5.28	---	12.36	1078	1996.3
XSECTION	55	ADDHYD	1.53	5.79	---	12.38	3563	2328.8
XSECTION	56	RUNOFF	.02	4.31	---	12.13	55	2750.0
XSECTION	57	ADDHYD	1.55	5.77	---	12.38	3581	2310.3
STRUCTURE	6	RESVOR	1.55	5.77	162.53	12.56	3053	1969.7
XSECTION	58	RUNOFF	.04	6.26	---	12.13	163	4075.0
XSECTION	62	RUNOFF	.02	6.90	---	12.16	104	5200.0

XSECTION 63 ADDHYD 2.11 5.61 --- 12.49 4081 1934.1  
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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.

QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION

ROUTING PARAMETERS

XSEC ID	REACH LENGTH COEFF	FLOOD PLAIN	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR	PEAK RATIO Q/I	ATT- KIN (C)
		LENGTH	PEAK	TIME	PEAK	TIME	COEFF	POWER			
	(FT)	(FT)	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)	(Q*)	

BASEFLOW IS .0 CFS

ALTERNATE	1	STORM	2								
7	2055		186	12.2	184	12.3	1.65	1.52	.011	.988	
.80?											
11	1397		3	13.3	3	13.5	2.53	1.54	.004	.990	
.47											
16	2449		64	12.2	59	12.3	2.42	1.40	.021	.928	
.55											
20	4470		333	12.2	305	12.4	1.73	1.47	.031	.916	
.50											
30	1561		80	12.1	74	12.2	1.16	1.56	.030	.920	
.73?											
35	2077		236	12.2	221	12.4	1.15	1.41	.029	.936	
.57											
42	2112		4	13.0	4	13.1	3.54	1.39	.006	.996	
.40											
45	3148		310	12.3	297	12.5	4.57	1.16	.037	.958	
.50											
49	1829		16	12.4	15	12.5	1.44	1.42	.038	.937	
.40											
52	4744		197	12.4	178	12.5	1.16	1.52	.045	.903	
.38											
59	1671		738	12.4	736	12.5	3.23	1.24	.012	.997	
.86?											

ALTERNATE	1	STORM	5								
7	2055		295	12.2	291	12.3	1.75	1.50	.010	.984	
.86?											
11	1397		9	12.7	9	12.8	2.53	1.54	.005	.990	

.64										
16	2449	102	12.2	96	12.3	2.47	1.39	.019	.940	
.60										
20	4470	539	12.2	486	12.4	2.57	1.33	.043	.902	
.47										
30	1561	113	12.1	106	12.2	1.20	1.54	.025	.940	
.77?										
35	2077	342	12.2	324	12.3	1.19	1.40	.026	.946	
.61										
42	2112	5	12.9	5	13.1	3.54	1.39	.005	.997	
.44										
45	3148	488	12.4	469	12.5	5.06	1.13	.043	.961	
.49										
49	1829	22	12.4	21	12.5	1.46	1.41	.030	.948	
.42										
52	4744	313	12.4	288	12.5	1.23	1.50	.040	.919	
.42										
59	1671	1136	12.4	1133	12.5	3.20	1.25	.011	.997	
.90?										
ALTERNATE		1	STORM	10						
-----										
7	2055	398	12.2	395	12.3	1.91	1.47	.010	.993	
.89?										
11	1397	15	12.6	15	12.7	2.53	1.54	.005	.993	
.72?										

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MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

		HYDROGRAPH INFORMATION				ROUTING PARAMETERS				
		INFLOW		OUTFLOW		Q-A EQ.		LENGTH	PEAK	ATT-
XSEC	REACH	FLOOD	PEAK	TIME	PEAK	TIME	COEFF	POWER	RATIO	KIN
ID	LENGTH	PLAIN	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	Q/I	(C)
COEFF	(FT)	(FT)						(k*)	(Q*)	
ALTERNATE		1	STORM	10						
-----										
16	2449		137	12.2	130	12.3	2.50	1.38	.017	.952
.63										
20	4470		733	12.2	658	12.4	3.29	1.25	.052	.898
.46										
30	1561		141	12.1	135	12.2	1.23	1.53	.022	.952
.81?										

35	2077	436	12.2	418	12.3	1.22	1.39	.024	.959
.63									
42	2112	7	12.9	7	13.0	3.54	1.39	.005	.998
.47									
45	3148	701	12.3	647	12.5	5.71	1.09	.054	.922
.48									
49	1829	35	12.3	31	12.4	1.49	1.40	.036	.869
.46									
52	4744	429	12.3	396	12.5	1.29	1.48	.038	.922
.45									
59	1671	1630	12.4	1627	12.5	3.32	1.24	.011	.998
.93?									

ALTERNATE 1 STORM 50

7	2055	752	12.2	749	12.3	3.07	1.31	.016	.996
.87?									
11	1397	50	12.4	50	12.4	2.60	1.51	.007	.988
.90?									
16	2449	256	12.2	251	12.3	2.57	1.37	.016	.978
.70?									
20	4470	1360	12.2	1234	12.4	3.92	1.20	.055	.908
.47									
30	1561	219	12.1	213	12.2	1.29	1.51	.018	.971
.87?									
35	2077	713	12.2	693	12.3	1.32	1.37	.021	.972
.68?									
42	2112	28	12.5	27	12.5	3.56	1.38	.009	.956
.61									
45	3148	1147	12.3	1076	12.4	6.54	1.05	.060	.938
.45									
49	1829	58	12.3	57	12.5	1.51	1.38	.031	.979
.51									
52	4744	763	12.3	683	12.5	1.85	1.33	.059	.895
.39									
59	1671	2711	12.5	2711	12.5	3.19	1.25	.009	1.000
.99?									

ALTERNATE 1 STORM 99

7	2055	946	12.2	936	12.3	3.39	1.28	.017	.989
.88?									
11	1397	70	12.4	70	12.4	2.65	1.49	.008	.999
.95?									
16	2449	335	12.2	327	12.3	2.62	1.36	.015	.977
.73?									

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS



USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION				ROUTING PARAMETERS				
			INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR	PEAK RATIO Q/I	ATT-KIN
COEFF			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)	(k*)	(Q*)	(C)
	ALTERNATE	1	STORM	99							
20	4470		1717	12.2	1565	12.4	3.99	1.20	.054	.911	
.48											
30	1561		261	12.1	255	12.2	1.32	1.50	.016	.978	
.89?											
35	2077		859	12.2	823	12.3	1.76	1.29	.027	.958	
.63											
42	2112		50	12.4	48	12.5	3.60	1.36	.013	.958	
.67?											
45	3148		1424	12.4	1283	12.5	5.69	1.02	.087	.901	
.36											
49	1829		59	12.3	59	12.5	1.52	1.38	.024	.990	
.51											
52	4744		927	12.3	800	12.5	2.57	1.21	.089	.863	
.32											
59	1671		3051	12.5	3051	12.5	3.11	1.25	.007	1.000	
1.00?											

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99
STRUCTURE 64	.05					
-----						
ALTERNATE 262	1	81	113	142	220	
STRUCTURE 58	.03					
-----						
ALTERNATE 94	1	2	8	16	71	
STRUCTURE 52	.03					

ALTERNATE 70	1		3	9	15	51
STRUCTURE	51	.04				
ALTERNATE 105	1		22	34	46	83
STRUCTURE	47	.02				
ALTERNATE 66	1		12	21	27	55
STRUCTURE	43	.02				
ALTERNATE 71	1		4	15	28	59
STRUCTURE	40	.02				
ALTERNATE 59	1		16	22	36	58
STRUCTURE	34	.15				
ALTERNATE 430	1		54	127	185	284
STRUCTURE	33	.02				
ALTERNATE 78	1		15	24	34	65
STRUCTURE	32	.08				
ALTERNATE 284	1		61	86	123	229
STRUCTURE	29	.02				
ALTERNATE 50	1		4	5	7	28
STRUCTURE	7	.12				
ALTERNATE 289	1		26	61	96	217
STRUCTURE	6	1.55				
ALTERNATE 3053	1		740	1136	1630	2711
STRUCTURE	5	.54				

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STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99
STRUCTURE 5	.54					
ALTERNATE 1078	1	208	351	497	905	
XSECTION 1	.21					
ALTERNATE 653	1	137	218	295	526	
XSECTION 2	.03					
ALTERNATE 98	1	18	30	42	78	
XSECTION 4	.06					
ALTERNATE 259	1	63	96	125	213	
XSECTION 6	.08					
ALTERNATE 278	1	53	88	121	223	
XSECTION 9	.06					
ALTERNATE 223	1	49	77	103	181	
XSECTION 10	.03					
ALTERNATE 87	1	19	30	40	71	
XSECTION 12	.09					
ALTERNATE 250	1	49	77	104	196	
XSECTION 13	.04					
ALTERNATE 185	1	49	72	92	153	
XSECTION 15	.08					
ALTERNATE 317	1	66	106	143	255	
XSECTION 17	.21					

ALTERNATE 565	1	110	178	243	450
XSECTION	18	.59			
ALTERNATE 1717	1	334	539	733	1361
XSECTION	19	.27			
ALTERNATE 684	1	122	208	290	541
XSECTION	20	.59			
ALTERNATE 1565	1	306	487	658	1235

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99
XSECTION 21	.86					
ALTERNATE 2232	1	426	691	942	1761	
XSECTION 22	.02					
ALTERNATE 67	1	17	25	33	55	
XSECTION 23	.08					
ALTERNATE 312	1	80	119	154	257	
XSECTION 25	.05					
ALTERNATE 181	1	46	68	89	149	
XSECTION 27	.01					
ALTERNATE 59	1	13	20	27	47	

XSECTION	28	.16				
ALTERNATE	1		56	132	192	295
446						
XSECTION	29	.05				
ALTERNATE	1		81	113	142	220
262						
XSECTION	31	.17				
ALTERNATE	1		142	207	264	433
522						
XSECTION	33	.05				
ALTERNATE	1		46	68	89	148
178						
XSECTION	36	.02				
ALTERNATE	1		21	30	39	65
79						
XSECTION	38	.07				
ALTERNATE	1		69	107	143	247
304						
XSECTION	39	.36				
ALTERNATE	1		265	390	512	869
1035						
XSECTION	41	.02				
ALTERNATE	1		25	37	48	80
97						

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STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99
XSECTION	43	.12				
ALTERNATE	1		26	61	96	217
289						

XSECTION	44		.14				
-----							
ALTERNATE	1			28	63	100	224
297							
XSECTION	46		.67				
-----							
ALTERNATE	1			320	505	712	1223
1469							
XSECTION	47		.28				
-----							
ALTERNATE	1			185	285	379	655
803							
XSECTION	48		.02				
-----							
ALTERNATE	1			30	44	55	89
107							
XSECTION	51		.02				
-----							
ALTERNATE	1			21	31	41	70
85							
XSECTION	52		.33				
-----							
ALTERNATE	1			198	315	432	764
927							
XSECTION	53		.21				
-----							
ALTERNATE	1			44	103	164	370
494							
XSECTION	54		.54				
-----							
ALTERNATE	1			208	351	497	905
1078							
XSECTION	55		1.53				
-----							
ALTERNATE	1			739	1132	1633	2973
3563							
XSECTION	56		.02				
-----							
ALTERNATE	1			6	13	20	42
55							
XSECTION	57		1.55				
-----							
ALTERNATE	1			742	1137	1640	2988
3581							
XSECTION	58		.04				
-----							
ALTERNATE	1			41	61	79	134
163							

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99
XSECTION 62	.02					
ALTERNATE 104	1	30	43	54	87	
XSECTION 63	2.11					
ALTERNATE 4081	1	954	1493	2130	3574	

1  
 TR20 ----- SCS  
 -

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

02/06/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT  
 2.04TEST

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST  
 FILES

INPUT = POND6.DAT , GIVEN DATA FILE  
 OUTPUT = POND6.OUT , DATED  
 02/06/\*\*,12:11:18

FILES GENERATED - DATED 02/06/\*\*,12:11:18

NONE!

TOTAL NUMBER OF WARNINGS = 33, MESSAGES = 10

\*\*\* TR-20 RUN COMPLETED \*\*\*





1

\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20  
HYDROLOGY\*\*\*\*\*

JOB	TR-20	NOPLOTS				
TITLE	Ellicott City Flood Study-Tiber/South Sub-Drainage Areas					
TITLE	27 Subareas MGMT-STD NOAA_C 2,5,10,50,100WITHMGMT					
5	RAINFL	1	.1			
8	0.0000	0.0013	0.0023	0.0034	0.0044	
8	0.0055	0.0065	0.0076	0.0087	0.0098	
8	0.0109	0.0121	0.0132	0.0143	0.0155	
8	0.0167	0.0178	0.0190	0.0202	0.0214	
8	0.0226	0.0238	0.0251	0.0263	0.0276	
8	0.0288	0.0301	0.0314	0.0327	0.0340	
8	0.0353	0.0366	0.0379	0.0393	0.0406	
8	0.0420	0.0434	0.0447	0.0461	0.0475	
8	0.0489	0.0504	0.0518	0.0532	0.0547	
8	0.0562	0.0576	0.0591	0.0606	0.0621	
8	0.0636	0.0651	0.0667	0.0682	0.0697	
8	0.0713	0.0729	0.0745	0.0760	0.0776	
8	0.0793	0.0809	0.0826	0.0843	0.0861	
8	0.0879	0.0898	0.0916	0.0936	0.0955	
8	0.0975	0.0996	0.1017	0.1038	0.1060	
8	0.1082	0.1104	0.1127	0.1150	0.1174	
8	0.1198	0.1223	0.1247	0.1273	0.1298	
8	0.1324	0.1351	0.1378	0.1405	0.1432	
8	0.1461	0.1490	0.1521	0.1554	0.1588	
8	0.1623	0.1660	0.1699	0.1739	0.1780	
8	0.1823	0.1868	0.1914	0.1961	0.2010	
8	0.2061	0.2117	0.2179	0.2247	0.2321	
8	0.2400	0.2490	0.2591	0.2702	0.2825	
8	0.2955	0.3157	0.3370	0.3662	0.4067	
8	0.4766	0.5933	0.6338	0.6630	0.6843	
8	0.7045	0.7176	0.7298	0.7409	0.7510	
8	0.7600	0.7679	0.7753	0.7821	0.7883	
8	0.7939	0.7990	0.8039	0.8086	0.8132	
8	0.8177	0.8220	0.8261	0.8301	0.8340	
8	0.8377	0.8412	0.8446	0.8479	0.8510	
8	0.8540	0.8568	0.8595	0.8622	0.8649	
8	0.8676	0.8702	0.8727	0.8753	0.8778	
8	0.8802	0.8826	0.8850	0.8873	0.8896	
8	0.8918	0.8940	0.8962	0.8983	0.9004	
8	0.9025	0.9045	0.9064	0.9084	0.9103	
8	0.9121	0.9139	0.9157	0.9174	0.9191	
8	0.9208	0.9224	0.9240	0.9256	0.9271	
8	0.9287	0.9303	0.9318	0.9334	0.9349	
8	0.9364	0.9379	0.9394	0.9409	0.9424	
8	0.9439	0.9453	0.9468	0.9482	0.9496	
8	0.9511	0.9525	0.9539	0.9553	0.9566	
8	0.9580	0.9594	0.9607	0.9621	0.9634	
8	0.9647	0.9660	0.9673	0.9686	0.9699	
8	0.9712	0.9724	0.9737	0.9749	0.9762	
8	0.9774	0.9786	0.9798	0.9810	0.9822	
8	0.9834	0.9845	0.9857	0.9868	0.9879	

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8	0.9891	0.9902	0.9913	0.9924	0.9935
8	0.9945	0.9956	0.9967	0.9977	0.9987
8	1.0000	1.0000	1.0000	1.0000	1.0000

9	ENDTBL				
3	STRUCT	58			
8			424.00	0.00	0.00
8			429.09	2.00	0.72
8			429.59	4.00	0.85
8			430.00	6.00	0.96
8			430.21	8.00	1.02
8			430.36	10.00	1.06
8			430.49	12.00	1.10
8			430.64	14.00	1.15
8			430.74	15.00	1.18
8			431.22	17.09	1.33
8			431.68	33.53	1.49
8			432.18	80.87	1.67
8			432.37	108.22	1.74

9	ENDTBL				
2	XSECTN	007	1.0	319.00	
8			318.00	0.00	0.00
8			318.25	10.19	3.39
8			318.50	32.80	7.08
8			318.75	65.48	11.07
8			319.00	107.54	15.35
8			320.00	367.34	35.47
8			321.00	663.16	60.18
8			322.00	1052.26	89.31
8			323.00	1529.69	131.30

9	ENDTBL				
3	STRUCT	52			
8			451.90	0.00	0.00
8			454.05	0.34	0.73
8			454.30	0.36	0.85
8			455.60	18.83	1.65
8			456.10	41.43	2.00
8			456.50	72.96	2.28

9	ENDTBL				
2	XSECTN	011	1.0	415.00	
8			414.00	0.00	0.00
8			414.25	7.22	1.98
8			414.50	23.69	4.29
8			414.75	48.28	6.93
8			415.00	81.00	9.89
8			416.00	299.51	25.08
8			417.00	488.53	45.33
8			418.00	779.05	70.44
8			419.00	809.36	107.84

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			396.00	0.00	0.00
8			396.50	4.38	0.27
8			397.00	12.40	0.65
8			397.50	22.78	1.07
8			398.00	35.07	1.54
8			398.50	49.45	2.05
8			399.00	64.75	2.59

8			399.45	86.12	3.10
9	ENDTBL				
2	XSECTN	016	1.0	331.00	
8			330.00	0.00	0.00
8			330.25	5.94	1.92
8			330.50	21.34	4.68
8			330.75	47.19	8.28
8			331.00	85.01	12.73
8			332.00	385.16	38.91
8			333.00	704.29	76.97
8			334.00	1202.25	125.34
8			335.00	1592.91	187.47
9	ENDTBL				
2	XSECTN	020	1.0	235.00	
8			234.00	0.00	0.00
8			234.25	9.06	3.27
8			234.50	29.33	6.89
8			234.75	58.86	10.87
8			235.00	97.22	15.19
8			236.00	339.40	36.03
8			237.00	586.83	61.50
8			238.00	902.53	90.59
8			239.00	1290.91	123.25
8			240.00	1750.59	159.40
8			241.00	1985.66	201.02
8			242.00	2381.26	250.13
9	ENDTBL				
3	STRUCT	47			
8			410.00	0.00	0.00
8			413.89	5.00	0.05
8			414.04	10.00	0.15
8			414.17	15.00	0.24
8			414.28	20.00	0.27
8			415.00	30.68	0.38
8			415.27	39.01	0.42
8			415.52	52.87	0.45
8			415.79	71.61	0.49
8			416.07	95.27	0.54
9	ENDTBL				
3	STRUCT	32			
8			367.00	0.00	0.00
8			367.37	10.00	0.29
8			367.59	20.00	0.47

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			367.78	30.00	0.62
8			367.94	40.00	0.76
8			368.09	50.00	0.89
8			368.44	75.00	1.18
8			368.82	88.96	1.52
8			369.30	142.54	1.95
8			369.79	219.99	2.41
8			370.11	280.10	2.72
8			370.33	326.70	2.93
8			370.56	378.34	3.15
9	ENDTBL				
3	STRUCT	34			
8			329.00	0.00	0.00
8			332.62	30.00	0.72

8			336.99	50.00	2.59
8			337.92	70.00	3.17
8			338.11	90.00	3.29
8			338.19	100.00	3.34
8			338.26	109.00	3.39
8			338.55	150.00	3.58
8			338.61	160.00	3.63
8			338.64	165.00	3.65
8			338.70	175.00	3.69
8			338.73	179.50	3.71
8			343.01	310.00	7.34
8			343.91	680.58	8.20
9	ENDTBL				
3	STRUCT	64			
9	ENDTBL				
2	XSECTN	030	1.0	357.00	
8			356.00	0.00	0.00
8			356.25	11.94	4.48
8			356.50	38.65	9.42
8			356.75	77.59	14.83
8			357.00	128.16	20.70
8			358.00	446.97	48.84
8			359.00	544.48	91.80
8			360.00	941.05	156.94
8			361.00	1597.14	242.00
9	ENDTBL				
2	XSECTN	035	1.0	317.00	
8			316.00	0.00	0.00
8			316.25	12.78	5.64
8			316.50	44.21	13.12
8			316.75	94.71	22.44
8			317.00	166.16	33.59
8			318.00	703.03	96.58
8			319.00	1203.58	187.92
8			320.00	2039.69	306.56
8			321.00	3441.07	443.04

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

9	ENDTBL				
3	STRUCT	33			
8			323.00	0.00	0.00
8			323.20	5.00	0.01
8			324.01	10.00	0.06
8			325.62	15.00	0.19
8			326.73	18.00	0.29
8			327.09	20.00	0.33
8			327.38	25.00	0.36
8			327.54	28.00	0.38
8			327.63	30.00	0.39
8			328.16	38.10	0.46
8			328.84	73.25	0.54
8			329.21	106.03	0.59
9	ENDTBL				
3	STRUCT	29			
8			266.00	0.00	0.00
8			273.38	10.00	2.49
8			273.62	20.00	2.64
8			273.91	35.00	2.82
8			274.10	46.00	2.94

8			274.35	55.00	3.10
8			274.51	58.00	3.20
8			274.61	60.00	3.28
8			274.90	65.00	3.47
8			275.21	98.51	3.68
8			275.54	139.16	3.92
8			275.89	189.97	4.18
8			276.27	253.87	4.48
8			276.50	299.40	4.67
9	ENDTBL				
2	XSECTN	042	1.0	223.00	
8			222.00	0.00	0.00
8			222.25	2.73	0.83
8			222.50	10.35	2.16
8			222.75	23.82	3.97
8			223.00	44.24	6.28
8			224.00	215.28	20.42
8			225.00	406.10	41.61
8			226.00	702.08	67.86
8			227.00	890.97	103.46
9	ENDTBL				
3	STRUCT	07			
8			216.00	000.00	0.00
8			217.23	100.00	2.91
8			218.88	200.00	5.33
8			221.19	400.00	9.16
8			222.23	500.00	11.04
8			222.27	504.00	11.12
8			223.33	600.00	13.14

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			224.44	700.00	15.39
8			225.71	800.00	18.13
8			227.13	900.00	21.37
8			228.68	1000.00	25.17
8			230.40	1100.00	29.69
8			232.35	1200.00	35.20
8			234.84	1496.28	42.93
9	ENDTBL				
2	XSECTN	045	1.0	223.00	
8			222.00	0.00	0.00
8			222.25	2.28	0.83
8			222.50	8.62	2.16
8			222.75	19.85	3.97
8			223.00	36.86	6.28
8			224.00	179.35	20.41
8			225.00	338.28	41.30
8			226.00	584.84	67.85
8			227.00	830.09	103.44
8			228.00	1249.11	151.47
8			229.00	1307.14	232.37
8			230.00	2023.03	366.57
9	ENDTBL				
3	STRUCT	40			
8			333.00	000.00	0.00
8			334.00	15.15	0.40
8			334.25	16.92	0.47
8			334.50	18.53	0.55
8			334.75	20.02	0.63

8			335.00	21.40	0.68
8			335.50	23.92	0.77
8			335.86	25.59	0.80
8			336.00	27.61	0.82
8			336.25	33.80	0.84
8			336.50	42.02	0.93
8			336.75	51.79	1.01
8			336.86	56.51	1.05
8			337.00	57.30	1.08
8			337.50	58.38	1.31
8			338.00	59.45	1.68
9	ENDTBL				
2	XSECTN	049	1.0	317.00	
8			316.00	0.00	0.00
8			316.25	3.06	1.70
8			316.50	11.11	4.19
8			316.75	24.79	7.47
8			317.00	44.94	11.55
8			318.00	206.80	35.78
8			319.00	333.28	74.89
8			320.00	609.60	131.05
9	ENDTBL				

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

3	STRUCT	43			
8			317.30	0.00	0.00
8			318.00	0.19	0.08
8			319.00	0.24	0.27
8			320.75	0.30	0.79
8			321.00	3.22	0.85
8			321.75	23.58	1.09
8			322.00	32.83	1.17
8			322.20	40.94	1.20
8			322.40	49.63	1.27
8			322.80	68.56	1.45
8			322.90	73.60	1.49
9	ENDTBL				
2	XSECTN	052	1.0	279.00	
8			276.00	0.00	0.00
8			276.25	15.37	5.56
8			276.50	49.97	11.77
8			276.75	100.75	18.63
8			277.00	167.09	26.14
8			278.00	591.48	62.65
8			279.00	793.41	115.06
8			280.00	1313.82	188.91
8			281.00	2138.14	282.44
9	ENDTBL				
3	STRUCT	05			
9	ENDTBL				
3	STRUCT	06			
9	ENDTBL				
2	XSECTN	059	1.0	128.00	
8			129.00	0.00	0.00
8			129.25	1.13	0.50
8			129.50	5.18	1.55
8			129.75	13.39	3.16
8			130.00	26.84	5.32
8			131.00	191.72	26.64

8				132.00	508.02	58.78		
8				133.00	945.51	95.90		
8				134.00	1449.27	136.08		
8				135.00	2016.68	178.64		
8				138.00	4199.86	314.48		
9	ENDTBL							
6	RUNOFF	1	001	1	0.2101	77.19	0.319	1 141
6	RUNOFF	1	002	2	0.0292	74.00	0.232	1 142
6	RESVOR	2	58 2	3				1 1
SWMF58								
6	ADDHYD	4	003	1 3 4				1
1+2+58								
6	RUNOFF	1	004	1	0.0617	81.09	0.170	1 143
6	ADDHYD	4	005	4 1 2				1 1+2+3
6	RUNOFF	1	006	1	0.0799	74.51	0.216	1 144
6	REACH	3	007	2 3	2055.0			1
6	ADDHYD	4	008	1 3 2				1 SA14

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

6	RUNOFF	1	009	1	0.0604	78.12	0.220	1 153
6	RUNOFF	1	010	3	0.0264	78.36	0.290	1 151
6	RESVOR	2	52 3	4				1 1
SWMF52								
6	REACH	3	011	4 5	1396.5			1
6	ADDHYD	4	012	1 5 6				1 1
153+151								
6	RUNOFF	1	013	1	0.0447	83.97	0.210	1 152
6	RESVOR	2	51 1	3				1 1
SWMF51								
6	ADDHYD	4	014	6 3 1				1
012+51								
6	RUNOFF	1	015	3	0.0815	76.80	0.176	1 154
6	REACH	3	016	1 4	2448.6			1
6	ADDHYD	4	017	3 4 5				1 SA15
6	ADDHYD	4	018	2 5 1				1 1
SA14+15								
6	RUNOFF	1	019	2	0.2701	73.58	0.425	1 131
6	REACH	3	020	1 3	4470.1			1 SA13
6	ADDHYD	4	021	2 3 4				1 1
14+15+13								
6	RUNOFF	1	022	1	0.0185	83.00	0.283	1 121
6	RESVOR	2	47 1	2				1 1
SWMF47								
6	RUNOFF	1	023	3	0.0812	83.00	0.245	1 122
6	RESVOR	2	32 3	5				1 1
SWMF32								
6	ADDHYD	4	024	2 5 1				1
121+122								
6	RUNOFF	1	025	2	0.0465	82.74	0.236	1 123
6	ADDHYD	4	026	1 2 5				1
024+123								
6	RESVOR	2	34 5	3				1 1
SWMF34								
6	RUNOFF	1	027	2	0.0126	76.91	0.100	1 124
6	ADDHYD	4	028	3 2 5				1 SA12
6	RUNOFF	1	029	2	0.0499	87.76	0.100	1 111
6	RESVOR	2	64 2	3				1 1
SWMF64								
6	REACH	3	030	3 6	1561.1			1

6	RUNOFF	1	031		7	0.1745	85.00	0.449	1	1	112
6	ADDHYD	4	032	6	7	3			1		
111+112											
6	RUNOFF	1	033		1	0.0477	83.06	0.258	1	1	113
6	ADDHYD	4	034	3	1	2			1		
032+113											
6	REACH	3	035	2	3		2077.3		1		
6	RUNOFF	1	036		6	0.0244	83.54	0.370	1	1	114
6	RESVOR	2		33	6	7			1		1
SWMF33											
6	ADDHYD	4	037	3	7	1			1		
111-114											
6	RUNOFF	1	038		2	0.0684	79.13	0.136	1	1	115
6	ADDHYD	4	039	1	2	3			1		1 SA11
6	ADDHYD	4	040	5	3	6			1		12+11
6	RUNOFF	1	041		1	0.0236	82.59	0.200	1	1	101
6	RESVOR	2		29	1	3			1		1
SWMF29											
6	REACH	3	042	3	5		2112.0		1		
6	RUNOFF	1	043		1	0.1211	62.77	0.263	1	1	102
6	ADDHYD	4	044	5	1	2			1		1 SA10
6	REACH	3	045	6	3		3147.6		1		
6	ADDHYD	4	046	2	3	7			1		1
10+12+11											
6	RESVOR	2		07	7	1			1		1 PROP7
6	RUNOFF	1	047		2	0.2822	80.17	0.434	1	1	81
6	RUNOFF	1	048		3	0.0248	85.45	0.190	1	1	82
6	RESVOR	2		40	3	5			1		1
SWMF40											

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

6	REACH	3	049	5	6		1829.0		1		
6	ADDHYD	4	050	2	6	7			1		81+82
6	RUNOFF	1	051		2	0.0218	81.19	0.220	1	1	83
6	RESVOR	2		43	2	3			1		1
SWMF43											
6	ADDHYD	4	052	7	3	2			1		1
81+82+83											
6	REACH	3	052	2	3		4744.2		1		
6	RUNOFF	1	053		5	0.2083	62.56	0.262	1	1	84
6	ADDHYD	4	054	3	5	2			1		1 SA8
6	RESVOR	2		05	2	5			1		1 PROP5
6	ADDHYD	4	055	4	1	3			1		1 13+10
6	RUNOFF	1	056		6	0.0166	65.36	0.134	1	1	92
6	ADDHYD	4	057	3	6	7			1		1
13+10+92											
6	RESVOR	2		06	7	4			1		1 PROP6
6	RUNOFF	1	058		1	0.0357	81.76	0.141	1	1	93
6	REACH	3	059	4	3		1670.5		1		
6	ADDHYD	4	060	5	3	4			1		
SA8+93											
6	ADDHYD	4	061	7	4	1			1		92+93
6	RUNOFF	1	062		2	0.0233	86.98	0.186	1	1	91
6	ADDHYD	4	063	1	2	3			1		1
OUTFALL											
ENDATA											
7	INCREM	6				.06					
7	COMPUT	7	001	063		0.0		3.19	1.01	2	1
ENDCMP 1											



```

7 COMPUT 7 001 063 0.0 4.10 1.01 2 1 05
  ENDCMP 1
7 COMPUT 7 001 063 0.0 4.91 1.01 2 1 10
  ENDCMP 1
7 COMPUT 7 001 063 0.0 7.23 1.01 2 1 50
  ENDCMP 1
7 COMPUT 7 001 063 0.0 8.47 1.01 2 1 99
  ENDCMP 1
  ENDCMP 1
  ENDJOB 2

```

\*\*\*\*\*END OF 80-80

LIST\*\*\*\*\*

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-
      Ellicott City Flood Study-Tiber/South Sub-Drainage Areas
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2.04TEST
17:06:03      PASS 1 JOB NO. 1 PAGE
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EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .060 HOURS

```

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63
  STARTING TIME = .00 RAIN DEPTH = 3.19 RAIN DURATION = 1.00
  ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS
  ALTERNATE NO. = 1 STORM NO. = 2 RAIN TABLE NO. = 1

```

OPERATION RUNOFF XSECTION 1

```

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
  12.26 136.6 (RUNOFF)
  20.68 4.2 (RUNOFF)
  24.01 3.3 (RUNOFF)

```

```

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
      1.22 WATERSHED INCHES; 165 CFS-HRS; 13.6 ACRE-
FEET.

```

OPERATION RUNOFF XSECTION 2

```

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
  12.20 18.2 (RUNOFF)

```

```

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
      1.03 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-
FEET.

```

OPERATION RESVOR STRUCTURE 58

```

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
  13.47 2.2 429.15

```

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.02 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.26	137.7	(NULL)
20.65	5.2	(NULL)
23.76	4.0	(NULL)
24.00	4.0	(NULL)

1

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.19 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.16	63.3	(RUNOFF)
15.84	2.4	(RUNOFF)
24.00	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 5

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.21	189.4	(NULL)
18.63	7.5	(NULL)
20.63	6.5	(NULL)
23.74	5.1	(NULL)
24.00	5.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.25 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.19	53.1	(RUNOFF)
17.33	2.0	(RUNOFF)
24.02	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.06 WATERSHED INCHES; 55 CFS-HRS; 4.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.29	183.8	319.29
18.69	7.5	318.18
20.69	6.5	318.16
23.80	5.1	318.13
24.07	5.1	318.12

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 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.25 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	228.3	(NULL)
18.65	9.2	(NULL)
20.12	8.4	(NULL)
21.96	7.3	(NULL)
24.04	6.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.21 WATERSHED INCHES; 297 CFS-HRS; 24.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	49.0	(RUNOFF)
15.83	2.2	(RUNOFF)
23.09	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.27 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	19.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.29 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
13.33 2.8 454.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.86 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-
FEET.

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas
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\*\*\* WARNING - XSECTION 11, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,
UNLESS NEW RATING TABLE VALUES ARE INSERTED.
\*\*\*

OPERATION REACH XSECTION 11

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
13.47 2.7 414.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.86 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-
FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.19 49.1 (NULL)
18.82 2.0 (NULL)
24.02 1.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.15 WATERSHED INCHES; 64 CFS-HRS; 5.3 ACRE-
FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	49.3	(RUNOFF)
20.86	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.67 WATERSHED INCHES; 48 CFS-HRS; 4.0 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	22.2	397.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.67 WATERSHED INCHES; 48 CFS-HRS; 4.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 14

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	65.4	(NULL)
20.06	3.0	(NULL)
24.02	2.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.32 WATERSHED INCHES; 112 CFS-HRS; 9.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	66.3	(RUNOFF)
17.35	2.2	(RUNOFF)
24.01	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.19 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	59.8	330.83
24.09	2.3	330.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.32 WATERSHED INCHES; 112 CFS-HRS; 9.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	109.9	(NULL)
21.94	4.1	(NULL)
24.01	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.27 WATERSHED INCHES; 175 CFS-HRS; 14.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 18

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.25	333.7	(NULL)
20.09	13.1	(NULL)
20.63	12.5	(NULL)
21.94	11.4	(NULL)
23.09	10.5	(NULL)
24.03	9.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.23 WATERSHED INCHES; 471 CFS-HRS; 38.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.33	121.9	(RUNOFF)
20.13	5.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.01 WATERSHED INCHES; 175 CFS-HRS; 14.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	305.7	235.86
23.13	10.5	234.27
24.09	9.8	234.26

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.23 WATERSHED INCHES; 471 CFS-HRS; 38.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	426.1	(NULL)
23.13	14.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.16 WATERSHED INCHES; 646 CFS-HRS; 53.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	17.1	(RUNOFF)

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.60 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	12.3	414.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.60 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	80.0	(RUNOFF)
19.47	2.0	(RUNOFF)
24.02	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.60 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	61.0	368.24
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.60 WATERSHED INCHES;	84 CFS-HRS;	6.9 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	73.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.60 WATERSHED INCHES;	103 CFS-HRS;	8.5 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	46.1	(RUNOFF)
21.45	1.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.58 WATERSHED INCHES;	47 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	110.3	(NULL)
20.62	3.4	(NULL)
24.01	2.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.59 WATERSHED INCHES;	150 CFS-HRS;	12.4 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	54.3	337.19

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.59 WATERSHED INCHES;	150 CFS-HRS;	12.4 ACRE-
FEET.		



OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	12.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.19 WATERSHED INCHES; 10 CFS-HRS; .8 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.3%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	44.1	(NULL)
12.67	56.2	(NULL)
23.98	2.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 160 CFS-HRS; 13.2 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	80.5	(RUNOFF)
15.82	2.3	(RUNOFF)
23.02	1.1	(RUNOFF)
23.68	1.0	(RUNOFF)
23.99	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.5%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		
12.11	80.5	(NULL)
15.82	2.3	(NULL)
23.02	1.1	(NULL)
23.68	1.0	(NULL)
23.99	1.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	74.0	356.73
15.89	2.3	356.05
23.09	1.1	356.02
23.75	1.0	356.02
24.05	1.1	356.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.97 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	141.6	(RUNOFF)

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.75 WATERSHED INCHES; 197 CFS-HRS; 16.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	191.3	(NULL)
18.86	6.1	(NULL)
21.75	5.0	(NULL)
24.04	4.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.80 WATERSHED INCHES; 260 CFS-HRS; 21.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	46.0	(RUNOFF)
21.76	1.0	(RUNOFF)
21.97	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES; 49 CFS-HRS; 4.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	236.3	(NULL)
18.86	7.4	(NULL)
21.75	6.0	(NULL)
24.04	5.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.76 WATERSHED INCHES; 310 CFS-HRS; 25.6 ACRE-FEET.

OPERATION REACH XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	221.5	317.10
20.68	6.5	316.13
24.10	5.1	316.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.76 WATERSHED INCHES; 309 CFS-HRS; 25.6 ACRE-FEET.

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OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	20.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.64 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .047 HOURS.\*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.

\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	15.2	325.68

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.64 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	235.8	(NULL)
20.68	7.1	(NULL)
24.10	5.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.75 WATERSHED INCHES; 335 CFS-HRS; 27.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	69.3	(RUNOFF)
15.84	2.6	(RUNOFF)
17.34	2.0	(RUNOFF)
24.00	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.33 WATERSHED INCHES; 59 CFS-HRS; 4.9 ACRE-FEET.

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2.04TEST  
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OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	265.4	(NULL)
23.99	6.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.67 WATERSHED INCHES; 394 CFS-HRS; 32.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	312.0	(NULL)
23.99	9.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.64 WATERSHED INCHES;	554 CFS-HRS;	45.8 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	24.8	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.57 WATERSHED INCHES;	24 CFS-HRS;	2.0 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.00	3.6	268.66
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.56 WATERSHED INCHES;	24 CFS-HRS;	2.0 ACRE-
FEET.		

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.17	3.6	222.28
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.56 WATERSHED INCHES;	24 CFS-HRS;	2.0 ACRE-
FEET.		

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OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	26.2	(RUNOFF)
24.03	1.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.51 WATERSHED INCHES;	40 CFS-HRS;	3.3 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	27.9	(NULL)
20.62	2.4	(NULL)
24.02	1.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .68 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.45	298.1	224.75
24.04	9.6	222.52

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 554 CFS-HRS; 45.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.44	319.9	(NULL)
24.03	11.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 617 CFS-HRS; 51.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.69	263.0	219.61

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 617 CFS-HRS; 51.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
-----------------------------------	---------------------	------

12.32 185.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.40 WATERSHED INCHES; 256 CFS-HRS; 21.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.17 29.9 (RUNOFF)
15.84 1.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.78 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.33 16.5 334.19

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.78 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-
FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.51 15.5 316.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.78 WATERSHED INCHES; 28 CFS-HRS; 2.4 ACRE-
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.33 197.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.43 WATERSHED INCHES; 284 CFS-HRS; 23.5 ACRE-
FEET.

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OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	20.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 21 CFS-HRS; 1.7 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.86	3.8	321.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .97 WATERSHED INCHES; 14 CFS-HRS; 1.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	198.1	277.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 297 CFS-HRS; 24.6 ACRE-FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	177.7	277.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 297 CFS-HRS; 24.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	43.9	(RUNOFF)
23.11	2.1	(RUNOFF)
23.76	2.0	(RUNOFF)
24.03	2.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .50 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	207.7	(NULL)
24.00	7.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.05 WATERSHED INCHES; 364 CFS-HRS; 30.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	207.7	(NULL)
24.00	7.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.05 WATERSHED INCHES; 364 CFS-HRS; 30.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	609.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.28 WATERSHED INCHES; 1263 CFS-HRS; 104.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	6.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .61 WATERSHED INCHES; 7 CFS-HRS; .5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	612.3	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.27 WATERSHED INCHES; 1270 CFS-HRS; 104.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.43 612.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.27 WATERSHED INCHES; 1270 CFS-HRS; 104.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.14 40.7 (RUNOFF)  
17.34 1.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.51 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.51 610.0 132.23

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.27 WATERSHED INCHES; 1270 CFS-HRS; 104.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.49 815.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.21 WATERSHED INCHES; 1633 CFS-HRS; 135.0 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 61  
NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)

12.49 815.9 (NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.19 WATERSHED INCHES; 1603 CFS-HRS; 132.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK
ELEVATION (FEET)
12.17 30.3 (RUNOFF)
15.85 1.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.90 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-
FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK
ELEVATION (FEET)
12.49 825.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.20 WATERSHED INCHES; 1631 CFS-HRS; 134.8 ACRE-
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63
STARTING TIME = .00 RAIN DEPTH = 4.10 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS
ALTERNATE NO. = 1 STORM NO. = 5 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK
ELEVATION (FEET)
12.25 217.7 (RUNOFF)
20.12 6.2 (RUNOFF)
21.93 5.5 (RUNOFF)
24.02 4.6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.90 WATERSHED INCHES; 258 CFS-HRS; 21.3 ACRE-
FEET.

OPERATION RUNOFF XSECTION 2

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	30.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.67 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	8.3	430.23

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.64 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	219.8	(NULL)
18.65	8.3	(NULL)
20.66	7.2	(NULL)
23.11	6.0	(NULL)
24.01	5.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.87 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	95.7	(RUNOFF)
15.84	3.4	(RUNOFF)
19.47	2.0	(RUNOFF)
24.00	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.21 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 5

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	299.6	(NULL)
18.63	10.4	(NULL)
20.63	9.1	(NULL)
21.95	8.3	(NULL)
23.74	7.2	(NULL)
24.01	7.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.94 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	87.6	(RUNOFF)
15.83	3.8	(RUNOFF)
21.46	2.0	(RUNOFF)
24.02	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.70 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.28	292.4	319.71
18.70	10.4	318.25
20.69	9.1	318.22
22.00	8.3	318.20
23.80	7.2	318.18
24.07	7.1	318.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.94 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	368.5	(NULL)
18.66	12.8	(NULL)
20.67	11.3	(NULL)
21.99	10.3	(NULL)
23.12	9.4	(NULL)
24.04	8.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.89 WATERSHED INCHES; 465 CFS-HRS; 38.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	77.2	(RUNOFF)
15.82	3.1	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.98 WATERSHED INCHES; 77 CFS-HRS; 6.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	30.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.99 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.72	8.9	454.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.54 WATERSHED INCHES; 26 CFS-HRS; 2.2 ACRE-  
FEET.

OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	8.8	414.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.54 WATERSHED INCHES; 26 CFS-HRS; 2.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 12

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.19	77.4	(NULL)
23.08	2.1	(NULL)
23.73	2.0	(NULL)
24.03	2.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.84 WATERSHED INCHES; 103 CFS-HRS; 8.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	71.9	(RUNOFF)
17.33	2.0	(RUNOFF)
24.02	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.45 WATERSHED INCHES; 71 CFS-HRS; 5.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 51

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.39	34.2	397.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.45 WATERSHED INCHES; 71 CFS-HRS; 5.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.20	103.2	(NULL)
20.62	4.1	(NULL)
24.02	3.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.04 WATERSHED INCHES; 173 CFS-HRS; 14.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 15

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.16	106.0	(RUNOFF)
15.85	4.1	(RUNOFF)
17.34	3.2	(RUNOFF)
22.46	2.0	(RUNOFF)
24.01	1.9	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.87 WATERSHED INCHES;		99 CFS-HRS; 8.1 ACRE-
FEET.		

OPERATION REACH XSECTION 16

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	95.7	331.04
20.67	4.0	330.17
24.09	3.2	330.13
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.04 WATERSHED INCHES;		173 CFS-HRS; 14.3 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 17

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.20	178.2	(NULL)
20.80	6.3	(NULL)
23.72	5.0	(NULL)
24.01	5.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.98 WATERSHED INCHES;		272 CFS-HRS; 22.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 18

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.24	539.2	(NULL)
20.10	18.4	(NULL)
20.64	17.6	(NULL)
21.95	16.1	(NULL)
23.10	14.7	(NULL)
24.03	13.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.92 WATERSHED INCHES;		737 CFS-HRS; 60.9 ACRE-



FEET.

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OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	207.9	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.64 WATERSHED INCHES;	286 CFS-HRS;	23.6 ACRE-
FEET.		

OPERATION REACH XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	486.7	236.60
23.13	14.7	234.32
24.09	13.7	234.31
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.92 WATERSHED INCHES;	736 CFS-HRS;	60.9 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	690.9	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.83 WATERSHED INCHES;	1022 CFS-HRS;	84.5 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	25.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.37 WATERSHED INCHES;	28 CFS-HRS;	2.3 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	21.0	414.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.37 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	119.0	(RUNOFF)
23.10	2.1	(RUNOFF)
23.75	2.0	(RUNOFF)
24.02	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.37 WATERSHED INCHES; 124 CFS-HRS; 10.3 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	86.1	368.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.37 WATERSHED INCHES; 124 CFS-HRS; 10.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	107.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.37 WATERSHED INCHES; 153 CFS-HRS; 12.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	68.4	(RUNOFF)
24.03	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.35 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.25	162.5	(NULL)
20.62	4.6	(NULL)
24.02	3.6	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.36 WATERSHED INCHES; 223 CFS-HRS; 18.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.46	127.1	338.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.36 WATERSHED INCHES; 223 CFS-HRS; 18.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.12	20.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.88 WATERSHED INCHES; 15 CFS-HRS; 1.3 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.46	131.8	(NULL)
23.98	4.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.33 WATERSHED INCHES; 238 CFS-HRS; 19.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	113.0	(RUNOFF)
15.82	3.1	(RUNOFF)
17.32	2.4	(RUNOFF)
23.99	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 90 CFS-HRS; 7.4 ACRE-  
 FEET.

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\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	113.0	(NULL)
15.82	3.1	(NULL)
17.32	2.4	(NULL)
23.99	1.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 90 CFS-HRS; 7.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	105.9	356.89
15.89	3.1	356.06
17.39	2.4	356.05
24.05	1.4	356.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.80 WATERSHED INCHES; 90 CFS-HRS; 7.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	206.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.55 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	276.5	(NULL)
18.86	8.3	(NULL)
20.87	7.3	(NULL)
23.09	6.1	(NULL)
24.04	5.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.60 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	68.1	(RUNOFF)
24.03	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.38 WATERSHED INCHES; 73 CFS-HRS; 6.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	343.4	(NULL)
18.63	10.1	(NULL)
20.09	9.3	(NULL)
21.97	8.1	(NULL)
23.09	7.4	(NULL)
24.04	7.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.56 WATERSHED INCHES; 450 CFS-HRS; 37.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 35

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	326.6	317.30
20.16	9.3	316.18
22.00	8.1	316.16
23.15	7.4	316.14
24.10	6.9	316.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.56 WATERSHED INCHES; 450 CFS-HRS; 37.2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 30.0 (RUNOFF)
12.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.42 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-
FEET.

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\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE
TIME INCREMENT OF .047 HOURS.
\*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES
FIRST NEGATIVE VALUE IS 0 CFS.
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 23.6 327.30
12.44

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.42 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.33 343.7 (NULL)
20.16 10.1 (NULL)
20.68 9.6 (NULL)
23.15 8.0 (NULL)
24.10 7.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.55 WATERSHED INCHES; 488 CFS-HRS; 40.3 ACRE-
FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION(FEET)		
12.13	107.3	(RUNOFF)
15.84	3.7	(RUNOFF)
20.04	2.1	(RUNOFF)
20.60	2.0	(RUNOFF)
20.83	2.0	(RUNOFF)
24.00	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.05 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	390.1	(NULL)
23.99	9.1	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.46 WATERSHED INCHES; 578 CFS-HRS; 47.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	489.7	(NULL)
23.99	13.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES; 817 CFS-HRS; 67.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	36.9	(RUNOFF)
17.34	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.34 WATERSHED INCHES; 36 CFS-HRS; 2.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.93	5.5	270.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.32 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.09	5.5	222.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.32 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	60.9	(RUNOFF)
21.98	2.2	(RUNOFF)
24.03	1.9	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .96 WATERSHED INCHES; 75 CFS-HRS; 6.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	63.5	(NULL)
20.62	3.8	(NULL)
24.03	2.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.18 WATERSHED INCHES; 110 CFS-HRS; 9.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	470.1	225.53
24.10	13.1	222.60

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES; 817 CFS-HRS; 67.5 ACRE-  
 FEET.



OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	504.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.15 WATERSHED INCHES; 927 CFS-HRS; 76.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.72	427.8	221.48

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.15 WATERSHED INCHES; 927 CFS-HRS; 76.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	285.2	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.14 WATERSHED INCHES; 389 CFS-HRS; 32.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	43.5	(RUNOFF)
17.34	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.59 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	21.9	335.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.59 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-

FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	20.8	316.68

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.58 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	303.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.17 WATERSHED INCHES; 430 CFS-HRS; 35.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	31.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.22 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-  
 FEET.

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\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE

STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.

THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.

\*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	14.9	321.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.69 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	315.4	277.35
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.14 WATERSHED INCHES;	454 CFS-HRS;	37.5 ACRE-
FEET.		

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	287.9	277.28
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.14 WATERSHED INCHES;	454 CFS-HRS;	37.5 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	103.1	(RUNOFF)
20.11	4.2	(RUNOFF)
20.66	4.0	(RUNOFF)
24.02	3.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.95 WATERSHED INCHES;	127 CFS-HRS;	10.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 54

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	350.5	(NULL)
23.99	11.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.68 WATERSHED INCHES;	581 CFS-HRS;	48.0 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	350.5	(NULL)
23.99	11.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.68 WATERSHED INCHES; 581 CFS-HRS; 48.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	959.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.97 WATERSHED INCHES; 1948 CFS-HRS; 161.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	13.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.11 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	964.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 1960 CFS-HRS; 162.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 6

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	964.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 1960 CFS-HRS; 162.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	60.8	(RUNOFF)

15.45	2.1	(RUNOFF)
15.84	2.0	(RUNOFF)
21.45	1.0	(RUNOFF)
21.73	1.0	(RUNOFF)
21.94	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.27 WATERSHED INCHES; 52 CFS-HRS; 4.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	962.0	133.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 1960 CFS-HRS; 162.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	1307.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.89 WATERSHED INCHES; 2540 CFS-HRS; 209.9 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	1307.3	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.86 WATERSHED INCHES; 2500 CFS-HRS; 206.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	42.9	(RUNOFF)
17.34	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.72 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-
FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.47 1320.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.87 WATERSHED INCHES; 2541 CFS-HRS; 210.0 ACRE-
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63
STARTING TIME = .00 RAIN DEPTH = 4.91 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS
ALTERNATE NO. = 1 STORM NO. =10 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.25 295.0 (RUNOFF)
18.67 8.6 (RUNOFF)
20.67 7.5 (RUNOFF)
23.12 6.3 (RUNOFF)
24.01 5.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.56 WATERSHED INCHES; 347 CFS-HRS; 28.7 ACRE-
FEET.

OPERATION RUNOFF XSECTION 2

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TR20 ----- SCS
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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.19 42.1 (RUNOFF)
20.09 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.29 WATERSHED INCHES; 43 CFS-HRS; 3.6 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	16.1	430.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.25 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	303.4	(NULL)
18.66	10.3	(NULL)
20.66	9.0	(NULL)
23.76	7.1	(NULL)
24.01	7.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.52 WATERSHED INCHES; 390 CFS-HRS; 32.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	125.5	(RUNOFF)
15.84	4.3	(RUNOFF)
17.34	3.3	(RUNOFF)
21.95	2.2	(RUNOFF)
24.00	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.91 WATERSHED INCHES; 116 CFS-HRS; 9.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 5

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	404.6	(NULL)
18.64	13.0	(NULL)
20.63	11.4	(NULL)
21.95	10.4	(NULL)
23.08	9.5	(NULL)
24.00	8.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.60 WATERSHED INCHES; 505 CFS-HRS; 41.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	121.4	(RUNOFF)
15.83	4.9	(RUNOFF)
18.87	3.1	(RUNOFF)
24.02	2.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.33 WATERSHED INCHES;		9.9 ACRE-
FEET.		

OPERATION REACH XSECTION 7

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	397.0	320.10
18.70	13.0	318.28
20.69	11.4	318.26
22.00	10.4	318.25
23.15	9.5	318.23
24.07	8.9	318.22
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.60 WATERSHED INCHES;		41.8 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	500.5	(NULL)
18.66	16.1	(NULL)
20.67	14.1	(NULL)
21.99	12.9	(NULL)
23.77	11.2	(NULL)
24.04	11.1	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.55 WATERSHED INCHES;		51.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	103.4	(RUNOFF)
21.97	2.0	(RUNOFF)



24.02 1.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.64 WATERSHED INCHES; 103 CFS-HRS; 8.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.23 40.4 (RUNOFF)
18.66 1.1 (RUNOFF)
20.12 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.67 WATERSHED INCHES; 45 CFS-HRS; 3.8 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.60 15.5 455.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.20 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-
FEET.

OPERATION REACH XSECTION 11

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.69 15.4 414.37

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.20 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-
FEET.

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OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.19 103.7 (NULL)
20.86 3.2 (NULL)

24.01 2.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.51 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-
FEET.

OPERATION RUNOFF XSECTION 13

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows include times 12.18, 15.84, 17.32, 18.64, 24.01 with corresponding discharge values and (RUNOFF) labels.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.18 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 51

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Row includes time 12.38, discharge 45.7, and elevation 398.37.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.18 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 14

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows include times 12.20, 20.62, 23.07, 23.71, 24.01 with discharge values and (NULL) labels.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.73 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 15

1 TR20 ----- SCS

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Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows include times 12.16, 15.84 with discharge values and (RUNOFF) labels.

17.34	4.1	(RUNOFF)
19.75	3.1	(RUNOFF)
20.06	3.1	(RUNOFF)
24.01	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.53 WATERSHED INCHES; 133 CFS-HRS; 11.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	130.3	331.15
20.68	5.1	330.21
23.77	4.0	330.17
24.08	3.9	330.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	243.4	(NULL)
20.06	8.4	(NULL)
20.62	8.0	(NULL)
21.94	7.3	(NULL)
24.01	6.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.65 WATERSHED INCHES; 365 CFS-HRS; 30.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.24	732.9	(NULL)
18.63	25.4	(NULL)
20.10	23.1	(NULL)
20.64	22.1	(NULL)
21.95	20.2	(NULL)
23.10	18.5	(NULL)
24.03	17.4	(NULL)

1 TR20 ----- SCS

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.58 WATERSHED INCHES; 990 CFS-HRS; 81.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	289.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.26 WATERSHED INCHES; 393 CFS-HRS; 32.5 ACRE-FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	658.4	237.23
23.13	18.5	234.37
24.09	17.3	234.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.58 WATERSHED INCHES; 990 CFS-HRS; 81.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	941.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.48 WATERSHED INCHES; 1383 CFS-HRS; 114.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	32.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	27.2	414.77

1 TR20 ----- SCS

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	154.3	(RUNOFF)
20.87	3.1	(RUNOFF)
24.03	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 162 CFS-HRS; 13.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	122.8	369.12

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 162 CFS-HRS; 13.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	149.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 199 CFS-HRS; 16.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	89.1	(RUNOFF)
18.87	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.07 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

1 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	223.0	(NULL)
20.08	6.0	(NULL)
20.61	5.8	(NULL)
24.01	4.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.08 WATERSHED INCHES; 291 CFS-HRS; 24.0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	184.8	338.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.08 WATERSHED INCHES; 291 CFS-HRS; 24.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	26.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.54 WATERSHED INCHES; 21 CFS-HRS; 1.7 ACRE-FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27. THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -1.0%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	192.2	(NULL)
23.98	4.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.04 WATERSHED INCHES; 311 CFS-HRS; 25.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 29

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	141.9	(RUNOFF)
15.82	3.8	(RUNOFF)
20.02	2.2	(RUNOFF)
20.58	2.1	(RUNOFF)
20.82	2.1	(RUNOFF)
23.99	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.56 WATERSHED INCHES; 115 CFS-HRS; 9.5 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .3%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	141.9	(NULL)
15.82	3.8	(NULL)
20.02	2.2	(NULL)
20.58	2.1	(NULL)
20.82	2.1	(NULL)
23.99	1.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.56 WATERSHED INCHES; 115 CFS-HRS; 9.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	134.5	357.02
15.89	3.8	356.08
20.09	2.2	356.05
20.65	2.1	356.04
20.88	2.0	356.04
24.05	1.8	356.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.54 WATERSHED INCHES; 114 CFS-HRS; 9.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	264.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.28 WATERSHED INCHES; 370 CFS-HRS; 30.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	351.7	(NULL)
18.86	10.2	(NULL)
20.62	9.1	(NULL)
21.97	8.3	(NULL)
23.74	7.1	(NULL)
24.04	7.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.34 WATERSHED INCHES; 484 CFS-HRS; 40.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	88.5	(RUNOFF)
18.65	2.1	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.10 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	439.0	(NULL)
18.86	12.3	(NULL)
20.09	11.4	(NULL)
21.75	10.1	(NULL)
23.09	9.1	(NULL)
24.04	8.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.30 WATERSHED INCHES; 579 CFS-HRS; 47.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 35

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.32	419.8	317.47
20.16	11.4	316.22
20.91	10.8	316.21
23.15	9.1	316.18
24.10	8.5	316.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.30 WATERSHED INCHES; 579 CFS-HRS; 47.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.27	38.8	(RUNOFF)
20.14	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 49 CFS-HRS; 4.1 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .047 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.39	33.7	327.87
20.15	1.0	323.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.32	452.2	(NULL)
20.16	12.4	(NULL)
20.91	11.7	(NULL)
22.01	10.8	(NULL)
24.10	9.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.29 WATERSHED INCHES; 629 CFS-HRS; 52.0 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	142.5	(RUNOFF)
15.84	4.6	(RUNOFF)
17.34	3.6	(RUNOFF)
23.04	2.2	(RUNOFF)
23.70	2.0	(RUNOFF)
24.00	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.74 WATERSHED INCHES; 121 CFS-HRS; 10.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	511.7	(NULL)
23.99	11.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.18 WATERSHED INCHES; 750 CFS-HRS; 61.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	708.9	(NULL)
23.99	16.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.14 WATERSHED INCHES; 1061 CFS-HRS; 87.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	47.7	(RUNOFF)
18.86	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-FEET.

OPERATION RESVOR STRUCTURE 29

1 TR20 ----- SCS  
-

VERSION  
 02/06/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT  
 2.04TEST  
 17:06:03 PASS 3 JOB NO. 1  
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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.89 7.2 271.34  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 13.04 7.2 222.40  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.23 96.2 (RUNOFF)  
 21.46 3.0 (RUNOFF)  
 24.02 2.5 (RUNOFF)  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 112 CFS-HRS; 9.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.23 99.7 (NULL)  
 20.07 5.3 (NULL)  
 20.62 5.0 (NULL)  
 24.02 3.6 (NULL)  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.69 WATERSHED INCHES; 158 CFS-HRS; 13.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.46 648.3 226.26  
 24.04 16.2 222.67  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 1061 CFS-HRS; 87.7 ACRE-  
 FEET.

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION

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2.04TEST

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OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	711.6	(NULL)
24.03	19.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.82 WATERSHED INCHES; 1219 CFS-HRS; 100.7 ACRE-FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	586.9	223.19

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.82 WATERSHED INCHES; 1218 CFS-HRS; 100.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	378.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.83 WATERSHED INCHES; 515 CFS-HRS; 42.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	55.0	(RUNOFF)
20.07	1.1	(RUNOFF)
20.63	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.32 WATERSHED INCHES; 53 CFS-HRS; 4.4 ACRE-FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	35.5	336.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.32 WATERSHED INCHES; 53 CFS-HRS; 4.4 ACRE-  
FEET.

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2.04TEST  
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OPERATION REACH XSECTION 49

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.41 30.8 316.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.32 WATERSHED INCHES; 53 CFS-HRS; 4.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.33 404.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.87 WATERSHED INCHES; 568 CFS-HRS; 47.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.18 40.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.92 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.32 27.6 321.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.37 WATERSHED INCHES; 33 CFS-HRS; 2.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	432.2	277.62

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 601 CFS-HRS; 49.7 ACRE-  
 FEET.

1

TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	397.7	277.54

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 601 CFS-HRS; 49.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	163.6	(RUNOFF)
18.87	6.1	(RUNOFF)
21.98	5.0	(RUNOFF)
24.03	4.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.42 WATERSHED INCHES; 191 CFS-HRS; 15.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	497.3	(NULL)
24.01	14.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.29 WATERSHED INCHES; 792 CFS-HRS; 65.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.41 497.3 (NULL)  
24.01 14.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.29 WATERSHED INCHES; 792 CFS-HRS; 65.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.42 1389.6 (NULL)

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.63 WATERSHED INCHES; 2600 CFS-HRS; 214.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.14 20.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.62 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.42 1396.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.62 WATERSHED INCHES; 2618 CFS-HRS; 216.3 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.42 1396.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.62 WATERSHED INCHES; 2618 CFS-HRS; 216.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	79.3	(RUNOFF)
15.84	2.5	(RUNOFF)
24.00	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.97 WATERSHED INCHES; 68 CFS-HRS; 5.7 ACRE-FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	1393.5	133.89

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.62 WATERSHED INCHES; 2618 CFS-HRS; 216.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	1878.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.53 WATERSHED INCHES; 3410 CFS-HRS; 281.8 ACRE-FEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	1878.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.50 WATERSHED INCHES; 3362 CFS-HRS; 277.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	54.0	(RUNOFF)
19.43	1.0	(RUNOFF)



19.75	1.0	(RUNOFF)
20.07	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 52 CFS-HRS; 4.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	1895.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.51 WATERSHED INCHES; 3414 CFS-HRS; 282.1 ACRE-  
 FEET.

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

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2.04TEST

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PASS 4 JOB NO. 1

PAGE

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EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
 STARTING TIME = .00 RAIN DEPTH = 7.23 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =50 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	526.5	(RUNOFF)
18.67	13.8	(RUNOFF)
20.68	12.1	(RUNOFF)
21.94	11.1	(RUNOFF)
23.13	10.1	(RUNOFF)
24.01	9.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.59 WATERSHED INCHES; 622 CFS-HRS; 51.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	78.1	(RUNOFF)
24.02	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.24 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	70.8	432.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.15 WATERSHED INCHES; 78 CFS-HRS; 6.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 3

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 02/06/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT  
 2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	595.9	(NULL)
18.65	15.9	(NULL)
20.12	14.6	(NULL)
20.67	14.0	(NULL)
23.76	11.2	(NULL)
24.00	11.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.53 WATERSHED INCHES; 700 CFS-HRS; 57.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	212.7	(RUNOFF)
15.84	6.8	(RUNOFF)
17.34	5.2	(RUNOFF)
19.44	4.0	(RUNOFF)
22.75	3.1	(RUNOFF)
23.06	3.1	(RUNOFF)
24.00	3.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.03 WATERSHED INCHES; 200 CFS-HRS; 16.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	761.2	(NULL)
18.63	20.1	(NULL)
20.09	18.5	(NULL)
20.64	17.7	(NULL)

21.95	16.3	(NULL)
23.09	14.9	(NULL)
23.74	14.1	(NULL)
24.00	14.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.63 WATERSHED INCHES; 900 CFS-HRS; 74.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

1 TR20 ----- SCS  
 -

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2.04TEST

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	223.3	(RUNOFF)
15.83	8.2	(RUNOFF)
17.32	6.3	(RUNOFF)
18.86	5.0	(RUNOFF)
21.97	4.1	(RUNOFF)
24.02	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.30 WATERSHED INCHES; 222 CFS-HRS; 18.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	752.6	321.23
18.69	20.1	318.36
20.15	18.5	318.34
20.70	17.7	318.33
22.01	16.3	318.32
23.80	14.1	318.29
24.07	13.9	318.29

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.63 WATERSHED INCHES; 900 CFS-HRS; 74.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	933.8	(NULL)
18.65	25.2	(NULL)
20.12	23.2	(NULL)
20.68	22.2	(NULL)
21.99	20.4	(NULL)
23.12	18.6	(NULL)
24.04	17.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.56 WATERSHED INCHES; 1122 CFS-HRS; 92.7 ACRE-
FEET.

OPERATION RUNOFF XSECTION 9

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas
VERSION
02/06/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT
2.04TEST
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Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Data rows: 12.18, 180.9, (RUNOFF); 18.64, 4.0, (RUNOFF); 21.97, 3.2, (RUNOFF); 24.02, 2.8, (RUNOFF).

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.69 WATERSHED INCHES; 183 CFS-HRS; 15.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 10

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Data rows: 12.22, 70.7, (RUNOFF); 24.02, 1.2, (RUNOFF).

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.72 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 52

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Data row: 12.38, 50.8, 456.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.21 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-
FEET.

OPERATION REACH XSECTION 11

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Data row: 12.44, 50.4, 414.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.21 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 12

1

TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION  
02/06/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT  
2.04TEST  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	195.9	(NULL)
20.86	5.0	(NULL)
23.08	4.3	(NULL)
23.73	4.0	(NULL)
24.01	4.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.55 WATERSHED INCHES; 255 CFS-HRS; 21.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	153.2	(RUNOFF)
15.83	5.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.02	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.35 WATERSHED INCHES; 154 CFS-HRS; 12.8 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	83.1	399.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.35 WATERSHED INCHES; 154 CFS-HRS; 12.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	258.0	(NULL)
20.06	8.3	(NULL)
21.94	7.3	(NULL)
24.01	6.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.81 WATERSHED INCHES; 409 CFS-HRS; 33.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 15

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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02/06/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT  
2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	255.3	(RUNOFF)
15.84	8.6	(RUNOFF)
17.34	6.6	(RUNOFF)
19.47	5.1	(RUNOFF)
21.96	4.3	(RUNOFF)
24.01	3.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.55 WATERSHED INCHES; 239 CFS-HRS; 19.8 ACRE-  
FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	251.1	331.55
20.13	8.3	330.29
20.68	8.0	330.28
24.07	6.2	330.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.81 WATERSHED INCHES; 409 CFS-HRS; 33.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	449.9	(NULL)
20.06	13.3	(NULL)
20.62	12.7	(NULL)
21.94	11.6	(NULL)
23.06	10.6	(NULL)
24.01	9.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.71 WATERSHED INCHES; 648 CFS-HRS; 53.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.25	1360.9	(NULL)
20.10	36.4	(NULL)
20.64	34.9	(NULL)
21.95	31.9	(NULL)
23.10	29.2	(NULL)
23.75	27.6	(NULL)
24.03	27.5	(NULL)

1  
 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

02/06/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.61 WATERSHED INCHES; 1768 CFS-HRS; 146.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	541.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.19 WATERSHED INCHES; 731 CFS-HRS; 60.4 ACRE-FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	1235.0	238.86
20.14	36.4	234.56
23.14	29.2	234.50
24.09	27.3	234.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.61 WATERSHED INCHES; 1769 CFS-HRS; 146.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.35	1761.3	(NULL)
20.13	52.1	(NULL)
23.13	41.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 2499 CFS-HRS; 206.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	54.7	(RUNOFF)
21.96	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

OPERATION RESVOR STRUCTURE 47

1 TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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 2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	55.3	415.55
20.15	1.2	410.91

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	256.8	(RUNOFF)
20.10	5.2	(RUNOFF)
23.10	4.1	(RUNOFF)
24.03	3.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 275 CFS-HRS; 22.7 ACRE-FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	229.1	369.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 275 CFS-HRS; 22.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	284.3	(NULL)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 337 CFS-HRS; 27.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	148.7	(RUNOFF)
18.87	3.2	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.21 WATERSHED INCHES; 156 CFS-HRS; 12.9 ACRE-  
 FEET.

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	418.0	(NULL)
20.08	9.3	(NULL)
20.61	8.9	(NULL)
23.71	7.0	(NULL)
24.01	6.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.23 WATERSHED INCHES; 494 CFS-HRS; 40.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	283.6	342.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 494 CFS-HRS; 40.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	47.2	(RUNOFF)
17.32	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .9%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.39	295.1	(NULL)
23.98	7.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.18 WATERSHED INCHES; 531 CFS-HRS; 43.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 29

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 TR20 ----- SCS  
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 Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	220.3	(RUNOFF)
15.45	6.0	(RUNOFF)
15.82	5.8	(RUNOFF)
17.32	4.4	(RUNOFF)
20.02	3.3	(RUNOFF)
20.58	3.1	(RUNOFF)
20.82	3.1	(RUNOFF)
23.99	2.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.78 WATERSHED INCHES; 186 CFS-HRS; 15.4 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .1%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	220.3	(NULL)
15.45	6.0	(NULL)
15.82	5.8	(NULL)
17.32	4.4	(NULL)
20.02	3.3	(NULL)
20.58	3.1	(NULL)
20.82	3.1	(NULL)
23.99	2.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.78 WATERSHED INCHES; 186 CFS-HRS; 15.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	213.3	357.27
15.88	5.8	356.12
17.38	4.4	356.09
20.88	3.1	356.06
24.05	2.7	356.06

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.76 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

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TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

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 2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	433.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.47 WATERSHED INCHES; 616 CFS-HRS; 50.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.22	572.7	(NULL)
18.86	15.7	(NULL)
20.08	14.5	(NULL)
20.86	13.7	(NULL)
21.96	12.6	(NULL)
23.08	11.5	(NULL)
24.04	10.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.53 WATERSHED INCHES; 801 CFS-HRS; 66.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	148.2	(RUNOFF)

18.65	3.3	(RUNOFF)
20.10	3.0	(RUNOFF)
24.03	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.25 WATERSHED INCHES; 162 CFS-HRS; 13.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	729.7	(NULL)
18.61	19.2	(NULL)
18.85	18.9	(NULL)
20.09	17.5	(NULL)
20.86	16.6	(NULL)
21.97	15.3	(NULL)
23.74	13.1	(NULL)
24.04	13.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.48 WATERSHED INCHES; 963 CFS-HRS; 79.6 ACRE-  
 FEET.

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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 2.04TEST  
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OPERATION REACH XSECTION 35

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	694.0	317.98
20.15	17.5	316.29
20.92	16.6	316.28
22.01	15.3	316.27
23.80	13.1	316.25
24.10	13.0	316.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.49 WATERSHED INCHES; 963 CFS-HRS; 79.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	65.4	(RUNOFF)
23.76	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.30 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .047 HOURS. \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS. \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.29	64.5	328.67
23.78	1.2	323.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.31 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 37

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TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	758.3	(NULL)
20.15	19.1	(NULL)
20.91	18.0	(NULL)
22.01	16.6	(NULL)
23.15	15.1	(NULL)
23.80	14.3	(NULL)
24.10	14.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.47 WATERSHED INCHES; 1047 CFS-HRS; 86.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.13	246.6	(RUNOFF)
15.84	7.4	(RUNOFF)
17.34	5.7	(RUNOFF)
20.04	4.3	(RUNOFF)
20.60	4.1	(RUNOFF)
23.70	3.2	(RUNOFF)
24.00	3.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.81 WATERSHED INCHES; 212 CFS-HRS; 17.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	869.0	(NULL)
23.99	17.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.35 WATERSHED INCHES; 1259 CFS-HRS; 104.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	1147.4	(NULL)
23.99	25.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.30 WATERSHED INCHES; 1791 CFS-HRS; 148.0 ACRE-  
 FEET.

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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 2.04TEST  
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OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	79.8	(RUNOFF)
17.34	2.0	(RUNOFF)
24.01	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.19 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	28.4	273.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.12 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	27.2	222.79

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.11 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.22	217.1	(RUNOFF)
19.47	6.2	(RUNOFF)
20.11	6.0	(RUNOFF)
21.98	5.3	(RUNOFF)
24.02	4.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.05 WATERSHED INCHES; 238 CFS-HRS; 19.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 44

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 TR20 ----- SCS  
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 Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 02/06/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT  
 2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.22	224.0	(NULL)
20.63	8.5	(NULL)
24.02	6.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.38 WATERSHED INCHES; 316 CFS-HRS; 26.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.43	1075.9	227.59
24.04	24.9	222.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.29 WATERSHED INCHES; 1789 CFS-HRS; 147.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.40	1223.5	(NULL)
24.03	31.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

4.88 WATERSHED INCHES; 2104 CFS-HRS; 173.9 ACRE-FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.67 951.4 227.93

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.88 WATERSHED INCHES; 2104 CFS-HRS; 173.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.31 655.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.93 WATERSHED INCHES; 897 CFS-HRS; 74.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 48

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas
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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.16 89.2 (RUNOFF)
17.34 2.2 (RUNOFF)
24.01 1.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.52 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.29 58.1 337.36
24.03 1.2 333.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.52 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK



ELEVATION(FEET)  
12.46 57.3 317.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.52 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.31 707.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.97 WATERSHED INCHES; 985 CFS-HRS; 81.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.18 69.7 (RUNOFF)  
23.74 1.0 (RUNOFF)  
24.02 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.04 WATERSHED INCHES; 71 CFS-HRS; 5.9 ACRE-  
FEET.

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TR20 ----- SCS  
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2.04TEST

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\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE

STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.26 58.5 322.59  
24.03 1.0 320.81

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.45 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)

12.31 763.5 278.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.94 WATERSHED INCHES; 1048 CFS-HRS; 86.6 ACRE-
FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.45 686.4 278.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.94 WATERSHED INCHES; 1048 CFS-HRS; 86.6 ACRE-
FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.21 369.6 (RUNOFF)
18.87 11.0 (RUNOFF)
20.11 10.3 (RUNOFF)
21.97 9.1 (RUNOFF)
23.11 8.3 (RUNOFF)
24.03 7.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.03 WATERSHED INCHES; 407 CFS-HRS; 33.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 54

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas
VERSION

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2.04TEST
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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.38 904.7 (NULL)
24.01 23.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.20 WATERSHED INCHES; 1454 CFS-HRS; 120.2 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.38 904.7 (NULL)
24.01 23.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

4.20 WATERSHED INCHES; 1454 CFS-HRS; 120.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.39 2540.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.65 WATERSHED INCHES; 4602 CFS-HRS; 380.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.13 42.2 (RUNOFF)  
17.34 1.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.31 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.38 2554.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.64 WATERSHED INCHES; 4638 CFS-HRS; 383.3 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 6

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.38 2554.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.64 WATERSHED INCHES; 4638 CFS-HRS; 383.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.13 133.5 (RUNOFF)

17.34	3.0	(RUNOFF)
21.45	2.0	(RUNOFF)
24.00	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 117 CFS-HRS; 9.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	2553.2	135.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.64 WATERSHED INCHES; 4638 CFS-HRS; 383.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	3442.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.52 WATERSHED INCHES; 6092 CFS-HRS; 503.4 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	3442.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.47 WATERSHED INCHES; 6021 CFS-HRS; 497.6 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	86.7	(RUNOFF)
17.34	2.1	(RUNOFF)
24.01	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.70 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	3472.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.49 WATERSHED INCHES; 6106 CFS-HRS; 504.6 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
 STARTING TIME = .00 RAIN DEPTH = 8.47 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =99 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	652.9	(RUNOFF)
18.67	16.6	(RUNOFF)
20.13	15.2	(RUNOFF)
20.67	14.5	(RUNOFF)
21.93	13.3	(RUNOFF)
23.12	12.1	(RUNOFF)
24.01	11.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.72 WATERSHED INCHES; 776 CFS-HRS; 64.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 2

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	97.8	(RUNOFF)
20.09	2.1	(RUNOFF)
24.02	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.34 WATERSHED INCHES; 101 CFS-HRS; 8.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	93.7	432.27
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.24 WATERSHED INCHES;	99 CFS-HRS;	8.2 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	746.6	(NULL)
18.65	19.1	(NULL)
20.12	17.4	(NULL)
20.67	16.6	(NULL)
23.12	14.0	(NULL)
23.77	13.3	(NULL)
24.01	13.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.66 WATERSHED INCHES;	874 CFS-HRS;	72.3 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	259.5	(RUNOFF)
15.84	8.1	(RUNOFF)
17.34	6.2	(RUNOFF)
18.62	5.0	(RUNOFF)
21.45	4.1	(RUNOFF)
21.75	4.0	(RUNOFF)
21.95	4.0	(RUNOFF)
24.00	3.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.19 WATERSHED INCHES;	247 CFS-HRS;	20.4 ACRE-
FEET.		

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OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	961.0	(NULL)
18.63	24.2	(NULL)
20.08	22.0	(NULL)

20.63	21.0	(NULL)
21.95	19.3	(NULL)
23.09	17.7	(NULL)
24.00	16.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 1120 CFS-HRS; 92.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	278.1	(RUNOFF)
15.82	9.9	(RUNOFF)
17.31	7.6	(RUNOFF)
18.86	6.1	(RUNOFF)
21.45	5.1	(RUNOFF)
24.02	4.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.40 WATERSHED INCHES; 279 CFS-HRS; 23.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	943.1	321.72
18.69	24.1	318.40
20.15	22.0	318.38
20.70	21.0	318.37
22.01	19.3	318.35
23.15	17.7	318.33
24.07	16.5	318.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 1120 CFS-HRS; 92.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 8

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	1174.5	(NULL)
18.65	30.3	(NULL)
20.12	27.6	(NULL)
20.67	26.4	(NULL)
21.99	24.2	(NULL)
23.12	22.2	(NULL)
24.04	20.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 1399 CFS-HRS; 115.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	223.2	(RUNOFF)
20.87	4.2	(RUNOFF)
24.02	3.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.84 WATERSHED INCHES; 227 CFS-HRS; 18.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	87.2	(RUNOFF)
18.66	2.1	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.86 WATERSHED INCHES; 100 CFS-HRS; 8.3 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	70.3	456.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.35 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-  
 FEET.

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OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	70.0	414.92



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.34 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	250.4	(NULL)
18.61	7.1	(NULL)
20.86	6.0	(NULL)
23.08	5.1	(NULL)
24.01	4.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 318 CFS-HRS; 26.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	185.0	(RUNOFF)
15.83	6.0	(RUNOFF)
17.33	4.6	(RUNOFF)
20.86	3.2	(RUNOFF)
24.02	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.54 WATERSHED INCHES; 189 CFS-HRS; 15.6 ACRE-  
 FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 51,  
 VALUE EXTRAPOLATED.  
 \*\*\*

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.34	105.1	399.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.54 WATERSHED INCHES; 189 CFS-HRS; 15.6 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		
12.23	335.1	(NULL)
20.62	9.5	(NULL)
21.94	8.7	(NULL)
24.01	7.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.97 WATERSHED INCHES; 507 CFS-HRS; 41.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	316.5	(RUNOFF)
15.84	10.3	(RUNOFF)
17.34	8.0	(RUNOFF)
19.44	6.1	(RUNOFF)
21.95	5.2	(RUNOFF)
24.01	4.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.68 WATERSHED INCHES; 299 CFS-HRS; 24.7 ACRE-FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	328.0	331.81
20.68	9.5	330.31
24.08	7.4	330.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.97 WATERSHED INCHES; 507 CFS-HRS; 41.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	565.4	(NULL)
18.58	17.7	(NULL)
20.62	15.2	(NULL)
21.94	13.8	(NULL)
23.07	12.7	(NULL)
24.01	11.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.86 WATERSHED INCHES; 805 CFS-HRS; 66.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	1717.2	(NULL)
18.63	48.0	(NULL)
20.10	43.5	(NULL)
20.64	41.6	(NULL)
21.95	38.0	(NULL)
23.10	34.8	(NULL)
24.03	32.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.75 WATERSHED INCHES; 2204 CFS-HRS; 182.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	683.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.30 WATERSHED INCHES; 923 CFS-HRS; 76.3 ACRE-FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	1564.9	239.60
20.14	43.5	234.62
23.15	34.8	234.55
24.09	32.5	234.53

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.75 WATERSHED INCHES; 2203 CFS-HRS; 182.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	2231.6	(NULL)
20.13	62.4	(NULL)
23.14	49.9	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.61 WATERSHED INCHES; 3127 CFS-HRS; 258.4 ACRE-

FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	66.5	(RUNOFF)
24.02	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.42 WATERSHED INCHES;		77 CFS-HRS;
FEET.		6.3 ACRE-

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	65.7	415.70
23.14	1.1	410.86
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.42 WATERSHED INCHES;		77 CFS-HRS;
FEET.		6.3 ACRE-

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	311.9	(RUNOFF)
20.10	6.1	(RUNOFF)
21.97	5.3	(RUNOFF)
24.03	4.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.42 WATERSHED INCHES;		336 CFS-HRS;
FEET.		27.8 ACRE-

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	284.3	370.13
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.42 WATERSHED INCHES;		336 CFS-HRS;
FEET.		27.8 ACRE-

OPERATION ADDHYD XSECTION 24

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	349.9	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.42 WATERSHED INCHES;	413 CFS-HRS;	34.1 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	180.8	(RUNOFF)
21.97	3.0	(RUNOFF)
24.02	2.6	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.39 WATERSHED INCHES;	192 CFS-HRS;	15.9 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	515.5	(NULL)
20.08	11.1	(NULL)
20.61	10.6	(NULL)
24.01	8.2	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.41 WATERSHED INCHES;	605 CFS-HRS;	50.0 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	429.8	343.30
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.42 WATERSHED INCHES;	605 CFS-HRS;	50.0 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	58.8	(RUNOFF)
17.32	1.2	(RUNOFF)
18.58	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.67 WATERSHED INCHES;	46 CFS-HRS;	3.8 ACRE-
FEET.		

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\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.6%.  
\*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	446.1	(NULL)
23.98	9.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.36 WATERSHED INCHES; 652 CFS-HRS; 53.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	261.8	(RUNOFF)
15.45	7.1	(RUNOFF)
15.82	6.8	(RUNOFF)
17.32	5.2	(RUNOFF)
18.82	4.2	(RUNOFF)
22.41	3.2	(RUNOFF)
22.72	3.1	(RUNOFF)
23.02	3.1	(RUNOFF)
23.99	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.96 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-  
FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT 1.1%.  
\*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	261.8	(NULL)
15.45	7.1	(NULL)
15.82	6.8	(NULL)
17.32	5.2	(NULL)
18.82	4.2	(NULL)
22.41	3.2	(NULL)
22.72	3.1	(NULL)
23.02	3.1	(NULL)
23.99	3.2	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.96 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	255.4	357.40
15.88	6.8	356.14
17.38	5.2	356.11
18.88	4.2	356.09
21.98	3.4	356.07
22.78	3.1	356.07
23.09	3.1	356.07
24.05	3.2	356.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.99 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	521.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.66 WATERSHED INCHES; 750 CFS-HRS; 62.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	686.9	(NULL)
18.85	18.6	(NULL)
20.08	17.2	(NULL)
20.87	16.2	(NULL)
21.75	15.1	(NULL)
21.97	15.0	(NULL)
23.08	13.6	(NULL)
24.04	12.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.73 WATERSHED INCHES; 975 CFS-HRS; 80.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.20	178.4	(RUNOFF)
21.97	3.1	(RUNOFF)
24.03	2.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.43 WATERSHED INCHES; 198 CFS-HRS; 16.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.21	876.5	(NULL)
18.85	22.4	(NULL)
20.09	20.8	(NULL)
20.87	19.6	(NULL)
21.97	18.1	(NULL)
23.09	16.5	(NULL)
24.04	15.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 1173 CFS-HRS; 96.9 ACRE-FEET.

OPERATION REACH XSECTION 35

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.31	825.2	318.24
20.15	20.7	316.31
20.91	19.6	316.30
22.01	18.1	316.29
23.15	16.5	316.28
24.10	15.5	316.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 1173 CFS-HRS; 96.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.26	78.9	(RUNOFF)
18.64	2.0	(RUNOFF)
23.76	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.49 WATERSHED INCHES; 102 CFS-HRS; 8.4 ACRE-FEET.



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\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .047 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.29	78.4	328.90
23.77	1.4	323.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.47 WATERSHED INCHES; 102 CFS-HRS; 8.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	903.1	(NULL)
20.15	22.6	(NULL)
20.91	21.3	(NULL)
22.01	19.7	(NULL)
23.15	17.9	(NULL)
24.10	16.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.66 WATERSHED INCHES; 1275 CFS-HRS; 105.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.13	303.7	(RUNOFF)
15.45	9.3	(RUNOFF)
15.84	8.9	(RUNOFF)
17.34	6.8	(RUNOFF)
19.74	5.1	(RUNOFF)
20.04	5.1	(RUNOFF)
22.42	4.2	(RUNOFF)
22.74	4.1	(RUNOFF)
23.04	4.1	(RUNOFF)
24.00	4.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.96 WATERSHED INCHES; 263 CFS-HRS; 21.8 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	1035.2	(NULL)
23.99	20.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.53 WATERSHED INCHES;		127.1 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	1443.0	(NULL)
23.99	29.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.47 WATERSHED INCHES;		180.8 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	97.1	(RUNOFF)
15.84	3.1	(RUNOFF)
17.34	2.4	(RUNOFF)
24.02	1.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.37 WATERSHED INCHES;		8.0 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	49.7	274.20
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.25 WATERSHED INCHES;		7.9 ACRE-
FEET.		

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
 12.46                                  47.8                                  223.02  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.26 WATERSHED INCHES;                  95 CFS-HRS;                  7.9 ACRE-  
 FEET.

OPERATION RUNOFF    XSECTION    43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	289.3	(RUNOFF)
18.87	8.0	(RUNOFF)
20.86	7.1	(RUNOFF)
21.97	6.6	(RUNOFF)
23.10	6.0	(RUNOFF)
24.03	5.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.01 WATERSHED INCHES;                  313 CFS-HRS;                  25.9 ACRE-  
 FEET.

OPERATION ADDHYD    XSECTION    44

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	297.1	(NULL)
18.59	12.3	(NULL)
20.63	10.2	(NULL)
23.09	8.2	(NULL)
24.03	7.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.38 WATERSHED INCHES;                  409 CFS-HRS;                  33.8 ACRE-  
 FEET.

OPERATION REACH    XSECTION    45

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.50	1290.5	228.71
24.09	29.6	222.89

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.48 WATERSHED INCHES;                  2189 CFS-HRS;                  180.9 ACRE-  
 FEET.

OPERATION ADDHYD    XSECTION    46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
12.49 1468.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.02 WATERSHED INCHES; 2597 CFS-HRS; 214.6 ACRE-  
FEET.

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OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.77 1097.3 230.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.02 WATERSHED INCHES; 2596 CFS-HRS; 214.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.31 802.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.09 WATERSHED INCHES; 1108 CFS-HRS; 91.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.16 107.1 (RUNOFF)  
15.84 3.3 (RUNOFF)  
18.85 2.0 (RUNOFF)  
24.01 1.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.72 WATERSHED INCHES; 107 CFS-HRS; 8.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.32 59.2 337.87  
24.03 1.4 333.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.72 WATERSHED INCHES; 108 CFS-HRS; 8.9 ACRE-  
FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	58.6	317.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.71 WATERSHED INCHES; 107 CFS-HRS; 8.9 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	858.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.14 WATERSHED INCHES; 1216 CFS-HRS; 100.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	84.8	(RUNOFF)
24.02	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.20 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	71.1	322.85
24.03	1.2	320.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.60 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	926.8	279.26

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 1294 CFS-HRS; 107.0 ACRE-FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	800.3	279.01

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 1294 CFS-HRS; 107.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	494.4	(RUNOFF)
19.46	13.3	(RUNOFF)
20.86	12.1	(RUNOFF)
21.97	11.3	(RUNOFF)
23.10	10.3	(RUNOFF)
24.03	9.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.99 WATERSHED INCHES; 536 CFS-HRS; 44.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	1077.6	(NULL)
24.01	27.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.28 WATERSHED INCHES; 1830 CFS-HRS; 151.2 ACRE-FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.36	1077.6	(NULL)
24.01	27.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.28 WATERSHED INCHES; 1830 CFS-HRS; 151.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	3033.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.79 WATERSHED INCHES; 5722 CFS-HRS; 472.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 56

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	55.0	(RUNOFF)
20.04	1.1	(RUNOFF)
20.60	1.0	(RUNOFF)
20.83	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.31 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	3052.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 5768 CFS-HRS; 476.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	3052.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 5768 CFS-HRS; 476.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	162.6	(RUNOFF)
15.84	4.7	(RUNOFF)
17.34	3.6	(RUNOFF)
23.04	2.2	(RUNOFF)
23.70	2.0	(RUNOFF)
24.00	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.26 WATERSHED INCHES; 144 CFS-HRS; 11.9 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 59.  
 \*\*\*

OPERATION REACH XSECTION 59

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	3052.2	136.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 5768 CFS-HRS; 476.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	4129.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.64 WATERSHED INCHES; 7598 CFS-HRS; 627.9 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	4129.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)



5.58 WATERSHED INCHES; 7517 CFS-HRS; 621.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.16	103.9	(RUNOFF)
15.84	3.2	(RUNOFF)
17.34	2.4	(RUNOFF)
24.01	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.90 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.37	4172.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.60 WATERSHED INCHES; 7620 CFS-HRS; 629.7 ACRE-  
FEET.

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EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 5

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 6

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2.04TEST  
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE
------------------------	---------------------	----------	--------	----------------

ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
----	-----------	-----------------	----------------	-------------------	--------------	---------------	---------------

RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.  
 RAINFALL NUMBER 1, ARC 2  
 MAIN TIME INCREMENT .060 HOURS

ALTERNATE	1	STORM	2					
XSECTION	1	RUNOFF	.21	1.22	---	12.26	137	652.4
XSECTION	2	RUNOFF	.03	1.03	---	12.20	18	600.0
STRUCTURE	58	RESVOR	.03	1.02	429.15	13.47	2	66.7
XSECTION	4	RUNOFF	.06	1.47	---	12.16	63	1050.0
XSECTION	6	RUNOFF	.08	1.06	---	12.19	53	662.5
XSECTION	9	RUNOFF	.06	1.27	---	12.19	49	816.7
XSECTION	10	RUNOFF	.03	1.29	---	12.23	19	633.3
STRUCTURE	52	RESVOR	.03	.86	454.47	13.33T	3T	100.0
XSECTION	12	ADDHYD	.09	1.15	---	12.19	49	544.4
XSECTION	13	RUNOFF	.04	1.67	---	12.18	49	1225.0
STRUCTURE	51	RESVOR	.04	1.67	397.47	12.42	22	550.0
XSECTION	15	RUNOFF	.08	1.19	---	12.16	66	825.0
XSECTION	17	ADDHYD	.21	1.27	---	12.21	110	523.8
XSECTION	18	ADDHYD	.59	1.23	---	12.25	334	566.1
XSECTION	19	RUNOFF	.27	1.01	---	12.33	122	451.9
XSECTION	20	REACH	.59	1.23	235.86	12.38	306	518.6
XSECTION	21	ADDHYD	.86	1.16	---	12.36	426	495.3
XSECTION	22	RUNOFF	.02	1.60	---	12.22	17	850.0
STRUCTURE	47	RESVOR	.02	1.60	414.10	12.37	12	600.0
XSECTION	23	RUNOFF	.08	1.60	---	12.20	80	1000.0
STRUCTURE	32	RESVOR	.08	1.60	368.24	12.32	61	762.5
XSECTION	25	RUNOFF	.05	1.58	---	12.19	46	920.0
STRUCTURE	34	RESVOR	.15	1.59	337.19	12.68	54	360.0
XSECTION	27	RUNOFF	.01	1.19	---	12.12	13	1300.0
XSECTION	28	ADDHYD	.16	1.56	---	12.67	56	350.0
XSECTION	29	RUNOFF	.05	1.96	---	12.11	81	1620.0
STRUCTURE	64	RESVOR	.05	1.96	---	12.11	81	1620.0
XSECTION	31	RUNOFF	.17	1.75	---	12.33	142	835.3

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 2.04TEST  
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SUMMARY TABLE 1

-----  
 SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
ID	OPERATION	AREA	AMOUNT	ELEVATION	TIME	RATE	RATE

			(SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)
ALTERNATE	1	STORM	2					
XSECTION	33	RUNOFF	.05	1.60	---	12.21	46	920.0
XSECTION	36	RUNOFF	.02	1.64	---	12.27	21	1050.0
STRUCTURE	33	RESVOR	.02	1.64	325.68	12.45	15	750.0
XSECTION	38	RUNOFF	.07	1.33	---	12.13	69	985.7
XSECTION	39	ADDHYD	.36	1.67	---	12.32	265	736.1
XSECTION	41	RUNOFF	.02	1.57	---	12.18	25	1250.0
STRUCTURE	29	RESVOR	.02	1.56	268.66	13.00	4	200.0
XSECTION	43	RUNOFF	.12	.51	---	12.26	26	216.7
XSECTION	44	ADDHYD	.14	.68	---	12.26	28	200.0
XSECTION	46	ADDHYD	.67	1.43	---	12.44	320	477.6
STRUCTURE	7	RESVOR	.67	1.43	219.61	12.69	263	392.5
XSECTION	47	RUNOFF	.28	1.40	---	12.32	185	660.7
XSECTION	48	RUNOFF	.02	1.78	---	12.17	30	1500.0
STRUCTURE	40	RESVOR	.02	1.78	334.19	12.33	16	800.0
XSECTION	51	RUNOFF	.02	1.47	---	12.19	21	1050.0
STRUCTURE	43	RESVOR	.02	.97	321.02	12.86	4	200.0
XSECTION	52	ADDHYD	.33	1.40	277.07	12.33	198	600.0
XSECTION	53	RUNOFF	.21	.50	---	12.26	44	209.5
XSECTION	54	ADDHYD	.54	1.05	---	12.46	208	385.2
STRUCTURE	5	RESVOR	.54	1.05	---	12.46	208	385.2
XSECTION	55	ADDHYD	1.53	1.28	---	12.43	610	398.7
XSECTION	56	RUNOFF	.02	.61	---	12.14	6	300.0
XSECTION	57	ADDHYD	1.55	1.27	---	12.43	612	394.8
STRUCTURE	6	RESVOR	1.55	1.27	---	12.43	612	394.8
XSECTION	58	RUNOFF	.04	1.51	---	12.14	41	1025.0
XSECTION	62	RUNOFF	.02	1.90	---	12.17	30	1500.0
XSECTION	63	ADDHYD	2.11	1.20	---	12.49	825	391.0

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 SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

RAINFALL OF 4.10 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

	ALTERNATE	1	STORM	5				
XSECTION	1	RUNOFF	.21	1.90	---	12.25	218	1038.1
XSECTION	2	RUNOFF	.03	1.67	---	12.20	30	1000.0
STRUCTURE	58	RESVOR	.03	1.64	430.23	12.68	8	266.7
XSECTION	4	RUNOFF	.06	2.21	---	12.15	96	1600.0
XSECTION	6	RUNOFF	.08	1.70	---	12.19	88	1100.0
XSECTION	9	RUNOFF	.06	1.98	---	12.19	77	1283.3
XSECTION	10	RUNOFF	.03	1.99	---	12.23	30	1000.0
STRUCTURE	52	RESVOR	.03	1.54	454.90	12.72	9	300.0
XSECTION	12	ADDHYD	.09	1.84	---	12.19	77	855.6
XSECTION	13	RUNOFF	.04	2.45	---	12.18	72	1800.0
STRUCTURE	51	RESVOR	.04	2.45	397.96	12.39	34	850.0
XSECTION	15	RUNOFF	.08	1.87	---	12.16	106	1325.0
XSECTION	17	ADDHYD	.21	1.98	---	12.20	178	847.6
XSECTION	18	ADDHYD	.59	1.92	---	12.24	539	913.6
XSECTION	19	RUNOFF	.27	1.64	---	12.32	208	770.4
XSECTION	20	REACH	.59	1.92	236.60	12.37	487	825.4
XSECTION	21	ADDHYD	.86	1.83	---	12.36	691	803.5
XSECTION	22	RUNOFF	.02	2.37	---	12.22	25	1250.0
STRUCTURE	47	RESVOR	.02	2.37	414.35	12.33	21	1050.0
XSECTION	23	RUNOFF	.08	2.37	---	12.20	119	1487.5
STRUCTURE	32	RESVOR	.08	2.37	368.74	12.32	86	1075.0
XSECTION	25	RUNOFF	.05	2.35	---	12.19	68	1360.0
STRUCTURE	34	RESVOR	.15	2.36	338.39	12.46	127	846.7
XSECTION	27	RUNOFF	.01	1.88	---	12.12	20	2000.0

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION	TIME	RATE	RATE	
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	(FT)	(HR)	(CFS)	(CSM)	
	ALTERNATE	1	STORM	5				
XSECTION	28	ADDHYD	.16	2.33	---	12.46	132	825.0
XSECTION	29	RUNOFF	.05	2.79	---	12.11	113	2260.0
STRUCTURE	64	RESVOR	.05	2.79	---	12.11	113	2260.0
XSECTION	31	RUNOFF	.17	2.55	---	12.32	207	1217.6
XSECTION	33	RUNOFF	.05	2.38	---	12.20	68	1360.0

XSECTION	36	RUNOFF	.02	2.42	---	12.27	30	1500.0
STRUCTURE	33	RESVOR	.02	2.42	327.30	12.44	24	1200.0
XSECTION	38	RUNOFF	.07	2.05	---	12.13	107	1528.6
XSECTION	39	ADDHYD	.36	2.46	---	12.31	390	1083.3
XSECTION	41	RUNOFF	.02	2.34	---	12.17	37	1850.0
STRUCTURE	29	RESVOR	.02	2.32	270.05	12.93	5	250.0
XSECTION	43	RUNOFF	.12	.96	---	12.23	61	508.3
XSECTION	44	ADDHYD	.14	1.18	---	12.24	63	450.0
XSECTION	46	ADDHYD	.67	2.15	---	12.55	505	753.7
STRUCTURE	7	RESVOR	.67	2.15	221.48	12.72	428	638.8
XSECTION	47	RUNOFF	.28	2.14	---	12.32	285	1017.9
XSECTION	48	RUNOFF	.02	2.59	---	12.17	44	2200.0
STRUCTURE	40	RESVOR	.02	2.59	335.09	12.35	22	1100.0
XSECTION	51	RUNOFF	.02	2.22	---	12.18	31	1550.0
STRUCTURE	43	RESVOR	.02	1.69	321.43	12.41	15	750.0
XSECTION	52	ADDHYD	.33	2.14	277.35	12.33	315	954.5
XSECTION	53	RUNOFF	.21	.95	---	12.23	103	490.5
XSECTION	54	ADDHYD	.54	1.68	---	12.43	351	650.0
STRUCTURE	5	RESVOR	.54	1.68	---	12.43	351	650.0
XSECTION	55	ADDHYD	1.53	1.97	---	12.42	960	627.5
XSECTION	56	RUNOFF	.02	1.11	---	12.14	13	650.0
XSECTION	57	ADDHYD	1.55	1.96	---	12.42	964	621.9
STRUCTURE	6	RESVOR	1.55	1.96	---	12.42	964	621.9
XSECTION	58	RUNOFF	.04	2.27	---	12.13	61	1525.0
XSECTION	62	RUNOFF	.02	2.72	---	12.16	43	2150.0

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD			PEAK DISCHARGE			
	CONTROL	DRAINAGE	RUNOFF	ELEVATION	TIME	RATE	RATE
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	(FT)	(HR)	(CFS)	(CSM)

ALTERNATE 1 STORM 5

XSECTION 63 ADDHYD 2.11 1.87 --- 12.47 1321 626.1

RAINFALL OF 4.91 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 10

XSECTION	1	RUNOFF	.21	2.56	---	12.25	295	1404.8
XSECTION	2	RUNOFF	.03	2.29	---	12.19	42	1400.0
STRUCTURE	58	RESVOR	.03	2.25	430.98	12.52	16	533.3
XSECTION	4	RUNOFF	.06	2.91	---	12.15	125	2083.3
XSECTION	6	RUNOFF	.08	2.33	---	12.18	121	1512.5
XSECTION	9	RUNOFF	.06	2.64	---	12.18	103	1716.7
XSECTION	10	RUNOFF	.03	2.67	---	12.23	40	1333.3
STRUCTURE	52	RESVOR	.03	2.20	455.36	12.60	15	500.0
XSECTION	12	ADDHYD	.09	2.51	---	12.19	104	1155.6
XSECTION	13	RUNOFF	.04	3.18	---	12.18	92	2300.0
STRUCTURE	51	RESVOR	.04	3.18	398.37	12.38	46	1150.0
XSECTION	15	RUNOFF	.08	2.53	---	12.16	143	1787.5
XSECTION	17	ADDHYD	.21	2.65	---	12.20	243	1157.1
XSECTION	18	ADDHYD	.59	2.58	---	12.24	733	1242.4
XSECTION	19	RUNOFF	.27	2.26	---	12.32	290	1074.1
XSECTION	20	REACH	.59	2.58	237.23	12.37	658	1115.3
XSECTION	21	ADDHYD	.86	2.48	---	12.35	942	1095.3
XSECTION	22	RUNOFF	.02	3.09	---	12.22	33	1650.0
STRUCTURE	47	RESVOR	.02	3.09	414.77	12.32	27	1350.0
XSECTION	23	RUNOFF	.08	3.09	---	12.20	154	1925.0
STRUCTURE	32	RESVOR	.08	3.09	369.12	12.30	123	1537.5
XSECTION	25	RUNOFF	.05	3.07	---	12.19	89	1780.0
STRUCTURE	34	RESVOR	.15	3.08	338.90	12.39	185	1233.3
XSECTION	27	RUNOFF	.01	2.54	---	12.12	27	2700.0
XSECTION	28	ADDHYD	.16	3.04	---	12.37	192	1200.0

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A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)
ALTERNATE	1	STORM	10					
XSECTION	29	RUNOFF	.05	3.56	---	12.11	142	2840.0
STRUCTURE	64	RESVOR	.05	3.56	---	12.11	142	2840.0
XSECTION	31	RUNOFF	.17	3.28	---	12.32	264	1552.9
XSECTION	33	RUNOFF	.05	3.10	---	12.20	89	1780.0
XSECTION	36	RUNOFF	.02	3.14	---	12.27	39	1950.0
STRUCTURE	33	RESVOR	.02	3.14	327.87	12.39	34	1700.0

XSECTION	38	RUNOFF	.07	2.74	---	12.13	143	2042.9
XSECTION	39	ADDHYD	.36	3.18	---	12.30	512	1422.2
XSECTION	41	RUNOFF	.02	3.05	---	12.17	48	2400.0
STRUCTURE	29	RESVOR	.02	3.02	271.34	12.89	7	350.0
XSECTION	43	RUNOFF	.12	1.43	---	12.23	96	800.0
XSECTION	44	ADDHYD	.14	1.69	---	12.23	100	714.3
XSECTION	46	ADDHYD	.67	2.82	---	12.44	712	1062.7
STRUCTURE	7	RESVOR	.67	2.82	223.19	12.64	587	876.1
XSECTION	47	RUNOFF	.28	2.83	---	12.32	379	1353.6
XSECTION	48	RUNOFF	.02	3.32	---	12.17	55	2750.0
STRUCTURE	40	RESVOR	.02	3.32	336.30	12.31	36	1800.0
XSECTION	51	RUNOFF	.02	2.92	---	12.18	41	2050.0
STRUCTURE	43	RESVOR	.02	2.37	321.86	12.32	28	1400.0
XSECTION	52	ADDHYD	.33	2.83	277.62	12.33	432	1309.1
XSECTION	53	RUNOFF	.21	1.42	---	12.22	164	781.0
XSECTION	54	ADDHYD	.54	2.29	---	12.41	497	920.4
STRUCTURE	5	RESVOR	.54	2.29	---	12.41	497	920.4
XSECTION	55	ADDHYD	1.53	2.63	---	12.42	1390	908.5
XSECTION	56	RUNOFF	.02	1.62	---	12.14	20	1000.0
XSECTION	57	ADDHYD	1.55	2.62	---	12.42	1396	900.6
STRUCTURE	6	RESVOR	1.55	2.62	---	12.42	1396	900.6
XSECTION	58	RUNOFF	.04	2.97	---	12.13	79	1975.0
XSECTION	62	RUNOFF	.02	3.48	---	12.16	54	2700.0
XSECTION	63	ADDHYD	2.11	2.51	---	12.46	1895	898.1

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)

RAINFALL OF 7.23 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 50

XSECTION	1	RUNOFF	.21	4.59	---	12.24	526	2504.8
XSECTION	2	RUNOFF	.03	4.24	---	12.19	78	2600.0
STRUCTURE	58	RESVOR	.03	4.15	432.07	12.26	71	2366.7
XSECTION	4	RUNOFF	.06	5.03	---	12.15	213	3550.0
XSECTION	6	RUNOFF	.08	4.30	---	12.18	223	2787.5
XSECTION	9	RUNOFF	.06	4.69	---	12.18	181	3016.7

XSECTION	10	RUNOFF	.03	4.72	---	12.22	71	2366.7
STRUCTURE	52	RESVOR	.03	4.21	456.22	12.38	51	1700.0
XSECTION	12	ADDHYD	.09	4.55	---	12.19	196	2177.8
XSECTION	13	RUNOFF	.04	5.35	---	12.17	153	3825.0
STRUCTURE	51	RESVOR	.04	5.35	399.39	12.35	83	2075.0
XSECTION	15	RUNOFF	.08	4.55	---	12.16	255	3187.5
XSECTION	17	ADDHYD	.21	4.71	---	12.20	450	2142.9
XSECTION	18	ADDHYD	.59	4.61	---	12.25	1361	2306.8
XSECTION	19	RUNOFF	.27	4.19	---	12.31	541	2003.7
XSECTION	20	REACH	.59	4.61	238.86	12.37	1235	2093.2
XSECTION	21	ADDHYD	.86	4.48	---	12.35	1761	2047.7
XSECTION	22	RUNOFF	.02	5.24	---	12.22	55	2750.0
STRUCTURE	47	RESVOR	.02	5.24	415.55	12.26	55	2750.0
XSECTION	23	RUNOFF	.08	5.24	---	12.19	257	3212.5
STRUCTURE	32	RESVOR	.08	5.24	369.84	12.26	229	2862.5
XSECTION	25	RUNOFF	.05	5.21	---	12.19	149	2980.0
STRUCTURE	34	RESVOR	.15	5.24	342.14	12.41	284	1893.3
XSECTION	27	RUNOFF	.01	4.57	---	12.11	47	4700.0

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)
	ALTERNATE	1	STORM	50				
XSECTION	28	ADDHYD	.16	5.18	---	12.39	295	1843.8
XSECTION	29	RUNOFF	.05	5.78	---	12.11	220	4400.0
STRUCTURE	64	RESVOR	.05	5.78	---	12.11	220	4400.0
XSECTION	31	RUNOFF	.17	5.47	---	12.31	433	2547.1
XSECTION	33	RUNOFF	.05	5.25	---	12.20	148	2960.0
XSECTION	36	RUNOFF	.02	5.30	---	12.26	65	3250.0
STRUCTURE	33	RESVOR	.02	5.31	328.67	12.29	65	3250.0
XSECTION	38	RUNOFF	.07	4.81	---	12.13	247	3528.6
XSECTION	39	ADDHYD	.36	5.35	---	12.27	869	2413.9
XSECTION	41	RUNOFF	.02	5.19	---	12.17	80	4000.0
STRUCTURE	29	RESVOR	.02	5.12	273.78	12.45	28	1400.0
XSECTION	43	RUNOFF	.12	3.05	---	12.22	217	1808.3
XSECTION	44	ADDHYD	.14	3.38	---	12.22	224	1600.0



XSECTION	46	ADDHYD	.67	4.88	---	12.40	1223	1825.4
STRUCTURE	7	RESVOR	.67	4.88	227.93	12.67	951	1419.4
XSECTION	47	RUNOFF	.28	4.93	---	12.31	655	2339.3
XSECTION	48	RUNOFF	.02	5.52	---	12.16	89	4450.0
STRUCTURE	40	RESVOR	.02	5.52	337.36	12.29	58	2900.0
XSECTION	51	RUNOFF	.02	5.04	---	12.18	70	3500.0
STRUCTURE	43	RESVOR	.02	4.45	322.59	12.26	59	2950.0
XSECTION	52	ADDHYD	.33	4.94	278.85	12.31	764	2315.2
XSECTION	53	RUNOFF	.21	3.03	---	12.21	370	1761.9
XSECTION	54	ADDHYD	.54	4.20	---	12.38	905	1675.9
STRUCTURE	5	RESVOR	.54	4.20	---	12.38	905	1675.9
XSECTION	55	ADDHYD	1.53	4.65	---	12.39	2541	1660.8
XSECTION	56	RUNOFF	.02	3.31	---	12.13	42	2100.0
XSECTION	57	ADDHYD	1.55	4.64	---	12.38	2555	1648.4
STRUCTURE	6	RESVOR	1.55	4.64	---	12.38	2555	1648.4
XSECTION	58	RUNOFF	.04	5.09	---	12.13	134	3350.0
XSECTION	62	RUNOFF	.02	5.70	---	12.16	87	4350.0

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AMOUNT	ELEVATION	TIME	RATE	RATE
ID	OPERATION	AREA (SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	50					
XSECTION	63	ADDHYD	2.11	4.49	---	12.43	3472	1645.5
RAINFALL OF	8.47 inches AND			24.00 hr	DURATION,	BEGINS AT	.0 hrs.	
ALTERNATE	1	STORM	99					
XSECTION	1	RUNOFF	.21	5.72	---	12.24	653	3109.5
XSECTION	2	RUNOFF	.03	5.34	---	12.19	98	3266.7
STRUCTURE	58	RESVOR	.03	5.24	432.27	12.24	94	3133.3
XSECTION	4	RUNOFF	.06	6.19	---	12.15	259	4316.7
XSECTION	6	RUNOFF	.08	5.40	---	12.18	278	3475.0
XSECTION	9	RUNOFF	.06	5.84	---	12.18	223	3716.7
XSECTION	10	RUNOFF	.03	5.86	---	12.22	87	2900.0
STRUCTURE	52	RESVOR	.03	5.35	456.47	12.34	70	2333.3
XSECTION	12	ADDHYD	.09	5.69	---	12.20	250	2777.8

XSECTION	13	RUNOFF	.04	6.54	---	12.17	185	4625.0
STRUCTURE	51	RESVOR	.04	6.54	399.85	12.34	105	2625.0
XSECTION	15	RUNOFF	.08	5.68	---	12.16	317	3962.5
XSECTION	17	ADDHYD	.21	5.86	---	12.20	565	2690.5
XSECTION	18	ADDHYD	.59	5.75	---	12.24	1717	2910.2
XSECTION	19	RUNOFF	.27	5.30	---	12.31	684	2533.3
XSECTION	20	REACH	.59	5.75	239.60	12.36	1565	2652.5
XSECTION	21	ADDHYD	.86	5.61	---	12.35	2232	2595.3
XSECTION	22	RUNOFF	.02	6.42	---	12.22	67	3350.0
STRUCTURE	47	RESVOR	.02	6.42	415.70	12.24	66	3300.0
XSECTION	23	RUNOFF	.08	6.42	---	12.19	312	3900.0
STRUCTURE	32	RESVOR	.08	6.42	370.13	12.26	284	3550.0
XSECTION	25	RUNOFF	.05	6.39	---	12.19	181	3620.0
STRUCTURE	34	RESVOR	.15	6.42	343.30	12.36	430	2866.7
XSECTION	27	RUNOFF	.01	5.67	---	12.11	59	5900.0
XSECTION	28	ADDHYD	.16	6.36	---	12.35	446	2787.5

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)
	ALTERNATE	1	STORM	99				
XSECTION	29	RUNOFF	.05	6.96	---	12.11	262	5240.0
STRUCTURE	64	RESVOR	.05	6.96	---	12.11	262	5240.0
XSECTION	31	RUNOFF	.17	6.66	---	12.31	522	3070.6
XSECTION	33	RUNOFF	.05	6.43	---	12.20	178	3560.0
XSECTION	36	RUNOFF	.02	6.49	---	12.26	79	3950.0
STRUCTURE	33	RESVOR	.02	6.47	328.90	12.29	78	3900.0
XSECTION	38	RUNOFF	.07	5.96	---	12.13	304	4342.9
XSECTION	39	ADDHYD	.36	6.53	---	12.28	1035	2875.0
XSECTION	41	RUNOFF	.02	6.37	---	12.17	97	4850.0
STRUCTURE	29	RESVOR	.02	6.25	274.20	12.36	50	2500.0
XSECTION	43	RUNOFF	.12	4.01	---	12.21	289	2408.3
XSECTION	44	ADDHYD	.14	4.38	---	12.22	297	2121.4
XSECTION	46	ADDHYD	.67	6.02	---	12.49	1469	2192.5
STRUCTURE	7	RESVOR	.67	6.02	230.35	12.77	1097	1637.3
XSECTION	47	RUNOFF	.28	6.09	---	12.31	803	2867.9

XSECTION	48	RUNOFF	.02	6.72	---	12.16	107	5350.0
STRUCTURE	40	RESVOR	.02	6.72	337.87	12.32	59	2950.0
XSECTION	51	RUNOFF	.02	6.20	---	12.18	85	4250.0
STRUCTURE	43	RESVOR	.02	5.60	322.85	12.26	71	3550.0
XSECTION	52	ADDHYD	.33	6.10	279.26	12.31	927	2809.1
XSECTION	53	RUNOFF	.21	3.99	---	12.21	494	2352.4
XSECTION	54	ADDHYD	.54	5.28	---	12.36	1078	1996.3
STRUCTURE	5	RESVOR	.54	5.28	---	12.36	1078	1996.3
XSECTION	55	ADDHYD	1.53	5.79	---	12.38	3034	1983.0
XSECTION	56	RUNOFF	.02	4.31	---	12.13	55	2750.0
XSECTION	57	ADDHYD	1.55	5.77	---	12.38	3052	1969.0
STRUCTURE	6	RESVOR	1.55	5.77	---	12.38	3052	1969.0
XSECTION	58	RUNOFF	.04	6.26	---	12.13	163	4075.0
XSECTION	62	RUNOFF	.02	6.90	---	12.16	104	5200.0
XSECTION	63	ADDHYD	2.11	5.60	---	12.37	4173	1977.7

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION ROUTING PARAMETERS

XSEC	REACH	FLOOD PLAIN		INFLOW		OUTFLOW		Q-A EQ.		PEAK RATIO Q/I	ATT-KIN	
		LENGTH	COEFF	PEAK	TIME	PEAK	TIME	COEFF	POWER			
		(FT)	(FT)	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)	(Q*)	(C)

BASEFLOW IS .0 CFS

ALTERNATE	1	STORM	2							
7	2055	186	12.2	184	12.3	1.65	1.52	.011	.988	
.80?										
11	1397	3	13.3	3	13.5	2.53	1.54	.004	.990	
.47										
16	2449	64	12.2	59	12.3	2.42	1.40	.021	.928	
.55										
20	4470	333	12.2	305	12.4	1.73	1.47	.031	.916	
.50										
30	1561	80	12.1	74	12.2	1.16	1.56	.030	.920	
.73?										
35	2077	236	12.2	221	12.4	1.15	1.41	.029	.936	
.57										

42	2112	4	13.0	4	13.1	3.54	1.39	.006	.996
.40									
45	3148	310	12.3	297	12.5	4.57	1.16	.037	.958
.50									
49	1829	16	12.4	15	12.5	1.44	1.42	.038	.937
.40									
52	4744	197	12.4	178	12.5	1.16	1.52	.045	.903
.38									
59	1671	612	12.4	608	12.5	3.29	1.24	.010	.994
.84?									

ALTERNATE 1 STORM 5

7	2055	295	12.2	291	12.3	1.75	1.50	.010	.984
.86?									
11	1397	9	12.7	9	12.8	2.53	1.54	.005	.990
.64									
16	2449	102	12.2	96	12.3	2.47	1.39	.019	.940
.60									
20	4470	539	12.2	486	12.4	2.57	1.33	.043	.902
.47									
30	1561	113	12.1	106	12.2	1.20	1.54	.025	.940
.77?									
35	2077	342	12.2	324	12.3	1.19	1.40	.026	.946
.61									
42	2112	5	12.9	5	13.1	3.54	1.39	.005	.997
.44									
45	3148	488	12.4	469	12.5	5.06	1.13	.043	.961
.49									
49	1829	22	12.4	21	12.5	1.46	1.41	.030	.948
.42									
52	4744	313	12.4	288	12.5	1.23	1.50	.040	.919
.42									
59	1671	964	12.4	961	12.5	3.16	1.25	.009	.997
.89?									

ALTERNATE 1 STORM 10

7	2055	398	12.2	395	12.3	1.91	1.47	.010	.993
.89?									
11	1397	15	12.6	15	12.7	2.53	1.54	.005	.993
.72?									

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
USED;  
LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

		HYDROGRAPH INFORMATION				ROUTING PARAMETERS					
XSEC ID	REACH LENGTH COEFF	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT- KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
		ALTERNATE	1	STORM	10						
16	2449		137	12.2	130	12.3	2.50	1.38	.017	.952	
.63											
20	4470		733	12.2	658	12.4	3.29	1.25	.052	.898	
.46											
30	1561		141	12.1	135	12.2	1.23	1.53	.022	.952	
.81?											
35	2077		436	12.2	418	12.3	1.22	1.39	.024	.959	
.63											
42	2112		7	12.9	7	13.0	3.54	1.39	.005	.998	
.47											
45	3148		701	12.3	647	12.5	5.71	1.09	.054	.922	
.48											
49	1829		35	12.3	31	12.4	1.49	1.40	.036	.869	
.46											
52	4744		429	12.3	396	12.5	1.29	1.48	.038	.922	
.45											
59	1671		1396	12.4	1393	12.5	3.27	1.24	.009	.998	
.92?											
		ALTERNATE	1	STORM	50						
7	2055		752	12.2	749	12.3	3.07	1.31	.016	.996	
.87?											
11	1397		50	12.4	50	12.4	2.60	1.51	.007	.988	
.90?											
16	2449		256	12.2	251	12.3	2.57	1.37	.016	.978	
.70?											
20	4470		1360	12.2	1234	12.4	3.92	1.20	.055	.908	
.47											
30	1561		219	12.1	213	12.2	1.29	1.51	.018	.971	
.87?											
35	2077		713	12.2	693	12.3	1.32	1.37	.021	.972	
.68?											
42	2112		28	12.5	27	12.5	3.56	1.38	.009	.956	
.61											
45	3148		1147	12.3	1076	12.4	6.54	1.05	.060	.938	
.45											
49	1829		58	12.3	57	12.5	1.51	1.38	.031	.979	
.51											
52	4744		763	12.3	683	12.5	1.85	1.33	.059	.895	
.39											
59	1671		2544	12.4	2541	12.4	3.23	1.24	.008	.999	
.98?											
		ALTERNATE	1	STORM	99						
7	2055		946	12.2	936	12.3	3.39	1.28	.017	.989	
.88?											
11	1397		70	12.4	70	12.4	2.65	1.49	.008	.999	
.95?											

16 2449 335 12.2 327 12.3 2.62 1.36 .015 .977  
 .73?

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.

QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION

ROUTING PARAMETERS

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT- KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
	ALTERNATE	1	STORM	99							
20	4470		1717	12.2	1565	12.4	3.99	1.20	.054	.911	
.48											
30	1561		261	12.1	255	12.2	1.32	1.50	.016	.978	
.89?											
35	2077		859	12.2	823	12.3	1.76	1.29	.027	.958	
.63											
42	2112		50	12.4	48	12.5	3.60	1.36	.013	.958	
.67?											
45	3148		1424	12.4	1283	12.5	5.69	1.02	.087	.901	
.36											
49	1829		59	12.3	59	12.5	1.52	1.38	.024	.990	
.51											
52	4744		927	12.3	800	12.5	2.57	1.21	.089	.863	
.32											
59	1671		3045	12.4	3045	12.4	3.11	1.25	.007	1.000	
1.00?											

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99
STRUCTURE 64	.05					
----- ALTERNATE 262	1	81	113	142	220	
STRUCTURE 58	.03					
----- ALTERNATE 94	1	2	8	16	71	
STRUCTURE 52	.03					
----- ALTERNATE 70	1	3	9	15	51	
STRUCTURE 51	.04					
----- ALTERNATE 105	1	22	34	46	83	
STRUCTURE 47	.02					
----- ALTERNATE 66	1	12	21	27	55	
STRUCTURE 43	.02					
----- ALTERNATE 71	1	4	15	28	59	
STRUCTURE 40	.02					
----- ALTERNATE 59	1	16	22	36	58	
STRUCTURE 34	.15					
----- ALTERNATE 430	1	54	127	185	284	
STRUCTURE 33	.02					
----- ALTERNATE 78	1	15	24	34	65	
STRUCTURE 32	.08					
----- ALTERNATE 284	1	61	86	123	229	
STRUCTURE 29	.02					
----- ALTERNATE 50	1	4	5	7	28	
STRUCTURE 7	.67					
----- ALTERNATE	1	263	428	587	951	

1097

STRUCTURE 6 1.55

-----  
 ALTERNATE 1 612 964 1396 2555  
 3052

STRUCTURE 5 .54

1

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99
STRUCTURE 5	.54					
----- ALTERNATE 1 1078		208	351	497	905	
XSECTION 1	.21					
----- ALTERNATE 1 653		137	218	295	526	
XSECTION 2	.03					
----- ALTERNATE 1 98		18	30	42	78	
XSECTION 4	.06					
----- ALTERNATE 1 259		63	96	125	213	
XSECTION 6	.08					
----- ALTERNATE 1 278		53	88	121	223	
XSECTION 9	.06					
----- ALTERNATE 1 223		49	77	103	181	
XSECTION 10	.03					
----- ALTERNATE 1 87		19	30	40	71	



XSECTION 12 .09

-----  
 ALTERNATE 1 49 77 104 196  
 250

XSECTION 13 .04

-----  
 ALTERNATE 1 49 72 92 153  
 185

XSECTION 15 .08

-----  
 ALTERNATE 1 66 106 143 255  
 317

XSECTION 17 .21

-----  
 ALTERNATE 1 110 178 243 450  
 565

XSECTION 18 .59

-----  
 ALTERNATE 1 334 539 733 1361  
 1717

XSECTION 19 .27

-----  
 ALTERNATE 1 122 208 290 541  
 684

XSECTION 20 .59

-----  
 ALTERNATE 1 306 487 658 1235  
 1565

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99

XSECTION 21 .86

-----  
 ALTERNATE 1 426 691 942 1761  
 2232

XSECTION 22 .02

-----  
 ALTERNATE 1 17 25 33 55

67

XSECTION 23 .08

-----  
ALTERNATE 1 80 119 154 257  
312

XSECTION 25 .05

-----  
ALTERNATE 1 46 68 89 149  
181

XSECTION 27 .01

-----  
ALTERNATE 1 13 20 27 47  
59

XSECTION 28 .16

-----  
ALTERNATE 1 56 132 192 295  
446

XSECTION 29 .05

-----  
ALTERNATE 1 81 113 142 220  
262

XSECTION 31 .17

-----  
ALTERNATE 1 142 207 264 433  
522

XSECTION 33 .05

-----  
ALTERNATE 1 46 68 89 148  
178

XSECTION 36 .02

-----  
ALTERNATE 1 21 30 39 65  
79

XSECTION 38 .07

-----  
ALTERNATE 1 69 107 143 247  
304

XSECTION 39 .36

-----  
ALTERNATE 1 265 390 512 869  
1035

XSECTION 41 .02

-----  
ALTERNATE 1 25 37 48 80  
97

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99
XSECTION 43	.12					
----- ALTERNATE 289	1	26	61	96	217	
XSECTION 44	.14					
----- ALTERNATE 297	1	28	63	100	224	
XSECTION 46	.67					
----- ALTERNATE 1469	1	320	505	712	1223	
XSECTION 47	.28					
----- ALTERNATE 803	1	185	285	379	655	
XSECTION 48	.02					
----- ALTERNATE 107	1	30	44	55	89	
XSECTION 51	.02					
----- ALTERNATE 85	1	21	31	41	70	
XSECTION 52	.33					
----- ALTERNATE 927	1	198	315	432	764	
XSECTION 53	.21					
----- ALTERNATE 494	1	44	103	164	370	
XSECTION 54	.54					
----- ALTERNATE 1078	1	208	351	497	905	
XSECTION 55	1.53					
----- ALTERNATE 3034	1	610	960	1390	2541	
XSECTION 56	.02					

```

-----
ALTERNATE 1      6      13      20      42
55

```

```

XSECTION 57      1.55
-----

```

```

ALTERNATE 1      612     964     1396    2555
3052

```

```

XSECTION 58      .04
-----

```

```

ALTERNATE 1      41      61      79      134
163

```

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99

```

XSECTION 62      .02
-----

```

```

ALTERNATE 1      30      43      54      87
104

```

```

XSECTION 63      2.11
-----

```

```

ALTERNATE 1      825     1321    1895    3472
4173

```

```

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```

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```

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST  
FILES

INPUT = POND7.DAT , GIVEN DATA FILE  
OUTPUT = POND7.OUT , DATED  
02/06/\*\*,17:06:03

FILES GENERATED - DATED 02/06/\*\*,17:06:03

NONE!

TOTAL NUMBER OF WARNINGS = 28, MESSAGES = 10

\*\*\* TR-20 RUN COMPLETED \*\*\*

1

\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20  
HYDROLOGY\*\*\*\*\*

JOB	TR-20	NOPLOTS				
TITLE	Ellicott City Flood Study-Tiber/South Sub-Drainage Areas					
TITLE	27 Subareas MGMT-STD NOAA_C 2,5,10,50,100WITHMGMT					
5	RAINFL	1	.1			
8	0.0000	0.0013	0.0023	0.0034	0.0044	
8	0.0055	0.0065	0.0076	0.0087	0.0098	
8	0.0109	0.0121	0.0132	0.0143	0.0155	
8	0.0167	0.0178	0.0190	0.0202	0.0214	
8	0.0226	0.0238	0.0251	0.0263	0.0276	
8	0.0288	0.0301	0.0314	0.0327	0.0340	
8	0.0353	0.0366	0.0379	0.0393	0.0406	
8	0.0420	0.0434	0.0447	0.0461	0.0475	
8	0.0489	0.0504	0.0518	0.0532	0.0547	
8	0.0562	0.0576	0.0591	0.0606	0.0621	
8	0.0636	0.0651	0.0667	0.0682	0.0697	
8	0.0713	0.0729	0.0745	0.0760	0.0776	
8	0.0793	0.0809	0.0826	0.0843	0.0861	
8	0.0879	0.0898	0.0916	0.0936	0.0955	
8	0.0975	0.0996	0.1017	0.1038	0.1060	
8	0.1082	0.1104	0.1127	0.1150	0.1174	
8	0.1198	0.1223	0.1247	0.1273	0.1298	
8	0.1324	0.1351	0.1378	0.1405	0.1432	
8	0.1461	0.1490	0.1521	0.1554	0.1588	
8	0.1623	0.1660	0.1699	0.1739	0.1780	
8	0.1823	0.1868	0.1914	0.1961	0.2010	
8	0.2061	0.2117	0.2179	0.2247	0.2321	
8	0.2400	0.2490	0.2591	0.2702	0.2825	
8	0.2955	0.3157	0.3370	0.3662	0.4067	
8	0.4766	0.5933	0.6338	0.6630	0.6843	
8	0.7045	0.7176	0.7298	0.7409	0.7510	
8	0.7600	0.7679	0.7753	0.7821	0.7883	
8	0.7939	0.7990	0.8039	0.8086	0.8132	
8	0.8177	0.8220	0.8261	0.8301	0.8340	
8	0.8377	0.8412	0.8446	0.8479	0.8510	
8	0.8540	0.8568	0.8595	0.8622	0.8649	
8	0.8676	0.8702	0.8727	0.8753	0.8778	
8	0.8802	0.8826	0.8850	0.8873	0.8896	
8	0.8918	0.8940	0.8962	0.8983	0.9004	
8	0.9025	0.9045	0.9064	0.9084	0.9103	
8	0.9121	0.9139	0.9157	0.9174	0.9191	
8	0.9208	0.9224	0.9240	0.9256	0.9271	
8	0.9287	0.9303	0.9318	0.9334	0.9349	
8	0.9364	0.9379	0.9394	0.9409	0.9424	
8	0.9439	0.9453	0.9468	0.9482	0.9496	
8	0.9511	0.9525	0.9539	0.9553	0.9566	
8	0.9580	0.9594	0.9607	0.9621	0.9634	
8	0.9647	0.9660	0.9673	0.9686	0.9699	
8	0.9712	0.9724	0.9737	0.9749	0.9762	
8	0.9774	0.9786	0.9798	0.9810	0.9822	
8	0.9834	0.9845	0.9857	0.9868	0.9879	

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8	0.9891	0.9902	0.9913	0.9924	0.9935
8	0.9945	0.9956	0.9967	0.9977	0.9987
8	1.0000	1.0000	1.0000	1.0000	1.0000

9 ENDTBL

3 STRUCT 58

8		424.00	0.00	0.00
8		429.09	2.00	0.72
8		429.59	4.00	0.85
8		430.00	6.00	0.96
8		430.21	8.00	1.02
8		430.36	10.00	1.06
8		430.49	12.00	1.10
8		430.64	14.00	1.15
8		430.74	15.00	1.18
8		431.22	17.09	1.33
8		431.68	33.53	1.49
8		432.18	80.87	1.67
8		432.37	108.22	1.74

9 ENDTBL

2 XSECTN 007

8		1.0	319.00	
8		318.00	0.00	0.00
8		318.25	10.19	3.39
8		318.50	32.80	7.08
8		318.75	65.48	11.07
8		319.00	107.54	15.35
8		320.00	367.34	35.47
8		321.00	663.16	60.18
8		322.00	1052.26	89.31
8		323.00	1529.69	131.30

9 ENDTBL

3 STRUCT 52

8		451.90	0.00	0.00
8		454.05	0.34	0.73
8		454.30	0.36	0.85
8		455.60	18.83	1.65
8		456.10	41.43	2.00
8		456.50	72.96	2.28

9 ENDTBL

2 XSECTN 011

8		1.0	415.00	
8		414.00	0.00	0.00
8		414.25	7.22	1.98
8		414.50	23.69	4.29
8		414.75	48.28	6.93
8		415.00	81.00	9.89
8		416.00	299.51	25.08
8		417.00	488.53	45.33
8		418.00	779.05	70.44
8		419.00	809.36	107.84

9 ENDTBL

3 STRUCT 51

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8		396.00	0.00	0.00
8		396.50	4.38	0.27
8		397.00	12.40	0.65
8		397.50	22.78	1.07
8		398.00	35.07	1.54
8		398.50	49.45	2.05
8		399.00	64.75	2.59

8			399.45	86.12	3.10
9	ENDTBL				
2	XSECTN	016	1.0	331.00	
8			330.00	0.00	0.00
8			330.25	5.94	1.92
8			330.50	21.34	4.68
8			330.75	47.19	8.28
8			331.00	85.01	12.73
8			332.00	385.16	38.91
8			333.00	704.29	76.97
8			334.00	1202.25	125.34
8			335.00	1592.91	187.47
9	ENDTBL				
2	XSECTN	020	1.0	235.00	
8			234.00	0.00	0.00
8			234.25	9.06	3.27
8			234.50	29.33	6.89
8			234.75	58.86	10.87
8			235.00	97.22	15.19
8			236.00	339.40	36.03
8			237.00	586.83	61.50
8			238.00	902.53	90.59
8			239.00	1290.91	123.25
8			240.00	1750.59	159.40
8			241.00	1985.66	201.02
8			242.00	2381.26	250.13
9	ENDTBL				
3	STRUCT	10			
9	ENDTBL				
3	STRUCT	47			
8			410.00	0.00	0.00
8			413.89	5.00	0.05
8			414.04	10.00	0.15
8			414.17	15.00	0.24
8			414.28	20.00	0.27
8			415.00	30.68	0.38
8			415.27	39.01	0.42
8			415.52	52.87	0.45
8			415.79	71.61	0.49
8			416.07	95.27	0.54
9	ENDTBL				
3	STRUCT	32			
8			367.00	0.00	0.00

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			367.37	10.00	0.29
8			367.59	20.00	0.47
8			367.78	30.00	0.62
8			367.94	40.00	0.76
8			368.09	50.00	0.89
8			368.44	75.00	1.18
8			368.82	88.96	1.52
8			369.30	142.54	1.95
8			369.79	219.99	2.41
8			370.11	280.10	2.72
8			370.33	326.70	2.93
8			370.56	378.34	3.15
9	ENDTBL				
3	STRUCT	34			



8			329.00	0.00	0.00
8			332.62	30.00	0.72
8			336.99	50.00	2.59
8			337.92	70.00	3.17
8			338.11	90.00	3.29
8			338.19	100.00	3.34
8			338.26	109.00	3.39
8			338.55	150.00	3.58
8			338.61	160.00	3.63
8			338.64	165.00	3.65
8			338.70	175.00	3.69
8			338.73	179.50	3.71
8			343.01	310.00	7.34
8			343.91	680.58	8.20
9	ENDTBL				
3	STRUCT	64			
9	ENDTBL				
2	XSECTN	030	1.0	357.00	
8			356.00	0.00	0.00
8			356.25	11.94	4.48
8			356.50	38.65	9.42
8			356.75	77.59	14.83
8			357.00	128.16	20.70
8			358.00	446.97	48.84
8			359.00	544.48	91.80
8			360.00	941.05	156.94
8			361.00	1597.14	242.00
9	ENDTBL				
2	XSECTN	035	1.0	317.00	
8			316.00	0.00	0.00
8			316.25	12.78	5.64
8			316.50	44.21	13.12
8			316.75	94.71	22.44
8			317.00	166.16	33.59
8			318.00	703.03	96.58
8			319.00	1203.58	187.92

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			320.00	2039.69	306.56
8			321.00	3441.07	443.04
9	ENDTBL				
3	STRUCT	33			
8			323.00	0.00	0.00
8			323.20	5.00	0.01
8			324.01	10.00	0.06
8			325.62	15.00	0.19
8			326.73	18.00	0.29
8			327.09	20.00	0.33
8			327.38	25.00	0.36
8			327.54	28.00	0.38
8			327.63	30.00	0.39
8			328.16	38.10	0.46
8			328.84	73.25	0.54
8			329.21	106.03	0.59
9	ENDTBL				
3	STRUCT	08			
8			285.00	0.00	0.00
8			288.19	100.00	4.352
8			291.06	200.00	9.305

8			297.70	390.00	24.917
8			299.77	425.00	31.064
8			301.26	450.00	35.844
8			302.44	470.00	39.908
8			303.00	479.50	41.916
8			303.63	550.52	44.194
8			304.64	778.25	48.024
8			305.12	931.33	49.913
8			306.18	1334.58	54.217
9	ENDTBL				
3	STRUCT	29			
8			266.00	0.00	0.00
8			273.38	10.00	2.49
8			273.62	20.00	2.64
8			273.91	35.00	2.82
8			274.10	46.00	2.94
8			274.35	55.00	3.10
8			274.51	58.00	3.20
8			274.61	60.00	3.28
8			274.90	65.00	3.47
8			275.21	98.51	3.68
8			275.54	139.16	3.92
8			275.89	189.97	4.18
8			276.27	253.87	4.48
8			276.50	299.40	4.67
9	ENDTBL				
2	XSECTN	042	1.0	223.00	
8			222.00	0.00	0.00
8			222.25	2.73	0.83

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			222.50	10.35	2.16
8			222.75	23.82	3.97
8			223.00	44.24	6.28
8			224.00	215.28	20.42
8			225.00	406.10	41.61
8			226.00	702.08	67.86
8			227.00	890.97	103.46
9	ENDTBL				
2	XSECTN	045	1.0	223.00	
8			222.00	0.00	0.00
8			222.25	2.28	0.83
8			222.50	8.62	2.16
8			222.75	19.85	3.97
8			223.00	36.86	6.28
8			224.00	179.35	20.41
8			225.00	338.28	41.30
8			226.00	584.84	67.85
8			227.00	830.09	103.44
8			228.00	1249.11	151.47
8			229.00	1307.14	232.37
8			230.00	2023.03	366.57
9	ENDTBL				
3	STRUCT	07			
9	ENDTBL				
3	STRUCT	40			
8			333.00	000.00	0.00
8			334.00	15.15	0.40
8			334.25	16.92	0.47

8			334.50	18.53	0.55
8			334.75	20.02	0.63
8			335.00	21.40	0.68
8			335.50	23.92	0.77
8			335.86	25.59	0.80
8			336.00	27.61	0.82
8			336.25	33.80	0.84
8			336.50	42.02	0.93
8			336.75	51.79	1.01
8			336.86	56.51	1.05
8			337.00	57.30	1.08
8			337.50	58.38	1.31
8			338.00	59.45	1.68
9	ENDTBL				
2	XSECTN	049	1.0	317.00	
8			316.00	0.00	0.00
8			316.25	3.06	1.70
8			316.50	11.11	4.19
8			316.75	24.79	7.47
8			317.00	44.94	11.55
8			318.00	206.80	35.78
8			319.00	333.28	74.89

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			320.00	609.60	131.05
9	ENDTBL				
3	STRUCT	43			
8			317.30	0.00	0.00
8			318.00	0.19	0.08
8			319.00	0.24	0.27
8			320.75	0.30	0.79
8			321.00	3.22	0.85
8			321.75	23.58	1.09
8			322.00	32.83	1.17
8			322.20	40.94	1.20
8			322.40	49.63	1.27
8			322.80	68.56	1.45
8			322.90	73.60	1.49
9	ENDTBL				
2	XSECTN	052	1.0	279.00	
8			276.00	0.00	0.00
8			276.25	15.37	5.56
8			276.50	49.97	11.77
8			276.75	100.75	18.63
8			277.00	167.09	26.14
8			278.00	591.48	62.65
8			279.00	793.41	115.06
8			280.00	1313.82	188.91
8			281.00	2138.14	282.44
9	ENDTBL				
3	STRUCT	05			
9	ENDTBL				
3	STRUCT	06			
9	ENDTBL				
2	XSECTN	059	1.0	128.00	
8			129.00	0.00	0.00
8			129.25	1.13	0.50
8			129.50	5.18	1.55
8			129.75	13.39	3.16

8				130.00	26.84	5.32		
8				131.00	191.72	26.64		
8				132.00	508.02	58.78		
8				133.00	945.51	95.90		
8				134.00	1449.27	136.08		
8				135.00	2016.68	178.64		
8				138.00	4199.86	314.48		
9	ENDTBL							
6	RUNOFF	1 001	1	0.2101	77.19	0.319	1	1 141
6	RUNOFF	1 002	2	0.0292	74.00	0.232	1	1 142
6	RESVOR	2 58 2	3				1	1
	SWMF58							
6	ADDHYD	4 003	1 3 4				1	
	1+2+58							
6	RUNOFF	1 004	1	0.0617	81.09	0.170	1	1 143
6	ADDHYD	4 005	4 1 2				1	1+2+3
6	RUNOFF	1 006	1	0.0799	74.51	0.216	1	1 144

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

6	REACH	3 007	2 3	2055.0			1	
6	ADDHYD	4 008	1 3 2				1	SA14
6	RUNOFF	1 009	1	0.0604	78.12	0.220	1	1 153
6	RUNOFF	1 010	3	0.0264	78.36	0.290	1	1 151
6	RESVOR	2 52 3	4				1	1
	SWMF52							
6	REACH	3 011	4 5	1396.5			1	
6	ADDHYD	4 012	1 5 6				1	1
	153+151							
6	RUNOFF	1 013	1	0.0447	83.97	0.210	1	1 152
6	RESVOR	2 51 1	3				1	1
	SWMF51							
6	ADDHYD	4 014	6 3 1				1	
	012+51							
6	RUNOFF	1 015	3	0.0815	76.80	0.176	1	1 154
6	REACH	3 016	1 4	2448.6			1	
6	ADDHYD	4 017	3 4 5				1	1 SA15
6	ADDHYD	4 018	2 5 1				1	1
	SA14+15							
6	RUNOFF	1 019	2	0.2701	73.58	0.425	1	1 131
6	REACH	3 020	1 3	4470.1			1	1 SA13
6	ADDHYD	4 021	2 3 5				1	1
	14+15+13							
6	RESVOR	2 10 5	4				1	1
	PROP10							
6	RUNOFF	1 022	1	0.0185	83.00	0.283	1	1 121
6	RESVOR	2 47 1	2				1	1
	SWMF47							
6	RUNOFF	1 023	3	0.0812	83.00	0.245	1	1 122
6	RESVOR	2 32 3	5				1	1
	SWMF32							
6	ADDHYD	4 024	2 5 1				1	
	121+122							
6	RUNOFF	1 025	2	0.0465	82.74	0.236	1	1 123
6	ADDHYD	4 026	1 2 5				1	
	024+123							
6	RESVOR	2 34 5	3				1	1
	SWMF34							
6	RUNOFF	1 027	2	0.0126	76.91	0.100	1	1 124
6	ADDHYD	4 028	3 2 5				1	1 SA12

6	RUNOFF	1	029		2	0.0499	87.76	0.100	1	1	111
6	RESVOR	2	64	2	3				1	1	
SWMF64											
6	REACH	3	030	3	6		1561.1		1		
6	RUNOFF	1	031		7	0.1745	85.00	0.449	1	1	112
6	ADDHYD	4	032	6	7	3			1		
111+112											
6	RUNOFF	1	033		1	0.0477	83.06	0.258	1	1	113
6	ADDHYD	4	034	3	1	2			1		
032+113											
6	REACH	3	035	2	3		2077.3		1		
6	RUNOFF	1	036		6	0.0244	83.54	0.370	1	1	114
6	RESVOR	2	33	6	7				1	1	
SWMF33											
6	ADDHYD	4	037	3	7	1			1		
111-114											
6	RUNOFF	1	038		2	0.0684	79.13	0.136	1	1	115
6	ADDHYD	4	039	1	2	7			1	1	SA11
6	ADDHYD	4	040	5	7	2			1		12+11
6	RESVOR	2	08	2	6				1	1	PROP8
6	RUNOFF	1	041		1	0.0236	82.59	0.200	1	1	101
6	RESVOR	2	29	1	3				1	1	
SWMF29											
6	REACH	3	042	3	5		2112.0		1		
6	RUNOFF	1	043		1	0.1211	62.77	0.263	1	1	102
6	ADDHYD	4	044	5	1	2			1	1	SA10
6	REACH	3	045	6	3		3147.6		1		
6	ADDHYD	4	046	2	3	7			1	1	
10+12+11											

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

6	RESVOR	2	07	7	1				1	1	PROP7
6	RUNOFF	1	047		2	0.2822	80.17	0.434	1	1	81
6	RUNOFF	1	048		3	0.0248	85.45	0.190	1	1	82
6	RESVOR	2	40	3	5				1	1	
SWMF40											
6	REACH	3	049	5	6		1829.0		1		
6	ADDHYD	4	050	2	6	7			1		81+82
6	RUNOFF	1	051		2	0.0218	81.19	0.220	1	1	83
6	RESVOR	2	43	2	3				1	1	
SWMF43											
6	ADDHYD	4	052	7	3	2			1	1	
81+82+83											
6	REACH	3	052	2	3		4744.2		1		
6	RUNOFF	1	053		5	0.2083	62.56	0.262	1	1	84
6	ADDHYD	4	054	3	5	2			1	1	SA8
6	RESVOR	2	05	2	5				1	1	PROP5
6	ADDHYD	4	055	4	1	3			1	1	
13+10+PR											
6	RUNOFF	1	056		6	0.0166	65.36	0.134	1	1	92
6	ADDHYD	4	057	3	6	7			1	1	
13+10+92											
6	RESVOR	2	06	7	4				1	1	PROP6
6	RUNOFF	1	058		1	0.0357	81.76	0.141	1	1	93
6	REACH	3	059	4	3		1670.5		1		
6	ADDHYD	4	060	5	3	4			1		
SA8+93											
6	ADDHYD	4	061	7	4	1			1		92+93
6	RUNOFF	1	062		2	0.0233	86.98	0.186	1	1	91

```

6 ADDHYD 4 063 1 2 3 1 1
OUTFALL
ENDATA
7 INCREM 6 .06
7 COMPUT 7 001 063 0.0 3.19 1.01 2 1 2
ENDCMP 1
7 COMPUT 7 001 063 0.0 4.10 1.01 2 1 05
ENDCMP 1
7 COMPUT 7 001 063 0.0 4.91 1.01 2 1 10
ENDCMP 1
7 COMPUT 7 001 063 0.0 7.23 1.01 2 1 50
ENDCMP 1
7 COMPUT 7 001 063 0.0 8.47 1.01 2 1 99
ENDCMP 1
ENDCMP 1
ENDJOB 2

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\*\*\*\*\*END OF 80-80

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EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .060 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
 STARTING TIME = .00 RAIN DEPTH = 3.19 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. = 2 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	136.6	(RUNOFF)
20.68	4.2	(RUNOFF)
24.01	3.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.22 WATERSHED INCHES; 165 CFS-HRS; 13.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	18.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.03 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.47	2.2	429.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.02 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	137.7	(NULL)
20.65	5.2	(NULL)
23.76	4.0	(NULL)
24.00	4.0	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.19 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	63.3	(RUNOFF)
15.84	2.4	(RUNOFF)
24.00	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	189.4	(NULL)
18.63	7.5	(NULL)
20.63	6.5	(NULL)
23.74	5.1	(NULL)
24.00	5.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.25 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	53.1	(RUNOFF)
17.33	2.0	(RUNOFF)
24.02	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.06 WATERSHED INCHES; 55 CFS-HRS; 4.5 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	183.8	319.29
18.69	7.5	318.18
20.69	6.5	318.16
23.80	5.1	318.13
24.07	5.1	318.12

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.25 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	228.3	(NULL)
18.65	9.2	(NULL)
20.12	8.4	(NULL)
21.96	7.3	(NULL)
24.04	6.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.21 WATERSHED INCHES; 297 CFS-HRS; 24.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	49.0	(RUNOFF)
15.83	2.2	(RUNOFF)
23.09	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.27 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-FEET.



OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	19.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.29 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.33	2.8	454.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .86 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-  
 FEET.

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\*\*\* WARNING - XSECTION 11, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.47	2.7	414.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .86 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	49.1	(NULL)
18.82	2.0	(NULL)
24.02	1.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.15 WATERSHED INCHES; 64 CFS-HRS; 5.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.18	49.3	(RUNOFF)
20.86	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.67 WATERSHED INCHES; 48 CFS-HRS; 4.0 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 51

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.42	22.2	397.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.67 WATERSHED INCHES; 48 CFS-HRS; 4.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 14

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.21	65.4	(NULL)
20.06	3.0	(NULL)
24.02	2.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.32 WATERSHED INCHES; 112 CFS-HRS; 9.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.16	66.3	(RUNOFF)
17.35	2.2	(RUNOFF)
24.01	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.19 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	59.8	330.83
24.09	2.3	330.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.32 WATERSHED INCHES; 112 CFS-HRS; 9.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	109.9	(NULL)
21.94	4.1	(NULL)
24.01	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.27 WATERSHED INCHES; 175 CFS-HRS; 14.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	333.7	(NULL)
20.09	13.1	(NULL)
20.63	12.5	(NULL)
21.94	11.4	(NULL)
23.09	10.5	(NULL)
24.03	9.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.23 WATERSHED INCHES; 471 CFS-HRS; 38.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	121.9	(RUNOFF)
20.13	5.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.01 WATERSHED INCHES; 175 CFS-HRS; 14.5 ACRE-FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	305.7	235.86
23.13	10.5	234.27
24.09	9.8	234.26

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.23 WATERSHED INCHES; 471 CFS-HRS; 38.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	426.1	(NULL)
23.13	14.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.16 WATERSHED INCHES; 646 CFS-HRS; 53.4 ACRE-FEET.

OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	426.1	(NULL)
23.13	14.5	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.16 WATERSHED INCHES; 646 CFS-HRS; 53.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	17.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.60 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	12.3	414.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.60 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-FEET.

FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	80.0	(RUNOFF)
19.47	2.0	(RUNOFF)
24.02	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	61.0	368.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	73.1	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES; 103 CFS-HRS; 8.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	46.1	(RUNOFF)
21.45	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.58 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
-----------------------------------	---------------------	------

12.26	110.3	(NULL)
20.62	3.4	(NULL)
24.01	2.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.59 WATERSHED INCHES; 150 CFS-HRS; 12.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	54.3	337.19

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.59 WATERSHED INCHES; 150 CFS-HRS; 12.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	12.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.19 WATERSHED INCHES; 10 CFS-HRS; .8 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.3%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	44.1	(NULL)
12.67	56.2	(NULL)
23.98	2.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 160 CFS-HRS; 13.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	80.5	(RUNOFF)

15.82	2.3	(RUNOFF)
23.02	1.1	(RUNOFF)
23.68	1.0	(RUNOFF)
23.99	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.5%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	80.5	(NULL)
15.82	2.3	(NULL)
23.02	1.1	(NULL)
23.68	1.0	(NULL)
23.99	1.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	74.0	356.73
15.89	2.3	356.05
23.09	1.1	356.02
23.75	1.0	356.02
24.05	1.1	356.02

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.97 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	141.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.75 WATERSHED INCHES; 197 CFS-HRS; 16.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	191.3	(NULL)
18.86	6.1	(NULL)
21.75	5.0	(NULL)
24.04	4.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.80 WATERSHED INCHES; 260 CFS-HRS; 21.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	46.0	(RUNOFF)
21.76	1.0	(RUNOFF)
21.97	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES; 49 CFS-HRS; 4.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	236.3	(NULL)
18.86	7.4	(NULL)
21.75	6.0	(NULL)
24.04	5.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.76 WATERSHED INCHES; 310 CFS-HRS; 25.6 ACRE-  
FEET.

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OPERATION REACH XSECTION 35

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.34	221.5	317.10
20.68	6.5	316.13
24.10	5.1	316.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.76 WATERSHED INCHES; 309 CFS-HRS; 25.6 ACRE-  
FEET.



OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	20.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .047 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	15.2	325.68

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	235.8	(NULL)
20.68	7.1	(NULL)
24.10	5.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.75 WATERSHED INCHES; 335 CFS-HRS; 27.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 38

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	69.3	(RUNOFF)
15.84	2.6	(RUNOFF)
17.34	2.0	(RUNOFF)
24.00	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.33 WATERSHED INCHES; 59 CFS-HRS; 4.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	265.4	(NULL)
23.99	6.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.67 WATERSHED INCHES; 394 CFS-HRS; 32.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	312.0	(NULL)
23.99	9.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 554 CFS-HRS; 45.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.73	195.5	290.93

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 554 CFS-HRS; 45.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	24.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.57 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
 FEET.

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OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
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ELEVATION(FEET)  
 13.00 3.6 268.66

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 13.17 3.6 222.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.26 26.2 (RUNOFF)  
 24.03 1.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .51 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.26 27.9 (NULL)  
 20.62 2.4 (NULL)  
 24.02 1.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .68 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.85 194.1 224.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 554 CFS-HRS; 45.8 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.83	207.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 617 CFS-HRS; 51.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.83	207.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 617 CFS-HRS; 51.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	185.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 256 CFS-HRS; 21.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	29.9	(RUNOFF)
15.84	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	16.5	334.19

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 49

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	15.5	316.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.78 WATERSHED INCHES; 28 CFS-HRS; 2.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	197.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.43 WATERSHED INCHES; 284 CFS-HRS; 23.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	20.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.47 WATERSHED INCHES; 21 CFS-HRS; 1.7 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE

STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.86	3.8	321.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.97 WATERSHED INCHES; 14 CFS-HRS; 1.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	198.1	277.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.40 WATERSHED INCHES; 297 CFS-HRS; 24.6 ACRE-  
FEET.

OPERATION REACH XSECTION 52

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	177.7	277.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 297 CFS-HRS; 24.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	43.9	(RUNOFF)
23.11	2.1	(RUNOFF)
23.76	2.0	(RUNOFF)
24.03	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .50 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	207.7	(NULL)
24.00	7.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.05 WATERSHED INCHES; 364 CFS-HRS; 30.1 ACRE-FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	207.7	(NULL)
24.00	7.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.05 WATERSHED INCHES; 364 CFS-HRS; 30.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	572.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.28 WATERSHED INCHES; 1263 CFS-HRS; 104.4 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.14 6.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.61 WATERSHED INCHES; 7 CFS-HRS; .5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.40 574.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.27 WATERSHED INCHES; 1269 CFS-HRS; 104.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.40 574.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.27 WATERSHED INCHES; 1269 CFS-HRS; 104.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.14 40.7 (RUNOFF)  
17.34 1.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.51 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION(FEET)  
12.47 571.5 132.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.27 WATERSHED INCHES; 1269 CFS-HRS; 104.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 60

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.47 779.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.21 WATERSHED INCHES; 1633 CFS-HRS; 135.0 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 61  
NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.47 779.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.19 WATERSHED INCHES; 1602 CFS-HRS; 132.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.17 30.3 (RUNOFF)  
15.85 1.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.90 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.47 789.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.20 WATERSHED INCHES; 1630 CFS-HRS; 134.7 ACRE-



FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
 STARTING TIME = .00 RAIN DEPTH = 4.10 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. = 5 RAIN TABLE NO. = 1

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OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.25	217.7	(RUNOFF)
20.12	6.2	(RUNOFF)
21.93	5.5	(RUNOFF)
24.02	4.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 258 CFS-HRS; 21.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	30.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.67 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.68	8.3	430.23

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.25	219.8	(NULL)
18.65	8.3	(NULL)

20.66	7.2	(NULL)
23.11	6.0	(NULL)
24.01	5.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.87 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 4

1 TR20 ----- SCS  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	95.7	(RUNOFF)
15.84	3.4	(RUNOFF)
19.47	2.0	(RUNOFF)
24.00	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.21 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	299.6	(NULL)
18.63	10.4	(NULL)
20.63	9.1	(NULL)
21.95	8.3	(NULL)
23.74	7.2	(NULL)
24.01	7.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.94 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	87.6	(RUNOFF)
15.83	3.8	(RUNOFF)
21.46	2.0	(RUNOFF)
24.02	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.70 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	292.4	319.71
18.70	10.4	318.25
20.69	9.1	318.22
22.00	8.3	318.20
23.80	7.2	318.18
24.07	7.1	318.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.94 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	368.5	(NULL)
18.66	12.8	(NULL)
20.67	11.3	(NULL)
21.99	10.3	(NULL)
23.12	9.4	(NULL)
24.04	8.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.89 WATERSHED INCHES; 465 CFS-HRS; 38.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	77.2	(RUNOFF)
15.82	3.1	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 77 CFS-HRS; 6.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	30.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.99 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.72	8.9	454.90
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.54 WATERSHED INCHES; 26 CFS-HRS; 2.2 ACRE-FEET.		

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OPERATION REACH XSECTION 11

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.82	8.8	414.27
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.54 WATERSHED INCHES; 26 CFS-HRS; 2.2 ACRE-FEET.		

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	77.4	(NULL)
23.08	2.1	(NULL)
23.73	2.0	(NULL)
24.03	2.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.84 WATERSHED INCHES; 103 CFS-HRS; 8.5 ACRE-FEET.		

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	71.9	(RUNOFF)
17.33	2.0	(RUNOFF)
24.02	1.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.45 WATERSHED INCHES; 71 CFS-HRS; 5.9 ACRE-FEET.		

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	34.2	397.96
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.45 WATERSHED INCHES;	71 CFS-HRS;	5.9 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	103.2	(NULL)
20.62	4.1	(NULL)
24.02	3.2	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.04 WATERSHED INCHES;	173 CFS-HRS;	14.3 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	106.0	(RUNOFF)
15.85	4.1	(RUNOFF)
17.34	3.2	(RUNOFF)
22.46	2.0	(RUNOFF)
24.01	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.87 WATERSHED INCHES;	99 CFS-HRS;	8.1 ACRE-
FEET.		

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	95.7	331.04
20.67	4.0	330.17
24.09	3.2	330.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.04 WATERSHED INCHES;	173 CFS-HRS;	14.3 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 17

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.20	178.2	(NULL)
20.80	6.3	(NULL)
23.72	5.0	(NULL)
24.01	5.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.98 WATERSHED INCHES; 272 CFS-HRS; 22.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 18

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.24	539.2	(NULL)
20.10	18.4	(NULL)
20.64	17.6	(NULL)
21.95	16.1	(NULL)
23.10	14.7	(NULL)
24.03	13.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.92 WATERSHED INCHES; 737 CFS-HRS; 60.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.32	207.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.64 WATERSHED INCHES; 286 CFS-HRS; 23.6 ACRE-  
FEET.

OPERATION REACH XSECTION 20

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.37	486.7	236.60
23.13	14.7	234.32
24.09	13.7	234.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.92 WATERSHED INCHES; 736 CFS-HRS; 60.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	690.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.83 WATERSHED INCHES; 1022 CFS-HRS; 84.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	690.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.83 WATERSHED INCHES; 1022 CFS-HRS; 84.5 ACRE-  
 FEET.

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	25.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	21.0	414.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	119.0	(RUNOFF)
23.10	2.1	(RUNOFF)
23.75	2.0	(RUNOFF)
24.02	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.37 WATERSHED INCHES; 124 CFS-HRS; 10.3 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.32 86.1 368.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.37 WATERSHED INCHES; 124 CFS-HRS; 10.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.33 107.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.37 WATERSHED INCHES; 153 CFS-HRS; 12.6 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.19 68.4 (RUNOFF)  
24.03 1.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.35 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.25 162.5 (NULL)  
20.62 4.6 (NULL)  
24.02 3.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.36 WATERSHED INCHES; 223 CFS-HRS; 18.4 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK



ELEVATION(FEET)  
 12.46 127.1 338.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.36 WATERSHED INCHES; 223 CFS-HRS; 18.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.12 20.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.88 WATERSHED INCHES; 15 CFS-HRS; 1.3 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.46 131.8 (NULL)  
 23.98 4.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.33 WATERSHED INCHES; 238 CFS-HRS; 19.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.11 113.0 (RUNOFF)  
 15.82 3.1 (RUNOFF)  
 17.32 2.4 (RUNOFF)  
 23.99 1.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 90 CFS-HRS; 7.4 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%.  
 \*\*\*

OPERATION RESVOR      STRUCTURE 64

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	113.0	(NULL)
15.82	3.1	(NULL)
17.32	2.4	(NULL)
23.99	1.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.79 WATERSHED INCHES;      90 CFS-HRS;      7.4 ACRE-  
FEET.

OPERATION REACH      XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	105.9	356.89
15.89	3.1	356.06
17.39	2.4	356.05
24.05	1.4	356.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.80 WATERSHED INCHES;      90 CFS-HRS;      7.4 ACRE-  
FEET.

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OPERATION RUNOFF      XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	206.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.55 WATERSHED INCHES;      287 CFS-HRS;      23.7 ACRE-  
FEET.

OPERATION ADDHYD      XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	276.5	(NULL)
18.86	8.3	(NULL)
20.87	7.3	(NULL)
23.09	6.1	(NULL)
24.04	5.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.60 WATERSHED INCHES;      377 CFS-HRS;      31.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	68.1	(RUNOFF)
24.03	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.38 WATERSHED INCHES; 73 CFS-HRS; 6.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	343.4	(NULL)
18.63	10.1	(NULL)
20.09	9.3	(NULL)
21.97	8.1	(NULL)
23.09	7.4	(NULL)
24.04	7.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.56 WATERSHED INCHES; 450 CFS-HRS; 37.2 ACRE-FEET.

OPERATION REACH XSECTION 35

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	326.6	317.30
20.16	9.3	316.18
22.00	8.1	316.16
23.15	7.4	316.14
24.10	6.9	316.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.56 WATERSHED INCHES; 450 CFS-HRS; 37.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	30.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .047 HOURS. \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS. \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.44 23.6 327.30 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.42 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.33 343.7 (NULL) 20.16 10.1 (NULL) 20.68 9.6 (NULL) 23.15 8.0 (NULL) 24.10 7.5 (NULL) RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.55 WATERSHED INCHES; 488 CFS-HRS; 40.3 ACRE-FEET.

1 TR20 ----- SCS Ellicott City Flood Study-Tiber/South Sub-Drainage Areas VERSION 02/28/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,50,100WITHMGMT 2.04TEST 13:56:48 PASS 2 JOB NO. 1 PAGE 30

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.13 107.3 (RUNOFF) 15.84 3.7 (RUNOFF) 20.04 2.1 (RUNOFF) 20.60 2.0 (RUNOFF) 20.83 2.0 (RUNOFF) 24.00 1.7 (RUNOFF) RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.05 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION(FEET)			
12.31	390.1		(NULL)
23.99	9.1		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.46 WATERSHED INCHES; 578 CFS-HRS; 47.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	489.7	(NULL)
23.99	13.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES; 817 CFS-HRS; 67.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.75	270.2	293.51

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES; 816 CFS-HRS; 67.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 41

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	36.9	(RUNOFF)
17.34	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.34 WATERSHED INCHES; 36 CFS-HRS; 2.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.93	5.5	270.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.32 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.09	5.5	222.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.32 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	60.9	(RUNOFF)
21.98	2.2	(RUNOFF)
24.03	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .96 WATERSHED INCHES; 75 CFS-HRS; 6.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	63.5	(NULL)
20.62	3.8	(NULL)
24.03	2.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.18 WATERSHED INCHES; 110 CFS-HRS; 9.1 ACRE-  
 FEET.

1  
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OPERATION REACH XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.88	268.0	224.56

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES; 816 CFS-HRS; 67.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.84	290.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.15 WATERSHED INCHES; 926 CFS-HRS; 76.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.84	290.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.15 WATERSHED INCHES; 926 CFS-HRS; 76.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	285.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.14 WATERSHED INCHES; 389 CFS-HRS; 32.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	43.5	(RUNOFF)
17.34	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.59 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 40

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	21.9	335.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.59 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
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2.14 WATERSHED INCHES; 454 CFS-HRS; 37.5 ACRE-  
FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	287.9	277.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.14 WATERSHED INCHES; 454 CFS-HRS; 37.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	103.1	(RUNOFF)
20.11	4.2	(RUNOFF)
20.66	4.0	(RUNOFF)
24.02	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.95 WATERSHED INCHES; 127 CFS-HRS; 10.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	350.5	(NULL)
23.99	11.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.68 WATERSHED INCHES; 581 CFS-HRS; 48.0 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	350.5	(NULL)
23.99	11.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.68 WATERSHED INCHES; 581 CFS-HRS; 48.0 ACRE-  
FEET.

1 TR20 ----- SCS  
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OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	915.9	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.97 WATERSHED INCHES;	1948 CFS-HRS;	160.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	13.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.11 WATERSHED INCHES;	12 CFS-HRS;	1.0 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	921.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.96 WATERSHED INCHES;	1959 CFS-HRS;	161.9 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	921.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.96 WATERSHED INCHES;	1959 CFS-HRS;	161.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	60.8	(RUNOFF)
15.45	2.1	(RUNOFF)
15.84	2.0	(RUNOFF)
21.45	1.0	(RUNOFF)
21.73	1.0	(RUNOFF)
21.94	1.0	(RUNOFF)

1 TR20 ----- SCS

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.27 WATERSHED INCHES; 52 CFS-HRS; 4.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	917.5	132.94

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 1959 CFS-HRS; 161.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	1267.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.89 WATERSHED INCHES; 2540 CFS-HRS; 209.9 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	1267.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.86 WATERSHED INCHES; 2499 CFS-HRS; 206.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	42.9	(RUNOFF)
17.34	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.72 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	1282.6	(NULL)

1 TR20 ----- SCS  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.87 WATERSHED INCHES; 2540 CFS-HRS; 209.9 ACRE-  
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
STARTING TIME = .00 RAIN DEPTH = 4.91 RAIN DURATION = 1.00  
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. =10 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	295.0	(RUNOFF)
18.67	8.6	(RUNOFF)
20.67	7.5	(RUNOFF)
23.12	6.3	(RUNOFF)
24.01	5.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.56 WATERSHED INCHES; 347 CFS-HRS; 28.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	42.1	(RUNOFF)
20.09	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.29 WATERSHED INCHES; 43 CFS-HRS; 3.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.52	16.1	430.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.25 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 3

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.26	303.4	(NULL)
18.66	10.3	(NULL)
20.66	9.0	(NULL)
23.76	7.1	(NULL)
24.01	7.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.52 WATERSHED INCHES; 390 CFS-HRS; 32.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.15	125.5	(RUNOFF)
15.84	4.3	(RUNOFF)
17.34	3.3	(RUNOFF)
21.95	2.2	(RUNOFF)
24.00	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.91 WATERSHED INCHES; 116 CFS-HRS; 9.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 5

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.21	404.6	(NULL)
18.64	13.0	(NULL)
20.63	11.4	(NULL)
21.95	10.4	(NULL)
23.08	9.5	(NULL)
24.00	8.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.60 WATERSHED INCHES; 505 CFS-HRS; 41.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	121.4	(RUNOFF)
15.83	4.9	(RUNOFF)
18.87	3.1	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.33 WATERSHED INCHES; 120 CFS-HRS; 9.9 ACRE-  
 FEET.

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OPERATION REACH XSECTION 7

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.28	397.0	320.10
18.70	13.0	318.28
20.69	11.4	318.26
22.00	10.4	318.25
23.15	9.5	318.23
24.07	8.9	318.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.60 WATERSHED INCHES; 505 CFS-HRS; 41.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.25	500.5	(NULL)
18.66	16.1	(NULL)
20.67	14.1	(NULL)
21.99	12.9	(NULL)
23.77	11.2	(NULL)
24.04	11.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.55 WATERSHED INCHES; 626 CFS-HRS; 51.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	103.4	(RUNOFF)
21.97	2.0	(RUNOFF)
24.02	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.64 WATERSHED INCHES; 103 CFS-HRS; 8.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.23	40.4	(RUNOFF)
18.66	1.1	(RUNOFF)
20.12	1.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.67 WATERSHED INCHES; 45 CFS-HRS; 3.8 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.60 15.5 455.36  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.20 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
FEET.

OPERATION REACH XSECTION 11

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.69 15.4 414.37  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.20 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.19 103.7 (NULL)  
20.86 3.2 (NULL)  
24.01 2.5 (NULL)  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.51 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.18 92.4 (RUNOFF)  
15.84 3.2 (RUNOFF)  
17.32 2.5 (RUNOFF)  
18.64 2.0 (RUNOFF)  
24.01 1.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.18 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
 FEET.

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OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	45.7	398.37

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.18 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	138.8	(NULL)
20.62	5.1	(NULL)
23.07	4.2	(NULL)
23.71	4.0	(NULL)
24.01	3.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	143.3	(RUNOFF)
15.84	5.3	(RUNOFF)
17.34	4.1	(RUNOFF)
19.75	3.1	(RUNOFF)
20.06	3.1	(RUNOFF)
24.01	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.53 WATERSHED INCHES; 133 CFS-HRS; 11.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	130.3	331.15
20.68	5.1	330.21



23.77	4.0	330.17
24.08	3.9	330.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	243.4	(NULL)
20.06	8.4	(NULL)
20.62	8.0	(NULL)
21.94	7.3	(NULL)
24.01	6.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.65 WATERSHED INCHES; 365 CFS-HRS; 30.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	732.9	(NULL)
18.63	25.4	(NULL)
20.10	23.1	(NULL)
20.64	22.1	(NULL)
21.95	20.2	(NULL)
23.10	18.5	(NULL)
24.03	17.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.58 WATERSHED INCHES; 990 CFS-HRS; 81.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	289.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.26 WATERSHED INCHES; 393 CFS-HRS; 32.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
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ELEVATION(FEET)		
12.37	658.4	237.23
23.13	18.5	234.37
24.09	17.3	234.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.58 WATERSHED INCHES; 990 CFS-HRS; 81.8 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	941.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.48 WATERSHED INCHES; 1383 CFS-HRS; 114.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	941.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.48 WATERSHED INCHES; 1383 CFS-HRS; 114.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	32.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	27.2	414.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	154.3	(RUNOFF)
20.87	3.1	(RUNOFF)
24.03	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 162 CFS-HRS; 13.4 ACRE-  
 FEET.

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OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	122.8	369.12

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 162 CFS-HRS; 13.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	149.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 199 CFS-HRS; 16.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	89.1	(RUNOFF)
18.87	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.07 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	223.0	(NULL)
20.08	6.0	(NULL)

20.61	5.8	(NULL)
24.01	4.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.08 WATERSHED INCHES; 291 CFS-HRS; 24.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	184.8	338.90

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.08 WATERSHED INCHES; 291 CFS-HRS; 24.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	26.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.54 WATERSHED INCHES; 21 CFS-HRS; 1.7 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -1.0%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	192.2	(NULL)
23.98	4.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.04 WATERSHED INCHES; 311 CFS-HRS; 25.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	141.9	(RUNOFF)
15.82	3.8	(RUNOFF)
20.02	2.2	(RUNOFF)

20.58	2.1	(RUNOFF)
20.82	2.1	(RUNOFF)
23.99	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.56 WATERSHED INCHES; 115 CFS-HRS; 9.5 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .3%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	141.9	(NULL)
15.82	3.8	(NULL)
20.02	2.2	(NULL)
20.58	2.1	(NULL)
20.82	2.1	(NULL)
23.99	1.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.56 WATERSHED INCHES; 115 CFS-HRS; 9.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	134.5	357.02
15.89	3.8	356.08
20.09	2.2	356.05
20.65	2.1	356.04
20.88	2.0	356.04
24.05	1.8	356.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.54 WATERSHED INCHES; 114 CFS-HRS; 9.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	264.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.28 WATERSHED INCHES; 370 CFS-HRS; 30.5 ACRE-

FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.22	351.7	(NULL)
18.86	10.2	(NULL)
20.62	9.1	(NULL)
21.97	8.3	(NULL)
23.74	7.1	(NULL)
24.04	7.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.34 WATERSHED INCHES; 484 CFS-HRS; 40.0 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 33

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.20	88.5	(RUNOFF)
18.65	2.1	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.10 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.21	439.0	(NULL)
18.86	12.3	(NULL)
20.09	11.4	(NULL)
21.75	10.1	(NULL)
23.09	9.1	(NULL)
24.04	8.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.30 WATERSHED INCHES; 579 CFS-HRS; 47.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 35

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.32	419.8	317.47
20.16	11.4	316.22

20.91	10.8	316.21
23.15	9.1	316.18
24.10	8.5	316.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.30 WATERSHED INCHES; 579 CFS-HRS; 47.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	38.8	(RUNOFF)
20.14	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 49 CFS-HRS; 4.1 ACRE-  
 FEET.

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\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .047 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	33.7	327.87
20.15	1.0	323.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	452.2	(NULL)
20.16	12.4	(NULL)
20.91	11.7	(NULL)
22.01	10.8	(NULL)
24.10	9.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.29 WATERSHED INCHES; 629 CFS-HRS; 52.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	142.5	(RUNOFF)
15.84	4.6	(RUNOFF)
17.34	3.6	(RUNOFF)
23.04	2.2	(RUNOFF)
23.70	2.0	(RUNOFF)
24.00	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.74 WATERSHED INCHES; 121 CFS-HRS; 10.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	511.7	(NULL)
23.99	11.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.18 WATERSHED INCHES; 750 CFS-HRS; 61.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	708.9	(NULL)
23.99	16.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 1061 CFS-HRS; 87.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 8

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.74	343.7	296.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 1060 CFS-HRS; 87.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 41



PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	47.7	(RUNOFF)
18.86	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.05 WATERSHED INCHES;	46 CFS-HRS;	3.8 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.89	7.2	271.34
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.02 WATERSHED INCHES;	46 CFS-HRS;	3.8 ACRE-
FEET.		

OPERATION REACH XSECTION 42

1 TR20 ----- SCS

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.04	7.2	222.40
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.02 WATERSHED INCHES;	46 CFS-HRS;	3.8 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	96.2	(RUNOFF)
21.46	3.0	(RUNOFF)
24.02	2.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.43 WATERSHED INCHES;	112 CFS-HRS;	9.3 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	99.7	(NULL)
20.07	5.3	(NULL)
20.62	5.0	(NULL)
24.02	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.69 WATERSHED INCHES; 158 CFS-HRS; 13.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.87	340.2	225.01

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 1060 CFS-HRS; 87.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.83	371.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.82 WATERSHED INCHES; 1218 CFS-HRS; 100.7 ACRE-  
 FEET.

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OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.83	371.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.82 WATERSHED INCHES; 1218 CFS-HRS; 100.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	378.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 515 CFS-HRS; 42.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.17	55.0	(RUNOFF)
20.07	1.1	(RUNOFF)
20.63	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.32 WATERSHED INCHES; 53 CFS-HRS; 4.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	35.5	336.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.32 WATERSHED INCHES; 53 CFS-HRS; 4.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	30.8	316.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.32 WATERSHED INCHES; 53 CFS-HRS; 4.4 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	404.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.87 WATERSHED INCHES; 568 CFS-HRS; 47.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	40.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.92 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE

STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	27.6	321.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.37 WATERSHED INCHES; 33 CFS-HRS; 2.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	432.2	277.62

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.83 WATERSHED INCHES; 601 CFS-HRS; 49.7 ACRE-FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	397.7	277.54

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.83 WATERSHED INCHES; 601 CFS-HRS; 49.7 ACRE-FEET.

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OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	163.6	(RUNOFF)
18.87	6.1	(RUNOFF)
21.98	5.0	(RUNOFF)
24.03	4.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.42 WATERSHED INCHES; 191 CFS-HRS; 15.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	497.3	(NULL)
24.01	14.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.29 WATERSHED INCHES; 792 CFS-HRS; 65.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	497.3	(NULL)
24.01	14.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.29 WATERSHED INCHES; 792 CFS-HRS; 65.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	1233.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.63 WATERSHED INCHES; 2600 CFS-HRS; 214.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	20.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.62 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	1240.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.62 WATERSHED INCHES; 2617 CFS-HRS; 216.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	1240.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.62 WATERSHED INCHES; 2617 CFS-HRS; 216.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	79.3	(RUNOFF)
15.84	2.5	(RUNOFF)
24.00	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.97 WATERSHED INCHES; 68 CFS-HRS; 5.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	1237.6	133.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.62 WATERSHED INCHES; 2617 CFS-HRS; 216.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	1733.6	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.53 WATERSHED INCHES; 3409 CFS-HRS; 281.7 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
12.43 1733.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.50 WATERSHED INCHES; 3360 CFS-HRS; 277.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	54.0	(RUNOFF)
19.43	1.0	(RUNOFF)
19.75	1.0	(RUNOFF)
20.07	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.48 WATERSHED INCHES; 52 CFS-HRS; 4.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	1752.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.51 WATERSHED INCHES; 3412 CFS-HRS; 282.0 ACRE-  
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

EXECUTIVE CONTROL COMPUT	FROM XSECTION 1 TO XSECTION 63
STARTING TIME = .00	RAIN DEPTH = 7.23 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2	MAIN TIME INCREMENT = .060 HOURS
ALTERNATE NO. = 1	STORM NO. =50 RAIN TABLE NO. = 1

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OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	526.5	(RUNOFF)
18.67	13.8	(RUNOFF)
20.68	12.1	(RUNOFF)
21.94	11.1	(RUNOFF)
23.13	10.1	(RUNOFF)
24.01	9.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

4.59 WATERSHED INCHES; 622 CFS-HRS; 51.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	78.1	(RUNOFF)
24.02	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.24 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	70.8	432.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.15 WATERSHED INCHES; 78 CFS-HRS; 6.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	595.9	(NULL)
18.65	15.9	(NULL)
20.12	14.6	(NULL)
20.67	14.0	(NULL)
23.76	11.2	(NULL)
24.00	11.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.53 WATERSHED INCHES; 700 CFS-HRS; 57.9 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	212.7	(RUNOFF)
15.84	6.8	(RUNOFF)
17.34	5.2	(RUNOFF)
19.44	4.0	(RUNOFF)
22.75	3.1	(RUNOFF)
23.06	3.1	(RUNOFF)
24.00	3.0	(RUNOFF)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.03 WATERSHED INCHES; 200 CFS-HRS; 16.5 ACRE-
FEET.

OPERATION ADDHYD XSECTION 5

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows show data points from 12.21 to 24.00 hours with discharge values ranging from 761.2 to 14.0 CFS.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.63 WATERSHED INCHES; 900 CFS-HRS; 74.4 ACRE-
FEET.

OPERATION RUNOFF XSECTION 6

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows show data points from 12.18 to 24.02 hours with discharge values ranging from 223.3 to 3.5 CFS.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.30 WATERSHED INCHES; 222 CFS-HRS; 18.3 ACRE-
FEET.

OPERATION REACH XSECTION 7

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Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows show data points from 12.28 to 24.07 hours with discharge values ranging from 752.6 to 13.9 CFS and elevation values ranging from 321.23 to 318.29 feet.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.63 WATERSHED INCHES; 900 CFS-HRS; 74.4 ACRE-

FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.26	933.8	(NULL)
18.65	25.2	(NULL)
20.12	23.2	(NULL)
20.68	22.2	(NULL)
21.99	20.4	(NULL)
23.12	18.6	(NULL)
24.04	17.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.56 WATERSHED INCHES; 1122 CFS-HRS; 92.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	180.9	(RUNOFF)
18.64	4.0	(RUNOFF)
21.97	3.2	(RUNOFF)
24.02	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.69 WATERSHED INCHES; 183 CFS-HRS; 15.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.22	70.7	(RUNOFF)
24.02	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.72 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE-  
 FEET.

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\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	50.8	456.22
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.21 WATERSHED INCHES;	72 CFS-HRS;	5.9 ACRE-
FEET.		

OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	50.4	414.77
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.21 WATERSHED INCHES;	72 CFS-HRS;	5.9 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	195.9	(NULL)
20.86	5.0	(NULL)
23.08	4.3	(NULL)
23.73	4.0	(NULL)
24.01	4.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.55 WATERSHED INCHES;	255 CFS-HRS;	21.0 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	153.2	(RUNOFF)
15.83	5.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.02	2.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.35 WATERSHED INCHES;	154 CFS-HRS;	12.8 ACRE-
FEET.		

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OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	83.1	399.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.35 WATERSHED INCHES; 154 CFS-HRS; 12.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	258.0	(NULL)
20.06	8.3	(NULL)
21.94	7.3	(NULL)
24.01	6.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.81 WATERSHED INCHES; 409 CFS-HRS; 33.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.16	255.3	(RUNOFF)
15.84	8.6	(RUNOFF)
17.34	6.6	(RUNOFF)
19.47	5.1	(RUNOFF)
21.96	4.3	(RUNOFF)
24.01	3.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.55 WATERSHED INCHES; 239 CFS-HRS; 19.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	251.1	331.55
20.13	8.3	330.29
20.68	8.0	330.28
24.07	6.2	330.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.81 WATERSHED INCHES; 409 CFS-HRS; 33.8 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
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12.20	449.9	(NULL)
20.06	13.3	(NULL)
20.62	12.7	(NULL)
21.94	11.6	(NULL)
23.06	10.6	(NULL)
24.01	9.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.71 WATERSHED INCHES; 648 CFS-HRS; 53.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	1360.9	(NULL)
20.10	36.4	(NULL)
20.64	34.9	(NULL)
21.95	31.9	(NULL)
23.10	29.2	(NULL)
23.75	27.6	(NULL)
24.03	27.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.61 WATERSHED INCHES; 1768 CFS-HRS; 146.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	541.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.19 WATERSHED INCHES; 731 CFS-HRS; 60.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.37	1235.0	238.86
20.14	36.4	234.56
23.14	29.2	234.50
24.09	27.3	234.47

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.61 WATERSHED INCHES; 1769 CFS-HRS; 146.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.35	1761.3	(NULL)
20.13	52.1	(NULL)
23.13	41.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 2499 CFS-HRS; 206.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 10

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.35	1761.3	(NULL)
20.13	52.1	(NULL)
23.13	41.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 2499 CFS-HRS; 206.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.22	54.7	(RUNOFF)
21.96	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.26	55.3	415.55
20.15	1.2	410.91

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 23

1 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
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12.19	256.8	(RUNOFF)
20.10	5.2	(RUNOFF)
23.10	4.1	(RUNOFF)
24.03	3.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 275 CFS-HRS; 22.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	229.1	369.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 275 CFS-HRS; 22.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	284.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 337 CFS-HRS; 27.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	148.7	(RUNOFF)
18.87	3.2	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.21 WATERSHED INCHES; 156 CFS-HRS; 12.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	418.0	(NULL)
20.08	9.3	(NULL)
20.61	8.9	(NULL)
23.71	7.0	(NULL)
24.01	6.9	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.23 WATERSHED INCHES; 494 CFS-HRS; 40.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	283.6	342.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 494 CFS-HRS; 40.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	47.2	(RUNOFF)
17.32	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .9%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	295.1	(NULL)
23.98	7.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.18 WATERSHED INCHES; 531 CFS-HRS; 43.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	220.3	(RUNOFF)
15.45	6.0	(RUNOFF)
15.82	5.8	(RUNOFF)
17.32	4.4	(RUNOFF)
20.02	3.3	(RUNOFF)
20.58	3.1	(RUNOFF)
20.82	3.1	(RUNOFF)
23.99	2.7	(RUNOFF)

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 TR20 ----- SCS  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.78 WATERSHED INCHES; 186 CFS-HRS; 15.4 ACRE-  
FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .1%.  
\*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	220.3	(NULL)
15.45	6.0	(NULL)
15.82	5.8	(NULL)
17.32	4.4	(NULL)
20.02	3.3	(NULL)
20.58	3.1	(NULL)
20.82	3.1	(NULL)
23.99	2.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.78 WATERSHED INCHES; 186 CFS-HRS; 15.4 ACRE-  
FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	213.3	357.27
15.88	5.8	356.12
17.38	4.4	356.09
20.88	3.1	356.06
24.05	2.7	356.06

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.76 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	433.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.47 WATERSHED INCHES; 616 CFS-HRS; 50.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 32

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.22	572.7	(NULL)
18.86	15.7	(NULL)
20.08	14.5	(NULL)
20.86	13.7	(NULL)
21.96	12.6	(NULL)
23.08	11.5	(NULL)
24.04	10.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.53 WATERSHED INCHES; 801 CFS-HRS; 66.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.20	148.2	(RUNOFF)
18.65	3.3	(RUNOFF)
20.10	3.0	(RUNOFF)
24.03	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.25 WATERSHED INCHES; 162 CFS-HRS; 13.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.21	729.7	(NULL)
18.61	19.2	(NULL)
18.85	18.9	(NULL)
20.09	17.5	(NULL)
20.86	16.6	(NULL)
21.97	15.3	(NULL)
23.74	13.1	(NULL)
24.04	13.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.48 WATERSHED INCHES; 963 CFS-HRS; 79.6 ACRE-FEET.

OPERATION REACH XSECTION 35

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	694.0	317.98
20.15	17.5	316.29
20.92	16.6	316.28
22.01	15.3	316.27
23.80	13.1	316.25
24.10	13.0	316.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.49 WATERSHED INCHES; 963 CFS-HRS; 79.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.26	65.4	(RUNOFF)
23.76	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.30 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .047 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.29	64.5	328.67
23.78	1.2	323.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.31 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	758.3	(NULL)
20.15	19.1	(NULL)
20.91	18.0	(NULL)
22.01	16.6	(NULL)
23.15	15.1	(NULL)
23.80	14.3	(NULL)
24.10	14.2	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.47 WATERSHED INCHES; 1047 CFS-HRS; 86.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	246.6	(RUNOFF)
15.84	7.4	(RUNOFF)
17.34	5.7	(RUNOFF)
20.04	4.3	(RUNOFF)
20.60	4.1	(RUNOFF)
23.70	3.2	(RUNOFF)
24.00	3.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.81 WATERSHED INCHES; 212 CFS-HRS; 17.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	869.0	(NULL)
23.99	17.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.35 WATERSHED INCHES; 1259 CFS-HRS; 104.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	1147.4	(NULL)
23.99	25.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.30 WATERSHED INCHES; 1791 CFS-HRS; 148.0 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 8

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.86	476.5	302.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.29 WATERSHED INCHES; 1789 CFS-HRS; 147.8 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	79.8	(RUNOFF)
17.34	2.0	(RUNOFF)
24.01	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.19 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.45	28.4	273.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.12 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-  
FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.57	27.2	222.79

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.11 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	217.1	(RUNOFF)
19.47	6.2	(RUNOFF)
20.11	6.0	(RUNOFF)
21.98	5.3	(RUNOFF)
24.02	4.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.05 WATERSHED INCHES; 238 CFS-HRS; 19.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 44

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	224.0	(NULL)
20.63	8.5	(NULL)
24.02	6.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.38 WATERSHED INCHES; 316 CFS-HRS; 26.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.98	474.8	225.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.29 WATERSHED INCHES; 1789 CFS-HRS; 147.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	544.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.88 WATERSHED INCHES; 2104 CFS-HRS; 173.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	544.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.88 WATERSHED INCHES; 2104 CFS-HRS; 173.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	655.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.93 WATERSHED INCHES; 897 CFS-HRS; 74.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.16	89.2	(RUNOFF)
17.34	2.2	(RUNOFF)
24.01	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.52 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.29	58.1	337.36
24.03	1.2	333.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.52 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-FEET.

OPERATION REACH XSECTION 49

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.46	57.3	317.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.52 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.31	707.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.97 WATERSHED INCHES; 985 CFS-HRS; 81.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.18	69.7	(RUNOFF)
23.74	1.0	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

5.04 WATERSHED INCHES; 71 CFS-HRS; 5.9 ACRE-  
FEET.

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\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE

STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	58.5	322.59
24.03	1.0	320.81

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.45 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	763.5	278.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.94 WATERSHED INCHES; 1048 CFS-HRS; 86.6 ACRE-  
FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.45	686.4	278.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.94 WATERSHED INCHES; 1048 CFS-HRS; 86.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	369.6	(RUNOFF)
18.87	11.0	(RUNOFF)
20.11	10.3	(RUNOFF)
21.97	9.1	(RUNOFF)
23.11	8.3	(RUNOFF)
24.03	7.9	(RUNOFF)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.03 WATERSHED INCHES; 407 CFS-HRS; 33.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 54

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.38 904.7 (NULL)  
24.01 23.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.20 WATERSHED INCHES; 1454 CFS-HRS; 120.2 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.38 904.7 (NULL)  
24.01 23.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.20 WATERSHED INCHES; 1454 CFS-HRS; 120.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.36 2267.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.65 WATERSHED INCHES; 4602 CFS-HRS; 380.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.13 42.2 (RUNOFF)  
17.34 1.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.31 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	2283.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.64 WATERSHED INCHES; 4638 CFS-HRS; 383.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 6  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	2283.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.64 WATERSHED INCHES; 4638 CFS-HRS; 383.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	133.5	(RUNOFF)
17.34	3.0	(RUNOFF)
21.45	2.0	(RUNOFF)
24.00	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 117 CFS-HRS; 9.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	2280.7	135.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.64 WATERSHED INCHES; 4637 CFS-HRS; 383.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	3180.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.52 WATERSHED INCHES; 6092 CFS-HRS; 503.4 ACRE-

FEET.

\*\*\* WARNING - XSECTION 61  
NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.41 3180.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.47 WATERSHED INCHES; 6019 CFS-HRS; 497.4 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.16 86.7 (RUNOFF)  
17.34 2.1 (RUNOFF)  
24.01 1.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.70 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.41 3212.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.48 WATERSHED INCHES; 6104 CFS-HRS; 504.4 ACRE-  
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
STARTING TIME = .00 RAIN DEPTH = 8.47 RAIN DURATION = 1.00  
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. =99 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION (FEET)		
12.24	652.9	(RUNOFF)
18.67	16.6	(RUNOFF)
20.13	15.2	(RUNOFF)
20.67	14.5	(RUNOFF)
21.93	13.3	(RUNOFF)
23.12	12.1	(RUNOFF)
24.01	11.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.72 WATERSHED INCHES; 776 CFS-HRS; 64.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 2

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.19	97.8	(RUNOFF)
20.09	2.1	(RUNOFF)
24.02	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.34 WATERSHED INCHES; 101 CFS-HRS; 8.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.24	93.7	432.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.24	746.6	(NULL)
18.65	19.1	(NULL)
20.12	17.4	(NULL)
20.67	16.6	(NULL)
23.12	14.0	(NULL)
23.77	13.3	(NULL)
24.01	13.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.66 WATERSHED INCHES; 874 CFS-HRS; 72.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.15	259.5	(RUNOFF)
15.84	8.1	(RUNOFF)
17.34	6.2	(RUNOFF)
18.62	5.0	(RUNOFF)
21.45	4.1	(RUNOFF)
21.75	4.0	(RUNOFF)
21.95	4.0	(RUNOFF)
24.00	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.19 WATERSHED INCHES; 247 CFS-HRS; 20.4 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 5

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.21	961.0	(NULL)
18.63	24.2	(NULL)
20.08	22.0	(NULL)
20.63	21.0	(NULL)
21.95	19.3	(NULL)
23.09	17.7	(NULL)
24.00	16.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.77 WATERSHED INCHES; 1120 CFS-HRS; 92.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	278.1	(RUNOFF)
15.82	9.9	(RUNOFF)
17.31	7.6	(RUNOFF)
18.86	6.1	(RUNOFF)
21.45	5.1	(RUNOFF)
24.02	4.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.40 WATERSHED INCHES; 279 CFS-HRS; 23.0 ACRE-  
FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	943.1	321.72
18.69	24.1	318.40
20.15	22.0	318.38
20.70	21.0	318.37
22.01	19.3	318.35
23.15	17.7	318.33
24.07	16.5	318.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 1120 CFS-HRS; 92.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 8

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	1174.5	(NULL)
18.65	30.3	(NULL)
20.12	27.6	(NULL)
20.67	26.4	(NULL)
21.99	24.2	(NULL)
23.12	22.2	(NULL)
24.04	20.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 1399 CFS-HRS; 115.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	223.2	(RUNOFF)
20.87	4.2	(RUNOFF)
24.02	3.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.84 WATERSHED INCHES; 227 CFS-HRS; 18.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	87.2	(RUNOFF)
18.66	2.1	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

5.86 WATERSHED INCHES; 100 CFS-HRS; 8.3 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE

STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.34 70.3 456.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.35 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-  
FEET.

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OPERATION REACH XSECTION 11

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.40 70.0 414.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.34 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.20 250.4 (NULL)  
18.61 7.1 (NULL)  
20.86 6.0 (NULL)  
23.08 5.1 (NULL)  
24.01 4.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.69 WATERSHED INCHES; 318 CFS-HRS; 26.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.17 185.0 (RUNOFF)  
15.83 6.0 (RUNOFF)  
17.33 4.6 (RUNOFF)

20.86	3.2	(RUNOFF)
24.02	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.54 WATERSHED INCHES; 189 CFS-HRS; 15.6 ACRE-  
 FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 51,  
 VALUE EXTRAPOLATED.  
 \*\*\*

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	105.1	399.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.54 WATERSHED INCHES; 189 CFS-HRS; 15.6 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	335.1	(NULL)
20.62	9.5	(NULL)
21.94	8.7	(NULL)
24.01	7.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.97 WATERSHED INCHES; 507 CFS-HRS; 41.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	316.5	(RUNOFF)
15.84	10.3	(RUNOFF)
17.34	8.0	(RUNOFF)
19.44	6.1	(RUNOFF)
21.95	5.2	(RUNOFF)
24.01	4.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.68 WATERSHED INCHES; 299 CFS-HRS; 24.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 16



PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	328.0	331.81
20.68	9.5	330.31
24.08	7.4	330.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.97 WATERSHED INCHES; 507 CFS-HRS; 41.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	565.4	(NULL)
18.58	17.7	(NULL)
20.62	15.2	(NULL)
21.94	13.8	(NULL)
23.07	12.7	(NULL)
24.01	11.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.86 WATERSHED INCHES; 805 CFS-HRS; 66.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	1717.2	(NULL)
18.63	48.0	(NULL)
20.10	43.5	(NULL)
20.64	41.6	(NULL)
21.95	38.0	(NULL)
23.10	34.8	(NULL)
24.03	32.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.75 WATERSHED INCHES; 2204 CFS-HRS; 182.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	683.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.30 WATERSHED INCHES; 923 CFS-HRS; 76.3 ACRE-FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	1564.9	239.60
20.14	43.5	234.62
23.15	34.8	234.55
24.09	32.5	234.53

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.75 WATERSHED INCHES; 2203 CFS-HRS; 182.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	2231.6	(NULL)
20.13	62.4	(NULL)
23.14	49.9	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.61 WATERSHED INCHES; 3127 CFS-HRS; 258.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	2231.6	(NULL)
20.13	62.4	(NULL)
23.14	49.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.61 WATERSHED INCHES; 3127 CFS-HRS; 258.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	66.5	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	65.7	415.70
23.14	1.1	410.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.42 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	311.9	(RUNOFF)
20.10	6.1	(RUNOFF)
21.97	5.3	(RUNOFF)
24.03	4.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.42 WATERSHED INCHES; 336 CFS-HRS; 27.8 ACRE-FEET.

OPERATION RESVOR STRUCTURE 32

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	284.3	370.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.42 WATERSHED INCHES; 336 CFS-HRS; 27.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	349.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.42 WATERSHED INCHES; 413 CFS-HRS; 34.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	180.8	(RUNOFF)
21.97	3.0	(RUNOFF)

24.02 2.6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.39 WATERSHED INCHES; 192 CFS-HRS; 15.9 ACRE-
FEET.

OPERATION ADDHYD XSECTION 26

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows: 12.23 (515.5, NULL), 20.08 (11.1, NULL), 20.61 (10.6, NULL), 24.01 (8.2, NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.41 WATERSHED INCHES; 605 CFS-HRS; 50.0 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 34

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Row: 12.36 (429.8, 343.30)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.42 WATERSHED INCHES; 605 CFS-HRS; 50.0 ACRE-
FEET.

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OPERATION RUNOFF XSECTION 27

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows: 12.11 (58.8, (RUNOFF)), 17.32 (1.2, (RUNOFF)), 18.58 (1.0, (RUNOFF))

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.67 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-
FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.6%.
\*\*\*

OPERATION ADDHYD XSECTION 28

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK

12.35	446.1	(NULL)
23.98	9.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.36 WATERSHED INCHES; 652 CFS-HRS; 53.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	261.8	(RUNOFF)
15.45	7.1	(RUNOFF)
15.82	6.8	(RUNOFF)
17.32	5.2	(RUNOFF)
18.82	4.2	(RUNOFF)
22.41	3.2	(RUNOFF)
22.72	3.1	(RUNOFF)
23.02	3.1	(RUNOFF)
23.99	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.96 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT 1.1%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	261.8	(NULL)
15.45	7.1	(NULL)
15.82	6.8	(NULL)
17.32	5.2	(NULL)
18.82	4.2	(NULL)
22.41	3.2	(NULL)
22.72	3.1	(NULL)
23.02	3.1	(NULL)
23.99	3.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.96 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION (FEET)		
12.18	255.4	357.40
15.88	6.8	356.14
17.38	5.2	356.11
18.88	4.2	356.09
21.98	3.4	356.07
22.78	3.1	356.07
23.09	3.1	356.07
24.05	3.2	356.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.99 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.31	521.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.66 WATERSHED INCHES; 750 CFS-HRS; 62.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 32

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.21	686.9	(NULL)
18.85	18.6	(NULL)
20.08	17.2	(NULL)
20.87	16.2	(NULL)
21.75	15.1	(NULL)
21.97	15.0	(NULL)
23.08	13.6	(NULL)
24.04	12.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.73 WATERSHED INCHES; 975 CFS-HRS; 80.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.20	178.4	(RUNOFF)
21.97	3.1	(RUNOFF)
24.03	2.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.43 WATERSHED INCHES; 198 CFS-HRS; 16.4 ACRE-FEET.

FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.21	876.5	(NULL)
18.85	22.4	(NULL)
20.09	20.8	(NULL)
20.87	19.6	(NULL)
21.97	18.1	(NULL)
23.09	16.5	(NULL)
24.04	15.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.68 WATERSHED INCHES; 1173 CFS-HRS; 96.9 ACRE-  
FEET.

OPERATION REACH XSECTION 35

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	825.2	318.24
20.15	20.7	316.31
20.91	19.6	316.30
22.01	18.1	316.29
23.15	16.5	316.28
24.10	15.5	316.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.68 WATERSHED INCHES; 1173 CFS-HRS; 96.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.26	78.9	(RUNOFF)
18.64	2.0	(RUNOFF)
23.76	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.49 WATERSHED INCHES; 102 CFS-HRS; 8.4 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .047 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.

\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.29	78.4	328.90
23.77	1.4	323.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.47 WATERSHED INCHES; 102 CFS-HRS; 8.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	903.1	(NULL)
20.15	22.6	(NULL)
20.91	21.3	(NULL)
22.01	19.7	(NULL)
23.15	17.9	(NULL)
24.10	16.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.66 WATERSHED INCHES; 1275 CFS-HRS; 105.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.13	303.7	(RUNOFF)
15.45	9.3	(RUNOFF)
15.84	8.9	(RUNOFF)
17.34	6.8	(RUNOFF)
19.74	5.1	(RUNOFF)
20.04	5.1	(RUNOFF)
22.42	4.2	(RUNOFF)
22.74	4.1	(RUNOFF)
23.04	4.1	(RUNOFF)
24.00	4.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 263 CFS-HRS; 21.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------



ELEVATION(FEET)			
12.28	1035.2		(NULL)
23.99	20.5		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.53 WATERSHED INCHES; 1537 CFS-HRS; 127.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	1443.0	(NULL)
23.99	29.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.47 WATERSHED INCHES; 2188 CFS-HRS; 180.8 ACRE-FEET.

OPERATION RESVOR STRUCTURE 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	777.5	304.64

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.48 WATERSHED INCHES; 2189 CFS-HRS; 180.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	97.1	(RUNOFF)
15.84	3.1	(RUNOFF)
17.34	2.4	(RUNOFF)
24.02	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.37 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	49.7	274.20

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.25 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-FEET.

FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	47.8	223.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.26 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	289.3	(RUNOFF)
18.87	8.0	(RUNOFF)
20.86	7.1	(RUNOFF)
21.97	6.6	(RUNOFF)
23.10	6.0	(RUNOFF)
24.03	5.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.01 WATERSHED INCHES; 313 CFS-HRS; 25.9 ACRE-FEET.

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OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	297.1	(NULL)
18.59	12.3	(NULL)
20.63	10.2	(NULL)
23.09	8.2	(NULL)
24.03	7.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.38 WATERSHED INCHES; 409 CFS-HRS; 33.8 ACRE-FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.83	743.3	226.65

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.47 WATERSHED INCHES; 2188 CFS-HRS; 180.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	833.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.02 WATERSHED INCHES; 2596 CFS-HRS; 214.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	833.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.02 WATERSHED INCHES; 2596 CFS-HRS; 214.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	802.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.09 WATERSHED INCHES; 1108 CFS-HRS; 91.6 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	107.1	(RUNOFF)
15.84	3.3	(RUNOFF)
18.85	2.0	(RUNOFF)
24.01	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.72 WATERSHED INCHES; 107 CFS-HRS; 8.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	59.2	337.87

24.03 1.4 333.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.72 WATERSHED INCHES; 108 CFS-HRS; 8.9 ACRE-
FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.51 58.6 317.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.71 WATERSHED INCHES; 107 CFS-HRS; 8.9 ACRE-
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.31 858.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.14 WATERSHED INCHES; 1216 CFS-HRS; 100.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.18 84.8 (RUNOFF)
24.02 1.2 (RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.20 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.26 71.1 322.85
24.03 1.2 320.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.60 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	926.8	279.26

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 1294 CFS-HRS; 107.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	800.3	279.01

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 1294 CFS-HRS; 107.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	494.4	(RUNOFF)
19.46	13.3	(RUNOFF)
20.86	12.1	(RUNOFF)
21.97	11.3	(RUNOFF)
23.10	10.3	(RUNOFF)
24.03	9.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.99 WATERSHED INCHES; 536 CFS-HRS; 44.3 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	1077.6	(NULL)
24.01	27.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.28 WATERSHED INCHES; 1830 CFS-HRS; 151.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	1077.6	(NULL)
24.01	27.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.28 WATERSHED INCHES; 1830 CFS-HRS; 151.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	2855.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.79 WATERSHED INCHES; 5722 CFS-HRS; 472.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	55.0	(RUNOFF)
20.04	1.1	(RUNOFF)
20.60	1.0	(RUNOFF)
20.83	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.31 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	2875.6	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 5768 CFS-HRS; 476.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	2875.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.77 WATERSHED INCHES; 5768 CFS-HRS; 476.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	162.6	(RUNOFF)
15.84	4.7	(RUNOFF)
17.34	3.6	(RUNOFF)
23.04	2.2	(RUNOFF)
23.70	2.0	(RUNOFF)
24.00	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.26 WATERSHED INCHES; 144 CFS-HRS; 11.9 ACRE-  
FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.41	2875.1	136.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.77 WATERSHED INCHES; 5768 CFS-HRS; 476.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.40	3948.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.64 WATERSHED INCHES; 7598 CFS-HRS; 627.9 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 61  
NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
\*\*\*

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OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.40	3948.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.58 WATERSHED INCHES; 7511 CFS-HRS; 620.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.16	103.9	(RUNOFF)
15.84	3.2	(RUNOFF)
17.34	2.4	(RUNOFF)
24.01	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.90 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.40	3988.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.59 WATERSHED INCHES; 7615 CFS-HRS; 629.3 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 5

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 6

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.  
 RAIN TABLE NUMBER 1, ARC 2  
 MAIN TIME INCREMENT .060 HOURS

ALTERNATE 1 STORM 2



XSECTION	1	RUNOFF	.21	1.22	---	12.26	137	652.4
XSECTION	2	RUNOFF	.03	1.03	---	12.20	18	600.0
STRUCTURE	58	RESVOR	.03	1.02	429.15	13.47	2	66.7
XSECTION	4	RUNOFF	.06	1.47	---	12.16	63	1050.0
XSECTION	6	RUNOFF	.08	1.06	---	12.19	53	662.5
XSECTION	9	RUNOFF	.06	1.27	---	12.19	49	816.7
XSECTION	10	RUNOFF	.03	1.29	---	12.23	19	633.3
STRUCTURE	52	RESVOR	.03	.86	454.47	13.33T	3T	100.0
XSECTION	12	ADDHYD	.09	1.15	---	12.19	49	544.4
XSECTION	13	RUNOFF	.04	1.67	---	12.18	49	1225.0
STRUCTURE	51	RESVOR	.04	1.67	397.47	12.42	22	550.0
XSECTION	15	RUNOFF	.08	1.19	---	12.16	66	825.0
XSECTION	17	ADDHYD	.21	1.27	---	12.21	110	523.8
XSECTION	18	ADDHYD	.59	1.23	---	12.25	334	566.1
XSECTION	19	RUNOFF	.27	1.01	---	12.33	122	451.9
XSECTION	20	REACH	.59	1.23	235.86	12.38	306	518.6
XSECTION	21	ADDHYD	.86	1.16	---	12.36	426	495.3
STRUCTURE	10	RESVOR	.86	1.16	---	12.36	426	495.3
XSECTION	22	RUNOFF	.02	1.60	---	12.22	17	850.0
STRUCTURE	47	RESVOR	.02	1.60	414.10	12.37	12	600.0
XSECTION	23	RUNOFF	.08	1.60	---	12.20	80	1000.0
STRUCTURE	32	RESVOR	.08	1.60	368.24	12.32	61	762.5
XSECTION	25	RUNOFF	.05	1.58	---	12.19	46	920.0
STRUCTURE	34	RESVOR	.15	1.59	337.19	12.68	54	360.0
XSECTION	27	RUNOFF	.01	1.19	---	12.12	13	1300.0
XSECTION	28	ADDHYD	.16	1.56	---	12.67	56	350.0
XSECTION	29	RUNOFF	.05	1.96	---	12.11	81	1620.0
STRUCTURE	64	RESVOR	.05	1.96	---	12.11	81	1620.0

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SUMMARY TABLE 1

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ALTERNATE	1	STORM	2					
XSECTION	31	RUNOFF	.17	1.75	---	12.33	142	835.3
XSECTION	33	RUNOFF	.05	1.60	---	12.21	46	920.0
XSECTION	36	RUNOFF	.02	1.64	---	12.27	21	1050.0

STRUCTURE	33	RESVOR	.02	1.64	325.68	12.45	15	750.0
XSECTION	38	RUNOFF	.07	1.33	---	12.13	69	985.7
XSECTION	39	ADDHYD	.36	1.67	---	12.32	265	736.1
STRUCTURE	8	RESVOR	.52	1.64	290.93	12.73	196	376.9
XSECTION	41	RUNOFF	.02	1.57	---	12.18	25	1250.0
STRUCTURE	29	RESVOR	.02	1.56	268.66	13.00	4	200.0
XSECTION	43	RUNOFF	.12	.51	---	12.26	26	216.7
XSECTION	44	ADDHYD	.14	.68	---	12.26	28	200.0
XSECTION	46	ADDHYD	.67	1.43	---	12.83	207	309.0
STRUCTURE	7	RESVOR	.67	1.43	---	12.83	207	309.0
XSECTION	47	RUNOFF	.28	1.40	---	12.32	185	660.7
XSECTION	48	RUNOFF	.02	1.78	---	12.17	30	1500.0
STRUCTURE	40	RESVOR	.02	1.78	334.19	12.33	16	800.0
XSECTION	51	RUNOFF	.02	1.47	---	12.19	21	1050.0
STRUCTURE	43	RESVOR	.02	.97	321.02	12.86	4	200.0
XSECTION	52	ADDHYD	.33	1.40	277.07	12.33	198	600.0
XSECTION	53	RUNOFF	.21	.50	---	12.26	44	209.5
XSECTION	54	ADDHYD	.54	1.05	---	12.46	208	385.2
STRUCTURE	5	RESVOR	.54	1.05	---	12.46	208	385.2
XSECTION	55	ADDHYD	1.53	1.28	---	12.40	572	373.9
XSECTION	56	RUNOFF	.02	.61	---	12.14	6	300.0
XSECTION	57	ADDHYD	1.55	1.27	---	12.40	575	371.0
STRUCTURE	6	RESVOR	1.55	1.27	---	12.40	575	371.0
XSECTION	58	RUNOFF	.04	1.51	---	12.14	41	1025.0
XSECTION	62	RUNOFF	.02	1.90	---	12.17	30	1500.0
XSECTION	63	ADDHYD	2.11	1.20	---	12.47	789	373.9

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)
RAINFALL OF 4.10 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.								
ALTERNATE	1	STORM	5					
XSECTION	1	RUNOFF	.21	1.90	---	12.25	218	1038.1
XSECTION	2	RUNOFF	.03	1.67	---	12.20	30	1000.0
STRUCTURE	58	RESVOR	.03	1.64	430.23	12.68	8	266.7
XSECTION	4	RUNOFF	.06	2.21	---	12.15	96	1600.0

XSECTION	6	RUNOFF	.08	1.70	---	12.19	88	1100.0
XSECTION	9	RUNOFF	.06	1.98	---	12.19	77	1283.3
XSECTION	10	RUNOFF	.03	1.99	---	12.23	30	1000.0
STRUCTURE	52	RESVOR	.03	1.54	454.90	12.72	9	300.0
XSECTION	12	ADDHYD	.09	1.84	---	12.19	77	855.6
XSECTION	13	RUNOFF	.04	2.45	---	12.18	72	1800.0
STRUCTURE	51	RESVOR	.04	2.45	397.96	12.39	34	850.0
XSECTION	15	RUNOFF	.08	1.87	---	12.16	106	1325.0
XSECTION	17	ADDHYD	.21	1.98	---	12.20	178	847.6
XSECTION	18	ADDHYD	.59	1.92	---	12.24	539	913.6
XSECTION	19	RUNOFF	.27	1.64	---	12.32	208	770.4
XSECTION	20	REACH	.59	1.92	236.60	12.37	487	825.4
XSECTION	21	ADDHYD	.86	1.83	---	12.36	691	803.5
STRUCTURE	10	RESVOR	.86	1.83	---	12.36	691	803.5
XSECTION	22	RUNOFF	.02	2.37	---	12.22	25	1250.0
STRUCTURE	47	RESVOR	.02	2.37	414.35	12.33	21	1050.0
XSECTION	23	RUNOFF	.08	2.37	---	12.20	119	1487.5
STRUCTURE	32	RESVOR	.08	2.37	368.74	12.32	86	1075.0
XSECTION	25	RUNOFF	.05	2.35	---	12.19	68	1360.0
STRUCTURE	34	RESVOR	.15	2.36	338.39	12.46	127	846.7

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 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)					
ALTERNATE	1	STORM	5					
XSECTION	27	RUNOFF	.01	1.88	---	12.12	20	2000.0
XSECTION	28	ADDHYD	.16	2.33	---	12.46	132	825.0
XSECTION	29	RUNOFF	.05	2.79	---	12.11	113	2260.0
STRUCTURE	64	RESVOR	.05	2.79	---	12.11	113	2260.0
XSECTION	31	RUNOFF	.17	2.55	---	12.32	207	1217.6
XSECTION	33	RUNOFF	.05	2.38	---	12.20	68	1360.0
XSECTION	36	RUNOFF	.02	2.42	---	12.27	30	1500.0
STRUCTURE	33	RESVOR	.02	2.42	327.30	12.44	24	1200.0
XSECTION	38	RUNOFF	.07	2.05	---	12.13	107	1528.6
XSECTION	39	ADDHYD	.36	2.46	---	12.31	390	1083.3

STRUCTURE	8	RESVOR	.52	2.42	293.51	12.75	270	519.2
XSECTION	41	RUNOFF	.02	2.34	---	12.17	37	1850.0
STRUCTURE	29	RESVOR	.02	2.32	270.05	12.93	5	250.0
XSECTION	43	RUNOFF	.12	.96	---	12.23	61	508.3
XSECTION	44	ADDHYD	.14	1.18	---	12.24	63	450.0
XSECTION	46	ADDHYD	.67	2.15	---	12.84	290	432.8
STRUCTURE	7	RESVOR	.67	2.15	---	12.84	290	432.8
XSECTION	47	RUNOFF	.28	2.14	---	12.32	285	1017.9
XSECTION	48	RUNOFF	.02	2.59	---	12.17	44	2200.0
STRUCTURE	40	RESVOR	.02	2.59	335.09	12.35	22	1100.0
XSECTION	51	RUNOFF	.02	2.22	---	12.18	31	1550.0
STRUCTURE	43	RESVOR	.02	1.69	321.43	12.41	15	750.0
XSECTION	52	ADDHYD	.33	2.14	277.35	12.33	315	954.5
XSECTION	53	RUNOFF	.21	.95	---	12.23	103	490.5
XSECTION	54	ADDHYD	.54	1.68	---	12.43	351	650.0
STRUCTURE	5	RESVOR	.54	1.68	---	12.43	351	650.0
XSECTION	55	ADDHYD	1.53	1.97	---	12.37	916	598.7
XSECTION	56	RUNOFF	.02	1.11	---	12.14	13	650.0
XSECTION	57	ADDHYD	1.55	1.96	---	12.37	921	594.2
STRUCTURE	6	RESVOR	1.55	1.96	---	12.37	921	594.2

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A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
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HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD		DRAINAGE	RUNOFF	PEAK DISCHARGE			
	CONTROL	OPERATION			ELEVATION	TIME	RATE	RATE
ID			AREA	AMOUNT	(FT)	(HR)	(CFS)	(CSM)
			(SQ MI)	(IN)				
ALTERNATE	1	STORM	5					
XSECTION	58	RUNOFF	.04	2.27	---	12.13	61	1525.0
XSECTION	62	RUNOFF	.02	2.72	---	12.16	43	2150.0
XSECTION	63	ADDHYD	2.11	1.87	---	12.44	1283	608.1
RAINFALL OF	4.91 inches	AND	24.00 hr	DURATION,	BEGINS AT	.0 hrs.		
ALTERNATE	1	STORM	10					
XSECTION	1	RUNOFF	.21	2.56	---	12.25	295	1404.8
XSECTION	2	RUNOFF	.03	2.29	---	12.19	42	1400.0
STRUCTURE	58	RESVOR	.03	2.25	430.98	12.52	16	533.3
XSECTION	4	RUNOFF	.06	2.91	---	12.15	125	2083.3
XSECTION	6	RUNOFF	.08	2.33	---	12.18	121	1512.5

XSECTION	9	RUNOFF	.06	2.64	---	12.18	103	1716.7
XSECTION	10	RUNOFF	.03	2.67	---	12.23	40	1333.3
STRUCTURE	52	RESVOR	.03	2.20	455.36	12.60	15	500.0
XSECTION	12	ADDHYD	.09	2.51	---	12.19	104	1155.6
XSECTION	13	RUNOFF	.04	3.18	---	12.18	92	2300.0
STRUCTURE	51	RESVOR	.04	3.18	398.37	12.38	46	1150.0
XSECTION	15	RUNOFF	.08	2.53	---	12.16	143	1787.5
XSECTION	17	ADDHYD	.21	2.65	---	12.20	243	1157.1
XSECTION	18	ADDHYD	.59	2.58	---	12.24	733	1242.4
XSECTION	19	RUNOFF	.27	2.26	---	12.32	290	1074.1
XSECTION	20	REACH	.59	2.58	237.23	12.37	658	1115.3
XSECTION	21	ADDHYD	.86	2.48	---	12.35	942	1095.3
STRUCTURE	10	RESVOR	.86	2.48	---	12.35	942	1095.3
XSECTION	22	RUNOFF	.02	3.09	---	12.22	33	1650.0
STRUCTURE	47	RESVOR	.02	3.09	414.77	12.32	27	1350.0
XSECTION	23	RUNOFF	.08	3.09	---	12.20	154	1925.0
STRUCTURE	32	RESVOR	.08	3.09	369.12	12.30	123	1537.5
XSECTION	25	RUNOFF	.05	3.07	---	12.19	89	1780.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

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HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION	TIME	RATE	RATE	
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	10					
STRUCTURE	34	RESVOR	.15	3.08	338.90	12.39	185	1233.3
XSECTION	27	RUNOFF	.01	2.54	---	12.12	27	2700.0
XSECTION	28	ADDHYD	.16	3.04	---	12.37	192	1200.0
XSECTION	29	RUNOFF	.05	3.56	---	12.11	142	2840.0
STRUCTURE	64	RESVOR	.05	3.56	---	12.11	142	2840.0
XSECTION	31	RUNOFF	.17	3.28	---	12.32	264	1552.9
XSECTION	33	RUNOFF	.05	3.10	---	12.20	89	1780.0
XSECTION	36	RUNOFF	.02	3.14	---	12.27	39	1950.0
STRUCTURE	33	RESVOR	.02	3.14	327.87	12.39	34	1700.0
XSECTION	38	RUNOFF	.07	2.74	---	12.13	143	2042.9
XSECTION	39	ADDHYD	.36	3.18	---	12.30	512	1422.2
STRUCTURE	8	RESVOR	.52	3.14	296.08	12.74	344	661.5

XSECTION	41	RUNOFF	.02	3.05	---	12.17	48	2400.0
STRUCTURE	29	RESVOR	.02	3.02	271.34	12.89	7	350.0
XSECTION	43	RUNOFF	.12	1.43	---	12.23	96	800.0
XSECTION	44	ADDHYD	.14	1.69	---	12.23	100	714.3
XSECTION	46	ADDHYD	.67	2.82	---	12.83	372	555.2
STRUCTURE	7	RESVOR	.67	2.82	---	12.83	372	555.2
XSECTION	47	RUNOFF	.28	2.83	---	12.32	379	1353.6
XSECTION	48	RUNOFF	.02	3.32	---	12.17	55	2750.0
STRUCTURE	40	RESVOR	.02	3.32	336.30	12.31	36	1800.0
XSECTION	51	RUNOFF	.02	2.92	---	12.18	41	2050.0
STRUCTURE	43	RESVOR	.02	2.37	321.86	12.32	28	1400.0
XSECTION	52	ADDHYD	.33	2.83	277.62	12.33	432	1309.1
XSECTION	53	RUNOFF	.21	1.42	---	12.22	164	781.0
XSECTION	54	ADDHYD	.54	2.29	---	12.41	497	920.4
STRUCTURE	5	RESVOR	.54	2.29	---	12.41	497	920.4
XSECTION	55	ADDHYD	1.53	2.63	---	12.37	1233	805.9
XSECTION	56	RUNOFF	.02	1.62	---	12.14	20	1000.0
XSECTION	57	ADDHYD	1.55	2.62	---	12.37	1241	800.6

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F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)

ALTERNATE 1 STORM 10

STRUCTURE	6	RESVOR	1.55	2.62	---	12.37	1241	800.6
XSECTION	58	RUNOFF	.04	2.97	---	12.13	79	1975.0
XSECTION	62	RUNOFF	.02	3.48	---	12.16	54	2700.0
XSECTION	63	ADDHYD	2.11	2.51	---	12.42	1753	830.8

RAINFALL OF 7.23 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 50

XSECTION	1	RUNOFF	.21	4.59	---	12.24	526	2504.8
XSECTION	2	RUNOFF	.03	4.24	---	12.19	78	2600.0
STRUCTURE	58	RESVOR	.03	4.15	432.07	12.26	71	2366.7
XSECTION	4	RUNOFF	.06	5.03	---	12.15	213	3550.0
XSECTION	6	RUNOFF	.08	4.30	---	12.18	223	2787.5

XSECTION	9	RUNOFF	.06	4.69	---	12.18	181	3016.7
XSECTION	10	RUNOFF	.03	4.72	---	12.22	71	2366.7
STRUCTURE	52	RESVOR	.03	4.21	456.22	12.38	51	1700.0
XSECTION	12	ADDHYD	.09	4.55	---	12.19	196	2177.8
XSECTION	13	RUNOFF	.04	5.35	---	12.17	153	3825.0
STRUCTURE	51	RESVOR	.04	5.35	399.39	12.35	83	2075.0
XSECTION	15	RUNOFF	.08	4.55	---	12.16	255	3187.5
XSECTION	17	ADDHYD	.21	4.71	---	12.20	450	2142.9
XSECTION	18	ADDHYD	.59	4.61	---	12.25	1361	2306.8
XSECTION	19	RUNOFF	.27	4.19	---	12.31	541	2003.7
XSECTION	20	REACH	.59	4.61	238.86	12.37	1235	2093.2
XSECTION	21	ADDHYD	.86	4.48	---	12.35	1761	2047.7
STRUCTURE	10	RESVOR	.86	4.48	---	12.35	1761	2047.7
XSECTION	22	RUNOFF	.02	5.24	---	12.22	55	2750.0
STRUCTURE	47	RESVOR	.02	5.24	415.55	12.26	55	2750.0
XSECTION	23	RUNOFF	.08	5.24	---	12.19	257	3212.5
STRUCTURE	32	RESVOR	.08	5.24	369.84	12.26	229	2862.5

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HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AMOUNT	ELEVATION	TIME	RATE	RATE
ID	OPERATION	AREA (SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	50					
XSECTION	25	RUNOFF	.05	5.21	---	12.19	149	2980.0
STRUCTURE	34	RESVOR	.15	5.24	342.14	12.41	284	1893.3
XSECTION	27	RUNOFF	.01	4.57	---	12.11	47	4700.0
XSECTION	28	ADDHYD	.16	5.18	---	12.39	295	1843.8
XSECTION	29	RUNOFF	.05	5.78	---	12.11	220	4400.0
STRUCTURE	64	RESVOR	.05	5.78	---	12.11	220	4400.0
XSECTION	31	RUNOFF	.17	5.47	---	12.31	433	2547.1
XSECTION	33	RUNOFF	.05	5.25	---	12.20	148	2960.0
XSECTION	36	RUNOFF	.02	5.30	---	12.26	65	3250.0
STRUCTURE	33	RESVOR	.02	5.31	328.67	12.29	65	3250.0
XSECTION	38	RUNOFF	.07	4.81	---	12.13	247	3528.6
XSECTION	39	ADDHYD	.36	5.35	---	12.27	869	2413.9
STRUCTURE	8	RESVOR	.52	5.29	302.82	12.86	476	915.4
XSECTION	41	RUNOFF	.02	5.19	---	12.17	80	4000.0

STRUCTURE	29	RESVOR	.02	5.12	273.78	12.45	28	1400.0
XSECTION	43	RUNOFF	.12	3.05	---	12.22	217	1808.3
XSECTION	44	ADDHYD	.14	3.38	---	12.22	224	1600.0
XSECTION	46	ADDHYD	.67	4.88	---	12.64	544	811.9
STRUCTURE	7	RESVOR	.67	4.88	---	12.64	544	811.9
XSECTION	47	RUNOFF	.28	4.93	---	12.31	655	2339.3
XSECTION	48	RUNOFF	.02	5.52	---	12.16	89	4450.0
STRUCTURE	40	RESVOR	.02	5.52	337.36	12.29	58	2900.0
XSECTION	51	RUNOFF	.02	5.04	---	12.18	70	3500.0
STRUCTURE	43	RESVOR	.02	4.45	322.59	12.26	59	2950.0
XSECTION	52	ADDHYD	.33	4.94	278.85	12.31	764	2315.2
XSECTION	53	RUNOFF	.21	3.03	---	12.21	370	1761.9
XSECTION	54	ADDHYD	.54	4.20	---	12.38	905	1675.9
STRUCTURE	5	RESVOR	.54	4.20	---	12.38	905	1675.9
XSECTION	55	ADDHYD	1.53	4.65	---	12.36	2268	1482.4
XSECTION	56	RUNOFF	.02	3.31	---	12.13	42	2100.0

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 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)

ALTERNATE 1 STORM 50

XSECTION	57	ADDHYD	1.55	4.64	---	12.36	2283	1472.9
STRUCTURE	6	RESVOR	1.55	4.64	---	12.36	2283	1472.9
XSECTION	58	RUNOFF	.04	5.09	---	12.13	134	3350.0
XSECTION	62	RUNOFF	.02	5.70	---	12.16	87	4350.0
XSECTION	63	ADDHYD	2.11	4.48	---	12.41	3212	1522.3

RAINFALL OF 8.47 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 99

XSECTION	1	RUNOFF	.21	5.72	---	12.24	653	3109.5
XSECTION	2	RUNOFF	.03	5.34	---	12.19	98	3266.7
STRUCTURE	58	RESVOR	.03	5.24	432.27	12.24	94	3133.3
XSECTION	4	RUNOFF	.06	6.19	---	12.15	259	4316.7
XSECTION	6	RUNOFF	.08	5.40	---	12.18	278	3475.0
XSECTION	9	RUNOFF	.06	5.84	---	12.18	223	3716.7



XSECTION	10	RUNOFF	.03	5.86	---	12.22	87	2900.0
STRUCTURE	52	RESVOR	.03	5.35	456.47	12.34	70	2333.3
XSECTION	12	ADDHYD	.09	5.69	---	12.20	250	2777.8
XSECTION	13	RUNOFF	.04	6.54	---	12.17	185	4625.0
STRUCTURE	51	RESVOR	.04	6.54	399.85	12.34	105	2625.0
XSECTION	15	RUNOFF	.08	5.68	---	12.16	317	3962.5
XSECTION	17	ADDHYD	.21	5.86	---	12.20	565	2690.5
XSECTION	18	ADDHYD	.59	5.75	---	12.24	1717	2910.2
XSECTION	19	RUNOFF	.27	5.30	---	12.31	684	2533.3
XSECTION	20	REACH	.59	5.75	239.60	12.36	1565	2652.5
XSECTION	21	ADDHYD	.86	5.61	---	12.35	2232	2595.3
STRUCTURE	10	RESVOR	.86	5.61	---	12.35	2232	2595.3
XSECTION	22	RUNOFF	.02	6.42	---	12.22	67	3350.0
STRUCTURE	47	RESVOR	.02	6.42	415.70	12.24	66	3300.0
XSECTION	23	RUNOFF	.08	6.42	---	12.19	312	3900.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)					
ALTERNATE	1	STORM	99					
STRUCTURE	32	RESVOR	.08	6.42	370.13	12.26	284	3550.0
XSECTION	25	RUNOFF	.05	6.39	---	12.19	181	3620.0
STRUCTURE	34	RESVOR	.15	6.42	343.30	12.36	430	2866.7
XSECTION	27	RUNOFF	.01	5.67	---	12.11	59	5900.0
XSECTION	28	ADDHYD	.16	6.36	---	12.35	446	2787.5
XSECTION	29	RUNOFF	.05	6.96	---	12.11	262	5240.0
STRUCTURE	64	RESVOR	.05	6.96	---	12.11	262	5240.0
XSECTION	31	RUNOFF	.17	6.66	---	12.31	522	3070.6
XSECTION	33	RUNOFF	.05	6.43	---	12.20	178	3560.0
XSECTION	36	RUNOFF	.02	6.49	---	12.26	79	3950.0
STRUCTURE	33	RESVOR	.02	6.47	328.90	12.29	78	3900.0
XSECTION	38	RUNOFF	.07	5.96	---	12.13	304	4342.9
XSECTION	39	ADDHYD	.36	6.53	---	12.28	1035	2875.0
STRUCTURE	8	RESVOR	.52	6.48	304.64	12.69	778	1496.2
XSECTION	41	RUNOFF	.02	6.37	---	12.17	97	4850.0

STRUCTURE	29	RESVOR	.02	6.25	274.20	12.36	50	2500.0
XSECTION	43	RUNOFF	.12	4.01	---	12.21	289	2408.3
XSECTION	44	ADDHYD	.14	4.38	---	12.22	297	2121.4
XSECTION	46	ADDHYD	.67	6.02	---	12.80	833	1243.3
STRUCTURE	7	RESVOR	.67	6.02	---	12.80	833	1243.3
XSECTION	47	RUNOFF	.28	6.09	---	12.31	803	2867.9
XSECTION	48	RUNOFF	.02	6.72	---	12.16	107	5350.0
STRUCTURE	40	RESVOR	.02	6.72	337.87	12.32	59	2950.0
XSECTION	51	RUNOFF	.02	6.20	---	12.18	85	4250.0
STRUCTURE	43	RESVOR	.02	5.60	322.85	12.26	71	3550.0
XSECTION	52	ADDHYD	.33	6.10	279.26	12.31	927	2809.1
XSECTION	53	RUNOFF	.21	3.99	---	12.21	494	2352.4
XSECTION	54	ADDHYD	.54	5.28	---	12.36	1078	1996.3
STRUCTURE	5	RESVOR	.54	5.28	---	12.36	1078	1996.3
XSECTION	55	ADDHYD	1.53	5.79	---	12.35	2855	1866.0

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION	TIME	RATE	RATE	
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	99					
XSECTION	56	RUNOFF	.02	4.31	---	12.13	55	2750.0
XSECTION	57	ADDHYD	1.55	5.77	---	12.35	2876	1855.5
STRUCTURE	6	RESVOR	1.55	5.77	---	12.35	2876	1855.5
XSECTION	58	RUNOFF	.04	6.26	---	12.13	163	4075.0
XSECTION	62	RUNOFF	.02	6.90	---	12.16	104	5200.0
XSECTION	63	ADDHYD	2.11	5.59	---	12.40	3988	1890.0

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

		HYDROGRAPH INFORMATION					ROUTING PARAMETERS				
XSEC ID	REACH LENGTH COEFF	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT- KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
BASEFLOW IS		.0 CFS									
ALTERNATE		1	STORM		2						
7	2055		186	12.2	184	12.3	1.65	1.52	.011	.988	
	.80?										
11	1397		3	13.3	3	13.5	2.53	1.54	.004	.990	
	.47										
16	2449		64	12.2	59	12.3	2.42	1.40	.021	.928	
	.55										
20	4470		333	12.2	305	12.4	1.73	1.47	.031	.916	
	.50										
30	1561		80	12.1	74	12.2	1.16	1.56	.030	.920	
	.73?										
35	2077		236	12.2	221	12.4	1.15	1.41	.029	.936	
	.57										
42	2112		4	13.0	4	13.1	3.54	1.39	.006	.996	
	.40										
45	3148		195	12.7	194	12.8	3.25	1.32	.012	.993	
	.56										
49	1829		16	12.4	15	12.5	1.44	1.42	.038	.937	
	.40										
52	4744		197	12.4	178	12.5	1.16	1.52	.045	.903	
	.38										
59	1671		573	12.4	571	12.5	3.31	1.24	.010	.997	
	.83?										
ALTERNATE		1	STORM		5						
7	2055		295	12.2	291	12.3	1.75	1.50	.010	.984	
	.86?										
11	1397		9	12.7	9	12.8	2.53	1.54	.005	.990	
	.64										
16	2449		102	12.2	96	12.3	2.47	1.39	.019	.940	
	.60										
20	4470		539	12.2	486	12.4	2.57	1.33	.043	.902	
	.47										
30	1561		113	12.1	106	12.2	1.20	1.54	.025	.940	
	.77?										
35	2077		342	12.2	324	12.3	1.19	1.40	.026	.946	
	.61										
42	2112		5	12.9	5	13.1	3.54	1.39	.005	.997	
	.44										
45	3148		270	12.7	268	12.9	4.08	1.21	.017	.992	

.52									
49	1829		22 12.4		21 12.5	1.46	1.41	.030	.948
.42									
52	4744		313 12.4		288 12.5	1.23	1.50	.040	.919
.42									
59	1671		920 12.4		914 12.4	3.16	1.25	.009	.994
.88?									

ALTERNATE 1 STORM 10

7	2055		398 12.2		395 12.3	1.91	1.47	.010	.993
.89?									
11	1397		15 12.6		15 12.7	2.53	1.54	.005	.993
.72?									

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MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC REACH ID COEFF	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION				ROUTING PARAMETERS				
			INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
	ALTERNATE	1	STORM	10							
16	2449		137 12.2		130 12.3	2.50	1.38	.017	.952		
.63											
20	4470		733 12.2		658 12.4	3.29	1.25	.052	.898		
.46											
30	1561		141 12.1		135 12.2	1.23	1.53	.022	.952		
.81?											
35	2077		436 12.2		418 12.3	1.22	1.39	.024	.959		
.63											
42	2112		7 12.9		7 13.0	3.54	1.39	.005	.998		
.47											
45	3148		344 12.7		340 12.9	4.92	1.14	.022	.990		
.48											
49	1829		35 12.3		31 12.4	1.49	1.40	.036	.869		
.46											
52	4744		429 12.3		396 12.5	1.29	1.48	.038	.922		
.45											
59	1671		1240 12.4		1236 12.4	3.23	1.24	.008	.996		
.91?											

ALTERNATE	1	STORM	50						
7	2055	752	12.2	749	12.3	3.07	1.31	.016	.996
.87?									
11	1397	50	12.4	50	12.4	2.60	1.51	.007	.988
.90?									
16	2449	256	12.2	251	12.3	2.57	1.37	.016	.978
.70?									
20	4470	1360	12.2	1234	12.4	3.92	1.20	.055	.908
.47									
30	1561	219	12.1	213	12.2	1.29	1.51	.018	.971
.87?									
35	2077	713	12.2	693	12.3	1.32	1.37	.021	.972
.68?									
42	2112	28	12.5	27	12.5	3.56	1.38	.009	.956
.61									
45	3148	476	12.8	475	13.0	5.05	1.13	.017	.996
.49									
49	1829	58	12.3	57	12.5	1.51	1.38	.031	.979
.51									
52	4744	763	12.3	683	12.5	1.85	1.33	.059	.895
.39									
59	1671	2283	12.4	2281	12.4	3.30	1.24	.008	.999
.96?									

ALTERNATE	1	STORM	99						
7	2055	946	12.2	936	12.3	3.39	1.28	.017	.989
.88?									
11	1397	70	12.4	70	12.4	2.65	1.49	.008	.999
.95?									
16	2449	335	12.2	327	12.3	2.62	1.36	.015	.977
.73?									

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MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

		HYDROGRAPH INFORMATION				ROUTING PARAMETERS					
XSEC ID	REACH LENGTH	FLOOD PLAIN LENGTH	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR	PEAK RATIO Q/I	ATT- KIN
			PEAK	TIME	PEAK	TIME	COEFF	POWER			
COEFF	(FT)	(FT)	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)	(Q*)	(C)

ALTERNATE	1	STORM	99						
20	4470	1717	12.2	1565	12.4	3.99	1.20	.054	.911
.48									
30	1561	261	12.1	255	12.2	1.32	1.50	.016	.978
.89?									
35	2077	859	12.2	823	12.3	1.76	1.29	.027	.958
.63									
42	2112	50	12.4	48	12.5	3.60	1.36	.013	.958
.67?									
45	3148	774	12.7	743	12.8	6.39	1.05	.032	.960
.45									
49	1829	59	12.3	59	12.5	1.52	1.38	.024	.990
.51									
52	4744	927	12.3	800	12.5	2.57	1.21	.089	.863
.32									
59	1671	2871	12.4	2871	12.4	3.15	1.25	.007	1.000
.99?									

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99
STRUCTURE 64	.05					
-----						
ALTERNATE 1		81	113	142	220	
262						
STRUCTURE 58	.03					
-----						
ALTERNATE 1		2	8	16	71	
94						
STRUCTURE 52	.03					
-----						
ALTERNATE 1		3	9	15	51	
70						
STRUCTURE 51	.04					
-----						
ALTERNATE 1		22	34	46	83	
105						
STRUCTURE 47	.02					
-----						
ALTERNATE 1		12	21	27	55	
66						

STRUCTURE	43		.02				
ALTERNATE	1			4	15	28	59
71							
STRUCTURE	40		.02				
ALTERNATE	1			16	22	36	58
59							
STRUCTURE	34		.15				
ALTERNATE	1			54	127	185	284
430							
STRUCTURE	33		.02				
ALTERNATE	1			15	24	34	65
78							
STRUCTURE	32		.08				
ALTERNATE	1			61	86	123	229
284							
STRUCTURE	29		.02				
ALTERNATE	1			4	5	7	28
50							
STRUCTURE	10		.86				
ALTERNATE	1			426	691	942	1761
2232							
STRUCTURE	8		.52				
ALTERNATE	1			196	270	344	476
778							
STRUCTURE	7		.67				

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99

STRUCTURE	7	.67				
ALTERNATE 833	1		207	290	372	544
STRUCTURE	6	1.55				
ALTERNATE 2876	1		575	921	1241	2283
STRUCTURE	5	.54				
ALTERNATE 1078	1		208	351	497	905
XSECTION	1	.21				
ALTERNATE 653	1		137	218	295	526
XSECTION	2	.03				
ALTERNATE 98	1		18	30	42	78
XSECTION	4	.06				
ALTERNATE 259	1		63	96	125	213
XSECTION	6	.08				
ALTERNATE 278	1		53	88	121	223
XSECTION	9	.06				
ALTERNATE 223	1		49	77	103	181
XSECTION	10	.03				
ALTERNATE 87	1		19	30	40	71
XSECTION	12	.09				
ALTERNATE 250	1		49	77	104	196
XSECTION	13	.04				
ALTERNATE 185	1		49	72	92	153
XSECTION	15	.08				
ALTERNATE 317	1		66	106	143	255
XSECTION	17	.21				
ALTERNATE 565	1		110	178	243	450



XSECTION	18	.59				
ALTERNATE	1		334	539	733	1361
1717						
1						
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STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99
XSECTION 19	.27					
ALTERNATE 684	1	122	208	290	541	
XSECTION 20	.59					
ALTERNATE 1565	1	306	487	658	1235	
XSECTION 21	.86					
ALTERNATE 2232	1	426	691	942	1761	
XSECTION 22	.02					
ALTERNATE 67	1	17	25	33	55	
XSECTION 23	.08					
ALTERNATE 312	1	80	119	154	257	
XSECTION 25	.05					
ALTERNATE 181	1	46	68	89	149	
XSECTION 27	.01					
ALTERNATE 59	1	13	20	27	47	
XSECTION 28	.16					
ALTERNATE	1	56	132	192	295	

446

XSECTION 29 .05

-----  
 ALTERNATE 1 81 113 142 220  
 262

XSECTION 31 .17

-----  
 ALTERNATE 1 142 207 264 433  
 522

XSECTION 33 .05

-----  
 ALTERNATE 1 46 68 89 148  
 178

XSECTION 36 .02

-----  
 ALTERNATE 1 21 30 39 65  
 79

XSECTION 38 .07

-----  
 ALTERNATE 1 69 107 143 247  
 304

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 STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99

XSECTION 39 .36

-----  
 ALTERNATE 1 265 390 512 869  
 1035

XSECTION 41 .02

-----  
 ALTERNATE 1 25 37 48 80  
 97

XSECTION 43 .12

-----  
 ALTERNATE 1 26 61 96 217  
 289

XSECTION 44 .14

ALTERNATE 297	1		28	63	100	224
XSECTION	46	.67				
ALTERNATE 833	1		207	290	372	544
XSECTION	47	.28				
ALTERNATE 803	1		185	285	379	655
XSECTION	48	.02				
ALTERNATE 107	1		30	44	55	89
XSECTION	51	.02				
ALTERNATE 85	1		21	31	41	70
XSECTION	52	.33				
ALTERNATE 927	1		198	315	432	764
XSECTION	53	.21				
ALTERNATE 494	1		44	103	164	370
XSECTION	54	.54				
ALTERNATE 1078	1		208	351	497	905
XSECTION	55	1.53				
ALTERNATE 2855	1		572	916	1233	2268
XSECTION	56	.02				
ALTERNATE 55	1		6	13	20	42

1

TR20 ----- SCS  
-

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION  
02/28/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT  
2.04TEST  
13:56:48 SUMMARY, JOB NO. 1 PAGE  
114

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ DRAINAGE

STRUCTURE ID	AREA (SQ MI)	STORM NUMBERS.....			
		2	5	10	50 99
XSECTION 57	1.55				
-----					
ALTERNATE 2876	1	575	921	1241	2283
XSECTION 58	.04				
-----					
ALTERNATE 163	1	41	61	79	134
XSECTION 62	.02				
-----					
ALTERNATE 104	1	30	43	54	87
XSECTION 63	2.11				
-----					
ALTERNATE 3988	1	789	1283	1753	3212

1  
 TR20 ----- SCS  
 -  
 Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 02/28/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT  
 2.04TEST

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST  
 FILES

INPUT = pond8.dat , GIVEN DATA FILE  
 OUTPUT = pond8.OUT , DATED  
 02/28/\*\*,13:56:48

FILES GENERATED - DATED 02/28/\*\*,13:56:48

NONE!

TOTAL NUMBER OF WARNINGS = 27, MESSAGES = 10

\*\*\* TR-20 RUN COMPLETED \*\*\*

1

\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20  
HYDROLOGY\*\*\*\*\*

JOB	TR-20	NOPLOTS				
TITLE	Ellicott City Flood Study-Tiber/South Sub-Drainage Areas					
TITLE	27 Subareas MGMT-STD NOAA_C 2,5,10,50,100WITHMGMT					
5	RAINFL	1	.1			
8	0.0000	0.0013	0.0023	0.0034	0.0044	
8	0.0055	0.0065	0.0076	0.0087	0.0098	
8	0.0109	0.0121	0.0132	0.0143	0.0155	
8	0.0167	0.0178	0.0190	0.0202	0.0214	
8	0.0226	0.0238	0.0251	0.0263	0.0276	
8	0.0288	0.0301	0.0314	0.0327	0.0340	
8	0.0353	0.0366	0.0379	0.0393	0.0406	
8	0.0420	0.0434	0.0447	0.0461	0.0475	
8	0.0489	0.0504	0.0518	0.0532	0.0547	
8	0.0562	0.0576	0.0591	0.0606	0.0621	
8	0.0636	0.0651	0.0667	0.0682	0.0697	
8	0.0713	0.0729	0.0745	0.0760	0.0776	
8	0.0793	0.0809	0.0826	0.0843	0.0861	
8	0.0879	0.0898	0.0916	0.0936	0.0955	
8	0.0975	0.0996	0.1017	0.1038	0.1060	
8	0.1082	0.1104	0.1127	0.1150	0.1174	
8	0.1198	0.1223	0.1247	0.1273	0.1298	
8	0.1324	0.1351	0.1378	0.1405	0.1432	
8	0.1461	0.1490	0.1521	0.1554	0.1588	
8	0.1623	0.1660	0.1699	0.1739	0.1780	
8	0.1823	0.1868	0.1914	0.1961	0.2010	
8	0.2061	0.2117	0.2179	0.2247	0.2321	
8	0.2400	0.2490	0.2591	0.2702	0.2825	
8	0.2955	0.3157	0.3370	0.3662	0.4067	
8	0.4766	0.5933	0.6338	0.6630	0.6843	
8	0.7045	0.7176	0.7298	0.7409	0.7510	
8	0.7600	0.7679	0.7753	0.7821	0.7883	
8	0.7939	0.7990	0.8039	0.8086	0.8132	
8	0.8177	0.8220	0.8261	0.8301	0.8340	
8	0.8377	0.8412	0.8446	0.8479	0.8510	
8	0.8540	0.8568	0.8595	0.8622	0.8649	
8	0.8676	0.8702	0.8727	0.8753	0.8778	
8	0.8802	0.8826	0.8850	0.8873	0.8896	
8	0.8918	0.8940	0.8962	0.8983	0.9004	
8	0.9025	0.9045	0.9064	0.9084	0.9103	
8	0.9121	0.9139	0.9157	0.9174	0.9191	
8	0.9208	0.9224	0.9240	0.9256	0.9271	
8	0.9287	0.9303	0.9318	0.9334	0.9349	
8	0.9364	0.9379	0.9394	0.9409	0.9424	
8	0.9439	0.9453	0.9468	0.9482	0.9496	
8	0.9511	0.9525	0.9539	0.9553	0.9566	
8	0.9580	0.9594	0.9607	0.9621	0.9634	
8	0.9647	0.9660	0.9673	0.9686	0.9699	
8	0.9712	0.9724	0.9737	0.9749	0.9762	
8	0.9774	0.9786	0.9798	0.9810	0.9822	
8	0.9834	0.9845	0.9857	0.9868	0.9879	

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8	0.9891	0.9902	0.9913	0.9924	0.9935
8	0.9945	0.9956	0.9967	0.9977	0.9987
8	1.0000	1.0000	1.0000	1.0000	1.0000

9 ENDTBL  
3 STRUCT

58

8		424.00	0.00	0.00
8		429.09	2.00	0.72
8		429.59	4.00	0.85
8		430.00	6.00	0.96
8		430.21	8.00	1.02
8		430.36	10.00	1.06
8		430.49	12.00	1.10
8		430.64	14.00	1.15
8		430.74	15.00	1.18
8		431.22	17.09	1.33
8		431.68	33.53	1.49
8		432.18	80.87	1.67
8		432.37	108.22	1.74

9 ENDTBL  
2 XSECTN

007

8		1.0	319.00	
8		318.00	0.00	0.00
8		318.25	10.19	3.39
8		318.50	32.80	7.08
8		318.75	65.48	11.07
8		319.00	107.54	15.35
8		320.00	367.34	35.47
8		321.00	663.16	60.18
8		322.00	1052.26	89.31
8		323.00	1529.69	131.30

9 ENDTBL  
3 STRUCT

52

8		451.90	0.00	0.00
8		454.05	0.34	0.73
8		454.30	0.36	0.85
8		455.60	18.83	1.65
8		456.10	41.43	2.00
8		456.50	72.96	2.28

9 ENDTBL  
2 XSECTN

011

8		1.0	415.00	
8		414.00	0.00	0.00
8		414.25	7.22	1.98
8		414.50	23.69	4.29
8		414.75	48.28	6.93
8		415.00	81.00	9.89
8		416.00	299.51	25.08
8		417.00	488.53	45.33
8		418.00	779.05	70.44
8		419.00	809.36	107.84

9 ENDTBL  
3 STRUCT

51

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8		396.00	0.00	0.00
8		396.50	4.38	0.27
8		397.00	12.40	0.65
8		397.50	22.78	1.07
8		398.00	35.07	1.54
8		398.50	49.45	2.05
8		399.00	64.75	2.59

8			399.45	86.12	3.10
9	ENDTBL				
2	XSECTN	016	1.0	331.00	
8			330.00	0.00	0.00
8			330.25	5.94	1.92
8			330.50	21.34	4.68
8			330.75	47.19	8.28
8			331.00	85.01	12.73
8			332.00	385.16	38.91
8			333.00	704.29	76.97
8			334.00	1202.25	125.34
8			335.00	1592.91	187.47
9	ENDTBL				
2	XSECTN	020	1.0	235.00	
8			234.00	0.00	0.00
8			234.25	9.06	3.27
8			234.50	29.33	6.89
8			234.75	58.86	10.87
8			235.00	97.22	15.19
8			236.00	339.40	36.03
8			237.00	586.83	61.50
8			238.00	902.53	90.59
8			239.00	1290.91	123.25
8			240.00	1750.59	159.40
8			241.00	1985.66	201.02
8			242.00	2381.26	250.13
9	ENDTBL				
3	STRUCT	10			
9	ENDTBL				
3	STRUCT	47			
8			410.00	0.00	0.00
8			413.89	5.00	0.05
8			414.04	10.00	0.15
8			414.17	15.00	0.24
8			414.28	20.00	0.27
8			415.00	30.68	0.38
8			415.27	39.01	0.42
8			415.52	52.87	0.45
8			415.79	71.61	0.49
8			416.07	95.27	0.54
9	ENDTBL				
3	STRUCT	32			
8			367.00	0.00	0.00

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			367.37	10.00	0.29
8			367.59	20.00	0.47
8			367.78	30.00	0.62
8			367.94	40.00	0.76
8			368.09	50.00	0.89
8			368.44	75.00	1.18
8			368.82	88.96	1.52
8			369.30	142.54	1.95
8			369.79	219.99	2.41
8			370.11	280.10	2.72
8			370.33	326.70	2.93
8			370.56	378.34	3.15
9	ENDTBL				
3	STRUCT	34			

8			329.00	0.00	0.00
8			332.62	30.00	0.72
8			336.99	50.00	2.59
8			337.92	70.00	3.17
8			338.11	90.00	3.29
8			338.19	100.00	3.34
8			338.26	109.00	3.39
8			338.55	150.00	3.58
8			338.61	160.00	3.63
8			338.64	165.00	3.65
8			338.70	175.00	3.69
8			338.73	179.50	3.71
8			343.01	310.00	7.34
8			343.91	680.58	8.20
9	ENDTBL				
3	STRUCT	64			
9	ENDTBL				
2	XSECTN	030	1.0	357.00	
8			356.00	0.00	0.00
8			356.25	11.94	4.48
8			356.50	38.65	9.42
8			356.75	77.59	14.83
8			357.00	128.16	20.70
8			358.00	446.97	48.84
8			359.00	544.48	91.80
8			360.00	941.05	156.94
8			361.00	1597.14	242.00
9	ENDTBL				
2	XSECTN	035	1.0	317.00	
8			316.00	0.00	0.00
8			316.25	12.78	5.64
8			316.50	44.21	13.12
8			316.75	94.71	22.44
8			317.00	166.16	33.59
8			318.00	703.03	96.58
8			319.00	1203.58	187.92

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			320.00	2039.69	306.56
8			321.00	3441.07	443.04
9	ENDTBL				
3	STRUCT	33			
8			323.00	0.00	0.00
8			323.20	5.00	0.01
8			324.01	10.00	0.06
8			325.62	15.00	0.19
8			326.73	18.00	0.29
8			327.09	20.00	0.33
8			327.38	25.00	0.36
8			327.54	28.00	0.38
8			327.63	30.00	0.39
8			328.16	38.10	0.46
8			328.84	73.25	0.54
8			329.21	106.03	0.59
9	ENDTBL				
3	STRUCT	29			
8			266.00	0.00	0.00
8			273.38	10.00	2.49
8			273.62	20.00	2.64



8			273.91	35.00	2.82
8			274.10	46.00	2.94
8			274.35	55.00	3.10
8			274.51	58.00	3.20
8			274.61	60.00	3.28
8			274.90	65.00	3.47
8			275.21	98.51	3.68
8			275.54	139.16	3.92
8			275.89	189.97	4.18
8			276.27	253.87	4.48
8			276.50	299.40	4.67
9	ENDTBL				
2	XSECTN	042	1.0	223.00	
8			222.00	0.00	0.00
8			222.25	2.73	0.83
8			222.50	10.35	2.16
8			222.75	23.82	3.97
8			223.00	44.24	6.28
8			224.00	215.28	20.42
8			225.00	406.10	41.61
8			226.00	702.08	67.86
8			227.00	890.97	103.46
9	ENDTBL				
2	XSECTN	045	1.0	223.00	
8			222.00	0.00	0.00
8			222.25	2.28	0.83
8			222.50	8.62	2.16
8			222.75	19.85	3.97
8			223.00	36.86	6.28

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			224.00	179.35	20.41
8			225.00	338.28	41.30
8			226.00	584.84	67.85
8			227.00	830.09	103.44
8			228.00	1249.11	151.47
8			229.00	1307.14	232.37
8			230.00	2023.03	366.57
9	ENDTBL				
3	STRUCT	07			
9	ENDTBL				
3	STRUCT	40			
8			333.00	000.00	0.00
8			334.00	15.15	0.40
8			334.25	16.92	0.47
8			334.50	18.53	0.55
8			334.75	20.02	0.63
8			335.00	21.40	0.68
8			335.50	23.92	0.77
8			335.86	25.59	0.80
8			336.00	27.61	0.82
8			336.25	33.80	0.84
8			336.50	42.02	0.93
8			336.75	51.79	1.01
8			336.86	56.51	1.05
8			337.00	57.30	1.08
8			337.50	58.38	1.31
8			338.00	59.45	1.68
9	ENDTBL				

2	XSECTN	049	1.0	317.00	
8			316.00	0.00	0.00
8			316.25	3.06	1.70
8			316.50	11.11	4.19
8			316.75	24.79	7.47
8			317.00	44.94	11.55
8			318.00	206.80	35.78
8			319.00	333.28	74.89
8			320.00	609.60	131.05
9	ENDTBL				
3	STRUCT	43			
8			317.30	0.00	0.00
8			318.00	0.19	0.08
8			319.00	0.24	0.27
8			320.75	0.30	0.79
8			321.00	3.22	0.85
8			321.75	23.58	1.09
8			322.00	32.83	1.17
8			322.20	40.94	1.20
8			322.40	49.63	1.27
8			322.80	68.56	1.45
8			322.90	73.60	1.49

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

9	ENDTBL				
2	XSECTN	052	1.0	279.00	
8			276.00	0.00	0.00
8			276.25	15.37	5.56
8			276.50	49.97	11.77
8			276.75	100.75	18.63
8			277.00	167.09	26.14
8			278.00	591.48	62.65
8			279.00	793.41	115.06
8			280.00	1313.82	188.91
8			281.00	2138.14	282.44
9	ENDTBL				
3	STRUCT	05			
9	ENDTBL				
3	STRUCT	06			
9	ENDTBL				
3	STRUCT	13			
8			386.30	0.00	0.00
8			386.56	10.00	0.469
8			387.39	25.00	1.220
8			388.22	40.00	2.032
8			389.33	60.00	3.209
8			390.40	80.00	4.444
8			391.41	100.00	5.724
8			391.92	110.00	6.403
8			392.43	120.00	7.108
8			393.00	131.10	7.922
8			393.56	175.68	8.764
8			394.29	332.85	9.913
8			395.07	645.74	11.216
8			395.90	1168.38	12.677
9	ENDTBL				
2	XSECTN	059	1.0	128.00	
8			129.00	0.00	0.00
8			129.25	1.13	0.50

8				129.50	5.18	1.55		
8				129.75	13.39	3.16		
8				130.00	26.84	5.32		
8				131.00	191.72	26.64		
8				132.00	508.02	58.78		
8				133.00	945.51	95.90		
8				134.00	1449.27	136.08		
8				135.00	2016.68	178.64		
8				138.00	4199.86	314.48		
9	ENDTBL							
6	RUNOFF	1 001		1 0.2101	77.19	0.319	1	1 141
6	RESVOR	2 13 1	6				1	1
PROP13								
6	RUNOFF	1 002		2 0.0292	74.00	0.232	1	1 142
6	RESVOR	2 58 2	3				1	1
SWMF58								
6	ADDHYD	4 003	6 3 4				1	1
1+2+58								

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

6	RUNOFF	1 004		1 0.0617	81.09	0.170	1	1 143
6	ADDHYD	4 005	4 1 2				1	1+2+3
6	RUNOFF	1 006		1 0.0799	74.51	0.216	1	1 144
6	REACH	3 007	2 3		2055.0		1	
6	ADDHYD	4 008	1 3 2				1	SA14
6	RUNOFF	1 009		1 0.0604	78.12	0.220	1	1 153
6	RUNOFF	1 010		3 0.0264	78.36	0.290	1	1 151
6	RESVOR	2 52 3	4				1	1
SWMF52								
6	REACH	3 011	4 5		1396.5		1	
6	ADDHYD	4 012	1 5 6				1	1
153+151								
6	RUNOFF	1 013		1 0.0447	83.97	0.210	1	1 152
6	RESVOR	2 51 1	3				1	1
SWMF51								
6	ADDHYD	4 014	6 3 1				1	
012+51								
6	RUNOFF	1 015		3 0.0815	76.80	0.176	1	1 154
6	REACH	3 016	1 4		2448.6		1	
6	ADDHYD	4 017	3 4 5				1	1 SA15
6	ADDHYD	4 018	2 5 1				1	1
SA14+15								
6	RUNOFF	1 019		2 0.2701	73.58	0.425	1	1 131
6	REACH	3 020	1 3		4470.1		1	1 SA13
6	ADDHYD	4 021	2 3 5				1	1
14+15+13								
6	RESVOR	2 10 5	4				1	1
PROP10								
6	RUNOFF	1 022		1 0.0185	83.00	0.283	1	1 121
6	RESVOR	2 47 1	2				1	1
SWMF47								
6	RUNOFF	1 023		3 0.0812	83.00	0.245	1	1 122
6	RESVOR	2 32 3	5				1	1
SWMF32								
6	ADDHYD	4 024	2 5 1				1	
121+122								
6	RUNOFF	1 025		2 0.0465	82.74	0.236	1	1 123
6	ADDHYD	4 026	1 2 5				1	
024+123								

6 RESVOR	2	34	5	3				1	1
SWMF34									
6 RUNOFF	1	027		2	0.0126	76.91	0.100	1	1 124
6 ADDHYD	4	028	3	2	5			1	1 SA12
6 RUNOFF	1	029		2	0.0499	87.76	0.100	1	1 111
6 RESVOR	2	64	2	3				1	1
SWMF64									
6 REACH	3	030	3	6		1561.1		1	
6 RUNOFF	1	031		7	0.1745	85.00	0.449	1	1 112
6 ADDHYD	4	032	6	7	3			1	
111+112									
6 RUNOFF	1	033		1	0.0477	83.06	0.258	1	1 113
6 ADDHYD	4	034	3	1	2			1	
032+113									
6 REACH	3	035	2	3		2077.3		1	
6 RUNOFF	1	036		6	0.0244	83.54	0.370	1	1 114
6 RESVOR	2	33	6	7				1	1
SWMF33									
6 ADDHYD	4	037	3	7	1			1	
111-114									
6 RUNOFF	1	038		2	0.0684	79.13	0.136	1	1 115
6 ADDHYD	4	039	1	2	3			1	1 SA11
6 ADDHYD	4	040	5	3	6			1	12+11
6 RUNOFF	1	041		1	0.0236	82.59	0.200	1	1 101
6 RESVOR	2	29	1	3				1	1
SWMF29									
6 REACH	3	042	3	5		2112.0		1	
6 RUNOFF	1	043		1	0.1211	62.77	0.263	1	1 102
6 ADDHYD	4	044	5	1	2			1	1 SA10

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

6 REACH	3	045	6	3		3147.6		1	
6 ADDHYD	4	046	2	3	7			1	1
10+12+11									
6 RESVOR	2	07	7	1				1	1 PROP7
6 RUNOFF	1	047		2	0.2822	80.17	0.434	1	1 81
6 RUNOFF	1	048		3	0.0248	85.45	0.190	1	1 82
6 RESVOR	2	40	3	5				1	1
SWMF40									
6 REACH	3	049	5	6		1829.0		1	
6 ADDHYD	4	050	2	6	7			1	81+82
6 RUNOFF	1	051		2	0.0218	81.19	0.220	1	1 83
6 RESVOR	2	43	2	3				1	1
SWMF43									
6 ADDHYD	4	052	7	3	2			1	1
81+82+83									
6 REACH	3	052	2	3		4744.2		1	
6 RUNOFF	1	053		5	0.2083	62.56	0.262	1	1 84
6 ADDHYD	4	054	3	5	2			1	1 SA8
6 RESVOR	2	05	2	5				1	1 PROP5
6 ADDHYD	4	055	4	1	3			1	1
13+10+PR									
6 RUNOFF	1	056		6	0.0166	65.36	0.134	1	1 92
6 ADDHYD	4	057	3	6	7			1	1
13+10+92									
6 RESVOR	2	06	7	4				1	1 PROP6
6 RUNOFF	1	058		1	0.0357	81.76	0.141	1	1 93
6 REACH	3	059	4	3		1670.5		1	
6 ADDHYD	4	060	5	3	4			1	

SA8+93  
6 ADDHYD 4 061 7 4 1 1 92+93  
6 RUNOFF 1 062 2 0.0233 86.98 0.186 1 1 91  
6 ADDHYD 4 063 1 2 3 1 1

OUTFALL  
ENDATA  
7 INCREM 6 .06  
7 COMPUT 7 001 063 0.0 3.19 1.01 2 1 2  
ENDCMP 1  
7 COMPUT 7 001 063 0.0 4.10 1.01 2 1 05  
ENDCMP 1  
7 COMPUT 7 001 063 0.0 4.91 1.01 2 1 10  
ENDCMP 1  
7 COMPUT 7 001 063 0.0 7.23 1.01 2 1 50  
ENDCMP 1  
7 COMPUT 7 001 063 0.0 8.47 1.01 2 1 99  
ENDCMP 1  
ENDCMP 1  
ENDJOB 2

\*\*\*\*\*END OF 80-80

LIST\*\*\*\*\*

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EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .060 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
STARTING TIME = .00 RAIN DEPTH = 3.19 RAIN DURATION = 1.00  
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. = 2 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	136.6	(RUNOFF)
20.68	4.2	(RUNOFF)
24.01	3.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.22 WATERSHED INCHES; 165 CFS-HRS; 13.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	62.3	389.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.21 WATERSHED INCHES; 165 CFS-HRS; 13.6 ACRE-

FEET.

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	18.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.03 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.47	2.2	429.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.02 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	64.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.19 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	63.3	(RUNOFF)
15.84	2.4	(RUNOFF)
24.00	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	94.2	(NULL)

20.01	7.0	(NULL)
24.00	5.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.25 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	53.1	(RUNOFF)
17.33	2.0	(RUNOFF)
24.02	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.06 WATERSHED INCHES; 55 CFS-HRS; 4.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	89.0	318.89
24.06	5.2	318.13

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.25 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	136.9	(NULL)
20.07	8.6	(NULL)
24.03	6.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.21 WATERSHED INCHES; 297 CFS-HRS; 24.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	49.0	(RUNOFF)
15.83	2.2	(RUNOFF)
23.09	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.27 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.23	19.1	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.29 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		454.47
13.33	2.8	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .86 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-  
 FEET.

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\*\*\* WARNING - XSECTION 11, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		414.09
13.47	2.7	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .86 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(NULL)
12.19	49.1	



18.82	2.0	(NULL)
24.02	1.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.15 WATERSHED INCHES; 64 CFS-HRS; 5.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	49.3	(RUNOFF)
20.86	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.67 WATERSHED INCHES; 48 CFS-HRS; 4.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	22.2	397.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.67 WATERSHED INCHES; 48 CFS-HRS; 4.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	65.4	(NULL)
20.06	3.0	(NULL)
24.02	2.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.32 WATERSHED INCHES; 112 CFS-HRS; 9.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	66.3	(RUNOFF)
17.35	2.2	(RUNOFF)
24.01	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.19 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-

FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	59.8	330.83
24.09	2.3	330.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.32 WATERSHED INCHES; 112 CFS-HRS; 9.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	109.9	(NULL)
21.94	4.1	(NULL)
24.01	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.27 WATERSHED INCHES; 175 CFS-HRS; 14.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	244.3	(NULL)
20.06	13.3	(NULL)
20.61	12.7	(NULL)
21.93	11.6	(NULL)
23.71	10.1	(NULL)
24.02	9.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.23 WATERSHED INCHES; 471 CFS-HRS; 38.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	121.9	(RUNOFF)
20.13	5.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.01 WATERSHED INCHES; 175 CFS-HRS; 14.5 ACRE-FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	219.6	235.51
24.05	9.9	234.26

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.23 WATERSHED INCHES; 471 CFS-HRS; 38.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	340.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.16 WATERSHED INCHES; 646 CFS-HRS; 53.4 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	340.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.16 WATERSHED INCHES; 646 CFS-HRS; 53.4 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	17.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.37	12.3	414.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.60 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	80.0	(RUNOFF)
19.47	2.0	(RUNOFF)
24.02	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	61.0	368.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	73.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES; 103 CFS-HRS; 8.5 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	46.1	(RUNOFF)
21.45	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.58 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		
12.26	110.3	(NULL)
20.62	3.4	(NULL)
24.01	2.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.59 WATERSHED INCHES; 150 CFS-HRS; 12.4 ACRE-FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	54.3	337.19

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.59 WATERSHED INCHES; 150 CFS-HRS; 12.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	12.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.19 WATERSHED INCHES; 10 CFS-HRS; .8 ACRE-FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.3%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	44.1	(NULL)
12.67	56.2	(NULL)
23.98	2.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 160 CFS-HRS; 13.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.11	80.5	(RUNOFF)
15.82	2.3	(RUNOFF)
23.02	1.1	(RUNOFF)
23.68	1.0	(RUNOFF)
23.99	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.5%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	80.5	(NULL)
15.82	2.3	(NULL)
23.02	1.1	(NULL)
23.68	1.0	(NULL)
23.99	1.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	74.0	356.73
15.89	2.3	356.05
23.09	1.1	356.02
23.75	1.0	356.02
24.05	1.1	356.02

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.97 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	141.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.75 WATERSHED INCHES; 197 CFS-HRS; 16.3 ACRE-

FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	191.3	(NULL)
18.86	6.1	(NULL)
21.75	5.0	(NULL)
24.04	4.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.80 WATERSHED INCHES; 260 CFS-HRS; 21.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	46.0	(RUNOFF)
21.76	1.0	(RUNOFF)
21.97	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES; 49 CFS-HRS; 4.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	236.3	(NULL)
18.86	7.4	(NULL)
21.75	6.0	(NULL)
24.04	5.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.76 WATERSHED INCHES; 310 CFS-HRS; 25.6 ACRE-  
FEET.

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OPERATION REACH XSECTION 35

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.34	221.5	317.10
20.68	6.5	316.13
24.10	5.1	316.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.76 WATERSHED INCHES; 309 CFS-HRS; 25.6 ACRE-

FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	20.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .047 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	15.2	325.68

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	235.8	(NULL)
20.68	7.1	(NULL)
24.10	5.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.75 WATERSHED INCHES; 335 CFS-HRS; 27.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 38

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	69.3	(RUNOFF)
15.84	2.6	(RUNOFF)
17.34	2.0	(RUNOFF)
24.00	1.2	(RUNOFF)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.33 WATERSHED INCHES; 59 CFS-HRS; 4.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	265.4	(NULL)
23.99	6.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.67 WATERSHED INCHES; 394 CFS-HRS; 32.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	312.0	(NULL)
23.99	9.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 554 CFS-HRS; 45.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	24.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.57 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.00	3.6	268.66

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
 FEET.

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OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.17	3.6	222.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	26.2	(RUNOFF)
24.03	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .51 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	27.9	(NULL)
20.62	2.4	(NULL)
24.02	1.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .68 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	298.1	224.75
24.04	9.6	222.52

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 554 CFS-HRS; 45.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	319.9	(NULL)
24.03	11.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.43 WATERSHED INCHES; 617 CFS-HRS; 51.0 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	319.9	(NULL)
24.03	11.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.43 WATERSHED INCHES; 617 CFS-HRS; 51.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	185.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.40 WATERSHED INCHES; 256 CFS-HRS; 21.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	29.9	(RUNOFF)
15.84	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.78 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	16.5	334.19

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.78 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-  
FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	15.5	316.58

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 28 CFS-HRS; 2.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	197.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 284 CFS-HRS; 23.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	20.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 21 CFS-HRS; 1.7 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.86	3.8	321.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .97 WATERSHED INCHES; 14 CFS-HRS; 1.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	198.1	277.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 297 CFS-HRS; 24.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	177.7	277.03

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.40 WATERSHED INCHES; 297 CFS-HRS; 24.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	43.9	(RUNOFF)
23.11	2.1	(RUNOFF)
23.76	2.0	(RUNOFF)
24.03	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.50 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	207.7	(NULL)
24.00	7.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.05 WATERSHED INCHES; 364 CFS-HRS; 30.1 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	207.7	(NULL)
24.00	7.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.05 WATERSHED INCHES; 364 CFS-HRS; 30.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	652.7	(NULL)
24.03	25.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.28 WATERSHED INCHES; 1263 CFS-HRS; 104.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 56

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	6.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.61 WATERSHED INCHES; 7 CFS-HRS; .5 ACRE-		
FEET.		

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	655.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.27 WATERSHED INCHES; 1270 CFS-HRS; 104.9 ACRE-		
FEET.		

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	655.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.27 WATERSHED INCHES; 1270 CFS-HRS; 104.9 ACRE-		
FEET.		

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	40.7	(RUNOFF)
17.34	1.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.51 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-		
FEET.		

OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	650.7	132.33
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.27 WATERSHED INCHES; 1270 CFS-HRS; 104.9 ACRE-		
FEET.		

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	858.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.21 WATERSHED INCHES; 1633 CFS-HRS; 135.0 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	858.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.19 WATERSHED INCHES; 1605 CFS-HRS; 132.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	30.3	(RUNOFF)
15.85	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	868.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.20 WATERSHED INCHES; 1633 CFS-HRS; 135.0 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
 STARTING TIME = .00 RAIN DEPTH = 4.10 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. = 5 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	217.7	(RUNOFF)
20.12	6.2	(RUNOFF)
21.93	5.5	(RUNOFF)
24.02	4.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 258 CFS-HRS; 21.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	97.4	391.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 258 CFS-HRS; 21.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	30.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.67 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	8.3	430.23

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 3



PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	105.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.87 WATERSHED INCHES;	289 CFS-HRS;	23.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 4  
 1 TR20 ----- SCS  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	95.7	(RUNOFF)
15.84	3.4	(RUNOFF)
19.47	2.0	(RUNOFF)
24.00	1.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.21 WATERSHED INCHES;	88 CFS-HRS;	7.3 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	147.5	(NULL)
20.01	9.8	(NULL)
24.00	7.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.94 WATERSHED INCHES;	377 CFS-HRS;	31.1 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	87.6	(RUNOFF)
15.83	3.8	(RUNOFF)
21.46	2.0	(RUNOFF)
24.02	1.7	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.70 WATERSHED INCHES;	88 CFS-HRS;	7.3 ACRE-
FEET.		

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)			
12.26	143.4		319.14
24.06	7.3		318.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.94 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 8

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	221.6	(NULL)
20.07	12.0	(NULL)
20.61	11.5	(NULL)
23.71	9.1	(NULL)
24.04	9.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.89 WATERSHED INCHES; 465 CFS-HRS; 38.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	77.2	(RUNOFF)
15.82	3.1	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 77 CFS-HRS; 6.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	30.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.99 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE

STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.

\*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.72	8.9	454.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.54 WATERSHED INCHES; 26 CFS-HRS; 2.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	8.8	414.27

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.54 WATERSHED INCHES; 26 CFS-HRS; 2.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	77.4	(NULL)
23.08	2.1	(NULL)
23.73	2.0	(NULL)
24.03	2.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.84 WATERSHED INCHES; 103 CFS-HRS; 8.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	71.9	(RUNOFF)
17.33	2.0	(RUNOFF)
24.02	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.45 WATERSHED INCHES; 71 CFS-HRS; 5.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	34.2	397.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.45 WATERSHED INCHES; 71 CFS-HRS; 5.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	103.2	(NULL)
20.62	4.1	(NULL)
24.02	3.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.04 WATERSHED INCHES; 173 CFS-HRS; 14.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 15

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.16	106.0	(RUNOFF)
15.85	4.1	(RUNOFF)
17.34	3.2	(RUNOFF)
22.46	2.0	(RUNOFF)
24.01	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.87 WATERSHED INCHES; 99 CFS-HRS; 8.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	95.7	331.04
20.67	4.0	330.17
24.09	3.2	330.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.04 WATERSHED INCHES; 173 CFS-HRS; 14.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	178.2	(NULL)
20.80	6.3	(NULL)
23.72	5.0	(NULL)

24.01 5.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.98 WATERSHED INCHES; 272 CFS-HRS; 22.5 ACRE-
FEET.

OPERATION ADDHYD XSECTION 18

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.22, 20.07, 20.62, 21.94, 23.72, 24.03 and discharge values like 396.0, 18.7, 17.9, 16.3, 14.2, 13.9.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.92 WATERSHED INCHES; 736 CFS-HRS; 60.9 ACRE-
FEET.

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OPERATION RUNOFF XSECTION 19

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Row includes values 12.32, 207.9, (RUNOFF).

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.64 WATERSHED INCHES; 286 CFS-HRS; 23.6 ACRE-
FEET.

OPERATION REACH XSECTION 20

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values 12.34, 24.09 and discharge values 359.2, 14.0, and peak values 236.08, 234.31.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.92 WATERSHED INCHES; 736 CFS-HRS; 60.9 ACRE-
FEET.

OPERATION ADDHYD XSECTION 21

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Row includes values 12.33, 569.0, (NULL).

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.83 WATERSHED INCHES; 1022 CFS-HRS; 84.5 ACRE-

FEET.

OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	569.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.83 WATERSHED INCHES; 1022 CFS-HRS; 84.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	25.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 47

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	21.0	414.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	119.0	(RUNOFF)
23.10	2.1	(RUNOFF)
23.75	2.0	(RUNOFF)
24.02	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 124 CFS-HRS; 10.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.32 86.1 368.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.37 WATERSHED INCHES; 124 CFS-HRS; 10.3 ACRE-
FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.33 107.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.37 WATERSHED INCHES; 153 CFS-HRS; 12.6 ACRE-
FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.19 68.4 (RUNOFF)
24.03 1.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.35 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 26

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.25 162.5 (NULL)
20.62 4.6 (NULL)
24.02 3.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.36 WATERSHED INCHES; 223 CFS-HRS; 18.4 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.46 127.1 338.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.36 WATERSHED INCHES; 223 CFS-HRS; 18.4 ACRE-
FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	20.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.88 WATERSHED INCHES; 15 CFS-HRS; 1.3 ACRE-FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.46	131.8	(NULL)
23.98	4.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.33 WATERSHED INCHES; 238 CFS-HRS; 19.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	113.0	(RUNOFF)
15.82	3.1	(RUNOFF)
17.32	2.4	(RUNOFF)
23.99	1.5	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 90 CFS-HRS; 7.4 ACRE-FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	113.0	(NULL)
15.82	3.1	(NULL)
17.32	2.4	(NULL)



23.99 1.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.79 WATERSHED INCHES; 90 CFS-HRS; 7.4 ACRE-
FEET.

OPERATION REACH XSECTION 30

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows show data for times 12.18, 15.89, 17.39, and 24.05.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.80 WATERSHED INCHES; 90 CFS-HRS; 7.4 ACRE-
FEET.

OPERATION RUNOFF XSECTION 31

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Row shows data for time 12.32 with (RUNOFF) in the peak column.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.55 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-
FEET.

OPERATION ADDHYD XSECTION 32

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Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows show data for times 12.23, 18.86, 20.87, 23.09, and 24.04, all with (NULL) in the peak column.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.60 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 33

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows show data for times 12.20 and 24.03, both with (RUNOFF) in the peak column.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.38 WATERSHED INCHES; 73 CFS-HRS; 6.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.22	343.4	(NULL)
18.63	10.1	(NULL)
20.09	9.3	(NULL)
21.97	8.1	(NULL)
23.09	7.4	(NULL)
24.04	7.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.56 WATERSHED INCHES; 450 CFS-HRS; 37.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 35

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.33	326.6	317.30
20.16	9.3	316.18
22.00	8.1	316.16
23.15	7.4	316.14
24.10	6.9	316.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.56 WATERSHED INCHES; 450 CFS-HRS; 37.2 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 36

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.27	30.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .047 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	23.6	327.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	343.7	(NULL)
20.16	10.1	(NULL)
20.68	9.6	(NULL)
23.15	8.0	(NULL)
24.10	7.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.55 WATERSHED INCHES; 488 CFS-HRS; 40.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	107.3	(RUNOFF)
15.84	3.7	(RUNOFF)
20.04	2.1	(RUNOFF)
20.60	2.0	(RUNOFF)
20.83	2.0	(RUNOFF)
24.00	1.7	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.05 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	390.1	(NULL)
23.99	9.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.46 WATERSHED INCHES; 578 CFS-HRS; 47.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.40	489.7	(NULL)
23.99	13.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.42 WATERSHED INCHES; 817 CFS-HRS; 67.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	36.9	(RUNOFF)
17.34	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.34 WATERSHED INCHES; 36 CFS-HRS; 2.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.93	5.5	270.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.32 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
13.09	5.5	222.34

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.32 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	60.9	(RUNOFF)
21.98	2.2	(RUNOFF)
24.03	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .96 WATERSHED INCHES; 75 CFS-HRS; 6.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.24	63.5	(NULL)
20.62	3.8	(NULL)
24.03	2.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.18 WATERSHED INCHES; 110 CFS-HRS; 9.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.56	470.1	225.53
24.10	13.1	222.60

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES; 817 CFS-HRS; 67.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.55	504.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.15 WATERSHED INCHES; 927 CFS-HRS; 76.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 7

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.55	504.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.15 WATERSHED INCHES; 927 CFS-HRS; 76.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	285.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.14 WATERSHED INCHES; 389 CFS-HRS; 32.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	43.5	(RUNOFF)
17.34	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.59 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	21.9	335.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.59 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	20.8	316.68

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.58 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	303.0	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.17 WATERSHED INCHES; 430 CFS-HRS; 35.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.18	31.3	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.22 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	14.9	321.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.69 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	315.4	277.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.14 WATERSHED INCHES; 454 CFS-HRS; 37.5 ACRE-FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	287.9	277.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.14 WATERSHED INCHES; 454 CFS-HRS; 37.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 53

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
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ELEVATION(FEET)		
12.23	103.1	(RUNOFF)
20.11	4.2	(RUNOFF)
20.66	4.0	(RUNOFF)
24.02	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .95 WATERSHED INCHES; 127 CFS-HRS; 10.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	350.5	(NULL)
23.99	11.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.68 WATERSHED INCHES; 581 CFS-HRS; 48.0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	350.5	(NULL)
23.99	11.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.68 WATERSHED INCHES; 581 CFS-HRS; 48.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	1002.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.97 WATERSHED INCHES; 1948 CFS-HRS; 161.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	13.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.11 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-FEET.

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OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	1007.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 1960 CFS-HRS; 162.0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	1007.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 1960 CFS-HRS; 162.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	60.8	(RUNOFF)
15.45	2.1	(RUNOFF)
15.84	2.0	(RUNOFF)
21.45	1.0	(RUNOFF)
21.73	1.0	(RUNOFF)
21.94	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.27 WATERSHED INCHES; 52 CFS-HRS; 4.3 ACRE-FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	1002.0	133.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 1960 CFS-HRS; 162.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	1354.2	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.89 WATERSHED INCHES; 2540 CFS-HRS; 209.9 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 61  
NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.45 1354.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.86 WATERSHED INCHES; 2503 CFS-HRS; 206.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.16 42.9 (RUNOFF)  
17.34 1.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.72 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.45 1368.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.87 WATERSHED INCHES; 2544 CFS-HRS; 210.2 ACRE-  
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
STARTING TIME = .00 RAIN DEPTH = 4.91 RAIN DURATION = 1.00  
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. =10 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	295.0	(RUNOFF)
18.67	8.6	(RUNOFF)
20.67	7.5	(RUNOFF)
23.12	6.3	(RUNOFF)
24.01	5.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.56 WATERSHED INCHES; 347 CFS-HRS; 28.7 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 13

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.60	128.4	392.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.56 WATERSHED INCHES; 347 CFS-HRS; 28.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	42.1	(RUNOFF)
20.09	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.29 WATERSHED INCHES; 43 CFS-HRS; 3.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.52	16.1	430.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.25 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.59	144.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.52 WATERSHED INCHES; 390 CFS-HRS; 32.2 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	125.5	(RUNOFF)
15.84	4.3	(RUNOFF)
17.34	3.3	(RUNOFF)
21.95	2.2	(RUNOFF)
24.00	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.91 WATERSHED INCHES; 116 CFS-HRS; 9.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	198.7	(NULL)
20.01	12.2	(NULL)
24.00	9.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.60 WATERSHED INCHES; 505 CFS-HRS; 41.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	121.4	(RUNOFF)
15.83	4.9	(RUNOFF)
18.87	3.1	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.33 WATERSHED INCHES; 120 CFS-HRS; 9.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	194.8	319.34
24.06	9.1	318.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.60 WATERSHED INCHES; 505 CFS-HRS; 41.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 8

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	302.2	(NULL)
20.08	15.1	(NULL)
20.62	14.5	(NULL)
23.08	12.1	(NULL)
24.03	11.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.55 WATERSHED INCHES; 626 CFS-HRS; 51.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	103.4	(RUNOFF)
21.97	2.0	(RUNOFF)
24.02	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.64 WATERSHED INCHES; 103 CFS-HRS; 8.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	40.4	(RUNOFF)
18.66	1.1	(RUNOFF)
20.12	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.67 WATERSHED INCHES; 45 CFS-HRS; 3.8 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.60	15.5	455.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.20 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 11  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	15.4	414.37
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.20 WATERSHED INCHES;		37 CFS-HRS;
FEET.		3.1 ACRE-

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	103.7	(NULL)
20.86	3.2	(NULL)
24.01	2.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.51 WATERSHED INCHES;		140 CFS-HRS;
FEET.		11.6 ACRE-

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	92.4	(RUNOFF)
15.84	3.2	(RUNOFF)
17.32	2.5	(RUNOFF)
18.64	2.0	(RUNOFF)
24.01	1.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.18 WATERSHED INCHES;		92 CFS-HRS;
FEET.		7.6 ACRE-

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	45.7	398.37
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.18 WATERSHED INCHES;		92 CFS-HRS;
FEET.		7.6 ACRE-

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	138.8	(NULL)
20.62	5.1	(NULL)
23.07	4.2	(NULL)
23.71	4.0	(NULL)
24.01	3.9	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.16	143.3	(RUNOFF)
15.84	5.3	(RUNOFF)
17.34	4.1	(RUNOFF)
19.75	3.1	(RUNOFF)
20.06	3.1	(RUNOFF)
24.01	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.53 WATERSHED INCHES; 133 CFS-HRS; 11.0 ACRE-FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	130.3	331.15
20.68	5.1	330.21
23.77	4.0	330.17
24.08	3.9	330.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	243.4	(NULL)
20.06	8.4	(NULL)
20.62	8.0	(NULL)
21.94	7.3	(NULL)
24.01	6.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.65 WATERSHED INCHES; 365 CFS-HRS; 30.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 18

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	540.4	(NULL)
20.07	23.5	(NULL)
20.62	22.5	(NULL)
21.94	20.5	(NULL)
23.07	18.8	(NULL)
24.02	17.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.58 WATERSHED INCHES; 990 CFS-HRS; 81.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	289.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.26 WATERSHED INCHES; 393 CFS-HRS; 32.5 ACRE-  
FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.34	485.3	236.59
24.08	17.5	234.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.58 WATERSHED INCHES; 990 CFS-HRS; 81.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.33	777.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.48 WATERSHED INCHES; 1383 CFS-HRS; 114.3 ACRE-  
FEET.



OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	777.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.48 WATERSHED INCHES; 1383 CFS-HRS; 114.3 ACRE-FEET.

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OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	32.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	27.2	414.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	154.3	(RUNOFF)
20.87	3.1	(RUNOFF)
24.03	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 162 CFS-HRS; 13.4 ACRE-FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	122.8	369.12

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 162 CFS-HRS; 13.4 ACRE-FEET.

FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	149.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 199 CFS-HRS; 16.4 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	89.1	(RUNOFF)
18.87	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.07 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	223.0	(NULL)
20.08	6.0	(NULL)
20.61	5.8	(NULL)
24.01	4.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.08 WATERSHED INCHES; 291 CFS-HRS; 24.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	184.8	338.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.08 WATERSHED INCHES; 291 CFS-HRS; 24.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	26.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.54 WATERSHED INCHES; 21 CFS-HRS; 1.7 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -1.0%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	192.2	(NULL)
23.98	4.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.04 WATERSHED INCHES; 311 CFS-HRS; 25.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	141.9	(RUNOFF)
15.82	3.8	(RUNOFF)
20.02	2.2	(RUNOFF)
20.58	2.1	(RUNOFF)
20.82	2.1	(RUNOFF)
23.99	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.56 WATERSHED INCHES; 115 CFS-HRS; 9.5 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .3%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	141.9	(NULL)
15.82	3.8	(NULL)
20.02	2.2	(NULL)

20.58	2.1	(NULL)
20.82	2.1	(NULL)
23.99	1.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.56 WATERSHED INCHES; 115 CFS-HRS; 9.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	134.5	357.02
15.89	3.8	356.08
20.09	2.2	356.05
20.65	2.1	356.04
20.88	2.0	356.04
24.05	1.8	356.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.54 WATERSHED INCHES; 114 CFS-HRS; 9.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	264.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.28 WATERSHED INCHES; 370 CFS-HRS; 30.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	351.7	(NULL)
18.86	10.2	(NULL)
20.62	9.1	(NULL)
21.97	8.3	(NULL)
23.74	7.1	(NULL)
24.04	7.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.34 WATERSHED INCHES; 484 CFS-HRS; 40.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	88.5	(RUNOFF)
18.65	2.1	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.10 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 34

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	439.0	(NULL)
18.86	12.3	(NULL)
20.09	11.4	(NULL)
21.75	10.1	(NULL)
23.09	9.1	(NULL)
24.04	8.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.30 WATERSHED INCHES; 579 CFS-HRS; 47.9 ACRE-FEET.

OPERATION REACH XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	419.8	317.47
20.16	11.4	316.22
20.91	10.8	316.21
23.15	9.1	316.18
24.10	8.5	316.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.30 WATERSHED INCHES; 579 CFS-HRS; 47.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	38.8	(RUNOFF)
20.14	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 49 CFS-HRS; 4.1 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE

TIME INCREMENT OF .047 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.39	33.7	327.87
20.15	1.0	323.04

1

TR20 ----- SCS

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2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.14 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	452.2	(NULL)
20.16	12.4	(NULL)
20.91	11.7	(NULL)
22.01	10.8	(NULL)
24.10	9.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.29 WATERSHED INCHES; 629 CFS-HRS; 52.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.13	142.5	(RUNOFF)
15.84	4.6	(RUNOFF)
17.34	3.6	(RUNOFF)
23.04	2.2	(RUNOFF)
23.70	2.0	(RUNOFF)
24.00	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.74 WATERSHED INCHES; 121 CFS-HRS; 10.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)			
12.30	511.7		(NULL)
23.99	11.3		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.18 WATERSHED INCHES; 750 CFS-HRS; 61.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	708.9	(NULL)
23.99	16.2	(NULL)

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 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

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 2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 1061 CFS-HRS; 87.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	47.7	(RUNOFF)
18.86	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.89	7.2	271.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.04	7.2	222.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	96.2	(RUNOFF)
21.46	3.0	(RUNOFF)
24.02	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 112 CFS-HRS; 9.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 44

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 TR20 ----- SCS  
 -  
 Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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 2.04TEST  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	99.7	(NULL)
20.07	5.3	(NULL)
20.62	5.0	(NULL)
24.02	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.69 WATERSHED INCHES; 158 CFS-HRS; 13.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.46	648.3	226.26
24.04	16.2	222.67

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 1061 CFS-HRS; 87.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.44	711.6	(NULL)
24.03	19.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.82 WATERSHED INCHES; 1219 CFS-HRS; 100.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 7



PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	711.6	(NULL)
24.03	19.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.82 WATERSHED INCHES; 1219 CFS-HRS; 100.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	378.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 515 CFS-HRS; 42.6 ACRE-  
 FEET.

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TR20 ----- SCS

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	55.0	(RUNOFF)
20.07	1.1	(RUNOFF)
20.63	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.32 WATERSHED INCHES; 53 CFS-HRS; 4.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	35.5	336.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.32 WATERSHED INCHES; 53 CFS-HRS; 4.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	30.8	316.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.32 WATERSHED INCHES; 53 CFS-HRS; 4.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	404.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.87 WATERSHED INCHES; 568 CFS-HRS; 47.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	40.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.92 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
 FEET.

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	27.6	321.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 33 CFS-HRS; 2.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	432.2	277.62

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 601 CFS-HRS; 49.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	397.7	277.54

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 601 CFS-HRS; 49.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	163.6	(RUNOFF)
18.87	6.1	(RUNOFF)
21.98	5.0	(RUNOFF)
24.03	4.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.42 WATERSHED INCHES; 191 CFS-HRS; 15.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 54

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 -  
 Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	497.3	(NULL)
24.01	14.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.29 WATERSHED INCHES; 792 CFS-HRS; 65.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	497.3	(NULL)
24.01	14.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.29 WATERSHED INCHES; 792 CFS-HRS; 65.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	1455.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.63 WATERSHED INCHES; 2601 CFS-HRS; 214.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.14 20.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.62 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.38 1462.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.62 WATERSHED INCHES; 2618 CFS-HRS; 216.3 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 6

1  
TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2.04TEST

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.38 1462.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.62 WATERSHED INCHES; 2618 CFS-HRS; 216.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.13 79.3 (RUNOFF)  
15.84 2.5 (RUNOFF)  
24.00 1.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.97 WATERSHED INCHES; 68 CFS-HRS; 5.7 ACRE-  
FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)

12.45 1458.3 134.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.62 WATERSHED INCHES; 2618 CFS-HRS; 216.3 ACRE-
FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.44 1952.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.53 WATERSHED INCHES; 3410 CFS-HRS; 281.8 ACRE-
FEET.

\*\*\* WARNING - XSECTION 61
NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.
\*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.44 1952.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.50 WATERSHED INCHES; 3365 CFS-HRS; 278.1 ACRE-
FEET.

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TR20 ----- SCS
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OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.16 54.0 (RUNOFF)
19.43 1.0 (RUNOFF)
19.75 1.0 (RUNOFF)
20.07 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.48 WATERSHED INCHES; 52 CFS-HRS; 4.3 ACRE-
FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.44 1971.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.51 WATERSHED INCHES; 3418 CFS-HRS; 282.4 ACRE-  
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
STARTING TIME = .00 RAIN DEPTH = 7.23 RAIN DURATION = 1.00  
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. =50 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.24	526.5	(RUNOFF)
18.67	13.8	(RUNOFF)
20.68	12.1	(RUNOFF)
21.94	11.1	(RUNOFF)
23.13	10.1	(RUNOFF)
24.01	9.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.59 WATERSHED INCHES; 622 CFS-HRS; 51.4 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 13

1

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-

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2.04TEST  
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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.36	448.8	394.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.59 WATERSHED INCHES; 623 CFS-HRS; 51.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 2

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.19	78.1	(RUNOFF)
24.02	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.24 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	70.8	432.07
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.15 WATERSHED INCHES;	78 CFS-HRS;	6.5 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	505.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.54 WATERSHED INCHES;	701 CFS-HRS;	57.9 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	212.7	(RUNOFF)
15.84	6.8	(RUNOFF)
17.34	5.2	(RUNOFF)
19.44	4.0	(RUNOFF)
22.75	3.1	(RUNOFF)
23.06	3.1	(RUNOFF)
24.00	3.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.03 WATERSHED INCHES;	200 CFS-HRS;	16.5 ACRE-
FEEET.		

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2.04TEST  
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OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	608.4	(NULL)
20.02	19.1	(NULL)
23.02	15.4	(NULL)
24.00	14.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.63 WATERSHED INCHES;	900 CFS-HRS;	74.4 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
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ELEVATION (FEET)		
12.18	223.3	(RUNOFF)
15.83	8.2	(RUNOFF)
17.32	6.3	(RUNOFF)
18.86	5.0	(RUNOFF)
21.97	4.1	(RUNOFF)
24.02	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.30 WATERSHED INCHES; 222 CFS-HRS; 18.3 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.40	595.9	320.77
20.07	19.1	318.35
23.08	15.4	318.31
24.06	14.4	318.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.63 WATERSHED INCHES; 900 CFS-HRS; 74.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 8

1 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.38	707.0	(NULL)
20.08	23.8	(NULL)
20.62	22.8	(NULL)
21.93	20.9	(NULL)
23.08	19.2	(NULL)
23.72	18.2	(NULL)
24.04	17.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.56 WATERSHED INCHES; 1121 CFS-HRS; 92.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.18	180.9	(RUNOFF)
18.64	4.0	(RUNOFF)
21.97	3.2	(RUNOFF)
24.02	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)



4.69 WATERSHED INCHES; 183 CFS-HRS; 15.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	70.7	(RUNOFF)
24.02	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.72 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	50.8	456.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.21 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-  
FEET.

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TR20 ----- SCS  
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2.04TEST  
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OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	50.4	414.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.21 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	195.9	(NULL)
20.86	5.0	(NULL)
23.08	4.3	(NULL)
23.73	4.0	(NULL)
24.01	4.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.55 WATERSHED INCHES; 255 CFS-HRS; 21.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	153.2	(RUNOFF)
15.83	5.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.02	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.35 WATERSHED INCHES; 154 CFS-HRS; 12.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.35	83.1	399.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.35 WATERSHED INCHES; 154 CFS-HRS; 12.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 03/23/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT  
 2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	258.0	(NULL)
20.06	8.3	(NULL)
21.94	7.3	(NULL)
24.01	6.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.81 WATERSHED INCHES; 409 CFS-HRS; 33.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.16	255.3	(RUNOFF)
15.84	8.6	(RUNOFF)
17.34	6.6	(RUNOFF)
19.47	5.1	(RUNOFF)
21.96	4.3	(RUNOFF)
24.01	3.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.55 WATERSHED INCHES; 239 CFS-HRS; 19.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	251.1	331.55
20.13	8.3	330.29
20.68	8.0	330.28
24.07	6.2	330.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.81 WATERSHED INCHES; 409 CFS-HRS; 33.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	449.9	(NULL)
20.06	13.3	(NULL)
20.62	12.7	(NULL)
21.94	11.6	(NULL)
23.06	10.6	(NULL)
24.01	9.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.71 WATERSHED INCHES; 648 CFS-HRS; 53.5 ACRE-  
 FEET.

1 TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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 2.04TEST  
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OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.35	1059.5	(NULL)
20.07	37.1	(NULL)
20.62	35.5	(NULL)
21.94	32.4	(NULL)
23.08	29.8	(NULL)
23.73	28.2	(NULL)
24.03	27.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.61 WATERSHED INCHES; 1769 CFS-HRS; 146.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	541.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.19 WATERSHED INCHES; 731 CFS-HRS; 60.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	1011.0	238.28
24.09	27.8	234.48

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.61 WATERSHED INCHES; 1768 CFS-HRS; 146.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	1489.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 2499 CFS-HRS; 206.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	1489.0	(NULL)

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 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 2499 CFS-HRS; 206.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	54.7	(RUNOFF)
21.96	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	55.3	415.55
20.15	1.2	410.91

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.24 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	256.8	(RUNOFF)
20.10	5.2	(RUNOFF)
23.10	4.1	(RUNOFF)
24.03	3.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.24 WATERSHED INCHES; 275 CFS-HRS; 22.7 ACRE-FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	229.1	369.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.24 WATERSHED INCHES; 275 CFS-HRS; 22.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 24

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION  
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2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	284.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.24 WATERSHED INCHES; 337 CFS-HRS; 27.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.19	148.7	(RUNOFF)
18.87	3.2	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.21 WATERSHED INCHES; 156 CFS-HRS; 12.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	418.0	(NULL)
20.08	9.3	(NULL)
20.61	8.9	(NULL)
23.71	7.0	(NULL)
24.01	6.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.23 WATERSHED INCHES; 494 CFS-HRS; 40.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.41	283.6	342.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 494 CFS-HRS; 40.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	47.2	(RUNOFF)
17.32	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
 FEET.

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 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .9%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	295.1	(NULL)
23.98	7.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.18 WATERSHED INCHES; 531 CFS-HRS; 43.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	220.3	(RUNOFF)
15.45	6.0	(RUNOFF)
15.82	5.8	(RUNOFF)
17.32	4.4	(RUNOFF)
20.02	3.3	(RUNOFF)
20.58	3.1	(RUNOFF)
20.82	3.1	(RUNOFF)
23.99	2.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.78 WATERSHED INCHES; 186 CFS-HRS; 15.4 ACRE-FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .1%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	220.3	(NULL)
15.45	6.0	(NULL)
15.82	5.8	(NULL)
17.32	4.4	(NULL)
20.02	3.3	(NULL)
20.58	3.1	(NULL)
20.82	3.1	(NULL)
23.99	2.7	(NULL)

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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 2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.78 WATERSHED INCHES; 186 CFS-HRS; 15.4 ACRE-FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
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ELEVATION(FEET)		
12.18	213.3	357.27
15.88	5.8	356.12
17.38	4.4	356.09
20.88	3.1	356.06
24.05	2.7	356.06

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.76 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	433.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.47 WATERSHED INCHES; 616 CFS-HRS; 50.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	572.7	(NULL)
18.86	15.7	(NULL)
20.08	14.5	(NULL)
20.86	13.7	(NULL)
21.96	12.6	(NULL)
23.08	11.5	(NULL)
24.04	10.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.53 WATERSHED INCHES; 801 CFS-HRS; 66.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	148.2	(RUNOFF)
18.65	3.3	(RUNOFF)
20.10	3.0	(RUNOFF)
24.03	2.2	(RUNOFF)

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.25 WATERSHED INCHES; 162 CFS-HRS; 13.3 ACRE-FEET.



OPERATION ADDHYD XSECTION 34

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.21	729.7	(NULL)
18.61	19.2	(NULL)
18.85	18.9	(NULL)
20.09	17.5	(NULL)
20.86	16.6	(NULL)
21.97	15.3	(NULL)
23.74	13.1	(NULL)
24.04	13.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.48 WATERSHED INCHES; 963 CFS-HRS; 79.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 35

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	694.0	317.98
20.15	17.5	316.29
20.92	16.6	316.28
22.01	15.3	316.27
23.80	13.1	316.25
24.10	13.0	316.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.49 WATERSHED INCHES; 963 CFS-HRS; 79.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.26	65.4	(RUNOFF)
23.76	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.30 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .047 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

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TR20 ----- SCS

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2.04TEST

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OPERATION RESVOR STRUCTURE 33

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.29	64.5	328.67
23.78	1.2	323.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.31 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.31	758.3	(NULL)
20.15	19.1	(NULL)
20.91	18.0	(NULL)
22.01	16.6	(NULL)
23.15	15.1	(NULL)
23.80	14.3	(NULL)
24.10	14.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.47 WATERSHED INCHES; 1047 CFS-HRS; 86.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.13	246.6	(RUNOFF)
15.84	7.4	(RUNOFF)
17.34	5.7	(RUNOFF)
20.04	4.3	(RUNOFF)
20.60	4.1	(RUNOFF)
23.70	3.2	(RUNOFF)
24.00	3.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.81 WATERSHED INCHES; 212 CFS-HRS; 17.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.27	869.0	(NULL)
23.99	17.3	(NULL)

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

5.35 WATERSHED INCHES; 1259 CFS-HRS; 104.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.29	1147.4	(NULL)
23.99	25.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.30 WATERSHED INCHES; 1791 CFS-HRS; 148.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.17	79.8	(RUNOFF)
17.34	2.0	(RUNOFF)
24.01	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.19 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.45	28.4	273.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.12 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-  
FEET.

OPERATION REACH XSECTION 42

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.57	27.2	222.79

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.11 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 43

1 TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
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ELEVATION (FEET)		
12.22	217.1	(RUNOFF)
19.47	6.2	(RUNOFF)
20.11	6.0	(RUNOFF)
21.98	5.3	(RUNOFF)
24.02	4.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.05 WATERSHED INCHES; 238 CFS-HRS; 19.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 44

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.22	224.0	(NULL)
20.63	8.5	(NULL)
24.02	6.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.38 WATERSHED INCHES; 316 CFS-HRS; 26.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 45

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.43	1075.9	227.59
24.04	24.9	222.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.29 WATERSHED INCHES; 1789 CFS-HRS; 147.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.40	1223.5	(NULL)
24.03	31.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.88 WATERSHED INCHES; 2104 CFS-HRS; 173.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.40	1223.5	(NULL)
24.03	31.2	(NULL)

1 TR20 ----- SCS  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.88 WATERSHED INCHES; 2104 CFS-HRS; 173.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	655.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.93 WATERSHED INCHES; 897 CFS-HRS; 74.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	89.2	(RUNOFF)
17.34	2.2	(RUNOFF)
24.01	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.52 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	58.1	337.36
24.03	1.2	333.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.52 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	57.3	317.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.52 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	707.5	(NULL)

1 TR20 ----- SCS  
 -

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 2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.97 WATERSHED INCHES; 985 CFS-HRS; 81.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	69.7	(RUNOFF)
23.74	1.0	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.04 WATERSHED INCHES; 71 CFS-HRS; 5.9 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	58.5	322.59
24.03	1.0	320.81

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.45 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	763.5	278.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.94 WATERSHED INCHES; 1048 CFS-HRS; 86.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	686.4	278.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.94 WATERSHED INCHES; 1048 CFS-HRS; 86.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 53

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.21	369.6	(RUNOFF)
18.87	11.0	(RUNOFF)
20.11	10.3	(RUNOFF)
21.97	9.1	(RUNOFF)
23.11	8.3	(RUNOFF)
24.03	7.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.03 WATERSHED INCHES; 407 CFS-HRS; 33.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 54

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.38	904.7	(NULL)
24.01	23.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.20 WATERSHED INCHES; 1454 CFS-HRS; 120.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.38	904.7	(NULL)
24.01	23.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.20 WATERSHED INCHES; 1454 CFS-HRS; 120.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.40	2712.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.65 WATERSHED INCHES; 4602 CFS-HRS; 380.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
-----------------	----------------------	------

ELEVATION(FEET)			
12.13		42.2	(RUNOFF)
17.34		1.2	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.31 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	2725.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.64 WATERSHED INCHES; 4638 CFS-HRS; 383.3 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	2725.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.64 WATERSHED INCHES; 4638 CFS-HRS; 383.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	133.5	(RUNOFF)
17.34	3.0	(RUNOFF)
21.45	2.0	(RUNOFF)
24.00	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.09 WATERSHED INCHES; 117 CFS-HRS; 9.7 ACRE-  
FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	2725.1	135.97

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.64 WATERSHED INCHES; 4638 CFS-HRS; 383.3 ACRE-  
FEET.



OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	3609.5	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.53 WATERSHED INCHES; 6092 CFS-HRS; 503.5 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	3609.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 6026 CFS-HRS; 498.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	86.7	(RUNOFF)
17.34	2.1	(RUNOFF)
24.01	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.70 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	3638.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.49 WATERSHED INCHES; 6112 CFS-HRS; 505.1 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
 STARTING TIME = .00 RAIN DEPTH = 8.47 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =99 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	652.9	(RUNOFF)
18.67	16.6	(RUNOFF)
20.13	15.2	(RUNOFF)
20.67	14.5	(RUNOFF)
21.93	13.3	(RUNOFF)
23.12	12.1	(RUNOFF)
24.01	11.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.72 WATERSHED INCHES; 776 CFS-HRS; 64.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 13

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	610.3	394.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.72 WATERSHED INCHES; 776 CFS-HRS; 64.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	97.8	(RUNOFF)
20.09	2.1	(RUNOFF)
24.02	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.34 WATERSHED INCHES; 101 CFS-HRS; 8.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	93.7	432.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	689.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.66 WATERSHED INCHES; 874 CFS-HRS; 72.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	259.5	(RUNOFF)
15.84	8.1	(RUNOFF)
17.34	6.2	(RUNOFF)
18.62	5.0	(RUNOFF)
21.45	4.1	(RUNOFF)
21.75	4.0	(RUNOFF)
21.95	4.0	(RUNOFF)
24.00	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.19 WATERSHED INCHES; 247 CFS-HRS; 20.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	834.7	(NULL)
20.01	22.7	(NULL)
23.02	18.3	(NULL)
24.00	17.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 1121 CFS-HRS; 92.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	278.1	(RUNOFF)
15.82	9.9	(RUNOFF)

17.31	7.6	(RUNOFF)
18.86	6.1	(RUNOFF)
21.45	5.1	(RUNOFF)
24.02	4.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.40 WATERSHED INCHES; 279 CFS-HRS; 23.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 7

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	825.2	321.42
23.08	18.3	318.34
24.06	17.1	318.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 1120 CFS-HRS; 92.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	996.2	(NULL)
20.08	28.4	(NULL)
20.62	27.2	(NULL)
21.93	24.8	(NULL)
23.08	22.8	(NULL)
24.04	21.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 1399 CFS-HRS; 115.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	223.2	(RUNOFF)
20.87	4.2	(RUNOFF)
24.02	3.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.84 WATERSHED INCHES; 227 CFS-HRS; 18.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	87.2	(RUNOFF)
18.66	2.1	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.86 WATERSHED INCHES; 100 CFS-HRS; 8.3 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

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OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	70.3	456.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.35 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-FEET.

OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	70.0	414.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.34 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	250.4	(NULL)
18.61	7.1	(NULL)
20.86	6.0	(NULL)
23.08	5.1	(NULL)
24.01	4.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 318 CFS-HRS; 26.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	185.0	(RUNOFF)
15.83	6.0	(RUNOFF)
17.33	4.6	(RUNOFF)
20.86	3.2	(RUNOFF)
24.02	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.54 WATERSHED INCHES; 189 CFS-HRS; 15.6 ACRE-  
FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 51,  
VALUE EXTRAPOLATED.  
\*\*\*

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OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.34	105.1	399.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.54 WATERSHED INCHES; 189 CFS-HRS; 15.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	335.1	(NULL)
20.62	9.5	(NULL)
21.94	8.7	(NULL)
24.01	7.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.97 WATERSHED INCHES; 507 CFS-HRS; 41.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	316.5	(RUNOFF)
15.84	10.3	(RUNOFF)
17.34	8.0	(RUNOFF)
19.44	6.1	(RUNOFF)
21.95	5.2	(RUNOFF)
24.01	4.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.68 WATERSHED INCHES; 299 CFS-HRS; 24.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	328.0	331.81
20.68	9.5	330.31
24.08	7.4	330.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.97 WATERSHED INCHES; 507 CFS-HRS; 41.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 17

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	565.4	(NULL)
18.58	17.7	(NULL)
20.62	15.2	(NULL)
21.94	13.8	(NULL)
23.07	12.7	(NULL)
24.01	11.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.86 WATERSHED INCHES; 805 CFS-HRS; 66.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	1488.9	(NULL)
20.07	44.3	(NULL)
20.62	42.4	(NULL)
21.94	38.6	(NULL)
23.08	35.5	(NULL)
23.73	33.6	(NULL)
24.03	33.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.75 WATERSHED INCHES; 2203 CFS-HRS; 182.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	683.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.30 WATERSHED INCHES; 923 CFS-HRS; 76.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	1385.0	239.20
24.09	33.1	234.53

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.75 WATERSHED INCHES; 2203 CFS-HRS; 182.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	2014.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.61 WATERSHED INCHES; 3127 CFS-HRS; 258.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	2014.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.61 WATERSHED INCHES; 3127 CFS-HRS; 258.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	66.5	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-  
 FEET.



OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	65.7	415.70
23.14	1.1	410.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.42 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	311.9	(RUNOFF)
20.10	6.1	(RUNOFF)
21.97	5.3	(RUNOFF)
24.03	4.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.42 WATERSHED INCHES; 336 CFS-HRS; 27.8 ACRE-  
FEET.

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OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	284.3	370.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.42 WATERSHED INCHES; 336 CFS-HRS; 27.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	349.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.42 WATERSHED INCHES; 413 CFS-HRS; 34.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	180.8	(RUNOFF)

21.97	3.0	(RUNOFF)
24.02	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.39 WATERSHED INCHES; 192 CFS-HRS; 15.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	515.5	(NULL)
20.08	11.1	(NULL)
20.61	10.6	(NULL)
24.01	8.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.41 WATERSHED INCHES; 605 CFS-HRS; 50.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	429.8	343.30

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 605 CFS-HRS; 50.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	58.8	(RUNOFF)
17.32	1.2	(RUNOFF)
18.58	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.67 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.6%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		
12.35	446.1	(NULL)
23.98	9.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.36 WATERSHED INCHES; 652 CFS-HRS; 53.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	261.8	(RUNOFF)
15.45	7.1	(RUNOFF)
15.82	6.8	(RUNOFF)
17.32	5.2	(RUNOFF)
18.82	4.2	(RUNOFF)
22.41	3.2	(RUNOFF)
22.72	3.1	(RUNOFF)
23.02	3.1	(RUNOFF)
23.99	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.96 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT 1.1%.  
 \*\*\*

1

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	261.8	(NULL)
15.45	7.1	(NULL)
15.82	6.8	(NULL)
17.32	5.2	(NULL)
18.82	4.2	(NULL)
22.41	3.2	(NULL)
22.72	3.1	(NULL)
23.02	3.1	(NULL)
23.99	3.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.96 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	255.4	357.40
15.88	6.8	356.14
17.38	5.2	356.11
18.88	4.2	356.09
21.98	3.4	356.07
22.78	3.1	356.07
23.09	3.1	356.07
24.05	3.2	356.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.99 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	521.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.66 WATERSHED INCHES; 750 CFS-HRS; 62.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 32

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	686.9	(NULL)
18.85	18.6	(NULL)
20.08	17.2	(NULL)
20.87	16.2	(NULL)
21.75	15.1	(NULL)
21.97	15.0	(NULL)
23.08	13.6	(NULL)
24.04	12.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.73 WATERSHED INCHES; 975 CFS-HRS; 80.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	178.4	(RUNOFF)
21.97	3.1	(RUNOFF)
24.03	2.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

6.43 WATERSHED INCHES; 198 CFS-HRS; 16.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.21	876.5	(NULL)
18.85	22.4	(NULL)
20.09	20.8	(NULL)
20.87	19.6	(NULL)
21.97	18.1	(NULL)
23.09	16.5	(NULL)
24.04	15.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.68 WATERSHED INCHES; 1173 CFS-HRS; 96.9 ACRE-  
FEET.

OPERATION REACH XSECTION 35

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.31	825.2	318.24
20.15	20.7	316.31
20.91	19.6	316.30
22.01	18.1	316.29
23.15	16.5	316.28
24.10	15.5	316.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.68 WATERSHED INCHES; 1173 CFS-HRS; 96.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.26	78.9	(RUNOFF)
18.64	2.0	(RUNOFF)
23.76	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.49 WATERSHED INCHES; 102 CFS-HRS; 8.4 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .047 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES

FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.29	78.4	328.90
23.77	1.4	323.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.47 WATERSHED INCHES; 102 CFS-HRS; 8.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	903.1	(NULL)
20.15	22.6	(NULL)
20.91	21.3	(NULL)
22.01	19.7	(NULL)
23.15	17.9	(NULL)
24.10	16.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.66 WATERSHED INCHES; 1275 CFS-HRS; 105.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.13	303.7	(RUNOFF)
15.45	9.3	(RUNOFF)
15.84	8.9	(RUNOFF)
17.34	6.8	(RUNOFF)
19.74	5.1	(RUNOFF)
20.04	5.1	(RUNOFF)
22.42	4.2	(RUNOFF)
22.74	4.1	(RUNOFF)
23.04	4.1	(RUNOFF)
24.00	4.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.96 WATERSHED INCHES; 263 CFS-HRS; 21.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	1035.2	(NULL)
23.99	20.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.53 WATERSHED INCHES; 1537 CFS-HRS; 127.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	1443.0	(NULL)
23.99	29.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.47 WATERSHED INCHES; 2188 CFS-HRS; 180.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 41

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	97.1	(RUNOFF)
15.84	3.1	(RUNOFF)
17.34	2.4	(RUNOFF)
24.02	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.37 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	49.7	274.20

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.25 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	47.8	223.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

6.26 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.21	289.3	(RUNOFF)
18.87	8.0	(RUNOFF)
20.86	7.1	(RUNOFF)
21.97	6.6	(RUNOFF)
23.10	6.0	(RUNOFF)
24.03	5.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.01 WATERSHED INCHES; 313 CFS-HRS; 25.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 44

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.22	297.1	(NULL)
18.59	12.3	(NULL)
20.63	10.2	(NULL)
23.09	8.2	(NULL)
24.03	7.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.38 WATERSHED INCHES; 409 CFS-HRS; 33.8 ACRE-  
FEET.

OPERATION REACH XSECTION 45

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.50	1290.5	228.71
24.09	29.6	222.89

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.48 WATERSHED INCHES; 2189 CFS-HRS; 180.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.49	1468.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)



6.02 WATERSHED INCHES; 2597 CFS-HRS; 214.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.49 1468.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.02 WATERSHED INCHES; 2597 CFS-HRS; 214.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.31 802.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.09 WATERSHED INCHES; 1108 CFS-HRS; 91.6 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.16 107.1 (RUNOFF)  
15.84 3.3 (RUNOFF)  
18.85 2.0 (RUNOFF)  
24.01 1.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.72 WATERSHED INCHES; 107 CFS-HRS; 8.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.32 59.2 337.87  
24.03 1.4 333.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.72 WATERSHED INCHES; 108 CFS-HRS; 8.9 ACRE-  
FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	58.6	317.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.71 WATERSHED INCHES; 107 CFS-HRS; 8.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	858.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.14 WATERSHED INCHES; 1216 CFS-HRS; 100.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	84.8	(RUNOFF)
24.02	1.2	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.20 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE

STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.

\*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	71.1	322.85
24.03	1.2	320.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.60 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.31 926.8 279.26

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.10 WATERSHED INCHES; 1294 CFS-HRS; 107.0 ACRE-
FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.47 800.3 279.01

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.10 WATERSHED INCHES; 1294 CFS-HRS; 107.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.21 494.4 (RUNOFF)
19.46 13.3 (RUNOFF)
20.86 12.1 (RUNOFF)
21.97 11.3 (RUNOFF)
23.10 10.3 (RUNOFF)
24.03 9.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.99 WATERSHED INCHES; 536 CFS-HRS; 44.3 ACRE-
FEET.

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OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.36 1077.6 (NULL)
24.01 27.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.28 WATERSHED INCHES; 1830 CFS-HRS; 151.2 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.36 1077.6 (NULL)
24.01 27.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

5.28 WATERSHED INCHES; 1830 CFS-HRS; 151.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.42 3404.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.79 WATERSHED INCHES; 5722 CFS-HRS; 472.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.13 55.0 (RUNOFF)  
20.04 1.1 (RUNOFF)  
20.60 1.0 (RUNOFF)  
20.83 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.31 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.42 3420.5 (NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.77 WATERSHED INCHES; 5769 CFS-HRS; 476.7 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.42 3420.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.77 WATERSHED INCHES; 5769 CFS-HRS; 476.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION (FEET)		
12.13	162.6	(RUNOFF)
15.84	4.7	(RUNOFF)
17.34	3.6	(RUNOFF)
23.04	2.2	(RUNOFF)
23.70	2.0	(RUNOFF)
24.00	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.26 WATERSHED INCHES; 144 CFS-HRS; 11.9 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 59.  
 \*\*\*

OPERATION REACH XSECTION 59

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.42	3420.5	136.93

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 5769 CFS-HRS; 476.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.41	4490.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.64 WATERSHED INCHES; 7599 CFS-HRS; 627.9 ACRE-  
 FEET.

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\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.41	4490.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.59 WATERSHED INCHES; 7523 CFS-HRS; 621.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.16	103.9	(RUNOFF)
15.84	3.2	(RUNOFF)
17.34	2.4	(RUNOFF)
24.01	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.90 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.41	4527.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.60 WATERSHED INCHES; 7626 CFS-HRS; 630.2 ACRE-  
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 5

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 6

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AMOUNT	ELEVATION	TIME	RATE	
ID	OPERATION	AREA (SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)	
RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT				.0 hrs.				
RAINTABLE NUMBER 1, ARC 2								
MAIN TIME INCREMENT .060 HOURS								
ALTERNATE	1	STORM	2					
XSECTION	1	RUNOFF	.21	1.22	---	12.26	137	652.4
STRUCTURE	13	RESVOR	.21	1.21	389.46	12.61	62	295.2
XSECTION	2	RUNOFF	.03	1.03	---	12.20	18	600.0
STRUCTURE	58	RESVOR	.03	1.02	429.15	13.47	2	66.7
XSECTION	3	ADDHYD	.24	1.19	---	12.61	64	266.7

XSECTION	4	RUNOFF	.06	1.47	---	12.16	63	1050.0
XSECTION	6	RUNOFF	.08	1.06	---	12.19	53	662.5
XSECTION	9	RUNOFF	.06	1.27	---	12.19	49	816.7
XSECTION	10	RUNOFF	.03	1.29	---	12.23	19	633.3
STRUCTURE	52	RESVOR	.03	.86	454.47	13.33T	3T	100.0
XSECTION	12	ADDHYD	.09	1.15	---	12.19	49	544.4
XSECTION	13	RUNOFF	.04	1.67	---	12.18	49	1225.0
STRUCTURE	51	RESVOR	.04	1.67	397.47	12.42	22	550.0
XSECTION	15	RUNOFF	.08	1.19	---	12.16	66	825.0
XSECTION	17	ADDHYD	.21	1.27	---	12.21	110	523.8
XSECTION	18	ADDHYD	.59	1.23	---	12.23	244	413.6
XSECTION	19	RUNOFF	.27	1.01	---	12.33	122	451.9
XSECTION	20	REACH	.59	1.23	235.51	12.36	220	372.9
XSECTION	21	ADDHYD	.86	1.16	---	12.35	341	396.5
STRUCTURE	10	RESVOR	.86	1.16	---	12.35	341	396.5
XSECTION	22	RUNOFF	.02	1.60	---	12.22	17	850.0
STRUCTURE	47	RESVOR	.02	1.60	414.10	12.37	12	600.0
XSECTION	23	RUNOFF	.08	1.60	---	12.20	80	1000.0
STRUCTURE	32	RESVOR	.08	1.60	368.24	12.32	61	762.5
XSECTION	25	RUNOFF	.05	1.58	---	12.19	46	920.0
STRUCTURE	34	RESVOR	.15	1.59	337.19	12.68	54	360.0
XSECTION	27	RUNOFF	.01	1.19	---	12.12	13	1300.0
XSECTION	28	ADDHYD	.16	1.56	---	12.67	56	350.0

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SUMMARY TABLE 1

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AMOUNT	ELEVATION	TIME	RATE	
ID	OPERATION	AREA (SQ MI)	(IN)	(FT)	(HR)	(CFS)	RATE (CSM)	
ALTERNATE	1	STORM	2					
XSECTION	29	RUNOFF	.05	1.96	---	12.11	81	1620.0
STRUCTURE	64	RESVOR	.05	1.96	---	12.11	81	1620.0
XSECTION	31	RUNOFF	.17	1.75	---	12.33	142	835.3
XSECTION	33	RUNOFF	.05	1.60	---	12.21	46	920.0
XSECTION	36	RUNOFF	.02	1.64	---	12.27	21	1050.0
STRUCTURE	33	RESVOR	.02	1.64	325.68	12.45	15	750.0
XSECTION	38	RUNOFF	.07	1.33	---	12.13	69	985.7

XSECTION	39	ADDHYD	.36	1.67	---	12.32	265	736.1
XSECTION	41	RUNOFF	.02	1.57	---	12.18	25	1250.0
STRUCTURE	29	RESVOR	.02	1.56	268.66	13.00	4	200.0
XSECTION	43	RUNOFF	.12	.51	---	12.26	26	216.7
XSECTION	44	ADDHYD	.14	.68	---	12.26	28	200.0
XSECTION	46	ADDHYD	.67	1.43	---	12.44	320	477.6
STRUCTURE	7	RESVOR	.67	1.43	---	12.44	320	477.6
XSECTION	47	RUNOFF	.28	1.40	---	12.32	185	660.7
XSECTION	48	RUNOFF	.02	1.78	---	12.17	30	1500.0
STRUCTURE	40	RESVOR	.02	1.78	334.19	12.33	16	800.0
XSECTION	51	RUNOFF	.02	1.47	---	12.19	21	1050.0
STRUCTURE	43	RESVOR	.02	.97	321.02	12.86	4	200.0
XSECTION	52	ADDHYD	.33	1.40	277.07	12.33	198	600.0
XSECTION	53	RUNOFF	.21	.50	---	12.26	44	209.5
XSECTION	54	ADDHYD	.54	1.05	---	12.46	208	385.2
STRUCTURE	5	RESVOR	.54	1.05	---	12.46	208	385.2
XSECTION	55	ADDHYD	1.53	1.28	---	12.38	653	426.8
XSECTION	56	RUNOFF	.02	.61	---	12.14	6	300.0
XSECTION	57	ADDHYD	1.55	1.27	---	12.38	655	422.6
STRUCTURE	6	RESVOR	1.55	1.27	---	12.38	655	422.6
XSECTION	58	RUNOFF	.04	1.51	---	12.14	41	1025.0
XSECTION	62	RUNOFF	.02	1.90	---	12.17	30	1500.0
XSECTION	63	ADDHYD	2.11	1.20	---	12.45	869	411.8

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)
RAINFALL OF 4.10 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.								
ALTERNATE 1 STORM 5								
XSECTION	1	RUNOFF	.21	1.90	---	12.25	218	1038.1
STRUCTURE	13	RESVOR	.21	1.90	391.28	12.60	97	461.9
XSECTION	2	RUNOFF	.03	1.67	---	12.20	30	1000.0
STRUCTURE	58	RESVOR	.03	1.64	430.23	12.68	8	266.7
XSECTION	3	ADDHYD	.24	1.87	---	12.62	105	437.5
XSECTION	4	RUNOFF	.06	2.21	---	12.15	96	1600.0
XSECTION	6	RUNOFF	.08	1.70	---	12.19	88	1100.0



XSECTION	9	RUNOFF	.06	1.98	---	12.19	77	1283.3
XSECTION	10	RUNOFF	.03	1.99	---	12.23	30	1000.0
STRUCTURE	52	RESVOR	.03	1.54	454.90	12.72	9	300.0
XSECTION	12	ADDHYD	.09	1.84	---	12.19	77	855.6
XSECTION	13	RUNOFF	.04	2.45	---	12.18	72	1800.0
STRUCTURE	51	RESVOR	.04	2.45	397.96	12.39	34	850.0
XSECTION	15	RUNOFF	.08	1.87	---	12.16	106	1325.0
XSECTION	17	ADDHYD	.21	1.98	---	12.20	178	847.6
XSECTION	18	ADDHYD	.59	1.92	---	12.22	396	671.2
XSECTION	19	RUNOFF	.27	1.64	---	12.32	208	770.4
XSECTION	20	REACH	.59	1.92	236.08	12.34	359	608.5
XSECTION	21	ADDHYD	.86	1.83	---	12.33	569	661.6
STRUCTURE	10	RESVOR	.86	1.83	---	12.33	569	661.6
XSECTION	22	RUNOFF	.02	2.37	---	12.22	25	1250.0
STRUCTURE	47	RESVOR	.02	2.37	414.35	12.33	21	1050.0
XSECTION	23	RUNOFF	.08	2.37	---	12.20	119	1487.5
STRUCTURE	32	RESVOR	.08	2.37	368.74	12.32	86	1075.0

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AMOUNT	ELEVATION	TIME	RATE	RATE
ID	OPERATION	AREA (SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	5					
XSECTION	25	RUNOFF	.05	2.35	---	12.19	68	1360.0
STRUCTURE	34	RESVOR	.15	2.36	338.39	12.46	127	846.7
XSECTION	27	RUNOFF	.01	1.88	---	12.12	20	2000.0
XSECTION	28	ADDHYD	.16	2.33	---	12.46	132	825.0
XSECTION	29	RUNOFF	.05	2.79	---	12.11	113	2260.0
STRUCTURE	64	RESVOR	.05	2.79	---	12.11	113	2260.0
XSECTION	31	RUNOFF	.17	2.55	---	12.32	207	1217.6
XSECTION	33	RUNOFF	.05	2.38	---	12.20	68	1360.0
XSECTION	36	RUNOFF	.02	2.42	---	12.27	30	1500.0
STRUCTURE	33	RESVOR	.02	2.42	327.30	12.44	24	1200.0
XSECTION	38	RUNOFF	.07	2.05	---	12.13	107	1528.6
XSECTION	39	ADDHYD	.36	2.46	---	12.31	390	1083.3
XSECTION	41	RUNOFF	.02	2.34	---	12.17	37	1850.0
STRUCTURE	29	RESVOR	.02	2.32	270.05	12.93	5	250.0

XSECTION	43	RUNOFF	.12	.96	---	12.23	61	508.3
XSECTION	44	ADDHYD	.14	1.18	---	12.24	63	450.0
XSECTION	46	ADDHYD	.67	2.15	---	12.55	505	753.7
STRUCTURE	7	RESVOR	.67	2.15	---	12.55	505	753.7
XSECTION	47	RUNOFF	.28	2.14	---	12.32	285	1017.9
XSECTION	48	RUNOFF	.02	2.59	---	12.17	44	2200.0
STRUCTURE	40	RESVOR	.02	2.59	335.09	12.35	22	1100.0
XSECTION	51	RUNOFF	.02	2.22	---	12.18	31	1550.0
STRUCTURE	43	RESVOR	.02	1.69	321.43	12.41	15	750.0
XSECTION	52	ADDHYD	.33	2.14	277.35	12.33	315	954.5
XSECTION	53	RUNOFF	.21	.95	---	12.23	103	490.5
XSECTION	54	ADDHYD	.54	1.68	---	12.43	351	650.0
STRUCTURE	5	RESVOR	.54	1.68	---	12.43	351	650.0
XSECTION	55	ADDHYD	1.53	1.97	---	12.39	1002	654.9
XSECTION	56	RUNOFF	.02	1.11	---	12.14	13	650.0
XSECTION	57	ADDHYD	1.55	1.96	---	12.39	1007	649.7

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AMOUNT	ELEVATION	TIME	RATE	RATE
ID	OPERATION	AREA (SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	5					
STRUCTURE	6	RESVOR	1.55	1.96	---	12.39	1007	649.7
XSECTION	58	RUNOFF	.04	2.27	---	12.13	61	1525.0
XSECTION	62	RUNOFF	.02	2.72	---	12.16	43	2150.0
XSECTION	63	ADDHYD	2.11	1.87	---	12.45	1369	648.8
RAINFALL OF	4.91 inches	AND	24.00 hr	DURATION,	BEGINS AT	.0 hrs.		
ALTERNATE	1	STORM	10					
XSECTION	1	RUNOFF	.21	2.56	---	12.25	295	1404.8
STRUCTURE	13	RESVOR	.21	2.56	392.86	12.60	128	609.5
XSECTION	2	RUNOFF	.03	2.29	---	12.19	42	1400.0
STRUCTURE	58	RESVOR	.03	2.25	430.98	12.52	16	533.3
XSECTION	3	ADDHYD	.24	2.52	---	12.59	144	600.0
XSECTION	4	RUNOFF	.06	2.91	---	12.15	125	2083.3
XSECTION	6	RUNOFF	.08	2.33	---	12.18	121	1512.5

XSECTION	9	RUNOFF	.06	2.64	---	12.18	103	1716.7
XSECTION	10	RUNOFF	.03	2.67	---	12.23	40	1333.3
STRUCTURE	52	RESVOR	.03	2.20	455.36	12.60	15	500.0
XSECTION	12	ADDHYD	.09	2.51	---	12.19	104	1155.6
XSECTION	13	RUNOFF	.04	3.18	---	12.18	92	2300.0
STRUCTURE	51	RESVOR	.04	3.18	398.37	12.38	46	1150.0
XSECTION	15	RUNOFF	.08	2.53	---	12.16	143	1787.5
XSECTION	17	ADDHYD	.21	2.65	---	12.20	243	1157.1
XSECTION	18	ADDHYD	.59	2.58	---	12.21	540	915.3
XSECTION	19	RUNOFF	.27	2.26	---	12.32	290	1074.1
XSECTION	20	REACH	.59	2.58	236.59	12.34	485	822.0
XSECTION	21	ADDHYD	.86	2.48	---	12.33	777	903.5
STRUCTURE	10	RESVOR	.86	2.48	---	12.33	777	903.5
XSECTION	22	RUNOFF	.02	3.09	---	12.22	33	1650.0
STRUCTURE	47	RESVOR	.02	3.09	414.77	12.32	27	1350.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)					
	ALTERNATE	1	STORM	10				
XSECTION	23	RUNOFF	.08	3.09	---	12.20	154	1925.0
STRUCTURE	32	RESVOR	.08	3.09	369.12	12.30	123	1537.5
XSECTION	25	RUNOFF	.05	3.07	---	12.19	89	1780.0
STRUCTURE	34	RESVOR	.15	3.08	338.90	12.39	185	1233.3
XSECTION	27	RUNOFF	.01	2.54	---	12.12	27	2700.0
XSECTION	28	ADDHYD	.16	3.04	---	12.37	192	1200.0
XSECTION	29	RUNOFF	.05	3.56	---	12.11	142	2840.0
STRUCTURE	64	RESVOR	.05	3.56	---	12.11	142	2840.0
XSECTION	31	RUNOFF	.17	3.28	---	12.32	264	1552.9
XSECTION	33	RUNOFF	.05	3.10	---	12.20	89	1780.0
XSECTION	36	RUNOFF	.02	3.14	---	12.27	39	1950.0
STRUCTURE	33	RESVOR	.02	3.14	327.87	12.39	34	1700.0
XSECTION	38	RUNOFF	.07	2.74	---	12.13	143	2042.9
XSECTION	39	ADDHYD	.36	3.18	---	12.30	512	1422.2
XSECTION	41	RUNOFF	.02	3.05	---	12.17	48	2400.0

STRUCTURE	29	RESVOR	.02	3.02	271.34	12.89	7	350.0
XSECTION	43	RUNOFF	.12	1.43	---	12.23	96	800.0
XSECTION	44	ADDHYD	.14	1.69	---	12.23	100	714.3
XSECTION	46	ADDHYD	.67	2.82	---	12.44	712	1062.7
STRUCTURE	7	RESVOR	.67	2.82	---	12.44	712	1062.7
XSECTION	47	RUNOFF	.28	2.83	---	12.32	379	1353.6
XSECTION	48	RUNOFF	.02	3.32	---	12.17	55	2750.0
STRUCTURE	40	RESVOR	.02	3.32	336.30	12.31	36	1800.0
XSECTION	51	RUNOFF	.02	2.92	---	12.18	41	2050.0
STRUCTURE	43	RESVOR	.02	2.37	321.86	12.32	28	1400.0
XSECTION	52	ADDHYD	.33	2.83	277.62	12.33	432	1309.1
XSECTION	53	RUNOFF	.21	1.42	---	12.22	164	781.0
XSECTION	54	ADDHYD	.54	2.29	---	12.41	497	920.4
STRUCTURE	5	RESVOR	.54	2.29	---	12.41	497	920.4
XSECTION	55	ADDHYD	1.53	2.63	---	12.38	1455	951.0

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SUMMARY TABLE 1

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION	TIME	RATE	RATE	
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE 1		STORM	10					
XSECTION	56	RUNOFF	.02	1.62	---	12.14	20	1000.0
XSECTION	57	ADDHYD	1.55	2.62	---	12.38	1462	943.2
STRUCTURE	6	RESVOR	1.55	2.62	---	12.38	1462	943.2
XSECTION	58	RUNOFF	.04	2.97	---	12.13	79	1975.0
XSECTION	62	RUNOFF	.02	3.48	---	12.16	54	2700.0
XSECTION	63	ADDHYD	2.11	2.51	---	12.44	1971	934.1
RAINFALL OF		7.23 inches AND	24.00 hr	DURATION, BEGINS AT		.0 hrs.		
ALTERNATE 1		STORM	50					
XSECTION	1	RUNOFF	.21	4.59	---	12.24	526	2504.8
STRUCTURE	13	RESVOR	.21	4.59	394.58	12.36	449	2138.1
XSECTION	2	RUNOFF	.03	4.24	---	12.19	78	2600.0
STRUCTURE	58	RESVOR	.03	4.15	432.07	12.26	71	2366.7
XSECTION	3	ADDHYD	.24	4.54	---	12.35	505	2104.2
XSECTION	4	RUNOFF	.06	5.03	---	12.15	213	3550.0

XSECTION	6	RUNOFF	.08	4.30	---	12.18	223	2787.5
XSECTION	9	RUNOFF	.06	4.69	---	12.18	181	3016.7
XSECTION	10	RUNOFF	.03	4.72	---	12.22	71	2366.7
STRUCTURE	52	RESVOR	.03	4.21	456.22	12.38	51	1700.0
XSECTION	12	ADDHYD	.09	4.55	---	12.19	196	2177.8
XSECTION	13	RUNOFF	.04	5.35	---	12.17	153	3825.0
STRUCTURE	51	RESVOR	.04	5.35	399.39	12.35	83	2075.0
XSECTION	15	RUNOFF	.08	4.55	---	12.16	255	3187.5
XSECTION	17	ADDHYD	.21	4.71	---	12.20	450	2142.9
XSECTION	18	ADDHYD	.59	4.61	---	12.35	1060	1796.6
XSECTION	19	RUNOFF	.27	4.19	---	12.31	541	2003.7
XSECTION	20	REACH	.59	4.61	238.28	12.45	1011	1713.6
XSECTION	21	ADDHYD	.86	4.48	---	12.39	1489	1731.4
STRUCTURE	10	RESVOR	.86	4.48	---	12.39	1489	1731.4

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 SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ALTERNATE	1	STORM	50					
XSECTION	22	RUNOFF	.02	5.24	---	12.22	55	2750.0
STRUCTURE	47	RESVOR	.02	5.24	415.55	12.26	55	2750.0
XSECTION	23	RUNOFF	.08	5.24	---	12.19	257	3212.5
STRUCTURE	32	RESVOR	.08	5.24	369.84	12.26	229	2862.5
XSECTION	25	RUNOFF	.05	5.21	---	12.19	149	2980.0
STRUCTURE	34	RESVOR	.15	5.24	342.14	12.41	284	1893.3
XSECTION	27	RUNOFF	.01	4.57	---	12.11	47	4700.0
XSECTION	28	ADDHYD	.16	5.18	---	12.39	295	1843.8
XSECTION	29	RUNOFF	.05	5.78	---	12.11	220	4400.0
STRUCTURE	64	RESVOR	.05	5.78	---	12.11	220	4400.0
XSECTION	31	RUNOFF	.17	5.47	---	12.31	433	2547.1
XSECTION	33	RUNOFF	.05	5.25	---	12.20	148	2960.0
XSECTION	36	RUNOFF	.02	5.30	---	12.26	65	3250.0
STRUCTURE	33	RESVOR	.02	5.31	328.67	12.29	65	3250.0
XSECTION	38	RUNOFF	.07	4.81	---	12.13	247	3528.6
XSECTION	39	ADDHYD	.36	5.35	---	12.27	869	2413.9
XSECTION	41	RUNOFF	.02	5.19	---	12.17	80	4000.0

STRUCTURE	29	RESVOR	.02	5.12	273.78	12.45	28	1400.0
XSECTION	43	RUNOFF	.12	3.05	---	12.22	217	1808.3
XSECTION	44	ADDHYD	.14	3.38	---	12.22	224	1600.0
XSECTION	46	ADDHYD	.67	4.88	---	12.40	1223	1825.4
STRUCTURE	7	RESVOR	.67	4.88	---	12.40	1223	1825.4
XSECTION	47	RUNOFF	.28	4.93	---	12.31	655	2339.3
XSECTION	48	RUNOFF	.02	5.52	---	12.16	89	4450.0
STRUCTURE	40	RESVOR	.02	5.52	337.36	12.29	58	2900.0
XSECTION	51	RUNOFF	.02	5.04	---	12.18	70	3500.0
STRUCTURE	43	RESVOR	.02	4.45	322.59	12.26	59	2950.0
XSECTION	52	ADDHYD	.33	4.94	278.85	12.31	764	2315.2
XSECTION	53	RUNOFF	.21	3.03	---	12.21	370	1761.9
XSECTION	54	ADDHYD	.54	4.20	---	12.38	905	1675.9

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1		STORM	50				
STRUCTURE	5 RESVOR	.54	4.20	---	12.38	905	1675.9
XSECTION	55 ADDHYD	1.53	4.65	---	12.40	2712	1772.5
XSECTION	56 RUNOFF	.02	3.31	---	12.13	42	2100.0
XSECTION	57 ADDHYD	1.55	4.64	---	12.40	2726	1758.7
STRUCTURE	6 RESVOR	1.55	4.64	---	12.40	2726	1758.7
XSECTION	58 RUNOFF	.04	5.09	---	12.13	134	3350.0
XSECTION	62 RUNOFF	.02	5.70	---	12.16	87	4350.0
XSECTION	63 ADDHYD	2.11	4.49	---	12.43	3639	1724.6
RAINFALL OF		8.47 inches AND	24.00 hr	DURATION, BEGINS AT		.0 hrs.	
ALTERNATE 1		STORM	99				
XSECTION	1 RUNOFF	.21	5.72	---	12.24	653	3109.5
STRUCTURE	13 RESVOR	.21	5.72	394.98	12.31	610	2904.8
XSECTION	2 RUNOFF	.03	5.34	---	12.19	98	3266.7
STRUCTURE	58 RESVOR	.03	5.24	432.27	12.24	94	3133.3
XSECTION	3 ADDHYD	.24	5.66	---	12.31	690	2875.0
XSECTION	4 RUNOFF	.06	6.19	---	12.15	259	4316.7

XSECTION	6	RUNOFF	.08	5.40	---	12.18	278	3475.0
XSECTION	9	RUNOFF	.06	5.84	---	12.18	223	3716.7
XSECTION	10	RUNOFF	.03	5.86	---	12.22	87	2900.0
STRUCTURE	52	RESVOR	.03	5.35	456.47	12.34	70	2333.3
XSECTION	12	ADDHYD	.09	5.69	---	12.20	250	2777.8
XSECTION	13	RUNOFF	.04	6.54	---	12.17	185	4625.0
STRUCTURE	51	RESVOR	.04	6.54	399.85	12.34	105	2625.0
XSECTION	15	RUNOFF	.08	5.68	---	12.16	317	3962.5
XSECTION	17	ADDHYD	.21	5.86	---	12.20	565	2690.5
XSECTION	18	ADDHYD	.59	5.75	---	12.31	1489	2523.7
XSECTION	19	RUNOFF	.27	5.30	---	12.31	684	2533.3
XSECTION	20	REACH	.59	5.75	239.20	12.42	1385	2347.5

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)					
ALTERNATE	1	STORM	99					
XSECTION	21	ADDHYD	.86	5.61	---	12.38	2014	2341.9
STRUCTURE	10	RESVOR	.86	5.61	---	12.38	2014	2341.9
XSECTION	22	RUNOFF	.02	6.42	---	12.22	67	3350.0
STRUCTURE	47	RESVOR	.02	6.42	415.70	12.24	66	3300.0
XSECTION	23	RUNOFF	.08	6.42	---	12.19	312	3900.0
STRUCTURE	32	RESVOR	.08	6.42	370.13	12.26	284	3550.0
XSECTION	25	RUNOFF	.05	6.39	---	12.19	181	3620.0
STRUCTURE	34	RESVOR	.15	6.42	343.30	12.36	430	2866.7
XSECTION	27	RUNOFF	.01	5.67	---	12.11	59	5900.0
XSECTION	28	ADDHYD	.16	6.36	---	12.35	446	2787.5
XSECTION	29	RUNOFF	.05	6.96	---	12.11	262	5240.0
STRUCTURE	64	RESVOR	.05	6.96	---	12.11	262	5240.0
XSECTION	31	RUNOFF	.17	6.66	---	12.31	522	3070.6
XSECTION	33	RUNOFF	.05	6.43	---	12.20	178	3560.0
XSECTION	36	RUNOFF	.02	6.49	---	12.26	79	3950.0
STRUCTURE	33	RESVOR	.02	6.47	328.90	12.29	78	3900.0
XSECTION	38	RUNOFF	.07	5.96	---	12.13	304	4342.9
XSECTION	39	ADDHYD	.36	6.53	---	12.28	1035	2875.0
XSECTION	41	RUNOFF	.02	6.37	---	12.17	97	4850.0

STRUCTURE	29	RESVOR	.02	6.25	274.20	12.36	50	2500.0
XSECTION	43	RUNOFF	.12	4.01	---	12.21	289	2408.3
XSECTION	44	ADDHYD	.14	4.38	---	12.22	297	2121.4
XSECTION	46	ADDHYD	.67	6.02	---	12.49	1469	2192.5
STRUCTURE	7	RESVOR	.67	6.02	---	12.49	1469	2192.5
XSECTION	47	RUNOFF	.28	6.09	---	12.31	803	2867.9
XSECTION	48	RUNOFF	.02	6.72	---	12.16	107	5350.0
STRUCTURE	40	RESVOR	.02	6.72	337.87	12.32	59	2950.0
XSECTION	51	RUNOFF	.02	6.20	---	12.18	85	4250.0
STRUCTURE	43	RESVOR	.02	5.60	322.85	12.26	71	3550.0
XSECTION	52	ADDHYD	.33	6.10	279.26	12.31	927	2809.1

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL DRAINAGE			RUNOFF	PEAK DISCHARGE			
	ID	OPERATION	AREA (SQ MI)		ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE	1	STORM	99					
XSECTION	53	RUNOFF	.21	3.99	---	12.21	494	2352.4
XSECTION	54	ADDHYD	.54	5.28	---	12.36	1078	1996.3
STRUCTURE	5	RESVOR	.54	5.28	---	12.36	1078	1996.3
XSECTION	55	ADDHYD	1.53	5.79	---	12.42	3405	2225.5
XSECTION	56	RUNOFF	.02	4.31	---	12.13	55	2750.0
XSECTION	57	ADDHYD	1.55	5.77	---	12.42	3420	2206.5
STRUCTURE	6	RESVOR	1.55	5.77	---	12.42	3420	2206.5
XSECTION	58	RUNOFF	.04	6.26	---	12.13	163	4075.0
XSECTION	62	RUNOFF	.02	6.90	---	12.16	104	5200.0
XSECTION	63	ADDHYD	2.11	5.60	---	12.41	4528	2146.0

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SUMMARY TABLE 2



MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

		HYDROGRAPH INFORMATION				ROUTING PARAMETERS					
XSEC ID	REACH LENGTH COEFF	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT- KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
BASEFLOW IS		.0 CFS									
ALTERNATE		1	STORM		2						
7	2055		94	12.2	89	12.3	1.55	1.55	.005	.943	
	.71?										
11	1397		3	13.3	3	13.5	2.53	1.54	.004	.990	
	.47										
16	2449		64	12.2	59	12.3	2.42	1.40	.021	.928	
	.55										
20	4470		244	12.2	220	12.4	1.66	1.49	.021	.900	
	.47										
30	1561		80	12.1	74	12.2	1.16	1.56	.030	.920	
	.73?										
35	2077		236	12.2	221	12.4	1.15	1.41	.029	.936	
	.57										
42	2112		4	13.0	4	13.1	3.54	1.39	.006	.996	
	.40										
45	3148		310	12.3	297	12.5	4.57	1.16	.037	.958	
	.50										
49	1829		16	12.4	15	12.5	1.44	1.42	.038	.937	
	.40										
52	4744		197	12.4	178	12.5	1.16	1.52	.045	.903	
	.38										
59	1671		653	12.4	649	12.5	3.27	1.24	.011	.994	
	.84?										
ALTERNATE		1	STORM		5						
7	2055		147	12.2	142	12.2	1.61	1.53	.004	.964	
	.77?										
11	1397		9	12.7	9	12.8	2.53	1.54	.005	.990	
	.64										
16	2449		102	12.2	96	12.3	2.47	1.39	.019	.940	
	.60										
20	4470		394	12.2	358	12.4	1.90	1.44	.022	.909	
	.50										
30	1561		113	12.1	106	12.2	1.20	1.54	.025	.940	
	.77?										
35	2077		342	12.2	324	12.3	1.19	1.40	.026	.946	
	.61										
42	2112		5	12.9	5	13.1	3.54	1.39	.005	.997	
	.44										
45	3148		488	12.4	469	12.5	5.06	1.13	.043	.961	

.49	49	1829	22	12.4	21	12.5	1.46	1.41	.030	.948
.42	52	4744	313	12.4	288	12.5	1.23	1.50	.040	.919
.42	59	1671	1003	12.4	1001	12.5	3.17	1.25	.009	.998
.89?										

ALTERNATE 1 STORM 10

.81?	7	2055	198	12.2	193	12.2	1.66	1.52	.004	.973
.72?	11	1397	15	12.6	15	12.7	2.53	1.54	.005	.993

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION

ROUTING PARAMETERS

XSEC ID	REACH LENGTH COEFF	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT- KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
	ALTERNATE	1	STORM	10							
16	2449		137	12.2	130	12.3	2.50	1.38	.017	.952	
.63	20	4470	536	12.2	484	12.4	2.56	1.33	.029	.904	
.47	30	1561	141	12.1	135	12.2	1.23	1.53	.022	.952	
.81?	35	2077	436	12.2	418	12.3	1.22	1.39	.024	.959	
.63	42	2112	7	12.9	7	13.0	3.54	1.39	.005	.998	
.47	45	3148	701	12.3	647	12.5	5.71	1.09	.054	.922	
.48	49	1829	35	12.3	31	12.4	1.49	1.40	.036	.869	
.46	52	4744	429	12.3	396	12.5	1.29	1.48	.038	.922	
.45	59	1671	1457	12.4	1451	12.4	3.28	1.24	.010	.995	
.92?											

ALTERNATE	1	STORM	50						
7	2055	597	12.3	591	12.4	2.66	1.35	.011	.991
.87?									
11	1397	50	12.4	50	12.4	2.60	1.51	.007	.988
.90?									
16	2449	256	12.2	251	12.3	2.57	1.37	.016	.978
.70?									
20	4470	1059	12.4	1006	12.5	3.76	1.21	.042	.950
.46									
30	1561	219	12.1	213	12.2	1.29	1.51	.018	.971
.87?									
35	2077	713	12.2	693	12.3	1.32	1.37	.021	.972
.68?									
42	2112	28	12.5	27	12.5	3.56	1.38	.009	.956
.61									
45	3148	1147	12.3	1076	12.4	6.54	1.05	.060	.938
.45									
49	1829	58	12.3	57	12.5	1.51	1.38	.031	.979
.51									
52	4744	763	12.3	683	12.5	1.85	1.33	.059	.895
.39									
59	1671	2717	12.4	2717	12.5	3.19	1.25	.009	1.000
.99?									

ALTERNATE	1	STORM	99						
7	2055	829	12.3	824	12.4	3.20	1.30	.014	.995
.87?									
11	1397	70	12.4	70	12.4	2.65	1.49	.008	.999
.95?									
16	2449	335	12.2	327	12.3	2.62	1.36	.015	.977
.73?									

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

		HYDROGRAPH INFORMATION				ROUTING PARAMETERS					
XSEC ID	REACH LENGTH	FLOOD PLAIN LENGTH	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR	PEAK RATIO Q/I	ATT-KIN
			PEAK	TIME	PEAK	TIME	COEFF	POWER			
	(FT)	(FT)	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)	(Q*)	(C)

ALTERNATE	1	STORM	99						
20 4470		1488	12.3	1385	12.4	3.95	1.20	.047	.931
.47									
30 1561		261	12.1	255	12.2	1.32	1.50	.016	.978
.89?									
35 2077		859	12.2	823	12.3	1.76	1.29	.027	.958
.63									
42 2112		50	12.4	48	12.5	3.60	1.36	.013	.958
.67?									
45 3148		1424	12.4	1283	12.5	5.69	1.02	.087	.901
.36									
49 1829		59	12.3	59	12.5	1.52	1.38	.024	.990
.51									
52 4744		927	12.3	800	12.5	2.57	1.21	.089	.863
.32									
59 1671		3420	12.4	3420	12.4	3.03	1.26	.008	1.000
1.00?									

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99
STRUCTURE 64	.05					
-----						
ALTERNATE 1		81	113	142	220	
262						
STRUCTURE 58	.03					
-----						
ALTERNATE 1		2	8	16	71	
94						
STRUCTURE 52	.03					
-----						
ALTERNATE 1		3	9	15	51	
70						
STRUCTURE 51	.04					
-----						
ALTERNATE 1		22	34	46	83	
105						
STRUCTURE 47	.02					
-----						
ALTERNATE 1		12	21	27	55	
66						

STRUCTURE	43		.02				
ALTERNATE	1			4	15	28	59
	71						
STRUCTURE	40		.02				
ALTERNATE	1			16	22	36	58
	59						
STRUCTURE	34		.15				
ALTERNATE	1			54	127	185	284
	430						
STRUCTURE	33		.02				
ALTERNATE	1			15	24	34	65
	78						
STRUCTURE	32		.08				
ALTERNATE	1			61	86	123	229
	284						
STRUCTURE	29		.02				
ALTERNATE	1			4	5	7	28
	50						
STRUCTURE	13		.21				
ALTERNATE	1			62	97	128	449
	610						
STRUCTURE	10		.86				
ALTERNATE	1			341	569	777	1489
	2014						
STRUCTURE	7		.67				

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STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99

STRUCTURE	7	.67				
ALTERNATE 1469	1		320	505	712	1223
STRUCTURE	6	1.55				
ALTERNATE 3420	1		655	1007	1462	2726
STRUCTURE	5	.54				
ALTERNATE 1078	1		208	351	497	905
XSECTION	1	.21				
ALTERNATE 653	1		137	218	295	526
XSECTION	2	.03				
ALTERNATE 98	1		18	30	42	78
XSECTION	3	.24				
ALTERNATE 690	1		64	105	144	505
XSECTION	4	.06				
ALTERNATE 259	1		63	96	125	213
XSECTION	6	.08				
ALTERNATE 278	1		53	88	121	223
XSECTION	9	.06				
ALTERNATE 223	1		49	77	103	181
XSECTION	10	.03				
ALTERNATE 87	1		19	30	40	71
XSECTION	12	.09				
ALTERNATE 250	1		49	77	104	196
XSECTION	13	.04				
ALTERNATE 185	1		49	72	92	153
XSECTION	15	.08				
ALTERNATE 317	1		66	106	143	255

XSECTION 17 .21  
 -----  
 ALTERNATE 1 110 178 243 450  
 565  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99
XSECTION 18 .59 ----- ALTERNATE 1 244 396 540 1060 1489						
XSECTION 19 .27 ----- ALTERNATE 1 122 208 290 541 684						
XSECTION 20 .59 ----- ALTERNATE 1 220 359 485 1011 1385						
XSECTION 21 .86 ----- ALTERNATE 1 341 569 777 1489 2014						
XSECTION 22 .02 ----- ALTERNATE 1 17 25 33 55 67						
XSECTION 23 .08 ----- ALTERNATE 1 80 119 154 257 312						
XSECTION 25 .05 ----- ALTERNATE 1 46 68 89 149 181						
XSECTION 27 .01 ----- ALTERNATE 1 13 20 27 47						

59

XSECTION 28 .16

-----  
 ALTERNATE 1 56 132 192 295  
 446

XSECTION 29 .05

-----  
 ALTERNATE 1 81 113 142 220  
 262

XSECTION 31 .17

-----  
 ALTERNATE 1 142 207 264 433  
 522

XSECTION 33 .05

-----  
 ALTERNATE 1 46 68 89 148  
 178

XSECTION 36 .02

-----  
 ALTERNATE 1 21 30 39 65  
 79

1

TR20 ----- SCS

-----  
 Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 03/23/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT  
 2.04TEST  
 09:59:13 SUMMARY, JOB NO. 1 PAGE  
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SUMMARY TABLE 3

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 STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	50	99

XSECTION 38 .07

-----  
 ALTERNATE 1 69 107 143 247  
 304

XSECTION 39 .36

-----  
 ALTERNATE 1 265 390 512 869  
 1035

XSECTION 41 .02

-----  
 ALTERNATE 1 25 37 48 80  
 97

XSECTION 43 .12



ALTERNATE 289	1		26	61	96	217
XSECTION	44	.14				
ALTERNATE 297	1		28	63	100	224
XSECTION	46	.67				
ALTERNATE 1469	1		320	505	712	1223
XSECTION	47	.28				
ALTERNATE 803	1		185	285	379	655
XSECTION	48	.02				
ALTERNATE 107	1		30	44	55	89
XSECTION	51	.02				
ALTERNATE 85	1		21	31	41	70
XSECTION	52	.33				
ALTERNATE 927	1		198	315	432	764
XSECTION	53	.21				
ALTERNATE 494	1		44	103	164	370
XSECTION	54	.54				
ALTERNATE 1078	1		208	351	497	905
XSECTION	55	1.53				
ALTERNATE 3405	1		653	1002	1455	2712

1

TR20 ----- SCS

-

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION

03/23/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT

2.04TEST

09:59:13

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SUMMARY, JOB NO. 1

PAGE

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ DRAINAGE

STRUCTURE ID	AREA (SQ MI)	STORM NUMBERS.....			
		2	5	10	50 99
XSECTION 56	.02				
-----					
ALTERNATE 55	1	6	13	20	42
XSECTION 57	1.55				
-----					
ALTERNATE 3420	1	655	1007	1462	2726
XSECTION 58	.04				
-----					
ALTERNATE 163	1	41	61	79	134
XSECTION 62	.02				
-----					
ALTERNATE 104	1	30	43	54	87
XSECTION 63	2.11				
-----					
ALTERNATE 4528	1	869	1369	1971	3639

1  
TR20 ----- SCS  
-

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION  
03/23/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,50,100WITHMGMT  
2.04TEST

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST  
FILES

INPUT = pond13.dat , GIVEN DATA FILE  
OUTPUT = pond13.OUT , DATED  
03/23/\*\*,09:59:13

FILES GENERATED - DATED 03/23/\*\*,09:59:13

NONE!

TOTAL NUMBER OF WARNINGS = 28, MESSAGES = 10

\*\*\* TR-20 RUN COMPLETED \*\*\*

1

\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20  
HYDROLOGY\*\*\*\*\*

JOB	TR-20	NOPLOTS				
TITLE	Ellicott City Flood Study-Tiber/South Sub-Drainage Areas					
TITLE	27 Subareas MGMT-STD NOAA_C 2,5,10,25,50,100WITHMGMT;GHCHUG					
5	RAINFL	1	.1			
8	0.0000	0.0013	0.0023	0.0034	0.0044	
8	0.0055	0.0065	0.0076	0.0087	0.0098	
8	0.0109	0.0121	0.0132	0.0143	0.0155	
8	0.0167	0.0178	0.0190	0.0202	0.0214	
8	0.0226	0.0238	0.0251	0.0263	0.0276	
8	0.0288	0.0301	0.0314	0.0327	0.0340	
8	0.0353	0.0366	0.0379	0.0393	0.0406	
8	0.0420	0.0434	0.0447	0.0461	0.0475	
8	0.0489	0.0504	0.0518	0.0532	0.0547	
8	0.0562	0.0576	0.0591	0.0606	0.0621	
8	0.0636	0.0651	0.0667	0.0682	0.0697	
8	0.0713	0.0729	0.0745	0.0760	0.0776	
8	0.0793	0.0809	0.0826	0.0843	0.0861	
8	0.0879	0.0898	0.0916	0.0936	0.0955	
8	0.0975	0.0996	0.1017	0.1038	0.1060	
8	0.1082	0.1104	0.1127	0.1150	0.1174	
8	0.1198	0.1223	0.1247	0.1273	0.1298	
8	0.1324	0.1351	0.1378	0.1405	0.1432	
8	0.1461	0.1490	0.1521	0.1554	0.1588	
8	0.1623	0.1660	0.1699	0.1739	0.1780	
8	0.1823	0.1868	0.1914	0.1961	0.2010	
8	0.2061	0.2117	0.2179	0.2247	0.2321	
8	0.2400	0.2490	0.2591	0.2702	0.2825	
8	0.2955	0.3157	0.3370	0.3662	0.4067	
8	0.4766	0.5933	0.6338	0.6630	0.6843	
8	0.7045	0.7176	0.7298	0.7409	0.7510	
8	0.7600	0.7679	0.7753	0.7821	0.7883	
8	0.7939	0.7990	0.8039	0.8086	0.8132	
8	0.8177	0.8220	0.8261	0.8301	0.8340	
8	0.8377	0.8412	0.8446	0.8479	0.8510	
8	0.8540	0.8568	0.8595	0.8622	0.8649	
8	0.8676	0.8702	0.8727	0.8753	0.8778	
8	0.8802	0.8826	0.8850	0.8873	0.8896	
8	0.8918	0.8940	0.8962	0.8983	0.9004	
8	0.9025	0.9045	0.9064	0.9084	0.9103	
8	0.9121	0.9139	0.9157	0.9174	0.9191	
8	0.9208	0.9224	0.9240	0.9256	0.9271	
8	0.9287	0.9303	0.9318	0.9334	0.9349	
8	0.9364	0.9379	0.9394	0.9409	0.9424	
8	0.9439	0.9453	0.9468	0.9482	0.9496	
8	0.9511	0.9525	0.9539	0.9553	0.9566	
8	0.9580	0.9594	0.9607	0.9621	0.9634	
8	0.9647	0.9660	0.9673	0.9686	0.9699	
8	0.9712	0.9724	0.9737	0.9749	0.9762	
8	0.9774	0.9786	0.9798	0.9810	0.9822	
8	0.9834	0.9845	0.9857	0.9868	0.9879	

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8	0.9891	0.9902	0.9913	0.9924	0.9935
8	0.9945	0.9956	0.9967	0.9977	0.9987
8	1.0000	1.0000	1.0000	1.0000	1.0000

9 ENDTBL

3 STRUCT 58

8		424.00	0.00	0.00
8		429.09	2.00	0.72
8		429.59	4.00	0.85
8		430.00	6.00	0.96
8		430.21	8.00	1.02
8		430.36	10.00	1.06
8		430.49	12.00	1.10
8		430.64	14.00	1.15
8		430.74	15.00	1.18
8		431.22	17.09	1.33
8		431.68	33.53	1.49
8		432.18	80.87	1.67
8		432.37	108.22	1.74

9 ENDTBL

2 XSECTN 007

8		1.0	319.00	
8		318.00	0.00	0.00
8		318.25	10.19	3.39
8		318.50	32.80	7.08
8		318.75	65.48	11.07
8		319.00	107.54	15.35
8		320.00	367.34	35.47
8		321.00	663.16	60.18
8		322.00	1052.26	89.31
8		323.00	1529.69	131.30

9 ENDTBL

3 STRUCT 52

8		451.90	0.00	0.00
8		454.05	0.34	0.73
8		454.30	0.36	0.85
8		455.60	18.83	1.65
8		456.10	41.43	2.00
8		456.50	72.96	2.28

9 ENDTBL

2 XSECTN 011

8		1.0	415.00	
8		414.00	0.00	0.00
8		414.25	7.22	1.98
8		414.50	23.69	4.29
8		414.75	48.28	6.93
8		415.00	81.00	9.89
8		416.00	299.51	25.08
8		417.00	488.53	45.33
8		418.00	779.05	70.44
8		419.00	809.36	107.84

9 ENDTBL

3 STRUCT 51

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8		396.00	0.00	0.00
8		396.50	4.38	0.27
8		397.00	12.40	0.65
8		397.50	22.78	1.07
8		398.00	35.07	1.54
8		398.50	49.45	2.05
8		399.00	64.75	2.59

8			399.45	86.12	3.10
9	ENDTBL				
2	XSECTN	016	1.0	331.00	
8			330.00	0.00	0.00
8			330.25	5.94	1.92
8			330.50	21.34	4.68
8			330.75	47.19	8.28
8			331.00	85.01	12.73
8			332.00	385.16	38.91
8			333.00	704.29	76.97
8			334.00	1202.25	125.34
8			335.00	1592.91	187.47
9	ENDTBL				
2	XSECTN	020	1.0	235.00	
8			234.00	0.00	0.00
8			234.25	9.06	3.27
8			234.50	29.33	6.89
8			234.75	58.86	10.87
8			235.00	97.22	15.19
8			236.00	339.40	36.03
8			237.00	586.83	61.50
8			238.00	902.53	90.59
8			239.00	1290.91	123.25
8			240.00	1750.59	159.40
8			241.00	1985.66	201.02
8			242.00	2381.26	250.13
9	ENDTBL				
3	STRUCT	10			
9	ENDTBL				
3	STRUCT	47			
8			410.00	0.00	0.00
8			413.89	5.00	0.05
8			414.04	10.00	0.15
8			414.17	15.00	0.24
8			414.28	20.00	0.27
8			415.00	30.68	0.38
8			415.27	39.01	0.42
8			415.52	52.87	0.45
8			415.79	71.61	0.49
8			416.07	95.27	0.54
9	ENDTBL				
3	STRUCT	32			
8			367.00	0.00	0.00

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			367.37	10.00	0.29
8			367.59	20.00	0.47
8			367.78	30.00	0.62
8			367.94	40.00	0.76
8			368.09	50.00	0.89
8			368.44	75.00	1.18
8			368.82	88.96	1.52
8			369.30	142.54	1.95
8			369.79	219.99	2.41
8			370.11	280.10	2.72
8			370.33	326.70	2.93
8			370.56	378.34	3.15
9	ENDTBL				
3	STRUCT	34			

8			329.00	0.00	0.00
8			332.62	30.00	0.72
8			336.99	50.00	2.59
8			337.92	70.00	3.17
8			338.11	90.00	3.29
8			338.19	100.00	3.34
8			338.26	109.00	3.39
8			338.55	150.00	3.58
8			338.61	160.00	3.63
8			338.64	165.00	3.65
8			338.70	175.00	3.69
8			338.73	179.50	3.71
8			343.01	310.00	7.34
8			343.91	680.58	8.20
9	ENDTBL				
3	STRUCT	64			
9	ENDTBL				
2	XSECTN	030	1.0	357.00	
8			356.00	0.00	0.00
8			356.25	11.94	4.48
8			356.50	38.65	9.42
8			356.75	77.59	14.83
8			357.00	128.16	20.70
8			358.00	446.97	48.84
8			359.00	544.48	91.80
8			360.00	941.05	156.94
8			361.00	1597.14	242.00
9	ENDTBL				
2	XSECTN	035	1.0	317.00	
8			316.00	0.00	0.00
8			316.25	12.78	5.64
8			316.50	44.21	13.12
8			316.75	94.71	22.44
8			317.00	166.16	33.59
8			318.00	703.03	96.58
8			319.00	1203.58	187.92

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			320.00	2039.69	306.56
8			321.00	3441.07	443.04
9	ENDTBL				
3	STRUCT	33			
8			323.00	0.00	0.00
8			323.20	5.00	0.01
8			324.01	10.00	0.06
8			325.62	15.00	0.19
8			326.73	18.00	0.29
8			327.09	20.00	0.33
8			327.38	25.00	0.36
8			327.54	28.00	0.38
8			327.63	30.00	0.39
8			328.16	38.10	0.46
8			328.84	73.25	0.54
8			329.21	106.03	0.59
9	ENDTBL				
3	STRUCT	08			
8			285.00	0.00	0.00
8			288.19	100.00	4.352
8			291.06	200.00	9.305

8			297.70	390.00	24.917
8			299.77	425.00	31.064
8			301.26	450.00	35.844
8			302.44	470.00	39.908
8			303.00	479.50	41.916
8			303.63	550.52	44.194
8			304.64	778.25	48.024
8			305.12	931.33	49.913
8			306.18	1334.58	54.217
9	ENDTBL				
3	STRUCT	29			
8			266.00	0.00	0.00
8			273.38	10.00	2.49
8			273.62	20.00	2.64
8			273.91	35.00	2.82
8			274.10	46.00	2.94
8			274.35	55.00	3.10
8			274.51	58.00	3.20
8			274.61	60.00	3.28
8			274.90	65.00	3.47
8			275.21	98.51	3.68
8			275.54	139.16	3.92
8			275.89	189.97	4.18
8			276.27	253.87	4.48
8			276.50	299.40	4.67
9	ENDTBL				
2	XSECTN	042	1.0	223.00	
8			222.00	0.00	0.00
8			222.25	2.73	0.83

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			222.50	10.35	2.16
8			222.75	23.82	3.97
8			223.00	44.24	6.28
8			224.00	215.28	20.42
8			225.00	406.10	41.61
8			226.00	702.08	67.86
8			227.00	890.97	103.46
9	ENDTBL				
2	XSECTN	045	1.0	223.00	
8			222.00	0.00	0.00
8			222.25	2.28	0.83
8			222.50	8.62	2.16
8			222.75	19.85	3.97
8			223.00	36.86	6.28
8			224.00	179.35	20.41
8			225.00	338.28	41.30
8			226.00	584.84	67.85
8			227.00	830.09	103.44
8			228.00	1249.11	151.47
8			229.00	1307.14	232.37
8			230.00	2023.03	366.57
9	ENDTBL				
3	STRUCT	07			
8			216.00	000.00	0.00
8			217.23	100.00	2.91
8			218.88	200.00	5.33
8			221.19	400.00	9.16
8			222.23	500.00	11.04



8			222.27	504.00	11.12
8			223.33	600.00	13.14
8			224.44	700.00	15.39
8			225.71	800.00	18.13
8			227.13	900.00	21.37
8			228.68	1000.00	25.17
8			230.40	1100.00	29.69
8			232.35	1200.00	35.20
8			234.84	1496.28	42.93
9	ENDTBL				
3	STRUCT	40			
8			333.00	000.00	0.00
8			334.00	15.15	0.40
8			334.25	16.92	0.47
8			334.50	18.53	0.55
8			334.75	20.02	0.63
8			335.00	21.40	0.68
8			335.50	23.92	0.77
8			335.86	25.59	0.80
8			336.00	27.61	0.82
8			336.25	33.80	0.84
8			336.50	42.02	0.93

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			336.75	51.79	1.01
8			336.86	56.51	1.05
8			337.00	57.30	1.08
8			337.50	58.38	1.31
8			338.00	59.45	1.68
9	ENDTBL				
2	XSECTN	049	1.0	317.00	
8			316.00	0.00	0.00
8			316.25	3.06	1.70
8			316.50	11.11	4.19
8			316.75	24.79	7.47
8			317.00	44.94	11.55
8			318.00	206.80	35.78
8			319.00	333.28	74.89
8			320.00	609.60	131.05
9	ENDTBL				
3	STRUCT	43			
8			317.30	0.00	0.00
8			318.00	0.19	0.08
8			319.00	0.24	0.27
8			320.75	0.30	0.79
8			321.00	3.22	0.85
8			321.75	23.58	1.09
8			322.00	32.83	1.17
8			322.20	40.94	1.20
8			322.40	49.63	1.27
8			322.80	68.56	1.45
8			322.90	73.60	1.49
9	ENDTBL				
2	XSECTN	052	1.0	279.00	
8			276.00	0.00	0.00
8			276.25	15.37	5.56
8			276.50	49.97	11.77
8			276.75	100.75	18.63
8			277.00	167.09	26.14

8			278.00	591.48	62.65
8			279.00	793.41	115.06
8			280.00	1313.82	188.91
8			281.00	2138.14	282.44
9	ENDTBL				
3	STRUCT	05			
8			256.00	0.00	0.00
8			257.31	25.00	2.040
8			258.61	50.00	4.248
8			259.92	75.00	6.631
8			261.23	100.00	9.193
8			262.74	125.00	12.396
8			265.08	150.00	17.872
8			267.43	175.00	24.009
8			269.77	200.00	30.850

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			274.91	250.00	48.522
8			276.30	260.00	53.975
8			277.00	265.00	56.814
8			277.70	319.90	59.729
8			279.13	415.88	65.974
8			280.67	569.65	73.359
9	ENDTBL				
3	STRUCT	06			
8			138.00	0.00	0.00
8			140.50	200.00	0.06
8			142.72	400.00	0.21
8			145.47	800.00	0.60
8			146.68	1000.00	0.86
8			147.48	1137.00	1.07
8			147.86	1200.00	1.17
8			150.46	1631.00	2.02
8			151.53	1800.00	2.44
8			152.93	2000.00	3.07
8			156.96	2500.00	5.82
8			158.84	2700.00	9.89
8			161.96	3000.00	18.44
8			163.03	3100.00	21.74
8			164.18	3283.92	25.46
8			166.59	3969.22	34.45
9	ENDTBL				
2	XSECTN	059	1.0	128.00	
8			129.00	0.00	0.00
8			129.25	1.13	0.50
8			129.50	5.18	1.55
8			129.75	13.39	3.16
8			130.00	26.84	5.32
8			131.00	191.72	26.64
8			132.00	508.02	58.78
8			133.00	945.51	95.90
8			134.00	1449.27	136.08
8			135.00	2016.68	178.64
8			138.00	4199.86	314.48
9	ENDTBL				
3	STRUCT	13			
8			386.30	0.00	0.00
8			386.56	10.00	0.469
8			387.39	25.00	1.220

8		388.22	40.00	2.032
8		389.33	60.00	3.209
8		390.40	80.00	4.444
8		391.41	100.00	5.724
8		391.92	110.00	6.403
8		392.43	120.00	7.108
8		393.00	131.10	7.922
8		393.56	175.68	8.764

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8		394.29	332.85	9.913		
8		395.07	645.74	11.216		
8		395.90	1168.38	12.677		
9	ENDTBL					
6	RUNOFF 1 001	1 0.2101	77.19	0.319	1	1 141
6	RESVOR 2 13 1 6				1	1
PROP13						
6	RUNOFF 1 002	2 0.0292	74.00	0.232	1	1 142
6	RESVOR 2 58 2 3				1	1
SWMF58						
6	ADDHYD 4 003	6 3 4			1	1
1+2+58						
6	RUNOFF 1 004	1 0.0617	81.09	0.170	1	1 143
6	ADDHYD 4 005	4 1 2			1	1+2+3
6	RUNOFF 1 006	1 0.0799	74.51	0.216	1	1 144
6	REACH 3 007	2 3	2055.0		1	
6	ADDHYD 4 008	1 3 2			1	SA14
6	RUNOFF 1 009	1 0.0604	78.12	0.220	1	1 153
6	RUNOFF 1 010	3 0.0264	78.36	0.290	1	1 151
6	RESVOR 2 52 3 4				1	1
SWMF52						
6	REACH 3 011	4 5	1396.5		1	
6	ADDHYD 4 012	1 5 6			1	1
153+151						
6	RUNOFF 1 013	1 0.0447	83.97	0.210	1	1 152
6	RESVOR 2 51 1 3				1	1
SWMF51						
6	ADDHYD 4 014	6 3 1			1	
012+51						
6	RUNOFF 1 015	3 0.0815	76.80	0.176	1	1 154
6	REACH 3 016	1 4	2448.6		1	
6	ADDHYD 4 017	3 4 5			1	1 SA15
6	ADDHYD 4 018	2 5 1			1	1
SA14+15						
6	RUNOFF 1 019	2 0.2701	73.58	0.425	1	1 131
6	REACH 3 020	1 3	4470.1		1	1 SA13
6	ADDHYD 4 021	2 3 5			1	1
14+15+13						
6	RESVOR 2 10 5 4				1	1
PROP10						
6	RUNOFF 1 022	1 0.0185	83.00	0.283	1	1 121
6	RESVOR 2 47 1 2				1	1
SWMF47						
6	RUNOFF 1 023	3 0.0812	83.00	0.245	1	1 122
6	RESVOR 2 32 3 5				1	1
SWMF32						
6	ADDHYD 4 024	2 5 1			1	
121+122						
6	RUNOFF 1 025	2 0.0465	82.74	0.236	1	1 123

6	ADDHYD	4	026	1	2	5				1	
024+123											
6	RESVOR	2		34	5	3				1	1
SWMF34											
6	RUNOFF	1	027			2	0.0126	76.91	0.100	1	1 124
6	ADDHYD	4	028	3	2	5				1	1 SA12
6	RUNOFF	1	029			2	0.0499	87.76	0.100	1	1 111
6	RESVOR	2		64	2	3				1	1
SWMF64											
6	REACH	3	030	3		6		1561.1		1	
6	RUNOFF	1	031			7	0.1745	85.00	0.449	1	1 112
6	ADDHYD	4	032	6	7	3				1	
111+112											
6	RUNOFF	1	033			1	0.0477	83.06	0.258	1	1 113
6	ADDHYD	4	034	3	1	2				1	
032+113											
6	REACH	3	035	2		3		2077.3		1	
6	RUNOFF	1	036			6	0.0244	83.54	0.370	1	1 114
6	RESVOR	2		33	6	7				1	1
SWMF33											

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

6	ADDHYD	4	037	3	7	1				1	
111-114											
6	RUNOFF	1	038			2	0.0684	79.13	0.136	1	1 115
6	ADDHYD	4	039	1	2	7				1	1 SA11
6	ADDHYD	4	040	5	7	2				1	12+11
6	RESVOR	2		08	2	6				1	1 PROP8
6	RUNOFF	1	041			1	0.0236	82.59	0.200	1	1 101
6	RESVOR	2		29	1	3				1	1
SWMF29											
6	REACH	3	042	3		5		2112.0		1	
6	RUNOFF	1	043			1	0.1211	62.77	0.263	1	1 102
6	ADDHYD	4	044	5	1	2				1	1 SA10
6	REACH	3	045	6		3		3147.6		1	
6	ADDHYD	4	046	2	3	7				1	1
10+12+11											
6	RESVOR	2		07	7	1				1	1 PROP7
6	RUNOFF	1	047			2	0.2822	80.17	0.434	1	1 81
6	RUNOFF	1	048			3	0.0248	85.45	0.190	1	1 82
6	RESVOR	2		40	3	5				1	1
SWMF40											
6	REACH	3	049	5		6		1829.0		1	
6	ADDHYD	4	050	2	6	7				1	81+82
6	RUNOFF	1	051			2	0.0218	81.19	0.220	1	1 83
6	RESVOR	2		43	2	3				1	1
SWMF43											
6	ADDHYD	4	052	7	3	2				1	1
81+82+83											
6	REACH	3	052	2		3		4744.2		1	
6	RUNOFF	1	053			5	0.2083	62.56	0.262	1	1 84
6	ADDHYD	4	054	3	5	2				1	1 SA8
6	RESVOR	2		05	2	5				1	1 PROP5
6	ADDHYD	4	055	4	1	3				1	1
13+10+PR											
6	RUNOFF	1	056			6	0.0166	65.36	0.134	1	1 92
6	ADDHYD	4	057	3	6	7				1	1
13+10+92											
6	RESVOR	2		06	7	4				1	1 PROP6

```

6 RUNOFF 1 058      1 0.0357      81.76      0.141      1      1 93
6 REACH 3 059      4 3      1670.5      1
6 ADDHYD 4 060      5 3 4      1
SA8+93
6 ADDHYD 4 061      7 4 1      1      92+93
6 RUNOFF 1 062      2 0.0233      68.08      0.186      1 1      1 91
6 ADDHYD 4 063      1 2 3      1      1
OUTFALL
ENDATA
7 INCREM 6      .06
7 COMPUT 7 001      063 0.0      3.19      1.01 2 1 2
ENDCMP 1
7 COMPUT 7 001      063 0.0      4.10      1.01 2 1 05
ENDCMP 1
7 COMPUT 7 001      063 0.0      4.91      1.01 2 1 10
ENDCMP 1
7 COMPUT 7 001      063 0.0      6.14      1.01 2 1 25
ENDCMP 1
7 COMPUT 7 001      063 0.0      7.23      1.01 2 1 50
ENDCMP 1
7 COMPUT 7 001      063 0.0      8.47      1.01 2 1 99
ENDCMP 1
ENDCMP 1

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
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ENDJOB 2

\*\*\*\*\*END OF 80-80  
LIST\*\*\*\*\*

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .060 HOURS

EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .060 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
STARTING TIME = .00 RAIN DEPTH = 3.19 RAIN DURATION = 1.00  
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. = 2 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	136.6	(RUNOFF)
20.68	4.2	(RUNOFF)

24.01 3.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.22 WATERSHED INCHES; 165 CFS-HRS; 13.6 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 13

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.61 62.3 389.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.21 WATERSHED INCHES; 165 CFS-HRS; 13.6 ACRE-
FEET.

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.20 18.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.03 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
13.47 2.2 429.15

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.02 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.61 64.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.19 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION(FEET)			
12.16	63.3		(RUNOFF)
15.84	2.4		(RUNOFF)
24.00	1.1		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	94.2	(NULL)
20.01	7.0	(NULL)
24.00	5.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.25 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	53.1	(RUNOFF)
17.33	2.0	(RUNOFF)
24.02	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.06 WATERSHED INCHES; 55 CFS-HRS; 4.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 7

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	89.0	318.89
24.06	5.2	318.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.25 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	136.9	(NULL)
20.07	8.6	(NULL)

24.03 6.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.21 WATERSHED INCHES; 297 CFS-HRS; 24.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.19 49.0 (RUNOFF)
15.83 2.2 (RUNOFF)
23.09 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.27 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.23 19.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.29 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
13.33 2.8 454.47

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.86 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-
FEET.

\*\*\* WARNING - XSECTION 11, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,
UNLESS NEW RATING TABLE VALUES ARE INSERTED.
\*\*\*

OPERATION REACH XSECTION 11



PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.47	2.7	414.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .86 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	49.1	(NULL)
18.82	2.0	(NULL)
24.02	1.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.15 WATERSHED INCHES; 64 CFS-HRS; 5.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	49.3	(RUNOFF)
20.86	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.67 WATERSHED INCHES; 48 CFS-HRS; 4.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	22.2	397.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.67 WATERSHED INCHES; 48 CFS-HRS; 4.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	65.4	(NULL)
20.06	3.0	(NULL)
24.02	2.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.32 WATERSHED INCHES; 112 CFS-HRS; 9.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.16	66.3	(RUNOFF)
17.35	2.2	(RUNOFF)
24.01	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.19 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	59.8	330.83
24.09	2.3	330.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.32 WATERSHED INCHES; 112 CFS-HRS; 9.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	109.9	(NULL)
21.94	4.1	(NULL)
24.01	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.27 WATERSHED INCHES; 175 CFS-HRS; 14.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 18

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	244.3	(NULL)
20.06	13.3	(NULL)
20.61	12.7	(NULL)
21.93	11.6	(NULL)
23.71	10.1	(NULL)
24.02	9.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.23 WATERSHED INCHES; 471 CFS-HRS; 38.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	121.9	(RUNOFF)
20.13	5.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.01 WATERSHED INCHES; 175 CFS-HRS; 14.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	219.6	235.51
24.05	9.9	234.26

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.23 WATERSHED INCHES; 471 CFS-HRS; 38.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	340.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.16 WATERSHED INCHES; 646 CFS-HRS; 53.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	340.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.16 WATERSHED INCHES; 646 CFS-HRS; 53.4 ACRE-  
 FEET.

1  
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 2.04TEST  
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OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
12.22    17.1    (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES;            19 CFS-HRS;            1.6 ACRE-  
FEET.

OPERATION RESVOR    STRUCTURE 47

PEAK TIME(HRS)                                    PEAK DISCHARGE(CFS)                                    PEAK  
ELEVATION(FEET)  
12.37    12.3    414.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES;            19 CFS-HRS;            1.6 ACRE-  
FEET.

OPERATION RUNOFF    XSECTION 23

PEAK TIME(HRS)                                    PEAK DISCHARGE(CFS)                                    PEAK  
ELEVATION(FEET)  
12.20    80.0    (RUNOFF)  
19.47    2.0    (RUNOFF)  
24.02    1.5    (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES;            84 CFS-HRS;            6.9 ACRE-  
FEET.

OPERATION RESVOR    STRUCTURE 32

PEAK TIME(HRS)                                    PEAK DISCHARGE(CFS)                                    PEAK  
ELEVATION(FEET)  
12.32    61.0    368.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES;            84 CFS-HRS;            6.9 ACRE-  
FEET.

OPERATION ADDHYD    XSECTION 24

PEAK TIME(HRS)                                    PEAK DISCHARGE(CFS)                                    PEAK  
ELEVATION(FEET)  
12.32    73.1    (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES;            103 CFS-HRS;            8.5 ACRE-  
FEET.

1

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OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	46.1	(RUNOFF)
21.45	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.58 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	110.3	(NULL)
20.62	3.4	(NULL)
24.01	2.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.59 WATERSHED INCHES; 150 CFS-HRS; 12.4 ACRE-FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	54.3	337.19

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.59 WATERSHED INCHES; 150 CFS-HRS; 12.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	12.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.19 WATERSHED INCHES; 10 CFS-HRS; .8 ACRE-FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.3%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

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 Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	44.1	(NULL)
12.67	56.2	(NULL)
23.98	2.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 160 CFS-HRS; 13.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.11	80.5	(RUNOFF)
15.82	2.3	(RUNOFF)
23.02	1.1	(RUNOFF)
23.68	1.0	(RUNOFF)
23.99	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29. THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.5%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.11	80.5	(NULL)
15.82	2.3	(NULL)
23.02	1.1	(NULL)
23.68	1.0	(NULL)
23.99	1.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	74.0	356.73
15.89	2.3	356.05
23.09	1.1	356.02
23.75	1.0	356.02
24.05	1.1	356.02

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.97 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	141.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.75 WATERSHED INCHES; 197 CFS-HRS; 16.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	191.3	(NULL)
18.86	6.1	(NULL)
21.75	5.0	(NULL)
24.04	4.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.80 WATERSHED INCHES; 260 CFS-HRS; 21.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	46.0	(RUNOFF)
21.76	1.0	(RUNOFF)
21.97	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.60 WATERSHED INCHES; 49 CFS-HRS; 4.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	236.3	(NULL)
18.86	7.4	(NULL)
21.75	6.0	(NULL)
24.04	5.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.76 WATERSHED INCHES; 310 CFS-HRS; 25.6 ACRE-  
 FEET.

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OPERATION REACH XSECTION 35

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.34	221.5	317.10
20.68	6.5	316.13
24.10	5.1	316.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.76 WATERSHED INCHES; 309 CFS-HRS; 25.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.27	20.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.64 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .047 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.45	15.2	325.68

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.64 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.34	235.8	(NULL)
20.68	7.1	(NULL)
24.10	5.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.75 WATERSHED INCHES; 335 CFS-HRS; 27.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 38

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	69.3	(RUNOFF)
15.84	2.6	(RUNOFF)
17.34	2.0	(RUNOFF)
24.00	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.33 WATERSHED INCHES; 59 CFS-HRS; 4.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	265.4	(NULL)
23.99	6.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.67 WATERSHED INCHES; 394 CFS-HRS; 32.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	312.0	(NULL)
23.99	9.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.64 WATERSHED INCHES; 554 CFS-HRS; 45.8 ACRE-FEET.

OPERATION RESVOR STRUCTURE 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.73	195.5	290.93

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.64 WATERSHED INCHES; 554 CFS-HRS; 45.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	24.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.57 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-FEET.

FEET.

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OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.00	3.6	268.66
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.56 WATERSHED INCHES;	24 CFS-HRS;	2.0 ACRE-
FEET.		

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.17	3.6	222.28
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.56 WATERSHED INCHES;	24 CFS-HRS;	2.0 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	26.2	(RUNOFF)
24.03	1.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.51 WATERSHED INCHES;	40 CFS-HRS;	3.3 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	27.9	(NULL)
20.62	2.4	(NULL)
24.02	1.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.68 WATERSHED INCHES;	63 CFS-HRS;	5.2 ACRE-
FEET.		

OPERATION REACH XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.85 194.1 224.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 554 CFS-HRS; 45.8 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.83	207.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 617 CFS-HRS; 51.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.16	188.5	218.69

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 617 CFS-HRS; 51.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	185.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 256 CFS-HRS; 21.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	29.9	(RUNOFF)
15.84	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	16.5	334.19

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-FEET.

OPERATION REACH XSECTION 49

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	15.5	316.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 28 CFS-HRS; 2.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	197.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 284 CFS-HRS; 23.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	20.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 21 CFS-HRS; 1.7 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE

STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.86	3.8	321.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .97 WATERSHED INCHES; 14 CFS-HRS; 1.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	198.1	277.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 297 CFS-HRS; 24.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 52

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	177.7	277.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 297 CFS-HRS; 24.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	43.9	(RUNOFF)
23.11	2.1	(RUNOFF)
23.76	2.0	(RUNOFF)
24.03	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .50 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	207.7	(NULL)
24.00	7.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.05 WATERSHED INCHES; 364 CFS-HRS; 30.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
13.07	92.9	260.86

	HYDROGRAPH POINTS FOR		ALTERNATE = 1,	STORM = 2				
HRS	MAIN	TIME INCREMENT =	.060 hr,		DRAINAGE AREA =	.54		
SQ.MI.								
8.46 CFS	.00	.01	.01	.01	.01	.01	.02	
.02								
8.94 CFS	.02	.03	.03	.03	.04	.04	.05	
.05								
9.42 CFS	.06	.06	.07	.08	.08	.09	.11	
.13								
9.90 CFS	.15	.17	.21	.25	.29	.34	.40	
.46								
10.38 CFS	.54	.62	.70	.80	.90	1.01	1.13	
1.25								
10.86 CFS	1.39	1.55	1.72	1.90	2.11	2.33	2.58	
2.86								
11.34 CFS	3.17	3.52	3.90	4.34	4.82	5.36	5.97	
6.68								
11.82 CFS	7.51	8.51	9.74	11.35	13.67	17.17	22.27	
28.71								
12.30 CFS	36.16	44.40	52.75	60.56	67.82	74.26	79.40	
83.56								
12.78 CFS	86.84	89.31	91.06	92.18	92.76	92.88	92.62	
92.04								
13.26 CFS	91.19	90.14	88.90	87.53	86.04	84.46	82.80	
81.09								
13.74 CFS	79.34	77.56	75.77	73.91	72.00	70.11	68.26	
66.45								
14.22 CFS	64.69	62.97	61.29	59.67	58.09	56.56	55.08	
53.64								
14.70 CFS	52.25	50.89	49.55	48.17	46.85	45.56	44.32	
43.11								

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15.18 CFS	41.94	40.81	39.71	38.64	37.61	36.61	35.65	
34.73								
15.66 CFS	33.84	32.99	32.17	31.39	30.64	29.92	29.23	
28.58								
16.14 CFS	27.94	27.34	26.76	26.20	25.66	25.15	24.63	
24.11								
16.62 CFS	23.62	23.15	22.70	22.26	21.85	21.44	21.06	
20.69								
17.10 CFS	20.33	19.99	19.66	19.33	19.02	18.72	18.43	
18.15								
17.58 CFS	17.87	17.60	17.33	17.08	16.83	16.58	16.34	
16.10								
18.06 CFS	15.88	15.65	15.43	15.22	15.01	14.80	14.60	
14.41								
18.54 CFS	14.22	14.03	13.86	13.69	13.52	13.36	13.21	
13.07								
19.02 CFS	12.93	12.80	12.67	12.55	12.43	12.32	12.21	
12.11								

19.50 CFS	12.01	11.92	11.82	11.74	11.65	11.57	11.49
11.41							
19.98 CFS	11.34	11.26	11.19	11.13	11.06	11.00	10.94
10.88							
20.46 CFS	10.82	10.76	10.70	10.64	10.58	10.53	10.47
10.42							
20.94 CFS	10.37	10.32	10.27	10.22	10.17	10.12	10.07
10.03							
21.42 CFS	9.98	9.93	9.89	9.85	9.80	9.76	9.72
9.68							
21.90 CFS	9.63	9.59	9.55	9.51	9.47	9.43	9.39
9.35							
22.38 CFS	9.31	9.27	9.23	9.19	9.15	9.11	9.07
9.03							
22.86 CFS	8.99	8.95	8.91	8.86	8.82	8.78	8.75
8.71							
23.34 CFS	8.67	8.63	8.59	8.55	8.51	8.47	8.43
8.39							
23.82 CFS	8.35	8.31	8.27	8.23	8.19	8.15	8.08
7.97							
24.30 CFS	7.83	7.66	7.45	7.22	6.96	6.68	6.40
6.11							
24.78 CFS	5.82	5.54	5.26	4.99	4.73	4.48	4.25
4.02							
25.26 CFS	3.81	3.61	3.42	3.23	3.06	2.90	2.75
2.60							
25.74 CFS	2.47	2.34	2.22	2.11	2.00	1.90	1.80
1.72							
26.22 CFS	1.63	1.55	1.48	1.41	1.34	1.28	1.22
1.17							
26.70 CFS	1.12	1.07	1.02	.98	.94	.90	.86
.83							
27.18 CFS	.80	.77	.74	.71	.69	.67	.64
.62							
27.66 CFS	.60	.58	.57	.55	.54	.52	.51
.49							
28.14 CFS	.48	.47	.46	.45	.44	.43	.42
.42							
28.62 CFS	.41	.40	.39	.39	.38	.38	.37
.37							
29.10 CFS	.36	.36	.35	.35	.34	.34	.34
.33							
29.58 CFS	.33	.33	.33	.32	.32	.32	.32
.32							
30.06 CFS	.31	.31	.31	.31	.31	.31	.30
.30							
30.54 CFS	.30	.30	.30	.30	.30	.30	.30
.29							
31.02 CFS	.29	.29	.29	.29	.29	.29	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.05 WATERSHED INCHES; 364 CFS-HRS; 30.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.39	415.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.28 WATERSHED INCHES; 1263 CFS-HRS; 104.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 56  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	6.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.61 WATERSHED INCHES; 7 CFS-HRS; .5 ACRE-		
FEET.		

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	418.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.27 WATERSHED INCHES; 1269 CFS-HRS; 104.9 ACRE-		
FEET.		

\*\*\* WARNING - STRUCTURE 6, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .006 HOURS.  
\*\*\*

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	416.8	142.84
HRS MAIN TIME INCREMENT = .060 hr, ALTERNATE = 1, STORM = 2		
SQ.MI. DRAINAGE AREA = 1.55		
7.26 CFS	.00 .01 .01 .01 .02 .02 .03	
.04		
7.74 CFS	.04 .05 .06 .06 .07 .08 .09	
.10		
8.22 CFS	.12 .13 .14 .16 .18 .20 .22	
.25		
8.70 CFS	.28 .32 .35 .40 .44 .49 .55	
.61		
9.18 CFS	.67 .73 .81 .90 1.00 1.10 1.22	
1.34		
9.66 CFS	1.47 1.62 1.77 1.94 2.12 2.30 2.51	
2.72		
10.14 CFS	2.96 3.21 3.49 3.79 4.12 4.48 4.88	
5.30		
10.62 CFS	5.77 6.27 6.82 7.43 8.12 8.92 9.84	
10.90		
11.10 CFS	12.13 13.56 15.22 17.14 19.36 21.89 24.74	



27.96								
11.58	CFS	32	36	42	49	58	70	86
109								
12.06	CFS	145	200	263	342	392	414	416
407								
12.54	CFS	397	390	384	377	371	365	359
354								
13.02	CFS	349	343	336	329	321	313	304
296								
13.50	CFS	287	278	269	259	250	241	233
225								
13.98	CFS	217	209	202	195	188	181	175
169								
14.46	CFS	163	157	152	147	142	137	133
128								
14.94	CFS	124	120	116	112	108	105	101
98								
15.42	CFS	94.96	92.21	89.67	87.31	85.07	82.91	80.84
78.89								
15.90	CFS	77.09	75.42	73.83	72.28	70.79	69.38	68.09
66.87								
16.38	CFS	65.72	64.61	63.54	62.52	61.52	60.58	59.70
58.87								
16.86	CFS	58.08	57.30	56.55	55.84	55.17	54.50	53.81
53.11								
17.34	CFS	52.42	51.80	51.23	50.64	50.02	49.39	48.77
48.19								
17.82	CFS	47.63	47.08	46.51	45.97	45.44	44.94	44.43
43.90								
18.30	CFS	43.38	42.89	42.41	41.93	41.48	41.09	40.76
40.45								

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18.78	CFS	40.12	39.80	39.49	39.20	38.89	38.57	38.27
37.98								
19.26	CFS	37.72	37.49	37.27	37.07	36.89	36.70	36.51
36.29								
19.74	CFS	36.06	35.86	35.68	35.47	35.27	35.10	34.97
34.87								
20.22	CFS	34.74	34.58	34.40	34.22	34.02	33.81	33.63
33.51								
20.70	CFS	33.41	33.29	33.15	33.01	32.88	32.74	32.57
32.39								
21.18	CFS	32.22	32.07	31.93	31.81	31.70	31.60	31.49
31.38								
21.66	CFS	31.23	31.06	30.91	30.78	30.65	30.53	30.44
30.33								
22.14	CFS	30.18	30.02	29.86	29.72	29.59	29.48	29.37
29.26								
22.62	CFS	29.14	28.98	28.81	28.67	28.53	28.37	28.20
28.07								
23.10	CFS	27.98	27.90	27.80	27.66	27.51	27.37	27.24
27.09								
23.58	CFS	26.92	26.74	26.61	26.52	26.43	26.31	26.14
26.02								
24.06	CFS	25.92	25.62	24.76	23.27	21.53	19.86	18.41

17.19								
24.54 CFS	16.15	15.23	14.38	13.58	12.83	12.10	11.41	
10.74								
25.02 CFS	10.10	9.48	8.89	8.33	7.79	7.29	6.82	
6.37								
25.50 CFS	5.95	5.56	5.19	4.85	4.54	4.24	3.97	
3.71								
25.98 CFS	3.48	3.24	2.97	2.72	2.49	2.29	2.11	
1.96								
26.46 CFS	1.83	1.72	1.62	1.54	1.46	1.40	1.34	
1.29								
26.94 CFS	1.24	1.20	1.17	1.13	1.10	1.08	1.05	
1.03								
27.42 CFS	1.01	.99	.98	.96	.94	.92	.91	
.89								
27.90 CFS	.88	.87	.86	.85	.84	.83	.82	
.81								
28.38 CFS	.80	.79	.79	.78	.77	.76	.76	
.75								
28.86 CFS	.74	.74	.73	.72	.71	.71	.70	
.69								
29.34 CFS	.69	.68	.67	.67	.66	.65	.65	
.64								
29.82 CFS	.64	.63	.63	.62	.61	.61	.60	
.60								
30.30 CFS	.59							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.27 WATERSHED INCHES; 1269 CFS-HRS; 104.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.14	40.7	(RUNOFF)
17.34	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.51 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.48	414.4	131.70

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.27 WATERSHED INCHES; 1269 CFS-HRS; 104.9 ACRE-FEET.

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OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.53 476.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.21 WATERSHED INCHES; 1633 CFS-HRS; 134.9 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.53 476.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.18 WATERSHED INCHES; 1587 CFS-HRS; 131.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.18 10.3 (RUNOFF)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2							
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .02							
11.76 CFS	.38	.65	1.08	1.75	3.06	5.34	8.82	
10.26								
12.24 CFS	8.86	7.08	5.84	4.90	4.29	3.92	3.44	
2.95								
12.72 CFS	2.63	2.44	2.30	2.18	2.07	1.96	1.84	
1.73								
13.20 CFS	1.64	1.57	1.50	1.43	1.37	1.30	1.23	
1.17								
13.68 CFS	1.12	1.08	1.05	1.03	1.02	1.00	.99	
.97								
14.16 CFS	.95	.93	.91	.90	.89	.87	.85	
.83								
14.64 CFS	.81	.79	.78	.76	.75	.73	.71	
.69								
15.12 CFS	.67	.65	.63	.63	.62	.62	.62	
.62								
15.60 CFS	.62	.61	.60	.59	.60	.59	.59	
.58								
16.08 CFS	.57	.57	.56	.56	.56	.55	.54	
.54								
16.56 CFS	.53	.53	.52	.52	.52	.51	.50	
.50								
17.04 CFS	.50	.50						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .73 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.53	480.6	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.17 WATERSHED INCHES; 1598 CFS-HRS; 132.1 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
 STARTING TIME = .00 RAIN DEPTH = 4.10 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. = 5 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	217.7	(RUNOFF)
20.12	6.2	(RUNOFF)
21.93	5.5	(RUNOFF)
24.02	4.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 258 CFS-HRS; 21.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	97.4	391.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 258 CFS-HRS; 21.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	30.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.67 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-

FEET.

OPERATION RESVOR STRUCTURE 58

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	8.3	430.23
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.64 WATERSHED INCHES;	31 CFS-HRS;	2.6 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	105.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.87 WATERSHED INCHES;	289 CFS-HRS;	23.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	95.7	(RUNOFF)
15.84	3.4	(RUNOFF)
19.47	2.0	(RUNOFF)
24.00	1.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.21 WATERSHED INCHES;	88 CFS-HRS;	7.3 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	147.5	(NULL)
20.01	9.8	(NULL)
24.00	7.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.94 WATERSHED INCHES;	377 CFS-HRS;	31.1 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	87.6	(RUNOFF)
15.83	3.8	(RUNOFF)
21.46	2.0	(RUNOFF)
24.02	1.7	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.70 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	143.4	319.14
24.06	7.3	318.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.94 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	221.6	(NULL)
20.07	12.0	(NULL)
20.61	11.5	(NULL)
23.71	9.1	(NULL)
24.04	9.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.89 WATERSHED INCHES; 465 CFS-HRS; 38.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	77.2	(RUNOFF)
15.82	3.1	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 77 CFS-HRS; 6.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	30.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.99 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-FEET.

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\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.72	8.9	454.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.54 WATERSHED INCHES; 26 CFS-HRS; 2.2 ACRE-FEET.

OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	8.8	414.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.54 WATERSHED INCHES; 26 CFS-HRS; 2.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	77.4	(NULL)
23.08	2.1	(NULL)
23.73	2.0	(NULL)
24.03	2.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.84 WATERSHED INCHES; 103 CFS-HRS; 8.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		
12.18	71.9	(RUNOFF)
17.33	2.0	(RUNOFF)
24.02	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.45 WATERSHED INCHES; 71 CFS-HRS; 5.9 ACRE-FEET.

OPERATION RESVOR STRUCTURE 51

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	34.2	397.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.45 WATERSHED INCHES; 71 CFS-HRS; 5.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	103.2	(NULL)
20.62	4.1	(NULL)
24.02	3.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.04 WATERSHED INCHES; 173 CFS-HRS; 14.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	106.0	(RUNOFF)
15.85	4.1	(RUNOFF)
17.34	3.2	(RUNOFF)
22.46	2.0	(RUNOFF)
24.01	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.87 WATERSHED INCHES; 99 CFS-HRS; 8.1 ACRE-FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	95.7	331.04



20.67 4.0 330.17  
 24.09 3.2 330.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.04 WATERSHED INCHES; 173 CFS-HRS; 14.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 17

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	178.2	(NULL)
20.80	6.3	(NULL)
23.72	5.0	(NULL)
24.01	5.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 272 CFS-HRS; 22.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	396.0	(NULL)
20.07	18.7	(NULL)
20.62	17.9	(NULL)
21.94	16.3	(NULL)
23.72	14.2	(NULL)
24.03	13.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.92 WATERSHED INCHES; 736 CFS-HRS; 60.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	207.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 286 CFS-HRS; 23.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.34	359.2	236.08

24.09 14.0 234.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.92 WATERSHED INCHES; 736 CFS-HRS; 60.9 ACRE-
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.33 569.0 (NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.83 WATERSHED INCHES; 1022 CFS-HRS; 84.5 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.33 569.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.83 WATERSHED INCHES; 1022 CFS-HRS; 84.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.22 25.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.37 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.33 21.0 414.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.37 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-
FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION(FEET)		
12.20	119.0	(RUNOFF)
23.10	2.1	(RUNOFF)
23.75	2.0	(RUNOFF)
24.02	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 124 CFS-HRS; 10.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	86.1	368.74

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 124 CFS-HRS; 10.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	107.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 153 CFS-HRS; 12.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	68.4	(RUNOFF)
24.03	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.35 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	162.5	(NULL)
20.62	4.6	(NULL)
24.02	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.36 WATERSHED INCHES;      223 CFS-HRS;      18.4 ACRE-  
FEET.

OPERATION RESVOR      STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	127.1	338.39
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.36 WATERSHED INCHES;      223 CFS-HRS;      18.4 ACRE- FEET.		

OPERATION RUNOFF      XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	20.0	(RUNOFF)

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.88 WATERSHED INCHES;      15 CFS-HRS;      1.3 ACRE-  
FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%.  
\*\*\*

OPERATION ADDHYD      XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	131.8	(NULL)
23.98	4.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.33 WATERSHED INCHES;      238 CFS-HRS;      19.7 ACRE-  
FEET.

OPERATION RUNOFF      XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	113.0	(RUNOFF)
15.82	3.1	(RUNOFF)
17.32	2.4	(RUNOFF)
23.99	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.79 WATERSHED INCHES;      90 CFS-HRS;      7.4 ACRE-

FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	113.0	(NULL)
15.82	3.1	(NULL)
17.32	2.4	(NULL)
23.99	1.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 90 CFS-HRS; 7.4 ACRE-FEET.

OPERATION REACH XSECTION 30

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	105.9	356.89
15.89	3.1	356.06
17.39	2.4	356.05
24.05	1.4	356.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.80 WATERSHED INCHES; 90 CFS-HRS; 7.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	206.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.55 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	276.5	(NULL)
18.86	8.3	(NULL)
20.87	7.3	(NULL)

23.09 6.1 (NULL)  
 24.04 5.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.60 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.20	68.1	(RUNOFF)
24.03	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.38 WATERSHED INCHES; 73 CFS-HRS; 6.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 34

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.22	343.4	(NULL)
18.63	10.1	(NULL)
20.09	9.3	(NULL)
21.97	8.1	(NULL)
23.09	7.4	(NULL)
24.04	7.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.56 WATERSHED INCHES; 450 CFS-HRS; 37.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 35

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.33	326.6	317.30
20.16	9.3	316.18
22.00	8.1	316.16
23.15	7.4	316.14
24.10	6.9	316.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.56 WATERSHED INCHES; 450 CFS-HRS; 37.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
-----------------	----------------------	------

ELEVATION(FEET)  
12.27 30.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.42 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .047 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.44 23.6 327.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.42 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.33 343.7 (NULL)  
20.16 10.1 (NULL)  
20.68 9.6 (NULL)  
23.15 8.0 (NULL)  
24.10 7.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.55 WATERSHED INCHES; 488 CFS-HRS; 40.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.13 107.3 (RUNOFF)  
15.84 3.7 (RUNOFF)  
20.04 2.1 (RUNOFF)  
20.60 2.0 (RUNOFF)  
20.83 2.0 (RUNOFF)  
24.00 1.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.05 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	390.1	(NULL)
23.99	9.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.46 WATERSHED INCHES; 578 CFS-HRS; 47.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	489.7	(NULL)
23.99	13.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.42 WATERSHED INCHES; 817 CFS-HRS; 67.5 ACRE-  
FEET.

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OPERATION RESVOR STRUCTURE 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.75	270.2	293.51

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.42 WATERSHED INCHES; 816 CFS-HRS; 67.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	36.9	(RUNOFF)
17.34	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.34 WATERSHED INCHES; 36 CFS-HRS; 2.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------



ELEVATION(FEET)  
12.93 5.5 270.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.32 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
13.09 5.5 222.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.32 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.23 60.9 (RUNOFF)  
21.98 2.2 (RUNOFF)  
24.03 1.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.96 WATERSHED INCHES; 75 CFS-HRS; 6.2 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.24 63.5 (NULL)  
20.62 3.8 (NULL)  
24.03 2.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.18 WATERSHED INCHES; 110 CFS-HRS; 9.1 ACRE-  
FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.88 268.0 224.56

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.42 WATERSHED INCHES; 816 CFS-HRS; 67.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.84	290.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.15 WATERSHED INCHES;	926 CFS-HRS;	76.5 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.13	275.2	219.75
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.15 WATERSHED INCHES;	926 CFS-HRS;	76.5 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	285.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.14 WATERSHED INCHES;	389 CFS-HRS;	32.1 ACRE-
FEET.		

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OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	43.5	(RUNOFF)
17.34	1.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.59 WATERSHED INCHES;	41 CFS-HRS;	3.4 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	21.9	335.09
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		

2.59 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.50 20.8 316.68

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.58 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.32 303.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.17 WATERSHED INCHES; 430 CFS-HRS; 35.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.18 31.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.22 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-  
FEET.

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\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.41 14.9 321.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.69 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	315.4	277.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.14 WATERSHED INCHES; 454 CFS-HRS; 37.5 ACRE-FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	287.9	277.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.14 WATERSHED INCHES; 454 CFS-HRS; 37.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	103.1	(RUNOFF)
20.11	4.2	(RUNOFF)
20.66	4.0	(RUNOFF)
24.02	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .95 WATERSHED INCHES; 127 CFS-HRS; 10.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 54

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	350.5	(NULL)
23.99	11.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.68 WATERSHED INCHES; 581 CFS-HRS; 48.0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.08	136.9	263.85

		HYDROGRAPH POINTS FOR			ALTERNATE = 1,	STORM = 5	
HRS	MAIN	TIME	INCREMENT =	.060	hr,	DRAINAGE	AREA =
SQ.MI.							.54
7.26	CFS	.00	.01	.01	.01	.01	.02
.02							
7.74	CFS	.03	.03	.03	.04	.04	.05
.06							
8.22	CFS	.06	.07	.08	.09	.10	.11
.14							
8.70	CFS	.17	.19	.22	.26	.30	.34
.44							
9.18	CFS	.50	.56	.62	.69	.76	.84
1.02							
9.66	CFS	1.12	1.22	1.33	1.45	1.57	1.71
2.00							
10.14	CFS	2.16	2.32	2.50	2.68	2.88	3.08
3.51							
10.62	CFS	3.75	3.99	4.24	4.51	4.80	5.11
5.82							
11.10	CFS	6.22	6.66	7.14	7.67	8.26	8.90
10.40							
11.58	CFS	11.28	12.27	13.43	14.81	16.50	18.61
24.92							
12.06	CFS	30	36	46	57	69	82
105							
12.54	CFS	114	122	127	130	132	134
136							
13.02	CFS	137	137	137	136	136	135
133							
13.50	CFS	132	131	129	128	127	125
120							
13.98	CFS	117	115	112	110	108	105
101							
14.46	CFS	98.00	95.31	92.70	90.18	87.73	85.35
80.82							
14.94	CFS	78.66	76.56	74.48	72.36	70.30	68.30
64.50							
15.42	CFS	62.69	60.95	59.27	57.65	56.10	54.61
51.81							
15.90	CFS	50.50	49.18	47.88	46.64	45.45	44.32
42.20							
16.38	CFS	41.20	40.25	39.34	38.47	37.62	36.82
35.30							
16.86	CFS	34.58	33.89	33.23	32.59	31.98	31.39
30.27							
17.34	CFS	29.74	29.22	28.72	28.24	27.77	27.31
26.42							
17.82	CFS	26.00	25.59	25.18	24.77	24.36	23.96
23.19							
18.30	CFS	22.83	22.47	22.12	21.78	21.46	21.14
20.55							
18.78	CFS	20.28	20.01	19.76	19.53	19.30	19.08
18.66							
19.26	CFS	18.47	18.28	18.10	17.93	17.77	17.61
17.32							
19.74	CFS	17.18	17.05	16.92	16.79	16.67	16.55
16.33							
20.22	CFS	16.23	16.13	16.03	15.93	15.84	15.74
15.55							
20.70	CFS	15.47	15.38	15.30	15.21	15.13	15.06
14.90							
21.18	CFS	14.82	14.75	14.67	14.60	14.53	14.46
14.32							
21.66	CFS	14.26	14.19	14.13	14.06	14.00	13.94

13.81								
22.14	CFS	13.75	13.69	13.63	13.57	13.51	13.45	13.39
13.33								
22.62	CFS	13.27	13.21	13.15	13.09	13.03	12.97	12.90
12.84								
23.10	CFS	12.78	12.72	12.66	12.60	12.55	12.49	12.43
12.37								
23.58	CFS	12.31	12.25	12.19	12.13	12.08	12.02	11.96
11.90								

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24.06	CFS	11.84	11.78	11.67	11.51	11.29	11.02	10.70
10.33								
24.54	CFS	9.94	9.52	9.10	8.67	8.24	7.82	7.42
7.02								
25.02	CFS	6.65	6.29	5.95	5.63	5.32	5.03	4.75
4.49								
25.50	CFS	4.25	4.02	3.80	3.59	3.40	3.22	3.04
2.88								
25.98	CFS	2.73	2.59	2.45	2.32	2.20	2.09	1.99
1.89								
26.46	CFS	1.79	1.70	1.62	1.54	1.47	1.40	1.33
1.27								
26.94	CFS	1.21	1.16	1.11	1.06	1.02	.97	.93
.89								
27.42	CFS	.86	.83	.79	.76	.74	.71	.69
.66								
27.90	CFS	.64	.62	.60	.58	.56	.55	.53
.52								
28.38	CFS	.50	.49	.48	.47	.46	.45	.44
.43								
28.86	CFS	.42	.41	.41	.40	.39	.39	.38
.37								
29.34	CFS	.37	.36	.36	.36	.35	.35	.34
.34								
29.82	CFS	.34	.33	.33	.33	.33	.32	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.68 WATERSHED INCHES; 581 CFS-HRS; 48.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	693.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.97 WATERSHED INCHES; 1948 CFS-HRS; 160.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
 12.14 13.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.11 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.37 698.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 1959 CFS-HRS; 161.9 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 6, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .006 HOURS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 6

1

TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.38 698.8 144.77

HRS	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5							
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55 SQ.MI.							
6.06 CFS	.00	.01	.01	.01	.02	.02	.03	.04
6.54 CFS	.04	.05	.06	.07	.07	.08	.09	.11
7.02 CFS	.12	.13	.15	.16	.18	.21	.23	.26
7.50 CFS	.30	.34	.38	.42	.48	.53	.59	.66
7.98 CFS	.73	.81	.90	1.00	1.11	1.22	1.34	1.47
8.46 CFS	1.61	1.75	1.90	2.05	2.21	2.38	2.55	2.73
8.94 CFS	2.92	3.12	3.32	3.54	3.77	4.02	4.29	4.58
9.42 CFS	4.90	5.24	5.60	5.99	6.40	6.84	7.31	7.83
9.90 CFS	8.38	8.98	9.64	10.35	11.14	12.00	12.92	13.91
10.38 CFS	14.94	16.02	17.16	18.37	19.65	21.05	22.59	24.29
10.86 CFS	26.19	28.28	30.57	33.05	35.75	38.76	42.16	46.03

11.34 CFS	50	55	61	67	73	82	93
107							
11.82 CFS	124	145	173	212	269	360	472
589							
12.30 CFS	670	697	689	665	640	619	605
592							
12.78 CFS	579	566	555	544	533	522	510
497							
13.26 CFS	484	470	457	444	430	417	403
389							
13.74 CFS	376	363	349	337	324	313	302
292							
14.22 CFS	282	272	262	253	244	236	228
220							
14.70 CFS	212	204	197	189	183	176	170
164							
15.18 CFS	159	153	148	144	139	135	131
128							
15.66 CFS	124	121	118	115	112	109	107
105							
16.14 CFS	102	100	98	96	95	93	91
90							
16.62 CFS	88.30	86.87	85.54	84.30	83.11	81.94	80.81
79.75							
17.10 CFS	78.75	77.76	76.73	75.68	74.66	73.74	72.89
72.03							
17.58 CFS	71.11	70.16	69.25	68.40	67.59	66.78	65.96
65.16							
18.06 CFS	64.41	63.68	62.93	62.17	61.42	60.71	60.03
59.35							
18.54 CFS	58.69	58.13	57.67	57.23	56.77	56.30	55.87
55.46							
19.02 CFS	55.02	54.57	54.13	53.72	53.35	53.02	52.71
52.43							
19.50 CFS	52.17	51.91	51.63	51.32	50.99	50.70	50.43
50.14							
19.98 CFS	49.85	49.61	49.44	49.29	49.10	48.87	48.62
48.35							
20.46 CFS	48.06	47.75	47.49	47.33	47.19	47.02	46.82
46.62							
20.94 CFS	46.44	46.23	45.98	45.72	45.48	45.26	45.07
44.89							
21.42 CFS	44.74	44.59	44.44	44.28	44.06	43.82	43.60
43.41							
21.90 CFS	43.23	43.06	42.92	42.77	42.56	42.33	42.10
41.89							
22.38 CFS	41.71	41.55	41.40	41.25	41.07	40.84	40.59
40.38							
22.86 CFS	40.18	39.95	39.72	39.53	39.41	39.31	39.15
38.95							
23.34 CFS	38.74	38.54	38.35	38.14	37.89	37.63	37.44
37.32							
23.82 CFS	37.20	37.02	36.79	36.60	36.44	35.99	34.73
32.52							
24.30 CFS	29.94	27.51	25.42	23.70	22.23	20.92	19.72
18.59							
24.78 CFS	17.53	16.52	15.55	14.63	13.74	12.89	12.08
11.31							
25.26 CFS	10.58	9.88	9.23	8.62	8.05	7.51	7.01
6.54							
25.74 CFS	6.10	5.70	5.32	4.97	4.65	4.35	4.08
3.80							
26.22 CFS	3.50	3.21	2.95	2.72	2.52	2.34	2.19
2.06							



26.70 CFS	1.94	1.84	1.75	1.67	1.61	1.55	1.49
1.44							
27.18 CFS	1.40	1.36	1.33	1.29	1.26	1.24	1.21
1.19							

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TR20 ----- SCS

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27.66 CFS	1.17	1.15	1.13	1.11	1.09	1.07	1.05
1.04							
28.14 CFS	1.02	1.01	1.00	.98	.97	.96	.95
.94							
28.62 CFS	.93	.92	.91	.90	.89	.88	.87
.86							
29.10 CFS	.85						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 1959 CFS-HRS; 161.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	60.8	(RUNOFF)
15.45	2.1	(RUNOFF)
15.84	2.0	(RUNOFF)
21.45	1.0	(RUNOFF)
21.73	1.0	(RUNOFF)
21.94	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.27 WATERSHED INCHES; 52 CFS-HRS; 4.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.45	695.1	132.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 1959 CFS-HRS; 161.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.48	794.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.89 WATERSHED INCHES; 2540 CFS-HRS; 209.9 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	794.5	(NULL)

1  
 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.84 WATERSHED INCHES; 2478 CFS-HRS; 204.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	19.3	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .02  
 SQ.MI.

HRS	11.40	11.88	12.36	12.84	13.32	13.80	14.28	14.76	15.24	15.72	16.20	16.68	17.16	17.64	18.12
CFS	.43	3.37	10.21	3.78	2.42	1.68	1.45	1.22	1.00	.93	.88	.82	.75	.68	.62
	.53	4.70	8.43	3.57	2.31	1.65	1.43	1.20	.98	.93	.88	.81	.74	.68	.61
	.65	7.22	7.28	3.38	2.20	1.62	1.40	1.17	.98	.93	.87	.80	.73	.67	.61
	.86	11.32	6.58	3.19	2.08	1.60	1.38	1.14	.98	.93	.86	.79	.73	.66	.61
	1.17	17.19	5.75	3.00	1.97	1.58	1.35	1.11	.98	.92	.85	.78	.73	.65	.60
	1.50	19.30	4.89	2.81	1.87	1.55	1.31	1.09	.97	.90	.84	.78	.72	.64	.59
	1.88	16.24	4.35	2.66	1.79	1.52	1.28	1.05	.97	.89	.83	.78	.70	.64	.59

.59							
18.60 CFS	.60	.60	.59	.59	.59	.59	.58
.58							
19.08 CFS	.57	.57	.57	.57	.57	.57	.57
.57							
19.56 CFS	.57	.56	.55	.56	.56	.55	.54
.55							
20.04 CFS	.56	.56	.55	.54	.54	.54	.53
.52							
20.52 CFS	.52	.53	.54	.53	.52	.52	.53
.52							
21.00 CFS	.51	.51	.51	.51	.50	.51	.51
.51							
21.48 CFS	.51	.50	.49				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.27 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	801.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.83 WATERSHED INCHES; 2498 CFS-HRS; 206.4 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

1

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 2.04TEST  
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EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
 STARTING TIME = .00 RAIN DEPTH = 4.91 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =10 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	295.0	(RUNOFF)
18.67	8.6	(RUNOFF)
20.67	7.5	(RUNOFF)
23.12	6.3	(RUNOFF)
24.01	5.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.56 WATERSHED INCHES; 347 CFS-HRS; 28.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	128.4	392.86
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.56 WATERSHED INCHES;	347 CFS-HRS;	28.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	42.1	(RUNOFF)
20.09	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.29 WATERSHED INCHES;	43 CFS-HRS;	3.6 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	16.1	430.98
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.25 WATERSHED INCHES;	42 CFS-HRS;	3.5 ACRE-
FEET.		

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.59	144.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.52 WATERSHED INCHES;	390 CFS-HRS;	32.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	125.5	(RUNOFF)
15.84	4.3	(RUNOFF)
17.34	3.3	(RUNOFF)
21.95	2.2	(RUNOFF)

24.00 1.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.91 WATERSHED INCHES; 116 CFS-HRS; 9.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.19 198.7 (NULL)
20.01 12.2 (NULL)
24.00 9.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.60 WATERSHED INCHES; 505 CFS-HRS; 41.8 ACRE-
FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.18 121.4 (RUNOFF)
15.83 4.9 (RUNOFF)
18.87 3.1 (RUNOFF)
24.02 2.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.33 WATERSHED INCHES; 120 CFS-HRS; 9.9 ACRE-
FEET.

OPERATION REACH XSECTION 7

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas
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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.26 194.8 319.34
24.06 9.1 318.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.60 WATERSHED INCHES; 505 CFS-HRS; 41.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.23 302.2 (NULL)
20.08 15.1 (NULL)
20.62 14.5 (NULL)
23.08 12.1 (NULL)

24.03 11.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.55 WATERSHED INCHES; 626 CFS-HRS; 51.7 ACRE-
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.18 103.4 (RUNOFF)
21.97 2.0 (RUNOFF)
24.02 1.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.64 WATERSHED INCHES; 103 CFS-HRS; 8.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.23 40.4 (RUNOFF)
18.66 1.1 (RUNOFF)
20.12 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.67 WATERSHED INCHES; 45 CFS-HRS; 3.8 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 52

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas
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2.04TEST
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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.60 15.5 455.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.20 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-
FEET.

OPERATION REACH XSECTION 11

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)

12.69 15.4 414.37

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.20 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 12

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows: 12.19, 20.86, 24.01 with corresponding discharge values and NULL peak values.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.51 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-
FEET.

OPERATION RUNOFF XSECTION 13

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows: 12.18, 15.84, 17.32, 18.64, 24.01 with corresponding discharge values and (RUNOFF) peak values.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.18 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 51

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Row: 12.38 with discharge 45.7 and peak 398.37.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.18 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-
FEET.

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas
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2.04TEST

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OPERATION ADDHYD XSECTION 14

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows: 12.20, 20.62, 23.07, 23.71 with corresponding discharge values and NULL peak values.

24.01 3.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.73 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 15

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include times 12.16, 15.84, 17.34, 19.75, 20.06, 24.01 and corresponding discharge values.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.53 WATERSHED INCHES; 133 CFS-HRS; 11.0 ACRE-
FEET.

OPERATION REACH XSECTION 16

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include times 12.30, 20.68, 23.77, 24.08 and corresponding discharge and peak values.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.73 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 17

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include times 12.20, 20.06, 20.62, 21.94, 24.01 and corresponding discharge values.

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2.04TEST
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.65 WATERSHED INCHES; 365 CFS-HRS; 30.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 18



PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	540.4	(NULL)
20.07	23.5	(NULL)
20.62	22.5	(NULL)
21.94	20.5	(NULL)
23.07	18.8	(NULL)
24.02	17.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.58 WATERSHED INCHES; 990 CFS-HRS; 81.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	289.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.26 WATERSHED INCHES; 393 CFS-HRS; 32.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.34	485.3	236.59
24.08	17.5	234.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.58 WATERSHED INCHES; 990 CFS-HRS; 81.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	777.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.48 WATERSHED INCHES; 1383 CFS-HRS; 114.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 10

1  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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 2.04TEST  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	777.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.48 WATERSHED INCHES; 1383 CFS-HRS; 114.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.22	32.9	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	27.2	414.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.20	154.3	(RUNOFF)
20.87	3.1	(RUNOFF)
24.03	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 162 CFS-HRS; 13.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	122.8	369.12

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 162 CFS-HRS; 13.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 24

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
12.31 149.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.09 WATERSHED INCHES; 199 CFS-HRS; 16.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.19 89.1 (RUNOFF)  
18.87 2.0 (RUNOFF)  
24.02 1.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.07 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.26 223.0 (NULL)  
20.08 6.0 (NULL)  
20.61 5.8 (NULL)  
24.01 4.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.08 WATERSHED INCHES; 291 CFS-HRS; 24.0 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.39 184.8 338.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.08 WATERSHED INCHES; 291 CFS-HRS; 24.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.12 26.6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.54 WATERSHED INCHES; 21 CFS-HRS; 1.7 ACRE-  
FEET.

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\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -1.0%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	192.2	(NULL)
23.98	4.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.04 WATERSHED INCHES; 311 CFS-HRS; 25.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	141.9	(RUNOFF)
15.82	3.8	(RUNOFF)
20.02	2.2	(RUNOFF)
20.58	2.1	(RUNOFF)
20.82	2.1	(RUNOFF)
23.99	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.56 WATERSHED INCHES; 115 CFS-HRS; 9.5 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .3%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	141.9	(NULL)
15.82	3.8	(NULL)
20.02	2.2	(NULL)
20.58	2.1	(NULL)
20.82	2.1	(NULL)
23.99	1.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.56 WATERSHED INCHES; 115 CFS-HRS; 9.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	134.5	357.02
15.89	3.8	356.08
20.09	2.2	356.05
20.65	2.1	356.04
20.88	2.0	356.04
24.05	1.8	356.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.54 WATERSHED INCHES; 114 CFS-HRS; 9.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	264.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.28 WATERSHED INCHES; 370 CFS-HRS; 30.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	351.7	(NULL)
18.86	10.2	(NULL)
20.62	9.1	(NULL)
21.97	8.3	(NULL)
23.74	7.1	(NULL)
24.04	7.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.34 WATERSHED INCHES; 484 CFS-HRS; 40.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	88.5	(RUNOFF)
18.65	2.1	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.10 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 34

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.21	439.0	(NULL)
18.86	12.3	(NULL)
20.09	11.4	(NULL)
21.75	10.1	(NULL)
23.09	9.1	(NULL)
24.04	8.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.30 WATERSHED INCHES; 579 CFS-HRS; 47.9 ACRE-FEET.

OPERATION REACH XSECTION 35

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.32	419.8	317.47
20.16	11.4	316.22
20.91	10.8	316.21
23.15	9.1	316.18
24.10	8.5	316.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.30 WATERSHED INCHES; 579 CFS-HRS; 47.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.27	38.8	(RUNOFF)
20.14	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 49 CFS-HRS; 4.1 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .047 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.39	33.7	327.87
20.15	1.0	323.04

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.14 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	452.2	(NULL)
20.16	12.4	(NULL)
20.91	11.7	(NULL)
22.01	10.8	(NULL)
24.10	9.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.29 WATERSHED INCHES; 629 CFS-HRS; 52.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.13	142.5	(RUNOFF)
15.84	4.6	(RUNOFF)
17.34	3.6	(RUNOFF)
23.04	2.2	(RUNOFF)
23.70	2.0	(RUNOFF)
24.00	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.74 WATERSHED INCHES; 121 CFS-HRS; 10.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	511.7	(NULL)
23.99	11.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.18 WATERSHED INCHES; 750 CFS-HRS; 61.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	708.9	(NULL)
23.99	16.2	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 1061 CFS-HRS; 87.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	343.7	296.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 1060 CFS-HRS; 87.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	47.7	(RUNOFF)
18.86	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.89	7.2	271.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.04	7.2	222.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		



12.23	96.2	(RUNOFF)
21.46	3.0	(RUNOFF)
24.02	2.5	(RUNOFF)

1

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.43 WATERSHED INCHES; 112 CFS-HRS; 9.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	99.7	(NULL)
20.07	5.3	(NULL)
20.62	5.0	(NULL)
24.02	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.69 WATERSHED INCHES; 158 CFS-HRS; 13.1 ACRE-  
FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.87	340.2	225.01

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.14 WATERSHED INCHES; 1060 CFS-HRS; 87.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.83	371.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.82 WATERSHED INCHES; 1218 CFS-HRS; 100.7 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.09	353.9	220.66

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.82 WATERSHED INCHES; 1218 CFS-HRS; 100.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	378.6	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 515 CFS-HRS; 42.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	55.0	(RUNOFF)
20.07	1.1	(RUNOFF)
20.63	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.32 WATERSHED INCHES; 53 CFS-HRS; 4.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	35.5	336.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.32 WATERSHED INCHES; 53 CFS-HRS; 4.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	30.8	316.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.32 WATERSHED INCHES; 53 CFS-HRS; 4.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	404.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.87 WATERSHED INCHES; 568 CFS-HRS; 47.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.18	40.9	

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.92 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	27.6	321.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 33 CFS-HRS; 2.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	432.2	277.62

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 601 CFS-HRS; 49.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	397.7	277.54

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 601 CFS-HRS; 49.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.22	163.6	(RUNOFF)
18.87	6.1	(RUNOFF)
21.98	5.0	(RUNOFF)
24.03	4.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.42 WATERSHED INCHES; 191 CFS-HRS; 15.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 54

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.41	497.3	(NULL)
24.01	14.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.29 WATERSHED INCHES; 792 CFS-HRS; 65.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
13.10	168.1	266.78

HRS	MAIN	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10					
SQ.MI.	TIME	INCREMENT = .060 hr, DRAINAGE AREA = .54					
6.36 CFS	.00	.01	.01	.01	.01	.02	.02
.02							
6.84 CFS	.03	.03	.03	.04	.04	.05	.05
.06							
7.32 CFS	.06	.07	.08	.09	.10	.11	.12
.14							
7.80 CFS	.17	.19	.23	.26	.30	.35	.40
.45							
8.28 CFS	.51	.58	.64	.72	.79	.87	.96
1.05							
8.76 CFS	1.14	1.23	1.33	1.44	1.54	1.65	1.77
1.89							
9.24 CFS	2.01	2.13	2.26	2.40	2.54	2.69	2.85
3.02							
9.72 CFS	3.20	3.39	3.58	3.79	4.01	4.24	4.48
4.73							
10.20 CFS	4.99	5.26	5.55	5.85	6.16	6.48	6.81
7.16							

10.68 CFS	7.52	7.89	8.29	8.71	9.17	9.66	10.20
10.79							
11.16 CFS	11.43	12.14	12.94	13.83	14.85	16.00	17.31
18.79							
11.64 CFS	20.50	22.49	24.84	27.48	30.72	34.80	40.12
47.42							
12.12 CFS	57	70	85	102	116	128	136
144							
12.60 CFS	150	155	159	162	164	166	167
168							
13.08 CFS	168	168	168	167	166	166	164
163							
13.56 CFS	162	161	159	158	156	154	153
151							
14.04 CFS	149	147	145	144	142	140	138
136							
14.52 CFS	134	132	130	129	127	125	122
119							
15.00 CFS	116	114	111	108	106	103	101
98							
15.48 CFS	94.80	92.02	89.34	86.77	84.30	81.93	79.65
77.47							
15.96 CFS	75.37	73.24	71.17	69.19	67.30	65.49	63.75
62.09							
16.44 CFS	60.50	58.97	57.50	56.09	54.74	53.44	52.20
51.00							
16.92 CFS	49.84	48.65	47.51	46.42	45.38	44.37	43.40
42.47							
17.40 CFS	41.58	40.72	39.89	39.09	38.31	37.56	36.84
36.13							
17.88 CFS	35.45	34.79	34.16	33.54	32.94	32.36	31.80
31.25							
18.36 CFS	30.72	30.21	29.71	29.22	28.76	28.31	27.89
27.48							
18.84 CFS	27.09	26.72	26.36	26.02	25.69	25.37	25.07
24.76							
19.32 CFS	24.46	24.17	23.90	23.64	23.40	23.16	22.93
22.72							
19.80 CFS	22.51	22.31	22.11	21.92	21.73	21.56	21.40
21.24							
20.28 CFS	21.08	20.94	20.79	20.65	20.50	20.37	20.23
20.10							
20.76 CFS	19.98	19.85	19.73	19.62	19.51	19.40	19.29
19.18							
21.24 CFS	19.07	18.96	18.86	18.76	18.66	18.57	18.48
18.38							
21.72 CFS	18.29	18.20	18.12	18.03	17.94	17.86	17.78
17.69							
22.20 CFS	17.61	17.53	17.44	17.36	17.28	17.20	17.12
17.04							
22.68 CFS	16.96	16.88	16.80	16.72	16.64	16.55	16.47
16.39							

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23.16 CFS	16.31	16.24	16.16	16.09	16.01	15.94	15.86
15.78							

23.64 CFS	15.70	15.62	15.55	15.47	15.39	15.31	15.24
15.17							
24.12 CFS	15.08	14.94	14.73	14.44	14.08	13.65	13.17
12.65							
24.60 CFS	12.10	11.54	10.98	10.43	9.89	9.37	8.86
8.38							
25.08 CFS	7.92	7.49	7.07	6.68	6.31	5.96	5.63
5.32							
25.56 CFS	5.02	4.75	4.49	4.24	4.01	3.79	3.58
3.39							
26.04 CFS	3.21	3.03	2.87	2.72	2.58	2.44	2.32
2.20							
26.52 CFS	2.08	1.98	1.88	1.79	1.70	1.62	1.54
1.46							
27.00 CFS	1.39	1.33	1.27	1.21	1.16	1.11	1.06
1.01							
27.48 CFS	.97	.93	.89	.86	.82	.79	.76
.73							
27.96 CFS	.71	.68	.66	.64	.62	.60	.58
.56							
28.44 CFS	.55	.53	.52	.50	.49	.48	.47
.46							
28.92 CFS	.45	.44	.43	.42	.41	.40	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.28 WATERSHED INCHES; 792 CFS-HRS; 65.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	955.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.63 WATERSHED INCHES; 2600 CFS-HRS; 214.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	20.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.62 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	963.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.62 WATERSHED INCHES; 2617 CFS-HRS; 216.3 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 6, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .006 HOURS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 6

1

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PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET)  
 12.38 965.0 146.47

HRS	MAIN	TIME	INCREMENT	FOR	ALTERNATE = 1,	STORM =10		
SQ.MI.			= .060 hr,		DRAINAGE	AREA =		
5.28 CFS	.00	.01	.01	.02	.02	.03	.04	
.04								
5.76 CFS	.05	.06	.07	.08	.09	.10	.11	
.13								
6.24 CFS	.14	.16	.18	.20	.22	.24	.28	
.32								
6.72 CFS	.36	.40	.45	.50	.56	.62	.69	
.77								
7.20 CFS	.85	.95	1.06	1.17	1.29	1.42	1.56	
1.70								
7.68 CFS	1.85	2.01	2.18	2.35	2.53	2.71	2.91	
3.12								
8.16 CFS	3.34	3.57	3.81	4.07	4.35	4.64	4.95	
5.28								
8.64 CFS	5.62	5.97	6.35	6.74	7.13	7.54	7.96	
8.41								
9.12 CFS	8.89	9.40	9.95	10.54	11.19	11.89	12.65	
13.45								
9.60 CFS	14.29	15.18	16.13	17.14	18.21	19.33	20.50	
21.70								
10.08 CFS	22.97	24.31	25.72	27.20	28.72	30.28	31.90	
33.59								
10.56 CFS	35.36	37.26	39.33	41.63	44.21	47.09	50.26	
53.72								
11.04 CFS	57.46	61.51	66.00	71.09	76.87	83.36	90.56	
98.46								
11.52 CFS	107	117	130	146	166	191	218	
257								
12.00 CFS	312	394	509	667	823	923	963	
951								
12.48 CFS	920	885	854	828	803	778	757	
738								
12.96 CFS	720	703	686	668	649	631	612	
593								
13.44 CFS	574	556	537	519	501	484	467	
451								
13.92 CFS	436	422	408	395	381	369	356	
343								
14.40 CFS	330	318	308	298	288	278	268	
259								
14.88 CFS	250	242	233	225	217	210	202	
194								
15.36 CFS	188	181	175	170	166	161	157	

153								
15.84	CFS	149	145	142	139	135	132	129
127								
16.32	CFS	124	122	119	117	115	113	111
109								
16.80	CFS	108	106	104	103	102	100	99
98								
17.28	CFS	96.16	94.83	93.63	92.52	91.40	90.21	88.99
87.81								
17.76	CFS	86.71	85.67	84.62	83.57	82.55	81.57	80.64
79.68								
18.24	CFS	78.70	77.75	76.84	75.96	75.09	74.26	73.54
72.94								
18.72	CFS	72.37	71.79	71.19	70.63	70.10	69.55	68.97
68.40								
19.20	CFS	67.88	67.41	66.99	66.60	66.24	65.90	65.57
65.21								
19.68	CFS	64.81	64.40	64.03	63.69	63.32	62.94	62.63
62.41								
20.16	CFS	62.23	61.99	61.69	61.37	61.03	60.66	60.27
59.95								
20.64	CFS	59.73	59.55	59.33	59.08	58.82	58.59	58.33
58.01								
21.12	CFS	57.68	57.37	57.09	56.85	56.63	56.43	56.24
56.06								
21.60	CFS	55.84	55.58	55.27	54.98	54.74	54.51	54.30
54.12								
22.08	CFS	53.93	53.67	53.37	53.08	52.82	52.58	52.38
52.19								
22.56	CFS	52.00	51.76	51.48	51.16	50.89	50.64	50.35
50.05								
23.04	CFS	49.82	49.66	49.53	49.34	49.08	48.82	48.56
48.32								
23.52	CFS	48.05	47.73	47.41	47.17	47.02	46.86	46.63
46.34								
24.00	CFS	46.10	45.89	45.31	43.72	40.94	37.68	34.59
31.92								
24.48	CFS	29.72	27.84	26.18	24.65	23.22	21.87	20.58
19.35								
24.96	CFS	18.17	17.06	15.99	14.97	14.01	13.10	12.23
11.42								
25.44	CFS	10.66	9.94	9.27	8.64	8.06	7.51	7.01
6.54								
25.92	CFS	6.10	5.70	5.33	4.99	4.68	4.36	4.02
3.69								
26.40	CFS	3.40	3.14	2.90	2.70	2.52	2.37	2.24
2.12								

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26.88	CFS	2.02	1.93	1.85	1.78	1.72	1.66	1.61
1.56								
27.36	CFS	1.52	1.49	1.45	1.42	1.39	1.36	1.34
1.31								
27.84	CFS	1.29	1.27	1.25	1.23	1.20	1.18	1.16
1.15								
28.32	CFS	1.13	1.12	1.10				



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.62 WATERSHED INCHES; 2617 CFS-HRS; 216.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	79.3	(RUNOFF)
15.84	2.5	(RUNOFF)
24.00	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.97 WATERSHED INCHES; 68 CFS-HRS; 5.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	961.3	133.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.62 WATERSHED INCHES; 2617 CFS-HRS; 216.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	1089.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.53 WATERSHED INCHES; 3409 CFS-HRS; 281.7 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	1089.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.48 WATERSHED INCHES; 3334 CFS-HRS; 275.5 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	28.5	(RUNOFF)
15.85	1.2	(RUNOFF)

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10						
	MAIN TIME INCREMENT = .060 hr,			DRAINAGE AREA = .02			
HRS							
SQ.MI.							
11.04 CFS	.46	.54	.63	.74	.87	1.00	1.16
1.32							
11.52 CFS	1.51	1.86	2.40	2.93	3.52	4.44	5.80
7.84							
12.00 CFS	11.52	17.35	25.60	28.42	23.54	18.10	14.47
11.86							
12.48 CFS	10.16	9.15	7.96	6.75	5.99	5.52	5.18
4.89							
12.96 CFS	4.63	4.36	4.09	3.83	3.62	3.45	3.29
3.14							
13.44 CFS	2.98	2.83	2.68	2.53	2.42	2.34	2.28
2.23							
13.92 CFS	2.19	2.16	2.13	2.09	2.05	2.00	1.95
1.92							
14.40 CFS	1.89	1.86	1.82	1.77	1.72	1.68	1.64
1.61							
14.88 CFS	1.58	1.53	1.49	1.46	1.41	1.37	1.34
1.32							
15.36 CFS	1.31	1.31	1.31	1.31	1.29	1.27	1.25
1.24							
15.84 CFS	1.25	1.24	1.23	1.21	1.19	1.18	1.18
1.17							
16.32 CFS	1.16	1.14	1.13	1.12	1.10	1.09	1.09
1.08							
16.80 CFS	1.07	1.05	1.05	1.04	1.04	1.03	1.00
.98							
17.28 CFS	.97	.98	.97	.95	.93	.91	.90
.90							
17.76 CFS	.89	.88	.86	.86	.85	.85	.83
.82							
18.24 CFS	.81	.80	.80	.78	.78	.79	.80
.80							
18.72 CFS	.78	.78	.79	.78	.77	.76	.76
.76							
19.20 CFS	.76	.76	.76	.76	.76	.76	.75
.74							
19.68 CFS	.73	.74	.74	.73	.72	.72	.74
.74							
20.16 CFS	.73	.72	.72	.71	.70	.69	.69
.70							
20.64 CFS	.71	.70	.69	.69	.70	.68	.67
.67							
21.12 CFS	.67	.67	.67	.67	.67	.67	.67
.67							
21.60 CFS	.65	.64	.65	.65	.64	.64	.65
.64							
22.08 CFS	.63	.62	.62	.62	.62	.62	.62
.62							
22.56 CFS	.62	.60	.59	.60	.60	.58	.58
.58							
23.04 CFS	.60	.60	.58	.58	.57	.57	.57
.57							

23.52 CFS	.55	.54	.55	.56	.56	.55	.53
.53							
24.00 CFS	.57	.55	.37				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.82 WATERSHED INCHES; 27 CFS-HRS; 2.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	1100.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.47 WATERSHED INCHES; 3361 CFS-HRS; 277.7 ACRE-  
 FEET.

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EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
 STARTING TIME = .00 RAIN DEPTH = 6.14 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =25 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	415.5	(RUNOFF)
18.67	11.3	(RUNOFF)
20.12	10.4	(RUNOFF)
20.67	10.0	(RUNOFF)
23.12	8.3	(RUNOFF)
24.02	7.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.62 WATERSHED INCHES; 490 CFS-HRS; 40.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	288.0	394.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.62 WATERSHED INCHES; 491 CFS-HRS; 40.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	61.0	(RUNOFF)
24.03	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.30 WATERSHED INCHES; 62 CFS-HRS; 5.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 58

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	42.7	431.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.24 WATERSHED INCHES; 61 CFS-HRS; 5.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.42	322.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.57 WATERSHED INCHES; 552 CFS-HRS; 45.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	171.7	(RUNOFF)
15.84	5.6	(RUNOFF)
17.34	4.3	(RUNOFF)
20.06	3.2	(RUNOFF)
20.62	3.1	(RUNOFF)
20.85	3.0	(RUNOFF)
24.01	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.02 WATERSHED INCHES; 160 CFS-HRS; 13.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	288.4	(NULL)
12.40	382.9	(NULL)
20.02	15.9	(NULL)
23.02	12.8	(NULL)
24.00	11.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.66 WATERSHED INCHES; 711 CFS-HRS; 58.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 6

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	174.8	(RUNOFF)
15.83	6.7	(RUNOFF)
17.32	5.2	(RUNOFF)
18.86	4.1	(RUNOFF)
23.09	3.1	(RUNOFF)
24.02	2.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.35 WATERSHED INCHES; 173 CFS-HRS; 14.3 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	285.9	319.69
12.47	380.0	320.04
20.07	15.9	318.31
23.08	12.8	318.28
24.06	11.9	318.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.66 WATERSHED INCHES; 711 CFS-HRS; 58.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	439.6	(NULL)
12.45	451.8	(NULL)
20.08	19.8	(NULL)
20.62	19.0	(NULL)
21.93	17.3	(NULL)

23.08	15.9	(NULL)
23.72	15.0	(NULL)
24.04	14.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.59 WATERSHED INCHES; 883 CFS-HRS; 73.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	144.1	(RUNOFF)
15.81	5.3	(RUNOFF)
19.76	3.1	(RUNOFF)
20.09	3.0	(RUNOFF)
24.02	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.71 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	56.2	(RUNOFF)
23.11	1.1	(RUNOFF)
23.76	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.74 WATERSHED INCHES; 64 CFS-HRS; 5.3 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE

STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	32.3	455.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.25 WATERSHED INCHES; 55 CFS-HRS; 4.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	31.9	414.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.25 WATERSHED INCHES; 55 CFS-HRS; 4.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	151.6	(NULL)
20.86	4.2	(NULL)
24.02	3.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.57 WATERSHED INCHES; 200 CFS-HRS; 16.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	125.0	(RUNOFF)
15.83	4.2	(RUNOFF)
17.33	3.2	(RUNOFF)
21.96	2.1	(RUNOFF)
24.02	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.32 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	63.1	398.95

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.32 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.21	202.3	(NULL)
21.94	6.0	(NULL)
24.01	5.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.82 WATERSHED INCHES; 324 CFS-HRS; 26.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 15

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 04/21/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	202.1	(RUNOFF)
15.84	7.0	(RUNOFF)
17.34	5.4	(RUNOFF)
19.75	4.1	(RUNOFF)
20.06	4.1	(RUNOFF)
23.06	3.3	(RUNOFF)
23.72	3.1	(RUNOFF)
24.01	3.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.58 WATERSHED INCHES; 188 CFS-HRS; 15.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	192.2	331.36
20.67	6.6	330.26
24.08	5.1	330.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.82 WATERSHED INCHES; 324 CFS-HRS; 26.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	349.1	(NULL)
20.62	10.5	(NULL)
21.94	9.6	(NULL)
24.01	8.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.73 WATERSHED INCHES; 512 CFS-HRS; 42.3 ACRE-  
 FEET.



OPERATION ADDHYD XSECTION 18

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.21	782.0	(NULL)
12.42	690.6	(NULL)
20.07	30.7	(NULL)
20.62	29.5	(NULL)
21.94	26.9	(NULL)
23.08	24.6	(NULL)
23.72	23.3	(NULL)
24.03	22.9	(NULL)

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.64 WATERSHED INCHES; 1395 CFS-HRS; 115.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	420.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.26 WATERSHED INCHES; 568 CFS-HRS; 46.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 20

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.36	698.1	237.35
12.46	688.7	237.32
24.09	23.0	234.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.64 WATERSHED INCHES; 1396 CFS-HRS; 115.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.33	1120.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.52 WATERSHED INCHES; 1963 CFS-HRS; 162.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	1120.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.52 WATERSHED INCHES; 1963 CFS-HRS; 162.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	44.5	(RUNOFF)
18.66	1.1	(RUNOFF)

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.22 WATERSHED INCHES; 50 CFS-HRS; 4.2 ACRE-FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	40.8	415.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.22 WATERSHED INCHES; 50 CFS-HRS; 4.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	208.0	(RUNOFF)
20.87	4.0	(RUNOFF)
24.02	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.22 WATERSHED INCHES; 221 CFS-HRS; 18.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	179.3	369.53

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.22 WATERSHED INCHES; 221 CFS-HRS; 18.3 ACRE-

FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	219.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.22 WATERSHED INCHES; 271 CFS-HRS; 22.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	120.6	(RUNOFF)
21.97	2.1	(RUNOFF)
24.02	1.8	(RUNOFF)

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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 2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.19 WATERSHED INCHES; 126 CFS-HRS; 10.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	325.6	(NULL)
20.61	7.5	(NULL)
23.08	6.2	(NULL)
24.01	5.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.21 WATERSHED INCHES; 397 CFS-HRS; 32.8 ACRE-FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	233.6	340.51

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.22 WATERSHED INCHES; 398 CFS-HRS; 32.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	37.3	(RUNOFF)
15.82	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.57 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27. THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .8%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	243.0	(NULL)
23.98	6.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.17 WATERSHED INCHES; 427 CFS-HRS; 35.3 ACRE-FEET.

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 TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	184.7	(RUNOFF)
15.45	5.1	(RUNOFF)
15.82	4.8	(RUNOFF)
17.32	3.7	(RUNOFF)
18.58	3.0	(RUNOFF)
23.02	2.2	(RUNOFF)
23.68	2.1	(RUNOFF)
23.99	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.73 WATERSHED INCHES; 152 CFS-HRS; 12.6 ACRE-FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29. THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.2%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.11	184.7	(NULL)
15.45	5.1	(NULL)
15.82	4.8	(NULL)
17.32	3.7	(NULL)
18.58	3.0	(NULL)
23.02	2.2	(NULL)
23.68	2.1	(NULL)
23.99	2.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.73 WATERSHED INCHES; 152 CFS-HRS; 12.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	177.3	357.15
15.88	4.8	356.10
17.38	3.7	356.08
18.65	3.0	356.06
23.09	2.2	356.05
23.75	2.1	356.04
24.05	2.3	356.05

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 2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.71 WATERSHED INCHES; 152 CFS-HRS; 12.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	354.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.43 WATERSHED INCHES; 499 CFS-HRS; 41.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	469.7	(NULL)
18.86	13.1	(NULL)
20.08	12.1	(NULL)
20.86	11.5	(NULL)
21.96	10.6	(NULL)
23.73	9.1	(NULL)
24.04	9.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.49 WATERSHED INCHES; 651 CFS-HRS; 53.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.20	119.6	(RUNOFF)
21.97	2.2	(RUNOFF)
23.10	2.0	(RUNOFF)
24.03	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.22 WATERSHED INCHES; 130 CFS-HRS; 10.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 34

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 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2.04TEST

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.21	596.7	(NULL)
18.62	16.0	(NULL)
18.86	15.8	(NULL)
20.09	14.7	(NULL)
20.63	14.0	(NULL)
20.86	13.9	(NULL)
21.97	12.8	(NULL)
23.09	11.7	(NULL)
23.74	11.0	(NULL)
24.04	11.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.45 WATERSHED INCHES; 781 CFS-HRS; 64.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 35

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	565.4	317.74
20.68	14.0	316.26
20.91	13.9	316.26
22.01	12.8	316.25
23.15	11.7	316.23
24.10	10.9	316.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.45 WATERSHED INCHES; 781 CFS-HRS; 64.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	53.0	(RUNOFF)
23.13	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.27 WATERSHED INCHES; 67 CFS-HRS; 5.6 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .047 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 33

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TR20 ----- SCS  
-  
Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2.04TEST  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	53.4	328.46
23.15	1.0	323.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.27 WATERSHED INCHES; 67 CFS-HRS; 5.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	618.7	(NULL)
20.68	15.3	(NULL)
22.00	13.9	(NULL)
23.15	12.7	(NULL)
24.10	11.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.43 WATERSHED INCHES; 848 CFS-HRS; 70.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	198.2	(RUNOFF)
15.84	6.1	(RUNOFF)

17.34	4.7	(RUNOFF)
21.45	3.1	(RUNOFF)
21.73	3.1	(RUNOFF)
21.94	3.1	(RUNOFF)
24.00	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.82 WATERSHED INCHES; 169 CFS-HRS; 13.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	703.2	(NULL)
23.99	14.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.32 WATERSHED INCHES; 1017 CFS-HRS; 84.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 40

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 TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	936.6	(NULL)
23.99	20.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.27 WATERSHED INCHES; 1442 CFS-HRS; 119.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.79	426.1	299.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.27 WATERSHED INCHES; 1442 CFS-HRS; 119.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	65.3	(RUNOFF)
15.84	2.2	(RUNOFF)
21.96	1.1	(RUNOFF)
22.75	1.0	(RUNOFF)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.18 WATERSHED INCHES; 64 CFS-HRS; 5.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.84	10.0	273.38

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.12 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.98	10.0	222.49

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.12 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 43

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

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2.04TEST

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	157.8	(RUNOFF)
18.87	5.1	(RUNOFF)
21.98	4.2	(RUNOFF)
24.02	3.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.25 WATERSHED INCHES; 176 CFS-HRS; 14.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	163.0	(NULL)
20.07	7.4	(NULL)
20.62	6.9	(NULL)
23.74	5.1	(NULL)
24.02	5.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.56 WATERSHED INCHES; 239 CFS-HRS; 19.7 ACRE-

FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.92	423.9	225.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.27 WATERSHED INCHES; 1442 CFS-HRS; 119.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	469.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.90 WATERSHED INCHES; 1681 CFS-HRS; 138.9 ACRE-FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.10	455.3	221.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.90 WATERSHED INCHES; 1680 CFS-HRS; 138.9 ACRE-FEET.

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 TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 04/21/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
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OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	523.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.92 WATERSHED INCHES; 715 CFS-HRS; 59.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	73.8	(RUNOFF)
15.84	2.4	(RUNOFF)
23.07	1.1	(RUNOFF)

23.73	1.0	(RUNOFF)
24.01	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	55.2	336.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	48.6	317.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	568.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.97 WATERSHED INCHES; 786 CFS-HRS; 65.0 ACRE-  
 FEET.

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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 2.04TEST  
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OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	56.3	(RUNOFF)
21.45	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.03 WATERSHED INCHES; 57 CFS-HRS; 4.7 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE

STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	47.3	322.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.46 WATERSHED INCHES; 49 CFS-HRS; 4.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	613.3	278.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.93 WATERSHED INCHES; 834 CFS-HRS; 69.0 ACRE-FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	568.6	277.95

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.93 WATERSHED INCHES; 834 CFS-HRS; 69.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 53

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	268.4	(RUNOFF)
20.11	8.1	(RUNOFF)
21.98	7.1	(RUNOFF)
23.75	6.2	(RUNOFF)
24.03	6.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.23 WATERSHED INCHES; 300 CFS-HRS; 24.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	734.1	(NULL)
24.01	18.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.27 WATERSHED INCHES; 1135 CFS-HRS; 93.8 ACRE-FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.14	211.6	270.96

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25						
	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = .54		
HRS							
SQ.MI.							
5.28 CFS	.00	.01	.01	.01	.01	.02	.02
.02							
5.76 CFS	.03	.03	.03	.04	.04	.05	.05
.06							
6.24 CFS	.07	.07	.08	.09	.10	.11	.13
.15							
6.72 CFS	.17	.20	.23	.27	.31	.36	.41
.47							
7.20 CFS	.53	.59	.66	.74	.82	.91	1.00
1.09							
7.68 CFS	1.19	1.29	1.40	1.51	1.63	1.74	1.87
2.00							
8.16 CFS	2.13	2.26	2.40	2.55	2.70	2.85	3.01
3.17							
8.64 CFS	3.33	3.50	3.67	3.84	4.02	4.20	4.39
4.58							
9.12 CFS	4.77	4.97	5.17	5.38	5.59	5.81	6.05
6.29							
9.60 CFS	6.55	6.82	7.11	7.41	7.72	8.05	8.39
8.76							
10.08 CFS	9.13	9.52	9.93	10.36	10.80	11.26	11.73
12.23							
10.56 CFS	12.76	13.31	13.89	14.52	15.19	15.92	16.73
17.62							
11.04 CFS	18.60	19.69	20.89	22.23	23.71	25.34	27.04
28.95							
11.52 CFS	31.07	33.45	36.16	39.31	43.01	47.42	52.56
58.75							
12.00 CFS	67	77	92	109	127	139	152
163							
12.48 CFS	174	183	191	197	202	205	207
209							
12.96 CFS	210	211	211	212	211	211	211
210							
13.44 CFS	209	208	207	206	205	203	202
201							
13.92 CFS	199	197	195	193	191	189	187
185							
14.40 CFS	183	181	179	177	175	173	171
169							
14.88 CFS	167	165	162	160	158	156	154
152							
15.36 CFS	150	148	146	144	141	139	137
135							

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15.84	CFS	133	131	129	127	125	123	120
117								
16.32	CFS	114	111	108	106	103	101	98
96								
16.80	CFS	92.89	90.31	87.85	85.48	83.21	81.03	78.93
76.92								
17.28	CFS	74.97	72.97	71.04	69.20	67.43	65.73	64.09
62.51								
17.76	CFS	61.00	59.54	58.13	56.77	55.46	54.21	52.99
51.82								
18.24	CFS	50.70	49.58	48.45	47.36	46.32	45.32	44.36
43.45								
18.72	CFS	42.58	41.75	40.96	40.21	39.49	38.81	38.15
37.53								
19.20	CFS	36.93	36.36	35.81	35.29	34.80	34.33	33.88
33.45								
19.68	CFS	33.04	32.64	32.26	31.90	31.54	31.20	30.88
30.57								
20.16	CFS	30.27	29.99	29.71	29.45	29.19	28.94	28.69
28.45								
20.64	CFS	28.22	28.00	27.78	27.57	27.37	27.18	26.99
26.80								
21.12	CFS	26.62	26.44	26.26	26.09	25.92	25.76	25.61
25.45								
21.60	CFS	25.31	25.16	25.02	24.87	24.72	24.57	24.43
24.29								
22.08	CFS	24.16	24.02	23.89	23.76	23.63	23.50	23.37
23.25								
22.56	CFS	23.13	23.01	22.89	22.77	22.65	22.53	22.41
22.28								
23.04	CFS	22.16	22.05	21.93	21.82	21.71	21.61	21.50
21.39								
23.52	CFS	21.28	21.17	21.06	20.95	20.84	20.73	20.63
20.52								
24.00	CFS	20.41	20.32	20.19	20.00	19.70	19.29	18.79
18.20								
24.48	CFS	17.54	16.83	16.08	15.32	14.56	13.81	13.09
12.39								
24.96	CFS	11.71	11.07	10.45	9.87	9.32	8.80	8.30
7.84								
25.44	CFS	7.40	6.98	6.59	6.22	5.87	5.54	5.23
4.94								
25.92	CFS	4.67	4.41	4.17	3.94	3.73	3.52	3.33
3.15								
26.40	CFS	2.99	2.83	2.68	2.54	2.40	2.28	2.16
2.05								
26.88	CFS	1.95	1.85	1.76	1.67	1.59	1.51	1.44
1.37								
27.36	CFS	1.31	1.25	1.19	1.14	1.09	1.04	1.00
.96								
27.84	CFS	.92	.88	.85	.81	.78	.75	.73
.70								
28.32	CFS	.68						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.27 WATERSHED INCHES; 1134 CFS-HRS; 93.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	1399.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.68 WATERSHED INCHES; 3643 CFS-HRS; 301.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	31.3	(RUNOFF)
15.84	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.49 WATERSHED INCHES; 27 CFS-HRS; 2.2 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	1410.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.67 WATERSHED INCHES; 3669 CFS-HRS; 303.2 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 6, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .006 HOURS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	1411.4	149.14

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55  
 SQ.MI.  
 4.38 CFS .00 .01 .01 .02 .02 .03 .04  
 .05

4.86 CFS .16	.06	.07	.08	.09	.10	.12	.14
5.34 CFS .44	.18	.20	.23	.26	.30	.34	.39
5.82 CFS 1.08	.50	.56	.63	.70	.78	.87	.97
6.30 CFS 2.20	1.19	1.32	1.45	1.58	1.73	1.88	2.04
6.78 CFS 3.87	2.38	2.55	2.74	2.94	3.16	3.38	3.61
7.26 CFS 6.56	4.14	4.43	4.74	5.07	5.42	5.78	6.17
7.74 CFS 10.52	6.97	7.40	7.85	8.33	8.83	9.36	9.92
8.22 CFS 16.30	11.16	11.82	12.50	13.22	13.97	14.73	15.50
8.70 CFS 23.30	17.13	17.98	18.85	19.71	20.57	21.44	22.35
9.18 CFS 32.89	24.29	25.32	26.41	27.58	28.83	30.14	31.49
9.66 CFS 46.89	34.35	35.90	37.55	39.29	41.10	42.96	44.88
10.14 CFS 66.17	49.00	51.23	53.54	55.91	58.33	60.81	63.41
10.62 CFS 102	69	72	76	80	85	90	96
11.10 CFS 179	108	115	123	132	143	154	166
11.58 CFS 481	195	212	236	266	302	346	403
12.06 CFS 1379	602	775	977	1189	1336	1404	1400
12.54 CFS 965	1354	1315	1263	1201	1128	1065	1011
13.02 CFS 750	927	893	865	839	816	793	770
13.50 CFS 578	728	707	685	663	641	619	598
13.98 CFS 447	559	541	524	507	491	476	461
14.46 CFS 343	433	419	407	394	381	368	355
14.94 CFS 261	331	319	309	299	289	279	270
15.42 CFS 205	253	245	237	230	224	217	211
15.90 CFS 168	199	193	189	183	179	175	172
16.38 CFS 144	165	161	158	155	152	149	147
16.86 CFS 128	142	140	138	136	134	132	130
17.34 CFS 115	126	124	123	121	120	118	116
17.82 CFS 104	113	112	110	109	108	106	105
18.30 CFS 95	102	101	100	99	98	97	96

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18.78	CFS	94.50	93.71	92.97	92.27	91.53	90.77	90.02
89.33								
19.26	CFS	88.71	88.15	87.64	87.17	86.72	86.29	85.81
85.28								
19.74	CFS	84.74	84.25	83.80	83.30	82.80	82.39	82.10
81.86								
20.22	CFS	81.54	81.14	80.72	80.27	79.78	79.27	78.84
78.54								
20.70	CFS	78.30	78.02	77.68	77.34	77.04	76.68	76.26
75.83								
21.18	CFS	75.42	75.05	74.73	74.44	74.17	73.92	73.67
73.39								
21.66	CFS	73.04	72.63	72.24	71.92	71.62	71.33	71.11
70.85								
22.14	CFS	70.50	70.10	69.72	69.37	69.06	68.79	68.53
68.28								
22.62	CFS	67.97	67.59	67.19	66.83	66.49	66.10	65.71
65.39								
23.10	CFS	65.18	65.01	64.76	64.42	64.07	63.74	63.41
63.06								
23.58	CFS	62.64	62.22	61.90	61.69	61.49	61.19	60.80
60.50								
24.06	CFS	60.23	59.50	57.38	53.65	49.30	45.18	41.63
38.68								
24.54	CFS	36.18	33.96	31.93	30.05	28.27	26.57	24.95
23.40								
25.02	CFS	21.92	20.52	19.19	17.93	16.75	15.62	14.58
13.59								
25.50	CFS	12.66	11.80	10.99	10.24	9.54	8.89	8.28
7.73								
25.98	CFS	7.21	6.73	6.30	5.89	5.52	5.18	4.83
4.47								
26.46	CFS	4.12	3.80	3.52	3.27	3.05	2.86	2.70
2.55								
26.94	CFS	2.43	2.31	2.22	2.13	2.05	1.98	1.92
1.86								
27.42	CFS	1.81	1.77	1.72	1.68			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.67 WATERSHED INCHES; 3669 CFS-HRS; 303.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	108.3	(RUNOFF)
15.84	3.3	(RUNOFF)
17.34	2.5	(RUNOFF)
18.60	2.1	(RUNOFF)
18.84	2.0	(RUNOFF)
24.00	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.09 WATERSHED INCHES; 94 CFS-HRS; 7.8 ACRE-  
FEET.

OPERATION REACH XSECTION 59

```

PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
ELEVATION(FEET)
  12.46                       1401.6                          133.91

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
      3.67 WATERSHED INCHES;    3669 CFS-HRS;    303.2 ACRE-
FEET.
    
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OPERATION ADDHYD    XSECTION    60
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PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
ELEVATION(FEET)
  12.48                       1574.5                          (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
      3.57 WATERSHED INCHES;    4802 CFS-HRS;    396.9 ACRE-
FEET.
    
```

```

*** WARNING - XSECTION 61
                NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.
***
    
```

OPERATION ADDHYD XSECTION 61

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PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
ELEVATION(FEET)
  12.48                       1574.5                          (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
      3.50 WATERSHED INCHES;    4707 CFS-HRS;    389.0 ACRE-
FEET.
    
```

OPERATION RUNOFF XSECTION 62

```

PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
ELEVATION(FEET)
  12.17                       43.7                             (RUNOFF)
  19.75                       1.0                               (RUNOFF)
  20.07                       1.0                               (RUNOFF)
    
```

HRS	MAIN	TIME	INCREMENT	ALTERNATE	STORM	DRAINAGE	AREA	SQ.MI.
10.44	0.46	0.50	0.55	0.60	0.67	0.75	0.84	0.93
10.92	1.04	1.15	1.26	1.41	1.59	1.79	2.00	2.23
11.40	2.49	2.76	3.06	3.65	4.59	5.46	6.40	7.87
11.88	10.00	13.16	18.75	27.54	39.74	43.47	35.43	

26.83								
12.36	CFS	21.34	17.32	14.77	13.25	11.48	9.71	8.58
7.91								
12.84	CFS	7.41	6.98	6.60	6.21	5.81	5.44	5.13
4.89								
13.32	CFS	4.67	4.44	4.22	4.00	3.78	3.58	3.42
3.30								
13.80	CFS	3.21	3.14	3.08	3.04	2.99	2.94	2.88
2.81								
14.28	CFS	2.74	2.70	2.65	2.61	2.55	2.48	2.41
2.35								
14.76	CFS	2.30	2.26	2.21	2.15	2.09	2.04	1.97
1.91								
15.24	CFS	1.87	1.84	1.83	1.83	1.82	1.82	1.80
1.78								
15.72	CFS	1.74	1.73	1.74	1.73	1.71	1.68	1.65
1.64								
16.20	CFS	1.64	1.63	1.61	1.59	1.58	1.55	1.53
1.52								
16.68	CFS	1.51	1.51	1.49	1.46	1.45	1.45	1.44
1.42								
17.16	CFS	1.39	1.36	1.35	1.35	1.35	1.32	1.29
1.27								
17.64	CFS	1.25	1.25	1.24	1.22	1.20	1.19	1.18
1.17								
18.12	CFS	1.15	1.13	1.12	1.11	1.11	1.08	1.07
1.09								
18.60	CFS	1.10	1.10	1.08	1.08	1.09	1.08	1.07
1.05								
19.08	CFS	1.05	1.05	1.05	1.05	1.05	1.05	1.05
1.05								
19.56	CFS	1.04	1.02	1.01	1.02	1.02	1.00	.99
1.00								
20.04	CFS	1.02	1.02	1.00	.99	.99	.98	.96
.95								
20.52	CFS	.96	.97	.98	.96	.95	.96	.96
.94								

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21.00	CFS	.93	.92	.92	.92	.92	.92	.92
.92								
21.48	CFS	.92	.92	.90	.88	.89	.89	.88
.88								
21.96	CFS	.89	.88	.87	.86	.85	.85	.85
.85								
22.44	CFS	.85	.85	.85	.82	.82	.83	.82
.80								
22.92	CFS	.79	.80	.82	.82	.80	.79	.79
.79								
23.40	CFS	.78	.78	.76	.75	.76	.77	.77
.75								
23.88	CFS	.73	.73	.78	.76	.50	.24	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.73 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	1589.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.49 WATERSHED INCHES; 4748 CFS-HRS; 392.4 ACRE-FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
 STARTING TIME = .00 RAIN DEPTH = 7.23 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =50 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	526.5	(RUNOFF)
18.67	13.8	(RUNOFF)
20.68	12.1	(RUNOFF)
21.94	11.1	(RUNOFF)
23.13	10.1	(RUNOFF)
24.01	9.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.59 WATERSHED INCHES; 622 CFS-HRS; 51.4 ACRE-FEET.

OPERATION RESVOR STRUCTURE 13

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	448.8	394.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.59 WATERSHED INCHES; 623 CFS-HRS; 51.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	78.1	(RUNOFF)

24.02 1.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.24 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.26 70.8 432.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.15 WATERSHED INCHES; 78 CFS-HRS; 6.5 ACRE-
FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.35 505.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.54 WATERSHED INCHES; 701 CFS-HRS; 57.9 ACRE-
FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.15 212.7 (RUNOFF)
15.84 6.8 (RUNOFF)
17.34 5.2 (RUNOFF)
19.44 4.0 (RUNOFF)
22.75 3.1 (RUNOFF)
23.06 3.1 (RUNOFF)
24.00 3.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.03 WATERSHED INCHES; 200 CFS-HRS; 16.5 ACRE-
FEET.

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OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.33 608.4 (NULL)
20.02 19.1 (NULL)
23.02 15.4 (NULL)
24.00 14.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.63 WATERSHED INCHES; 900 CFS-HRS; 74.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	223.3	(RUNOFF)
15.83	8.2	(RUNOFF)
17.32	6.3	(RUNOFF)
18.86	5.0	(RUNOFF)
21.97	4.1	(RUNOFF)
24.02	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.30 WATERSHED INCHES; 222 CFS-HRS; 18.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	595.9	320.77
20.07	19.1	318.35
23.08	15.4	318.31
24.06	14.4	318.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.63 WATERSHED INCHES; 900 CFS-HRS; 74.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 8

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	707.0	(NULL)
20.08	23.8	(NULL)
20.62	22.8	(NULL)
21.93	20.9	(NULL)
23.08	19.2	(NULL)
23.72	18.2	(NULL)
24.04	17.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.56 WATERSHED INCHES; 1121 CFS-HRS; 92.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	180.9	(RUNOFF)
18.64	4.0	(RUNOFF)
21.97	3.2	(RUNOFF)
24.02	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.69 WATERSHED INCHES; 183 CFS-HRS; 15.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	70.7	(RUNOFF)
24.02	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.72 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	50.8	456.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.21 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-FEET.

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OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	50.4	414.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.21 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	195.9	(NULL)
20.86	5.0	(NULL)
23.08	4.3	(NULL)
23.73	4.0	(NULL)
24.01	4.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.55 WATERSHED INCHES; 255 CFS-HRS; 21.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	153.2	(RUNOFF)
15.83	5.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.02	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.35 WATERSHED INCHES; 154 CFS-HRS; 12.8 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	83.1	399.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.35 WATERSHED INCHES; 154 CFS-HRS; 12.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 14

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	258.0	(NULL)
20.06	8.3	(NULL)
21.94	7.3	(NULL)
24.01	6.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.81 WATERSHED INCHES; 409 CFS-HRS; 33.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 15



PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	255.3	(RUNOFF)
15.84	8.6	(RUNOFF)
17.34	6.6	(RUNOFF)
19.47	5.1	(RUNOFF)
21.96	4.3	(RUNOFF)
24.01	3.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.55 WATERSHED INCHES; 239 CFS-HRS; 19.8 ACRE-FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	251.1	331.55
20.13	8.3	330.29
20.68	8.0	330.28
24.07	6.2	330.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.81 WATERSHED INCHES; 409 CFS-HRS; 33.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	449.9	(NULL)
20.06	13.3	(NULL)
20.62	12.7	(NULL)
21.94	11.6	(NULL)
23.06	10.6	(NULL)
24.01	9.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.71 WATERSHED INCHES; 648 CFS-HRS; 53.5 ACRE-FEET.

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OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	1059.5	(NULL)
20.07	37.1	(NULL)
20.62	35.5	(NULL)
21.94	32.4	(NULL)
23.08	29.8	(NULL)

23.73	28.2	(NULL)
24.03	27.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.61 WATERSHED INCHES; 1769 CFS-HRS; 146.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	541.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.19 WATERSHED INCHES; 731 CFS-HRS; 60.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	1011.0	238.28
24.09	27.8	234.48

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.61 WATERSHED INCHES; 1768 CFS-HRS; 146.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	1489.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 2499 CFS-HRS; 206.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	1489.0	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 2499 CFS-HRS; 206.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	54.7	(RUNOFF)
21.96	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	55.3	415.55
20.15	1.2	410.91

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	256.8	(RUNOFF)
20.10	5.2	(RUNOFF)
23.10	4.1	(RUNOFF)
24.03	3.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 275 CFS-HRS; 22.7 ACRE-FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	229.1	369.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 275 CFS-HRS; 22.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 24

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	284.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 337 CFS-HRS; 27.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	148.7	(RUNOFF)
18.87	3.2	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.21 WATERSHED INCHES; 156 CFS-HRS; 12.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.24	418.0	(NULL)
20.08	9.3	(NULL)
20.61	8.9	(NULL)
23.71	7.0	(NULL)
24.01	6.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.23 WATERSHED INCHES; 494 CFS-HRS; 40.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.41	283.6	342.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 494 CFS-HRS; 40.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.11	47.2	(RUNOFF)
17.32	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
 FEET.

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\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .9%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.39	295.1	(NULL)
23.98	7.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.18 WATERSHED INCHES; 531 CFS-HRS; 43.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	220.3	(RUNOFF)
15.45	6.0	(RUNOFF)
15.82	5.8	(RUNOFF)
17.32	4.4	(RUNOFF)
20.02	3.3	(RUNOFF)
20.58	3.1	(RUNOFF)
20.82	3.1	(RUNOFF)
23.99	2.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.78 WATERSHED INCHES; 186 CFS-HRS; 15.4 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .1%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	220.3	(NULL)
15.45	6.0	(NULL)
15.82	5.8	(NULL)
17.32	4.4	(NULL)
20.02	3.3	(NULL)
20.58	3.1	(NULL)
20.82	3.1	(NULL)
23.99	2.7	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.78 WATERSHED INCHES; 186 CFS-HRS; 15.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	213.3	357.27
15.88	5.8	356.12
17.38	4.4	356.09
20.88	3.1	356.06
24.05	2.7	356.06

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.76 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	433.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.47 WATERSHED INCHES; 616 CFS-HRS; 50.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.22	572.7	(NULL)
18.86	15.7	(NULL)
20.08	14.5	(NULL)
20.86	13.7	(NULL)
21.96	12.6	(NULL)
23.08	11.5	(NULL)
24.04	10.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.53 WATERSHED INCHES; 801 CFS-HRS; 66.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	148.2	(RUNOFF)
18.65	3.3	(RUNOFF)
20.10	3.0	(RUNOFF)
24.03	2.2	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.25 WATERSHED INCHES; 162 CFS-HRS; 13.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	729.7	(NULL)
18.61	19.2	(NULL)
18.85	18.9	(NULL)
20.09	17.5	(NULL)
20.86	16.6	(NULL)
21.97	15.3	(NULL)
23.74	13.1	(NULL)
24.04	13.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.48 WATERSHED INCHES; 963 CFS-HRS; 79.6 ACRE-  
FEET.

OPERATION REACH XSECTION 35

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	694.0	317.98
20.15	17.5	316.29
20.92	16.6	316.28
22.01	15.3	316.27
23.80	13.1	316.25
24.10	13.0	316.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.49 WATERSHED INCHES; 963 CFS-HRS; 79.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	65.4	(RUNOFF)
23.76	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.30 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .047 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

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OPERATION RESVOR STRUCTURE 33

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.29	64.5	328.67
23.78	1.2	323.05
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.31 WATERSHED INCHES;		84 CFS-HRS; 6.9 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 37

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	758.3	(NULL)
20.15	19.1	(NULL)
20.91	18.0	(NULL)
22.01	16.6	(NULL)
23.15	15.1	(NULL)
23.80	14.3	(NULL)
24.10	14.2	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.47 WATERSHED INCHES;		1047 CFS-HRS; 86.5 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 38

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.13	246.6	(RUNOFF)
15.84	7.4	(RUNOFF)
17.34	5.7	(RUNOFF)
20.04	4.3	(RUNOFF)
20.60	4.1	(RUNOFF)
23.70	3.2	(RUNOFF)
24.00	3.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.81 WATERSHED INCHES;		212 CFS-HRS; 17.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 39

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.27	869.0	(NULL)
23.99	17.3	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.35 WATERSHED INCHES; 1259 CFS-HRS; 104.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	1147.4	(NULL)
23.99	25.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.30 WATERSHED INCHES; 1791 CFS-HRS; 148.0 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.86	476.5	302.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.29 WATERSHED INCHES; 1789 CFS-HRS; 147.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	79.8	(RUNOFF)
17.34	2.0	(RUNOFF)
24.01	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.19 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	28.4	273.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.12 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-  
FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.57 27.2 222.79  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.11 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	217.1	(RUNOFF)
19.47	6.2	(RUNOFF)
20.11	6.0	(RUNOFF)
21.98	5.3	(RUNOFF)
24.02	4.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.05 WATERSHED INCHES; 238 CFS-HRS; 19.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	224.0	(NULL)
20.63	8.5	(NULL)
24.02	6.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.38 WATERSHED INCHES; 316 CFS-HRS; 26.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.98	474.8	225.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.29 WATERSHED INCHES; 1789 CFS-HRS; 147.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.64	544.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.88 WATERSHED INCHES; 2104 CFS-HRS; 173.9 ACRE-  
 FEET.

FEET.

OPERATION RESVOR STRUCTURE 7

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.05	526.4	222.52

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.88 WATERSHED INCHES; 2104 CFS-HRS; 173.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	655.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.93 WATERSHED INCHES; 897 CFS-HRS; 74.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	89.2	(RUNOFF)
17.34	2.2	(RUNOFF)
24.01	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.52 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	58.1	337.36
24.03	1.2	333.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.52 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.46 57.3 317.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.52 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	707.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.97 WATERSHED INCHES; 985 CFS-HRS; 81.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	69.7	(RUNOFF)
23.74	1.0	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.04 WATERSHED INCHES; 71 CFS-HRS; 5.9 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE

STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	58.5	322.59
24.03	1.0	320.81

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.45 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	763.5	278.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.94 WATERSHED INCHES; 1048 CFS-HRS; 86.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	686.4	278.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.94 WATERSHED INCHES; 1048 CFS-HRS; 86.6 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	369.6	(RUNOFF)
18.87	11.0	(RUNOFF)
20.11	10.3	(RUNOFF)
21.97	9.1	(RUNOFF)
23.11	8.3	(RUNOFF)
24.03	7.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.03 WATERSHED INCHES; 407 CFS-HRS; 33.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	904.7	(NULL)
24.01	23.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.20 WATERSHED INCHES; 1454 CFS-HRS; 120.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.21	246.2	274.52

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .54  
 SQ.MI.

4.68 CFS	.00	.01	.01	.01	.01	.02	.02
.03							
5.16 CFS	.03	.04	.04	.05	.05	.06	.07
.07							
5.64 CFS	.08	.09	.11	.12	.14	.16	.19
.22							
6.12 CFS	.26	.30	.35	.40	.46	.52	.58
.65							
6.60 CFS	.72	.80	.89	.97	1.07	1.16	1.27
1.37							
7.08 CFS	1.48	1.60	1.72	1.85	1.97	2.11	2.25
2.39							
7.56 CFS	2.54	2.70	2.85	3.02	3.18	3.35	3.53
3.71							
8.04 CFS	3.89	4.08	4.27	4.47	4.67	4.87	5.09
5.30							
8.52 CFS	5.52	5.74	5.97	6.20	6.43	6.67	6.91
7.16							
9.00 CFS	7.41	7.66	7.92	8.18	8.45	8.72	9.00
9.29							
9.48 CFS	9.60	9.91	10.25	10.60	10.98	11.37	11.79
12.24							
9.96 CFS	12.72	13.24	13.78	14.36	14.97	15.61	16.28
16.99							
10.44 CFS	17.73	18.51	19.32	20.16	21.04	21.98	22.98
24.06							
10.92 CFS	25.21	26.40	27.70	29.13	30.71	32.46	34.39
36.53							
11.40 CFS	38.91	41.54	44.44	47.68	51.27	55.23	59.87
65.39							
11.88 CFS	72	80	90	103	119	133	148
162							
12.36 CFS	176	189	201	210	218	225	230
235							
12.84 CFS	238	241	243	245	245	246	246
246							

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13.32 CFS	246	245	244	244	242	241	240
239							
13.80 CFS	237	236	234	232	231	229	227
225							
14.28 CFS	224	222	220	218	216	215	213
211							
14.76 CFS	209	207	206	204	202	200	198
195							
15.24 CFS	193	191	189	186	184	182	180
177							
15.72 CFS	175	173	171	168	166	164	162
159							
16.20 CFS	157	155	153	151	149	147	145
143							
16.68 CFS	140	138	136	134	132	130	129
127							
17.16 CFS	125	122	119	116	113	111	108
105							

17.64 CFS	103	101	98	95	93	90	88
85							
18.12 CFS	82.92	80.75	78.65	76.64	74.68	72.68	70.75
68.91							
18.60 CFS	67.15	65.48	63.87	62.34	60.88	59.49	58.17
56.90							
19.08 CFS	55.68	54.52	53.41	52.35	51.34	50.38	49.41
48.47							
19.56 CFS	47.57	46.72	45.91	45.13	44.39	43.68	43.00
42.35							
20.04 CFS	41.73	41.14	40.58	40.04	39.53	39.04	38.56
38.10							
20.52 CFS	37.66	37.23	36.82	36.43	36.05	35.69	35.34
35.01							
21.00 CFS	34.69	34.37	34.06	33.77	33.48	33.20	32.93
32.67							
21.48 CFS	32.42	32.18	31.95	31.72	31.49	31.28	31.06
30.86							
21.96 CFS	30.66	30.46	30.27	30.08	29.90	29.72	29.54
29.36							
22.44 CFS	29.19	29.02	28.85	28.69	28.53	28.36	28.20
28.04							
22.92 CFS	27.88	27.72	27.56	27.41	27.26	27.11	26.97
26.82							
23.40 CFS	26.68	26.54	26.40	26.26	26.11	25.97	25.83
25.69							
23.88 CFS	25.56	25.42	25.28	25.16	25.00	24.74	24.36
23.85							
24.36 CFS	23.23	22.52	21.73	20.88	19.98	19.06	18.14
17.22							
24.84 CFS	16.33	15.46	14.63	13.83	13.06	12.33	11.64
10.99							
25.32 CFS	10.37	9.78	9.23	8.71	8.21	7.75	7.31
6.90							
25.80 CFS	6.51	6.15	5.80	5.48	5.17	4.88	4.61
4.36							
26.28 CFS	4.12	3.89	3.68	3.48	3.29	3.12	2.95
2.79							
26.76 CFS	2.65	2.51	2.38	2.25	2.14	2.03	1.93
1.83							
27.24 CFS	1.74	1.65	1.57	1.50	1.43	1.36	1.30
1.24							
27.72 CFS	1.18						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.19 WATERSHED INCHES; 1453 CFS-HRS; 120.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.42	1895.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.65 WATERSHED INCHES; 4602 CFS-HRS; 380.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 56

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	42.2	(RUNOFF)
17.34	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.31 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	1908.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.64 WATERSHED INCHES; 4637 CFS-HRS; 383.2 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 6, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .006 HOURS.  
\*\*\*

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	1896.1	152.20

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55 SQ.MI.

HRS	3.84 CFS	.00	.01	.01	.02	.02	.03	.04
	.05							
	4.32 CFS	.06	.08	.09	.11	.13	.15	.17
	.20							
	4.80 CFS	.23	.27	.31	.36	.42	.48	.54
	.62							
	5.28 CFS	.70	.79	.90	1.02	1.15	1.28	1.43
	1.58							
	5.76 CFS	1.74	1.91	2.09	2.26	2.45	2.64	2.84
	3.05							
	6.24 CFS	3.27	3.50	3.74	3.99	4.26	4.56	4.87
	5.20							
	6.72 CFS	5.55	5.92	6.30	6.69	7.11	7.55	8.00
	8.48							
	7.20 CFS	9.00	9.56	10.15	10.77	11.43	12.13	12.87
	13.63							
	7.68 CFS	14.41	15.20	16.03	16.88	17.75	18.65	19.58
	20.52							
	8.16 CFS	21.48	22.46	23.45	24.43	25.45	26.50	27.55
	28.60							
	8.64 CFS	29.69	30.83	31.99	33.16	34.32	35.46	36.61
	37.81							



9.12 CFS	39.09	40.44	41.84	43.34	44.95	46.69	48.51
50.38							
9.60 CFS	52.30	54.32	56.46	58.74	61.16	63.66	66.22
68.86							
10.08 CFS	71.63	74.55	77.63	80.83	84.08	87.39	90.77
94.29							
10.56 CFS	98	102	106	111	117	124	131
138							
11.04 CFS	146	155	165	176	188	201	215
231							
11.52 CFS	248	268	292	324	364	411	467
543							
12.00 CFS	648	803	1008	1271	1537	1733	1835
1886							
12.48 CFS	1892	1843	1748	1633	1510	1406	1311
1227							
12.96 CFS	1155	1099	1053	1012	975	944	917
892							
13.44 CFS	869	846	824	802	778	758	738
719							
13.92 CFS	701	684	666	649	631	613	595
577							
14.40 CFS	560	543	526	510	495	479	464
450							

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14.88 CFS	436	423	410	397	384	372	359
346							
15.36 CFS	334	322	313	304	295	287	279
271							
15.84 CFS	263	255	249	242	236	229	223
218							
16.32 CFS	212	207	202	198	193	189	185
182							
16.80 CFS	179	176	173	170	167	165	162
160							
17.28 CFS	157	155	152	150	148	146	144
142							
17.76 CFS	140	138	136	134	132	131	129
128							
18.24 CFS	126	124	123	121	120	118	117
116							
18.72 CFS	115	114	113	112	112	111	110
109							
19.20 CFS	108	107	106	106	105	105	104
104							
19.68 CFS	103	102	102	101	101	100	100
99							
20.16 CFS	98.87	98.49	98.02	97.51	96.96	96.37	95.75
95.23							
20.64 CFS	94.88	94.59	94.26	93.84	93.43	93.07	92.65
92.14							
21.12 CFS	91.62	91.12	90.68	90.29	89.94	89.62	89.33
89.03							
21.60 CFS	88.69	88.27	87.77	87.30	86.92	86.56	86.22
85.95							

22.08 CFS	85.64	85.21	84.74	84.27	83.85	83.48	83.15
82.85							
22.56 CFS	82.54	82.17	81.72	81.22	80.79	80.38	79.91
79.43							
23.04 CFS	79.04	78.79	78.59	78.29	77.89	77.47	77.06
76.67							
23.52 CFS	76.23	75.73	75.22	74.83	74.59	74.35	73.99
73.51							
24.00 CFS	73.16	72.85	71.92	69.30	64.72	59.39	54.36
50.02							
24.48 CFS	46.44	43.40	40.71	38.26	35.98	33.82	31.78
29.82							
24.96 CFS	27.95	26.16	24.46	22.85	21.33	19.90	18.55
17.29							
25.44 CFS	16.11	15.00	13.97	13.00	12.10	11.26	10.48
9.76							
25.92 CFS	9.10	8.48	7.91	7.39	6.91	6.46	6.05
5.68							
26.40 CFS	5.30	4.90	4.52	4.18	3.87	3.60	3.36
3.16							
26.88 CFS	2.97	2.82	2.68	2.56	2.45		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.64 WATERSHED INCHES; 4637 CFS-HRS; 383.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	133.5	(RUNOFF)
17.34	3.0	(RUNOFF)
21.45	2.0	(RUNOFF)
24.00	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 117 CFS-HRS; 9.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	1894.5	134.78

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.64 WATERSHED INCHES; 4637 CFS-HRS; 383.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.53	2102.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.52 WATERSHED INCHES; 6090 CFS-HRS; 503.2 ACRE-FEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.53	2102.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.44 WATERSHED INCHES; 5975 CFS-HRS; 493.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	57.4	(RUNOFF)
15.84	2.2	(RUNOFF)
22.75	1.0	(RUNOFF)
23.07	1.0	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .02 SQ.MI.

9.84 CFS	.48	.52	.55	.59	.64	.69	.73
.78							
10.32 CFS	.82	.87	.92	.98	1.05	1.13	1.24
1.36							
10.80 CFS	1.49	1.63	1.78	1.94	2.10	2.32	2.57
2.86							
11.28 CFS	3.17	3.49	3.85	4.22	4.61	5.46	6.78
7.99							
11.76 CFS	9.25	11.23	14.13	18.31	25.78	37.33	53.02
57.05							
12.24 CFS	46.49	35.12	27.68	22.39	19.04	16.99	14.70
12.41							
12.72 CFS	10.96	10.09	9.43	8.88	8.39	7.89	7.38
6.90							
13.20 CFS	6.51	6.20	5.91	5.62	5.34	5.05	4.78
4.52							
13.68 CFS	4.32	4.17	4.05	3.96	3.89	3.83	3.78
3.71							
14.16 CFS	3.62	3.54	3.46	3.40	3.34	3.28	3.21
3.12							
14.64 CFS	3.03	2.95	2.90	2.84	2.77	2.70	2.63
2.56							
15.12 CFS	2.48	2.40	2.34	2.31	2.30	2.29	2.29
2.29							
15.60 CFS	2.26	2.23	2.19	2.17	2.18	2.17	2.14
2.10							
16.08 CFS	2.07	2.06	2.05	2.04	2.01	1.99	1.97
1.95							

16.56 CFS	1.92	1.90	1.89	1.88	1.86	1.83	1.82
1.81							

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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17.04 CFS	1.80	1.78	1.74	1.70	1.68	1.69	1.68
1.65							
17.52 CFS	1.61	1.58	1.57	1.56	1.55	1.52	1.49
1.48							
18.00 CFS	1.48	1.46	1.44	1.41	1.40	1.39	1.38
1.35							
18.48 CFS	1.34	1.36	1.38	1.37	1.35	1.34	1.36
1.35							
18.96 CFS	1.33	1.32	1.31	1.31	1.31	1.31	1.31
1.31							
19.44 CFS	1.31	1.31	1.30	1.27	1.26	1.28	1.27
1.25							
19.92 CFS	1.24	1.25	1.27	1.27	1.25	1.24	1.23
1.22							
20.40 CFS	1.20	1.18	1.19	1.21	1.22	1.20	1.18
1.19							
20.88 CFS	1.19	1.17	1.16	1.15	1.15	1.14	1.14
1.14							
21.36 CFS	1.14	1.14	1.14	1.14	1.12	1.10	1.11
1.11							
21.84 CFS	1.09	1.10	1.11	1.10	1.08	1.07	1.06
1.06							
22.32 CFS	1.06	1.06	1.06	1.06	1.05	1.02	1.01
1.03							
22.80 CFS	1.02	1.00	.99	1.00	1.02	1.02	1.00
.98							
23.28 CFS	.98	.98	.98	.97	.94	.93	.95
.96							
23.76 CFS	.96	.94	.91	.91	.97	.94	.62
.30							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.60 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.53	2120.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.43 WATERSHED INCHES; 6029 CFS-HRS; 498.2 ACRE-  
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 5

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
STARTING TIME = .00 RAIN DEPTH = 8.47 RAIN DURATION = 1.00

ANT. RUNOFF COND. = 2                      MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1                         STORM NO. =99                                 RAIN TABLE NO. = 1

OPERATION RUNOFF    XSECTION    1  
 1

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                    Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	652.9	(RUNOFF)
18.67	16.6	(RUNOFF)
20.13	15.2	(RUNOFF)
20.67	14.5	(RUNOFF)
21.93	13.3	(RUNOFF)
23.12	12.1	(RUNOFF)
24.01	11.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.72 WATERSHED INCHES;                      776 CFS-HRS;                      64.1 ACRE-FEET.

OPERATION RESVOR    STRUCTURE 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	610.3	394.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.72 WATERSHED INCHES;                      776 CFS-HRS;                      64.1 ACRE-FEET.

OPERATION RUNOFF    XSECTION    2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	97.8	(RUNOFF)
20.09	2.1	(RUNOFF)
24.02	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.34 WATERSHED INCHES;                      101 CFS-HRS;                      8.3 ACRE-FEET.

OPERATION RESVOR    STRUCTURE 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	93.7	432.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES;                      99 CFS-HRS;                      8.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	689.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.66 WATERSHED INCHES; 874 CFS-HRS; 72.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	259.5	(RUNOFF)
15.84	8.1	(RUNOFF)
17.34	6.2	(RUNOFF)
18.62	5.0	(RUNOFF)
21.45	4.1	(RUNOFF)
21.75	4.0	(RUNOFF)
21.95	4.0	(RUNOFF)
24.00	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.19 WATERSHED INCHES; 247 CFS-HRS; 20.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	834.7	(NULL)
20.01	22.7	(NULL)
23.02	18.3	(NULL)
24.00	17.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 1121 CFS-HRS; 92.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	278.1	(RUNOFF)
15.82	9.9	(RUNOFF)
17.31	7.6	(RUNOFF)
18.86	6.1	(RUNOFF)
21.45	5.1	(RUNOFF)

24.02 4.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.40 WATERSHED INCHES; 279 CFS-HRS; 23.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 7

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.35	825.2	321.42
23.08	18.3	318.34
24.06	17.1	318.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 1120 CFS-HRS; 92.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.33	996.2	(NULL)
20.08	28.4	(NULL)
20.62	27.2	(NULL)
21.93	24.8	(NULL)
23.08	22.8	(NULL)
24.04	21.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 1399 CFS-HRS; 115.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	223.2	(RUNOFF)
20.87	4.2	(RUNOFF)
24.02	3.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.84 WATERSHED INCHES; 227 CFS-HRS; 18.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.22	87.2	(RUNOFF)

18.66 2.1 (RUNOFF)  
 24.02 1.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.86 WATERSHED INCHES; 100 CFS-HRS; 8.3 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

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OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	70.3	456.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.35 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	70.0	414.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.34 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	250.4	(NULL)
18.61	7.1	(NULL)
20.86	6.0	(NULL)
23.08	5.1	(NULL)
24.01	4.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 318 CFS-HRS; 26.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------



ELEVATION(FEET)		
12.17	185.0	(RUNOFF)
15.83	6.0	(RUNOFF)
17.33	4.6	(RUNOFF)
20.86	3.2	(RUNOFF)
24.02	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.54 WATERSHED INCHES; 189 CFS-HRS; 15.6 ACRE-FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 51,  
 VALUE EXTRAPOLATED.  
 \*\*\*

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OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	105.1	399.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.54 WATERSHED INCHES; 189 CFS-HRS; 15.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	335.1	(NULL)
20.62	9.5	(NULL)
21.94	8.7	(NULL)
24.01	7.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.97 WATERSHED INCHES; 507 CFS-HRS; 41.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	316.5	(RUNOFF)
15.84	10.3	(RUNOFF)
17.34	8.0	(RUNOFF)
19.44	6.1	(RUNOFF)
21.95	5.2	(RUNOFF)
24.01	4.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.68 WATERSHED INCHES; 299 CFS-HRS; 24.7 ACRE-FEET.

FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	328.0	331.81
20.68	9.5	330.31
24.08	7.4	330.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.97 WATERSHED INCHES; 507 CFS-HRS; 41.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 17

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	565.4	(NULL)
18.58	17.7	(NULL)
20.62	15.2	(NULL)
21.94	13.8	(NULL)
23.07	12.7	(NULL)
24.01	11.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.86 WATERSHED INCHES; 805 CFS-HRS; 66.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	1488.9	(NULL)
20.07	44.3	(NULL)
20.62	42.4	(NULL)
21.94	38.6	(NULL)
23.08	35.5	(NULL)
23.73	33.6	(NULL)
24.03	33.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.75 WATERSHED INCHES; 2203 CFS-HRS; 182.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	683.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.30 WATERSHED INCHES; 923 CFS-HRS; 76.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	1385.0	239.20
24.09	33.1	234.53

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.75 WATERSHED INCHES; 2203 CFS-HRS; 182.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	2014.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.61 WATERSHED INCHES; 3127 CFS-HRS; 258.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	2014.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.61 WATERSHED INCHES; 3127 CFS-HRS; 258.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	66.5	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	65.7	415.70
23.14	1.1	410.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.42 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	311.9	(RUNOFF)
20.10	6.1	(RUNOFF)
21.97	5.3	(RUNOFF)
24.03	4.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.42 WATERSHED INCHES; 336 CFS-HRS; 27.8 ACRE-  
FEET.

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OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	284.3	370.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.42 WATERSHED INCHES; 336 CFS-HRS; 27.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	349.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.42 WATERSHED INCHES; 413 CFS-HRS; 34.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	180.8	(RUNOFF)
21.97	3.0	(RUNOFF)
24.02	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.39 WATERSHED INCHES; 192 CFS-HRS; 15.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	515.5	(NULL)
20.08	11.1	(NULL)
20.61	10.6	(NULL)
24.01	8.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.41 WATERSHED INCHES; 605 CFS-HRS; 50.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	429.8	343.30

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 605 CFS-HRS; 50.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.11	58.8	(RUNOFF)
17.32	1.2	(RUNOFF)
18.58	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.67 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.6%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.35	446.1	(NULL)
23.98	9.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.36 WATERSHED INCHES; 652 CFS-HRS; 53.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	261.8	(RUNOFF)
15.45	7.1	(RUNOFF)
15.82	6.8	(RUNOFF)
17.32	5.2	(RUNOFF)
18.82	4.2	(RUNOFF)
22.41	3.2	(RUNOFF)
22.72	3.1	(RUNOFF)
23.02	3.1	(RUNOFF)
23.99	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.96 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT 1.1%.  
 \*\*\*

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 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

04/21/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG

2.04TEST

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OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	261.8	(NULL)
15.45	7.1	(NULL)
15.82	6.8	(NULL)
17.32	5.2	(NULL)
18.82	4.2	(NULL)
22.41	3.2	(NULL)
22.72	3.1	(NULL)
23.02	3.1	(NULL)
23.99	3.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.96 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	255.4	357.40

15.88	6.8	356.14
17.38	5.2	356.11
18.88	4.2	356.09
21.98	3.4	356.07
22.78	3.1	356.07
23.09	3.1	356.07
24.05	3.2	356.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.99 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	521.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.66 WATERSHED INCHES; 750 CFS-HRS; 62.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 32

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	686.9	(NULL)
18.85	18.6	(NULL)
20.08	17.2	(NULL)
20.87	16.2	(NULL)
21.75	15.1	(NULL)
21.97	15.0	(NULL)
23.08	13.6	(NULL)
24.04	12.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.73 WATERSHED INCHES; 975 CFS-HRS; 80.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	178.4	(RUNOFF)
21.97	3.1	(RUNOFF)
24.03	2.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.43 WATERSHED INCHES; 198 CFS-HRS; 16.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	876.5	(NULL)
18.85	22.4	(NULL)
20.09	20.8	(NULL)
20.87	19.6	(NULL)
21.97	18.1	(NULL)
23.09	16.5	(NULL)
24.04	15.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 1173 CFS-HRS; 96.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 35

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2.04TEST

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	825.2	318.24
20.15	20.7	316.31
20.91	19.6	316.30
22.01	18.1	316.29
23.15	16.5	316.28
24.10	15.5	316.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 1173 CFS-HRS; 96.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	78.9	(RUNOFF)
18.64	2.0	(RUNOFF)
23.76	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.49 WATERSHED INCHES; 102 CFS-HRS; 8.4 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .047 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*



OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	78.4	328.90
23.77	1.4	323.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.47 WATERSHED INCHES; 102 CFS-HRS; 8.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	903.1	(NULL)
20.15	22.6	(NULL)
20.91	21.3	(NULL)
22.01	19.7	(NULL)
23.15	17.9	(NULL)
24.10	16.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.66 WATERSHED INCHES; 1275 CFS-HRS; 105.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	303.7	(RUNOFF)
15.45	9.3	(RUNOFF)
15.84	8.9	(RUNOFF)
17.34	6.8	(RUNOFF)
19.74	5.1	(RUNOFF)
20.04	5.1	(RUNOFF)
22.42	4.2	(RUNOFF)
22.74	4.1	(RUNOFF)
23.04	4.1	(RUNOFF)
24.00	4.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.96 WATERSHED INCHES; 263 CFS-HRS; 21.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	1035.2	(NULL)

23.99 20.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.53 WATERSHED INCHES; 1537 CFS-HRS; 127.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	1443.0	(NULL)
23.99	29.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.47 WATERSHED INCHES; 2188 CFS-HRS; 180.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	777.5	304.64

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.48 WATERSHED INCHES; 2189 CFS-HRS; 180.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	97.1	(RUNOFF)
15.84	3.1	(RUNOFF)
17.34	2.4	(RUNOFF)
24.02	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.37 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	49.7	274.20

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.25 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.46	47.8	223.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.26 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	289.3	(RUNOFF)
18.87	8.0	(RUNOFF)
20.86	7.1	(RUNOFF)
21.97	6.6	(RUNOFF)
23.10	6.0	(RUNOFF)
24.03	5.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.01 WATERSHED INCHES; 313 CFS-HRS; 25.9 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	297.1	(NULL)
18.59	12.3	(NULL)
20.63	10.2	(NULL)
23.09	8.2	(NULL)
24.03	7.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.38 WATERSHED INCHES; 409 CFS-HRS; 33.8 ACRE-  
FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.83	743.3	226.65

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.47 WATERSHED INCHES; 2188 CFS-HRS; 180.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	833.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.02 WATERSHED INCHES; 2596 CFS-HRS; 214.6 ACRE-FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.02	743.3	224.99

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.02 WATERSHED INCHES; 2595 CFS-HRS; 214.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	802.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.09 WATERSHED INCHES; 1108 CFS-HRS; 91.6 ACRE-FEET.

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OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	107.1	(RUNOFF)
15.84	3.3	(RUNOFF)
18.85	2.0	(RUNOFF)
24.01	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.72 WATERSHED INCHES; 107 CFS-HRS; 8.9 ACRE-FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	59.2	337.87
24.03	1.4	333.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.72 WATERSHED INCHES; 108 CFS-HRS; 8.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	58.6	317.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.71 WATERSHED INCHES; 107 CFS-HRS; 8.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	858.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.14 WATERSHED INCHES; 1216 CFS-HRS; 100.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	84.8	(RUNOFF)
24.02	1.2	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.20 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	71.1	322.85
24.03	1.2	320.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.60 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-

FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	926.8	279.26

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 1294 CFS-HRS; 107.0 ACRE-FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	800.3	279.01

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 1294 CFS-HRS; 107.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	494.4	(RUNOFF)
19.46	13.3	(RUNOFF)
20.86	12.1	(RUNOFF)
21.97	11.3	(RUNOFF)
23.10	10.3	(RUNOFF)
24.03	9.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.99 WATERSHED INCHES; 536 CFS-HRS; 44.3 ACRE-FEET.

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OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	1077.6	(NULL)
24.01	27.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.28 WATERSHED INCHES; 1830 CFS-HRS; 151.2 ACRE-FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)						PEAK	
13.18	333.5						277.90	
HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99								
HRS	MAIN	TIME	INCREMENT =	.060	hr,	DRAINAGE	AREA =	.54
SQ.MI.								
4.14 CFS	.00	.01	.01	.01	.01	.01	.02	.02
.03								
4.62 CFS	.03	.04	.04	.04	.05	.06	.07	.08
.09								
5.10 CFS	.10	.12	.14	.17	.20	.24	.28	
.33								
5.58 CFS	.39	.45	.51	.58	.66	.74	.82	
.91								
6.06 CFS	1.01	1.10	1.20	1.31	1.42	1.53	1.65	
1.77								
6.54 CFS	1.89	2.02	2.15	2.29	2.44	2.59	2.74	
2.90								
7.02 CFS	3.06	3.23	3.40	3.58	3.76	3.95	4.14	
4.34								
7.50 CFS	4.55	4.76	4.97	5.19	5.42	5.65	5.88	
6.12								
7.98 CFS	6.36	6.61	6.86	7.12	7.38	7.65	7.92	
8.20								
8.46 CFS	8.48	8.77	9.06	9.35	9.65	9.95	10.26	
10.57								
8.94 CFS	10.89	11.21	11.54	11.88	12.23	12.59	12.97	
13.37								
9.42 CFS	13.80	14.24	14.72	15.23	15.76	16.34	16.95	
17.59								
9.90 CFS	18.27	18.99	19.75	20.54	21.38	22.25	23.16	
24.11								
10.38 CFS	25.09	26.05	27.04	28.07	29.15	30.28	31.47	
32.75								
10.86 CFS	34.12	35.61	37.23	38.99	40.92	43.03	45.35	
47.91								
11.34 CFS	50.68	53.58	56.78	60.33	64.33	68.94	74.33	
80.27								
11.82 CFS	87	96	105	115	128	139	154	
170								
12.30 CFS	186	202	214	225	236	246	253	
258								
12.78 CFS	262	266	293	312	324	330	333	
333								
13.26 CFS	332	328	323	317	309	300	291	
282								
13.74 CFS	272	265	264	263	262	261	260	
258								
14.22 CFS	257	256	255	254	252	251	249	
247								
14.70 CFS	245	243	241	239	237	235	233	
231								
15.18 CFS	229	227	225	223	221	219	217	
215								
15.66 CFS	213	211	209	207	205	203	201	
199								
16.14 CFS	197	194	192	190	187	185	183	
181								
16.62 CFS	178	176	174	172	170	167	165	
163								
17.10 CFS	161	159	157	154	152	150	148	
146								

17.58 CFS	144	142	140	138	136	134	132
130							
18.06 CFS	128	126	124	121	118	115	112
110							
18.54 CFS	107	105	102	100	97	95	92
90							
19.02 CFS	87.23	85.00	82.86	80.82	78.86	76.99	75.21
73.39							

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19.50 CFS	71.64	69.98	68.40	66.88	65.44	64.06	62.74
61.48							
19.98 CFS	60.27	59.12	58.02	56.98	55.98	55.02	54.11
53.23							
20.46 CFS	52.38	51.57	50.78	50.04	49.27	48.53	47.83
47.16							
20.94 CFS	46.52	45.90	45.31	44.73	44.18	43.65	43.15
42.66							
21.42 CFS	42.19	41.75	41.32	40.91	40.51	40.12	39.75
39.39							
21.90 CFS	39.04	38.71	38.39	38.08	37.77	37.47	37.18
36.90							
22.38 CFS	36.62	36.35	36.09	35.84	35.59	35.35	35.11
34.87							
22.86 CFS	34.64	34.40	34.17	33.94	33.73	33.52	33.31
33.11							
23.34 CFS	32.91	32.72	32.52	32.33	32.13	31.94	31.75
31.56							
23.82 CFS	31.38	31.20	31.02	30.84	30.67	30.47	30.17
29.72							
24.30 CFS	29.14	28.45	27.67	26.79	25.85	24.85	23.75
22.64							
24.78 CFS	21.53	20.44	19.37	18.34	17.35	16.40	15.49
14.63							
25.26 CFS	13.81	13.03	12.29	11.60	10.94	10.32	9.73
9.18							
25.74 CFS	8.66	8.17	7.70	7.27	6.86	6.47	6.11
5.77							
26.22 CFS	5.44	5.14	4.85	4.58	4.33	4.09	3.87
3.66							
26.70 CFS	3.46	3.27	3.10	2.93	2.78	2.63	2.49
2.36							
27.18 CFS	2.24	2.13					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.27 WATERSHED INCHES; 1828 CFS-HRS; 151.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET) 2511.4 (NULL)  
 12.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)



5.78 WATERSHED INCHES; 5721 CFS-HRS; 472.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.13	55.0	(RUNOFF)
20.04	1.1	(RUNOFF)
20.60	1.0	(RUNOFF)
20.83	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.31 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.40	2528.5	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.77 WATERSHED INCHES; 5767 CFS-HRS; 476.6 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 6, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .006 HOURS.  
\*\*\*

OPERATION RESVOR STRUCTURE 6

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.46	2463.7	156.67

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99							
	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = 1.55			
3.42 CFS	.00	.01	.01	.02	.03	.04	.05	
.07								
3.90 CFS	.08	.10	.12	.14	.17	.20	.24	
.28								
4.38 CFS	.33	.39	.46	.53	.61	.71	.82	
.95								
4.86 CFS	1.09	1.25	1.41	1.59	1.77	1.97	2.17	
2.38								
5.34 CFS	2.60	2.84	3.08	3.33	3.59	3.88	4.18	
4.50								
5.82 CFS	4.84	5.19	5.55	5.92	6.31	6.73	7.16	
7.60								

6.30 CFS 12.07	8.05	8.52	9.02	9.55	10.12	10.73	11.38
6.78 CFS 18.58	12.79	13.52	14.30	15.11	15.94	16.78	17.65
7.26 CFS 26.69	19.54	20.51	21.49	22.48	23.50	24.55	25.62
7.74 CFS 36.24	27.78	28.90	30.06	31.24	32.45	33.69	34.95
8.22 CFS 47.05	37.54	38.84	40.13	41.48	42.86	44.23	45.61
8.70 CFS 59.34	48.55	50.09	51.62	53.12	54.59	56.08	57.64
9.18 CFS 77.32	61.14	63.02	65.04	67.24	69.61	72.11	74.68
9.66 CFS 103	80	83	86	89	93	96	100
10.14 CFS 138	107	111	115	120	124	128	133
10.62 CFS 201	143	149	155	163	171	180	190
11.10 CFS 333	211	224	237	253	271	290	310
11.58 CFS 844	359	390	430	481	542	616	713
12.06 CFS 2460	1031	1289	1616	1919	2137	2321	2441
12.54 CFS 1496	2390	2265	2121	1971	1797	1672	1577
13.02 CFS 1040	1428	1367	1309	1253	1196	1135	1085
13.50 CFS 792	1000	960	927	895	866	839	815
13.98 CFS 647	770	751	733	716	699	682	664
14.46 CFS 511	629	612	594	577	560	543	527
14.94 CFS 401	496	482	467	453	440	426	414
15.42 CFS 318	389	378	366	356	345	335	326
15.90 CFS 260	310	302	295	287	280	273	266
16.38 CFS 218	254	249	243	238	232	227	223
16.86 CFS 190	214	210	206	203	199	196	193
17.34 CFS 168	187	184	181	179	176	173	171
17.82 CFS 151	166	164	162	159	157	155	153
18.30 CFS 138	149	147	145	144	142	141	139
18.78 CFS 129	137	136	135	134	133	131	130
19.26 CFS 123	128	128	127	126	125	125	124
19.74 CFS 118	122	122	121	120	120	119	119
20.22 CFS 113	118	117	117	116	115	114	114

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20.70	CFS	113	113	112	112	111	111	110
109								
21.18	CFS	109	108	108	107	107	107	106
106								
21.66	CFS	105	105	104	104	103	103	103
102								
22.14	CFS	102	101	101	100	100	99	99
99								
22.62	CFS	98.21	97.66	97.06	96.53	96.05	95.49	94.91
94.46								
23.10	CFS	94.17	93.93	93.58	93.10	92.59	92.10	91.63
91.12								
23.58	CFS	90.51	89.89	89.43	89.15	88.87	88.44	87.87
87.42								
24.06	CFS	87.00	85.83	82.65	77.14	70.71	64.67	59.50
55.25								
24.54	CFS	51.64	48.46	45.56	42.87	40.32	37.91	35.59
33.37								
25.02	CFS	31.25	29.23	27.30	25.47	23.75	22.13	20.62
19.20								
25.50	CFS	17.87	16.63	15.47	14.39	13.38	12.45	11.58
10.78								
25.98	CFS	10.04	9.36	8.73	8.14	7.61	7.12	6.66
6.25								
26.46	CFS	5.84	5.40	4.99	4.61	4.28		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 5767 CFS-HRS; 476.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.13	162.6	(RUNOFF)
15.84	4.7	(RUNOFF)
17.34	3.6	(RUNOFF)
23.04	2.2	(RUNOFF)
23.70	2.0	(RUNOFF)
24.00	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.26 WATERSHED INCHES; 144 CFS-HRS; 11.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 59

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.52	2462.4	135.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 5767 CFS-HRS; 476.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET) 2696.6 (NULL)  
 12.53

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.64 WATERSHED INCHES; 7593 CFS-HRS; 627.5 ACRE-  
 FEET.

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\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET) 2696.6 (NULL)  
 12.53

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.54 WATERSHED INCHES; 7459 CFS-HRS; 616.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET) 73.7 (RUNOFF)  
 12.17 2.1 (RUNOFF)  
 17.34 1.2 (RUNOFF)  
 24.01

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	ALTERNATE	=	1,	STORM	=	99
SQ.MI.							DRAINAGE	AREA	=	.02		
9.24 CFS	.48	.52	.56	.60	.63	.67	.71					
.76												
9.72 CFS	.82	.87	.92	.96	1.02	1.07	1.14					
1.20												
10.20 CFS	1.27	1.32	1.38	1.45	1.52	1.60	1.69					
1.81												
10.68 CFS	1.96	2.13	2.32	2.52	2.73	2.95	3.17					
3.47												
11.16 CFS	3.82	4.22	4.63	5.07	5.55	6.04	6.56					
7.70												
11.64 CFS	9.48	11.09	12.75	15.35	19.12	24.51	34.21					
48.83												
12.12 CFS	68.24	73.22	59.48	44.74	35.05	28.28	23.95					
21.31												
12.60 CFS	18.42	15.52	13.70	12.59	11.77	11.07	10.45					
9.82												
13.08 CFS	9.18	8.58	8.09	7.70	7.34	6.98	6.63					

6.27								
13.56	CFS	5.93	5.61	5.35	5.17	5.02	4.90	4.81
4.74								
14.04	CFS	4.67	4.59	4.48	4.37	4.27	4.20	4.13
4.06								
14.52	CFS	3.96	3.85	3.74	3.65	3.57	3.51	3.42
3.33								
15.00	CFS	3.24	3.16	3.06	2.96	2.89	2.85	2.83
2.82								
15.48	CFS	2.82	2.82	2.79	2.74	2.69	2.67	2.69
2.68								
15.96	CFS	2.64	2.59	2.55	2.53	2.53	2.51	2.48
2.45								
16.44	CFS	2.43	2.39	2.36	2.34	2.33	2.32	2.29
2.25								
16.92	CFS	2.23	2.23	2.22	2.19	2.14	2.09	2.07
2.08								
17.40	CFS	2.07	2.03	1.98	1.94	1.92	1.92	1.90
1.87								
17.88	CFS	1.83	1.82	1.81	1.80	1.76	1.73	1.71
1.71								
18.36	CFS	1.69	1.66	1.65	1.67	1.69	1.69	1.66
1.65								
18.84	CFS	1.66	1.66	1.63	1.61	1.61	1.60	1.60
1.60								
19.32	CFS	1.60	1.60	1.60	1.60	1.59	1.56	1.55
1.56								
19.80	CFS	1.56	1.53	1.51	1.53	1.56	1.55	1.53
1.51								
20.28	CFS	1.51	1.50	1.47	1.45	1.46	1.48	1.49
1.47								
20.76	CFS	1.44	1.46	1.46	1.44	1.42	1.41	1.40
1.40								
21.24	CFS	1.40	1.40	1.40	1.40	1.40	1.40	1.37
1.34								
21.72	CFS	1.35	1.36	1.34	1.35	1.36	1.34	1.32
1.31								
22.20	CFS	1.30	1.30	1.30	1.30	1.30	1.30	1.29
1.25								

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22.68	CFS	1.24	1.26	1.25	1.22	1.21	1.22	1.25
1.24								
23.16	CFS	1.22	1.20	1.20	1.19	1.19	1.18	1.15
1.13								
23.64	CFS	1.16	1.18	1.17	1.14	1.11	1.11	1.19
1.14								
24.12	CFS	.76	.37					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.64 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET) 12.53 2718.3 (NULL)  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.53 WATERSHED INCHES; 7529 CFS-HRS; 622.2 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 6

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 7

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.								
RAINTABLE NUMBER 1, ARC 2								
MAIN TIME INCREMENT .060 HOURS								
ALTERNATE		1	STORM	2				
XSECTION	1	RUNOFF	.21	1.22	---	12.26	137	652.4
STRUCTURE	13	RESVOR	.21	1.21	389.46	12.61	62	295.2
XSECTION	2	RUNOFF	.03	1.03	---	12.20	18	600.0
STRUCTURE	58	RESVOR	.03	1.02	429.15	13.47	2	66.7
XSECTION	3	ADDHYD	.24	1.19	---	12.61	64	266.7
XSECTION	4	RUNOFF	.06	1.47	---	12.16	63	1050.0
XSECTION	6	RUNOFF	.08	1.06	---	12.19	53	662.5
XSECTION	9	RUNOFF	.06	1.27	---	12.19	49	816.7
XSECTION	10	RUNOFF	.03	1.29	---	12.23	19	633.3
STRUCTURE	52	RESVOR	.03	.86	454.47	13.33T	3T	100.0
XSECTION	12	ADDHYD	.09	1.15	---	12.19	49	544.4
XSECTION	13	RUNOFF	.04	1.67	---	12.18	49	1225.0
STRUCTURE	51	RESVOR	.04	1.67	397.47	12.42	22	550.0
XSECTION	15	RUNOFF	.08	1.19	---	12.16	66	825.0
XSECTION	17	ADDHYD	.21	1.27	---	12.21	110	523.8
XSECTION	18	ADDHYD	.59	1.23	---	12.23	244	413.6
XSECTION	19	RUNOFF	.27	1.01	---	12.33	122	451.9
XSECTION	20	REACH	.59	1.23	235.51	12.36	220	372.9

XSECTION	21	ADDHYD	.86	1.16	---	12.35	341	396.5
STRUCTURE	10	RESVOR	.86	1.16	---	12.35	341	396.5
XSECTION	22	RUNOFF	.02	1.60	---	12.22	17	850.0
STRUCTURE	47	RESVOR	.02	1.60	414.10	12.37	12	600.0
XSECTION	23	RUNOFF	.08	1.60	---	12.20	80	1000.0
STRUCTURE	32	RESVOR	.08	1.60	368.24	12.32	61	762.5
XSECTION	25	RUNOFF	.05	1.58	---	12.19	46	920.0
STRUCTURE	34	RESVOR	.15	1.59	337.19	12.68	54	360.0
XSECTION	27	RUNOFF	.01	1.19	---	12.12	13	1300.0
XSECTION	28	ADDHYD	.16	1.56	---	12.67	56	350.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AMOUNT	ELEVATION	TIME	RATE	RATE
ID	OPERATION	AREA (SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	2					
XSECTION	29	RUNOFF	.05	1.96	---	12.11	81	1620.0
STRUCTURE	64	RESVOR	.05	1.96	---	12.11	81	1620.0
XSECTION	31	RUNOFF	.17	1.75	---	12.33	142	835.3
XSECTION	33	RUNOFF	.05	1.60	---	12.21	46	920.0
XSECTION	36	RUNOFF	.02	1.64	---	12.27	21	1050.0
STRUCTURE	33	RESVOR	.02	1.64	325.68	12.45	15	750.0
XSECTION	38	RUNOFF	.07	1.33	---	12.13	69	985.7
XSECTION	39	ADDHYD	.36	1.67	---	12.32	265	736.1
STRUCTURE	8	RESVOR	.52	1.64	290.93	12.73	196	376.9
XSECTION	41	RUNOFF	.02	1.57	---	12.18	25	1250.0
STRUCTURE	29	RESVOR	.02	1.56	268.66	13.00	4	200.0
XSECTION	43	RUNOFF	.12	.51	---	12.26	26	216.7
XSECTION	44	ADDHYD	.14	.68	---	12.26	28	200.0
XSECTION	46	ADDHYD	.67	1.43	---	12.83	207	309.0
STRUCTURE	7	RESVOR	.67	1.43	218.69	13.16	188	280.6
XSECTION	47	RUNOFF	.28	1.40	---	12.32	185	660.7
XSECTION	48	RUNOFF	.02	1.78	---	12.17	30	1500.0
STRUCTURE	40	RESVOR	.02	1.78	334.19	12.33	16	800.0
XSECTION	51	RUNOFF	.02	1.47	---	12.19	21	1050.0
STRUCTURE	43	RESVOR	.02	.97	321.02	12.86	4	200.0

XSECTION	52	ADDHYD	.33	1.40	277.07	12.33	198	600.0
XSECTION	53	RUNOFF	.21	.50	---	12.26	44	209.5
XSECTION	54	ADDHYD	.54	1.05	---	12.46	208	385.2
STRUCTURE	5	RESVOR	.54	1.05	260.86	13.07	93	172.2
XSECTION	55	ADDHYD	1.53	1.28	---	12.39	415	271.2
XSECTION	56	RUNOFF	.02	.61	---	12.14	6	300.0
XSECTION	57	ADDHYD	1.55	1.27	---	12.39	418	269.7
STRUCTURE	6	RESVOR	1.55	1.27	142.84	12.40	417	269.0
XSECTION	58	RUNOFF	.04	1.51	---	12.14	41	1025.0
XSECTION	62	RUNOFF	.02	.73	---	12.18	10	500.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ALTERNATE 1 STORM 2								
XSECTION	63	ADDHYD	2.11	1.17	---	12.53	481	228.0
RAINFALL OF		4.10 inches AND	24.00 hr	DURATION,	BEGINS AT	.0 hrs.		
ALTERNATE 1 STORM 5								
XSECTION	1	RUNOFF	.21	1.90	---	12.25	218	1038.1
STRUCTURE	13	RESVOR	.21	1.90	391.28	12.60	97	461.9
XSECTION	2	RUNOFF	.03	1.67	---	12.20	30	1000.0
STRUCTURE	58	RESVOR	.03	1.64	430.23	12.68	8	266.7
XSECTION	3	ADDHYD	.24	1.87	---	12.62	105	437.5
XSECTION	4	RUNOFF	.06	2.21	---	12.15	96	1600.0
XSECTION	6	RUNOFF	.08	1.70	---	12.19	88	1100.0
XSECTION	9	RUNOFF	.06	1.98	---	12.19	77	1283.3
XSECTION	10	RUNOFF	.03	1.99	---	12.23	30	1000.0
STRUCTURE	52	RESVOR	.03	1.54	454.90	12.72	9	300.0
XSECTION	12	ADDHYD	.09	1.84	---	12.19	77	855.6
XSECTION	13	RUNOFF	.04	2.45	---	12.18	72	1800.0
STRUCTURE	51	RESVOR	.04	2.45	397.96	12.39	34	850.0
XSECTION	15	RUNOFF	.08	1.87	---	12.16	106	1325.0
XSECTION	17	ADDHYD	.21	1.98	---	12.20	178	847.6
XSECTION	18	ADDHYD	.59	1.92	---	12.22	396	671.2



XSECTION	19	RUNOFF	.27	1.64	---	12.32	208	770.4
XSECTION	20	REACH	.59	1.92	236.08	12.34	359	608.5
XSECTION	21	ADDHYD	.86	1.83	---	12.33	569	661.6
STRUCTURE	10	RESVOR	.86	1.83	---	12.33	569	661.6
XSECTION	22	RUNOFF	.02	2.37	---	12.22	25	1250.0
STRUCTURE	47	RESVOR	.02	2.37	414.35	12.33	21	1050.0
XSECTION	23	RUNOFF	.08	2.37	---	12.20	119	1487.5
STRUCTURE	32	RESVOR	.08	2.37	368.74	12.32	86	1075.0
XSECTION	25	RUNOFF	.05	2.35	---	12.19	68	1360.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)				
ALTERNATE	1	STORM	5				
STRUCTURE 34	RESVOR	.15	2.36	338.39	12.46	127	846.7
XSECTION 27	RUNOFF	.01	1.88	---	12.12	20	2000.0
XSECTION 28	ADDHYD	.16	2.33	---	12.46	132	825.0
XSECTION 29	RUNOFF	.05	2.79	---	12.11	113	2260.0
STRUCTURE 64	RESVOR	.05	2.79	---	12.11	113	2260.0
XSECTION 31	RUNOFF	.17	2.55	---	12.32	207	1217.6
XSECTION 33	RUNOFF	.05	2.38	---	12.20	68	1360.0
XSECTION 36	RUNOFF	.02	2.42	---	12.27	30	1500.0
STRUCTURE 33	RESVOR	.02	2.42	327.30	12.44	24	1200.0
XSECTION 38	RUNOFF	.07	2.05	---	12.13	107	1528.6
XSECTION 39	ADDHYD	.36	2.46	---	12.31	390	1083.3
STRUCTURE 8	RESVOR	.52	2.42	293.51	12.75	270	519.2
XSECTION 41	RUNOFF	.02	2.34	---	12.17	37	1850.0
STRUCTURE 29	RESVOR	.02	2.32	270.05	12.93	5	250.0
XSECTION 43	RUNOFF	.12	.96	---	12.23	61	508.3
XSECTION 44	ADDHYD	.14	1.18	---	12.24	63	450.0
XSECTION 46	ADDHYD	.67	2.15	---	12.84	290	432.8
STRUCTURE 7	RESVOR	.67	2.15	219.75	13.13	275	410.4
XSECTION 47	RUNOFF	.28	2.14	---	12.32	285	1017.9
XSECTION 48	RUNOFF	.02	2.59	---	12.17	44	2200.0
STRUCTURE 40	RESVOR	.02	2.59	335.09	12.35	22	1100.0
XSECTION 51	RUNOFF	.02	2.22	---	12.18	31	1550.0

STRUCTURE	43	RESVOR	.02	1.69	321.43	12.41	15	750.0
XSECTION	52	ADDHYD	.33	2.14	277.35	12.33	315	954.5
XSECTION	53	RUNOFF	.21	.95	---	12.23	103	490.5
XSECTION	54	ADDHYD	.54	1.68	---	12.43	351	650.0
STRUCTURE	5	RESVOR	.54	1.68	263.85	13.08	137	253.7
XSECTION	55	ADDHYD	1.53	1.97	---	12.37	693	452.9
XSECTION	56	RUNOFF	.02	1.11	---	12.14	13	650.0
XSECTION	57	ADDHYD	1.55	1.96	---	12.37	698	450.3

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:

F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
-----							
ALTERNATE	1	STORM	5				
STRUCTURE	6	RESVOR	1.55	1.96	144.77	12.38	699 451.0
XSECTION	58	RUNOFF	.04	2.27	---	12.13	61 1525.0
XSECTION	62	RUNOFF	.02	1.27	---	12.17	19 950.0
XSECTION	63	ADDHYD	2.11	1.83	---	12.47	802 380.1
RAINFALL OF 4.91 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
-----							
ALTERNATE	1	STORM	10				
XSECTION	1	RUNOFF	.21	2.56	---	12.25	295 1404.8
STRUCTURE	13	RESVOR	.21	2.56	392.86	12.60	128 609.5
XSECTION	2	RUNOFF	.03	2.29	---	12.19	42 1400.0
STRUCTURE	58	RESVOR	.03	2.25	430.98	12.52	16 533.3
XSECTION	3	ADDHYD	.24	2.52	---	12.59	144 600.0
XSECTION	4	RUNOFF	.06	2.91	---	12.15	125 2083.3
XSECTION	6	RUNOFF	.08	2.33	---	12.18	121 1512.5
XSECTION	9	RUNOFF	.06	2.64	---	12.18	103 1716.7
XSECTION	10	RUNOFF	.03	2.67	---	12.23	40 1333.3
STRUCTURE	52	RESVOR	.03	2.20	455.36	12.60	15 500.0
XSECTION	12	ADDHYD	.09	2.51	---	12.19	104 1155.6
XSECTION	13	RUNOFF	.04	3.18	---	12.18	92 2300.0
STRUCTURE	51	RESVOR	.04	3.18	398.37	12.38	46 1150.0
XSECTION	15	RUNOFF	.08	2.53	---	12.16	143 1787.5
XSECTION	17	ADDHYD	.21	2.65	---	12.20	243 1157.1

XSECTION	18	ADDHYD	.59	2.58	---	12.21	540	915.3
XSECTION	19	RUNOFF	.27	2.26	---	12.32	290	1074.1
XSECTION	20	REACH	.59	2.58	236.59	12.34	485	822.0
XSECTION	21	ADDHYD	.86	2.48	---	12.33	777	903.5
STRUCTURE	10	RESVOR	.86	2.48	---	12.33	777	903.5
XSECTION	22	RUNOFF	.02	3.09	---	12.22	33	1650.0
STRUCTURE	47	RESVOR	.02	3.09	414.77	12.32	27	1350.0

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SUMMARY TABLE 1

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 SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)					
ALTERNATE	1	STORM	10					
XSECTION	23	RUNOFF	.08	3.09	---	12.20	154	1925.0
STRUCTURE	32	RESVOR	.08	3.09	369.12	12.30	123	1537.5
XSECTION	25	RUNOFF	.05	3.07	---	12.19	89	1780.0
STRUCTURE	34	RESVOR	.15	3.08	338.90	12.39	185	1233.3
XSECTION	27	RUNOFF	.01	2.54	---	12.12	27	2700.0
XSECTION	28	ADDHYD	.16	3.04	---	12.37	192	1200.0
XSECTION	29	RUNOFF	.05	3.56	---	12.11	142	2840.0
STRUCTURE	64	RESVOR	.05	3.56	---	12.11	142	2840.0
XSECTION	31	RUNOFF	.17	3.28	---	12.32	264	1552.9
XSECTION	33	RUNOFF	.05	3.10	---	12.20	89	1780.0
XSECTION	36	RUNOFF	.02	3.14	---	12.27	39	1950.0
STRUCTURE	33	RESVOR	.02	3.14	327.87	12.39	34	1700.0
XSECTION	38	RUNOFF	.07	2.74	---	12.13	143	2042.9
XSECTION	39	ADDHYD	.36	3.18	---	12.30	512	1422.2
STRUCTURE	8	RESVOR	.52	3.14	296.08	12.74	344	661.5
XSECTION	41	RUNOFF	.02	3.05	---	12.17	48	2400.0
STRUCTURE	29	RESVOR	.02	3.02	271.34	12.89	7	350.0
XSECTION	43	RUNOFF	.12	1.43	---	12.23	96	800.0
XSECTION	44	ADDHYD	.14	1.69	---	12.23	100	714.3
XSECTION	46	ADDHYD	.67	2.82	---	12.83	372	555.2
STRUCTURE	7	RESVOR	.67	2.82	220.66	13.09	354	528.4
XSECTION	47	RUNOFF	.28	2.83	---	12.32	379	1353.6
XSECTION	48	RUNOFF	.02	3.32	---	12.17	55	2750.0
STRUCTURE	40	RESVOR	.02	3.32	336.30	12.31	36	1800.0

XSECTION	51	RUNOFF	.02	2.92	---	12.18	41	2050.0
STRUCTURE	43	RESVOR	.02	2.37	321.86	12.32	28	1400.0
XSECTION	52	ADDHYD	.33	2.83	277.62	12.33	432	1309.1
XSECTION	53	RUNOFF	.21	1.42	---	12.22	164	781.0
XSECTION	54	ADDHYD	.54	2.29	---	12.41	497	920.4
STRUCTURE	5	RESVOR	.54	2.28	266.78	13.10	168	311.1

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF		PEAK DISCHARGE		
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1		STORM 10					
XSECTION	55	ADDHYD	1.53	2.63	---	12.36	955 624.2
XSECTION	56	RUNOFF	.02	1.62	---	12.14	20 1000.0
XSECTION	57	ADDHYD	1.55	2.62	---	12.36	963 621.3
STRUCTURE	6	RESVOR	1.55	2.62	146.47	12.38	965 622.6
XSECTION	58	RUNOFF	.04	2.97	---	12.13	79 1975.0
XSECTION	62	RUNOFF	.02	1.82	---	12.17	28 1400.0
XSECTION	63	ADDHYD	2.11	2.47	---	12.45	1100 521.3
RAINFALL OF 6.14 inches AND 24.00 hr DURATION, BEGINS AT					.0 hrs.		
ALTERNATE 1		STORM 25					
XSECTION	1	RUNOFF	.21	3.62	---	12.24	416 1981.0
STRUCTURE	13	RESVOR	.21	3.62	394.08	12.43	288 1371.4
XSECTION	2	RUNOFF	.03	3.30	---	12.19	61 2033.3
STRUCTURE	58	RESVOR	.03	3.24	431.78	12.33	43 1433.3
XSECTION	3	ADDHYD	.24	3.57	---	12.42	322 1341.7
XSECTION	4	RUNOFF	.06	4.02	---	12.15	172 2866.7
XSECTION	6	RUNOFF	.08	3.35	---	12.18	175 2187.5
XSECTION	9	RUNOFF	.06	3.71	---	12.18	144 2400.0
XSECTION	10	RUNOFF	.03	3.74	---	12.22	56 1866.7
STRUCTURE	52	RESVOR	.03	3.25	455.90	12.44	32 1066.7
XSECTION	12	ADDHYD	.09	3.57	---	12.19	152 1688.9
XSECTION	13	RUNOFF	.04	4.32	---	12.18	125 3125.0
STRUCTURE	51	RESVOR	.04	4.32	398.95	12.37	63 1575.0
XSECTION	15	RUNOFF	.08	3.58	---	12.16	202 2525.0

XSECTION	17	ADDHYD	.21	3.73	---	12.20	349	1661.9
XSECTION	18	ADDHYD	.59	3.64	---	12.21	782	1325.4
XSECTION	19	RUNOFF	.27	3.26	---	12.31	421	1559.3
XSECTION	20	REACH	.59	3.64	237.35	12.36	698	1183.1
XSECTION	21	ADDHYD	.86	3.52	---	12.33	1121	1303.5

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				ELEVATION	TIME	RATE	RATE
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	(FT)	(HR)	(CFS)	(CSM)
ALTERNATE	1	STORM	25				
STRUCTURE 10	RESVOR	.86	3.52	---	12.33	1121	1303.5
XSECTION 22	RUNOFF	.02	4.22	---	12.21	44	2200.0
STRUCTURE 47	RESVOR	.02	4.22	415.30	12.30	41	2050.0
XSECTION 23	RUNOFF	.08	4.22	---	12.19	208	2600.0
STRUCTURE 32	RESVOR	.08	4.22	369.53	12.27	179	2237.5
XSECTION 25	RUNOFF	.05	4.19	---	12.19	121	2420.0
STRUCTURE 34	RESVOR	.15	4.22	340.51	12.41	234	1560.0
XSECTION 27	RUNOFF	.01	3.57	---	12.11	37	3700.0
XSECTION 28	ADDHYD	.16	4.17	---	12.39	243	1518.8
XSECTION 29	RUNOFF	.05	4.73	---	12.11	185	3700.0
STRUCTURE 64	RESVOR	.05	4.73	---	12.11	185	3700.0
XSECTION 31	RUNOFF	.17	4.43	---	12.31	354	2082.4
XSECTION 33	RUNOFF	.05	4.22	---	12.20	120	2400.0
XSECTION 36	RUNOFF	.02	4.27	---	12.27	53	2650.0
STRUCTURE 33	RESVOR	.02	4.27	328.46	12.32	53	2650.0
XSECTION 38	RUNOFF	.07	3.82	---	12.13	198	2828.6
XSECTION 39	ADDHYD	.36	4.32	---	12.29	703	1952.8
STRUCTURE 8	RESVOR	.52	4.27	299.84	12.79	426	819.2
XSECTION 41	RUNOFF	.02	4.18	---	12.17	65	3250.0
STRUCTURE 29	RESVOR	.02	4.12	273.38	12.84	10	500.0
XSECTION 43	RUNOFF	.12	2.25	---	12.22	158	1316.7
XSECTION 44	ADDHYD	.14	2.56	---	12.22	163	1164.3
XSECTION 46	ADDHYD	.67	3.90	---	12.82	469	700.0
STRUCTURE 7	RESVOR	.67	3.90	221.77	13.10	455	679.1
XSECTION 47	RUNOFF	.28	3.92	---	12.31	523	1867.9

XSECTION	48	RUNOFF	.02	4.48	---	12.16	74	3700.0
STRUCTURE	40	RESVOR	.02	4.48	336.83	12.26	55	2750.0
XSECTION	51	RUNOFF	.02	4.03	---	12.18	56	2800.0
STRUCTURE	43	RESVOR	.02	3.46	322.35	12.26	47	2350.0
XSECTION	52	ADDHYD	.33	3.93	278.11	12.32	613	1857.6

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL		DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE		
	OPERATION	STORM				TIME (HR)	RATE (CFS)	RATE (CSM)
	ALTERNATE	1	STORM	25				
XSECTION	53	RUNOFF	.21	2.23	---	12.22	268	1276.2
XSECTION	54	ADDHYD	.54	3.27	---	12.38	734	1359.3
STRUCTURE	5	RESVOR	.54	3.27	270.96	13.14	212	392.6
XSECTION	55	ADDHYD	1.53	3.68	---	12.37	1399	914.4
XSECTION	56	RUNOFF	.02	2.49	---	12.13	31	1550.0
XSECTION	57	ADDHYD	1.55	3.67	---	12.36	1411	910.3
STRUCTURE	6	RESVOR	1.55	3.67	149.14	12.39	1411	910.3
XSECTION	58	RUNOFF	.04	4.09	---	12.13	108	2700.0
XSECTION	62	RUNOFF	.02	2.73	---	12.17	44	2200.0
XSECTION	63	ADDHYD	2.11	3.49	---	12.48	1589	753.1

RAINFALL OF 7.23 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

	ALTERNATE	1	STORM	50				
XSECTION	1	RUNOFF	.21	4.59	---	12.24	526	2504.8
STRUCTURE	13	RESVOR	.21	4.59	394.58	12.36	449	2138.1
XSECTION	2	RUNOFF	.03	4.24	---	12.19	78	2600.0
STRUCTURE	58	RESVOR	.03	4.15	432.07	12.26	71	2366.7
XSECTION	3	ADDHYD	.24	4.54	---	12.35	505	2104.2
XSECTION	4	RUNOFF	.06	5.03	---	12.15	213	3550.0
XSECTION	6	RUNOFF	.08	4.30	---	12.18	223	2787.5
XSECTION	9	RUNOFF	.06	4.69	---	12.18	181	3016.7
XSECTION	10	RUNOFF	.03	4.72	---	12.22	71	2366.7
STRUCTURE	52	RESVOR	.03	4.21	456.22	12.38	51	1700.0
XSECTION	12	ADDHYD	.09	4.55	---	12.19	196	2177.8
XSECTION	13	RUNOFF	.04	5.35	---	12.17	153	3825.0
STRUCTURE	51	RESVOR	.04	5.35	399.39	12.35	83	2075.0

XSECTION	15	RUNOFF	.08	4.55	---	12.16	255	3187.5
XSECTION	17	ADDHYD	.21	4.71	---	12.20	450	2142.9
XSECTION	18	ADDHYD	.59	4.61	---	12.35	1060	1796.6

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SUMMARY TABLE 1  
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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL		DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE		
	OPERATION	ALTERNATE				1	STORM	50
XSECTION	19	RUNOFF	.27	4.19	---	12.31	541	2003.7
XSECTION	20	REACH	.59	4.61	238.28	12.45	1011	1713.6
XSECTION	21	ADDHYD	.86	4.48	---	12.39	1489	1731.4
STRUCTURE	10	RESVOR	.86	4.48	---	12.39	1489	1731.4
XSECTION	22	RUNOFF	.02	5.24	---	12.22	55	2750.0
STRUCTURE	47	RESVOR	.02	5.24	415.55	12.26	55	2750.0
XSECTION	23	RUNOFF	.08	5.24	---	12.19	257	3212.5
STRUCTURE	32	RESVOR	.08	5.24	369.84	12.26	229	2862.5
XSECTION	25	RUNOFF	.05	5.21	---	12.19	149	2980.0
STRUCTURE	34	RESVOR	.15	5.24	342.14	12.41	284	1893.3
XSECTION	27	RUNOFF	.01	4.57	---	12.11	47	4700.0
XSECTION	28	ADDHYD	.16	5.18	---	12.39	295	1843.8
XSECTION	29	RUNOFF	.05	5.78	---	12.11	220	4400.0
STRUCTURE	64	RESVOR	.05	5.78	---	12.11	220	4400.0
XSECTION	31	RUNOFF	.17	5.47	---	12.31	433	2547.1
XSECTION	33	RUNOFF	.05	5.25	---	12.20	148	2960.0
XSECTION	36	RUNOFF	.02	5.30	---	12.26	65	3250.0
STRUCTURE	33	RESVOR	.02	5.31	328.67	12.29	65	3250.0
XSECTION	38	RUNOFF	.07	4.81	---	12.13	247	3528.6
XSECTION	39	ADDHYD	.36	5.35	---	12.27	869	2413.9
STRUCTURE	8	RESVOR	.52	5.29	302.82	12.86	476	915.4
XSECTION	41	RUNOFF	.02	5.19	---	12.17	80	4000.0
STRUCTURE	29	RESVOR	.02	5.12	273.78	12.45	28	1400.0
XSECTION	43	RUNOFF	.12	3.05	---	12.22	217	1808.3
XSECTION	44	ADDHYD	.14	3.38	---	12.22	224	1600.0
XSECTION	46	ADDHYD	.67	4.88	---	12.64	544	811.9
STRUCTURE	7	RESVOR	.67	4.88	222.52	13.05	526	785.1

XSECTION	47	RUNOFF	.28	4.93	---	12.31	655	2339.3
XSECTION	48	RUNOFF	.02	5.52	---	12.16	89	4450.0
STRUCTURE	40	RESVOR	.02	5.52	337.36	12.29	58	2900.0

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SUMMARY TABLE 1

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F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)
ALTERNATE 1		STORM	50					
XSECTION	51	RUNOFF	.02	5.04	---	12.18	70	3500.0
STRUCTURE	43	RESVOR	.02	4.45	322.59	12.26	59	2950.0
XSECTION	52	ADDHYD	.33	4.94	278.85	12.31	764	2315.2
XSECTION	53	RUNOFF	.21	3.03	---	12.21	370	1761.9
XSECTION	54	ADDHYD	.54	4.20	---	12.38	905	1675.9
STRUCTURE	5	RESVOR	.54	4.19	274.52	13.21	246	455.6
XSECTION	55	ADDHYD	1.53	4.65	---	12.42	1896	1239.2
XSECTION	56	RUNOFF	.02	3.31	---	12.13	42	2100.0
XSECTION	57	ADDHYD	1.55	4.64	---	12.42	1908	1231.0
STRUCTURE	6	RESVOR	1.55	4.64	152.20	12.46	1896	1223.2
XSECTION	58	RUNOFF	.04	5.09	---	12.13	134	3350.0
XSECTION	62	RUNOFF	.02	3.60	---	12.17	57	2850.0
XSECTION	63	ADDHYD	2.11	4.43	---	12.53	2120	1004.7

RAINFALL OF 8.47 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1		STORM	99					
XSECTION	1	RUNOFF	.21	5.72	---	12.24	653	3109.5
STRUCTURE	13	RESVOR	.21	5.72	394.98	12.31	610	2904.8
XSECTION	2	RUNOFF	.03	5.34	---	12.19	98	3266.7
STRUCTURE	58	RESVOR	.03	5.24	432.27	12.24	94	3133.3
XSECTION	3	ADDHYD	.24	5.66	---	12.31	690	2875.0
XSECTION	4	RUNOFF	.06	6.19	---	12.15	259	4316.7
XSECTION	6	RUNOFF	.08	5.40	---	12.18	278	3475.0
XSECTION	9	RUNOFF	.06	5.84	---	12.18	223	3716.7
XSECTION	10	RUNOFF	.03	5.86	---	12.22	87	2900.0
STRUCTURE	52	RESVOR	.03	5.35	456.47	12.34	70	2333.3
XSECTION	12	ADDHYD	.09	5.69	---	12.20	250	2777.8



XSECTION	13	RUNOFF	.04	6.54	---	12.17	185	4625.0
STRUCTURE	51	RESVOR	.04	6.54	399.85	12.34	105	2625.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ALTERNATE	1	STORM	99					
XSECTION	15	RUNOFF	.08	5.68	---	12.16	317	3962.5
XSECTION	17	ADDHYD	.21	5.86	---	12.20	565	2690.5
XSECTION	18	ADDHYD	.59	5.75	---	12.31	1489	2523.7
XSECTION	19	RUNOFF	.27	5.30	---	12.31	684	2533.3
XSECTION	20	REACH	.59	5.75	239.20	12.42	1385	2347.5
XSECTION	21	ADDHYD	.86	5.61	---	12.38	2014	2341.9
STRUCTURE	10	RESVOR	.86	5.61	---	12.38	2014	2341.9
XSECTION	22	RUNOFF	.02	6.42	---	12.22	67	3350.0
STRUCTURE	47	RESVOR	.02	6.42	415.70	12.24	66	3300.0
XSECTION	23	RUNOFF	.08	6.42	---	12.19	312	3900.0
STRUCTURE	32	RESVOR	.08	6.42	370.13	12.26	284	3550.0
XSECTION	25	RUNOFF	.05	6.39	---	12.19	181	3620.0
STRUCTURE	34	RESVOR	.15	6.42	343.30	12.36	430	2866.7
XSECTION	27	RUNOFF	.01	5.67	---	12.11	59	5900.0
XSECTION	28	ADDHYD	.16	6.36	---	12.35	446	2787.5
XSECTION	29	RUNOFF	.05	6.96	---	12.11	262	5240.0
STRUCTURE	64	RESVOR	.05	6.96	---	12.11	262	5240.0
XSECTION	31	RUNOFF	.17	6.66	---	12.31	522	3070.6
XSECTION	33	RUNOFF	.05	6.43	---	12.20	178	3560.0
XSECTION	36	RUNOFF	.02	6.49	---	12.26	79	3950.0
STRUCTURE	33	RESVOR	.02	6.47	328.90	12.29	78	3900.0
XSECTION	38	RUNOFF	.07	5.96	---	12.13	304	4342.9
XSECTION	39	ADDHYD	.36	6.53	---	12.28	1035	2875.0
STRUCTURE	8	RESVOR	.52	6.48	304.64	12.69	778	1496.2
XSECTION	41	RUNOFF	.02	6.37	---	12.17	97	4850.0
STRUCTURE	29	RESVOR	.02	6.25	274.20	12.36	50	2500.0
XSECTION	43	RUNOFF	.12	4.01	---	12.21	289	2408.3
XSECTION	44	ADDHYD	.14	4.38	---	12.22	297	2121.4
XSECTION	46	ADDHYD	.67	6.02	---	12.80	833	1243.3

STRUCTURE 7 RESVOR .67 6.02 224.99 13.02 743 1109.0  
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:

F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)					
ALTERNATE	1	STORM	99					
XSECTION	47	RUNOFF	.28	6.09	---	12.31	803	2867.9
XSECTION	48	RUNOFF	.02	6.72	---	12.16	107	5350.0
STRUCTURE	40	RESVOR	.02	6.72	337.87	12.32	59	2950.0
XSECTION	51	RUNOFF	.02	6.20	---	12.18	85	4250.0
STRUCTURE	43	RESVOR	.02	5.60	322.85	12.26	71	3550.0
XSECTION	52	ADDHYD	.33	6.10	279.26	12.31	927	2809.1
XSECTION	53	RUNOFF	.21	3.99	---	12.21	494	2352.4
XSECTION	54	ADDHYD	.54	5.28	---	12.36	1078	1996.3
STRUCTURE	5	RESVOR	.54	5.27	277.90	13.18	334	618.5
XSECTION	55	ADDHYD	1.53	5.78	---	12.40	2511	1641.2
XSECTION	56	RUNOFF	.02	4.31	---	12.13	55	2750.0
XSECTION	57	ADDHYD	1.55	5.77	---	12.40	2528	1631.0
STRUCTURE	6	RESVOR	1.55	5.77	156.67	12.46	2464	1589.7
XSECTION	58	RUNOFF	.04	6.26	---	12.13	163	4075.0
XSECTION	62	RUNOFF	.02	4.64	---	12.17	74	3700.0
XSECTION	63	ADDHYD	2.11	5.53	---	12.53	2718	1288.2

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.

QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION											ROUTING PARAMETERS	
XSEC ID	REACH LENGTH COEFF	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT- KIN (C)	
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)				
BASEFLOW IS		.0 CFS										
ALTERNATE		1	STORM									
7	2055		94	12.2	89	12.3	1.55	1.55	.005	.943		
	.71?											
11	1397		3	13.3	3	13.5	2.53	1.54	.004	.990		
	.47											
16	2449		64	12.2	59	12.3	2.42	1.40	.021	.928		
	.55											
20	4470		244	12.2	220	12.4	1.66	1.49	.021	.900		
	.47											
30	1561		80	12.1	74	12.2	1.16	1.56	.030	.920		
	.73?											
35	2077		236	12.2	221	12.4	1.15	1.41	.029	.936		
	.57											
42	2112		4	13.0	4	13.1	3.54	1.39	.006	.996		
	.40											
45	3148		195	12.7	194	12.8	3.25	1.32	.012	.993		
	.56											
49	1829		16	12.4	15	12.5	1.44	1.42	.038	.937		
	.40											
52	4744		197	12.4	178	12.5	1.16	1.52	.045	.903		
	.38											
59	1671		416	12.4	414	12.5	3.33	1.23	.007	.996		
	.80?											
ALTERNATE		1	STORM									
7	2055		147	12.2	142	12.2	1.61	1.53	.004	.964		
	.77?											
11	1397		9	12.7	9	12.8	2.53	1.54	.005	.990		
	.64											
16	2449		102	12.2	96	12.3	2.47	1.39	.019	.940		
	.60											
20	4470		394	12.2	358	12.4	1.90	1.44	.022	.909		
	.50											
30	1561		113	12.1	106	12.2	1.20	1.54	.025	.940		
	.77?											
35	2077		342	12.2	324	12.3	1.19	1.40	.026	.946		
	.61											
42	2112		5	12.9	5	13.1	3.54	1.39	.005	.997		
	.44											
45	3148		270	12.7	268	12.9	4.08	1.21	.017	.992		
	.52											
49	1829		22	12.4	21	12.5	1.46	1.41	.030	.948		
	.42											
52	4744		313	12.4	288	12.5	1.23	1.50	.040	.919		

.42

59 1671 697 12.4 691 12.4 3.25 1.24 .007 .991  
 .85?

ALTERNATE 1 STORM 10

7 2055 198 12.2 193 12.2 1.66 1.52 .004 .973  
 .81?

11 1397 15 12.6 15 12.7 2.53 1.54 .005 .993  
 .72?

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

		HYDROGRAPH INFORMATION				ROUTING PARAMETERS					
XSEC ID	REACH LENGTH	FLOOD PLAIN LENGTH	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR	PEAK RATIO Q/I	ATT- KIN
			PEAK	TIME	PEAK	TIME	COEFF	POWER			
COEFF	(FT)	(FT)	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)	(Q*)	(C)
ALTERNATE	1	STORM	10								
16	2449		137	12.2	130	12.3	2.50	1.38	.017	.952	
.63											
20	4470		536	12.2	484	12.4	2.56	1.33	.029	.904	
.47											
30	1561		141	12.1	135	12.2	1.23	1.53	.022	.952	
.81?											
35	2077		436	12.2	418	12.3	1.22	1.39	.024	.959	
.63											
42	2112		7	12.9	7	13.0	3.54	1.39	.005	.998	
.47											
45	3148		344	12.7	340	12.9	4.92	1.14	.022	.990	
.48											
49	1829		35	12.3	31	12.4	1.49	1.40	.036	.869	
.46											
52	4744		429	12.3	396	12.5	1.29	1.48	.038	.922	
.45											
59	1671		963	12.4	957	12.4	3.16	1.25	.006	.994	
.89?											
ALTERNATE	1	STORM	25								
7	2055		381	12.4	379	12.5	1.85	1.48	.005	.997	

.89?	11	1397	32	12.4	32	12.5	2.55	1.53	.007	.991
.84?	16	2449	199	12.2	192	12.3	2.54	1.37	.016	.967
.67?	20	4470	775	12.2	698	12.4	3.38	1.24	.037	.901
.46	30	1561	184	12.1	177	12.2	1.26	1.52	.020	.963
.84?	35	2077	583	12.2	564	12.3	1.26	1.38	.021	.968
.67?	42	2112	10	12.8	10	13.0	3.54	1.39	.004	.997
.51	45	3148	426	12.8	424	12.9	5.00	1.13	.020	.995
.49	49	1829	54	12.2	48	12.4	1.51	1.38	.038	.886
.50	52	4744	612	12.3	567	12.4	1.39	1.45	.037	.928
.47	59	1671	1404	12.4	1400	12.5	3.27	1.24	.006	.997
.92?										

ALTERNATE 1 STORM 50

.87?	7	2055	597	12.3	591	12.4	2.66	1.35	.011	.991
.90?	11	1397	50	12.4	50	12.4	2.60	1.51	.007	.988
.70?	16	2449	256	12.2	251	12.3	2.57	1.37	.016	.978

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;  
 LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION				ROUTING PARAMETERS						
XSEC REACH ID COEFF	REACH LENGTH (FT)	FLOOD PLAIN		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN (C)
		LENGTH (FT)	PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)			
ALTERNATE	1	STORM	50							
20	4470	1059	12.4	1006	12.5	3.76	1.21	.042	.950	
.46										

30	1561	219	12.1	213	12.2	1.29	1.51	.018	.971
.87?									
35	2077	713	12.2	693	12.3	1.32	1.37	.021	.972
.68?									
42	2112	28	12.5	27	12.5	3.56	1.38	.009	.956
.61									
45	3148	476	12.8	475	13.0	5.05	1.13	.017	.996
.49									
49	1829	58	12.3	57	12.5	1.51	1.38	.031	.979
.51									
52	4744	763	12.3	683	12.5	1.85	1.33	.059	.895
.39									
59	1671	1892	12.5	1891	12.5	3.36	1.23	.007	1.000
.94?									
ALTERNATE		1	STORM	99					
-----									
7	2055	829	12.3	824	12.4	3.20	1.30	.014	.995
.87?									
11	1397	70	12.4	70	12.4	2.65	1.49	.008	.999
.95?									
16	2449	335	12.2	327	12.3	2.62	1.36	.015	.977
.73?									
20	4470	1488	12.3	1385	12.4	3.95	1.20	.047	.931
.47									
30	1561	261	12.1	255	12.2	1.32	1.50	.016	.978
.89?									
35	2077	859	12.2	823	12.3	1.76	1.29	.027	.958
.63									
42	2112	50	12.4	48	12.5	3.60	1.36	.013	.958
.67?									
45	3148	774	12.7	743	12.8	6.39	1.05	.032	.960
.45									
49	1829	59	12.3	59	12.5	1.52	1.38	.024	.990
.51									
52	4744	927	12.3	800	12.5	2.57	1.21	.089	.863
.32									
59	1671	2460	12.5	2459	12.5	3.26	1.24	.006	1.000
.97?									

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
STRUCTURE 64	.05					

ALTERNATE 220	1	81	113	142	185
STRUCTURE	58				.03
ALTERNATE 71	1	2	8	16	43
STRUCTURE	52				.03
ALTERNATE 51	1	3	9	15	32
STRUCTURE	51				.04
ALTERNATE 83	1	22	34	46	63
STRUCTURE	47				.02
ALTERNATE 55	1	12	21	27	41
STRUCTURE	43				.02
ALTERNATE 59	1	4	15	28	47
STRUCTURE	40				.02
ALTERNATE 58	1	16	22	36	55
STRUCTURE	34				.15
ALTERNATE 284	1	54	127	185	234
STRUCTURE	33				.02
ALTERNATE 65	1	15	24	34	53
STRUCTURE	32				.08
ALTERNATE 229	1	61	86	123	179
STRUCTURE	29				.02
ALTERNATE 28	1	4	5	7	10
STRUCTURE	13				.21
ALTERNATE 449	1	62	97	128	288
STRUCTURE	10				.86
ALTERNATE 1489	1	341	569	777	1121

STRUCTURE 8 .52

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
STRUCTURE 8	.52					
ALTERNATE 476	1	196	270	344	426	
STRUCTURE 7	.67					
ALTERNATE 526	1	188	275	354	455	
STRUCTURE 6	1.55					
ALTERNATE 1896	1	417	699	965	1411	
STRUCTURE 5	.54					
ALTERNATE 246	1	93	137	168	212	
XSECTION 1	.21					
ALTERNATE 526	1	137	218	295	416	
XSECTION 2	.03					
ALTERNATE 78	1	18	30	42	61	
XSECTION 3	.24					
ALTERNATE 505	1	64	105	144	322	
XSECTION 4	.06					
ALTERNATE 213	1	63	96	125	172	
XSECTION 6	.08					



ALTERNATE 223	1	53	88	121	175
XSECTION	9	.06			
ALTERNATE 181	1	49	77	103	144
XSECTION	10	.03			
ALTERNATE 71	1	19	30	40	56
XSECTION	12	.09			
ALTERNATE 196	1	49	77	104	152
XSECTION	13	.04			
ALTERNATE 153	1	49	72	92	125
XSECTION	15	.08			
ALTERNATE 255	1	66	106	143	202

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
XSECTION	17	.21				
ALTERNATE 450	1	110	178	243	349	
XSECTION	18	.59				
ALTERNATE 1060	1	244	396	540	782	
XSECTION	19	.27				
ALTERNATE 541	1	122	208	290	421	

XSECTION	20		.59				
ALTERNATE	1			220	359	485	698
1011							
XSECTION	21		.86				
ALTERNATE	1			341	569	777	1121
1489							
XSECTION	22		.02				
ALTERNATE	1			17	25	33	44
55							
XSECTION	23		.08				
ALTERNATE	1			80	119	154	208
257							
XSECTION	25		.05				
ALTERNATE	1			46	68	89	121
149							
XSECTION	27		.01				
ALTERNATE	1			13	20	27	37
47							
XSECTION	28		.16				
ALTERNATE	1			56	132	192	243
295							
XSECTION	29		.05				
ALTERNATE	1			81	113	142	185
220							
XSECTION	31		.17				
ALTERNATE	1			142	207	264	354
433							
XSECTION	33		.05				
ALTERNATE	1			46	68	89	120
148							

1

TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION

04/21/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG

2.04TEST

14:07:34

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
XSECTION 36	.02					
----- ALTERNATE 1 65		21	30	39	53	
XSECTION 38	.07					
----- ALTERNATE 1 247		69	107	143	198	
XSECTION 39	.36					
----- ALTERNATE 1 869		265	390	512	703	
XSECTION 41	.02					
----- ALTERNATE 1 80		25	37	48	65	
XSECTION 43	.12					
----- ALTERNATE 1 217		26	61	96	158	
XSECTION 44	.14					
----- ALTERNATE 1 224		28	63	100	163	
XSECTION 46	.67					
----- ALTERNATE 1 544		207	290	372	469	
XSECTION 47	.28					
----- ALTERNATE 1 655		185	285	379	523	
XSECTION 48	.02					
----- ALTERNATE 1 89		30	44	55	74	
XSECTION 51	.02					
----- ALTERNATE 1 70		21	31	41	56	
XSECTION 52	.33					
----- ALTERNATE 1 764		198	315	432	613	
XSECTION 53	.21					
----- ALTERNATE 1		44	103	164	268	

370

XSECTION 54 .54

-----  
 ALTERNATE 1 208 351 497 734  
 905

1

TR20 ----- SCS

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 Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 04/21/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
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SUMMARY TABLE 3

-----  
 STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
XSECTION 55	1.53					
----- ALTERNATE 1 1896		415	693	955	1399	
XSECTION 56	.02					
----- ALTERNATE 1 42		6	13	20	31	
XSECTION 57	1.55					
----- ALTERNATE 1 1908		418	698	963	1411	
XSECTION 58	.04					
----- ALTERNATE 1 134		41	61	79	108	
XSECTION 62	.02					
----- ALTERNATE 1 57		10	19	28	44	
XSECTION 63	2.11					
----- ALTERNATE 1 2120		481	802	1100	1589	

SUMMARY TABLE 3

-----  
 STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE	DRAINAGE AREA	STORM NUMBERS.....				
		2	5	10	25	50

ID	(SQ MI)	99
STRUCTURE 64	.05	
-----		
ALTERNATE 1		262
STRUCTURE 58	.03	
-----		
ALTERNATE 1		94
STRUCTURE 52	.03	
-----		
ALTERNATE 1		70
STRUCTURE 51	.04	
-----		
ALTERNATE 1		105
STRUCTURE 47	.02	
-----		
ALTERNATE 1		66
STRUCTURE 43	.02	
-----		
ALTERNATE 1		71
STRUCTURE 40	.02	
-----		
ALTERNATE 1		59

1  
 TR20 ----- SCS  
 -  
 Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 04/21/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
STRUCTURE 34	.15	
-----		
ALTERNATE 1		430
STRUCTURE 33	.02	
-----		
ALTERNATE 1		78
STRUCTURE 32	.08	
-----		
ALTERNATE 1		284
STRUCTURE 29	.02	

ALTERNATE	1		50
STRUCTURE	13	.21	
ALTERNATE	1		610
STRUCTURE	10	.86	
ALTERNATE	1		2014
STRUCTURE	8	.52	
ALTERNATE	1		778
STRUCTURE	7	.67	
ALTERNATE	1		743
STRUCTURE	6	1.55	
ALTERNATE	1		2464
STRUCTURE	5	.54	
ALTERNATE	1		334
XSECTION	1	.21	
ALTERNATE	1		653
XSECTION	2	.03	
ALTERNATE	1		98
XSECTION	3	.24	
ALTERNATE	1		690

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 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

04/21/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
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SUMMARY TABLE 3  
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STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
XSECTION	4	.06
ALTERNATE	1	259
XSECTION	6	.08

ALTERNATE	1		278
XSECTION	9	.06	
ALTERNATE	1		223
XSECTION	10	.03	
ALTERNATE	1		87
XSECTION	12	.09	
ALTERNATE	1		250
XSECTION	13	.04	
ALTERNATE	1		185
XSECTION	15	.08	
ALTERNATE	1		317
XSECTION	17	.21	
ALTERNATE	1		565
XSECTION	18	.59	
ALTERNATE	1		1489
XSECTION	19	.27	
ALTERNATE	1		684
XSECTION	20	.59	
ALTERNATE	1		1385
XSECTION	21	.86	
ALTERNATE	1		2014
XSECTION	22	.02	
ALTERNATE	1		67

1

TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 04/21/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/  
 STRUCTURE DRAINAGE  
 AREA STORM NUMBERS.....

ID	(SQ MI)	99
XSECTION 23	.08	
-----		
ALTERNATE 1		312
XSECTION 25	.05	
-----		
ALTERNATE 1		181
XSECTION 27	.01	
-----		
ALTERNATE 1		59
XSECTION 28	.16	
-----		
ALTERNATE 1		446
XSECTION 29	.05	
-----		
ALTERNATE 1		262
XSECTION 31	.17	
-----		
ALTERNATE 1		522
XSECTION 33	.05	
-----		
ALTERNATE 1		178
XSECTION 36	.02	
-----		
ALTERNATE 1		79
XSECTION 38	.07	
-----		
ALTERNATE 1		304
XSECTION 39	.36	
-----		
ALTERNATE 1		1035
XSECTION 41	.02	
-----		
ALTERNATE 1		97
XSECTION 43	.12	
-----		
ALTERNATE 1		289
XSECTION 44	.14	
-----		
ALTERNATE 1		297

1 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 04/21/\*\* 27 Subareas MGMT-sTD NOAA\_C 2, 5, 10, 25, 50, 100WITHMGMT;GHCHUG  
 2.04TEST  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
XSECTION 46	.67	
-----		
ALTERNATE 1		833
XSECTION 47	.28	
-----		
ALTERNATE 1		803
XSECTION 48	.02	
-----		
ALTERNATE 1		107
XSECTION 51	.02	
-----		
ALTERNATE 1		85
XSECTION 52	.33	
-----		
ALTERNATE 1		927
XSECTION 53	.21	
-----		
ALTERNATE 1		494
XSECTION 54	.54	
-----		
ALTERNATE 1		1078
XSECTION 55	1.53	
-----		
ALTERNATE 1		2511
XSECTION 56	.02	
-----		
ALTERNATE 1		55
XSECTION 57	1.55	
-----		
ALTERNATE 1		2528
XSECTION 58	.04	
-----		
ALTERNATE 1		163
XSECTION 62	.02	
-----		
ALTERNATE 1		74
XSECTION 63	2.11	
-----		
ALTERNATE 1		2718

1

TR20 ----- SCS

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION  
04/21/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
2.04TEST

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST  
FILES

INPUT = CONWO11.DAT , GIVEN DATA FILE  
OUTPUT = CONWO11.OUT , DATED  
04/21/\*\*,14:07:34

FILES GENERATED - DATED 04/21/\*\*,14:07:34

NONE!

TOTAL NUMBER OF WARNINGS = 38, MESSAGES = 12

\*\*\* TR-20 RUN COMPLETED \*\*\*

1

\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20  
HYDROLOGY\*\*\*\*\*

JOB TR-20		NOPLOTS				
TITLE Ellicott City Flood Study-Tiber/South Sub-Drainage Areas						
TITLE 27 Subareas MGMT-sTD NOAA_C 2,5,10,50,100WITHMGMT, Jul 30						
5	RAINFL 5	0.05				
8		0.0000	0.0061	0.0061	0.0061	0.0061
8		0.0061	0.0121	0.0242	0.0364	0.0424
8		0.0424	0.0424	0.0424	0.0485	0.0606
8		0.0667	0.0727	0.0727	0.0727	0.0727
8		0.0788	0.0848	0.1030	0.1212	0.1333
8		0.1576	0.1818	0.1879	0.2000	0.2182
8		0.2242	0.2303	0.2424	0.2606	0.2909
8		0.3212	0.3576	0.4061	0.4667	0.5394
8		0.6061	0.6606	0.7030	0.7394	0.7576
8		0.7758	0.7939	0.8182	0.8424	0.8788
8		0.9091	0.9212	0.9333	0.9455	0.9515
8		0.9576	0.9697	0.9758	0.9818	0.9818
8		0.9818	0.9818	0.9818	0.9879	0.9879
8		0.9879	0.9879	0.9939	0.9939	0.9939
8		0.9939	0.9939	1.0000	1.0000	1.0000
9	ENDTBL					
3	STRUCT	58				
8			424.00	0.00	0.00	
8			429.09	2.00	0.72	
8			429.59	4.00	0.85	
8			430.00	6.00	0.96	
8			430.21	8.00	1.02	
8			430.36	10.00	1.06	
8			430.49	12.00	1.10	
8			430.64	14.00	1.15	
8			430.74	15.00	1.18	
8			431.22	17.09	1.33	
8			431.68	33.53	1.49	
8			432.18	80.87	1.67	
8			432.37	108.22	1.74	
9	ENDTBL					
2	XSECTN	007	1.0	319.00		
8			318.00	0.00	0.00	
8			318.25	10.19	3.39	
8			318.50	32.80	7.08	
8			318.75	65.48	11.07	
8			319.00	107.54	15.35	
8			320.00	367.34	35.47	
8			321.00	663.16	60.18	
8			322.00	1052.26	89.31	
8			323.00	1529.69	131.30	
9	ENDTBL					
3	STRUCT	52				
8			451.90	0.00	0.00	
8			454.05	0.34	0.73	
8			454.30	0.36	0.85	

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			455.60	18.83	1.65
8			456.10	41.43	2.00
8			456.50	72.96	2.28
9	ENDTBL				
2	XSECTN	011	1.0	415.00	
8			414.00	0.00	0.00
8			414.25	7.22	1.98
8			414.50	23.69	4.29
8			414.75	48.28	6.93
8			415.00	81.00	9.89
8			416.00	299.51	25.08
8			417.00	488.53	45.33
8			418.00	779.05	70.44
8			419.00	809.36	107.84
9	ENDTBL				
3	STRUCT	51			
8			396.00	0.00	0.00
8			396.50	4.38	0.27
8			397.00	12.40	0.65
8			397.50	22.78	1.07
8			398.00	35.07	1.54
8			398.50	49.45	2.05
8			399.00	64.75	2.59
8			399.45	86.12	3.10
9	ENDTBL				
2	XSECTN	016	1.0	331.00	
8			330.00	0.00	0.00
8			330.25	5.94	1.92
8			330.50	21.34	4.68
8			330.75	47.19	8.28
8			331.00	85.01	12.73
8			332.00	385.16	38.91
8			333.00	704.29	76.97
8			334.00	1202.25	125.34
8			335.00	1592.91	187.47
9	ENDTBL				
2	XSECTN	020	1.0	235.00	
8			234.00	0.00	0.00
8			234.25	9.06	3.27
8			234.50	29.33	6.89
8			234.75	58.86	10.87
8			235.00	97.22	15.19
8			236.00	339.40	36.03
8			237.00	586.83	61.50
8			238.00	902.53	90.59
8			239.00	1290.91	123.25
8			240.00	1750.59	159.40
8			241.00	1985.66	201.02
8			242.00	2381.26	250.13
9	ENDTBL				

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

3	STRUCT	10			
9	ENDTBL				
3	STRUCT	47			
8			410.00	0.00	0.00
8			413.89	5.00	0.05
8			414.04	10.00	0.15
8			414.17	15.00	0.24

8			414.28	20.00	0.27
8			415.00	30.68	0.38
8			415.27	39.01	0.42
8			415.52	52.87	0.45
8			415.79	71.61	0.49
8			416.07	95.27	0.54
9	ENDTBL				
3	STRUCT	32			
8			367.00	0.00	0.00
8			367.37	10.00	0.29
8			367.59	20.00	0.47
8			367.78	30.00	0.62
8			367.94	40.00	0.76
8			368.09	50.00	0.89
8			368.44	75.00	1.18
8			368.82	88.96	1.52
8			369.30	142.54	1.95
8			369.79	219.99	2.41
8			370.11	280.10	2.72
8			370.33	326.70	2.93
8			370.56	378.34	3.15
9	ENDTBL				
3	STRUCT	34			
8			329.00	0.00	0.00
8			332.62	30.00	0.72
8			336.99	50.00	2.59
8			337.92	70.00	3.17
8			338.11	90.00	3.29
8			338.19	100.00	3.34
8			338.26	109.00	3.39
8			338.55	150.00	3.58
8			338.61	160.00	3.63
8			338.64	165.00	3.65
8			338.70	175.00	3.69
8			338.73	179.50	3.71
8			343.01	310.00	7.34
8			343.91	680.58	8.20
9	ENDTBL				
3	STRUCT	64			
9	ENDTBL				
2	XSECTN	030	1.0	357.00	
8			356.00	0.00	0.00
8			356.25	11.94	4.48

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)

\*\*\*\*\*

8			356.50	38.65	9.42
8			356.75	77.59	14.83
8			357.00	128.16	20.70
8			358.00	446.97	48.84
8			359.00	544.48	91.80
8			360.00	941.05	156.94
8			361.00	1597.14	242.00
9	ENDTBL				
2	XSECTN	035	1.0	317.00	
8			316.00	0.00	0.00
8			316.25	12.78	5.64
8			316.50	44.21	13.12
8			316.75	94.71	22.44
8			317.00	166.16	33.59

8			318.00	703.03	96.58
8			319.00	1203.58	187.92
8			320.00	2039.69	306.56
8			321.00	3441.07	443.04
9	ENDTBL				
3	STRUCT	33			
8			323.00	0.00	0.00
8			323.20	5.00	0.01
8			324.01	10.00	0.06
8			325.62	15.00	0.19
8			326.73	18.00	0.29
8			327.09	20.00	0.33
8			327.38	25.00	0.36
8			327.54	28.00	0.38
8			327.63	30.00	0.39
8			328.16	38.10	0.46
8			328.84	73.25	0.54
8			329.21	106.03	0.59
9	ENDTBL				
3	STRUCT	08			
8			285.00	0.00	0.00
8			288.19	100.00	4.352
8			291.06	200.00	9.305
8			297.70	390.00	24.917
8			299.77	425.00	31.064
8			301.26	450.00	35.844
8			302.44	470.00	39.908
8			303.00	479.50	41.916
8			303.63	550.52	44.194
8			304.64	778.25	48.024
8			305.12	931.33	49.913
8			306.18	1334.58	54.217
9	ENDTBL				
3	STRUCT	29			
8			266.00	0.00	0.00
8			273.38	10.00	2.49

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			273.62	20.00	2.64
8			273.91	35.00	2.82
8			274.10	46.00	2.94
8			274.35	55.00	3.10
8			274.51	58.00	3.20
8			274.61	60.00	3.28
8			274.90	65.00	3.47
8			275.21	98.51	3.68
8			275.54	139.16	3.92
8			275.89	189.97	4.18
8			276.27	253.87	4.48
8			276.50	299.40	4.67
9	ENDTBL				
2	XSECTN	042	1.0	223.00	
8			222.00	0.00	0.00
8			222.25	2.73	0.83
8			222.50	10.35	2.16
8			222.75	23.82	3.97
8			223.00	44.24	6.28
8			224.00	215.28	20.42
8			225.00	406.10	41.61

8		226.00	702.08	67.86
8		227.00	890.97	103.46
9	ENDTBL			
2	XSECTN 045	1.0	223.00	
8		222.00	0.00	0.00
8		222.25	2.28	0.83
8		222.50	8.62	2.16
8		222.75	19.85	3.97
8		223.00	36.86	6.28
8		224.00	179.35	20.41
8		225.00	338.28	41.30
8		226.00	584.84	67.85
8		227.00	830.09	103.44
8		228.00	1249.11	151.47
8		229.00	1307.14	232.37
8		230.00	2023.03	366.57
9	ENDTBL			
3	STRUCT 07			
8		216.00	000.00	0.00
8		217.23	100.00	2.91
8		218.88	200.00	5.33
8		221.19	400.00	9.16
8		222.23	500.00	11.04
8		222.27	504.00	11.12
8		223.33	600.00	13.14
8		224.44	700.00	15.39
8		225.71	800.00	18.13
8		227.13	900.00	21.37
8		228.68	1000.00	25.17

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		230.40	1100.00	29.69
8		232.35	1200.00	35.20
8		234.84	1496.28	42.93
9	ENDTBL			
3	STRUCT 40			
8		333.00	000.00	0.00
8		334.00	15.15	0.40
8		334.25	16.92	0.47
8		334.50	18.53	0.55
8		334.75	20.02	0.63
8		335.00	21.40	0.68
8		335.50	23.92	0.77
8		335.86	25.59	0.80
8		336.00	27.61	0.82
8		336.25	33.80	0.84
8		336.50	42.02	0.93
8		336.75	51.79	1.01
8		336.86	56.51	1.05
8		337.00	57.30	1.08
8		337.50	58.38	1.31
8		338.00	59.45	1.68
9	ENDTBL			
2	XSECTN 049	1.0	317.00	
8		316.00	0.00	0.00
8		316.25	3.06	1.70
8		316.50	11.11	4.19
8		316.75	24.79	7.47
8		317.00	44.94	11.55

8			318.00	206.80	35.78
8			319.00	333.28	74.89
8			320.00	609.60	131.05
9	ENDTBL				
3	STRUCT	43			
8			317.30	0.00	0.00
8			318.00	0.19	0.08
8			319.00	0.24	0.27
8			320.75	0.30	0.79
8			321.00	3.22	0.85
8			321.75	23.58	1.09
8			322.00	32.83	1.17
8			322.20	40.94	1.20
8			322.40	49.63	1.27
8			322.80	68.56	1.45
8			322.90	73.60	1.49
9	ENDTBL				
2	XSECTN	052	1.0	279.00	
8			276.00	0.00	0.00
8			276.25	15.37	5.56
8			276.50	49.97	11.77
8			276.75	100.75	18.63

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			277.00	167.09	26.14
8			278.00	591.48	62.65
8			279.00	793.41	115.06
8			280.00	1313.82	188.91
8			281.00	2138.14	282.44
9	ENDTBL				
3	STRUCT	05			
8			256.00	0.00	0.00
8			257.31	25.00	2.040
8			258.61	50.00	4.248
8			259.92	75.00	6.631
8			261.23	100.00	9.193
8			262.74	125.00	12.396
8			265.08	150.00	17.872
8			267.43	175.00	24.009
8			269.77	200.00	30.850
8			274.91	250.00	48.522
8			276.30	260.00	53.975
8			277.00	265.00	56.814
8			277.70	319.90	59.729
8			279.13	415.88	65.974
8			280.67	569.65	73.359
9	ENDTBL				
3	STRUCT	06			
8			138.00	0.00	0.00
8			140.50	200.00	0.06
8			142.72	400.00	0.21
8			145.47	800.00	0.60
8			146.68	1000.00	0.86
8			147.48	1137.00	1.07
8			147.86	1200.00	1.17
8			150.46	1631.00	2.02
8			151.53	1800.00	2.44
8			152.93	2000.00	3.07
8			156.96	2500.00	5.82



8			158.84	2700.00	9.89
8			161.96	3000.00	18.44
8			163.03	3100.00	21.74
8			164.18	3283.92	25.46
8			166.59	3969.22	34.45
9	ENDTBL				
2	XSECTN	059	1.0	128.00	
8			129.00	0.00	0.00
8			129.25	1.13	0.50
8			129.50	5.18	1.55
8			129.75	13.39	3.16
8			130.00	26.84	5.32
8			131.00	191.72	26.64
8			132.00	508.02	58.78
8			133.00	945.51	95.90

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			134.00	1449.27	136.08		
8			135.00	2016.68	178.64		
8			138.00	4199.86	314.48		
9	ENDTBL						
3	STRUCT	13					
8			386.30	0.00	0.00		
8			386.56	10.00	0.469		
8			387.39	25.00	1.220		
8			388.22	40.00	2.032		
8			389.33	60.00	3.209		
8			390.40	80.00	4.444		
8			391.41	100.00	5.724		
8			391.92	110.00	6.403		
8			392.43	120.00	7.108		
8			393.00	131.10	7.922		
8			393.56	175.68	8.764		
8			394.29	332.85	9.913		
8			395.07	645.74	11.216		
8			395.90	1168.38	12.677		
9	ENDTBL						
6	RUNOFF	1 001	1 0.2101	77.19	0.319	1	1 141
6	RESVOR	2 13 1	6			1	1
PROP13							
6	RUNOFF	1 002	2 0.0292	74.00	0.232	1	1 142
6	RESVOR	2 58 2	3			1	1
SWMF58							
6	ADDHYD	4 003	6 3 4			1	1
1+2+58							
6	RUNOFF	1 004	1 0.0617	81.09	0.170	1	1 143
6	ADDHYD	4 005	4 1 2			1	1+2+3
6	RUNOFF	1 006	1 0.0799	74.51	0.216	1	1 144
6	REACH	3 007	2 3	2055.0		1	
6	ADDHYD	4 008	1 3 2			1	SA14
6	RUNOFF	1 009	1 0.0604	78.12	0.220	1	1 153
6	RUNOFF	1 010	3 0.0264	78.36	0.290	1	1 151
6	RESVOR	2 52 3	4			1	1
SWMF52							
6	REACH	3 011	4 5	1396.5		1	
6	ADDHYD	4 012	1 5 6			1	1
153+151							
6	RUNOFF	1 013	1 0.0447	83.97	0.210	1	1 152
6	RESVOR	2 51 1	3			1	1

```

SWMF51
6 ADDHYD 4 014 6 3 1 1
012+51
6 RUNOFF 1 015 3 0.0815 76.80 0.176 1 1 154
6 REACH 3 016 1 4 2448.6 1
6 ADDHYD 4 017 3 4 5 1 1 SA15
6 ADDHYD 4 018 2 5 1 1 1
SA14+15
6 RUNOFF 1 019 2 0.2701 73.58 0.425 1 1 131
6 REACH 3 020 1 3 4470.1 1 1 SA13
6 ADDHYD 4 021 2 3 5 1 1
14+15+13
6 RESVOR 2 10 5 4 1 1
PROP10
6 RUNOFF 1 022 1 0.0185 83.00 0.283 1 1 121
6 RESVOR 2 47 1 2 1 1
SWMF47
6 RUNOFF 1 023 3 0.0812 83.00 0.245 1 1 122
6 RESVOR 2 32 3 5 1 1
SWMF32
    
```

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
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```

6 ADDHYD 4 024 2 5 1 1
121+122
6 RUNOFF 1 025 2 0.0465 82.74 0.236 1 1 123
6 ADDHYD 4 026 1 2 5 1
024+123
6 RESVOR 2 34 5 3 1 1
SWMF34
6 RUNOFF 1 027 2 0.0126 76.91 0.100 1 1 124
6 ADDHYD 4 028 3 2 5 1 1 SA12
6 RUNOFF 1 029 2 0.0499 87.76 0.100 1 1 111
6 RESVOR 2 64 2 3 1 1
SWMF64
6 REACH 3 030 3 6 1561.1 1
6 RUNOFF 1 031 7 0.1745 85.00 0.449 1 1 112
6 ADDHYD 4 032 6 7 3 1
111+112
6 RUNOFF 1 033 1 0.0477 83.06 0.258 1 1 113
6 ADDHYD 4 034 3 1 2 1
032+113
6 REACH 3 035 2 3 2077.3 1
6 RUNOFF 1 036 6 0.0244 83.54 0.370 1 1 114
6 RESVOR 2 33 6 7 1 1
SWMF33
6 ADDHYD 4 037 3 7 1 1
111-114
6 RUNOFF 1 038 2 0.0684 79.13 0.136 1 1 115
6 ADDHYD 4 039 1 2 7 1 1 SA11
6 ADDHYD 4 040 5 7 2 1 12+11
6 RESVOR 2 08 2 6 1 1 PROP8
6 RUNOFF 1 041 1 0.0236 82.59 0.200 1 1 101
6 RESVOR 2 29 1 3 1 1
SWMF29
6 REACH 3 042 3 5 2112.0 1
6 RUNOFF 1 043 1 0.1211 62.77 0.263 1 1 102
6 ADDHYD 4 044 5 1 2 1 1 SA10
6 REACH 3 045 6 3 3147.6 1
6 ADDHYD 4 046 2 3 7 1 1
    
```

```

10+12+11
6 RESVOR 2 07 7 1 1 1 PROP7
6 RUNOFF 1 047 2 0.2822 80.17 0.434 1 1 81
6 RUNOFF 1 048 3 0.0248 85.45 0.190 1 1 82
6 RESVOR 2 40 3 5 1 1
SWMF40
6 REACH 3 049 5 6 1829.0 1
6 ADDHYD 4 050 2 6 7 1 81+82
6 RUNOFF 1 051 2 0.0218 81.19 0.220 1 1 83
6 RESVOR 2 43 2 3 1 1
SWMF43
6 ADDHYD 4 052 7 3 2 1 1
81+82+83
6 REACH 3 052 2 3 4744.2 1
6 RUNOFF 1 053 5 0.2083 62.56 0.262 1 1 84
6 ADDHYD 4 054 3 5 2 1 1 SA8
6 RESVOR 2 05 2 5 1 1 1 PROP5
6 ADDHYD 4 055 4 1 3 1 1
13+10+PR
6 RUNOFF 1 056 6 0.0166 65.36 0.134 1 1 92
6 ADDHYD 4 057 3 6 7 1 1
13+10+92
6 RESVOR 2 06 7 4 1 1 1 PROP6
6 RUNOFF 1 058 1 0.0357 81.76 0.141 1 1 93
6 REACH 3 059 4 3 1670.5 1
6 ADDHYD 4 060 5 3 4 1
SA8+93
6 ADDHYD 4 061 7 4 1 1 92+93
6 RUNOFF 1 062 2 0.0233 86.98 0.186 1 1 1 91

```

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

```

6 ADDHYD 4 063 1 2 3 1 1
OUTFALL
ENDATA
7 INCREM 6 .06
7 COMPUT 7 001 063 0.0 6.60 1.05 2 1 01
ENDCMP 1
ENDJOB 2

```

\*\*\*\*\*END OF 80-80  
 LIST\*\*\*\*\*

1 TR20 ----- SCS

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- Ellicott City Flood Study-Tiber/South Sub-Drainage Areas
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EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .060 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63
STARTING TIME = .00 RAIN DEPTH = 6.60 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS

```

ALTERNATE NO. = 1

STORM NO. = 1

RAIN TABLE NO. = 5

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.18	688.9	(RUNOFF)
2.56	412.7	(RUNOFF)
3.73	22.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.02 WATERSHED INCHES; 546 CFS-HRS; 45.1 ACRE-FEET.

OPERATION RESVOR STRUCTURE 13

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.26	637.9	395.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.03 WATERSHED INCHES; 547 CFS-HRS; 45.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.13	97.4	(RUNOFF)
2.55	55.5	(RUNOFF)
3.23	4.1	(RUNOFF)
3.45	3.7	(RUNOFF)
3.71	3.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.69 WATERSHED INCHES; 70 CFS-HRS; 5.7 ACRE-FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.20	90.6	432.25
2.58	53.8	431.89

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.68 WATERSHED INCHES; 69 CFS-HRS; 5.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.25	733.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.99 WATERSHED INCHES; 616 CFS-HRS; 50.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
1.38	31.9	(RUNOFF)
1.49	31.6	(RUNOFF)
2.07	259.3	(RUNOFF)
2.53	134.7	(RUNOFF)
3.23	10.0	(RUNOFF)
3.43	10.0	(RUNOFF)
3.68	9.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.44 WATERSHED INCHES; 177 CFS-HRS; 14.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.23	899.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.07 WATERSHED INCHES; 791 CFS-HRS; 65.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
1.55	22.8	(RUNOFF)
2.11	275.5	(RUNOFF)
2.55	152.8	(RUNOFF)
3.24	11.3	(RUNOFF)
3.44	10.3	(RUNOFF)
3.70	9.9	(RUNOFF)

1 TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.74 WATERSHED INCHES; 193 CFS-HRS; 16.0 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.30	885.4	321.57

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.08 WATERSHED INCHES; 793 CFS-HRS; 65.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.29	1059.2	(NULL)
3.69	111.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.01 WATERSHED INCHES; 986 CFS-HRS; 81.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
1.52	23.3	(RUNOFF)
2.11	226.3	(RUNOFF)
2.55	121.2	(RUNOFF)
3.24	8.8	(RUNOFF)
3.44	8.0	(RUNOFF)
3.70	7.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.12 WATERSHED INCHES; 161 CFS-HRS; 13.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.16	92.1	(RUNOFF)
2.56	52.5	(RUNOFF)
3.73	2.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.15 WATERSHED INCHES; 71 CFS-HRS; 5.8 ACRE-FEET.

1  
 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE

STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.33	67.6	456.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.86 WATERSHED INCHES; 66 CFS-HRS; 5.4 ACRE-FEET.

OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.39	67.4	414.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.86 WATERSHED INCHES; 66 CFS-HRS; 5.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
1.53	23.4	(NULL)
2.13	237.7	(NULL)
2.53	178.8	(NULL)
3.41	21.8	(NULL)
3.69	17.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.04 WATERSHED INCHES; 227 CFS-HRS; 18.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
1.40	27.7	(RUNOFF)
2.10	190.8	(RUNOFF)
2.54	96.4	(RUNOFF)
3.24	6.9	(RUNOFF)
3.44	6.4	(RUNOFF)
3.70	6.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.76 WATERSHED INCHES; 137 CFS-HRS; 11.3 ACRE-FEET.

1  
TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 51,  
 VALUE EXTRAPOLATED.  
 \*\*\*

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.29	117.4	400.11
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.76 WATERSHED INCHES; FEET.	137 CFS-HRS;	11.3 ACRE-

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.19	337.4	(NULL)
2.52	281.0	(NULL)
3.64	34.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.28 WATERSHED INCHES; FEET.	364 CFS-HRS;	30.1 ACRE-

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
1.40	27.8	(RUNOFF)
1.51	30.1	(RUNOFF)
2.08	310.0	(RUNOFF)
2.53	167.2	(RUNOFF)
3.23	12.4	(RUNOFF)
3.43	12.7	(RUNOFF)
3.68	11.8	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.98 WATERSHED INCHES; FEET.	210 CFS-HRS;	17.3 ACRE-

OPERATION REACH XSECTION 16

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.28	332.4	331.82
2.56	281.0	331.65
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.28 WATERSHED INCHES; FEET.	364 CFS-HRS;	30.0 ACRE-

1 TR20 ----- SCS  
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OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.16	576.4	(NULL)
2.52	446.8	(NULL)
3.66	47.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.17 WATERSHED INCHES; 573 CFS-HRS; 47.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.27	1564.3	(NULL)
3.63	157.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.07 WATERSHED INCHES; 1559 CFS-HRS; 128.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.25	723.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.65 WATERSHED INCHES; 636 CFS-HRS; 52.6 ACRE-FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.38	1448.9	239.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.06 WATERSHED INCHES; 1558 CFS-HRS; 128.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.34	2109.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.93 WATERSHED INCHES; 2194 CFS-HRS; 181.3 ACRE-FEET.

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 Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.34	2109.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.93 WATERSHED INCHES; 2194 CFS-HRS; 181.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.15	71.3	(RUNOFF)
2.56	38.8	(RUNOFF)
3.45	2.4	(RUNOFF)
3.72	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.65 WATERSHED INCHES; 55 CFS-HRS; 4.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.17	70.6	415.78
2.57	38.2	415.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.64 WATERSHED INCHES; 55 CFS-HRS; 4.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
1.49	44.8	(RUNOFF)
2.12	327.2	(RUNOFF)
2.55	171.8	(RUNOFF)
3.22	13.0	(RUNOFF)
3.45	10.9	(RUNOFF)
3.72	10.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.65 WATERSHED INCHES; 243 CFS-HRS; 20.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 32

1

TR20 ----- SCS

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.18	309.8	370.25
2.56	168.4	369.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.64 WATERSHED INCHES; 243 CFS-HRS; 20.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.18	380.3	(NULL)
2.56	206.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.64 WATERSHED INCHES; 299 CFS-HRS; 24.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
1.48	25.2	(RUNOFF)
2.12	188.2	(RUNOFF)
2.55	98.4	(RUNOFF)
3.23	7.2	(RUNOFF)
3.45	6.3	(RUNOFF)
3.71	5.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.62 WATERSHED INCHES; 139 CFS-HRS; 11.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.16	559.6	(NULL)
2.56	304.9	(NULL)
3.69	19.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.63 WATERSHED INCHES; 437 CFS-HRS; 36.1 ACRE-FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.25	504.6	343.48

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.63 WATERSHED INCHES; 436 CFS-HRS; 36.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
1.33	5.4	(RUNOFF)
1.49	5.2	(RUNOFF)
2.03	52.5	(RUNOFF)
2.50	29.1	(RUNOFF)
2.83	8.5	(RUNOFF)
3.19	2.9	(RUNOFF)
3.39	2.3	(RUNOFF)
3.65	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.00 WATERSHED INCHES; 32 CFS-HRS; 2.7 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT 1.4%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.25	538.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.58 WATERSHED INCHES; 469 CFS-HRS; 38.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
.80	4.6	(RUNOFF)
1.32	53.3	(RUNOFF)
1.48	39.5	(RUNOFF)
2.02	255.3	(RUNOFF)
2.50	128.1	(RUNOFF)
2.83	37.1	(RUNOFF)

3.19	12.5	(RUNOFF)
3.39	10.1	(RUNOFF)
3.65	10.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.18 WATERSHED INCHES; 167 CFS-HRS; 13.8 ACRE-  
 FEET.

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\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .9%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
.80	4.6	(NULL)
1.32	53.3	(NULL)
1.48	39.5	(NULL)
2.02	255.3	(NULL)
2.50	128.1	(NULL)
2.83	37.1	(NULL)
3.19	12.5	(NULL)
3.39	10.1	(NULL)
3.65	10.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.18 WATERSHED INCHES; 167 CFS-HRS; 13.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
.87	4.6	356.10
1.38	51.4	356.58
1.54	39.1	356.50
2.08	252.2	357.39
2.56	125.8	356.99
2.88	36.5	356.48
3.25	11.3	356.24
3.45	9.5	356.20
3.71	10.3	356.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.17 WATERSHED INCHES; 167 CFS-HRS; 13.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.25	592.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.87 WATERSHED INCHES; 548 CFS-HRS; 45.3 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
.89	5.9	(NULL)
1.56	129.9	(NULL)
2.19	771.5	(NULL)
3.71	32.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.93 WATERSHED INCHES; 715 CFS-HRS; 59.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
1.50	26.1	(RUNOFF)
2.13	189.0	(RUNOFF)
2.56	100.4	(RUNOFF)
3.45	6.4	(RUNOFF)
3.72	5.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.65 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
.89	6.2	(NULL)
1.56	155.4	(NULL)
2.17	954.7	(NULL)
3.71	37.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 858 CFS-HRS; 70.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
.97	5.3	316.10
1.64	149.2	316.94
2.27	922.8	318.44
3.77	36.1	316.44

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 858 CFS-HRS; 70.9 ACRE-FEET.

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OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.20	86.4	(RUNOFF)
3.71	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.71 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .047 HOURS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.22	86.1	328.99
3.77	2.6	323.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.71 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
.97	5.5	(NULL)
1.64	159.9	(NULL)
2.26	1006.9	(NULL)
3.77	38.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.87 WATERSHED INCHES; 932 CFS-HRS; 77.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
1.35	32.1	(RUNOFF)
1.49	32.1	(RUNOFF)
2.05	289.1	(RUNOFF)
2.51	153.9	(RUNOFF)
3.21	11.6	(RUNOFF)
3.42	12.4	(RUNOFF)
3.66	12.6	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.23 WATERSHED INCHES; 187 CFS-HRS; 15.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
.97	5.5	(NULL)
2.22	1162.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.75 WATERSHED INCHES; 1119 CFS-HRS; 92.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.24	1694.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.70 WATERSHED INCHES; 1589 CFS-HRS; 131.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 8

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.65	1082.9	305.52

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.68 WATERSHED INCHES; 1583 CFS-HRS; 130.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
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ELEVATION(FEET)		
1.40	13.3	(RUNOFF)
1.49	13.0	(RUNOFF)
2.09	99.1	(RUNOFF)
2.54	50.5	(RUNOFF)
3.24	3.7	(RUNOFF)
3.43	3.5	(RUNOFF)
3.69	3.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.60 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 29

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.34	48.9	274.18
2.58	47.5	274.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.60 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.47	47.4	223.02
2.64	47.3	223.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.60 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.17	274.3	(RUNOFF)
2.57	183.0	(RUNOFF)
3.45	12.5	(RUNOFF)
3.72	11.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.58 WATERSHED INCHES; 202 CFS-HRS; 16.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.17	282.6	(NULL)
2.57	229.9	(NULL)
3.44	21.9	(NULL)
3.72	20.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.91 WATERSHED INCHES; 272 CFS-HRS; 22.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.79	1034.8	227.49

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.69 WATERSHED INCHES; 1584 CFS-HRS; 130.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.73	1191.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.30 WATERSHED INCHES; 1856 CFS-HRS; 153.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
3.01	964.6	228.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.30 WATERSHED INCHES; 1855 CFS-HRS; 153.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.25	883.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.34 WATERSHED INCHES; 791 CFS-HRS; 65.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
1.39	17.7	(RUNOFF)
1.47	16.4	(RUNOFF)
2.08	110.8	(RUNOFF)
2.53	55.2	(RUNOFF)
3.24	4.0	(RUNOFF)
3.43	3.8	(RUNOFF)
3.69	3.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.92 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
 FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 40,  
 VALUE EXTRAPOLATED.  
 \*\*\*

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OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.29	60.0	338.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.93 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.48	59.6	317.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.92 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.25	940.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.39 WATERSHED INCHES; 869 CFS-HRS; 71.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
1.50	10.7	(RUNOFF)
2.11	87.4	(RUNOFF)
2.55	45.3	(RUNOFF)
3.24	3.3	(RUNOFF)
3.44	3.0	(RUNOFF)
3.70	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.45 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 43,  
 VALUE EXTRAPOLATED.  
 \*\*\*

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OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.21	75.0	322.93
3.70	2.6	320.95

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.17 WATERSHED INCHES; 59 CFS-HRS; 4.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.25	1014.1	279.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.37 WATERSHED INCHES; 928 CFS-HRS; 76.7 ACRE-FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
 2.42    876.2    279.16

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.37 WATERSHED INCHES;                    928 CFS-HRS;                    76.7 ACRE-  
 FEET.

OPERATION RUNOFF       XSECTION    53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.17	468.8	(RUNOFF)
2.57	313.7	(RUNOFF)
3.45	21.5	(RUNOFF)
3.72	19.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.56 WATERSHED INCHES;                    344 CFS-HRS;                    28.5 ACRE-  
 FEET.

OPERATION ADDHYD       XSECTION    54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.34	1168.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.67 WATERSHED INCHES;                    1272 CFS-HRS;                    105.1 ACRE-  
 FEET.

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OPERATION RESVOR       STRUCTURE    5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
3.11	437.9	279.35

                                HYDROGRAPH POINTS FOR    ALTERNATE = 1,    STORM = 1  
 MAIN TIME INCREMENT = .060 hr,                    DRAINAGE AREA = .54

HRS	SQ.MI.	1.02 CFS	2.52	1.50 CFS	52.07	1.98 CFS	210	2.46 CFS	381	2.94 CFS	397	3.42 CFS	264
		.00	.01	.02	.06	.18	.50	1.20					
		4.70	7.87	11.99	16.98	23.00	30.14	39.39					
		69	92	119	139	159	178	195					
		223	236	248	256	263	306	349					
		405	423	435	438	433	423	410					
		382	366	349	332	314	294	275					

3.90 CFS 247	262	261	259	257	255	252	250
4.38 CFS 222	244	241	237	234	231	228	225
4.86 CFS 198	218	215	212	210	207	204	201
5.34 CFS 171	194	191	187	184	181	177	174
5.82 CFS 145	167	164	161	157	154	151	148
6.30 CFS 118	141	138	135	132	129	126	122
6.78 CFS 83	113	109	105	101	96	92	87
7.26 CFS 55.49	79.40	75.66	71.89	68.26	64.82	61.54	58.44
7.74 CFS 35.81	52.69	50.03	47.32	44.75	42.32	40.03	37.86
8.22 CFS 22.79	33.87	32.03	30.30	28.66	27.11	25.65	24.20
8.70 CFS 14.13	21.46	20.22	19.04	17.93	16.89	15.91	14.99
9.18 CFS 8.80	13.31	12.54	11.82	11.14	10.50	9.90	9.33
9.66 CFS 5.52	8.29	7.82	7.38	6.96	6.57	6.19	5.85
10.14 CFS 3.50	5.21	4.92	4.65	4.39	4.15	3.92	3.70
10.62 CFS 2.26	3.31	3.13	2.97	2.81	2.66	2.52	2.39
11.10 CFS 1.50	2.15	2.04	1.93	1.83	1.74	1.66	1.58
11.58 CFS 1.03	1.43	1.36	1.30	1.24	1.18	1.13	1.08
12.06 CFS .74	.99	.94	.90	.87	.83	.80	.77
12.54 CFS .56	.71	.69	.66	.64	.62	.60	.58
13.02 CFS .45	.54	.53	.51	.50	.49	.47	.46
13.50 CFS .38	.44	.43	.42	.41	.41	.40	.39
13.98 CFS .34	.38	.37	.36	.36	.35	.35	.35
14.46 CFS .31	.34	.33	.33	.33	.32	.32	.32
14.94 CFS .30	.31	.31	.31	.30	.30	.30	.30
15.42 CFS .29	.30	.29	.29	.29	.29	.29	.29
15.90 CFS .28	.29	.28	.28	.28	.28	.28	.28
16.38 CFS .27	.28	.28	.28	.28	.28	.28	.28
16.86 CFS .27	.27	.27	.27	.27	.27	.27	.27
17.34 CFS .27	.27	.27	.27	.27	.27	.27	.27
17.82 CFS .27	.27	.27	.27	.27	.27	.27	.27
18.30 CFS .26	.27	.27	.27	.27	.27	.27	.26
18.78 CFS .26	.26	.26	.26	.26	.26	.26	.26

19.26 CFS	.26	.26	.26	.26	.26	.26	.26
.26							
19.74 CFS	.26	.26	.26	.26	.26	.26	.26
.26							
20.22 CFS	.26	.26	.26	.26	.26	.26	.26
.26							
20.70 CFS	.26	.26	.26	.26	.26	.26	.26
.26							

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21.18 CFS	.26	.26	.26	.26	.26	.26	.26
.26							
21.66 CFS	.26	.26	.26	.26	.26	.26	.26
.26							
22.14 CFS	.26	.26	.26	.25	.25	.25	.25
.25							
22.62 CFS	.25	.25	.25	.25	.25	.25	.25
.25							
23.10 CFS	.25	.25	.25	.25	.25	.25	.25
.25							
23.58 CFS	.25	.25	.25	.25	.25	.25	.25
.25							
24.06 CFS	.25	.25	.25	.25	.25	.25	.25
.25							
24.54 CFS	.25						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.67 WATERSHED INCHES; 1272 CFS-HRS; 105.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.36	2584.6	(NULL)
2.64	2484.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.09 WATERSHED INCHES; 4049 CFS-HRS; 334.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.07	48.2	(RUNOFF)
2.52	30.3	(RUNOFF)
3.21	2.4	(RUNOFF)
3.41	2.5	(RUNOFF)
3.66	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.37	2604.5	(NULL)
2.63	2502.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.08 WATERSHED INCHES; 4079 CFS-HRS; 337.1 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 6, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .006 HOURS.  
 \*\*\*

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OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.48	2518.9	157.14

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1									
HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	1.55
SQ.MI.										
.84 CFS	.00	.01	.04	.13	.26	.57	2.08			
8.63										
1.32 CFS	25	54	92	129	161	188	211			
246										
1.80 CFS	315	431	598	841	1135	1475	1819			
2056										
2.28 CFS	2244	2424	2509	2518	2515	2509	2507			
2502										
2.76 CFS	2462	2380	2269	2142	2014	1835	1667			
1508										
3.24 CFS	1380	1273	1180	1095	1026	962	899			
840										
3.72 CFS	795	755	719	678	638	601	567			
537										
4.20 CFS	510	483	459	435	413	391	369			
350										
4.68 CFS	331	313	295	277	260	242	225			
211										
5.16 CFS	198	182	171	157	146	134	123			
113										
5.64 CFS	104	96	89	82	76	70	64			
59										
6.12 CFS	53.95	49.46	45.38	41.60	38.16	34.69	31.06			
27.57										
6.60 CFS	24.41	21.59	19.14	17.02	15.19	13.62	12.27			
11.11										
7.08 CFS	10.12	9.27	8.53	7.89	7.34	6.86	6.45			



6.08								
7.56	CFS	5.76	5.48	5.24	5.01	4.82	4.64	4.48
4.33								
8.04	CFS	4.20	4.08	3.97	3.87	3.77	3.68	3.60
3.52								
8.52	CFS	3.44	3.37	3.30	3.24	3.18	3.12	3.06
3.00								
9.00	CFS	2.95	2.90	2.85	2.80	2.74	2.69	2.65
2.60								
9.48	CFS	2.56	2.52	2.48	2.44	2.40	2.36	2.33
2.29								
9.96	CFS	2.26	2.22	2.19	2.15	2.12	2.09	2.05
2.02								
10.44	CFS	1.99	1.96	1.93	1.90	1.87	1.85	1.82
1.79								
10.92	CFS	1.76	1.74	1.71	1.69	1.66	1.64	1.61
1.59								
11.40	CFS	1.57	1.54	1.52	1.50	1.48	1.46	1.44
1.42								
11.88	CFS	1.40	1.38	1.36	1.34	1.32	1.30	1.28
1.26								
12.36	CFS	1.25	1.23	1.21	1.20	1.18	1.16	1.15
1.13								
12.84	CFS	1.12	1.10	1.09	1.07	1.06	1.05	1.03
1.02								
13.32	CFS	1.01	.99	.98	.97	.95	.94	.93
.92								
13.80	CFS	.91	.90	.88	.87	.86	.85	.84
.83								
14.28	CFS	.82	.81	.80	.79	.78	.77	.76
.76								
14.76	CFS	.75	.74	.73	.72	.71	.71	.70
.69								
15.24	CFS	.68	.67	.67	.66	.65	.65	.64
.63								
15.72	CFS	.62	.62	.61	.61	.60	.59	.59
.58								
16.20	CFS	.57	.57	.56	.56	.55	.55	.54
.53								
16.68	CFS	.53	.52	.52	.51	.51	.50	.50
.50								
17.16	CFS	.49	.49	.48	.48	.47	.47	.46
.46								
17.64	CFS	.46	.45	.45	.44	.44	.44	.43
.43								
18.12	CFS	.43	.42	.42	.41	.41	.41	.40
.40								
18.60	CFS	.40	.40	.39	.39	.39	.38	.38
.38								
19.08	CFS	.37	.37	.37	.37	.36	.36	.36
.35								
19.56	CFS	.35	.35	.35	.35	.34	.34	.34
.34								
20.04	CFS	.33	.33	.33	.33	.32	.32	.32
.32								
20.52	CFS	.32	.31	.31	.31	.31	.31	.30
.30								

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TIME	PASS	1	JOB NO.	1	PAGE			
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21.00 CFS .29	.30	.30	.30	.30	.29	.29	.29	
21.48 CFS .28	.29	.29	.28	.28	.28	.28	.28	
21.96 CFS .26	.27	.27	.27	.27	.27	.27	.27	
22.44 CFS .25	.26	.26	.26	.26	.26	.26	.25	
22.92 CFS .24	.25	.25	.25	.25	.25	.25	.25	
23.40 CFS .23	.24	.24	.24	.24	.24	.24	.24	
23.88 CFS .22	.23	.23	.23	.23	.23	.23	.23	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.08 WATERSHED INCHES; 4079 CFS-HRS; 337.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
1.35	21.0	(RUNOFF)
1.49	19.8	(RUNOFF)
2.05	158.3	(RUNOFF)
2.52	82.0	(RUNOFF)
3.22	6.1	(RUNOFF)
3.42	6.6	(RUNOFF)
3.67	6.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.52 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.54	2518.9	135.69

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.08 WATERSHED INCHES; 4080 CFS-HRS; 337.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.79	2817.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.98 WATERSHED INCHES; 5352 CFS-HRS; 442.3 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 61  
NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 61

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.79	2817.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.98 WATERSHED INCHES; 5352 CFS-HRS; 442.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
.85	1.4	(RUNOFF)
1.38	18.7	(RUNOFF)
2.08	107.0	(RUNOFF)
2.53	52.4	(RUNOFF)
3.23	3.8	(RUNOFF)
3.43	3.7	(RUNOFF)
3.69	3.5	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .02  
 SQ.MI.

.72 CFS	.28	.90	1.37	1.16	.64	.67	1.73
4.56							
1.20 CFS	8.45	11.98	16.98	18.69	16.77	16.76	15.14
13.20							
1.68 CFS	16	25	36	48	66	88	105
106							
2.16 CFS	95.20	77.67	58.40	45.79	42.76	46.02	52.23
49.71							
2.64 CFS	38.51	29.25	22.10	18.16	17.15	14.56	9.60
4.83							
3.12 CFS	2.34	2.90	3.79	2.52	2.22	3.68	3.01
1.43							
3.60 CFS	1.39	3.34	3.19	1.60	.72	.32	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 76 CFS-HRS; 6.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
.85	1.4	(NULL)
2.58	2813.5	(NULL)
2.79	2834.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.99 WATERSHED INCHES; 5428 CFS-HRS; 448.6 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1  
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 6.60 inches AND 3.60 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 5, ARC 2							
MAIN TIME INCREMENT .060 HOURS							
ALTERNATE 1 STORM 1							
XSECTION	1	RUNOFF	.21	4.02	---	2.18	689 3281.0
STRUCTURE	13	RESVOR	.21	4.03	395.05	2.26	638 3038.1
XSECTION	2	RUNOFF	.03	3.69	---	2.13	97 3233.3
STRUCTURE	58	RESVOR	.03	3.68	432.25	2.20	91 3033.3
XSECTION	3	ADDHYD	.24	3.99	---	2.25	734 3058.3
XSECTION	4	RUNOFF	.06	4.44	---	2.07	259 4316.7
XSECTION	6	RUNOFF	.08	3.74	---	2.11	276 3450.0
XSECTION	9	RUNOFF	.06	4.12	---	2.11	226 3766.7
XSECTION	10	RUNOFF	.03	4.15	---	2.16	92 3066.7
STRUCTURE	52	RESVOR	.03	3.86	456.43	2.33	68 2266.7
XSECTION	12	ADDHYD	.09	4.04	---	2.13	238 2644.4
XSECTION	13	RUNOFF	.04	4.76	---	2.10	191 4775.0
STRUCTURE	51	RESVOR	.04	4.76	400.11	2.29	117 2925.0
XSECTION	15	RUNOFF	.08	3.98	---	2.08	310 3875.0
XSECTION	17	ADDHYD	.21	4.17	---	2.16	576 2742.9
XSECTION	18	ADDHYD	.59	4.07	---	2.27	1564 2650.8
XSECTION	19	RUNOFF	.27	3.65	---	2.25	724 2681.5
XSECTION	20	REACH	.59	4.06	239.34	2.38	1449 2455.9
XSECTION	21	ADDHYD	.86	3.93	---	2.34	2110 2453.5
STRUCTURE	10	RESVOR	.86	3.93	---	2.34	2110 2453.5
XSECTION	22	RUNOFF	.02	4.65	---	2.15	71 3550.0
STRUCTURE	47	RESVOR	.02	4.64	415.78	2.17	71 3550.0
XSECTION	23	RUNOFF	.08	4.65	---	2.12	327 4087.5

STRUCTURE	32	RESVOR	.08	4.64	370.25	2.18	310	3875.0
XSECTION	25	RUNOFF	.05	4.62	---	2.12	188	3760.0
STRUCTURE	34	RESVOR	.15	4.63	343.48	2.25	505	3366.7
XSECTION	27	RUNOFF	.01	4.00	---	2.03	52	5200.0
XSECTION	28	ADDHYD	.16	4.58	---	2.25	539	3368.8

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL		DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE		
	ID	OPERATION				TIME (HR)	RATE (CFS)	RATE (CSM)
	ALTERNATE	1	STORM	1				
XSECTION	29	RUNOFF	.05	5.18	---	2.02	255	5100.0
STRUCTURE	64	RESVOR	.05	5.18	---	2.02	255	5100.0
XSECTION	31	RUNOFF	.17	4.87	---	2.25	593	3488.2
XSECTION	33	RUNOFF	.05	4.65	---	2.13	189	3780.0
XSECTION	36	RUNOFF	.02	4.71	---	2.20	86	4300.0
STRUCTURE	33	RESVOR	.02	4.71	328.99	2.22	86	4300.0
XSECTION	38	RUNOFF	.07	4.23	---	2.05	289	4128.6
XSECTION	39	ADDHYD	.36	4.75	---	2.22	1163	3230.6
STRUCTURE	8	RESVOR	.52	4.68	305.52	2.65	1083	2082.7
XSECTION	41	RUNOFF	.02	4.60	---	2.09	99	4950.0
STRUCTURE	29	RESVOR	.02	4.60	274.18	2.34	49	2450.0
XSECTION	43	RUNOFF	.12	2.58	---	2.17	274	2283.3
XSECTION	44	ADDHYD	.14	2.91	---	2.17	283	2021.4
XSECTION	46	ADDHYD	.67	4.30	---	2.73	1191	1777.6
STRUCTURE	7	RESVOR	.67	4.30	228.13	3.01	965	1440.3
XSECTION	47	RUNOFF	.28	4.34	---	2.25	884	3157.1
XSECTION	48	RUNOFF	.02	4.92	---	2.08	111	5550.0
STRUCTURE	40	RESVOR	.02	4.93	338.27	2.29	60	3000.0
XSECTION	51	RUNOFF	.02	4.45	---	2.11	87	4350.0
STRUCTURE	43	RESVOR	.02	4.17	322.93	2.21	75	3750.0
XSECTION	52	ADDHYD	.33	4.37	279.42	2.25	1014	3072.7
XSECTION	53	RUNOFF	.21	2.56	---	2.17	469	2233.3
XSECTION	54	ADDHYD	.54	3.67	---	2.34	1169	2164.8
STRUCTURE	5	RESVOR	.54	3.67	279.35	3.11	438	811.1
XSECTION	55	ADDHYD	1.53	4.09	---	2.36	2585	1689.5

XSECTION	56	RUNOFF	.02	2.83	---	2.07	48	2400.0
XSECTION	57	ADDHYD	1.55	4.08	---	2.37	2604	1680.0
STRUCTURE	6	RESVOR	1.55	4.08	157.14	2.48	2519	1625.2
XSECTION	58	RUNOFF	.04	4.52	---	2.05	158	3950.0
XSECTION	62	RUNOFF	.02	5.09	---	2.08	107	5350.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AMOUNT	ELEVATION	TIME	RATE	RATE
ID	OPERATION	AREA (SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	1					
XSECTION	63	ADDHYD	2.11	3.99	---	2.79	2835	1343.6

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.

QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION ROUTING PARAMETERS

XSEC ID	REACH LENGTH	FLOOD PLAIN LENGTH	INFLOW		OUTFLOW		Q-A EQ.		PEAK RATIO Q/I	ATT- KIN	
			PEAK	TIME	PEAK	TIME	COEFF	POWER			
COEFF	(FT)	(FT)	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)	(Q*)	(C)

BASEFLOW IS .0 CFS

ALTERNATE	1	STORM	1							
7	2055	895	2.2	875	2.3	3.31	1.29	.025	.978	
.88?										
11	1397	68	2.3	67	2.4	2.64	1.50	.012	.998	
.94?										
16	2449	335	2.2	332	2.3	2.62	1.36	.024	.992	
.73?										
20	4470	1561	2.3	1445	2.4	3.96	1.20	.075	.926	
.48										
30	1561	252	2.0	251	2.1	1.31	1.51	.025	.995	
.89?										
35	2077	954	2.2	922	2.3	2.08	1.24	.054	.966	
.61										
42	2112	49	2.3	47	2.5	3.60	1.36	.020	.968	
.67?										
45	3148	1083	2.6	1032	2.8	6.59	1.04	.065	.953	
.45										
49	1829	60	2.3	60	2.5	1.52	1.38	.037	.993	
.51										
52	4744	1008	2.2	875	2.4	2.70	1.19	.151	.868	
.32										
59	1671	2518	2.5	2518	2.5	3.24	1.24	.010	1.000	
.98?										

1  
 TR20 ----- SCS  
 -

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 03/31/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT, Jul 30  
 2.04TEST  
 16:45:39 SUMMARY, JOB NO. 1 PAGE  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
STRUCTURE 64	.05	
-----		
ALTERNATE 1		255
STRUCTURE 58	.03	
-----		
ALTERNATE 1		91
STRUCTURE 52	.03	
-----		
ALTERNATE 1		68
STRUCTURE 51	.04	
-----		
ALTERNATE 1		117

STRUCTURE	47	.02	
ALTERNATE	1		71
STRUCTURE	43	.02	
ALTERNATE	1		75
STRUCTURE	40	.02	
ALTERNATE	1		60
STRUCTURE	34	.15	
ALTERNATE	1		505
STRUCTURE	33	.02	
ALTERNATE	1		86
STRUCTURE	32	.08	
ALTERNATE	1		310
STRUCTURE	29	.02	
ALTERNATE	1		49
STRUCTURE	13	.21	
ALTERNATE	1		638
STRUCTURE	10	.86	
ALTERNATE	1		2110
STRUCTURE	8	.52	

1

TR20 ----- SCS  
-

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION  
03/31/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT, Jul 30  
2.04TEST  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
STRUCTURE	8	.52
ALTERNATE	1	1083
STRUCTURE	7	.67



ALTERNATE	1		965
STRUCTURE	6	1.55	
ALTERNATE	1		2519
STRUCTURE	5	.54	
ALTERNATE	1		438
XSECTION	1	.21	
ALTERNATE	1		689
XSECTION	2	.03	
ALTERNATE	1		97
XSECTION	3	.24	
ALTERNATE	1		734
XSECTION	4	.06	
ALTERNATE	1		259
XSECTION	6	.08	
ALTERNATE	1		276
XSECTION	9	.06	
ALTERNATE	1		226
XSECTION	10	.03	
ALTERNATE	1		92
XSECTION	12	.09	
ALTERNATE	1		238
XSECTION	13	.04	
ALTERNATE	1		191
XSECTION	15	.08	
ALTERNATE	1		310

1

TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 03/31/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,50,100WITHMGMT, Jul 30  
 2.04TEST  
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SUMMARY, JOB NO. 1

PAGE

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES

QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION 17	.21	
-----		
ALTERNATE 1		576
XSECTION 18	.59	
-----		
ALTERNATE 1		1564
XSECTION 19	.27	
-----		
ALTERNATE 1		724
XSECTION 20	.59	
-----		
ALTERNATE 1		1449
XSECTION 21	.86	
-----		
ALTERNATE 1		2110
XSECTION 22	.02	
-----		
ALTERNATE 1		71
XSECTION 23	.08	
-----		
ALTERNATE 1		327
XSECTION 25	.05	
-----		
ALTERNATE 1		188
XSECTION 27	.01	
-----		
ALTERNATE 1		52
XSECTION 28	.16	
-----		
ALTERNATE 1		539
XSECTION 29	.05	
-----		
ALTERNATE 1		255
XSECTION 31	.17	
-----		
ALTERNATE 1		593
XSECTION 33	.05	
-----		
ALTERNATE 1		189

1

TR20 ----- SCS

-

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 03/31/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,50,100WITHMGMT, Jul 30

2.04TEST  
16:45:39  
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SUMMARY, JOB NO. 1

PAGE

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION 36	.02	
-----		
ALTERNATE 1		86
XSECTION 38	.07	
-----		
ALTERNATE 1		289
XSECTION 39	.36	
-----		
ALTERNATE 1		1163
XSECTION 41	.02	
-----		
ALTERNATE 1		99
XSECTION 43	.12	
-----		
ALTERNATE 1		274
XSECTION 44	.14	
-----		
ALTERNATE 1		283
XSECTION 46	.67	
-----		
ALTERNATE 1		1191
XSECTION 47	.28	
-----		
ALTERNATE 1		884
XSECTION 48	.02	
-----		
ALTERNATE 1		111
XSECTION 51	.02	
-----		
ALTERNATE 1		87
XSECTION 52	.33	
-----		
ALTERNATE 1		1014
XSECTION 53	.21	
-----		
ALTERNATE 1		469
XSECTION 54	.54	

```

-----
ALTERNATE      1                      1169
1
TR20 ----- SCS
-
      Ellicott City Flood Study-Tiber/South Sub-Drainage Areas
      VERSION
03/31/** 27 Subareas MGMT-sTD NOAA_C 2,5,10,50,100WITHMGMT, Jul 30
2.04TEST
16:45:39
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SUMMARY, JOB NO. 1
PAGE
    
```

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION 55	1.53	
-----		
ALTERNATE 1		2585
XSECTION 56	.02	
-----		
ALTERNATE 1		48
XSECTION 57	1.55	
-----		
ALTERNATE 1		2604
XSECTION 58	.04	
-----		
ALTERNATE 1		158
XSECTION 62	.02	
-----		
ALTERNATE 1		107
XSECTION 63	2.11	
-----		
ALTERNATE 1		2835

```

1
TR20 ----- SCS
-
      Ellicott City Flood Study-Tiber/South Sub-Drainage Areas
      VERSION
03/31/** 27 Subareas MGMT-sTD NOAA_C 2,5,10,50,100WITHMGMT, Jul 30
2.04TEST
    
```

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST  
FILES

INPUT = scojul.dat , GIVEN DATA FILE  
OUTPUT = scojul.OUT , DATED  
03/31/\*\*,16:45:39

FILES GENERATED - DATED 03/31/\*\*,16:45:39

NONE!

TOTAL NUMBER OF WARNINGS = 8, MESSAGES = 2

\*\*\* TR-20 RUN COMPLETED \*\*\*

1

\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20  
HYDROLOGY\*\*\*\*\*

JOB TR-20	NOPLOTS				
TITLE	Ellicott City Flood Study-Tiber/South Sub-Drainage Areas				
TITLE	27 Subareas MGMT-STD NOAA_C 2,5,10,25,50,100WITHMGMT;GHCHUG				
5 RAINFL 1	.1				
8	0.0000	0.0013	0.0023	0.0034	0.0044
8	0.0055	0.0065	0.0076	0.0087	0.0098
8	0.0109	0.0121	0.0132	0.0143	0.0155
8	0.0167	0.0178	0.0190	0.0202	0.0214
8	0.0226	0.0238	0.0251	0.0263	0.0276
8	0.0288	0.0301	0.0314	0.0327	0.0340
8	0.0353	0.0366	0.0379	0.0393	0.0406
8	0.0420	0.0434	0.0447	0.0461	0.0475
8	0.0489	0.0504	0.0518	0.0532	0.0547
8	0.0562	0.0576	0.0591	0.0606	0.0621
8	0.0636	0.0651	0.0667	0.0682	0.0697
8	0.0713	0.0729	0.0745	0.0760	0.0776
8	0.0793	0.0809	0.0826	0.0843	0.0861
8	0.0879	0.0898	0.0916	0.0936	0.0955
8	0.0975	0.0996	0.1017	0.1038	0.1060
8	0.1082	0.1104	0.1127	0.1150	0.1174
8	0.1198	0.1223	0.1247	0.1273	0.1298
8	0.1324	0.1351	0.1378	0.1405	0.1432
8	0.1461	0.1490	0.1521	0.1554	0.1588
8	0.1623	0.1660	0.1699	0.1739	0.1780
8	0.1823	0.1868	0.1914	0.1961	0.2010
8	0.2061	0.2117	0.2179	0.2247	0.2321
8	0.2400	0.2490	0.2591	0.2702	0.2825
8	0.2955	0.3157	0.3370	0.3662	0.4067
8	0.4766	0.5933	0.6338	0.6630	0.6843
8	0.7045	0.7176	0.7298	0.7409	0.7510
8	0.7600	0.7679	0.7753	0.7821	0.7883
8	0.7939	0.7990	0.8039	0.8086	0.8132
8	0.8177	0.8220	0.8261	0.8301	0.8340
8	0.8377	0.8412	0.8446	0.8479	0.8510
8	0.8540	0.8568	0.8595	0.8622	0.8649
8	0.8676	0.8702	0.8727	0.8753	0.8778
8	0.8802	0.8826	0.8850	0.8873	0.8896
8	0.8918	0.8940	0.8962	0.8983	0.9004
8	0.9025	0.9045	0.9064	0.9084	0.9103
8	0.9121	0.9139	0.9157	0.9174	0.9191
8	0.9208	0.9224	0.9240	0.9256	0.9271
8	0.9287	0.9303	0.9318	0.9334	0.9349
8	0.9364	0.9379	0.9394	0.9409	0.9424
8	0.9439	0.9453	0.9468	0.9482	0.9496
8	0.9511	0.9525	0.9539	0.9553	0.9566
8	0.9580	0.9594	0.9607	0.9621	0.9634
8	0.9647	0.9660	0.9673	0.9686	0.9699
8	0.9712	0.9724	0.9737	0.9749	0.9762
8	0.9774	0.9786	0.9798	0.9810	0.9822
8	0.9834	0.9845	0.9857	0.9868	0.9879

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8	0.9891	0.9902	0.9913	0.9924	0.9935
8	0.9945	0.9956	0.9967	0.9977	0.9987
8	1.0000	1.0000	1.0000	1.0000	1.0000

9 ENDTBL

3 STRUCT 58

8		424.00	0.00	0.00
8		429.09	2.00	0.72
8		429.59	4.00	0.85
8		430.00	6.00	0.96
8		430.21	8.00	1.02
8		430.36	10.00	1.06
8		430.49	12.00	1.10
8		430.64	14.00	1.15
8		430.74	15.00	1.18
8		431.22	17.09	1.33
8		431.68	33.53	1.49
8		432.18	80.87	1.67
8		432.37	108.22	1.74

9 ENDTBL

2 XSECTN 007

8		1.0	319.00	
8		318.00	0.00	0.00
8		318.25	10.19	3.39
8		318.50	32.80	7.08
8		318.75	65.48	11.07
8		319.00	107.54	15.35
8		320.00	367.34	35.47
8		321.00	663.16	60.18
8		322.00	1052.26	89.31
8		323.00	1529.69	131.30

9 ENDTBL

3 STRUCT 52

8		451.90	0.00	0.00
8		454.05	0.34	0.73
8		454.30	0.36	0.85
8		455.60	18.83	1.65
8		456.10	41.43	2.00
8		456.50	72.96	2.28

9 ENDTBL

2 XSECTN 011

8		1.0	415.00	
8		414.00	0.00	0.00
8		414.25	7.22	1.98
8		414.50	23.69	4.29
8		414.75	48.28	6.93
8		415.00	81.00	9.89
8		416.00	299.51	25.08
8		417.00	488.53	45.33
8		418.00	779.05	70.44
8		419.00	809.36	107.84

9 ENDTBL

3 STRUCT 51

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8		396.00	0.00	0.00
8		396.50	4.38	0.27
8		397.00	12.40	0.65
8		397.50	22.78	1.07
8		398.00	35.07	1.54
8		398.50	49.45	2.05
8		399.00	64.75	2.59

8			399.45	86.12	3.10
9	ENDTBL				
2	XSECTN	016	1.0	331.00	
8			330.00	0.00	0.00
8			330.25	5.94	1.92
8			330.50	21.34	4.68
8			330.75	47.19	8.28
8			331.00	85.01	12.73
8			332.00	385.16	38.91
8			333.00	704.29	76.97
8			334.00	1202.25	125.34
8			335.00	1592.91	187.47
9	ENDTBL				
2	XSECTN	020	1.0	235.00	
8			234.00	0.00	0.00
8			234.25	9.06	3.27
8			234.50	29.33	6.89
8			234.75	58.86	10.87
8			235.00	97.22	15.19
8			236.00	339.40	36.03
8			237.00	586.83	61.50
8			238.00	902.53	90.59
8			239.00	1290.91	123.25
8			240.00	1750.59	159.40
8			241.00	1985.66	201.02
8			242.00	2381.26	250.13
9	ENDTBL				
3	STRUCT	10			
9	ENDTBL				
3	STRUCT	47			
8			410.00	0.00	0.00
8			413.89	5.00	0.05
8			414.04	10.00	0.15
8			414.17	15.00	0.24
8			414.28	20.00	0.27
8			415.00	30.68	0.38
8			415.27	39.01	0.42
8			415.52	52.87	0.45
8			415.79	71.61	0.49
8			416.07	95.27	0.54
9	ENDTBL				
3	STRUCT	32			
8			367.00	0.00	0.00

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			367.37	10.00	0.29
8			367.59	20.00	0.47
8			367.78	30.00	0.62
8			367.94	40.00	0.76
8			368.09	50.00	0.89
8			368.44	75.00	1.18
8			368.82	88.96	1.52
8			369.30	142.54	1.95
8			369.79	219.99	2.41
8			370.11	280.10	2.72
8			370.33	326.70	2.93
8			370.56	378.34	3.15
9	ENDTBL				
3	STRUCT	34			



8			329.00	0.00	0.00
8			332.62	30.00	0.72
8			336.99	50.00	2.59
8			337.92	70.00	3.17
8			338.11	90.00	3.29
8			338.19	100.00	3.34
8			338.26	109.00	3.39
8			338.55	150.00	3.58
8			338.61	160.00	3.63
8			338.64	165.00	3.65
8			338.70	175.00	3.69
8			338.73	179.50	3.71
8			343.01	310.00	7.34
8			343.91	680.58	8.20
9	ENDTBL				
3	STRUCT	64			
9	ENDTBL				
2	XSECTN	030	1.0	357.00	
8			356.00	0.00	0.00
8			356.25	11.94	4.48
8			356.50	38.65	9.42
8			356.75	77.59	14.83
8			357.00	128.16	20.70
8			358.00	446.97	48.84
8			359.00	544.48	91.80
8			360.00	941.05	156.94
8			361.00	1597.14	242.00
9	ENDTBL				
2	XSECTN	035	1.0	317.00	
8			316.00	0.00	0.00
8			316.25	12.78	5.64
8			316.50	44.21	13.12
8			316.75	94.71	22.44
8			317.00	166.16	33.59
8			318.00	703.03	96.58
8			319.00	1203.58	187.92

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			320.00	2039.69	306.56
8			321.00	3441.07	443.04
9	ENDTBL				
3	STRUCT	33			
8			323.00	0.00	0.00
8			323.20	5.00	0.01
8			324.01	10.00	0.06
8			325.62	15.00	0.19
8			326.73	18.00	0.29
8			327.09	20.00	0.33
8			327.38	25.00	0.36
8			327.54	28.00	0.38
8			327.63	30.00	0.39
8			328.16	38.10	0.46
8			328.84	73.25	0.54
8			329.21	106.03	0.59
9	ENDTBL				
3	STRUCT	08			
8			285.00	0.00	0.00
8			288.19	100.00	4.352
8			291.06	200.00	9.305

8			297.70	390.00	24.917
8			299.77	425.00	31.064
8			301.26	450.00	35.844
8			302.44	470.00	39.908
8			303.00	479.50	41.916
8			303.63	550.52	44.194
8			304.64	778.25	48.024
8			305.12	931.33	49.913
8			306.18	1334.58	54.217
9	ENDTBL				
3	STRUCT	29			
8			266.00	0.00	0.00
8			273.38	10.00	2.49
8			273.62	20.00	2.64
8			273.91	35.00	2.82
8			274.10	46.00	2.94
8			274.35	55.00	3.10
8			274.51	58.00	3.20
8			274.61	60.00	3.28
8			274.90	65.00	3.47
8			275.21	98.51	3.68
8			275.54	139.16	3.92
8			275.89	189.97	4.18
8			276.27	253.87	4.48
8			276.50	299.40	4.67
9	ENDTBL				
2	XSECTN	042	1.0	223.00	
8			222.00	0.00	0.00
8			222.25	2.73	0.83

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			222.50	10.35	2.16
8			222.75	23.82	3.97
8			223.00	44.24	6.28
8			224.00	215.28	20.42
8			225.00	406.10	41.61
8			226.00	702.08	67.86
8			227.00	890.97	103.46
9	ENDTBL				
2	XSECTN	045	1.0	223.00	
8			222.00	0.00	0.00
8			222.25	2.28	0.83
8			222.50	8.62	2.16
8			222.75	19.85	3.97
8			223.00	36.86	6.28
8			224.00	179.35	20.41
8			225.00	338.28	41.30
8			226.00	584.84	67.85
8			227.00	830.09	103.44
8			228.00	1249.11	151.47
8			229.00	1307.14	232.37
8			230.00	2023.03	366.57
9	ENDTBL				
3	STRUCT	07			
9	ENDTBL				
3	STRUCT	40			
8			333.00	000.00	0.00
8			334.00	15.15	0.40
8			334.25	16.92	0.47

8			334.50	18.53	0.55
8			334.75	20.02	0.63
8			335.00	21.40	0.68
8			335.50	23.92	0.77
8			335.86	25.59	0.80
8			336.00	27.61	0.82
8			336.25	33.80	0.84
8			336.50	42.02	0.93
8			336.75	51.79	1.01
8			336.86	56.51	1.05
8			337.00	57.30	1.08
8			337.50	58.38	1.31
8			338.00	59.45	1.68
9	ENDTBL				
2	XSECTN	049	1.0	317.00	
8			316.00	0.00	0.00
8			316.25	3.06	1.70
8			316.50	11.11	4.19
8			316.75	24.79	7.47
8			317.00	44.94	11.55
8			318.00	206.80	35.78
8			319.00	333.28	74.89

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			320.00	609.60	131.05
9	ENDTBL				
3	STRUCT	43			
8			317.30	0.00	0.00
8			318.00	0.19	0.08
8			319.00	0.24	0.27
8			320.75	0.30	0.79
8			321.00	3.22	0.85
8			321.75	23.58	1.09
8			322.00	32.83	1.17
8			322.20	40.94	1.20
8			322.40	49.63	1.27
8			322.80	68.56	1.45
8			322.90	73.60	1.49
9	ENDTBL				
2	XSECTN	052	1.0	279.00	
8			276.00	0.00	0.00
8			276.25	15.37	5.56
8			276.50	49.97	11.77
8			276.75	100.75	18.63
8			277.00	167.09	26.14
8			278.00	591.48	62.65
8			279.00	793.41	115.06
8			280.00	1313.82	188.91
8			281.00	2138.14	282.44
9	ENDTBL				
3	STRUCT	05			
8			256.00	0.00	0.00
8			257.31	25.00	2.040
8			258.61	50.00	4.248
8			259.92	75.00	6.631
8			261.23	100.00	9.193
8			262.74	125.00	12.396
8			265.08	150.00	17.872
8			267.43	175.00	24.009

8			269.77	200.00	30.850
8			274.91	250.00	48.522
8			276.30	260.00	53.975
8			277.00	265.00	56.814
8			277.70	319.90	59.729
8			279.13	415.88	65.974
8			280.67	569.65	73.359
9	ENDTBL				
3	STRUCT	06			
9	ENDTBL				
2	XSECTN	059	1.0	128.00	
8			129.00	0.00	0.00
8			129.25	1.13	0.50
8			129.50	5.18	1.55
8			129.75	13.39	3.16

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
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8			130.00	26.84	5.32		
8			131.00	191.72	26.64		
8			132.00	508.02	58.78		
8			133.00	945.51	95.90		
8			134.00	1449.27	136.08		
8			135.00	2016.68	178.64		
8			138.00	4199.86	314.48		
9	ENDTBL						
3	STRUCT	13					
9	ENDTBL						
6	RUNOFF	1 001	1 0.2101	77.19	0.319	1	1 141
6	RESVOR	2 13 1	6			1	1
PROP13							
6	RUNOFF	1 002	2 0.0292	74.00	0.232	1	1 142
6	RESVOR	2 58 2	3			1	1
SWMF58							
6	ADDHYD	4 003	6 3 4			1	1
1+2+58							
6	RUNOFF	1 004	1 0.0617	81.09	0.170	1	1 143
6	ADDHYD	4 005	4 1 2			1	1+2+3
6	RUNOFF	1 006	1 0.0799	74.51	0.216	1	1 144
6	REACH	3 007	2 3	2055.0		1	
6	ADDHYD	4 008	1 3 2			1	SA14
6	RUNOFF	1 009	1 0.0604	78.12	0.220	1	1 153
6	RUNOFF	1 010	3 0.0264	78.36	0.290	1	1 151
6	RESVOR	2 52 3	4			1	1
SWMF52							
6	REACH	3 011	4 5	1396.5		1	
6	ADDHYD	4 012	1 5 6			1	1
153+151							
6	RUNOFF	1 013	1 0.0447	83.97	0.210	1	1 152
6	RESVOR	2 51 1	3			1	1
SWMF51							
6	ADDHYD	4 014	6 3 1			1	
012+51							
6	RUNOFF	1 015	3 0.0815	76.80	0.176	1	1 154
6	REACH	3 016	1 4	2448.6		1	
6	ADDHYD	4 017	3 4 5			1	1 SA15
6	ADDHYD	4 018	2 5 1			1	1
SA14+15							
6	RUNOFF	1 019	2 0.2701	73.58	0.425	1	1 131
6	REACH	3 020	1 3	4470.1		1	1 SA13

6	ADDHYD	4	021	2	3	5			1	1
14+15+13										
6	RESVOR	2		10	5	4			1	1
PROP10										
6	RUNOFF	1	022				1	0.0185	83.00	0.283
6	RESVOR	2		47	1	2			1	1
SWMF47										
6	RUNOFF	1	023				3	0.0812	83.00	0.245
6	RESVOR	2		32	3	5			1	1
SWMF32										
6	ADDHYD	4	024	2	5	1			1	
121+122										
6	RUNOFF	1	025				2	0.0465	82.74	0.236
6	ADDHYD	4	026	1	2	5			1	
024+123										
6	RESVOR	2		34	5	3			1	1
SWMF34										
6	RUNOFF	1	027				2	0.0126	76.91	0.100
6	ADDHYD	4	028	3	2	5			1	1
6	RUNOFF	1	029				2	0.0499	87.76	0.100
6	RESVOR	2		64	2	3			1	1
SWMF64										
6	REACH	3	030	3		6		1561.1		
6	RUNOFF	1	031				7	0.1745	85.00	0.449

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
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6	ADDHYD	4	032	6	7	3				1
111+112										
6	RUNOFF	1	033				1	0.0477	83.06	0.258
6	ADDHYD	4	034	3	1	2			1	
032+113										
6	REACH	3	035	2		3		2077.3		
6	RUNOFF	1	036				6	0.0244	83.54	0.370
6	RESVOR	2		33	6	7			1	1
SWMF33										
6	ADDHYD	4	037	3	7	1			1	
111-114										
6	RUNOFF	1	038				2	0.0684	79.13	0.136
6	ADDHYD	4	039	1	2	7			1	1
6	ADDHYD	4	040	5	7	2			1	12+11
6	RESVOR	2		08	2	6			1	1
6	RUNOFF	1	041				1	0.0236	82.59	0.200
6	RESVOR	2		29	1	3			1	1
SWMF29										
6	REACH	3	042	3		5		2112.0		
6	RUNOFF	1	043				1	0.1211	62.77	0.263
6	ADDHYD	4	044	5	1	2			1	1
6	REACH	3	045	6		3		3147.6		
6	ADDHYD	4	046	2	3	7			1	1
10+12+11										
6	RESVOR	2		07	7	1			1	1
6	RUNOFF	1	047				2	0.2822	80.17	0.434
6	RUNOFF	1	048				3	0.0248	85.45	0.190
6	RESVOR	2		40	3	5			1	1
SWMF40										
6	REACH	3	049	5		6		1829.0		
6	ADDHYD	4	050	2	6	7			1	81+82
6	RUNOFF	1	051				2	0.0218	81.19	0.220
6	RESVOR	2		43	2	3			1	1

```

SWMF43
6 ADDHYD 4 052 7 3 2 1 1
81+82+83
6 REACH 3 052 2 3 4744.2 1
6 RUNOFF 1 053 5 0.2083 62.56 0.262 1 1 84
6 ADDHYD 4 054 3 5 2 1 1 SA8
6 RESVOR 2 05 2 5 1 1 1 PROP5
6 ADDHYD 4 055 4 1 3 1 1
13+10+PR
6 RUNOFF 1 056 6 0.0166 65.36 0.134 1 1 92
6 ADDHYD 4 057 3 6 7 1 1
13+10+92
6 RESVOR 2 06 7 4 1 1 1 PROP6
6 RUNOFF 1 058 1 0.0357 81.76 0.141 1 1 93
6 REACH 3 059 4 3 1670.5 1
6 ADDHYD 4 060 5 3 4 1
SA8+93
6 ADDHYD 4 061 7 4 1 1 92+93
6 RUNOFF 1 062 2 0.0233 68.08 0.186 1 1 1 91
6 ADDHYD 4 063 1 2 3 1 1
OUTFALL
ENDATA
7 INCREM 6 .06
7 COMPUT 7 001 063 0.0 3.19 1.01 2 1 2
ENDCMP 1
7 COMPUT 7 001 063 0.0 4.10 1.01 2 1 05
ENDCMP 1
7 COMPUT 7 001 063 0.0 4.91 1.01 2 1 10
ENDCMP 1
7 COMPUT 7 001 063 0.0 6.14 1.01 2 1 25
1

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
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ENDCMP 1
7 COMPUT 7 001 063 0.0 7.23 1.01 2 1 50
ENDCMP 1
7 COMPUT 7 001 063 0.0 8.47 1.01 2 1 99
ENDCMP 1
ENDCMP 1
ENDJOB 2

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\*\*\*\*\*END OF 80-80  
 LIST\*\*\*\*\*

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EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .060 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
 STARTING TIME = .00 RAIN DEPTH = 3.19 RAIN DURATION = 1.00

ANT. RUNOFF COND. = 2      MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1      STORM NO. = 2      RAIN TABLE NO. = 1

OPERATION RUNOFF    XSECTION    1

PEAK TIME(HRS)                      PEAK DISCHARGE(CFS)                      PEAK  
ELEVATION(FEET)  
12.26                                      136.6                                      (RUNOFF)  
20.68                                      4.2                                      (RUNOFF)  
24.01                                      3.3                                      (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.22 WATERSHED INCHES;      165 CFS-HRS;      13.6 ACRE-FEET.

OPERATION RESVOR    STRUCTURE 13

PEAK TIME(HRS)                      PEAK DISCHARGE(CFS)                      PEAK  
ELEVATION(FEET)  
12.26                                      136.6                                      (NULL)  
20.68                                      4.2                                      (NULL)  
24.01                                      3.3                                      (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.22 WATERSHED INCHES;      165 CFS-HRS;      13.6 ACRE-FEET.

OPERATION RUNOFF    XSECTION    2

PEAK TIME(HRS)                      PEAK DISCHARGE(CFS)                      PEAK  
ELEVATION(FEET)  
12.20                                      18.2                                      (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.03 WATERSHED INCHES;      19 CFS-HRS;      1.6 ACRE-FEET.

OPERATION RESVOR    STRUCTURE 58

PEAK TIME(HRS)                      PEAK DISCHARGE(CFS)                      PEAK  
ELEVATION(FEET)  
13.47                                      2.2                                      429.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.02 WATERSHED INCHES;      19 CFS-HRS;      1.6 ACRE-FEET.

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2

OPERATION ADDHYD    XSECTION    3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	137.7	(NULL)
20.65	5.2	(NULL)
23.76	4.0	(NULL)
24.00	4.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.19 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	63.3	(RUNOFF)
15.84	2.4	(RUNOFF)
24.00	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.47 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	189.4	(NULL)
18.63	7.5	(NULL)
20.63	6.5	(NULL)
23.74	5.1	(NULL)
24.00	5.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.25 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	53.1	(RUNOFF)
17.33	2.0	(RUNOFF)
24.02	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.06 WATERSHED INCHES; 55 CFS-HRS; 4.5 ACRE-FEET.

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2.04TEST  
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OPERATION REACH XSECTION 7



PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	183.8	319.29
18.69	7.5	318.18
20.69	6.5	318.16
23.80	5.1	318.13
24.07	5.1	318.12

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.25 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	228.3	(NULL)
18.65	9.2	(NULL)
20.12	8.4	(NULL)
21.96	7.3	(NULL)
24.04	6.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.21 WATERSHED INCHES; 297 CFS-HRS; 24.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	49.0	(RUNOFF)
15.83	2.2	(RUNOFF)
23.09	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.27 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	19.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.29 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
FEET.

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE

STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.33	2.8	454.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .86 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-FEET.

\*\*\* WARNING - XSECTION 11, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT, UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.47	2.7	414.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .86 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	49.1	(NULL)
18.82	2.0	(NULL)
24.02	1.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.15 WATERSHED INCHES; 64 CFS-HRS; 5.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	49.3	(RUNOFF)
20.86	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.67 WATERSHED INCHES; 48 CFS-HRS; 4.0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 51

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	22.2	397.47
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.67 WATERSHED INCHES;	48 CFS-HRS;	4.0 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	65.4	(NULL)
20.06	3.0	(NULL)
24.02	2.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.32 WATERSHED INCHES;	112 CFS-HRS;	9.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	66.3	(RUNOFF)
17.35	2.2	(RUNOFF)
24.01	1.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.19 WATERSHED INCHES;	63 CFS-HRS;	5.2 ACRE-
FEET.		

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	59.8	330.83
24.09	2.3	330.10
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.32 WATERSHED INCHES;	112 CFS-HRS;	9.2 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	109.9	(NULL)
21.94	4.1	(NULL)
24.01	3.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.27 WATERSHED INCHES;	175 CFS-HRS;	14.4 ACRE-
FEET.		

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 2.04TEST  
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OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	333.7	(NULL)
20.09	13.1	(NULL)
20.63	12.5	(NULL)
21.94	11.4	(NULL)
23.09	10.5	(NULL)
24.03	9.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.23 WATERSHED INCHES; 471 CFS-HRS; 38.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	121.9	(RUNOFF)
20.13	5.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.01 WATERSHED INCHES; 175 CFS-HRS; 14.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	305.7	235.86
23.13	10.5	234.27
24.09	9.8	234.26

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.23 WATERSHED INCHES; 471 CFS-HRS; 38.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	426.1	(NULL)
23.13	14.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.16 WATERSHED INCHES; 646 CFS-HRS; 53.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 10

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	426.1	(NULL)
23.13	14.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.16 WATERSHED INCHES; 646 CFS-HRS; 53.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	17.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	12.3	414.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	80.0	(RUNOFF)
19.47	2.0	(RUNOFF)
24.02	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	61.0	368.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.60 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 24

1

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2.04TEST  
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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.32 73.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES; 103 CFS-HRS; 8.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.19 46.1 (RUNOFF)  
21.45 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.58 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.26 110.3 (NULL)  
20.62 3.4 (NULL)  
24.01 2.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.59 WATERSHED INCHES; 150 CFS-HRS; 12.4 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.68 54.3 337.19

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.59 WATERSHED INCHES; 150 CFS-HRS; 12.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION(FEET)  
12.12 12.6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.19 WATERSHED INCHES; 10 CFS-HRS; .8 ACRE-  
FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.3%.  
\*\*\*

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION

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OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.15 44.1 (NULL)  
12.67 56.2 (NULL)  
23.98 2.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.56 WATERSHED INCHES; 160 CFS-HRS; 13.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.11 80.5 (RUNOFF)  
15.82 2.3 (RUNOFF)  
23.02 1.1 (RUNOFF)  
23.68 1.0 (RUNOFF)  
23.99 1.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.96 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.5%.  
\*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.11 80.5 (NULL)  
15.82 2.3 (NULL)  
23.02 1.1 (NULL)  
23.68 1.0 (NULL)

23.99 1.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.96 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-
FEET.

OPERATION REACH XSECTION 30

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas
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Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.18, 15.89, 23.09, 23.75, 24.05 and corresponding discharge and peak values.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.97 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 31

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Row includes 12.33, 141.6, (RUNOFF).

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.75 WATERSHED INCHES; 197 CFS-HRS; 16.3 ACRE-
FEET.

OPERATION ADDHYD XSECTION 32

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.24, 18.86, 21.75, 24.04 and corresponding discharge and peak values, many are NULL.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.80 WATERSHED INCHES; 260 CFS-HRS; 21.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 33

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.21, 21.76, 21.97 and corresponding discharge and peak values, many are (RUNOFF).



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.60 WATERSHED INCHES; 49 CFS-HRS; 4.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 34

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	236.3	(NULL)
18.86	7.4	(NULL)
21.75	6.0	(NULL)
24.04	5.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.76 WATERSHED INCHES; 310 CFS-HRS; 25.6 ACRE-  
FEET.

OPERATION REACH XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.34	221.5	317.10
20.68	6.5	316.13
24.10	5.1	316.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.76 WATERSHED INCHES; 309 CFS-HRS; 25.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.27	20.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.64 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .047 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	15.2	325.68

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.64 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 37

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	235.8	(NULL)
20.68	7.1	(NULL)
24.10	5.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.75 WATERSHED INCHES; 335 CFS-HRS; 27.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	69.3	(RUNOFF)
15.84	2.6	(RUNOFF)
17.34	2.0	(RUNOFF)
24.00	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.33 WATERSHED INCHES; 59 CFS-HRS; 4.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	265.4	(NULL)
23.99	6.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.67 WATERSHED INCHES; 394 CFS-HRS; 32.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	312.0	(NULL)
23.99	9.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 554 CFS-HRS; 45.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.73	195.5	290.93

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 554 CFS-HRS; 45.8 ACRE-  
 FEET.

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	24.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.57 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.00	3.6	268.66

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.17	3.6	222.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.26	26.2	(RUNOFF)
24.03	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .51 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	27.9	(NULL)
20.62	2.4	(NULL)
24.02	1.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .68 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

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OPERATION REACH XSECTION 45

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.85	194.1	224.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.64 WATERSHED INCHES; 554 CFS-HRS; 45.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.83	207.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 617 CFS-HRS; 51.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.83	207.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 617 CFS-HRS; 51.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	185.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 256 CFS-HRS; 21.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	29.9	(RUNOFF)
15.84	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 40

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	16.5	334.19

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	15.5	316.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 28 CFS-HRS; 2.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	197.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 284 CFS-HRS; 23.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	20.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 21 CFS-HRS; 1.7 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.86	3.8	321.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .97 WATERSHED INCHES; 14 CFS-HRS; 1.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 52

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	198.1	277.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 297 CFS-HRS; 24.6 ACRE-FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	177.7	277.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 297 CFS-HRS; 24.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	43.9	(RUNOFF)
23.11	2.1	(RUNOFF)
23.76	2.0	(RUNOFF)
24.03	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .50 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	207.7	(NULL)
24.00	7.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.05 WATERSHED INCHES; 364 CFS-HRS; 30.1 ACRE-FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.07	92.9	260.86

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .54 SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	ALTERNATE	=	1,	STORM	=	2
8.46 CFS	.00	.01	.01	.01	.01	.01	.01	.01	.02			
.02												
8.94 CFS	.02	.03	.03	.03	.04	.04	.04	.05				
.05												
9.42 CFS	.06	.06	.07	.08	.08	.09	.11					
.13												
9.90 CFS	.15	.17	.21	.25	.29	.34	.40					
.46												
10.38 CFS	.54	.62	.70	.80	.90	1.01	1.13					
1.25												

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10.86 CFS	1.39	1.55	1.72	1.90	2.11	2.33	2.58
2.86							
11.34 CFS	3.17	3.52	3.90	4.34	4.82	5.36	5.97
6.68							
11.82 CFS	7.51	8.51	9.74	11.35	13.67	17.17	22.27
28.71							
12.30 CFS	36.16	44.40	52.75	60.56	67.82	74.26	79.40
83.56							
12.78 CFS	86.84	89.31	91.06	92.18	92.76	92.88	92.62
92.04							
13.26 CFS	91.19	90.14	88.90	87.53	86.04	84.46	82.80

81.09								
13.74	CFS	79.34	77.56	75.77	73.91	72.00	70.11	68.26
66.45								
14.22	CFS	64.69	62.97	61.29	59.67	58.09	56.56	55.08
53.64								
14.70	CFS	52.25	50.89	49.55	48.17	46.85	45.56	44.32
43.11								
15.18	CFS	41.94	40.81	39.71	38.64	37.61	36.61	35.65
34.73								
15.66	CFS	33.84	32.99	32.17	31.39	30.64	29.92	29.23
28.58								
16.14	CFS	27.94	27.34	26.76	26.20	25.66	25.15	24.63
24.11								
16.62	CFS	23.62	23.15	22.70	22.26	21.85	21.44	21.06
20.69								
17.10	CFS	20.33	19.99	19.66	19.33	19.02	18.72	18.43
18.15								
17.58	CFS	17.87	17.60	17.33	17.08	16.83	16.58	16.34
16.10								
18.06	CFS	15.88	15.65	15.43	15.22	15.01	14.80	14.60
14.41								
18.54	CFS	14.22	14.03	13.86	13.69	13.52	13.36	13.21
13.07								
19.02	CFS	12.93	12.80	12.67	12.55	12.43	12.32	12.21
12.11								
19.50	CFS	12.01	11.92	11.82	11.74	11.65	11.57	11.49
11.41								
19.98	CFS	11.34	11.26	11.19	11.13	11.06	11.00	10.94
10.88								
20.46	CFS	10.82	10.76	10.70	10.64	10.58	10.53	10.47
10.42								
20.94	CFS	10.37	10.32	10.27	10.22	10.17	10.12	10.07
10.03								
21.42	CFS	9.98	9.93	9.89	9.85	9.80	9.76	9.72
9.68								
21.90	CFS	9.63	9.59	9.55	9.51	9.47	9.43	9.39
9.35								
22.38	CFS	9.31	9.27	9.23	9.19	9.15	9.11	9.07
9.03								
22.86	CFS	8.99	8.95	8.91	8.86	8.82	8.78	8.75
8.71								
23.34	CFS	8.67	8.63	8.59	8.55	8.51	8.47	8.43
8.39								
23.82	CFS	8.35	8.31	8.27	8.23	8.19	8.15	8.08
7.97								
24.30	CFS	7.83	7.66	7.45	7.22	6.96	6.68	6.40
6.11								
24.78	CFS	5.82	5.54	5.26	4.99	4.73	4.48	4.25
4.02								
25.26	CFS	3.81	3.61	3.42	3.23	3.06	2.90	2.75
2.60								
25.74	CFS	2.47	2.34	2.22	2.11	2.00	1.90	1.80
1.72								
26.22	CFS	1.63	1.55	1.48	1.41	1.34	1.28	1.22
1.17								
26.70	CFS	1.12	1.07	1.02	.98	.94	.90	.86
.83								
27.18	CFS	.80	.77	.74	.71	.69	.67	.64
.62								
27.66	CFS	.60	.58	.57	.55	.54	.52	.51
.49								
28.14	CFS	.48	.47	.46	.45	.44	.43	.42
.42								
28.62	CFS	.41	.40	.39	.39	.38	.38	.37



.37							
29.10 CFS	.36	.36	.35	.35	.34	.34	.34
.33							
29.58 CFS	.33	.33	.33	.32	.32	.32	.32
.32							
30.06 CFS	.31	.31	.31	.31	.31	.31	.30
.30							
30.54 CFS	.30	.30	.30	.30	.30	.30	.30
.29							
31.02 CFS	.29	.29	.29	.29	.29	.29	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.05 WATERSHED INCHES; 364 CFS-HRS; 30.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 55

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.40	572.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.28 WATERSHED INCHES; 1263 CFS-HRS; 104.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.14	6.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .61 WATERSHED INCHES; 7 CFS-HRS; .5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.40	574.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.27 WATERSHED INCHES; 1269 CFS-HRS; 104.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.40	574.8	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55

HRS	SQ.MI.	CFS	.00	.01	.01	.02	.03	.03	.04
7.08	.05	CFS	.06	.06	.07	.08	.09	.10	.11
7.56	.13	CFS	.14	.15	.17	.19	.21	.24	.26
8.04	.29	CFS	.33	.36	.40	.45	.51	.56	.63
8.52	.69	CFS	.76	.84	.92	1.01	1.10	1.21	1.32
9.00	1.45	CFS	1.59	1.74	1.90	2.08	2.27	2.47	2.69
9.48	2.92	CFS	3.17	3.44	3.72	4.03	4.35	4.70	5.09
9.96	5.52	CFS	5.99	6.52	7.09	7.71	8.39	9.13	9.95
10.44	10.89	CFS	11.96	13.20	14.63	16.26	18.14	20.31	22.82
10.92	25.70	CFS	28.99	32.70	36.88	41.60	47.36	54.84	64.41
11.40	76.20	CFS	92	113	144	193	269	368	468
11.88	539	CFS	571	573	555	527	499	472	445
12.36	420	CFS	397	377	359	343	328	314	301
12.84	288	CFS	276	265	254	243	234	224	215
13.32	206	CFS	198	190	183	176	170	165	159
13.80	153	CFS	148	142	137	133	128	124	119
14.28	115	CFS	111	108	104	101	98	95	92
14.76	89	CFS	86.09	83.51	81.12	78.96	77.04	75.34	73.79
15.24	72.35	CFS							

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15.72	63.16	CFS	70.96	69.61	68.35	67.21	66.17	65.15	64.15
16.20	56.76	CFS	62.23	61.36	60.55	59.77	59.00	58.25	57.50
16.68	51.91	CFS	56.06	55.40	54.79	54.18	53.58	52.99	52.44
17.16	47.43	CFS	51.37	50.78	50.16	49.57	49.03	48.52	47.99
17.64	43.13	CFS	46.84	46.26	45.71	45.18	44.66	44.12	43.61
18.12	39.43	CFS	42.66	42.17	41.67	41.19	40.73	40.27	39.83
18.60	37.42	CFS	39.10	38.84	38.60	38.35	38.11	37.89	37.67

19.08	CFS	37.17	36.91	36.68	36.47	36.29	36.12	35.98
35.86								
19.56	CFS	35.73	35.57	35.39	35.19	35.02	34.85	34.65
34.47								
20.04	CFS	34.33	34.24	34.16	34.05	33.92	33.76	33.58
33.36								
20.52	CFS	33.15	32.98	32.86	32.77	32.66	32.54	32.42
32.30								
21.00	CFS	32.16	31.98	31.80	31.63	31.47	31.34	31.22
31.12								
21.48	CFS	31.04	30.95	30.84	30.70	30.53	30.38	30.24
30.11								
21.96	CFS	30.00	29.92	29.81	29.66	29.50	29.34	29.19
29.05								
22.44	CFS	28.94	28.84	28.74	28.61	28.45	28.28	28.13
27.98								
22.92	CFS	27.80	27.63	27.50	27.42	27.36	27.26	27.13
26.99								
23.40	CFS	26.85	26.71	26.55	26.37	26.18	26.06	25.97
25.89								
23.88	CFS	25.76	25.60	25.50	25.40	24.95	23.75	21.82
19.57								
24.36	CFS	17.33	15.31	13.61	12.21	11.04	10.05	9.20
8.46								
24.84	CFS	7.80	7.20	6.66	6.17	5.72	5.31	4.93
4.58								
25.32	CFS	4.27	3.98	3.72	3.47	3.25	3.05	2.86
2.69								
25.80	CFS	2.54	2.39	2.26	2.15	1.64	1.41	1.30
1.24								
26.28	CFS	1.21	1.17	1.16	1.14	1.12	1.11	1.09
1.08								
26.76	CFS	1.06	1.05	1.03	1.02	1.01	1.00	.98
.97								
27.24	CFS	.96	.95	.94	.93	.91	.90	.90
.88								
27.72	CFS	.87	.86	.85	.84	.83	.82	.82
.81								
28.20	CFS	.80	.79	.79	.78	.77	.76	.76
.75								
28.68	CFS	.74	.74	.73	.72	.72	.71	.70
.69								
29.16	CFS	.69	.68	.68	.67	.66	.66	.65
.65								
29.64	CFS	.64	.63	.63	.62	.62	.61	.61
.60								
30.12	CFS	.60	.59	.59	.58			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.27 WATERSHED INCHES; 1269 CFS-HRS; 104.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK (RUNOFF)
12.14	40.7	(RUNOFF)
17.34	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.51 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-FEET.

OPERATION REACH XSECTION 59  
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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.47 571.5 132.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.27 WATERSHED INCHES; 1269 CFS-HRS; 104.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.49 632.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.21 WATERSHED INCHES; 1633 CFS-HRS; 134.9 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 61  
NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.49 632.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.18 WATERSHED INCHES; 1594 CFS-HRS; 131.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.18 10.3 (RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .02  
SQ.MI.  
11.76 CFS .38 .65 1.08 1.75 3.06 5.34 8.82  
10.26  
12.24 CFS 8.86 7.08 5.84 4.90 4.29 3.92 3.44  
2.95  
12.72 CFS 2.63 2.44 2.30 2.18 2.07 1.96 1.84  
1.73  
13.20 CFS 1.64 1.57 1.50 1.43 1.37 1.30 1.23

1.17								
13.68 CFS	1.12	1.08	1.05	1.03	1.02	1.00	.99	
.97								
14.16 CFS	.95	.93	.91	.90	.89	.87	.85	
.83								
14.64 CFS	.81	.79	.78	.76	.75	.73	.71	
.69								
15.12 CFS	.67	.65	.63	.63	.62	.62	.62	
.62								
15.60 CFS	.62	.61	.60	.59	.60	.59	.59	
.58								
16.08 CFS	.57	.57	.56	.56	.56	.55	.54	
.54								
16.56 CFS	.53	.53	.52	.52	.52	.51	.50	
.50								
17.04 CFS	.50	.50						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.73 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	636.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.18 WATERSHED INCHES; 1605 CFS-HRS; 132.6 ACRE-  
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
STARTING TIME = .00 RAIN DEPTH = 4.10 RAIN DURATION = 1.00  
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. = 5 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	217.7	(RUNOFF)
20.12	6.2	(RUNOFF)
21.93	5.5	(RUNOFF)
24.02	4.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.90 WATERSHED INCHES; 258 CFS-HRS; 21.3 ACRE-  
FEET.

OPERATION RESVOR      STRUCTURE 13

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	217.7	(NULL)
20.12	6.2	(NULL)
21.93	5.5	(NULL)
24.02	4.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.90 WATERSHED INCHES;      258 CFS-HRS;      21.3 ACRE-  
FEET.

OPERATION RUNOFF      XSECTION 2

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	30.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.67 WATERSHED INCHES;      31 CFS-HRS;      2.6 ACRE-  
FEET.

OPERATION RESVOR      STRUCTURE 58

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.68	8.3	430.23

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.64 WATERSHED INCHES;      31 CFS-HRS;      2.6 ACRE-  
FEET.

OPERATION ADDHYD      XSECTION 3

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	219.8	(NULL)
18.65	8.3	(NULL)
20.66	7.2	(NULL)
23.11	6.0	(NULL)
24.01	5.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.87 WATERSHED INCHES;      289 CFS-HRS;      23.9 ACRE-  
FEET.

OPERATION RUNOFF      XSECTION 4

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	95.7	(RUNOFF)
15.84	3.4	(RUNOFF)
19.47	2.0	(RUNOFF)
24.00	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.21 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 5  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	299.6	(NULL)
18.63	10.4	(NULL)
20.63	9.1	(NULL)
21.95	8.3	(NULL)
23.74	7.2	(NULL)
24.01	7.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.94 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	87.6	(RUNOFF)
15.83	3.8	(RUNOFF)
21.46	2.0	(RUNOFF)
24.02	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.70 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	292.4	319.71
18.70	10.4	318.25
20.69	9.1	318.22
22.00	8.3	318.20
23.80	7.2	318.18
24.07	7.1	318.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.94 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	368.5	(NULL)
18.66	12.8	(NULL)
20.67	11.3	(NULL)
21.99	10.3	(NULL)
23.12	9.4	(NULL)
24.04	8.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.89 WATERSHED INCHES; 465 CFS-HRS; 38.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	77.2	(RUNOFF)
15.82	3.1	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.98 WATERSHED INCHES; 77 CFS-HRS; 6.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	30.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.99 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------



ELEVATION(FEET)			
12.72	8.9		454.90
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)			
1.54 WATERSHED INCHES;	26 CFS-HRS;		2.2 ACRE-
FEET.			

OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	8.8	414.27
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.54 WATERSHED INCHES;	26 CFS-HRS;	2.2 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 12

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	77.4	(NULL)
23.08	2.1	(NULL)
23.73	2.0	(NULL)
24.03	2.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.84 WATERSHED INCHES;	103 CFS-HRS;	8.5 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	71.9	(RUNOFF)
17.33	2.0	(RUNOFF)
24.02	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.45 WATERSHED INCHES;	71 CFS-HRS;	5.9 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	34.2	397.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.45 WATERSHED INCHES;	71 CFS-HRS;	5.9 ACRE-

FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	103.2	(NULL)
20.62	4.1	(NULL)
24.02	3.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.04 WATERSHED INCHES; 173 CFS-HRS; 14.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 15

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	106.0	(RUNOFF)
15.85	4.1	(RUNOFF)
17.34	3.2	(RUNOFF)
22.46	2.0	(RUNOFF)
24.01	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.87 WATERSHED INCHES; 99 CFS-HRS; 8.1 ACRE-  
FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	95.7	331.04
20.67	4.0	330.17
24.09	3.2	330.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.04 WATERSHED INCHES; 173 CFS-HRS; 14.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	178.2	(NULL)
20.80	6.3	(NULL)
23.72	5.0	(NULL)
24.01	5.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.98 WATERSHED INCHES; 272 CFS-HRS; 22.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.24	539.2	(NULL)
20.10	18.4	(NULL)
20.64	17.6	(NULL)
21.95	16.1	(NULL)
23.10	14.7	(NULL)
24.03	13.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.92 WATERSHED INCHES; 737 CFS-HRS; 60.9 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 19

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.32	207.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.64 WATERSHED INCHES; 286 CFS-HRS; 23.6 ACRE-  
FEET.

OPERATION REACH XSECTION 20

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.37	486.7	236.60
23.13	14.7	234.32
24.09	13.7	234.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.92 WATERSHED INCHES; 736 CFS-HRS; 60.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.36	690.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.83 WATERSHED INCHES; 1022 CFS-HRS; 84.5 ACRE-  
FEET.

OPERATION RESVOR     STRUCTURE 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	690.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.83 WATERSHED INCHES;     1022 CFS-HRS;     84.5 ACRE-  
FEET.

OPERATION RUNOFF     XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	25.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.37 WATERSHED INCHES;     28 CFS-HRS;     2.3 ACRE-  
FEET.

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION

05/04/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG

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OPERATION RESVOR     STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	21.0	414.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.37 WATERSHED INCHES;     28 CFS-HRS;     2.3 ACRE-  
FEET.

OPERATION RUNOFF     XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	119.0	(RUNOFF)
23.10	2.1	(RUNOFF)
23.75	2.0	(RUNOFF)
24.02	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.37 WATERSHED INCHES;     124 CFS-HRS;     10.3 ACRE-  
FEET.

OPERATION RESVOR     STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	86.1	368.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 124 CFS-HRS; 10.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	107.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 153 CFS-HRS; 12.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	68.4	(RUNOFF)
24.03	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.35 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-  
 FEET.

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

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 2.04TEST  
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OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	162.5	(NULL)
20.62	4.6	(NULL)
24.02	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.36 WATERSHED INCHES; 223 CFS-HRS; 18.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	127.1	338.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.36 WATERSHED INCHES; 223 CFS-HRS; 18.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	20.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.88 WATERSHED INCHES; 15 CFS-HRS; 1.3 ACRE-FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27. THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	131.8	(NULL)
23.98	4.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.33 WATERSHED INCHES; 238 CFS-HRS; 19.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 29

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	113.0	(RUNOFF)
15.82	3.1	(RUNOFF)
17.32	2.4	(RUNOFF)
23.99	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 90 CFS-HRS; 7.4 ACRE-FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29. THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	113.0	(NULL)
15.82	3.1	(NULL)
17.32	2.4	(NULL)
23.99	1.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 90 CFS-HRS; 7.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	105.9	356.89
15.89	3.1	356.06
17.39	2.4	356.05
24.05	1.4	356.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.80 WATERSHED INCHES; 90 CFS-HRS; 7.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	206.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.55 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 32

1 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

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 2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	276.5	(NULL)
18.86	8.3	(NULL)
20.87	7.3	(NULL)
23.09	6.1	(NULL)
24.04	5.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.60 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	68.1	(RUNOFF)
24.03	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.38 WATERSHED INCHES; 73 CFS-HRS; 6.0 ACRE-

FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	343.4	(NULL)
18.63	10.1	(NULL)
20.09	9.3	(NULL)
21.97	8.1	(NULL)
23.09	7.4	(NULL)
24.04	7.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.56 WATERSHED INCHES; 450 CFS-HRS; 37.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 35

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	326.6	317.30
20.16	9.3	316.18
22.00	8.1	316.16
23.15	7.4	316.14
24.10	6.9	316.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.56 WATERSHED INCHES; 450 CFS-HRS; 37.2 ACRE-  
 FEET.

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	30.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .047 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33



PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	23.6	327.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	343.7	(NULL)
20.16	10.1	(NULL)
20.68	9.6	(NULL)
23.15	8.0	(NULL)
24.10	7.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.55 WATERSHED INCHES; 488 CFS-HRS; 40.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	107.3	(RUNOFF)
15.84	3.7	(RUNOFF)
20.04	2.1	(RUNOFF)
20.60	2.0	(RUNOFF)
20.83	2.0	(RUNOFF)
24.00	1.7	(RUNOFF)

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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 2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.05 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	390.1	(NULL)
23.99	9.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.46 WATERSHED INCHES; 578 CFS-HRS; 47.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	489.7	(NULL)
23.99	13.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES; 817 CFS-HRS; 67.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.75	270.2	293.51

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES; 816 CFS-HRS; 67.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	36.9	(RUNOFF)
17.34	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.34 WATERSHED INCHES; 36 CFS-HRS; 2.9 ACRE-FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.93	5.5	270.05

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.32 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.09	5.5	222.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.32 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	60.9	(RUNOFF)
21.98	2.2	(RUNOFF)
24.03	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.96 WATERSHED INCHES; 75 CFS-HRS; 6.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	63.5	(NULL)
20.62	3.8	(NULL)
24.03	2.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.18 WATERSHED INCHES; 110 CFS-HRS; 9.1 ACRE-FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.88	268.0	224.56

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.42 WATERSHED INCHES; 816 CFS-HRS; 67.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.84	290.3	(NULL)

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2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.15 WATERSHED INCHES; 926 CFS-HRS; 76.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
-----------------------------------	---------------------	------

12.84 290.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.15 WATERSHED INCHES; 926 CFS-HRS; 76.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.32 285.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.14 WATERSHED INCHES; 389 CFS-HRS; 32.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.17 43.5 (RUNOFF)
17.34 1.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.59 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.35 21.9 335.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.59 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-
FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.50 20.8 316.68

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.58 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-
FEET.

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OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	303.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.17 WATERSHED INCHES; 430 CFS-HRS; 35.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	31.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.22 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	14.9	321.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.69 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	315.4	277.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.14 WATERSHED INCHES; 454 CFS-HRS; 37.5 ACRE-FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	287.9	277.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.14 WATERSHED INCHES; 454 CFS-HRS; 37.5 ACRE-FEET.

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OPERATION RUNOFF XSECTION 53

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.23	103.1	(RUNOFF)
20.11	4.2	(RUNOFF)
20.66	4.0	(RUNOFF)
24.02	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.95 WATERSHED INCHES; 127 CFS-HRS; 10.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 54

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.43	350.5	(NULL)
23.99	11.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.68 WATERSHED INCHES; 581 CFS-HRS; 48.0 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
13.08	136.9	263.85

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .54 SQ.MI.

HRS	7.26	8.22	8.70	9.18	9.66	10.14	10.62	11.10	11.58	12.06	12.54
CFS	.00	.03	.06	.10	.12	.16	.20	.24	.28	.32	.36
ELEVATION (FEET)	7.26	7.74	8.22	8.70	9.18	9.66	10.14	10.62	11.10	11.58	12.06

13.02	CFS	137	137	137	136	136	135	134
133								
13.50	CFS	132	131	129	128	127	125	123
120								
13.98	CFS	117	115	112	110	108	105	103
101								
14.46	CFS	98.00	95.31	92.70	90.18	87.73	85.35	83.05
80.82								
14.94	CFS	78.66	76.56	74.48	72.36	70.30	68.30	66.37
64.50								
15.42	CFS	62.69	60.95	59.27	57.65	56.10	54.61	53.18
51.81								
15.90	CFS	50.50	49.18	47.88	46.64	45.45	44.32	43.24
42.20								
16.38	CFS	41.20	40.25	39.34	38.47	37.62	36.82	36.04
35.30								

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16.86	CFS	34.58	33.89	33.23	32.59	31.98	31.39	30.82
30.27								
17.34	CFS	29.74	29.22	28.72	28.24	27.77	27.31	26.86
26.42								
17.82	CFS	26.00	25.59	25.18	24.77	24.36	23.96	23.57
23.19								
18.30	CFS	22.83	22.47	22.12	21.78	21.46	21.14	20.84
20.55								
18.78	CFS	20.28	20.01	19.76	19.53	19.30	19.08	18.86
18.66								
19.26	CFS	18.47	18.28	18.10	17.93	17.77	17.61	17.46
17.32								
19.74	CFS	17.18	17.05	16.92	16.79	16.67	16.55	16.44
16.33								
20.22	CFS	16.23	16.13	16.03	15.93	15.84	15.74	15.65
15.55								
20.70	CFS	15.47	15.38	15.30	15.21	15.13	15.06	14.98
14.90								
21.18	CFS	14.82	14.75	14.67	14.60	14.53	14.46	14.39
14.32								
21.66	CFS	14.26	14.19	14.13	14.06	14.00	13.94	13.87
13.81								
22.14	CFS	13.75	13.69	13.63	13.57	13.51	13.45	13.39
13.33								
22.62	CFS	13.27	13.21	13.15	13.09	13.03	12.97	12.90
12.84								
23.10	CFS	12.78	12.72	12.66	12.60	12.55	12.49	12.43
12.37								
23.58	CFS	12.31	12.25	12.19	12.13	12.08	12.02	11.96
11.90								
24.06	CFS	11.84	11.78	11.67	11.51	11.29	11.02	10.70
10.33								
24.54	CFS	9.94	9.52	9.10	8.67	8.24	7.82	7.42
7.02								
25.02	CFS	6.65	6.29	5.95	5.63	5.32	5.03	4.75
4.49								
25.50	CFS	4.25	4.02	3.80	3.59	3.40	3.22	3.04
2.88								

25.98 CFS	2.73	2.59	2.45	2.32	2.20	2.09	1.99
1.89							
26.46 CFS	1.79	1.70	1.62	1.54	1.47	1.40	1.33
1.27							
26.94 CFS	1.21	1.16	1.11	1.06	1.02	.97	.93
.89							
27.42 CFS	.86	.83	.79	.76	.74	.71	.69
.66							
27.90 CFS	.64	.62	.60	.58	.56	.55	.53
.52							
28.38 CFS	.50	.49	.48	.47	.46	.45	.44
.43							
28.86 CFS	.42	.41	.41	.40	.39	.39	.38
.37							
29.34 CFS	.37	.36	.36	.36	.35	.35	.34
.34							
29.82 CFS	.34	.33	.33	.33	.33	.32	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.68 WATERSHED INCHES; 581 CFS-HRS; 48.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	915.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.97 WATERSHED INCHES; 1948 CFS-HRS; 160.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	13.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.11 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	921.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 1959 CFS-HRS; 161.9 ACRE-  
 FEET.



OPERATION RESVOR STRUCTURE 6

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)							PEAK
12.37	921.1							(NULL)
HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5								
HRS	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = 1.55			
SQ.MI.								
5.88 CFS	.00	.01	.01	.02	.03	.03	.04	
.05								
6.36 CFS	.06	.07	.08	.08	.09	.10	.12	
.13								
6.84 CFS	.14	.16	.18	.20	.22	.25	.27	
.31								
7.32 CFS	.34	.38	.43	.49	.54	.61	.68	
.75								
7.80 CFS	.83	.91	1.00	1.10	1.21	1.33	1.46	
1.60								
8.28 CFS	1.75	1.90	2.07	2.23	2.40	2.58	2.77	
2.96								
8.76 CFS	3.16	3.36	3.58	3.80	4.03	4.27	4.52	
4.79								
9.24 CFS	5.08	5.40	5.76	6.16	6.60	7.08	7.59	
8.13								
9.72 CFS	8.71	9.33	9.99	10.70	11.47	12.29	13.18	
14.14								
10.20 CFS	15.17	16.28	17.44	18.66	19.92	21.24	22.63	
24.11								
10.68 CFS	25.70	27.48	29.46	31.70	34.21	36.99	40.04	
43.37								
11.16 CFS	47.08	51.27	56.06	61.47	67.52	74.22	81.66	
90.18								
11.64 CFS	101	115	133	155	183	221	275	
359								
12.12 CFS	483	637	785	884	920	906	863	
810								
12.60 CFS	759	712	668	629	593	562	536	
512								
13.08 CFS	491	471	452	434	417	402	387	
372								
13.56 CFS	359	345	332	317	303	290	277	
266								
14.04 CFS	255	246	237	228	220	213	206	
199								
14.52 CFS	193	186	180	174	168	162	156	
151								
15.00 CFS	145	140	136	131	127	123	119	
115								
15.48 CFS	112	110	107	105	103	100	99	
97								
15.96 CFS	95.17	93.60	92.07	90.56	89.15	87.84	86.62	
85.44								
16.44 CFS	84.29	83.16	82.04	80.94	79.90	78.93	78.02	
77.13								
16.92 CFS	76.24	75.39	74.58	73.81	73.01	72.15	71.25	
70.38								
17.40 CFS	69.60	68.86	68.10	67.27	66.42	65.58	64.79	
64.03								
17.88 CFS	63.28	62.52	61.78	61.09	60.40	59.71	58.99	
58.30								
18.36 CFS	57.65	57.00	56.37	55.79	55.32	54.96	54.61	

54.27								
18.84	CFS	53.93	53.61	53.30	52.95	52.58	52.22	51.88
51.58								
19.32	CFS	51.32	51.09	50.89	50.72	50.53	50.31	50.04
49.76								
19.80	CFS	49.51	49.26	48.98	48.72	48.53	48.40	48.28
48.13								
20.28	CFS	47.93	47.71	47.44	47.13	46.82	46.58	46.42
46.28								
20.76	CFS	46.13	45.95	45.79	45.62	45.40	45.15	44.89
44.65								
21.24	CFS	44.42	44.23	44.06	43.92	43.80	43.68	43.52
43.31								

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21.72	CFS	43.07	42.85	42.66	42.47	42.32	42.19	42.04
41.83								
22.20	CFS	41.60	41.36	41.15	40.96	40.80	40.66	40.52
40.33								
22.68	CFS	40.10	39.86	39.63	39.41	39.16	38.92	38.75
38.64								
23.16	CFS	38.54	38.40	38.22	38.02	37.82	37.62	37.39
37.12								
23.64	CFS	36.86	36.68	36.56	36.44	36.26	36.04	35.89
35.72								
24.12	CFS	35.02	33.30	30.54	27.31	24.11	21.22	18.82
16.85								
24.60	CFS	15.21	13.81	12.60	11.55	10.62	9.79	9.04
8.36								
25.08	CFS	7.74	7.17	6.65	6.18	5.74	5.34	4.98
4.65								
25.56	CFS	4.34	4.06	3.81	3.57	3.36	3.16	2.98
2.82								
26.04	CFS	2.67	2.53	2.01	1.75	1.61	1.53	1.48
1.44								
26.52	CFS	1.40	1.38	1.36	1.34	1.32	1.30	1.29
1.27								
27.00	CFS	1.25	1.23	1.22	1.20	1.18	1.17	1.15
1.14								
27.48	CFS	1.13	1.11	1.10	1.08	1.07	1.06	1.04
1.03								
27.96	CFS	1.02	1.00	.99	.98	.97	.96	.95
.94								
28.44	CFS	.93	.92	.91	.90	.89	.88	.87
.86								
28.92	CFS	.86	.85	.84	.83			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.96 WATERSHED INCHES; 1959 CFS-HRS; 161.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)

12.13	60.8	(RUNOFF)
15.45	2.1	(RUNOFF)
15.84	2.0	(RUNOFF)
21.45	1.0	(RUNOFF)
21.73	1.0	(RUNOFF)
21.94	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.27 WATERSHED INCHES; 52 CFS-HRS; 4.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	917.5	132.94

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 1959 CFS-HRS; 161.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	1014.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.89 WATERSHED INCHES; 2540 CFS-HRS; 209.9 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	1014.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.85 WATERSHED INCHES; 2487 CFS-HRS; 205.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	19.3	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .02

HRS	SQ.MI.	CFS	CFS	CFS	CFS	CFS	CFS	CFS
11.40	2.48	.43	.53	.65	.86	1.17	1.50	1.88
11.88	12.65	3.37	4.70	7.22	11.32	17.19	19.30	16.24
12.36	4.02	10.21	8.43	7.28	6.58	5.75	4.89	4.35
12.84	2.54	3.78	3.57	3.38	3.19	3.00	2.81	2.66
13.32	1.73	2.42	2.31	2.20	2.08	1.97	1.87	1.79
13.80	1.48	1.68	1.65	1.62	1.60	1.58	1.55	1.52
14.28	1.25	1.45	1.43	1.40	1.38	1.35	1.31	1.28
14.76	1.02	1.22	1.20	1.17	1.14	1.11	1.09	1.05
15.24	.95	1.00	.98	.98	.98	.98	.97	.97
15.72	.88	.93	.93	.93	.93	.92	.90	.89
16.20	.82	.88	.88	.87	.86	.85	.84	.83
16.68	.77	.82	.81	.80	.79	.78	.78	.78
17.16	.69	.75	.74	.73	.73	.73	.72	.70
17.64	.64	.68	.68	.67	.66	.65	.64	.64
18.12	.59	.62	.61	.61	.61	.60	.59	.59
18.60	.58	.60	.60	.59	.59	.59	.59	.58
19.08	.57	.57	.57	.57	.57	.57	.57	.57
19.56	.55	.57	.56	.55	.56	.56	.55	.54
20.04	.52	.56	.56	.55	.54	.54	.54	.53
20.52	.52	.52	.53	.54	.53	.52	.52	.53
21.00	.51	.51	.51	.51	.51	.50	.51	.51
21.48		.51	.50	.49				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.27 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-FEET.

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	1022.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.84 WATERSHED INCHES; 2506 CFS-HRS; 207.1 ACRE-FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
 STARTING TIME = .00 RAIN DEPTH = 4.91 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =10 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	295.0	(RUNOFF)
18.67	8.6	(RUNOFF)
20.67	7.5	(RUNOFF)
23.12	6.3	(RUNOFF)
24.01	5.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.56 WATERSHED INCHES; 347 CFS-HRS; 28.7 ACRE-FEET.

OPERATION RESVOR STRUCTURE 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	295.0	(NULL)
18.67	8.6	(NULL)
20.67	7.5	(NULL)
23.12	6.3	(NULL)
24.01	5.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.56 WATERSHED INCHES; 347 CFS-HRS; 28.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 2

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	42.1	(RUNOFF)

20.09 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.29 WATERSHED INCHES; 43 CFS-HRS; 3.6 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.52 16.1 430.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.25 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-
FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.26 303.4 (NULL)
18.66 10.3 (NULL)
20.66 9.0 (NULL)
23.76 7.1 (NULL)
24.01 7.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.52 WATERSHED INCHES; 390 CFS-HRS; 32.2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.15 125.5 (RUNOFF)
15.84 4.3 (RUNOFF)
17.34 3.3 (RUNOFF)
21.95 2.2 (RUNOFF)
24.00 1.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.91 WATERSHED INCHES; 116 CFS-HRS; 9.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 5

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.21 404.6 (NULL)
18.64 13.0 (NULL)

20.63	11.4	(NULL)
21.95	10.4	(NULL)
23.08	9.5	(NULL)
24.00	8.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.60 WATERSHED INCHES; 505 CFS-HRS; 41.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	121.4	(RUNOFF)
15.83	4.9	(RUNOFF)
18.87	3.1	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.33 WATERSHED INCHES; 120 CFS-HRS; 9.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	397.0	320.10
18.70	13.0	318.28
20.69	11.4	318.26
22.00	10.4	318.25
23.15	9.5	318.23
24.07	8.9	318.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.60 WATERSHED INCHES; 505 CFS-HRS; 41.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	500.5	(NULL)
18.66	16.1	(NULL)
20.67	14.1	(NULL)
21.99	12.9	(NULL)
23.77	11.2	(NULL)
24.04	11.1	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.55 WATERSHED INCHES; 626 CFS-HRS; 51.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	103.4	(RUNOFF)
21.97	2.0	(RUNOFF)
24.02	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.64 WATERSHED INCHES; 103 CFS-HRS; 8.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	40.4	(RUNOFF)
18.66	1.1	(RUNOFF)
20.12	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.67 WATERSHED INCHES; 45 CFS-HRS; 3.8 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.60	15.5	455.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.20 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
FEET.

OPERATION REACH XSECTION 11

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.69	15.4	414.37

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.20 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	103.7	(NULL)
20.86	3.2	(NULL)
24.01	2.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.51 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	92.4	(RUNOFF)
15.84	3.2	(RUNOFF)
17.32	2.5	(RUNOFF)
18.64	2.0	(RUNOFF)
24.01	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.18 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	45.7	398.37

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.18 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	138.8	(NULL)
20.62	5.1	(NULL)
23.07	4.2	(NULL)
23.71	4.0	(NULL)
24.01	3.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.73 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 15

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	143.3	(RUNOFF)
15.84	5.3	(RUNOFF)
17.34	4.1	(RUNOFF)
19.75	3.1	(RUNOFF)
20.06	3.1	(RUNOFF)
24.01	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.53 WATERSHED INCHES; 133 CFS-HRS; 11.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	130.3	331.15
20.68	5.1	330.21
23.77	4.0	330.17
24.08	3.9	330.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	243.4	(NULL)
20.06	8.4	(NULL)
20.62	8.0	(NULL)
21.94	7.3	(NULL)
24.01	6.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.65 WATERSHED INCHES; 365 CFS-HRS; 30.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	732.9	(NULL)
18.63	25.4	(NULL)
20.10	23.1	(NULL)
20.64	22.1	(NULL)
21.95	20.2	(NULL)
23.10	18.5	(NULL)
24.03	17.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.58 WATERSHED INCHES; 990 CFS-HRS; 81.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.32 289.6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.26 WATERSHED INCHES; 393 CFS-HRS; 32.5 ACRE-  
FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.37 658.4 237.23  
23.13 18.5 234.37  
24.09 17.3 234.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.58 WATERSHED INCHES; 990 CFS-HRS; 81.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.35 941.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.48 WATERSHED INCHES; 1383 CFS-HRS; 114.3 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.35 941.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.48 WATERSHED INCHES; 1383 CFS-HRS; 114.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.22 32.9 (RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.09 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	27.2	414.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.09 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	154.3	(RUNOFF)
20.87	3.1	(RUNOFF)
24.03	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.09 WATERSHED INCHES; 162 CFS-HRS; 13.4 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	122.8	369.12

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.09 WATERSHED INCHES; 162 CFS-HRS; 13.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	149.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.09 WATERSHED INCHES; 199 CFS-HRS; 16.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	89.1	(RUNOFF)

18.87 2.0 (RUNOFF)  
24.02 1.4 (RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.07 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	223.0	(NULL)
20.08	6.0	(NULL)
20.61	5.8	(NULL)
24.01	4.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.08 WATERSHED INCHES; 291 CFS-HRS; 24.0 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.39	184.8	338.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.08 WATERSHED INCHES; 291 CFS-HRS; 24.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.12	26.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.54 WATERSHED INCHES; 21 CFS-HRS; 1.7 ACRE-  
FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -1.0%.  
\*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	192.2	(NULL)

23.98 4.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.04 WATERSHED INCHES; 311 CFS-HRS; 25.7 ACRE-
FEET.

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OPERATION RUNOFF XSECTION 29

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows show values for times 12.11, 15.82, 20.02, 20.58, 20.82, 23.99.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.56 WATERSHED INCHES; 115 CFS-HRS; 9.5 ACRE-
FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .3%.
\*\*\*

OPERATION RESVOR STRUCTURE 64

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows show values for times 12.11, 15.82, 20.02, 20.58, 20.82, 23.99, with PEAK values as (NULL).

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.56 WATERSHED INCHES; 115 CFS-HRS; 9.5 ACRE-
FEET.

OPERATION REACH XSECTION 30

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows show values for times 12.18, 15.89, 20.09, 20.65, 20.88, 24.05.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.54 WATERSHED INCHES; 114 CFS-HRS; 9.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	264.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.28 WATERSHED INCHES; 370 CFS-HRS; 30.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	351.7	(NULL)
18.86	10.2	(NULL)
20.62	9.1	(NULL)
21.97	8.3	(NULL)
23.74	7.1	(NULL)
24.04	7.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.34 WATERSHED INCHES; 484 CFS-HRS; 40.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	88.5	(RUNOFF)
18.65	2.1	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.10 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	439.0	(NULL)
18.86	12.3	(NULL)
20.09	11.4	(NULL)
21.75	10.1	(NULL)

23.09	9.1	(NULL)
24.04	8.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.30 WATERSHED INCHES; 579 CFS-HRS; 47.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 35

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 2.04TEST  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	419.8	317.47
20.16	11.4	316.22
20.91	10.8	316.21
23.15	9.1	316.18
24.10	8.5	316.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.30 WATERSHED INCHES; 579 CFS-HRS; 47.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	38.8	(RUNOFF)
20.14	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 49 CFS-HRS; 4.1 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .047 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.39	33.7	327.87
20.15	1.0	323.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
 FEET.



OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	452.2	(NULL)
20.16	12.4	(NULL)
20.91	11.7	(NULL)
22.01	10.8	(NULL)
24.10	9.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.29 WATERSHED INCHES; 629 CFS-HRS; 52.0 ACRE-  
 FEET.

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 2.04TEST  
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OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	142.5	(RUNOFF)
15.84	4.6	(RUNOFF)
17.34	3.6	(RUNOFF)
23.04	2.2	(RUNOFF)
23.70	2.0	(RUNOFF)
24.00	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.74 WATERSHED INCHES; 121 CFS-HRS; 10.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	511.7	(NULL)
23.99	11.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.18 WATERSHED INCHES; 750 CFS-HRS; 61.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	708.9	(NULL)
23.99	16.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 1061 CFS-HRS; 87.7 ACRE-  
 FEET.

OPERATION RESVOR      STRUCTURE    8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	343.7	296.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES;      1060 CFS-HRS;      87.6 ACRE-  
 FEET.

OPERATION RUNOFF      XSECTION    41

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 2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	47.7	(RUNOFF)
18.86	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.05 WATERSHED INCHES;      46 CFS-HRS;      3.8 ACRE-  
 FEET.

OPERATION RESVOR      STRUCTURE    29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.89	7.2	271.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES;      46 CFS-HRS;      3.8 ACRE-  
 FEET.

OPERATION REACH      XSECTION    42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.04	7.2	222.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES;      46 CFS-HRS;      3.8 ACRE-  
 FEET.

OPERATION RUNOFF      XSECTION    43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	96.2	(RUNOFF)
21.46	3.0	(RUNOFF)
24.02	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 112 CFS-HRS; 9.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	99.7	(NULL)
20.07	5.3	(NULL)
20.62	5.0	(NULL)
24.02	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.69 WATERSHED INCHES; 158 CFS-HRS; 13.1 ACRE-  
 FEET.

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OPERATION REACH XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.87	340.2	225.01

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.14 WATERSHED INCHES; 1060 CFS-HRS; 87.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.83	371.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.82 WATERSHED INCHES; 1218 CFS-HRS; 100.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.83	371.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.82 WATERSHED INCHES; 1218 CFS-HRS; 100.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	378.6	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.83 WATERSHED INCHES;	515 CFS-HRS;	42.6 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	55.0	(RUNOFF)
20.07	1.1	(RUNOFF)
20.63	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.32 WATERSHED INCHES;	53 CFS-HRS;	4.4 ACRE-
FEET.		

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OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	35.5	336.30
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.32 WATERSHED INCHES;	53 CFS-HRS;	4.4 ACRE-
FEET.		

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	30.8	316.83
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.32 WATERSHED INCHES;	53 CFS-HRS;	4.4 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	404.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.87 WATERSHED INCHES;	568 CFS-HRS;	47.0 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	40.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.92 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	27.6	321.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 33 CFS-HRS; 2.8 ACRE-FEET.

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OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	432.2	277.62

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 601 CFS-HRS; 49.7 ACRE-FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	397.7	277.54

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 601 CFS-HRS; 49.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	163.6	(RUNOFF)
18.87	6.1	(RUNOFF)
21.98	5.0	(RUNOFF)
24.03	4.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.42 WATERSHED INCHES; 191 CFS-HRS; 15.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	497.3	(NULL)
24.01	14.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.29 WATERSHED INCHES; 792 CFS-HRS; 65.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.10	168.1	266.78

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .54 SQ.MI.

6.36 CFS	.00	.01	.01	.01	.01	.02	.02
.02							
6.84 CFS	.03	.03	.03	.04	.04	.05	.05
.06							

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7.32 CFS	.06	.07	.08	.09	.10	.11	.12
.14							
7.80 CFS	.17	.19	.23	.26	.30	.35	.40
.45							
8.28 CFS	.51	.58	.64	.72	.79	.87	.96
1.05							
8.76 CFS	1.14	1.23	1.33	1.44	1.54	1.65	1.77
1.89							
9.24 CFS	2.01	2.13	2.26	2.40	2.54	2.69	2.85
3.02							
9.72 CFS	3.20	3.39	3.58	3.79	4.01	4.24	4.48
4.73							
10.20 CFS	4.99	5.26	5.55	5.85	6.16	6.48	6.81
7.16							
10.68 CFS	7.52	7.89	8.29	8.71	9.17	9.66	10.20
10.79							
11.16 CFS	11.43	12.14	12.94	13.83	14.85	16.00	17.31

18.79								
11.64	CFS	20.50	22.49	24.84	27.48	30.72	34.80	40.12
47.42								
12.12	CFS	57	70	85	102	116	128	136
144								
12.60	CFS	150	155	159	162	164	166	167
168								
13.08	CFS	168	168	168	167	166	166	164
163								
13.56	CFS	162	161	159	158	156	154	153
151								
14.04	CFS	149	147	145	144	142	140	138
136								
14.52	CFS	134	132	130	129	127	125	122
119								
15.00	CFS	116	114	111	108	106	103	101
98								
15.48	CFS	94.80	92.02	89.34	86.77	84.30	81.93	79.65
77.47								
15.96	CFS	75.37	73.24	71.17	69.19	67.30	65.49	63.75
62.09								
16.44	CFS	60.50	58.97	57.50	56.09	54.74	53.44	52.20
51.00								
16.92	CFS	49.84	48.65	47.51	46.42	45.38	44.37	43.40
42.47								
17.40	CFS	41.58	40.72	39.89	39.09	38.31	37.56	36.84
36.13								
17.88	CFS	35.45	34.79	34.16	33.54	32.94	32.36	31.80
31.25								
18.36	CFS	30.72	30.21	29.71	29.22	28.76	28.31	27.89
27.48								
18.84	CFS	27.09	26.72	26.36	26.02	25.69	25.37	25.07
24.76								
19.32	CFS	24.46	24.17	23.90	23.64	23.40	23.16	22.93
22.72								
19.80	CFS	22.51	22.31	22.11	21.92	21.73	21.56	21.40
21.24								
20.28	CFS	21.08	20.94	20.79	20.65	20.50	20.37	20.23
20.10								
20.76	CFS	19.98	19.85	19.73	19.62	19.51	19.40	19.29
19.18								
21.24	CFS	19.07	18.96	18.86	18.76	18.66	18.57	18.48
18.38								
21.72	CFS	18.29	18.20	18.12	18.03	17.94	17.86	17.78
17.69								
22.20	CFS	17.61	17.53	17.44	17.36	17.28	17.20	17.12
17.04								
22.68	CFS	16.96	16.88	16.80	16.72	16.64	16.55	16.47
16.39								
23.16	CFS	16.31	16.24	16.16	16.09	16.01	15.94	15.86
15.78								
23.64	CFS	15.70	15.62	15.55	15.47	15.39	15.31	15.24
15.17								
24.12	CFS	15.08	14.94	14.73	14.44	14.08	13.65	13.17
12.65								
24.60	CFS	12.10	11.54	10.98	10.43	9.89	9.37	8.86
8.38								
25.08	CFS	7.92	7.49	7.07	6.68	6.31	5.96	5.63
5.32								
25.56	CFS	5.02	4.75	4.49	4.24	4.01	3.79	3.58
3.39								
26.04	CFS	3.21	3.03	2.87	2.72	2.58	2.44	2.32
2.20								
26.52	CFS	2.08	1.98	1.88	1.79	1.70	1.62	1.54

1.46								
27.00 CFS	1.39	1.33	1.27	1.21	1.16	1.11	1.06	
1.01								
27.48 CFS	.97	.93	.89	.86	.82	.79	.76	
.73								
27.96 CFS	.71	.68	.66	.64	.62	.60	.58	
.56								
28.44 CFS	.55	.53	.52	.50	.49	.48	.47	
.46								
28.92 CFS	.45	.44	.43	.42	.41	.40		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.28 WATERSHED INCHES; 792 CFS-HRS; 65.4 ACRE-  
 FEET.

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 05/04/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
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OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	1233.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.63 WATERSHED INCHES; 2600 CFS-HRS; 214.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	20.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.62 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	1240.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.62 WATERSHED INCHES; 2617 CFS-HRS; 216.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	1240.8	(NULL)



HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55

HRS	SQ.MI.	0.00	0.01	0.02	0.03	0.04	0.05
5.10 CFS	.06	.00	.01	.02	.02	.03	.04
5.58 CFS	.16	.07	.08	.09	.10	.11	.13
6.06 CFS	.36	.17	.19	.21	.23	.26	.29
6.54 CFS	.87	.40	.45	.51	.57	.63	.71
7.02 CFS	1.85	.95	1.05	1.16	1.28	1.40	1.54
7.50 CFS	3.36	2.01	2.19	2.37	2.55	2.74	2.94
7.98 CFS	5.53	3.59	3.82	4.07	4.32	4.60	4.89
8.46 CFS	8.96	5.89	6.28	6.68	7.11	7.55	8.01
8.94 CFS	13.63	9.45	9.95	10.46	11.01	11.59	12.21
9.42 CFS	21.84	14.44	15.31	16.25	17.23	18.28	19.39
9.90 CFS	34.06	23.16	24.52	25.94	27.42	28.97	30.60
10.38 CFS	51.67	35.86	37.71	39.62	41.62	43.76	46.09
10.86 CFS	91.62	55.03	58.80	62.96	67.51	72.49	78.04
11.34 CFS	205	100	109	119	130	143	159
11.82 CFS	1085	237	277	331	407	521	689

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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12.30 CFS	888	1205	1240	1218	1159	1086	1016	950
12.78 CFS	585	832	783	740	702	669	639	611
13.26 CFS	422	560	537	515	495	476	457	439
13.74 CFS	317	406	391	377	364	352	341	330
14.22 CFS	236	305	294	283	272	262	253	244
14.70 CFS	179	228	220	213	206	199	193	186
15.18 CFS	139	173	167	161	156	151	147	143
15.66 CFS	118	136	133	130	127	125	122	120
16.14 CFS	104	116	114	112	111	109	107	106
16.62 CFS	95	103	102	100	99	98	97	96

17.10	CFS	93.55	92.52	91.40	90.24	89.12	88.11	87.16
86.17								
17.58	CFS	85.11	84.02	82.95	81.94	80.97	80.00	79.02
78.09								
18.06	CFS	77.20	76.33	75.44	74.54	73.66	72.82	71.99
71.19								
18.54	CFS	70.46	69.88	69.41	68.97	68.53	68.11	67.71
67.31								
19.02	CFS	66.86	66.39	65.93	65.51	65.12	64.80	64.51
64.26								
19.50	CFS	64.03	63.79	63.50	63.16	62.82	62.50	62.18
61.83								
19.98	CFS	61.49	61.25	61.08	60.93	60.73	60.48	60.20
59.86								
20.46	CFS	59.46	59.08	58.77	58.57	58.39	58.19	57.97
57.76								
20.94	CFS	57.54	57.27	56.95	56.62	56.31	56.02	55.78
55.57								
21.42	CFS	55.39	55.24	55.08	54.88	54.61	54.31	54.03
53.78								
21.90	CFS	53.54	53.35	53.20	53.00	52.73	52.44	52.14
51.86								
22.38	CFS	51.63	51.43	51.25	51.07	50.83	50.53	50.22
49.94								
22.86	CFS	49.66	49.34	49.04	48.82	48.68	48.56	48.38
48.15								
23.34	CFS	47.90	47.65	47.39	47.10	46.75	46.43	46.20
46.06								
23.82	CFS	45.89	45.66	45.37	45.20	44.97	44.07	41.85
38.35								
24.30	CFS	34.25	30.21	26.58	23.55	21.06	18.98	17.22
15.70								
24.78	CFS	14.36	13.18	12.12	11.17	10.32	9.54	8.83
8.18								
25.26	CFS	7.59	7.04	6.55	6.10	5.68	5.30	4.96
4.64								
25.74	CFS	4.35	4.08	3.84	3.61	3.41	3.23	3.06
2.90								
26.22	CFS	2.35	2.05	1.88	1.78	1.71	1.67	1.63
1.60								
26.70	CFS	1.57	1.55	1.52	1.50	1.48	1.46	1.44
1.41								
27.18	CFS	1.39	1.38	1.36	1.34	1.32	1.30	1.28
1.27								
27.66	CFS	1.25	1.24	1.22	1.20	1.19	1.18	1.16
1.14								
28.14	CFS	1.13	1.11	1.10	1.09	1.07	1.06	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.62 WATERSHED INCHES; 2617 CFS-HRS; 216.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK (RUNOFF)
12.13	79.3	(RUNOFF)
15.84	2.5	(RUNOFF)
24.00	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.97 WATERSHED INCHES; 68 CFS-HRS; 5.7 ACRE-  
 FEET.

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OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	1237.6	133.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.62 WATERSHED INCHES; 2617 CFS-HRS; 216.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	1368.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.53 WATERSHED INCHES; 3409 CFS-HRS; 281.7 ACRE-FEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	1368.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.48 WATERSHED INCHES; 3345 CFS-HRS; 276.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	28.5	(RUNOFF)
15.85	1.2	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .02 SQ.MI.

11.04 CFS	.46	.54	.63	.74	.87	1.00	1.16
1.32							
11.52 CFS	1.51	1.86	2.40	2.93	3.52	4.44	5.80
7.84							
12.00 CFS	11.52	17.35	25.60	28.42	23.54	18.10	14.47

11.86								
12.48	CFS	10.16	9.15	7.96	6.75	5.99	5.52	5.18
4.89								
12.96	CFS	4.63	4.36	4.09	3.83	3.62	3.45	3.29
3.14								
13.44	CFS	2.98	2.83	2.68	2.53	2.42	2.34	2.28
2.23								
13.92	CFS	2.19	2.16	2.13	2.09	2.05	2.00	1.95
1.92								
14.40	CFS	1.89	1.86	1.82	1.77	1.72	1.68	1.64
1.61								
14.88	CFS	1.58	1.53	1.49	1.46	1.41	1.37	1.34
1.32								
15.36	CFS	1.31	1.31	1.31	1.31	1.29	1.27	1.25
1.24								
15.84	CFS	1.25	1.24	1.23	1.21	1.19	1.18	1.18
1.17								

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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16.32	CFS	1.16	1.14	1.13	1.12	1.10	1.09	1.09
1.08								
16.80	CFS	1.07	1.05	1.05	1.04	1.04	1.03	1.00
.98								
17.28	CFS	.97	.98	.97	.95	.93	.91	.90
.90								
17.76	CFS	.89	.88	.86	.86	.85	.85	.83
.82								
18.24	CFS	.81	.80	.80	.78	.78	.79	.80
.80								
18.72	CFS	.78	.78	.79	.78	.77	.76	.76
.76								
19.20	CFS	.76	.76	.76	.76	.76	.76	.75
.74								
19.68	CFS	.73	.74	.74	.73	.72	.72	.74
.74								
20.16	CFS	.73	.72	.72	.71	.70	.69	.69
.70								
20.64	CFS	.71	.70	.69	.69	.70	.68	.67
.67								
21.12	CFS	.67	.67	.67	.67	.67	.67	.67
.67								
21.60	CFS	.65	.64	.65	.65	.64	.64	.65
.64								
22.08	CFS	.63	.62	.62	.62	.62	.62	.62
.62								
22.56	CFS	.62	.60	.59	.60	.60	.58	.58
.58								
23.04	CFS	.60	.60	.58	.58	.57	.57	.57
.57								
23.52	CFS	.55	.54	.55	.56	.56	.55	.53
.53								
24.00	CFS	.57	.55	.37				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.82 WATERSHED INCHES; 27 CFS-HRS; 2.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	1379.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.48 WATERSHED INCHES; 3372 CFS-HRS; 278.7 ACRE-FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
 STARTING TIME = .00 RAIN DEPTH = 6.14 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =25 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	415.5	(RUNOFF)
18.67	11.3	(RUNOFF)
20.12	10.4	(RUNOFF)
20.67	10.0	(RUNOFF)
23.12	8.3	(RUNOFF)
24.02	7.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.62 WATERSHED INCHES; 490 CFS-HRS; 40.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	415.5	(NULL)
18.67	11.3	(NULL)
20.12	10.4	(NULL)
20.67	10.0	(NULL)
23.12	8.3	(NULL)
24.02	7.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.62 WATERSHED INCHES; 490 CFS-HRS; 40.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 2

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.19	61.0	(RUNOFF)
24.03	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.30 WATERSHED INCHES; 62 CFS-HRS; 5.1 ACRE-FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.33	42.7	431.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.24 WATERSHED INCHES; 61 CFS-HRS; 5.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 3

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.26	446.1	(NULL)
18.66	13.3	(NULL)
20.12	12.2	(NULL)
20.67	11.7	(NULL)
24.01	9.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.57 WATERSHED INCHES; 551 CFS-HRS; 45.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.15	171.7	(RUNOFF)
15.84	5.6	(RUNOFF)
17.34	4.3	(RUNOFF)
20.06	3.2	(RUNOFF)
20.62	3.1	(RUNOFF)
20.85	3.0	(RUNOFF)
24.01	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.02 WATERSHED INCHES; 160 CFS-HRS; 13.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	582.0	(NULL)
18.81	16.6	(NULL)
20.08	15.4	(NULL)
20.63	14.8	(NULL)
21.95	13.5	(NULL)
23.08	12.4	(NULL)
24.01	11.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.66 WATERSHED INCHES; 711 CFS-HRS; 58.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

1 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

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2.04TEST

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	174.8	(RUNOFF)
15.83	6.7	(RUNOFF)
17.32	5.2	(RUNOFF)
18.86	4.1	(RUNOFF)
23.09	3.1	(RUNOFF)
24.02	2.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.35 WATERSHED INCHES; 173 CFS-HRS; 14.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	570.7	320.69
18.70	16.8	318.32
20.15	15.4	318.31
20.70	14.8	318.30
22.01	13.5	318.29
23.15	12.4	318.27
24.07	11.6	318.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.66 WATERSHED INCHES; 711 CFS-HRS; 58.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION (FEET)		
12.26	716.5	(NULL)
18.66	20.9	(NULL)
20.12	19.3	(NULL)
20.67	18.4	(NULL)
21.99	16.9	(NULL)
23.12	15.5	(NULL)
24.04	14.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.60 WATERSHED INCHES; 884 CFS-HRS; 73.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9  
 1

TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 05/04/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
 18:32:27 PASS 4 JOB NO. 1 PAGE  
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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.18	144.1	(RUNOFF)
15.81	5.3	(RUNOFF)
19.76	3.1	(RUNOFF)
20.09	3.0	(RUNOFF)
24.02	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.71 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.22	56.2	(RUNOFF)
23.11	1.1	(RUNOFF)
23.76	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.74 WATERSHED INCHES; 64 CFS-HRS; 5.3 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.44	32.3	455.90



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.25 WATERSHED INCHES; 55 CFS-HRS; 4.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	31.9	414.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.25 WATERSHED INCHES; 55 CFS-HRS; 4.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

1

TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 05/04/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
 18:32:27 PASS 4 JOB NO. 1 PAGE  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	151.6	(NULL)
20.86	4.2	(NULL)
24.02	3.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.57 WATERSHED INCHES; 200 CFS-HRS; 16.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	125.0	(RUNOFF)
15.83	4.2	(RUNOFF)
17.33	3.2	(RUNOFF)
21.96	2.1	(RUNOFF)
24.02	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.32 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	63.1	398.95

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.32 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	202.3	(NULL)
21.94	6.0	(NULL)
24.01	5.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.82 WATERSHED INCHES; 324 CFS-HRS; 26.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 15

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TR20 ----- SCS  
-  
Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION  
05/04/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
2.04TEST  
18:32:27 PASS 4 JOB NO. 1 PAGE  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	202.1	(RUNOFF)
15.84	7.0	(RUNOFF)
17.34	5.4	(RUNOFF)
19.75	4.1	(RUNOFF)
20.06	4.1	(RUNOFF)
23.06	3.3	(RUNOFF)
23.72	3.1	(RUNOFF)
24.01	3.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.58 WATERSHED INCHES; 188 CFS-HRS; 15.5 ACRE-  
FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	192.2	331.36
20.67	6.6	330.26
24.08	5.1	330.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.82 WATERSHED INCHES; 324 CFS-HRS; 26.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	349.1	(NULL)
20.62	10.5	(NULL)
21.94	9.6	(NULL)
24.01	8.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.73 WATERSHED INCHES; 512 CFS-HRS; 42.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	1050.3	(NULL)
18.63	33.2	(NULL)
20.10	30.2	(NULL)
20.64	28.9	(NULL)
21.95	26.5	(NULL)
23.10	24.2	(NULL)
24.03	22.7	(NULL)

1

TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 05/04/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.64 WATERSHED INCHES; 1396 CFS-HRS; 115.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	420.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.26 WATERSHED INCHES; 568 CFS-HRS; 46.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.37	948.7	238.12
20.13	30.2	234.51
23.14	24.2	234.44
24.09	22.6	234.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.64 WATERSHED INCHES; 1395 CFS-HRS; 115.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	1358.2	(NULL)
23.13	34.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.52 WATERSHED INCHES; 1963 CFS-HRS; 162.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	1358.2	(NULL)
23.13	34.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.52 WATERSHED INCHES; 1963 CFS-HRS; 162.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 22

1  
 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

05/04/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	44.5	(RUNOFF)
18.66	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.22 WATERSHED INCHES; 50 CFS-HRS; 4.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	40.8	415.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.22 WATERSHED INCHES; 50 CFS-HRS; 4.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	208.0	(RUNOFF)
20.87	4.0	(RUNOFF)
24.02	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.22 WATERSHED INCHES; 221 CFS-HRS; 18.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	179.3	369.53
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.22 WATERSHED INCHES;	221 CFS-HRS;	18.3 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	219.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.22 WATERSHED INCHES;	271 CFS-HRS;	22.4 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 25

1  
 TR20 ----- SCS  
 -  
 Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 05/04/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
 18:32:27 PASS 4 JOB NO. 1 PAGE  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	120.6	(RUNOFF)
21.97	2.1	(RUNOFF)
24.02	1.8	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.19 WATERSHED INCHES;	126 CFS-HRS;	10.4 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	325.6	(NULL)
20.61	7.5	(NULL)
23.08	6.2	(NULL)
24.01	5.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.21 WATERSHED INCHES;	397 CFS-HRS;	32.8 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	233.6	340.51

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.22 WATERSHED INCHES; 398 CFS-HRS; 32.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	37.3	(RUNOFF)
15.82	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.57 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .8%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

1

TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 05/04/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
 18:32:27 PASS 4 JOB NO. 1 PAGE  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	243.0	(NULL)
23.98	6.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.17 WATERSHED INCHES; 427 CFS-HRS; 35.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	184.7	(RUNOFF)
15.45	5.1	(RUNOFF)
15.82	4.8	(RUNOFF)
17.32	3.7	(RUNOFF)
18.58	3.0	(RUNOFF)
23.02	2.2	(RUNOFF)
23.68	2.1	(RUNOFF)
23.99	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.73 WATERSHED INCHES; 152 CFS-HRS; 12.6 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.2%.

\*\*\*

OPERATION RESVOR      STRUCTURE 64

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	184.7	(NULL)
15.45	5.1	(NULL)
15.82	4.8	(NULL)
17.32	3.7	(NULL)
18.58	3.0	(NULL)
23.02	2.2	(NULL)
23.68	2.1	(NULL)
23.99	2.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.73 WATERSHED INCHES;      152 CFS-HRS;      12.6 ACRE-FEET.

OPERATION REACH      XSECTION 30

1

TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

05/04/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
 18:32:27      PASS      4      JOB NO.      1      PAGE  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	177.3	357.15
15.88	4.8	356.10
17.38	3.7	356.08
18.65	3.0	356.06
23.09	2.2	356.05
23.75	2.1	356.04
24.05	2.3	356.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.71 WATERSHED INCHES;      152 CFS-HRS;      12.5 ACRE-FEET.

OPERATION RUNOFF      XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	354.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.43 WATERSHED INCHES;      499 CFS-HRS;      41.2 ACRE-FEET.

OPERATION ADDHYD      XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	469.7	(NULL)

18.86	13.1	(NULL)
20.08	12.1	(NULL)
20.86	11.5	(NULL)
21.96	10.6	(NULL)
23.73	9.1	(NULL)
24.04	9.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.49 WATERSHED INCHES; 651 CFS-HRS; 53.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	119.6	(RUNOFF)
21.97	2.2	(RUNOFF)
23.10	2.0	(RUNOFF)
24.03	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.22 WATERSHED INCHES; 130 CFS-HRS; 10.7 ACRE-  
 FEET.

1

TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 05/04/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
 18:32:27 PASS 4 JOB NO. 1 PAGE  
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OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	596.7	(NULL)
18.62	16.0	(NULL)
18.86	15.8	(NULL)
20.09	14.7	(NULL)
20.63	14.0	(NULL)
20.86	13.9	(NULL)
21.97	12.8	(NULL)
23.09	11.7	(NULL)
23.74	11.0	(NULL)
24.04	11.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.45 WATERSHED INCHES; 781 CFS-HRS; 64.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 35

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	565.4	317.74
20.68	14.0	316.26
20.91	13.9	316.26
22.01	12.8	316.25



23.15	11.7	316.23
24.10	10.9	316.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.45 WATERSHED INCHES; 781 CFS-HRS; 64.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	53.0	(RUNOFF)
23.13	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.27 WATERSHED INCHES; 67 CFS-HRS; 5.6 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .047 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

1

TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 05/04/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
 18:32:27 PASS 4 JOB NO. 1 PAGE  
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OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	53.4	328.46
23.15	1.0	323.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.27 WATERSHED INCHES; 67 CFS-HRS; 5.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	618.7	(NULL)
20.68	15.3	(NULL)
22.00	13.9	(NULL)
23.15	12.7	(NULL)
24.10	11.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.43 WATERSHED INCHES; 848 CFS-HRS; 70.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	198.2	(RUNOFF)
15.84	6.1	(RUNOFF)
17.34	4.7	(RUNOFF)
21.45	3.1	(RUNOFF)
21.73	3.1	(RUNOFF)
21.94	3.1	(RUNOFF)
24.00	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.82 WATERSHED INCHES; 169 CFS-HRS; 13.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	703.2	(NULL)
23.99	14.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.32 WATERSHED INCHES; 1017 CFS-HRS; 84.0 ACRE-  
 FEET.

1  
 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 05/04/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
 18:32:27 PASS 4 JOB NO. 1 PAGE  
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OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	936.6	(NULL)
23.99	20.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.27 WATERSHED INCHES; 1442 CFS-HRS; 119.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 8

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.79	426.1	299.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.27 WATERSHED INCHES; 1442 CFS-HRS; 119.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	65.3	(RUNOFF)
15.84	2.2	(RUNOFF)
21.96	1.1	(RUNOFF)
22.75	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.18 WATERSHED INCHES; 64 CFS-HRS; 5.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.84	10.0	273.38

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.12 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.98	10.0	222.49

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.12 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

1

TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 05/04/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
 18:32:27 PASS 4 JOB NO. 1 PAGE  
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OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	157.8	(RUNOFF)
18.87	5.1	(RUNOFF)
21.98	4.2	(RUNOFF)
24.02	3.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.25 WATERSHED INCHES; 176 CFS-HRS; 14.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	163.0	(NULL)

20.07	7.4	(NULL)
20.62	6.9	(NULL)
23.74	5.1	(NULL)
24.02	5.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.56 WATERSHED INCHES; 239 CFS-HRS; 19.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.92	423.9	225.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.27 WATERSHED INCHES; 1442 CFS-HRS; 119.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	469.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.90 WATERSHED INCHES; 1681 CFS-HRS; 138.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	469.2	(NULL)

1

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.90 WATERSHED INCHES; 1681 CFS-HRS; 138.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	523.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.92 WATERSHED INCHES; 715 CFS-HRS; 59.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	73.8	(RUNOFF)
15.84	2.4	(RUNOFF)
23.07	1.1	(RUNOFF)
23.73	1.0	(RUNOFF)
24.01	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	55.2	336.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	48.6	317.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	568.7	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.97 WATERSHED INCHES; 786 CFS-HRS; 65.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	56.3	(RUNOFF)
21.45	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.03 WATERSHED INCHES; 57 CFS-HRS; 4.7 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.26 47.3 322.35
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.46 WATERSHED INCHES; 49 CFS-HRS; 4.0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.32 613.3 278.11
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.93 WATERSHED INCHES; 834 CFS-HRS; 69.0 ACRE-
FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.43 568.6 277.95
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.93 WATERSHED INCHES; 834 CFS-HRS; 69.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 53

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.22 268.4 (RUNOFF)
20.11 8.1 (RUNOFF)
21.98 7.1 (RUNOFF)
23.75 6.2 (RUNOFF)
24.03 6.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.23 WATERSHED INCHES; 300 CFS-HRS; 24.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	734.1	(NULL)
24.01	18.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.27 WATERSHED INCHES; 1135 CFS-HRS; 93.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.14	211.6	270.96

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .54  
 SQ.MI.

HRS	DISCHARGE	DISCHARGE	DISCHARGE	DISCHARGE	DISCHARGE	DISCHARGE	DISCHARGE
5.28 CFS	.00	.01	.01	.01	.01	.02	.02
.02							
5.76 CFS	.03	.03	.03	.04	.04	.05	.05
.06							
6.24 CFS	.07	.07	.08	.09	.10	.11	.13
.15							
6.72 CFS	.17	.20	.23	.27	.31	.36	.41
.47							
7.20 CFS	.53	.59	.66	.74	.82	.91	1.00
1.09							
7.68 CFS	1.19	1.29	1.40	1.51	1.63	1.74	1.87
2.00							
8.16 CFS	2.13	2.26	2.40	2.55	2.70	2.85	3.01
3.17							
8.64 CFS	3.33	3.50	3.67	3.84	4.02	4.20	4.39
4.58							
9.12 CFS	4.77	4.97	5.17	5.38	5.59	5.81	6.05
6.29							
9.60 CFS	6.55	6.82	7.11	7.41	7.72	8.05	8.39
8.76							
10.08 CFS	9.13	9.52	9.93	10.36	10.80	11.26	11.73
12.23							
10.56 CFS	12.76	13.31	13.89	14.52	15.19	15.92	16.73
17.62							
11.04 CFS	18.60	19.69	20.89	22.23	23.71	25.34	27.04
28.95							
11.52 CFS	31.07	33.45	36.16	39.31	43.01	47.42	52.56
58.75							
12.00 CFS	67	77	92	109	127	139	152
163							
12.48 CFS	174	183	191	197	202	205	207
209							
12.96 CFS	210	211	211	212	211	211	211
210							
13.44 CFS	209	208	207	206	205	203	202
201							
13.92 CFS	199	197	195	193	191	189	187

185								
14.40	CFS	183	181	179	177	175	173	171
169								
14.88	CFS	167	165	162	160	158	156	154
152								
15.36	CFS	150	148	146	144	141	139	137
135								

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15.84	CFS	133	131	129	127	125	123	120
117								
16.32	CFS	114	111	108	106	103	101	98
96								
16.80	CFS	92.89	90.31	87.85	85.48	83.21	81.03	78.93
76.92								
17.28	CFS	74.97	72.97	71.04	69.20	67.43	65.73	64.09
62.51								
17.76	CFS	61.00	59.54	58.13	56.77	55.46	54.21	52.99
51.82								
18.24	CFS	50.70	49.58	48.45	47.36	46.32	45.32	44.36
43.45								
18.72	CFS	42.58	41.75	40.96	40.21	39.49	38.81	38.15
37.53								
19.20	CFS	36.93	36.36	35.81	35.29	34.80	34.33	33.88
33.45								
19.68	CFS	33.04	32.64	32.26	31.90	31.54	31.20	30.88
30.57								
20.16	CFS	30.27	29.99	29.71	29.45	29.19	28.94	28.69
28.45								
20.64	CFS	28.22	28.00	27.78	27.57	27.37	27.18	26.99
26.80								
21.12	CFS	26.62	26.44	26.26	26.09	25.92	25.76	25.61
25.45								
21.60	CFS	25.31	25.16	25.02	24.87	24.72	24.57	24.43
24.29								
22.08	CFS	24.16	24.02	23.89	23.76	23.63	23.50	23.37
23.25								
22.56	CFS	23.13	23.01	22.89	22.77	22.65	22.53	22.41
22.28								
23.04	CFS	22.16	22.05	21.93	21.82	21.71	21.61	21.50
21.39								
23.52	CFS	21.28	21.17	21.06	20.95	20.84	20.73	20.63
20.52								
24.00	CFS	20.41	20.32	20.19	20.00	19.70	19.29	18.79
18.20								
24.48	CFS	17.54	16.83	16.08	15.32	14.56	13.81	13.09
12.39								
24.96	CFS	11.71	11.07	10.45	9.87	9.32	8.80	8.30
7.84								
25.44	CFS	7.40	6.98	6.59	6.22	5.87	5.54	5.23
4.94								
25.92	CFS	4.67	4.41	4.17	3.94	3.73	3.52	3.33
3.15								
26.40	CFS	2.99	2.83	2.68	2.54	2.40	2.28	2.16
2.05								
26.88	CFS	1.95	1.85	1.76	1.67	1.59	1.51	1.44



1.37								
27.36 CFS	1.31	1.25	1.19	1.14	1.09	1.04	1.00	
.96								
27.84 CFS	.92	.88	.85	.81	.78	.75	.73	
.70								
28.32 CFS	.68							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.27 WATERSHED INCHES; 1134 CFS-HRS; 93.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	1759.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.68 WATERSHED INCHES; 3643 CFS-HRS; 301.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	31.3	(RUNOFF)
15.84	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.49 WATERSHED INCHES; 27 CFS-HRS; 2.2 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	1771.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.67 WATERSHED INCHES; 3669 CFS-HRS; 303.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	1771.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55

SQ.MI.							
4.20 CFS	.00	.01	.01	.02	.03	.04	.05
.06							
4.68 CFS	.07	.09	.10	.12	.13	.15	.17
.19							
5.16 CFS	.22	.24	.28	.31	.35	.40	.45
.51							
5.64 CFS	.57	.64	.72	.80	.89	.99	1.09
1.19							
6.12 CFS	1.31	1.44	1.58	1.72	1.88	2.04	2.21
2.39							
6.60 CFS	2.57	2.76	2.96	3.18	3.39	3.62	3.86
4.12							
7.08 CFS	4.38	4.66	4.96	5.30	5.66	6.05	6.47
6.91							
7.56 CFS	7.38	7.86	8.35	8.86	9.38	9.92	10.48
11.06							
8.04 CFS	11.68	12.33	13.01	13.73	14.47	15.23	16.02
16.84							
8.52 CFS	17.67	18.50	19.36	20.25	21.17	22.10	23.04
23.97							
9.00 CFS	24.89	25.84	26.85	27.91	29.02	30.20	31.49
32.89							
9.48 CFS	34.38	35.94	37.56	39.26	41.06	42.97	45.00
47.11							
9.96 CFS	49.28	51.51	53.82	56.24	58.78	61.42	64.13
66.90							
10.44 CFS	69.75	72.73	75.87	79.26	83.02	87.28	92.14
97.66							
10.92 CFS	104	111	118	126	135	145	157
169							
11.40 CFS	183	199	216	235	260	291	330
377							
11.88 CFS	435	513	625	791	1033	1316	1573
1730							
12.36 CFS	1771	1732	1639	1523	1408	1302	1204
1117							
12.84 CFS	1042	979	926	881	843	808	777
748							
13.32 CFS	722	698	672	646	620	595	571
548							
13.80 CFS	527	507	488	472	456	442	428
415							
14.28 CFS	403	391	380	369	359	348	336
324							
14.76 CFS	311	300	289	279	269	259	250
242							
15.24 CFS	233	225	218	211	205	199	194
189							
15.72 CFS	184	179	175	171	167	164	161
157							
16.20 CFS	154	152	149	147	144	142	140
138							
16.68 CFS	136	134	132	130	129	127	126
124							
17.16 CFS	123	121	119	118	117	115	114
112							
17.64 CFS	111	109	108	107	105	104	103
102							
18.12 CFS	100	99	98	97	96	95	94
93							
18.60 CFS	91.87	91.26	90.69	90.12	89.56	89.03	88.50
87.90							
19.08 CFS	87.28	86.68	86.12	85.62	85.19	84.81	84.48

84.18								
19.56	CFS	83.88	83.49	83.04	82.59	82.17	81.75	81.27
80.82								

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20.04	CFS	80.50	80.29	80.09	79.83	79.50	79.12	78.67
78.14								
20.52	CFS	77.63	77.22	76.96	76.73	76.46	76.17	75.89
75.60								
21.00	CFS	75.24	74.82	74.38	73.97	73.59	73.27	73.00
72.76								
21.48	CFS	72.56	72.35	72.08	71.72	71.33	70.95	70.62
70.31								
21.96	CFS	70.06	69.86	69.59	69.24	68.85	68.45	68.09
67.78								
22.44	CFS	67.51	67.28	67.04	66.72	66.33	65.93	65.56
65.18								
22.92	CFS	64.75	64.35	64.07	63.89	63.72	63.48	63.18
62.85								
23.40	CFS	62.52	62.19	61.79	61.34	60.91	60.61	60.43
60.21								
23.88	CFS	59.90	59.52	59.32	59.03	57.83	54.79	50.05
44.57								
24.36	CFS	39.18	34.35	30.34	27.07	24.36	22.07	20.10
18.38								
24.84	CFS	16.85	15.49	14.25	13.13	12.11	11.20	10.36
9.60								
25.32	CFS	8.90	8.27	7.69	7.16	6.67	6.23	5.82
5.45								
25.80	CFS	5.11	4.80	4.51	4.26	4.02	3.80	3.60
3.42								
26.28	CFS	3.25	2.67	2.36	2.18	2.07	2.00	1.95
1.91								
26.76	CFS	1.87	1.84	1.81	1.78	1.75	1.73	1.70
1.68								
27.24	CFS	1.65	1.63	1.61	1.58	1.56	1.54	1.52

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.67 WATERSHED INCHES; 3669 CFS-HRS; 303.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.13	108.3	(RUNOFF)
15.84	3.3	(RUNOFF)
17.34	2.5	(RUNOFF)
18.60	2.1	(RUNOFF)
18.84	2.0	(RUNOFF)
24.00	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.09 WATERSHED INCHES; 94 CFS-HRS; 7.8 ACRE-FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	1768.1	134.56

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.67 WATERSHED INCHES; 3669 CFS-HRS; 303.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	1933.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.57 WATERSHED INCHES; 4803 CFS-HRS; 396.9 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	1933.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.51 WATERSHED INCHES; 4722 CFS-HRS; 390.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	43.7	(RUNOFF)
19.75	1.0	(RUNOFF)
20.07	1.0	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .02  
 SQ.MI.  
 10.44 CFS .46 .50 .55 .60 .67 .75 .84  
 .93  
 10.92 CFS 1.04 1.15 1.26 1.41 1.59 1.79 2.00  
 2.23

11.40 CFS	2.49	2.76	3.06	3.65	4.59	5.46	6.40
7.87							
11.88 CFS	10.00	13.16	18.75	27.54	39.74	43.47	35.43
26.83							
12.36 CFS	21.34	17.32	14.77	13.25	11.48	9.71	8.58
7.91							
12.84 CFS	7.41	6.98	6.60	6.21	5.81	5.44	5.13
4.89							
13.32 CFS	4.67	4.44	4.22	4.00	3.78	3.58	3.42
3.30							
13.80 CFS	3.21	3.14	3.08	3.04	2.99	2.94	2.88
2.81							
14.28 CFS	2.74	2.70	2.65	2.61	2.55	2.48	2.41
2.35							
14.76 CFS	2.30	2.26	2.21	2.15	2.09	2.04	1.97
1.91							
15.24 CFS	1.87	1.84	1.83	1.83	1.82	1.82	1.80
1.78							
15.72 CFS	1.74	1.73	1.74	1.73	1.71	1.68	1.65
1.64							
16.20 CFS	1.64	1.63	1.61	1.59	1.58	1.55	1.53
1.52							
16.68 CFS	1.51	1.51	1.49	1.46	1.45	1.45	1.44
1.42							
17.16 CFS	1.39	1.36	1.35	1.35	1.35	1.32	1.29
1.27							
17.64 CFS	1.25	1.25	1.24	1.22	1.20	1.19	1.18
1.17							
18.12 CFS	1.15	1.13	1.12	1.11	1.11	1.08	1.07
1.09							
18.60 CFS	1.10	1.10	1.08	1.08	1.09	1.08	1.07
1.05							
19.08 CFS	1.05	1.05	1.05	1.05	1.05	1.05	1.05
1.05							
19.56 CFS	1.04	1.02	1.01	1.02	1.02	1.00	.99
1.00							
20.04 CFS	1.02	1.02	1.00	.99	.99	.98	.96
.95							
20.52 CFS	.96	.97	.98	.96	.95	.96	.96
.94							
21.00 CFS	.93	.92	.92	.92	.92	.92	.92
.92							
21.48 CFS	.92	.92	.90	.88	.89	.89	.88
.88							
21.96 CFS	.89	.88	.87	.86	.85	.85	.85
.85							

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22.44 CFS	.85	.85	.85	.82	.82	.83	.82
.80							
22.92 CFS	.79	.80	.82	.82	.80	.79	.79
.79							
23.40 CFS	.78	.78	.76	.75	.76	.77	.77
.75							
23.88 CFS	.73	.73	.78	.76	.50	.24	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 41 CFS-HRS; 3.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	1950.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.50 WATERSHED INCHES; 4762 CFS-HRS; 393.6 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63  
 STARTING TIME = .00 RAIN DEPTH = 7.23 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =50 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	526.5	(RUNOFF)
18.67	13.8	(RUNOFF)
20.68	12.1	(RUNOFF)
21.94	11.1	(RUNOFF)
23.13	10.1	(RUNOFF)
24.01	9.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.59 WATERSHED INCHES; 622 CFS-HRS; 51.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 13

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	526.5	(NULL)
18.67	13.8	(NULL)
20.68	12.1	(NULL)
21.94	11.1	(NULL)
23.13	10.1	(NULL)
24.01	9.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.59 WATERSHED INCHES; 622 CFS-HRS; 51.4 ACRE-

FEET.

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	78.1	(RUNOFF)
24.02	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.24 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	70.8	432.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.15 WATERSHED INCHES; 78 CFS-HRS; 6.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	595.9	(NULL)
18.65	15.9	(NULL)
20.12	14.6	(NULL)
20.67	14.0	(NULL)
23.76	11.2	(NULL)
24.00	11.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.53 WATERSHED INCHES; 700 CFS-HRS; 57.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 4

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	212.7	(RUNOFF)
15.84	6.8	(RUNOFF)
17.34	5.2	(RUNOFF)
19.44	4.0	(RUNOFF)
22.75	3.1	(RUNOFF)
23.06	3.1	(RUNOFF)
24.00	3.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.03 WATERSHED INCHES; 200 CFS-HRS; 16.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	761.2	(NULL)
18.63	20.1	(NULL)
20.09	18.5	(NULL)
20.64	17.7	(NULL)
21.95	16.3	(NULL)
23.09	14.9	(NULL)
23.74	14.1	(NULL)
24.00	14.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.63 WATERSHED INCHES; 900 CFS-HRS; 74.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	223.3	(RUNOFF)
15.83	8.2	(RUNOFF)
17.32	6.3	(RUNOFF)
18.86	5.0	(RUNOFF)
21.97	4.1	(RUNOFF)
24.02	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.30 WATERSHED INCHES; 222 CFS-HRS; 18.3 ACRE-  
FEET.

OPERATION REACH XSECTION 7

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	752.6	321.23
18.69	20.1	318.36
20.15	18.5	318.34
20.70	17.7	318.33
22.01	16.3	318.32
23.80	14.1	318.29
24.07	13.9	318.29

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.63 WATERSHED INCHES; 900 CFS-HRS; 74.4 ACRE-  
FEET.



OPERATION ADDHYD XSECTION 8

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	933.8	(NULL)
18.65	25.2	(NULL)
20.12	23.2	(NULL)
20.68	22.2	(NULL)
21.99	20.4	(NULL)
23.12	18.6	(NULL)
24.04	17.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.56 WATERSHED INCHES; 1122 CFS-HRS; 92.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	180.9	(RUNOFF)
18.64	4.0	(RUNOFF)
21.97	3.2	(RUNOFF)
24.02	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.69 WATERSHED INCHES; 183 CFS-HRS; 15.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	70.7	(RUNOFF)
24.02	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.72 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE-  
FEET.

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\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)			
12.38	50.8		456.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.21 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	50.4	414.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.21 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	195.9	(NULL)
20.86	5.0	(NULL)
23.08	4.3	(NULL)
23.73	4.0	(NULL)
24.01	4.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.55 WATERSHED INCHES; 255 CFS-HRS; 21.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	153.2	(RUNOFF)
15.83	5.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.02	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.35 WATERSHED INCHES; 154 CFS-HRS; 12.8 ACRE-  
 FEET.

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OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	83.1	399.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.35 WATERSHED INCHES; 154 CFS-HRS; 12.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	258.0	(NULL)
20.06	8.3	(NULL)
21.94	7.3	(NULL)
24.01	6.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.81 WATERSHED INCHES; 409 CFS-HRS; 33.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.16	255.3	(RUNOFF)
15.84	8.6	(RUNOFF)
17.34	6.6	(RUNOFF)
19.47	5.1	(RUNOFF)
21.96	4.3	(RUNOFF)
24.01	3.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.55 WATERSHED INCHES; 239 CFS-HRS; 19.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	251.1	331.55
20.13	8.3	330.29
20.68	8.0	330.28
24.07	6.2	330.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.81 WATERSHED INCHES; 409 CFS-HRS; 33.8 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	449.9	(NULL)

20.06	13.3	(NULL)
20.62	12.7	(NULL)
21.94	11.6	(NULL)
23.06	10.6	(NULL)
24.01	9.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.71 WATERSHED INCHES; 648 CFS-HRS; 53.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	1360.9	(NULL)
20.10	36.4	(NULL)
20.64	34.9	(NULL)
21.95	31.9	(NULL)
23.10	29.2	(NULL)
23.75	27.6	(NULL)
24.03	27.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.61 WATERSHED INCHES; 1768 CFS-HRS; 146.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	541.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.19 WATERSHED INCHES; 731 CFS-HRS; 60.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.37	1235.0	238.86
20.14	36.4	234.56
23.14	29.2	234.50
24.09	27.3	234.47

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.61 WATERSHED INCHES; 1769 CFS-HRS; 146.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	1761.3	(NULL)
20.13	52.1	(NULL)
23.13	41.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 2499 CFS-HRS; 206.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	1761.3	(NULL)
20.13	52.1	(NULL)
23.13	41.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 2499 CFS-HRS; 206.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	54.7	(RUNOFF)
21.96	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	55.3	415.55
20.15	1.2	410.91

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 23

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	256.8	(RUNOFF)

20.10	5.2	(RUNOFF)
23.10	4.1	(RUNOFF)
24.03	3.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 275 CFS-HRS; 22.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	229.1	369.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 275 CFS-HRS; 22.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	284.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 337 CFS-HRS; 27.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	148.7	(RUNOFF)
18.87	3.2	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.21 WATERSHED INCHES; 156 CFS-HRS; 12.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	418.0	(NULL)
20.08	9.3	(NULL)
20.61	8.9	(NULL)
23.71	7.0	(NULL)
24.01	6.9	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.23 WATERSHED INCHES; 494 CFS-HRS; 40.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	283.6	342.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 494 CFS-HRS; 40.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	47.2	(RUNOFF)
17.32	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
 FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .9%.  
 \*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	295.1	(NULL)
23.98	7.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.18 WATERSHED INCHES; 531 CFS-HRS; 43.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.11	220.3	(RUNOFF)
15.45	6.0	(RUNOFF)
15.82	5.8	(RUNOFF)
17.32	4.4	(RUNOFF)
20.02	3.3	(RUNOFF)
20.58	3.1	(RUNOFF)
20.82	3.1	(RUNOFF)
23.99	2.7	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.78 WATERSHED INCHES; 186 CFS-HRS; 15.4 ACRE-  
FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .1%.  
\*\*\*

OPERATION RESVOR STRUCTURE 64

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	220.3	(NULL)
15.45	6.0	(NULL)
15.82	5.8	(NULL)
17.32	4.4	(NULL)
20.02	3.3	(NULL)
20.58	3.1	(NULL)
20.82	3.1	(NULL)
23.99	2.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.78 WATERSHED INCHES; 186 CFS-HRS; 15.4 ACRE-  
FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	213.3	357.27
15.88	5.8	356.12
17.38	4.4	356.09
20.88	3.1	356.06
24.05	2.7	356.06

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.76 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	433.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.47 WATERSHED INCHES; 616 CFS-HRS; 50.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 32

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.22	572.7	(NULL)
18.86	15.7	(NULL)
20.08	14.5	(NULL)
20.86	13.7	(NULL)
21.96	12.6	(NULL)
23.08	11.5	(NULL)
24.04	10.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.53 WATERSHED INCHES; 801 CFS-HRS; 66.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.20	148.2	(RUNOFF)
18.65	3.3	(RUNOFF)
20.10	3.0	(RUNOFF)
24.03	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.25 WATERSHED INCHES; 162 CFS-HRS; 13.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.21	729.7	(NULL)
18.61	19.2	(NULL)
18.85	18.9	(NULL)
20.09	17.5	(NULL)
20.86	16.6	(NULL)
21.97	15.3	(NULL)
23.74	13.1	(NULL)
24.04	13.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.48 WATERSHED INCHES; 963 CFS-HRS; 79.6 ACRE-  
FEET.

OPERATION REACH XSECTION 35

1 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION

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2.04TEST  
18:32:27 PASS 5 JOB NO. 1  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	694.0	317.98
20.15	17.5	316.29
20.92	16.6	316.28
22.01	15.3	316.27
23.80	13.1	316.25
24.10	13.0	316.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.49 WATERSHED INCHES; 963 CFS-HRS; 79.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	65.4	(RUNOFF)
23.76	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.30 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .047 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	64.5	328.67
23.78	1.2	323.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.31 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	758.3	(NULL)
20.15	19.1	(NULL)
20.91	18.0	(NULL)
22.01	16.6	(NULL)
23.15	15.1	(NULL)
23.80	14.3	(NULL)
24.10	14.2	(NULL)

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 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.47 WATERSHED INCHES; 1047 CFS-HRS; 86.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	246.6	(RUNOFF)
15.84	7.4	(RUNOFF)
17.34	5.7	(RUNOFF)
20.04	4.3	(RUNOFF)
20.60	4.1	(RUNOFF)
23.70	3.2	(RUNOFF)
24.00	3.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.81 WATERSHED INCHES; 212 CFS-HRS; 17.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	869.0	(NULL)
23.99	17.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.35 WATERSHED INCHES; 1259 CFS-HRS; 104.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	1147.4	(NULL)
23.99	25.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.30 WATERSHED INCHES; 1791 CFS-HRS; 148.0 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 8

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.86	476.5	302.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.29 WATERSHED INCHES; 1789 CFS-HRS; 147.8 ACRE-  
FEET.

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 2.04TEST  
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OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	79.8	(RUNOFF)
17.34	2.0	(RUNOFF)
24.01	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.19 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.45	28.4	273.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.12 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.57	27.2	222.79

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.11 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	217.1	(RUNOFF)
19.47	6.2	(RUNOFF)
20.11	6.0	(RUNOFF)
21.98	5.3	(RUNOFF)
24.02	4.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.05 WATERSHED INCHES; 238 CFS-HRS; 19.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 44

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 TR20 ----- SCS  
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05/04/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
2.04TEST  
18:32:27 PASS 5 JOB NO. 1 PAGE  
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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.22 224.0 (NULL)  
20.63 8.5 (NULL)  
24.02 6.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.38 WATERSHED INCHES; 316 CFS-HRS; 26.1 ACRE-  
FEET.

OPERATION REACH XSECTION 45

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.98 474.8 225.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.29 WATERSHED INCHES; 1789 CFS-HRS; 147.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 46

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.64 544.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.88 WATERSHED INCHES; 2104 CFS-HRS; 173.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.64 544.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.88 WATERSHED INCHES; 2104 CFS-HRS; 173.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.31 655.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.93 WATERSHED INCHES; 897 CFS-HRS; 74.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 48

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	89.2	(RUNOFF)
17.34	2.2	(RUNOFF)
24.01	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.52 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	58.1	337.36
24.03	1.2	333.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.52 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	57.3	317.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.52 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	707.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.97 WATERSHED INCHES; 985 CFS-HRS; 81.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	69.7	(RUNOFF)
23.74	1.0	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.04 WATERSHED INCHES; 71 CFS-HRS; 5.9 ACRE-

FEET.

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TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	58.5	322.59
24.03	1.0	320.81

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.45 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 52

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	763.5	278.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.94 WATERSHED INCHES; 1048 CFS-HRS; 86.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 52

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.45	686.4	278.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.94 WATERSHED INCHES; 1048 CFS-HRS; 86.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	369.6	(RUNOFF)
18.87	11.0	(RUNOFF)
20.11	10.3	(RUNOFF)
21.97	9.1	(RUNOFF)
23.11	8.3	(RUNOFF)
24.03	7.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.03 WATERSHED INCHES; 407 CFS-HRS; 33.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 54

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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 2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	904.7	(NULL)
24.01	23.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.20 WATERSHED INCHES; 1454 CFS-HRS; 120.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.21	246.2	274.52

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .54

HRS	4.68 CFS	5.16 CFS	5.64 CFS	6.12 CFS	6.60 CFS	7.08 CFS	7.56 CFS	8.04 CFS	8.52 CFS	9.00 CFS	9.48 CFS	9.96 CFS	10.44 CFS	10.92 CFS
SQ.MI.	.03	.07	.22	.65	1.37	2.39	3.71	5.30	7.16	9.29	12.24	16.99	24.06	36.53
	.00	.03	.08	.26	.72	1.48	2.54	3.89	5.52	7.41	9.60	12.72	17.73	25.21
	.01	.04	.09	.30	.80	1.60	2.70	4.08	5.74	7.66	9.91	13.24	18.51	26.40
	.01	.04	.11	.35	.89	1.72	2.85	4.27	5.97	7.92	10.25	13.78	19.32	27.70
	.01	.05	.12	.40	.97	1.85	3.02	4.47	6.20	8.18	10.60	14.36	20.16	29.13
	.01	.05	.14	.46	1.07	1.97	3.18	4.67	6.43	8.45	10.98	14.97	21.04	30.71
	.02	.06	.16	.52	1.16	2.11	3.35	4.87	6.67	8.72	11.37	15.61	21.98	32.46
	.02	.07	.19	.58	1.27	2.25	3.53	5.09	6.91	9.00	11.79	16.28	22.98	34.39



11.40 CFS	38.91	41.54	44.44	47.68	51.27	55.23	59.87
65.39							
11.88 CFS	72	80	90	103	119	133	148
162							
12.36 CFS	176	189	201	210	218	225	230
235							
12.84 CFS	238	241	243	245	245	246	246
246							
13.32 CFS	246	245	244	244	242	241	240
239							
13.80 CFS	237	236	234	232	231	229	227
225							
14.28 CFS	224	222	220	218	216	215	213
211							
14.76 CFS	209	207	206	204	202	200	198
195							
15.24 CFS	193	191	189	186	184	182	180
177							
15.72 CFS	175	173	171	168	166	164	162
159							
16.20 CFS	157	155	153	151	149	147	145
143							
16.68 CFS	140	138	136	134	132	130	129
127							
17.16 CFS	125	122	119	116	113	111	108
105							
17.64 CFS	103	101	98	95	93	90	88
85							
18.12 CFS	82.92	80.75	78.65	76.64	74.68	72.68	70.75
68.91							
18.60 CFS	67.15	65.48	63.87	62.34	60.88	59.49	58.17
56.90							
19.08 CFS	55.68	54.52	53.41	52.35	51.34	50.38	49.41
48.47							
19.56 CFS	47.57	46.72	45.91	45.13	44.39	43.68	43.00
42.35							
20.04 CFS	41.73	41.14	40.58	40.04	39.53	39.04	38.56
38.10							
20.52 CFS	37.66	37.23	36.82	36.43	36.05	35.69	35.34
35.01							
21.00 CFS	34.69	34.37	34.06	33.77	33.48	33.20	32.93
32.67							

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION

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2.04TEST

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21.48 CFS	32.42	32.18	31.95	31.72	31.49	31.28	31.06
30.86							
21.96 CFS	30.66	30.46	30.27	30.08	29.90	29.72	29.54
29.36							
22.44 CFS	29.19	29.02	28.85	28.69	28.53	28.36	28.20
28.04							
22.92 CFS	27.88	27.72	27.56	27.41	27.26	27.11	26.97
26.82							
23.40 CFS	26.68	26.54	26.40	26.26	26.11	25.97	25.83
25.69							
23.88 CFS	25.56	25.42	25.28	25.16	25.00	24.74	24.36
23.85							

24.36	CFS	23.23	22.52	21.73	20.88	19.98	19.06	18.14
17.22								
24.84	CFS	16.33	15.46	14.63	13.83	13.06	12.33	11.64
10.99								
25.32	CFS	10.37	9.78	9.23	8.71	8.21	7.75	7.31
6.90								
25.80	CFS	6.51	6.15	5.80	5.48	5.17	4.88	4.61
4.36								
26.28	CFS	4.12	3.89	3.68	3.48	3.29	3.12	2.95
2.79								
26.76	CFS	2.65	2.51	2.38	2.25	2.14	2.03	1.93
1.83								
27.24	CFS	1.74	1.65	1.57	1.50	1.43	1.36	1.30
1.24								
27.72	CFS	1.18						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.19 WATERSHED INCHES; 1453 CFS-HRS; 120.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.36	2267.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.65 WATERSHED INCHES; 4602 CFS-HRS; 380.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.13	42.2	(RUNOFF)
17.34	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.31 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.36	2283.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.64 WATERSHED INCHES; 4638 CFS-HRS; 383.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 6

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 05/04/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)							PEAK
12.36	2283.1							(NULL)
HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 50 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55 HRS SQ.MI.								
3.66 CFS .07	.00	.01	.01	.02	.03	.04	.05	
4.14 CFS .24	.09	.10	.12	.14	.16	.19	.21	
4.62 CFS .71	.28	.32	.36	.41	.48	.55	.63	
5.10 CFS 1.74	.80	.91	1.01	1.13	1.26	1.41	1.57	
5.58 CFS 3.32	1.91	2.10	2.28	2.48	2.68	2.89	3.11	
6.06 CFS 5.43	3.55	3.78	4.02	4.28	4.54	4.82	5.11	
6.54 CFS 9.00	5.79	6.18	6.59	7.04	7.51	7.99	8.48	
7.02 CFS 14.10	9.54	10.09	10.66	11.28	11.93	12.63	13.35	
7.50 CFS 21.07	14.89	15.71	16.56	17.42	18.30	19.20	20.13	
7.98 CFS 29.39	22.04	23.04	24.07	25.11	26.18	27.24	28.30	
8.46 CFS 38.80	30.50	31.62	32.73	33.88	35.08	36.32	37.57	
8.94 CFS 50.13	40.01	41.22	42.46	43.80	45.22	46.72	48.35	
9.42 CFS 68.97	52.07	54.14	56.30	58.53	60.89	63.40	66.10	
9.90 CFS 95.71	71.95	75.00	78.12	81.36	84.74	88.29	91.97	
10.38 CFS 134	100	103	107	112	116	121	127	
10.86 CFS 221	141	149	159	169	180	192	205	
11.34 CFS 446	238	256	277	299	324	355	396	
11.82 CFS 2038	506	583	686	832	1049	1359	1718	
12.30 CFS 1462	2233	2283	2214	2071	1905	1743	1596	
12.78 CFS 913	1346	1248	1166	1099	1043	994	951	
13.26 CFS 699	878	847	819	793	768	744	721	
13.74 CFS 546	678	659	641	622	603	583	564	
14.22 CFS 425	529	512	496	480	466	452	438	
14.70 CFS 331	413	400	388	377	366	356	344	
15.18 CFS 250	318	306	294	284	274	265	257	
15.66 CFS 204	243	237	230	224	219	214	209	
16.14 CFS 173	199	195	190	187	183	180	176	

16.62	CFS	170	167	165	162	160	158	156
154								
17.10	CFS	152	150	148	146	144	142	140
138								
17.58	CFS	137	135	133	131	129	128	126
125								
18.06	CFS	123	122	120	119	117	116	114
113								
18.54	CFS	112	111	110	110	109	108	108
107								
19.02	CFS	106	105	105	104	103	103	102
102								
19.50	CFS	102	101	101	100	100	99	99
98								
19.98	CFS	97.60	97.22	96.97	96.75	96.43	96.03	95.58
95.03								
20.46	CFS	94.39	93.76	93.27	92.96	92.69	92.37	92.02
91.69								
20.94	CFS	91.34	90.90	90.39	89.86	89.36	88.90	88.52
88.19								
21.42	CFS	87.92	87.67	87.43	87.11	86.67	86.18	85.73
85.33								
21.90	CFS	84.96	84.66	84.42	84.10	83.67	83.19	82.72
82.28								
22.38	CFS	81.90	81.58	81.31	81.02	80.63	80.15	79.67
79.22								
22.86	CFS	78.76	78.23	77.75	77.41	77.20	77.01	76.72
76.35								
23.34	CFS	75.96	75.56	75.15	74.66	74.11	73.60	73.24
73.02								
23.82	CFS	72.77	72.38	71.93	71.70	71.37	69.85	66.06
60.18								
24.30	CFS	53.44	46.86	40.99	36.15	32.21	28.96	26.22
23.86								
24.78	CFS	21.81	20.00	18.37	16.89	15.55	14.33	13.22
12.22								

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25.26	CFS	11.30	10.47	9.72	9.03	8.40	7.82	7.29
6.80								
25.74	CFS	6.36	5.96	5.59	5.25	4.94	4.66	4.40
4.17								
26.22	CFS	3.95	3.75	3.57	2.94	2.61	2.41	2.30
2.22								
26.70	CFS	2.17	2.12	2.08	2.04	2.01	1.98	1.95
1.92								

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.64 WATERSHED INCHES; 4638 CFS-HRS; 383.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)

12.13	133.5	(RUNOFF)
17.34	3.0	(RUNOFF)
21.45	2.0	(RUNOFF)
24.00	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 117 CFS-HRS; 9.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	2280.7	135.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.64 WATERSHED INCHES; 4637 CFS-HRS; 383.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	2470.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.52 WATERSHED INCHES; 6090 CFS-HRS; 503.3 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	2470.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.45 WATERSHED INCHES; 5993 CFS-HRS; 495.3 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	57.4	(RUNOFF)
15.84	2.2	(RUNOFF)
22.75	1.0	(RUNOFF)

23.07		1.0				(RUNOFF)		
		HYDROGRAPH POINTS FOR				ALTERNATE = 1, STORM =50		
HRS		MAIN	TIME	INCREMENT =	DRAINAGE AREA =			
SQ.MI.		.060 hr,				.02		
9.84	CFS	.48	.52	.55	.59	.64	.69	.73
.78								
10.32	CFS	.82	.87	.92	.98	1.05	1.13	1.24
1.36								
10.80	CFS	1.49	1.63	1.78	1.94	2.10	2.32	2.57
2.86								
11.28	CFS	3.17	3.49	3.85	4.22	4.61	5.46	6.78
7.99								
11.76	CFS	9.25	11.23	14.13	18.31	25.78	37.33	53.02
57.05								
12.24	CFS	46.49	35.12	27.68	22.39	19.04	16.99	14.70
12.41								
12.72	CFS	10.96	10.09	9.43	8.88	8.39	7.89	7.38
6.90								
13.20	CFS	6.51	6.20	5.91	5.62	5.34	5.05	4.78
4.52								
13.68	CFS	4.32	4.17	4.05	3.96	3.89	3.83	3.78
3.71								
14.16	CFS	3.62	3.54	3.46	3.40	3.34	3.28	3.21
3.12								
14.64	CFS	3.03	2.95	2.90	2.84	2.77	2.70	2.63
2.56								
15.12	CFS	2.48	2.40	2.34	2.31	2.30	2.29	2.29
2.29								
15.60	CFS	2.26	2.23	2.19	2.17	2.18	2.17	2.14
2.10								
16.08	CFS	2.07	2.06	2.05	2.04	2.01	1.99	1.97
1.95								
16.56	CFS	1.92	1.90	1.89	1.88	1.86	1.83	1.82
1.81								
17.04	CFS	1.80	1.78	1.74	1.70	1.68	1.69	1.68
1.65								
17.52	CFS	1.61	1.58	1.57	1.56	1.55	1.52	1.49
1.48								
18.00	CFS	1.48	1.46	1.44	1.41	1.40	1.39	1.38
1.35								
18.48	CFS	1.34	1.36	1.38	1.37	1.35	1.34	1.36
1.35								
18.96	CFS	1.33	1.32	1.31	1.31	1.31	1.31	1.31
1.31								
19.44	CFS	1.31	1.31	1.30	1.27	1.26	1.28	1.27
1.25								
19.92	CFS	1.24	1.25	1.27	1.27	1.25	1.24	1.23
1.22								
20.40	CFS	1.20	1.18	1.19	1.21	1.22	1.20	1.18
1.19								
20.88	CFS	1.19	1.17	1.16	1.15	1.15	1.14	1.14
1.14								
21.36	CFS	1.14	1.14	1.14	1.14	1.12	1.10	1.11
1.11								
21.84	CFS	1.09	1.10	1.11	1.10	1.08	1.07	1.06
1.06								
22.32	CFS	1.06	1.06	1.06	1.06	1.05	1.02	1.01
1.03								
22.80	CFS	1.02	1.00	.99	1.00	1.02	1.02	1.00
.98								
23.28	CFS	.98	.98	.98	.97	.94	.93	.95
.96								
23.76	CFS	.96	.94	.91	.91	.97	.94	.62

.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.60 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-
FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 2492.5 (NULL)
12.42

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.44 WATERSHED INCHES; 6047 CFS-HRS; 499.8 ACRE-
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 5

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 63
STARTING TIME = .00 RAIN DEPTH = 8.47 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS
ALTERNATE NO. = 1 STORM NO. =99 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.24 652.9 (RUNOFF)
18.67 16.6 (RUNOFF)
20.13 15.2 (RUNOFF)
20.67 14.5 (RUNOFF)
21.93 13.3 (RUNOFF)
23.12 12.1 (RUNOFF)
24.01 11.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.72 WATERSHED INCHES; 776 CFS-HRS; 64.1 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 13

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.24 652.9 (NULL)
18.67 16.6 (NULL)
20.13 15.2 (NULL)
20.67 14.5 (NULL)
21.93 13.3 (NULL)
23.12 12.1 (NULL)

24.01 11.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.72 WATERSHED INCHES; 776 CFS-HRS; 64.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 2

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.19 97.8 (RUNOFF)
20.09 2.1 (RUNOFF)
24.02 1.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.34 WATERSHED INCHES; 101 CFS-HRS; 8.3 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.24 93.7 432.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.24 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-
FEET.

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.24 746.6 (NULL)
18.65 19.1 (NULL)
20.12 17.4 (NULL)
20.67 16.6 (NULL)
23.12 14.0 (NULL)
23.77 13.3 (NULL)
24.01 13.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.66 WATERSHED INCHES; 874 CFS-HRS; 72.3 ACRE-
FEET.

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.15 259.5 (RUNOFF)
15.84 8.1 (RUNOFF)



17.34	6.2	(RUNOFF)
18.62	5.0	(RUNOFF)
21.45	4.1	(RUNOFF)
21.75	4.0	(RUNOFF)
21.95	4.0	(RUNOFF)
24.00	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.19 WATERSHED INCHES; 247 CFS-HRS; 20.4 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	961.0	(NULL)
18.63	24.2	(NULL)
20.08	22.0	(NULL)
20.63	21.0	(NULL)
21.95	19.3	(NULL)
23.09	17.7	(NULL)
24.00	16.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 1120 CFS-HRS; 92.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	278.1	(RUNOFF)
15.82	9.9	(RUNOFF)
17.31	7.6	(RUNOFF)
18.86	6.1	(RUNOFF)
21.45	5.1	(RUNOFF)
24.02	4.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.40 WATERSHED INCHES; 279 CFS-HRS; 23.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	943.1	321.72
18.69	24.1	318.40
20.15	22.0	318.38
20.70	21.0	318.37
22.01	19.3	318.35

23.15	17.7	318.33
24.07	16.5	318.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 1120 CFS-HRS; 92.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 8

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	1174.5	(NULL)
18.65	30.3	(NULL)
20.12	27.6	(NULL)
20.67	26.4	(NULL)
21.99	24.2	(NULL)
23.12	22.2	(NULL)
24.04	20.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 1399 CFS-HRS; 115.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	223.2	(RUNOFF)
20.87	4.2	(RUNOFF)
24.02	3.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.84 WATERSHED INCHES; 227 CFS-HRS; 18.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	87.2	(RUNOFF)
18.66	2.1	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.86 WATERSHED INCHES; 100 CFS-HRS; 8.3 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 52, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE

STARTS 2.40 FEET BELOW ASSUMED CREST ELEVATION AT 454.30.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.

\*\*\*

OPERATION RESVOR STRUCTURE 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	70.3	456.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.35 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-FEET.

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OPERATION REACH XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	70.0	414.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.34 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	250.4	(NULL)
18.61	7.1	(NULL)
20.86	6.0	(NULL)
23.08	5.1	(NULL)
24.01	4.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 318 CFS-HRS; 26.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	185.0	(RUNOFF)
15.83	6.0	(RUNOFF)
17.33	4.6	(RUNOFF)
20.86	3.2	(RUNOFF)
24.02	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.54 WATERSHED INCHES; 189 CFS-HRS; 15.6 ACRE-FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 51,  
 VALUE EXTRAPOLATED.  
 \*\*\*

OPERATION RESVOR STRUCTURE 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	105.1	399.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.54 WATERSHED INCHES; 189 CFS-HRS; 15.6 ACRE-  
 FEET.

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 2.04TEST  
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OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	335.1	(NULL)
20.62	9.5	(NULL)
21.94	8.7	(NULL)
24.01	7.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.97 WATERSHED INCHES; 507 CFS-HRS; 41.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	316.5	(RUNOFF)
15.84	10.3	(RUNOFF)
17.34	8.0	(RUNOFF)
19.44	6.1	(RUNOFF)
21.95	5.2	(RUNOFF)
24.01	4.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.68 WATERSHED INCHES; 299 CFS-HRS; 24.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	328.0	331.81
20.68	9.5	330.31
24.08	7.4	330.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.97 WATERSHED INCHES; 507 CFS-HRS; 41.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	565.4	(NULL)
18.58	17.7	(NULL)
20.62	15.2	(NULL)
21.94	13.8	(NULL)
23.07	12.7	(NULL)
24.01	11.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.86 WATERSHED INCHES; 805 CFS-HRS; 66.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	1717.2	(NULL)
18.63	48.0	(NULL)
20.10	43.5	(NULL)
20.64	41.6	(NULL)
21.95	38.0	(NULL)
23.10	34.8	(NULL)
24.03	32.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.75 WATERSHED INCHES; 2204 CFS-HRS; 182.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	683.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.30 WATERSHED INCHES; 923 CFS-HRS; 76.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	1564.9	239.60

20.14	43.5	234.62
23.15	34.8	234.55
24.09	32.5	234.53

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.75 WATERSHED INCHES; 2203 CFS-HRS; 182.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	2231.6	(NULL)
20.13	62.4	(NULL)
23.14	49.9	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.61 WATERSHED INCHES; 3127 CFS-HRS; 258.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	2231.6	(NULL)
20.13	62.4	(NULL)
23.14	49.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.61 WATERSHED INCHES; 3127 CFS-HRS; 258.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 22

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	66.5	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 47

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	65.7	415.70
23.14	1.1	410.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	311.9	(RUNOFF)
20.10	6.1	(RUNOFF)
21.97	5.3	(RUNOFF)
24.03	4.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 336 CFS-HRS; 27.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 32

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 TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

05/04/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	284.3	370.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 336 CFS-HRS; 27.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.25	349.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 413 CFS-HRS; 34.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	180.8	(RUNOFF)
21.97	3.0	(RUNOFF)
24.02	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.39 WATERSHED INCHES; 192 CFS-HRS; 15.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	515.5	(NULL)
20.08	11.1	(NULL)
20.61	10.6	(NULL)
24.01	8.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.41 WATERSHED INCHES; 605 CFS-HRS; 50.0 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	429.8	343.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.42 WATERSHED INCHES; 605 CFS-HRS; 50.0 ACRE-  
FEET.

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION  
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2.04TEST  
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OPERATION RUNOFF XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	58.8	(RUNOFF)
17.32	1.2	(RUNOFF)
18.58	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.67 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 27.  
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.6%.  
\*\*\*

OPERATION ADDHYD XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	446.1	(NULL)
23.98	9.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.36 WATERSHED INCHES; 652 CFS-HRS; 53.9 ACRE-  
FEET.



OPERATION RUNOFF XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	261.8	(RUNOFF)
15.45	7.1	(RUNOFF)
15.82	6.8	(RUNOFF)
17.32	5.2	(RUNOFF)
18.82	4.2	(RUNOFF)
22.41	3.2	(RUNOFF)
22.72	3.1	(RUNOFF)
23.02	3.1	(RUNOFF)
23.99	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.96 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-FEET.

\*\*\* WARNING - MAIN TIME INCREMENT ( .060) IS GREATER THAN 50% OF THE  
 TIME OF CONCENTRATION ( .10) FOR SUBWATERSHED XSECTION 29.  
 THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT 1.1%.  
 \*\*\*

OPERATION RESVOR STRUCTURE 64

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 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

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 2.04TEST  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.11	261.8	(NULL)
15.45	7.1	(NULL)
15.82	6.8	(NULL)
17.32	5.2	(NULL)
18.82	4.2	(NULL)
22.41	3.2	(NULL)
22.72	3.1	(NULL)
23.02	3.1	(NULL)
23.99	3.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.96 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-FEET.

OPERATION REACH XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	255.4	357.40
15.88	6.8	356.14
17.38	5.2	356.11
18.88	4.2	356.09
21.98	3.4	356.07
22.78	3.1	356.07

23.09	3.1	356.07
24.05	3.2	356.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.99 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	521.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.66 WATERSHED INCHES; 750 CFS-HRS; 62.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 32

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TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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2.04TEST

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	686.9	(NULL)
18.85	18.6	(NULL)
20.08	17.2	(NULL)
20.87	16.2	(NULL)
21.75	15.1	(NULL)
21.97	15.0	(NULL)
23.08	13.6	(NULL)
24.04	12.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.73 WATERSHED INCHES; 975 CFS-HRS; 80.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	178.4	(RUNOFF)
21.97	3.1	(RUNOFF)
24.03	2.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.43 WATERSHED INCHES; 198 CFS-HRS; 16.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.21	876.5	(NULL)
18.85	22.4	(NULL)
20.09	20.8	(NULL)
20.87	19.6	(NULL)
21.97	18.1	(NULL)
23.09	16.5	(NULL)
24.04	15.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 1173 CFS-HRS; 96.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 35

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	825.2	318.24
20.15	20.7	316.31
20.91	19.6	316.30
22.01	18.1	316.29
23.15	16.5	316.28
24.10	15.5	316.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 1173 CFS-HRS; 96.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 36

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	78.9	(RUNOFF)
18.64	2.0	(RUNOFF)
23.76	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.49 WATERSHED INCHES; 102 CFS-HRS; 8.4 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 33, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .047 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 33, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
-----------------------------------	---------------------	------

12.29	78.4	328.90
23.77	1.4	323.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.47 WATERSHED INCHES; 102 CFS-HRS; 8.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 37

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	903.1	(NULL)
20.15	22.6	(NULL)
20.91	21.3	(NULL)
22.01	19.7	(NULL)
23.15	17.9	(NULL)
24.10	16.8	(NULL)

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 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.66 WATERSHED INCHES; 1275 CFS-HRS; 105.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	303.7	(RUNOFF)
15.45	9.3	(RUNOFF)
15.84	8.9	(RUNOFF)
17.34	6.8	(RUNOFF)
19.74	5.1	(RUNOFF)
20.04	5.1	(RUNOFF)
22.42	4.2	(RUNOFF)
22.74	4.1	(RUNOFF)
23.04	4.1	(RUNOFF)
24.00	4.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 263 CFS-HRS; 21.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	1035.2	(NULL)
23.99	20.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.53 WATERSHED INCHES; 1537 CFS-HRS; 127.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	1443.0	(NULL)
23.99	29.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.47 WATERSHED INCHES; 2188 CFS-HRS; 180.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	777.5	304.64

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TR20 ----- SCS

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 Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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 2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.48 WATERSHED INCHES; 2189 CFS-HRS; 180.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	97.1	(RUNOFF)
15.84	3.1	(RUNOFF)
17.34	2.4	(RUNOFF)
24.02	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.37 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	49.7	274.20

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.25 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.46 47.8 223.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.26 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-
FEET.

OPERATION RUNOFF XSECTION 43

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.21, 18.87, 20.86, 21.97, 23.10, 24.03 and corresponding discharge and peak values.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.01 WATERSHED INCHES; 313 CFS-HRS; 25.9 ACRE-
FEET.

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TR20 ----- SCS
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OPERATION ADDHYD XSECTION 44

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.22, 18.59, 20.63, 23.09, 24.03 and corresponding discharge and peak values, many are NULL.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.38 WATERSHED INCHES; 409 CFS-HRS; 33.8 ACRE-
FEET.

OPERATION REACH XSECTION 45

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.83 and corresponding discharge and peak values.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.47 WATERSHED INCHES; 2188 CFS-HRS; 180.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 46

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.80 and corresponding discharge and peak values.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.02 WATERSHED INCHES; 2596 CFS-HRS; 214.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	833.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.02 WATERSHED INCHES; 2596 CFS-HRS; 214.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	802.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.09 WATERSHED INCHES; 1108 CFS-HRS; 91.6 ACRE-  
 FEET.

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 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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 2.04TEST  
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OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	107.1	(RUNOFF)
15.84	3.3	(RUNOFF)
18.85	2.0	(RUNOFF)
24.01	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.72 WATERSHED INCHES; 107 CFS-HRS; 8.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	59.2	337.87
24.03	1.4	333.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.72 WATERSHED INCHES; 108 CFS-HRS; 8.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	58.6	317.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.71 WATERSHED INCHES; 107 CFS-HRS; 8.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	858.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.14 WATERSHED INCHES; 1216 CFS-HRS; 100.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	84.8	(RUNOFF)
24.02	1.2	(RUNOFF)

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.20 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 43, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE

STARTS 3.45 FEET BELOW ASSUMED CREST ELEVATION AT 320.75.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	71.1	322.85
24.03	1.2	320.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.60 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 52



PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	926.8	279.26
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.10 WATERSHED INCHES;	1294 CFS-HRS;	107.0 ACRE-
FEEET.		

OPERATION REACH XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	800.3	279.01
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.10 WATERSHED INCHES;	1294 CFS-HRS;	107.0 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	494.4	(RUNOFF)
19.46	13.3	(RUNOFF)
20.86	12.1	(RUNOFF)
21.97	11.3	(RUNOFF)
23.10	10.3	(RUNOFF)
24.03	9.8	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.99 WATERSHED INCHES;	536 CFS-HRS;	44.3 ACRE-
FEEET.		

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OPERATION ADDHYD XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	1077.6	(NULL)
24.01	27.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.28 WATERSHED INCHES;	1830 CFS-HRS;	151.2 ACRE-
FEEET.		

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.18	333.5	277.90

		HYDROGRAPH POINTS FOR			ALTERNATE = 1,	STORM =99	
HRS	MAIN	TIME	INCREMENT =	.060	hr,	DRAINAGE	AREA =
SQ.MI.							.54
4.14 CFS	.00	.01	.01	.01	.01	.02	.02
.03							
4.62 CFS	.03	.04	.04	.05	.06	.07	.08
.09							
5.10 CFS	.10	.12	.14	.17	.20	.24	.28
.33							
5.58 CFS	.39	.45	.51	.58	.66	.74	.82
.91							
6.06 CFS	1.01	1.10	1.20	1.31	1.42	1.53	1.65
1.77							
6.54 CFS	1.89	2.02	2.15	2.29	2.44	2.59	2.74
2.90							
7.02 CFS	3.06	3.23	3.40	3.58	3.76	3.95	4.14
4.34							
7.50 CFS	4.55	4.76	4.97	5.19	5.42	5.65	5.88
6.12							
7.98 CFS	6.36	6.61	6.86	7.12	7.38	7.65	7.92
8.20							
8.46 CFS	8.48	8.77	9.06	9.35	9.65	9.95	10.26
10.57							
8.94 CFS	10.89	11.21	11.54	11.88	12.23	12.59	12.97
13.37							
9.42 CFS	13.80	14.24	14.72	15.23	15.76	16.34	16.95
17.59							
9.90 CFS	18.27	18.99	19.75	20.54	21.38	22.25	23.16
24.11							
10.38 CFS	25.09	26.05	27.04	28.07	29.15	30.28	31.47
32.75							
10.86 CFS	34.12	35.61	37.23	38.99	40.92	43.03	45.35
47.91							
11.34 CFS	50.68	53.58	56.78	60.33	64.33	68.94	74.33
80.27							
11.82 CFS	87	96	105	115	128	139	154
170							
12.30 CFS	186	202	214	225	236	246	253
258							
12.78 CFS	262	266	293	312	324	330	333
333							
13.26 CFS	332	328	323	317	309	300	291
282							
13.74 CFS	272	265	264	263	262	261	260
258							
14.22 CFS	257	256	255	254	252	251	249
247							
14.70 CFS	245	243	241	239	237	235	233
231							
15.18 CFS	229	227	225	223	221	219	217
215							
15.66 CFS	213	211	209	207	205	203	201
199							
16.14 CFS	197	194	192	190	187	185	183
181							
16.62 CFS	178	176	174	172	170	167	165
163							
17.10 CFS	161	159	157	154	152	150	148
146							
17.58 CFS	144	142	140	138	136	134	132
130							
18.06 CFS	128	126	124	121	118	115	112
110							
18.54 CFS	107	105	102	100	97	95	92

90								
19.02	CFS	87.23	85.00	82.86	80.82	78.86	76.99	75.21
73.39								

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19.50	CFS	71.64	69.98	68.40	66.88	65.44	64.06	62.74
61.48								
19.98	CFS	60.27	59.12	58.02	56.98	55.98	55.02	54.11
53.23								
20.46	CFS	52.38	51.57	50.78	50.04	49.27	48.53	47.83
47.16								
20.94	CFS	46.52	45.90	45.31	44.73	44.18	43.65	43.15
42.66								
21.42	CFS	42.19	41.75	41.32	40.91	40.51	40.12	39.75
39.39								
21.90	CFS	39.04	38.71	38.39	38.08	37.77	37.47	37.18
36.90								
22.38	CFS	36.62	36.35	36.09	35.84	35.59	35.35	35.11
34.87								
22.86	CFS	34.64	34.40	34.17	33.94	33.73	33.52	33.31
33.11								
23.34	CFS	32.91	32.72	32.52	32.33	32.13	31.94	31.75
31.56								
23.82	CFS	31.38	31.20	31.02	30.84	30.67	30.47	30.17
29.72								
24.30	CFS	29.14	28.45	27.67	26.79	25.85	24.85	23.75
22.64								
24.78	CFS	21.53	20.44	19.37	18.34	17.35	16.40	15.49
14.63								
25.26	CFS	13.81	13.03	12.29	11.60	10.94	10.32	9.73
9.18								
25.74	CFS	8.66	8.17	7.70	7.27	6.86	6.47	6.11
5.77								
26.22	CFS	5.44	5.14	4.85	4.58	4.33	4.09	3.87
3.66								
26.70	CFS	3.46	3.27	3.10	2.93	2.78	2.63	2.49
2.36								
27.18	CFS	2.24	2.13					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.27 WATERSHED INCHES; 1828 CFS-HRS; 151.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	2855.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.79 WATERSHED INCHES; 5722 CFS-HRS; 472.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 56

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	55.0	(RUNOFF)
20.04	1.1	(RUNOFF)
20.60	1.0	(RUNOFF)
20.83	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.31 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	2875.6	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 5768 CFS-HRS; 476.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 6

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	2875.6	(NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99							
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55							
3.24 CFS .09	.00	.01	.02	.03	.04	.05	.07	
3.72 CFS .33	.11	.13	.16	.18	.21	.25	.28	
4.20 CFS 1.05	.38	.45	.52	.61	.71	.81	.93	
4.68 CFS 2.61	1.20	1.36	1.54	1.74	1.94	2.16	2.38	
5.16 CFS 4.80	2.85	3.10	3.36	3.63	3.91	4.20	4.50	
5.64 CFS 8.09	5.13	5.49	5.87	6.28	6.72	7.16	7.61	
6.12 CFS 12.52	8.58	9.10	9.61	10.14	10.69	11.26	11.87	
6.60 CFS 19.05	13.22	13.95	14.73	15.54	16.37	17.23	18.13	
7.08 CFS 27.38	19.97	20.94	21.95	23.01	24.08	25.17	26.26	
7.56 CFS 36.98	28.52	29.68	30.84	32.01	33.20	34.43	35.69	
8.04 CFS	38.32	39.67	41.05	42.45	43.83	45.21	46.63	

48.09								
8.52 CFS	49.53	50.98	52.48	54.05	55.67	57.29	58.89	
60.46								
9.00 CFS	62.04	63.70	65.51	67.45	69.51	71.75	74.22	
76.92								
9.48 CFS	80	83	86	89	93	96	100	
104								
9.96 CFS	108	112	116	121	125	130	135	
140								
10.44 CFS	145	150	155	161	168	175	184	
194								
10.92 CFS	205	217	230	244	260	277	297	
319								
11.40 CFS	342	367	394	426	466	518	584	
662								
11.88 CFS	761	893	1077	1349	1736	2185	2586	
2832								
12.36 CFS	2871	2757	2554	2348	2196	2066	1939	
1813								
12.84 CFS	1689	1571	1461	1358	1260	1169	1090	
1020								
13.32 CFS	967	925	890	860	833	807	782	
759								
13.80 CFS	737	717	699	683	667	653	638	
621								
14.28 CFS	603	584	567	550	533	518	502	
487								
14.76 CFS	472	458	445	432	420	408	396	
384								
15.24 CFS	373	362	350	338	327	317	308	
299								
15.72 CFS	291	283	276	269	263	257	251	
245								
16.20 CFS	240	235	230	226	221	217	212	
208								
16.68 CFS	204	201	198	195	192	189	186	
183								
17.16 CFS	181	178	176	173	171	169	167	
164								
17.64 CFS	162	160	157	155	153	151	149	
148								
18.12 CFS	146	144	142	140	139	137	136	
134								
18.60 CFS	133	132	131	130	130	129	128	
127								
19.08 CFS	126	125	125	124	123	123	122	
122								
19.56 CFS	121	121	120	119	119	118	117	
117								
20.04 CFS	116	116	116	115	115	114	114	
113								
20.52 CFS	112	111	111	111	110	110	110	
109								
21.00 CFS	109	108	107	107	106	106	105	
105								
21.48 CFS	105	104	104	104	103	102	102	
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21.96 CFS	101	101	100	100	99	99	98
98							
22.44 CFS	97.50	97.17	96.83	96.37	95.79	95.20	94.66
94.12							
22.92 CFS	93.49	92.90	92.51	92.27	92.05	91.71	91.26
90.78							
23.40 CFS	90.30	89.82	89.23	88.57	87.95	87.53	87.28
86.98							
23.88 CFS	86.52	85.98	85.67	85.24	83.27	78.70	71.59
63.49							
24.36 CFS	55.61	48.64	42.90	38.26	34.43	31.22	28.46
26.04							
24.84 CFS	23.90	21.96	20.21	18.61	17.14	15.80	14.57
13.46							
25.32 CFS	12.45	11.54	10.70	9.94	9.24	8.60	8.02
7.48							
25.80 CFS	7.00	6.55	6.14	5.77	5.43	5.12	4.84
4.58							
26.28 CFS	4.34	4.13	3.93	3.29	2.92	2.70	2.56
2.46							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.77 WATERSHED INCHES; 5768 CFS-HRS; 476.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 58

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.13	162.6	(RUNOFF)
15.84	4.7	(RUNOFF)
17.34	3.6	(RUNOFF)
23.04	2.2	(RUNOFF)
23.70	2.0	(RUNOFF)
24.00	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.26 WATERSHED INCHES; 144 CFS-HRS; 11.9 ACRE-FEET.

OPERATION REACH XSECTION 59

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.41	2875.1	136.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.77 WATERSHED INCHES; 5768 CFS-HRS; 476.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.41	3086.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.64 WATERSHED INCHES; 7594 CFS-HRS; 627.6 ACRE-FEET.

FEET.

\*\*\* WARNING - XSECTION 61  
 NO HYDROGRAPH IN INPUT LOCATION 7 OR 4 FOR ADDHYD OPERATION.  
 \*\*\*

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OPERATION ADDHYD XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	3086.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.56 WATERSHED INCHES;	7480 CFS-HRS;	618.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	73.7	(RUNOFF)
17.34	2.1	(RUNOFF)
24.01	1.2	(RUNOFF)

		HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99						
		MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .02						
HRS	SQ.MI.							
9.24 CFS	.76	.48	.52	.56	.60	.63	.67	.71
9.72 CFS	1.20	.82	.87	.92	.96	1.02	1.07	1.14
10.20 CFS	1.81	1.27	1.32	1.38	1.45	1.52	1.60	1.69
10.68 CFS	3.47	1.96	2.13	2.32	2.52	2.73	2.95	3.17
11.16 CFS	7.70	3.82	4.22	4.63	5.07	5.55	6.04	6.56
11.64 CFS	48.83	9.48	11.09	12.75	15.35	19.12	24.51	34.21
12.12 CFS	21.31	68.24	73.22	59.48	44.74	35.05	28.28	23.95
12.60 CFS	9.82	18.42	15.52	13.70	12.59	11.77	11.07	10.45
13.08 CFS	6.27	9.18	8.58	8.09	7.70	7.34	6.98	6.63
13.56 CFS	4.74	5.93	5.61	5.35	5.17	5.02	4.90	4.81
14.04 CFS	4.06	4.67	4.59	4.48	4.37	4.27	4.20	4.13
14.52 CFS	3.33	3.96	3.85	3.74	3.65	3.57	3.51	3.42
15.00 CFS		3.24	3.16	3.06	2.96	2.89	2.85	2.83

2.82								
15.48	CFS	2.82	2.82	2.79	2.74	2.69	2.67	2.69
2.68								
15.96	CFS	2.64	2.59	2.55	2.53	2.53	2.51	2.48
2.45								
16.44	CFS	2.43	2.39	2.36	2.34	2.33	2.32	2.29
2.25								
16.92	CFS	2.23	2.23	2.22	2.19	2.14	2.09	2.07
2.08								
17.40	CFS	2.07	2.03	1.98	1.94	1.92	1.92	1.90
1.87								
17.88	CFS	1.83	1.82	1.81	1.80	1.76	1.73	1.71
1.71								
18.36	CFS	1.69	1.66	1.65	1.67	1.69	1.69	1.66
1.65								
18.84	CFS	1.66	1.66	1.63	1.61	1.61	1.60	1.60
1.60								
19.32	CFS	1.60	1.60	1.60	1.60	1.59	1.56	1.55
1.56								
19.80	CFS	1.56	1.53	1.51	1.53	1.56	1.55	1.53
1.51								
20.28	CFS	1.51	1.50	1.47	1.45	1.46	1.48	1.49
1.47								
20.76	CFS	1.44	1.46	1.46	1.44	1.42	1.41	1.40
1.40								
21.24	CFS	1.40	1.40	1.40	1.40	1.40	1.40	1.37
1.34								
21.72	CFS	1.35	1.36	1.34	1.35	1.36	1.34	1.32
1.31								
22.20	CFS	1.30	1.30	1.30	1.30	1.30	1.30	1.29
1.25								
22.68	CFS	1.24	1.26	1.25	1.22	1.21	1.22	1.25
1.24								
23.16	CFS	1.22	1.20	1.20	1.19	1.19	1.18	1.15
1.13								
23.64	CFS	1.16	1.18	1.17	1.14	1.11	1.11	1.19
1.14								

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24.12 CFS .76 .37

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.64 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 63

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET)  
 12.41 3115.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.55 WATERSHED INCHES; 7550 CFS-HRS; 623.9 ACRE-  
 FEET.



EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 6

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 7

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT					.0 hrs.		
RAINTABLE NUMBER 1, ARC 2							
MAIN TIME INCREMENT .060 HOURS							
ALTERNATE		1	STORM	2			
XSECTION	1	RUNOFF	.21	1.22	---	12.26	137 652.4
STRUCTURE	13	RESVOR	.21	1.22	---	12.26	137 652.4
XSECTION	2	RUNOFF	.03	1.03	---	12.20	18 600.0
STRUCTURE	58	RESVOR	.03	1.02	429.15	13.47	2 66.7
XSECTION	3	ADDHYD	.24	1.19	---	12.26	138 575.0
XSECTION	4	RUNOFF	.06	1.47	---	12.16	63 1050.0
XSECTION	6	RUNOFF	.08	1.06	---	12.19	53 662.5
XSECTION	9	RUNOFF	.06	1.27	---	12.19	49 816.7
XSECTION	10	RUNOFF	.03	1.29	---	12.23	19 633.3
STRUCTURE	52	RESVOR	.03	.86	454.47	13.33T	3T 100.0
XSECTION	12	ADDHYD	.09	1.15	---	12.19	49 544.4
XSECTION	13	RUNOFF	.04	1.67	---	12.18	49 1225.0
STRUCTURE	51	RESVOR	.04	1.67	397.47	12.42	22 550.0
XSECTION	15	RUNOFF	.08	1.19	---	12.16	66 825.0
XSECTION	17	ADDHYD	.21	1.27	---	12.21	110 523.8
XSECTION	18	ADDHYD	.59	1.23	---	12.25	334 566.1
XSECTION	19	RUNOFF	.27	1.01	---	12.33	122 451.9
XSECTION	20	REACH	.59	1.23	235.86	12.38	306 518.6
XSECTION	21	ADDHYD	.86	1.16	---	12.36	426 495.3
STRUCTURE	10	RESVOR	.86	1.16	---	12.36	426 495.3
XSECTION	22	RUNOFF	.02	1.60	---	12.22	17 850.0
STRUCTURE	47	RESVOR	.02	1.60	414.10	12.37	12 600.0
XSECTION	23	RUNOFF	.08	1.60	---	12.20	80 1000.0
STRUCTURE	32	RESVOR	.08	1.60	368.24	12.32	61 762.5
XSECTION	25	RUNOFF	.05	1.58	---	12.19	46 920.0

STRUCTURE	34	RESVOR	.15	1.59	337.19	12.68	54	360.0
XSECTION	27	RUNOFF	.01	1.19	---	12.12	13	1300.0
XSECTION	28	ADDHYD	.16	1.56	---	12.67	56	350.0

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SUMMARY TABLE 1

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AMOUNT	ELEVATION	TIME	RATE	RATE
ID	OPERATION	AREA (SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	2					
XSECTION	29	RUNOFF	.05	1.96	---	12.11	81	1620.0
STRUCTURE	64	RESVOR	.05	1.96	---	12.11	81	1620.0
XSECTION	31	RUNOFF	.17	1.75	---	12.33	142	835.3
XSECTION	33	RUNOFF	.05	1.60	---	12.21	46	920.0
XSECTION	36	RUNOFF	.02	1.64	---	12.27	21	1050.0
STRUCTURE	33	RESVOR	.02	1.64	325.68	12.45	15	750.0
XSECTION	38	RUNOFF	.07	1.33	---	12.13	69	985.7
XSECTION	39	ADDHYD	.36	1.67	---	12.32	265	736.1
STRUCTURE	8	RESVOR	.52	1.64	290.93	12.73	196	376.9
XSECTION	41	RUNOFF	.02	1.57	---	12.18	25	1250.0
STRUCTURE	29	RESVOR	.02	1.56	268.66	13.00	4	200.0
XSECTION	43	RUNOFF	.12	.51	---	12.26	26	216.7
XSECTION	44	ADDHYD	.14	.68	---	12.26	28	200.0
XSECTION	46	ADDHYD	.67	1.43	---	12.83	207	309.0
STRUCTURE	7	RESVOR	.67	1.43	---	12.83	207	309.0
XSECTION	47	RUNOFF	.28	1.40	---	12.32	185	660.7
XSECTION	48	RUNOFF	.02	1.78	---	12.17	30	1500.0
STRUCTURE	40	RESVOR	.02	1.78	334.19	12.33	16	800.0
XSECTION	51	RUNOFF	.02	1.47	---	12.19	21	1050.0
STRUCTURE	43	RESVOR	.02	.97	321.02	12.86	4	200.0
XSECTION	52	ADDHYD	.33	1.40	277.07	12.33	198	600.0
XSECTION	53	RUNOFF	.21	.50	---	12.26	44	209.5
XSECTION	54	ADDHYD	.54	1.05	---	12.46	208	385.2
STRUCTURE	5	RESVOR	.54	1.05	260.86	13.07	93	172.2
XSECTION	55	ADDHYD	1.53	1.28	---	12.40	572	373.9
XSECTION	56	RUNOFF	.02	.61	---	12.14	6	300.0
XSECTION	57	ADDHYD	1.55	1.27	---	12.40	575	371.0

STRUCTURE	6	RESVOR	1.55	1.27	---	12.40	575	371.0
XSECTION	58	RUNOFF	.04	1.51	---	12.14	41	1025.0
XSECTION	62	RUNOFF	.02	.73	---	12.18	10	500.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 2								
XSECTION	63	ADDHYD	2.11	1.18	---	12.49	637	301.9
RAINFALL OF		4.10 inches AND	24.00 hr	DURATION,	BEGINS AT	.0 hrs.		
ALTERNATE 1 STORM 5								
XSECTION	1	RUNOFF	.21	1.90	---	12.25	218	1038.1
STRUCTURE	13	RESVOR	.21	1.90	---	12.25	218	1038.1
XSECTION	2	RUNOFF	.03	1.67	---	12.20	30	1000.0
STRUCTURE	58	RESVOR	.03	1.64	430.23	12.68	8	266.7
XSECTION	3	ADDHYD	.24	1.87	---	12.25	220	916.7
XSECTION	4	RUNOFF	.06	2.21	---	12.15	96	1600.0
XSECTION	6	RUNOFF	.08	1.70	---	12.19	88	1100.0
XSECTION	9	RUNOFF	.06	1.98	---	12.19	77	1283.3
XSECTION	10	RUNOFF	.03	1.99	---	12.23	30	1000.0
STRUCTURE	52	RESVOR	.03	1.54	454.90	12.72	9	300.0
XSECTION	12	ADDHYD	.09	1.84	---	12.19	77	855.6
XSECTION	13	RUNOFF	.04	2.45	---	12.18	72	1800.0
STRUCTURE	51	RESVOR	.04	2.45	397.96	12.39	34	850.0
XSECTION	15	RUNOFF	.08	1.87	---	12.16	106	1325.0
XSECTION	17	ADDHYD	.21	1.98	---	12.20	178	847.6
XSECTION	18	ADDHYD	.59	1.92	---	12.24	539	913.6
XSECTION	19	RUNOFF	.27	1.64	---	12.32	208	770.4
XSECTION	20	REACH	.59	1.92	236.60	12.37	487	825.4
XSECTION	21	ADDHYD	.86	1.83	---	12.36	691	803.5
STRUCTURE	10	RESVOR	.86	1.83	---	12.36	691	803.5
XSECTION	22	RUNOFF	.02	2.37	---	12.22	25	1250.0
STRUCTURE	47	RESVOR	.02	2.37	414.35	12.33	21	1050.0
XSECTION	23	RUNOFF	.08	2.37	---	12.20	119	1487.5

STRUCTURE	32	RESVOR	.08	2.37	368.74	12.32	86	1075.0
XSECTION	25	RUNOFF	.05	2.35	---	12.19	68	1360.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AREA (SQ MI)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE	1	STORM	5					
STRUCTURE	34	RESVOR	.15	2.36	338.39	12.46	127	846.7
XSECTION	27	RUNOFF	.01	1.88	---	12.12	20	2000.0
XSECTION	28	ADDHYD	.16	2.33	---	12.46	132	825.0
XSECTION	29	RUNOFF	.05	2.79	---	12.11	113	2260.0
STRUCTURE	64	RESVOR	.05	2.79	---	12.11	113	2260.0
XSECTION	31	RUNOFF	.17	2.55	---	12.32	207	1217.6
XSECTION	33	RUNOFF	.05	2.38	---	12.20	68	1360.0
XSECTION	36	RUNOFF	.02	2.42	---	12.27	30	1500.0
STRUCTURE	33	RESVOR	.02	2.42	327.30	12.44	24	1200.0
XSECTION	38	RUNOFF	.07	2.05	---	12.13	107	1528.6
XSECTION	39	ADDHYD	.36	2.46	---	12.31	390	1083.3
STRUCTURE	8	RESVOR	.52	2.42	293.51	12.75	270	519.2
XSECTION	41	RUNOFF	.02	2.34	---	12.17	37	1850.0
STRUCTURE	29	RESVOR	.02	2.32	270.05	12.93	5	250.0
XSECTION	43	RUNOFF	.12	.96	---	12.23	61	508.3
XSECTION	44	ADDHYD	.14	1.18	---	12.24	63	450.0
XSECTION	46	ADDHYD	.67	2.15	---	12.84	290	432.8
STRUCTURE	7	RESVOR	.67	2.15	---	12.84	290	432.8
XSECTION	47	RUNOFF	.28	2.14	---	12.32	285	1017.9
XSECTION	48	RUNOFF	.02	2.59	---	12.17	44	2200.0
STRUCTURE	40	RESVOR	.02	2.59	335.09	12.35	22	1100.0
XSECTION	51	RUNOFF	.02	2.22	---	12.18	31	1550.0
STRUCTURE	43	RESVOR	.02	1.69	321.43	12.41	15	750.0
XSECTION	52	ADDHYD	.33	2.14	277.35	12.33	315	954.5
XSECTION	53	RUNOFF	.21	.95	---	12.23	103	490.5
XSECTION	54	ADDHYD	.54	1.68	---	12.43	351	650.0
STRUCTURE	5	RESVOR	.54	1.68	263.85	13.08	137	253.7
XSECTION	55	ADDHYD	1.53	1.97	---	12.37	916	598.7
XSECTION	56	RUNOFF	.02	1.11	---	12.14	13	650.0

XSECTION 57 ADDHYD 1.55 1.96 --- 12.37 921 594.2  
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
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 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1		STORM	5				
STRUCTURE 6	RESVOR	1.55	1.96	---	12.37	921	594.2
XSECTION 58	RUNOFF	.04	2.27	---	12.13	61	1525.0
XSECTION 62	RUNOFF	.02	1.27	---	12.17	19	950.0
XSECTION 63	ADDHYD	2.11	1.84	---	12.46	1022	484.4
RAINFALL OF		4.91 inches AND	24.00 hr	DURATION, BEGINS AT		.0 hrs.	
ALTERNATE 1		STORM	10				
XSECTION 1	RUNOFF	.21	2.56	---	12.25	295	1404.8
STRUCTURE 13	RESVOR	.21	2.56	---	12.25	295	1404.8
XSECTION 2	RUNOFF	.03	2.29	---	12.19	42	1400.0
STRUCTURE 58	RESVOR	.03	2.25	430.98	12.52	16	533.3
XSECTION 3	ADDHYD	.24	2.52	---	12.26	303	1262.5
XSECTION 4	RUNOFF	.06	2.91	---	12.15	125	2083.3
XSECTION 6	RUNOFF	.08	2.33	---	12.18	121	1512.5
XSECTION 9	RUNOFF	.06	2.64	---	12.18	103	1716.7
XSECTION 10	RUNOFF	.03	2.67	---	12.23	40	1333.3
STRUCTURE 52	RESVOR	.03	2.20	455.36	12.60	15	500.0
XSECTION 12	ADDHYD	.09	2.51	---	12.19	104	1155.6
XSECTION 13	RUNOFF	.04	3.18	---	12.18	92	2300.0
STRUCTURE 51	RESVOR	.04	3.18	398.37	12.38	46	1150.0
XSECTION 15	RUNOFF	.08	2.53	---	12.16	143	1787.5
XSECTION 17	ADDHYD	.21	2.65	---	12.20	243	1157.1
XSECTION 18	ADDHYD	.59	2.58	---	12.24	733	1242.4
XSECTION 19	RUNOFF	.27	2.26	---	12.32	290	1074.1
XSECTION 20	REACH	.59	2.58	237.23	12.37	658	1115.3
XSECTION 21	ADDHYD	.86	2.48	---	12.35	942	1095.3
STRUCTURE 10	RESVOR	.86	2.48	---	12.35	942	1095.3
XSECTION 22	RUNOFF	.02	3.09	---	12.22	33	1650.0
STRUCTURE 47	RESVOR	.02	3.09	414.77	12.32	27	1350.0

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
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F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)				
ALTERNATE	1	STORM	10				
XSECTION 23	RUNOFF	.08	3.09	---	12.20	154	1925.0
STRUCTURE 32	RESVOR	.08	3.09	369.12	12.30	123	1537.5
XSECTION 25	RUNOFF	.05	3.07	---	12.19	89	1780.0
STRUCTURE 34	RESVOR	.15	3.08	338.90	12.39	185	1233.3
XSECTION 27	RUNOFF	.01	2.54	---	12.12	27	2700.0
XSECTION 28	ADDHYD	.16	3.04	---	12.37	192	1200.0
XSECTION 29	RUNOFF	.05	3.56	---	12.11	142	2840.0
STRUCTURE 64	RESVOR	.05	3.56	---	12.11	142	2840.0
XSECTION 31	RUNOFF	.17	3.28	---	12.32	264	1552.9
XSECTION 33	RUNOFF	.05	3.10	---	12.20	89	1780.0
XSECTION 36	RUNOFF	.02	3.14	---	12.27	39	1950.0
STRUCTURE 33	RESVOR	.02	3.14	327.87	12.39	34	1700.0
XSECTION 38	RUNOFF	.07	2.74	---	12.13	143	2042.9
XSECTION 39	ADDHYD	.36	3.18	---	12.30	512	1422.2
STRUCTURE 8	RESVOR	.52	3.14	296.08	12.74	344	661.5
XSECTION 41	RUNOFF	.02	3.05	---	12.17	48	2400.0
STRUCTURE 29	RESVOR	.02	3.02	271.34	12.89	7	350.0
XSECTION 43	RUNOFF	.12	1.43	---	12.23	96	800.0
XSECTION 44	ADDHYD	.14	1.69	---	12.23	100	714.3
XSECTION 46	ADDHYD	.67	2.82	---	12.83	372	555.2
STRUCTURE 7	RESVOR	.67	2.82	---	12.83	372	555.2
XSECTION 47	RUNOFF	.28	2.83	---	12.32	379	1353.6
XSECTION 48	RUNOFF	.02	3.32	---	12.17	55	2750.0
STRUCTURE 40	RESVOR	.02	3.32	336.30	12.31	36	1800.0
XSECTION 51	RUNOFF	.02	2.92	---	12.18	41	2050.0
STRUCTURE 43	RESVOR	.02	2.37	321.86	12.32	28	1400.0
XSECTION 52	ADDHYD	.33	2.83	277.62	12.33	432	1309.1
XSECTION 53	RUNOFF	.21	1.42	---	12.22	164	781.0
XSECTION 54	ADDHYD	.54	2.29	---	12.41	497	920.4
STRUCTURE 5	RESVOR	.54	2.28	266.78	13.10	168	311.1

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ALTERNATE 1		STORM	10					
XSECTION	55	ADDHYD	1.53	2.63	---	12.37	1233	805.9
XSECTION	56	RUNOFF	.02	1.62	---	12.14	20	1000.0
XSECTION	57	ADDHYD	1.55	2.62	---	12.37	1241	800.6
STRUCTURE	6	RESVOR	1.55	2.62	---	12.37	1241	800.6
XSECTION	58	RUNOFF	.04	2.97	---	12.13	79	1975.0
XSECTION	62	RUNOFF	.02	1.82	---	12.17	28	1400.0
XSECTION	63	ADDHYD	2.11	2.48	---	12.44	1380	654.0
RAINFALL OF		6.14 inches AND	24.00 hr	DURATION,	BEGINS AT	.0 hrs.		
ALTERNATE 1		STORM	25					
XSECTION	1	RUNOFF	.21	3.62	---	12.24	416	1981.0
STRUCTURE	13	RESVOR	.21	3.62	---	12.24	416	1981.0
XSECTION	2	RUNOFF	.03	3.30	---	12.19	61	2033.3
STRUCTURE	58	RESVOR	.03	3.24	431.78	12.33	43	1433.3
XSECTION	3	ADDHYD	.24	3.57	---	12.26	446	1858.3
XSECTION	4	RUNOFF	.06	4.02	---	12.15	172	2866.7
XSECTION	6	RUNOFF	.08	3.35	---	12.18	175	2187.5
XSECTION	9	RUNOFF	.06	3.71	---	12.18	144	2400.0
XSECTION	10	RUNOFF	.03	3.74	---	12.22	56	1866.7
STRUCTURE	52	RESVOR	.03	3.25	455.90	12.44	32	1066.7
XSECTION	12	ADDHYD	.09	3.57	---	12.19	152	1688.9
XSECTION	13	RUNOFF	.04	4.32	---	12.18	125	3125.0
STRUCTURE	51	RESVOR	.04	4.32	398.95	12.37	63	1575.0
XSECTION	15	RUNOFF	.08	3.58	---	12.16	202	2525.0
XSECTION	17	ADDHYD	.21	3.73	---	12.20	349	1661.9
XSECTION	18	ADDHYD	.59	3.64	---	12.24	1050	1779.7
XSECTION	19	RUNOFF	.27	3.26	---	12.31	421	1559.3
XSECTION	20	REACH	.59	3.64	238.12	12.37	949	1608.5
XSECTION	21	ADDHYD	.86	3.52	---	12.35	1358	1579.1

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)				
ALTERNATE	1	STORM	25				
STRUCTURE 10	RESVOR	.86	3.52	---	12.35	1358	1579.1
XSECTION 22	RUNOFF	.02	4.22	---	12.21	44	2200.0
STRUCTURE 47	RESVOR	.02	4.22	415.30	12.30	41	2050.0
XSECTION 23	RUNOFF	.08	4.22	---	12.19	208	2600.0
STRUCTURE 32	RESVOR	.08	4.22	369.53	12.27	179	2237.5
XSECTION 25	RUNOFF	.05	4.19	---	12.19	121	2420.0
STRUCTURE 34	RESVOR	.15	4.22	340.51	12.41	234	1560.0
XSECTION 27	RUNOFF	.01	3.57	---	12.11	37	3700.0
XSECTION 28	ADDHYD	.16	4.17	---	12.39	243	1518.8
XSECTION 29	RUNOFF	.05	4.73	---	12.11	185	3700.0
STRUCTURE 64	RESVOR	.05	4.73	---	12.11	185	3700.0
XSECTION 31	RUNOFF	.17	4.43	---	12.31	354	2082.4
XSECTION 33	RUNOFF	.05	4.22	---	12.20	120	2400.0
XSECTION 36	RUNOFF	.02	4.27	---	12.27	53	2650.0
STRUCTURE 33	RESVOR	.02	4.27	328.46	12.32	53	2650.0
XSECTION 38	RUNOFF	.07	3.82	---	12.13	198	2828.6
XSECTION 39	ADDHYD	.36	4.32	---	12.29	703	1952.8
STRUCTURE 8	RESVOR	.52	4.27	299.84	12.79	426	819.2
XSECTION 41	RUNOFF	.02	4.18	---	12.17	65	3250.0
STRUCTURE 29	RESVOR	.02	4.12	273.38	12.84	10	500.0
XSECTION 43	RUNOFF	.12	2.25	---	12.22	158	1316.7
XSECTION 44	ADDHYD	.14	2.56	---	12.22	163	1164.3
XSECTION 46	ADDHYD	.67	3.90	---	12.82	469	700.0
STRUCTURE 7	RESVOR	.67	3.90	---	12.82	469	700.0
XSECTION 47	RUNOFF	.28	3.92	---	12.31	523	1867.9
XSECTION 48	RUNOFF	.02	4.48	---	12.16	74	3700.0
STRUCTURE 40	RESVOR	.02	4.48	336.83	12.26	55	2750.0
XSECTION 51	RUNOFF	.02	4.03	---	12.18	56	2800.0
STRUCTURE 43	RESVOR	.02	3.46	322.35	12.26	47	2350.0
XSECTION 52	ADDHYD	.33	3.93	278.11	12.32	613	1857.6

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SUMMARY TABLE 1

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 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
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 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL		DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE		
	OPERATION					TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE		1	STORM	25				
XSECTION	53	RUNOFF	.21	2.23	---	12.22	268	1276.2
XSECTION	54	ADDHYD	.54	3.27	---	12.38	734	1359.3
STRUCTURE	5	RESVOR	.54	3.27	270.96	13.14	212	392.6
XSECTION	55	ADDHYD	1.53	3.68	---	12.36	1759	1149.7
XSECTION	56	RUNOFF	.02	2.49	---	12.13	31	1550.0
XSECTION	57	ADDHYD	1.55	3.67	---	12.36	1771	1142.6
STRUCTURE	6	RESVOR	1.55	3.67	---	12.36	1771	1142.6
XSECTION	58	RUNOFF	.04	4.09	---	12.13	108	2700.0
XSECTION	62	RUNOFF	.02	2.73	---	12.17	44	2200.0
XSECTION	63	ADDHYD	2.11	3.50	---	12.43	1950	924.2
RAINFALL OF		7.23 inches AND	24.00 hr	DURATION,	BEGINS AT	.0 hrs.		
ALTERNATE		1	STORM	50				
XSECTION	1	RUNOFF	.21	4.59	---	12.24	526	2504.8
STRUCTURE	13	RESVOR	.21	4.59	---	12.24	526	2504.8
XSECTION	2	RUNOFF	.03	4.24	---	12.19	78	2600.0
STRUCTURE	58	RESVOR	.03	4.15	432.07	12.26	71	2366.7
XSECTION	3	ADDHYD	.24	4.53	---	12.25	596	2483.3
XSECTION	4	RUNOFF	.06	5.03	---	12.15	213	3550.0
XSECTION	6	RUNOFF	.08	4.30	---	12.18	223	2787.5
XSECTION	9	RUNOFF	.06	4.69	---	12.18	181	3016.7
XSECTION	10	RUNOFF	.03	4.72	---	12.22	71	2366.7
STRUCTURE	52	RESVOR	.03	4.21	456.22	12.38	51	1700.0
XSECTION	12	ADDHYD	.09	4.55	---	12.19	196	2177.8
XSECTION	13	RUNOFF	.04	5.35	---	12.17	153	3825.0
STRUCTURE	51	RESVOR	.04	5.35	399.39	12.35	83	2075.0
XSECTION	15	RUNOFF	.08	4.55	---	12.16	255	3187.5
XSECTION	17	ADDHYD	.21	4.71	---	12.20	450	2142.9
XSECTION	18	ADDHYD	.59	4.61	---	12.25	1361	2306.8

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SUMMARY TABLE 1

-----  
 SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL		DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE		
	OPERATION					TIME (HR)	RATE (CFS)	RATE (CSM)
	ALTERNATE	1	STORM	50				
XSECTION	19	RUNOFF	.27	4.19	---	12.31	541	2003.7
XSECTION	20	REACH	.59	4.61	238.86	12.37	1235	2093.2
XSECTION	21	ADDHYD	.86	4.48	---	12.35	1761	2047.7
STRUCTURE	10	RESVOR	.86	4.48	---	12.35	1761	2047.7
XSECTION	22	RUNOFF	.02	5.24	---	12.22	55	2750.0
STRUCTURE	47	RESVOR	.02	5.24	415.55	12.26	55	2750.0
XSECTION	23	RUNOFF	.08	5.24	---	12.19	257	3212.5
STRUCTURE	32	RESVOR	.08	5.24	369.84	12.26	229	2862.5
XSECTION	25	RUNOFF	.05	5.21	---	12.19	149	2980.0
STRUCTURE	34	RESVOR	.15	5.24	342.14	12.41	284	1893.3
XSECTION	27	RUNOFF	.01	4.57	---	12.11	47	4700.0
XSECTION	28	ADDHYD	.16	5.18	---	12.39	295	1843.8
XSECTION	29	RUNOFF	.05	5.78	---	12.11	220	4400.0
STRUCTURE	64	RESVOR	.05	5.78	---	12.11	220	4400.0
XSECTION	31	RUNOFF	.17	5.47	---	12.31	433	2547.1
XSECTION	33	RUNOFF	.05	5.25	---	12.20	148	2960.0
XSECTION	36	RUNOFF	.02	5.30	---	12.26	65	3250.0
STRUCTURE	33	RESVOR	.02	5.31	328.67	12.29	65	3250.0
XSECTION	38	RUNOFF	.07	4.81	---	12.13	247	3528.6
XSECTION	39	ADDHYD	.36	5.35	---	12.27	869	2413.9
STRUCTURE	8	RESVOR	.52	5.29	302.82	12.86	476	915.4
XSECTION	41	RUNOFF	.02	5.19	---	12.17	80	4000.0
STRUCTURE	29	RESVOR	.02	5.12	273.78	12.45	28	1400.0
XSECTION	43	RUNOFF	.12	3.05	---	12.22	217	1808.3
XSECTION	44	ADDHYD	.14	3.38	---	12.22	224	1600.0
XSECTION	46	ADDHYD	.67	4.88	---	12.64	544	811.9
STRUCTURE	7	RESVOR	.67	4.88	---	12.64	544	811.9
XSECTION	47	RUNOFF	.28	4.93	---	12.31	655	2339.3
XSECTION	48	RUNOFF	.02	5.52	---	12.16	89	4450.0
STRUCTURE	40	RESVOR	.02	5.52	337.36	12.29	58	2900.0

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SUMMARY TABLE 1

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 SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL		DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE		
	ID	OPERATION				TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE		1	STORM	50	-----			
XSECTION	51	RUNOFF	.02	5.04	---	12.18	70	3500.0
STRUCTURE	43	RESVOR	.02	4.45	322.59	12.26	59	2950.0
XSECTION	52	ADDHYD	.33	4.94	278.85	12.31	764	2315.2
XSECTION	53	RUNOFF	.21	3.03	---	12.21	370	1761.9
XSECTION	54	ADDHYD	.54	4.20	---	12.38	905	1675.9
STRUCTURE	5	RESVOR	.54	4.19	274.52	13.21	246	455.6
XSECTION	55	ADDHYD	1.53	4.65	---	12.36	2268	1482.4
XSECTION	56	RUNOFF	.02	3.31	---	12.13	42	2100.0
XSECTION	57	ADDHYD	1.55	4.64	---	12.36	2283	1472.9
STRUCTURE	6	RESVOR	1.55	4.64	---	12.36	2283	1472.9
XSECTION	58	RUNOFF	.04	5.09	---	12.13	134	3350.0
XSECTION	62	RUNOFF	.02	3.60	---	12.17	57	2850.0
XSECTION	63	ADDHYD	2.11	4.44	---	12.42	2492	1181.0

RAINFALL OF 8.47 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE		1	STORM	99	-----			
XSECTION	1	RUNOFF	.21	5.72	---	12.24	653	3109.5
STRUCTURE	13	RESVOR	.21	5.72	---	12.24	653	3109.5
XSECTION	2	RUNOFF	.03	5.34	---	12.19	98	3266.7
STRUCTURE	58	RESVOR	.03	5.24	432.27	12.24	94	3133.3
XSECTION	3	ADDHYD	.24	5.66	---	12.24	747	3112.5
XSECTION	4	RUNOFF	.06	6.19	---	12.15	259	4316.7
XSECTION	6	RUNOFF	.08	5.40	---	12.18	278	3475.0
XSECTION	9	RUNOFF	.06	5.84	---	12.18	223	3716.7
XSECTION	10	RUNOFF	.03	5.86	---	12.22	87	2900.0
STRUCTURE	52	RESVOR	.03	5.35	456.47	12.34	70	2333.3
XSECTION	12	ADDHYD	.09	5.69	---	12.20	250	2777.8
XSECTION	13	RUNOFF	.04	6.54	---	12.17	185	4625.0
STRUCTURE	51	RESVOR	.04	6.54	399.85	12.34	105	2625.0

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SUMMARY TABLE 1

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL		DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE		
	ID	OPERATION				TIME (HR)	RATE (CFS)	RATE (CSM)
	ALTERNATE	1	STORM	99				
XSECTION	15	RUNOFF	.08	5.68	---	12.16	317	3962.5
XSECTION	17	ADDHYD	.21	5.86	---	12.20	565	2690.5
XSECTION	18	ADDHYD	.59	5.75	---	12.24	1717	2910.2
XSECTION	19	RUNOFF	.27	5.30	---	12.31	684	2533.3
XSECTION	20	REACH	.59	5.75	239.60	12.36	1565	2652.5
XSECTION	21	ADDHYD	.86	5.61	---	12.35	2232	2595.3
STRUCTURE	10	RESVOR	.86	5.61	---	12.35	2232	2595.3
XSECTION	22	RUNOFF	.02	6.42	---	12.22	67	3350.0
STRUCTURE	47	RESVOR	.02	6.42	415.70	12.24	66	3300.0
XSECTION	23	RUNOFF	.08	6.42	---	12.19	312	3900.0
STRUCTURE	32	RESVOR	.08	6.42	370.13	12.26	284	3550.0
XSECTION	25	RUNOFF	.05	6.39	---	12.19	181	3620.0
STRUCTURE	34	RESVOR	.15	6.42	343.30	12.36	430	2866.7
XSECTION	27	RUNOFF	.01	5.67	---	12.11	59	5900.0
XSECTION	28	ADDHYD	.16	6.36	---	12.35	446	2787.5
XSECTION	29	RUNOFF	.05	6.96	---	12.11	262	5240.0
STRUCTURE	64	RESVOR	.05	6.96	---	12.11	262	5240.0
XSECTION	31	RUNOFF	.17	6.66	---	12.31	522	3070.6
XSECTION	33	RUNOFF	.05	6.43	---	12.20	178	3560.0
XSECTION	36	RUNOFF	.02	6.49	---	12.26	79	3950.0
STRUCTURE	33	RESVOR	.02	6.47	328.90	12.29	78	3900.0
XSECTION	38	RUNOFF	.07	5.96	---	12.13	304	4342.9
XSECTION	39	ADDHYD	.36	6.53	---	12.28	1035	2875.0
STRUCTURE	8	RESVOR	.52	6.48	304.64	12.69	778	1496.2
XSECTION	41	RUNOFF	.02	6.37	---	12.17	97	4850.0
STRUCTURE	29	RESVOR	.02	6.25	274.20	12.36	50	2500.0
XSECTION	43	RUNOFF	.12	4.01	---	12.21	289	2408.3
XSECTION	44	ADDHYD	.14	4.38	---	12.22	297	2121.4
XSECTION	46	ADDHYD	.67	6.02	---	12.80	833	1243.3
STRUCTURE	7	RESVOR	.67	6.02	---	12.80	833	1243.3

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)					
ALTERNATE	1	STORM	99					
XSECTION	47	RUNOFF	.28	6.09	---	12.31	803	2867.9
XSECTION	48	RUNOFF	.02	6.72	---	12.16	107	5350.0
STRUCTURE	40	RESVOR	.02	6.72	337.87	12.32	59	2950.0
XSECTION	51	RUNOFF	.02	6.20	---	12.18	85	4250.0
STRUCTURE	43	RESVOR	.02	5.60	322.85	12.26	71	3550.0
XSECTION	52	ADDHYD	.33	6.10	279.26	12.31	927	2809.1
XSECTION	53	RUNOFF	.21	3.99	---	12.21	494	2352.4
XSECTION	54	ADDHYD	.54	5.28	---	12.36	1078	1996.3
STRUCTURE	5	RESVOR	.54	5.27	277.90	13.18	334	618.5
XSECTION	55	ADDHYD	1.53	5.79	---	12.35	2855	1866.0
XSECTION	56	RUNOFF	.02	4.31	---	12.13	55	2750.0
XSECTION	57	ADDHYD	1.55	5.77	---	12.35	2876	1855.5
STRUCTURE	6	RESVOR	1.55	5.77	---	12.35	2876	1855.5
XSECTION	58	RUNOFF	.04	6.26	---	12.13	163	4075.0
XSECTION	62	RUNOFF	.02	4.64	---	12.17	74	3700.0
XSECTION	63	ADDHYD	2.11	5.55	---	12.41	3116	1476.8

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC REACH	FLOOD PLAIN	HYDROGRAPH INFORMATION		ROUTING PARAMETERS		
		INFLOW	OUTFLOW	Q-A EQ.	PEAK RATIO	ATT- KIN
					LENGTH	

ID	LENGTH	LENGTH	PEAK	TIME	PEAK	TIME	COEFF	POWER	FACTOR	Q/I
COEFF	(FT)	(FT)	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)	(Q*) (C)

BASEFLOW IS .0 CFS

ALTERNATE	1	STORM	2						
7	2055	186	12.2	184	12.3	1.65	1.52	.011	.988
.80?									
11	1397	3	13.3	3	13.5	2.53	1.54	.004	.990
.47									
16	2449	64	12.2	59	12.3	2.42	1.40	.021	.928
.55									
20	4470	333	12.2	305	12.4	1.73	1.47	.031	.916
.50									
30	1561	80	12.1	74	12.2	1.16	1.56	.030	.920
.73?									
35	2077	236	12.2	221	12.4	1.15	1.41	.029	.936
.57									
42	2112	4	13.0	4	13.1	3.54	1.39	.006	.996
.40									
45	3148	195	12.7	194	12.8	3.25	1.32	.012	.993
.56									
49	1829	16	12.4	15	12.5	1.44	1.42	.038	.937
.40									
52	4744	197	12.4	178	12.5	1.16	1.52	.045	.903
.38									
59	1671	573	12.4	571	12.5	3.31	1.24	.010	.997
.83?									

ALTERNATE	1	STORM	5						
7	2055	295	12.2	291	12.3	1.75	1.50	.010	.984
.86?									
11	1397	9	12.7	9	12.8	2.53	1.54	.005	.990
.64									
16	2449	102	12.2	96	12.3	2.47	1.39	.019	.940
.60									
20	4470	539	12.2	486	12.4	2.57	1.33	.043	.902
.47									
30	1561	113	12.1	106	12.2	1.20	1.54	.025	.940
.77?									
35	2077	342	12.2	324	12.3	1.19	1.40	.026	.946
.61									
42	2112	5	12.9	5	13.1	3.54	1.39	.005	.997
.44									
45	3148	270	12.7	268	12.9	4.08	1.21	.017	.992
.52									
49	1829	22	12.4	21	12.5	1.46	1.41	.030	.948
.42									
52	4744	313	12.4	288	12.5	1.23	1.50	.040	.919
.42									
59	1671	920	12.4	914	12.4	3.16	1.25	.009	.994
.88?									

ALTERNATE	1	STORM	10						
7	2055	398	12.2	395	12.3	1.91	1.47	.010	.993

.89?  
 11 1397 15 12.6 15 12.7 2.53 1.54 .005 .993  
 .72?

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

		HYDROGRAPH INFORMATION				ROUTING PARAMETERS					
XSEC ID	REACH LENGTH COEFF	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT- KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
	ALTERNATE	1	STORM	10							
16	2449		137	12.2	130	12.3	2.50	1.38	.017	.952	
.63											
20	4470		733	12.2	658	12.4	3.29	1.25	.052	.898	
.46											
30	1561		141	12.1	135	12.2	1.23	1.53	.022	.952	
.81?											
35	2077		436	12.2	418	12.3	1.22	1.39	.024	.959	
.63											
42	2112		7	12.9	7	13.0	3.54	1.39	.005	.998	
.47											
45	3148		344	12.7	340	12.9	4.92	1.14	.022	.990	
.48											
49	1829		35	12.3	31	12.4	1.49	1.40	.036	.869	
.46											
52	4744		429	12.3	396	12.5	1.29	1.48	.038	.922	
.45											
59	1671		1240	12.4	1236	12.4	3.23	1.24	.008	.996	
.91?											
	ALTERNATE	1	STORM	25							
7	2055		571	12.2	569	12.3	2.56	1.36	.013	.996	
.87?											
11	1397		32	12.4	32	12.5	2.55	1.53	.007	.991	
.84?											
16	2449		199	12.2	192	12.3	2.54	1.37	.016	.967	
.67?											
20	4470		1050	12.2	948	12.4	3.75	1.22	.055	.902	
.46											
30	1561		184	12.1	177	12.2	1.26	1.52	.020	.963	

.84?									
35	2077	583	12.2	564	12.3	1.26	1.38	.021	.968
.67?									
42	2112	10	12.8	10	13.0	3.54	1.39	.004	.997
.51									
45	3148	426	12.8	424	12.9	5.00	1.13	.020	.995
.49									
49	1829	54	12.2	48	12.4	1.51	1.38	.038	.886
.50									
52	4744	612	12.3	567	12.4	1.39	1.45	.037	.928
.47									
59	1671	1771	12.4	1768	12.4	3.34	1.24	.008	.998
.94?									

ALTERNATE 1 STORM 50

7	2055	752	12.2	749	12.3	3.07	1.31	.016	.996
.87?									
11	1397	50	12.4	50	12.4	2.60	1.51	.007	.988
.90?									
16	2449	256	12.2	251	12.3	2.57	1.37	.016	.978
.70?									

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;  
 LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION				ROUTING PARAMETERS							
XSEC ID	REACH LENGTH COEFF	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT- KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
	ALTERNATE	1	STORM	50							
20	4470		1360	12.2	1234	12.4	3.92	1.20	.055	.908	
.47											
30	1561		219	12.1	213	12.2	1.29	1.51	.018	.971	
.87?											
35	2077		713	12.2	693	12.3	1.32	1.37	.021	.972	
.68?											
42	2112		28	12.5	27	12.5	3.56	1.38	.009	.956	
.61											
45	3148		476	12.8	475	13.0	5.05	1.13	.017	.996	
.49											



49	1829	58	12.3	57	12.5	1.51	1.38	.031	.979
.51									
52	4744	763	12.3	683	12.5	1.85	1.33	.059	.895
.39									
59	1671	2283	12.4	2281	12.4	3.30	1.24	.008	.999
.96?									
ALTERNATE	1	STORM	99						
7	2055	946	12.2	936	12.3	3.39	1.28	.017	.989
.88?									
11	1397	70	12.4	70	12.4	2.65	1.49	.008	.999
.95?									
16	2449	335	12.2	327	12.3	2.62	1.36	.015	.977
.73?									
20	4470	1717	12.2	1565	12.4	3.99	1.20	.054	.911
.48									
30	1561	261	12.1	255	12.2	1.32	1.50	.016	.978
.89?									
35	2077	859	12.2	823	12.3	1.76	1.29	.027	.958
.63									
42	2112	50	12.4	48	12.5	3.60	1.36	.013	.958
.67?									
45	3148	774	12.7	743	12.8	6.39	1.05	.032	.960
.45									
49	1829	59	12.3	59	12.5	1.52	1.38	.024	.990
.51									
52	4744	927	12.3	800	12.5	2.57	1.21	.089	.863
.32									
59	1671	2871	12.4	2871	12.4	3.15	1.25	.007	1.000
.99?									

1

TR20 ----- SCS

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION

05/04/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG

2.04TEST

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
STRUCTURE 64	.05					
ALTERNATE 1 220		81	113	142	185	
STRUCTURE 58	.03					
ALTERNATE 1 71		2	8	16	43	

STRUCTURE	52		.03				
-----							
ALTERNATE	1			3	9	15	32
51							
STRUCTURE	51		.04				
-----							
ALTERNATE	1			22	34	46	63
83							
STRUCTURE	47		.02				
-----							
ALTERNATE	1			12	21	27	41
55							
STRUCTURE	43		.02				
-----							
ALTERNATE	1			4	15	28	47
59							
STRUCTURE	40		.02				
-----							
ALTERNATE	1			16	22	36	55
58							
STRUCTURE	34		.15				
-----							
ALTERNATE	1			54	127	185	234
284							
STRUCTURE	33		.02				
-----							
ALTERNATE	1			15	24	34	53
65							
STRUCTURE	32		.08				
-----							
ALTERNATE	1			61	86	123	179
229							
STRUCTURE	29		.02				
-----							
ALTERNATE	1			4	5	7	10
28							
STRUCTURE	13		.21				
-----							
ALTERNATE	1			137	218	295	416
526							
STRUCTURE	10		.86				
-----							
ALTERNATE	1			426	691	942	1358
1761							
STRUCTURE	8		.52				
-----							

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TR20 ----- SCS

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION

05/04/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
STRUCTURE 8	.52					
----- ALTERNATE 476	1	196	270	344	426	
STRUCTURE 7	.67					
----- ALTERNATE 544	1	207	290	372	469	
STRUCTURE 6	1.55					
----- ALTERNATE 2283	1	575	921	1241	1771	
STRUCTURE 5	.54					
----- ALTERNATE 246	1	93	137	168	212	
XSECTION 1	.21					
----- ALTERNATE 526	1	137	218	295	416	
XSECTION 2	.03					
----- ALTERNATE 78	1	18	30	42	61	
XSECTION 3	.24					
----- ALTERNATE 596	1	138	220	303	446	
XSECTION 4	.06					
----- ALTERNATE 213	1	63	96	125	172	
XSECTION 6	.08					
----- ALTERNATE 223	1	53	88	121	175	
XSECTION 9	.06					
----- ALTERNATE 181	1	49	77	103	144	

XSECTION 10 .03

-----  
 ALTERNATE 1 19 30 40 56  
 71

XSECTION 12 .09

-----  
 ALTERNATE 1 49 77 104 152  
 196

XSECTION 13 .04

-----  
 ALTERNATE 1 49 72 92 125  
 153

XSECTION 15 .08

-----  
 ALTERNATE 1 66 106 143 202  
 255

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 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

05/04/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
XSECTION 17 .21						
----- ALTERNATE 1 450	1	110	178	243	349	
XSECTION 18 .59						
----- ALTERNATE 1 1361	1	334	539	733	1050	
XSECTION 19 .27						
----- ALTERNATE 1 541	1	122	208	290	421	
XSECTION 20 .59						
----- ALTERNATE 1 1235	1	306	487	658	949	
XSECTION 21 .86						
----- ALTERNATE 1	1	426	691	942	1358	

1761

XSECTION 22 .02

-----  
 ALTERNATE 1 17 25 33 44  
 55

XSECTION 23 .08

-----  
 ALTERNATE 1 80 119 154 208  
 257

XSECTION 25 .05

-----  
 ALTERNATE 1 46 68 89 121  
 149

XSECTION 27 .01

-----  
 ALTERNATE 1 13 20 27 37  
 47

XSECTION 28 .16

-----  
 ALTERNATE 1 56 132 192 243  
 295

XSECTION 29 .05

-----  
 ALTERNATE 1 81 113 142 185  
 220

XSECTION 31 .17

-----  
 ALTERNATE 1 142 207 264 354  
 433

XSECTION 33 .05

-----  
 ALTERNATE 1 46 68 89 120  
 148

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TR20 ----- SCS

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 Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION

05/04/\*\* 27 Subareas MGMT-sTD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
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SUMMARY TABLE 3

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 STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50

XSECTION 36 .02

ALTERNATE 65	1		21	30	39	53
XSECTION	38	.07				
ALTERNATE 247	1		69	107	143	198
XSECTION	39	.36				
ALTERNATE 869	1		265	390	512	703
XSECTION	41	.02				
ALTERNATE 80	1		25	37	48	65
XSECTION	43	.12				
ALTERNATE 217	1		26	61	96	158
XSECTION	44	.14				
ALTERNATE 224	1		28	63	100	163
XSECTION	46	.67				
ALTERNATE 544	1		207	290	372	469
XSECTION	47	.28				
ALTERNATE 655	1		185	285	379	523
XSECTION	48	.02				
ALTERNATE 89	1		30	44	55	74
XSECTION	51	.02				
ALTERNATE 70	1		21	31	41	56
XSECTION	52	.33				
ALTERNATE 764	1		198	315	432	613
XSECTION	53	.21				
ALTERNATE 370	1		44	103	164	268
XSECTION	54	.54				
ALTERNATE 905	1		208	351	497	734

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TR20 ----- SCS

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION

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2.04TEST  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
XSECTION 55	1.53					
----- ALTERNATE 2268	1	572	916	1233	1759	
XSECTION 56	.02					
----- ALTERNATE 42	1	6	13	20	31	
XSECTION 57	1.55					
----- ALTERNATE 2283	1	575	921	1241	1771	
XSECTION 58	.04					
----- ALTERNATE 134	1	41	61	79	108	
XSECTION 62	.02					
----- ALTERNATE 57	1	10	19	28	44	
XSECTION 63	2.11					
----- ALTERNATE 2492	1	637	1022	1380	1950	

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		99				
STRUCTURE 64	.05					
----- ALTERNATE	1	262				
STRUCTURE 58	.03					

ALTERNATE	1	94
STRUCTURE	52	.03
ALTERNATE	1	70
STRUCTURE	51	.04
ALTERNATE	1	105
STRUCTURE	47	.02
ALTERNATE	1	66
STRUCTURE	43	.02
ALTERNATE	1	71
STRUCTURE	40	.02
ALTERNATE	1	59

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 TR20 ----- SCS  
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 Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
STRUCTURE 34	.15	
ALTERNATE 1		430
STRUCTURE 33	.02	
ALTERNATE 1		78
STRUCTURE 32	.08	
ALTERNATE 1		284
STRUCTURE 29	.02	
ALTERNATE 1		50
STRUCTURE 13	.21	
ALTERNATE 1		653
STRUCTURE 10	.86	



ALTERNATE	1		2232
STRUCTURE	8	.52	
ALTERNATE	1		778
STRUCTURE	7	.67	
ALTERNATE	1		833
STRUCTURE	6	1.55	
ALTERNATE	1		2876
STRUCTURE	5	.54	
ALTERNATE	1		334
XSECTION	1	.21	
ALTERNATE	1		653
XSECTION	2	.03	
ALTERNATE	1		98
XSECTION	3	.24	
ALTERNATE	1		747

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 05/04/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
XSECTION 4	.06	
ALTERNATE 1		259
XSECTION 6	.08	
ALTERNATE 1		278
XSECTION 9	.06	
ALTERNATE 1		223
XSECTION 10	.03	

ALTERNATE	1		87
XSECTION	12	.09	
ALTERNATE	1		250
XSECTION	13	.04	
ALTERNATE	1		185
XSECTION	15	.08	
ALTERNATE	1		317
XSECTION	17	.21	
ALTERNATE	1		565
XSECTION	18	.59	
ALTERNATE	1		1717
XSECTION	19	.27	
ALTERNATE	1		684
XSECTION	20	.59	
ALTERNATE	1		1565
XSECTION	21	.86	
ALTERNATE	1		2232
XSECTION	22	.02	
ALTERNATE	1		67

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 TR20 ----- SCS  
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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 05/04/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
XSECTION	23	.08
ALTERNATE	1	312
XSECTION	25	.05

ALTERNATE	1		181
XSECTION	27	.01	
ALTERNATE	1		59
XSECTION	28	.16	
ALTERNATE	1		446
XSECTION	29	.05	
ALTERNATE	1		262
XSECTION	31	.17	
ALTERNATE	1		522
XSECTION	33	.05	
ALTERNATE	1		178
XSECTION	36	.02	
ALTERNATE	1		79
XSECTION	38	.07	
ALTERNATE	1		304
XSECTION	39	.36	
ALTERNATE	1		1035
XSECTION	41	.02	
ALTERNATE	1		97
XSECTION	43	.12	
ALTERNATE	1		289
XSECTION	44	.14	
ALTERNATE	1		297

1 TR20 ----- SCS

Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
 VERSION  
 05/04/\*\* 27 Subareas MGMT-STD NOAA\_C 2,5,10,25,50,100WITHMGMT;GHCHUG  
 2.04TEST  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/  
 STRUCTURE DRAINAGE  
 AREA STORM NUMBERS.....

ID	(SQ MI)	99
XSECTION 46	.67	
-----		
ALTERNATE 1		833
XSECTION 47	.28	
-----		
ALTERNATE 1		803
XSECTION 48	.02	
-----		
ALTERNATE 1		107
XSECTION 51	.02	
-----		
ALTERNATE 1		85
XSECTION 52	.33	
-----		
ALTERNATE 1		927
XSECTION 53	.21	
-----		
ALTERNATE 1		494
XSECTION 54	.54	
-----		
ALTERNATE 1		1078
XSECTION 55	1.53	
-----		
ALTERNATE 1		2855
XSECTION 56	.02	
-----		
ALTERNATE 1		55
XSECTION 57	1.55	
-----		
ALTERNATE 1		2876
XSECTION 58	.04	
-----		
ALTERNATE 1		163
XSECTION 62	.02	
-----		
ALTERNATE 1		74
XSECTION 63	2.11	
-----		
ALTERNATE 1		3116

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TR20 ----- SCS

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Ellicott City Flood Study-Tiber/South Sub-Drainage Areas  
VERSION

05/04/\*\* 27 Subareas MGMT-sTD NOAA\_C 2, 5, 10, 25, 50, 100WITHMGMT;GHCHUG  
2.04TEST

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST  
FILES

INPUT = nc3t1.dat , GIVEN DATA FILE  
OUTPUT = nc3t1.OUT , DATED  
05/04/\*\*,18:32:27

FILES GENERATED - DATED 05/04/\*\*,18:32:27

NONE!

TOTAL NUMBER OF WARNINGS = 32, MESSAGES = 12

\*\*\* TR-20 RUN COMPLETED \*\*\*

1

\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20  
 HYDROLOGY\*\*\*\*\*

JOB TR-20		NOPLOTS		
TITLE	Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,			
TITLE	CN MGMT- EXISTING COND.- 2,10,50,100 yr NOAA Dis			
2 XSECTN	002	1.0	389.50	
8		389.00	0.00	0.00
8		389.25	1.65	1.06
8		389.50	6.25	2.75
8		389.75	14.40	5.06
8		390.00	26.75	8.00
8		390.25	45.54	14.33
8		390.50	68.67	15.00
8		390.75	96.11	18.88
8		391.00	127.89	23.00
8		391.25	164.08	27.38
8		391.50	204.77	32.00
8		391.75	250.06	36.88
9	ENDTBL			
2 XSECTN	005	1.0	367.00	
8		366.00	0.00	0.00
8		366.50	3.51	1.5
8		367.00	13.55	4.00
8		367.50	30.53	9.00
8		367.75	47.87	13.00
8		368.00	72.23	18.00
8		368.25	104.79	23.98
8		368.50	146.13	30.94
8		368.75	197.14	38.86
8		369.00	258.63	47.75
8		369.25	331.41	57.61
8		369.50	416.25	68.44
9	ENDTBL			
3	STRUCT	11		
8		380.00	0.00	0.00
8		381.00	2.70	0.53
8		382.20	53.00	1.16
8		383.80	186.80	1.40
9	ENDTBL			
2 XSECTN	008	1.0	330.00	
8		356.00	0.00	0.00
8		356.50	20.21	6.94
8		357.00	68.51	15.75
8		357.50	144.11	26.44
8		358.00	248.93	39.00
8		358.50	389.07	53.25
8		359.00	561.31	69.00
8		359.50	767.14	86.25
8		360.00	1008.16	105.00
8		361.00	1375.68	147.50
8		361.50	1604.19	171.38
9	ENDTBL			

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

2	XSECTN	016	1.0	333.08		
8			331.08	0.00	0.00	
8			332.08	80.21	8.00	
8			333.08	225.50	16.00	
8			333.58	310.09	20.00	
8			334.08	399.94	24.00	
8			334.58	493.86	28.00	
8			335.08	590.97	32.00	
8			335.58	690.67	36.00	
8			336.08	792.47	40.00	
8			336.58	896.02	44.00	
9	ENDTBL					
2	XSECTN	023	1.0	314.40		
8			313.22	0.00	0.00	
8			313.51	1.10	0.89	
8			313.81	3.51	1.84	
8			314.10	16.22	5.61	
8			314.40	34.66	9.74	
8			314.68	48.28	24.71	
8			314.96	79.66	42.09	
8			315.24	126.64	61.87	
8			315.52	189.07	84.06	
8			315.80	267.27	108.64	
8			316.08	361.75	135.63	
8			316.36	473.14	165.02	
8			316.64	602.11	196.81	
8			316.92	749.37	231.00	
8			317.20	878.70	277.25	
8			317.48	1103.89	329.14	
8			317.76	1358.10	382.70	
8			318.04	1640.58	437.94	
8			318.32	1950.87	494.86	
8			318.60	2288.69	553.45	
9	ENDTBL					
3	STRUCT	21				
8			364.00	0.00	0.00	
8			366.00	0.30	0.55	
8			368.00	0.50	1.31	
8			369.00	3.20	1.80	
8			370.00	5.20	2.29	
8			372.00	7.80	3.48	
8			374.00	9.60	5.00	
8			375.00	10.40	5.86	
8			376.00	45.30	6.79	
8			376.50	74.10	7.31	
8			377.00	106.80	7.83	
8			378.00	149.80	8.90	
8			379.00	155.60	10.06	
8			380.00	162.00	11.29	
9	ENDTBL					

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

3	STRUCT	22				
8			352.50	0.00	0.00	
8			358.65	100.00	0.91	
8			361.76	140.00	3.28	
8			363.64	160.00	5.47	
8			366.18	180.00	9.58	
8			368.71	200.00	14.77	

8			370.61	250.00	19.31
9	ENDTBL				
3	STRUCT	23			
9	ENDTBL				
2	XSECTN	027	1.0	317.00	
8			316.00	0.00	0.00
8			316.50	2.68	2.59
8			317.00	10.37	6.88
8			317.50	24.26	12.84
8			318.00	45.55	20.50
8			318.50	70.64	34.75
8			319.00	137.01	60.50
8			319.25	200.57	76.25
8			319.50	273.06	92.00
8			319.75	353.76	107.75
8			320.00	442.13	123.50
8			320.50	640.03	155.00
8			321.00	863.72	186.50
9	ENDTBL				
2	XSECTN	032	1.0	313.00	
8			310.00	0.00	0.00
8			311.00	12.25	5.50
8			312.00	52.16	16.00
8			312.50	83.38	23.13
8			313.00	123.94	31.50
8			313.25	148.02	36.16
8			313.50	174.79	41.13
8			313.75	204.34	46.41
8			314.00	236.81	52.00
8			314.50	278.65	65.75
8			315.00	353.72	84.00
9	ENDTBL				
2	XSECTN	034	1.0	338.50	
8			338.00	0.00	0.00
8			338.10	4.87	2.46
8			338.25	22.73	6.38
8			338.50	73.99	13.53
8			338.75	149.34	21.45
8			339.00	247.95	30.13
8			339.50	515.65	49.78
9	ENDTBL				
2	XSECTN	037	1.0	331.00	
8			330.00	0.00	0.00

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			330.25	14.29	3.25
8			330.50	46.85	7.00
8			330.75	95.34	11.25
8			331.00	159.64	16.00
8			331.25	240.13	21.25
8			331.50	337.44	27.00
8			331.75	452.26	33.25
8			332.00	585.36	40.00
8			332.50	875.33	55.81
8			333.00	1272.05	75.25
9	ENDTBL				
2	XSECTN	044	1.0	288.90	
8			287.68	0.00	0.00
8			287.99	1.15	0.94



8			288.29	3.69	1.95
8			288.60	17.06	5.98
8			288.90	36.44	10.37
8			289.19	63.07	39.25
8			289.47	121.85	69.50
8			289.76	206.05	101.12
8			290.05	313.23	134.09
8			290.33	442.07	168.42
8			290.62	591.78	204.12
8			290.91	761.87	241.18
8			291.19	952.02	279.60
8			291.48	1162.04	319.38
8			291.77	1391.84	360.52
8			292.05	1641.40	403.02
8			292.34	1910.74	446.89
8			292.63	2199.92	492.11
8			292.91	2509.04	538.70
8			293.20	2838.22	586.65
9	ENDTBL				
3	STRUCT	31			
8			356.38	0.0	0.00
8			357.26	10.90	0.02
8			357.50	12.30	0.03
8			358.00	14.70	0.05
8			359.00	18.70	0.10
8			360.00	22.00	0.16
8			361.00	24.90	0.25
8			361.50	26.20	0.30
8			362.00	27.50	0.36
8			362.50	28.70	0.43
8			362.90	29.60	0.49
8			363.50	51.30	0.60
8			363.75	65.70	0.67
8			364.00	82.60	0.72
8			364.20	83.30	0.83
8			364.60	100.00	0.88

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			366.80	260.00	1.47
8			366.92	340.00	1.49
8			366.98	380.00	1.50
9	ENDTBL				
3	STRUCT	32			
8			375.40	0.00	0.00
8			379.36	1.00	0.74
8			380.00	5.00	0.89
8			380.20	10.00	0.94
8			380.33	15.00	0.98
8			380.45	20.00	1.01
8			380.55	25.00	1.04
8			380.65	30.00	1.06
8			381.19	40.00	1.21
8			381.78	44.00	1.39
8			382.59	66.00	1.66
8			382.79	88.00	1.75
8			382.89	110.00	1.79
8			382.97	132.00	1.83
9	ENDTBL				
3	STRUCT	33			

8			350.00	0.00	0.00
8			354.30	1.00	1.08
8			354.47	2.00	1.15
8			354.87	5.00	1.30
8			355.38	10.00	1.50
8			356.18	20.00	1.84
8			356.88	40.00	2.15
8			357.27	60.00	2.33
8			357.46	80.00	2.42
8			358.08	100.00	2.73
8			358.14	120.00	2.76
8			358.19	140.00	2.78
8			358.25	171.00	2.81
8			358.27	180.00	2.82
9	ENDTBL				
3	STRUCT	34			
9	ENDTBL				
3	STRUCT	02			
9	ENDTBL				
3	STRUCT	01			
9	ENDTBL				
2	XSECTN	051	1.0	282.40	
8			281.10	0.00	0.00
8			281.42	1.24	1.09
8			281.75	3.96	2.26
8			282.07	18.30	6.92
8			282.40	39.09	12.00
8			282.88	67.33	37.27
8			283.36	131.17	65.87

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			283.84	225.10	97.78
8			284.32	348.01	133.01
8			284.80	499.91	171.56
8			285.28	681.29	213.43
8			285.76	892.92	258.61
8			286.24	1135.70	307.11
8			286.72	1410.63	358.94
8			287.20	1718.74	414.08
8			287.68	2061.13	472.54
8			288.16	2438.87	534.31
8			288.64	2853.08	599.41
8			289.12	3301.76	667.84
8			289.60	3785.91	739.78
9	ENDTBL				
2	XSECTN	053	1.0	289.00	
8			288.00	0.00	0.00
8			288.50	9.00	2.88
8			289.00	34.26	7.50
8			289.50	79.27	13.88
8			290.00	147.75	22.00
8			290.50	227.49	31.94
8			291.00	332.02	43.75
8			291.50	463.75	57.44
8			291.75	540.56	64.98
8			292.00	625.07	73.00
9	ENDTBL				
2	XSECTN	063	1.0	248.40	
8			247.07	0.00	0.00

8			247.41	1.85	1.14
8			247.74	5.93	2.35
8			248.07	27.43	7.18
8			248.40	58.61	12.46
8			248.67	89.70	40.04
8			248.95	158.39	68.99
8			249.22	256.90	99.30
8			249.49	382.40	130.99
8			249.77	533.43	164.04
8			250.04	709.09	198.46
8			250.31	908.86	234.24
8			250.59	1132.40	271.40
8			250.86	1379.55	309.92
8			251.13	1650.25	349.81
8			251.41	1944.49	391.07
8			251.68	2262.35	433.69
8			251.95	2603.94	477.69
8			252.23	2969.40	523.05
8			252.50	3358.93	569.78
9	ENDTBL				
3	STRUCT	61			
8			329.75	0.00	0.00

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			330.00	1.56	0.01
8			332.00	4.37	0.13
8			334.00	5.96	0.39
8			334.10	6.01	0.40
8			334.50	10.20	0.47
8			335.00	16.10	0.56
8			336.00	28.91	0.75
8			337.00	40.10	0.97
9	ENDTBL				
3	STRUCT	62			
8			287.30	0.00	0.00
8			288.00	5.45	0.01
8			289.00	9.05	0.05
8			290.00	11.60	0.13
8			292.00	15.35	0.50
8			294.00	18.40	1.19
8			294.30	18.92	1.26
8			294.50	20.73	1.40
8			295.00	36.40	1.60
8			295.40	38.00	1.80
8			296.00	51.10	2.15
8			297.00	69.60	2.75
8			298.00	86.80	3.44
8			298.68	98.50	3.91
8			298.80	107.56	4.00
9	ENDTBL				
3	STRUCT	63			
8			259.43	0.00	0.00
8			260.00	1.30	0.026
8			260.50	1.70	0.050
8			261.00	2.10	0.075
8			261.50	2.40	0.095
8			262.00	2.70	0.119
8			262.50	2.90	0.160
8			263.00	3.20	0.205

8		263.50	3.40	0.245
8		264.00	3.60	0.285
8		264.50	3.80	0.360
8		265.00	3.90	0.415
8		265.50	4.10	0.480
8		266.00	11.00	0.537
8		266.50	15.40	0.620
8		267.00	16.00	0.709
8		267.50	30.30	0.798
8		268.00	56.00	0.887
8		268.50	145.68	0.976
9	ENDTBL			
2	XSECTN 065	1.0	300.50	
8		300.00	0.00	0.00
8		300.10	0.29	0.23

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8		300.25	1.47	0.69
8		300.40	3.55	1.28
8		300.50	5.48	1.75
8		300.60	7.88	2.28
8		300.75	12.45	3.19
8		300.90	18.28	4.23
8		301.00	22.91	5.00
8		301.10	28.18	5.83
8		301.25	37.36	7.19
8		301.40	48.14	8.68
8		301.50	56.26	9.75
9	ENDTBL			
2	XSECTN 070	1.0	248.40	
8		247.07	0.00	0.00
8		247.41	1.85	1.14
8		247.74	5.93	2.35
8		248.07	27.43	7.18
8		248.40	58.61	12.46
8		248.67	89.70	40.04
8		248.95	158.39	68.99
8		249.22	256.90	99.30
8		249.49	382.40	130.99
8		249.77	533.43	164.04
8		250.04	709.09	198.46
8		250.31	908.86	234.24
8		250.59	1132.40	271.40
8		250.86	1379.55	309.92
8		251.13	1650.25	349.81
8		251.41	1944.49	391.07
8		251.68	2262.35	433.69
8		251.95	2603.94	477.69
8		252.23	2969.40	523.05
8		252.50	3358.93	569.78
9	ENDTBL			
2	XSECTN 072	1.0	248.40	
8		247.07	0.00	0.00
8		247.41	1.85	1.14
8		247.74	5.93	2.35
8		248.07	27.43	7.18
8		248.40	58.61	12.46
8		248.67	89.70	40.04
8		248.95	158.39	68.99

8	249.22	256.90	99.30
8	249.49	382.40	130.99
8	249.77	533.43	164.04
8	250.04	709.09	198.46
8	250.31	908.86	234.24
8	250.59	1132.40	271.40
8	250.86	1379.55	309.92
8	251.13	1650.25	349.81

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8	251.41	1944.49	391.07
8	251.68	2262.35	433.69
8	251.95	2603.94	477.69
8	252.23	2969.40	523.05
8	252.50	3358.93	569.78
9	ENDTBL		
2	XSECTN 077	1.0	229.00
8		226.00	0.00
8		226.50	11.73
8		227.00	42.97
8		227.50	96.50
8		228.00	175.93
8		228.50	258.13
8		229.00	385.22
8		229.50	561.82
8		230.00	793.74
8		230.50	1079.38
8		231.00	1462.49
8		231.50	1953.75
8		232.00	2564.16
8		232.50	3408.70
8		233.00	4351.01
9	ENDTBL		
2	XSECTN 080	1.0	212.00
8		210.50	0.00
8		210.75	4.72
8		211.00	15.68
8		211.25	32.36
8		211.50	54.93
8		211.75	83.70
8		212.00	119.05
8		212.25	163.87
8		212.50	215.35
8		212.75	273.55
8		213.00	338.57
8		214.00	669.42
8		215.00	806.07
8		216.00	1088.03
8		217.00	1451.30
8		218.00	1978.93
8		219.00	2262.06
8		220.00	3115.20
8		221.00	4892.67
9	ENDTBL		
3	STRUCT 65		
8		89.00	0.00
8		99.00	0.01
8		109.00	0.02
8		119.00	0.03

8	129.00	0.04	40.00
1			

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8	139.00	0.05	50.00
8	149.00	0.06	60.00
8	159.00	0.07	70.00
8	169.00	0.08	80.00
8	170.00	62.00	81.00
8	171.00	175.36	82.00
8	172.00	322.16	83.00
8	173.00	496.00	84.00
8	174.00	693.18	85.00
8	175.00	911.21	86.00
8	176.00	1148.26	87.00
8	177.00	1402.90	88.00
8	178.00	1674.00	89.00
8	179.00	1960.61	90.00

9 ENDTBL  
 5 RAINFL 9

	.1				
8	0.0000	0.0013	0.0023	0.0034	0.0044
8	0.0055	0.0065	0.0076	0.0087	0.0098
8	0.0109	0.0121	0.0132	0.0143	0.0155
8	0.0167	0.0178	0.0190	0.0202	0.0214
8	0.0226	0.0238	0.0251	0.0263	0.0276
8	0.0288	0.0301	0.0314	0.0327	0.0340
8	0.0353	0.0366	0.0379	0.0393	0.0406
8	0.0420	0.0434	0.0447	0.0461	0.0475
8	0.0489	0.0504	0.0518	0.0532	0.0547
8	0.0562	0.0576	0.0591	0.0606	0.0621
8	0.0636	0.0651	0.0667	0.0682	0.0697
8	0.0713	0.0729	0.0745	0.0760	0.0776
8	0.0793	0.0809	0.0826	0.0843	0.0861
8	0.0879	0.0898	0.0916	0.0936	0.0955
8	0.0975	0.0996	0.1017	0.1038	0.1060
8	0.1082	0.1104	0.1127	0.1150	0.1174
8	0.1198	0.1223	0.1247	0.1273	0.1298
8	0.1324	0.1351	0.1378	0.1405	0.1432
8	0.1461	0.1490	0.1521	0.1554	0.1588
8	0.1623	0.1660	0.1699	0.1739	0.1780
8	0.1823	0.1868	0.1914	0.1961	0.2010
8	0.2061	0.2117	0.2179	0.2247	0.2321
8	0.2400	0.2490	0.2591	0.2702	0.2825
8	0.2955	0.3157	0.3370	0.3662	0.4067
8	0.4766	0.5933	0.6338	0.6630	0.6843
8	0.7045	0.7176	0.7298	0.7409	0.7510
8	0.7600	0.7679	0.7753	0.7821	0.7883
8	0.7939	0.7990	0.8039	0.8086	0.8132
8	0.8177	0.8220	0.8261	0.8301	0.8340
8	0.8377	0.8412	0.8446	0.8479	0.8510
8	0.8540	0.8568	0.8595	0.8622	0.8649
8	0.8676	0.8702	0.8727	0.8753	0.8778
8	0.8802	0.8826	0.8850	0.8873	0.8896
8	0.8918	0.8940	0.8962	0.8983	0.9004

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8	0.9025	0.9045	0.9064	0.9084	0.9103		
8	0.9121	0.9139	0.9157	0.9174	0.9191		
8	0.9208	0.9224	0.9240	0.9256	0.9271		
8	0.9287	0.9303	0.9318	0.9334	0.9349		
8	0.9364	0.9379	0.9394	0.9409	0.9424		
8	0.9439	0.9453	0.9468	0.9482	0.9496		
8	0.9511	0.9525	0.9539	0.9553	0.9566		
8	0.9580	0.9594	0.9607	0.9621	0.9634		
8	0.9647	0.9660	0.9673	0.9686	0.9699		
8	0.9712	0.9724	0.9737	0.9749	0.9762		
8	0.9774	0.9786	0.9798	0.9810	0.9822		
8	0.9834	0.9845	0.9857	0.9868	0.9879		
8	0.9891	0.9902	0.9913	0.9924	0.9935		
8	0.9945	0.9956	0.9967	0.9977	0.9987		
8	1.0000	1.0000	1.0000	1.0000	1.0000		
9	ENDTBL						
6	RUNOFF	1 001	1	0.0336	80.992	0.4051	DA1
6	REACH	3 002	1 2	1170.0		1	
6	RUNOFF	1 003	1	0.0580	79.488	0.3751	DA2
6	ADDHYD	4 004	1 2 3			1	DA1+2
6	RESVOR	2 11 3	1			1	1
	SWMF10						
6	REACH	3 005	1 2	797.0		1	
6	RUNOFF	1 006	3	0.0798	77.284	0.3921	DA3
6	ADDHYD	4 007	2 3 4			1	
	DA12+3						
6	REACH	3 008	4 7	1221.0		1	1 SA1-
	SA2						
6	RUNOFF	1 009	1	0.0734	90.928	0.4221	DA1
6	RESVOR	2 21 1	2			1	1
	SWMF13						
6	RUNOFF	1 010	3	0.0097	72.007	0.1281	DA7
6	RESVOR	2 22 2 3 4				1	1 HWY
	STOR						
6	RUNOFF	1 011	2	0.0544	73.278	0.2201	DA2
6	ADDHYD	4 012	7 2 3			1	
	SA1+DA2						
6	RUNOFF	1 013	5	0.0193	79.062	0.2481	DA3
6	ADDHYD	4 014	4 3 6			1	
	DA17+2						
6	ADDHYD	4 015	6 5 3			1	
	DA172+3						
6	RESVOR	2 23 3	1			1	1
	HWYSTOR2						
6	REACH	3 016	1 2	920.0		1	1
6	RUNOFF	1 017	3	0.0211	87.900	0.1641	DA4
6	RUNOFF	1 018	4	0.0313	91.880	0.2551	DA5
6	RUNOFF	1 019	5	0.0404	84.467	0.1681	DA6
6	ADDHYD	4 020	3 4 6			1	1 DA4+5
6	ADDHYD	4 021	6 5 1			1	
	DA123+6						
6	ADDHYD	4 022	2 1 3			1	
	DA45+6						
6	REACH	3 023	3 7	1379.0		1	1 SA2-
	SA3						
6	RUNOFF	1 024	1	0.0505	82.333	0.3401	DA1
6	RESVOR	2 31 1	2			1	1 SWMF3
6	RUNOFF	1 025	3	0.0748	81.676	0.3581	DA2
6	ADDHYD	4 026	2 3 4			1	DA1+2
6	REACH	3 027	4 1	1021.0		1	
6	RUNOFF	1 028	2	0.0599	78.523	0.3231	DA3
6	ADDHYD	4 029	7 2 3			1	
	SA2+DA3						

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

6	ADDHYD	4	030	1	3	2			1	1
DA12+3										
6	RESVOR	2	01	2	5				1	1 PROP1
6	RUNOFF	1	031		1		0.0692	86.978	0.2761	DA4
6	REACH	3	032	1	6		1603.0		1	
6	RUNOFF	1	033		2		0.0084	95.000	0.1921	DA5
6	RESVOR	2	32	2	3				1	1
SWMF11										
6	REACH	3	034	3	7		583.0		1	
6	RUNOFF	1	035		1		0.0275	94.960	0.2481	DA6
6	RESVOR	2	33	1	2				1	1 SWMF8
6	ADDHYD	4	036	7	2	1			1	DA5+6
6	RESVOR	2	34	1	2				1	1
HWYSTOR3										
6	REACH	3	037	2	4		934.0		1	
6	RUNOFF	1	038		1		0.0328	85.878	0.1901	DA7
6	ADDHYD	4	039	4	1	3			1	
DA56+7										
6	RUNOFF	1	040		2		0.0393	80.311	0.3671	DA8
6	ADDHYD	4	041	5	2	1			1	1 DA3+8
6	ADDHYD	4	042	6	1	2			1	DA4+8
6	ADDHYD	4	043	3	2	1			1	DA7+8
6	REACH	3	044	1	2		1428.0		1	1 SA3-
SA4										
6	RESVOR	2	02	2	7				1	1 PROP2
6	RUNOFF	1	045		1		0.0477	80.798	0.4121	DA1
6	RUNOFF	1	046		2		0.0628	79.968	0.4401	DA2
6	ADDHYD	4	047	1	2	3			1	DA1+2
6	RUNOFF	1	048		1		0.0469	80.250	0.2491	DA3
6	ADDHYD	4	049	7	1	2			1	1
SA3+DA3										
6	ADDHYD	4	050	2	3	4			1	
DA12+3										
6	REACH	3	051	4	7		1275.0		1	1 SA4-
SA5										
6	RUNOFF	1	052		1		0.0087	41.639	0.1631	DA1
6	REACH	3	053	1	5		652.0		1	
6	RUNOFF	1	054		1		0.0072	33.729	0.2561	DA2
6	RUNOFF	1	055		2		0.0322	77.752	0.2491	DA3
6	ADDHYD	4	056	7	2	4			1	
SA4+DA3										
6	ADDHYD	4	057	5	1	3			1	DA1+2
6	ADDHYD	4	058	4	3	5			1	
DA12+3										
6	RUNOFF	1	059		1		0.0266	70.478	0.2611	DA4
6	ADDHYD	4	060	5	1	2			1	1
DA123+4										
6	RUNOFF	1	061		3		0.0173	69.728	0.2971	DA5
6	ADDHYD	4	062	2	3	6			1	
DA1234+5										
6	REACH	3	063	6	7		1959.0		1	1 SA5-
SA6										
6	RUNOFF	1	064		1		0.0110	84.520	0.5211	DA1
6	RESVOR	2	61	1	2				1	1
SWMF19										
6	REACH	3	065	2	3		1283.0		1	
6	RUNOFF	1	066		1		0.0458	70.198	0.2391	DA2



6 RESVOR	2	62	1	2				1	1
SWMF18									
6 ADDHYD	4	067	3	2	4			1	DA1+2
6 RUNOFF	1	068			5	0.0778	76.176	0.2281	DA3
6 ADDHYD	4	069	4	5	1			1	
DA12+3									
6 REACH	3	070	1	2		2166.0		1	
6 RUNOFF	1	071			1	0.0119	80.036	0.1221	DA4
6 RESVOR	2	63	1	3				1	1 SWMF2

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)

\*\*\*\*\*

6 REACH	3	072	3	4		1081.0			1	
6 RUNOFF	1	073			5	0.1100	64.864	0.2051		DA5
6 ADDHYD	4	074	7	5	1			1		
SA5+DA5										
6 ADDHYD	4	075	2	4	6				1	
DA123+4										
6 ADDHYD	4	076	1	6	2				1	1
DA12345										
6 REACH	3	077	2	7		884.0			1	1 SA6-
SA7										
6 RUNOFF	1	078			2	0.0510	70.802	0.1971		DA1
6 ADDHYD	4	079	7	2	1				1	
SA6+DA1										
6 REACH	3	080	1	2		1296.0			1	
6 RUNOFF	1	081			3	0.0513	73.958	0.1621		DA3
6 ADDHYD	4	082	2	3	4				1	DA1+3
6 RUNOFF	1	083			1	0.0313	67.555	0.1861		DA2
6 ADDHYD	4	084	4	1	2				1	
DA13+2										
6 RUNOFF	1	085			3	0.1187	68.693	0.3211		DA4
6 ADDHYD	4	086	2	3	1				1	
DA123+4										
6 RUNOFF	1	087			4	0.0159	86.785	0.1421		DA5
6 ADDHYD	4	088	1	4	7				1	1
DA1234+5										
6 DIVERT	6	081	7	2	3	730	082		1	1 UNGR1
6 RESVOR	2	65	3	1					1	1 H1UG
6 ADDHYD	4	089	1	2	4				1	1
DA1234+5										
ENDATA										
7 INCREM	6					.06				
7 COMPUT	7	001	089			0.0	3.19	1.09	2	1 2
ENDCMP										
7 COMPUT	7	001	089			0.0	4.91	1.09	2	1 10
ENDCMP										
7 COMPUT	7	001	089			0.0	7.23	1.09	2	1 50
ENDCMP										
7 COMPUT	7	001	089			0.0	8.47	1.09	2	1 99
ENDCMP										
ENDJOB										

\*\*\*\*\*END OF 80-80

LIST\*\*\*\*\*

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EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .060 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 89  
 STARTING TIME = .00 RAIN DEPTH = 3.19 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. = 2 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1  
 PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.30 23.9 (RUNOFF)  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.46 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 2  
 PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.41 22.7 389.92  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.46 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 3  
 PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.29 39.9 (RUNOFF)  
 23.14 1.0 (RUNOFF)  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.36 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 4  
 PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.32 60.4 (NULL)  
 23.10 1.6 (NULL)  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 83 CFS-HRS; 6.8 ACRE-  
 FEET.

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OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	50.9	382.15
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.39 WATERSHED INCHES;	82 CFS-HRS;	6.8 ACRE-
FEEET.		

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	50.4	367.78
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.39 WATERSHED INCHES;	82 CFS-HRS;	6.8 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	47.5	(RUNOFF)
23.75	1.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.22 WATERSHED INCHES;	63 CFS-HRS;	5.2 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	85.2	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.31 WATERSHED INCHES;	145 CFS-HRS;	12.0 ACRE-
FEEET.		

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	84.4	357.10
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.31 WATERSHED INCHES;	145 CFS-HRS;	12.0 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 9

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	77.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.24 WATERSHED INCHES; 106 CFS-HRS; 8.8 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE

STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.

\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.56	9.7 *	374.07
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.91 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	6.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.92 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.68	9.6 *	353.09
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.91 WATERSHED INCHES; 90 CFS-HRS; 7.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	33.2	(RUNOFF)
19.76	1.0	(RUNOFF)
20.09	1.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .99 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	98.2	(NULL)
24.00	3.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.24 WATERSHED INCHES; 180 CFS-HRS; 14.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	15.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.33 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	105.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 270 CFS-HRS; 22.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	112.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
 FEET.

OPERATION RESVOR      STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	112.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES;      287 CFS-HRS;      23.7 ACRE-  
 FEET.

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\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH      XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	112.5	332.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES;      287 CFS-HRS;      23.7 ACRE-  
 FEET.

OPERATION RUNOFF      XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	29.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES;      27 CFS-HRS;      2.2 ACRE-  
 FEET.

OPERATION RUNOFF      XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	43.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.33 WATERSHED INCHES;      47 CFS-HRS;      3.9 ACRE-  
 FEET.

OPERATION RUNOFF      XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.15	48.6	(RUNOFF)
19.47	1.0	(RUNOFF)
19.75	1.0	(RUNOFF)
20.06	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.71 WATERSHED INCHES; 44 CFS-HRS; 3.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	71.1	(NULL)
15.81	2.5	(NULL)
24.01	1.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.19 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	119.3	(NULL)
15.83	4.3	(NULL)
17.33	3.3	(NULL)
21.95	2.1	(NULL)
24.01	1.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 118 CFS-HRS; 9.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	200.7	(NULL)
23.99	9.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 405 CFS-HRS; 33.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.41 166.9 315.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.52 WATERSHED INCHES; 404 CFS-HRS; 33.4 ACRE-
FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.26 41.6 (RUNOFF)
20.68 1.1 (RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-
FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE
TIME INCREMENT OF .043 HOURS.
\*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES
FIRST NEGATIVE VALUE IS 0 CFS.
\*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.46 28.2 362.31
20.70 1.1 356.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.27 58.7 (RUNOFF)
23.97 1.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.51 WATERSHED INCHES; 73 CFS-HRS; 6.0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK



ELEVATION(FEET)		
12.29	84.2	(NULL)
18.68	3.2	(NULL)
23.78	2.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	76.6	318.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	42.0	(RUNOFF)
23.12	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.30 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	201.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 455 CFS-HRS; 37.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	275.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.50 WATERSHED INCHES; 578 CFS-HRS; 47.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	275.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.50 WATERSHED INCHES; 578 CFS-HRS; 47.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	76.8	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-  
 FEET.

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OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	68.8	312.27
24.15	1.3	310.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	14.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.63 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .28 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 376.89.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
AT STRUCTURE 32  
\*\*\*

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
13.56 1.0 379.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.01 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 34, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 34

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
AT XSECTION 34  
\*\*\*

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
13.68 1.0 338.02

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.00 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.19 41.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.63 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.47 17.5 355.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.08 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	18.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	18.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	18.2	330.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	40.3	(RUNOFF)
17.34	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.81 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	43.8	(NULL)
24.01	2.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.94 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.28 28.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.41 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.36 301.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.50 WATERSHED INCHES; 614 CFS-HRS; 50.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.37 369.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.54 WATERSHED INCHES; 699 CFS-HRS; 57.7 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.37 403.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.57 WATERSHED INCHES; 783 CFS-HRS; 64.7 ACRE-  
FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.52 375.3 290.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.57 WATERSHED INCHES; 782 CFS-HRS; 64.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	375.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.57 WATERSHED INCHES; 782 CFS-HRS; 64.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	33.3	(RUNOFF)
20.10	1.1 *	(RUNOFF)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.45 WATERSHED INCHES; 45 CFS-HRS; 3.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	40.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 56 CFS-HRS; 4.7 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	74.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.42 WATERSHED INCHES; 101 CFS-HRS; 8.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		
12.20	40.1	(RUNOFF)
20.10	1.1	(RUNOFF)
20.65	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.41 WATERSHED INCHES; 43 CFS-HRS; 3.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	392.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 825 CFS-HRS; 68.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	451.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.54 WATERSHED INCHES; 926 CFS-HRS; 76.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	435.2	284.60

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.54 WATERSHED INCHES; 925 CFS-HRS; 76.5 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.54 WATERSHED INCHES; 145 CFS-HRS; 76.5 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,

UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 53

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET) 24.1 (RUNOFF)  
12.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.25 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET) 443.7 (NULL)  
12.60

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.53 WATERSHED INCHES; 951 CFS-HRS; 78.6 ACRE-  
FEET.

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\*\*\* WARNING - XSECTION 57  
NO HYDROGRAPH IN INPUT LOCATION 5 OR 1 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.60 443.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.51 WATERSHED INCHES; 951 CFS-HRS; 78.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.23 12.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .85 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.60 448.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 966 CFS-HRS; 79.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.25 7.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .81 WATERSHED INCHES; 9 CFS-HRS; .7 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)

12.60 452.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.48 WATERSHED INCHES; 975 CFS-HRS; 80.6 ACRE-
FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.77 426.8 249.57

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.48 WATERSHED INCHES; 974 CFS-HRS; 80.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.37 8.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.74 4.7 332.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-
FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.86 4.6 300.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 66

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION(FEET)  
12.21 21.6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.83 WATERSHED INCHES; 25 CFS-HRS; 2.0 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.43 12.4 290.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.83 WATERSHED INCHES; 25 CFS-HRS; 2.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.58 16.5 (NULL)  
20.11 1.0 (NULL)  
20.66 1.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.00 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.20 55.7 (RUNOFF)  
24.03 1.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.15 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 69

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	68.6	(NULL)
23.10	2.1	(NULL)
23.75	2.0	(NULL)
24.03	2.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.09 WATERSHED INCHES; 95 CFS-HRS; 7.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	60.1	248.41
23.17	2.1	247.43
24.09	2.0	247.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.09 WATERSHED INCHES; 95 CFS-HRS; 7.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	13.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	3.4	263.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	3.3	247.53

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	34.3	(RUNOFF)
15.86	2.4	(RUNOFF)
24.02	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.59 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.76	436.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.39 WATERSHED INCHES; 1016 CFS-HRS; 84.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	63.1	(NULL)
18.71	3.1	(NULL)
24.09	2.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.11 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.74	474.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.36 WATERSHED INCHES; 1121 CFS-HRS; 92.7 ACRE-  
FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.81	473.6	229.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.36 WATERSHED INCHES; 1121 CFS-HRS; 92.6 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	27.4	(RUNOFF)
17.35	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .86 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.81	479.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.34 WATERSHED INCHES; 1149 CFS-HRS; 95.0 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 80.  
 \*\*\*

OPERATION REACH XSECTION 80

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.81	479.7	213.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.34 WATERSHED INCHES; 1149 CFS-HRS; 95.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	36.0	(RUNOFF)
19.47	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.03 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.81	486.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.33 WATERSHED INCHES; 1183 CFS-HRS; 97.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.18 13.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.71 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.81 489.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.31 WATERSHED INCHES; 1198 CFS-HRS; 99.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.28 43.1 (RUNOFF)  
18.68 2.0 (RUNOFF)  
24.02 1.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.76 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.79 505.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.27 WATERSHED INCHES; 1256 CFS-HRS; 103.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	22.5	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.89 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.79	508.2	(NULL)
23.97	27.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.28 WATERSHED INCHES; 1275 CFS-HRS; 105.4 ACRE-  
FEET.

OPERATION DIVERT XSECTION 81  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.79	508.2	(DIVERT)
23.97	27.9	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1275 CFS-HRS; 105.4 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 65, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 80.00 FEET BELOW ASSUMED CREST ELEVATION AT 169.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 65

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 89  
NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.  
\*\*\*

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OPERATION ADDHYD XSECTION 89

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.79 508.2 (NULL)  
23.97 27.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.28 WATERSHED INCHES; 1275 CFS-HRS; 105.4 ACRE-  
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 89  
STARTING TIME = .00 RAIN DEPTH = 4.91 RAIN DURATION = 1.00  
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. =10 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 48.0 (RUNOFF)  
23.10 1.1 \* (RUNOFF)  
\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.90 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.41 45.0 390.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.90 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 3

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	82.2	(RUNOFF)
20.68	2.2	(RUNOFF)
23.98	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.77 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	122.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.82 WATERSHED INCHES; 166 CFS-HRS; 13.8 ACRE-FEET.

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	121.3	383.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 166 CFS-HRS; 13.7 ACRE-FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	120.5	368.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 166 CFS-HRS; 13.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	101.9	(RUNOFF)
23.73	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.57 WATERSHED INCHES;      132 CFS-HRS;      10.9 ACRE-  
 FEET.

OPERATION ADDHYD    XSECTION    7

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	213.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.70 WATERSHED INCHES;      298 CFS-HRS;      24.7 ACRE-  
 FEET.

OPERATION REACH    XSECTION    8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	212.2	357.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.70 WATERSHED INCHES;      299 CFS-HRS;      24.7 ACRE-  
 FEET.

OPERATION RUNOFF    XSECTION    9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	132.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.88 WATERSHED INCHES;      184 CFS-HRS;      15.2 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE

STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR    STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	60.8	376.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.49 WATERSHED INCHES;      165 CFS-HRS;      13.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	16.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.13 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-FEET.

OPERATION RESVOR STRUCTURE 22

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.81	56.5	355.97

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.49 WATERSHED INCHES; 165 CFS-HRS; 13.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	77.9	(RUNOFF)
15.82	3.3	(RUNOFF)
18.86	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.23 WATERSHED INCHES; 78 CFS-HRS; 6.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	249.3	(NULL)
24.00	6.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.59 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	32.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	262.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.80 WATERSHED INCHES; 540 CFS-HRS; 44.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	278.8	(NULL)
23.98	12.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	278.8	(NULL)
23.98	12.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	278.8	333.39
23.98	12.6	331.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	52.0	(RUNOFF)
17.34	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.57 WATERSHED INCHES; 49 CFS-HRS; 4.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 18

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	72.1	(RUNOFF)
23.75	1.0	(RUNOFF)
24.02	1.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.99 WATERSHED INCHES; 81 CFS-HRS; 6.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	90.5	(RUNOFF)
17.34	2.3	(RUNOFF)
24.00	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.23 WATERSHED INCHES; 84 CFS-HRS; 7.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	121.6	(NULL)
15.81	4.1	(NULL)
17.31	3.1	(NULL)
21.75	2.0	(NULL)
21.96	2.0	(NULL)
24.01	1.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.82 WATERSHED INCHES; 129 CFS-HRS; 10.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	211.4	(NULL)
15.83	7.0	(NULL)
17.33	5.4	(NULL)
19.41	4.1	(NULL)
19.74	4.0	(NULL)
20.06	4.0	(NULL)
23.06	3.2	(NULL)
24.01	3.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.56 WATERSHED INCHES; 213 CFS-HRS; 17.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	426.8	(NULL)
20.04	21.6	(NULL)
20.56	20.8	(NULL)
23.03	16.9	(NULL)
24.00	15.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.96 WATERSHED INCHES; 787 CFS-HRS; 65.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.39	379.7	316.13
24.04	15.6	314.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.96 WATERSHED INCHES; 786 CFS-HRS; 65.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	81.4	(RUNOFF)
20.13	2.0	(RUNOFF)
23.99	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.03 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	78.5	363.94
20.15	2.0	356.54
23.79	1.5	356.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 99 CFS-HRS; 8.1 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	115.6	(RUNOFF)
18.66	3.3	(RUNOFF)
23.77	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.97 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	190.6	(NULL)
20.14	5.0	(NULL)
23.14	4.0	(NULL)
23.78	3.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-  
 FEET.



OPERATION REACH XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	174.0	319.15
20.20	5.0	316.65
23.20	4.0	316.59

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	87.6	(RUNOFF)
21.94	2.0	(RUNOFF)
24.01	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.68 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 29

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	457.0	(NULL)
24.03	17.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 890 CFS-HRS; 73.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	621.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.94 WATERSHED INCHES; 1132 CFS-HRS; 93.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	621.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.94 WATERSHED INCHES; 1132 CFS-HRS; 93.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	137.5	(RUNOFF)
18.66	3.2	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	125.9	313.02
18.72	3.2	310.26
24.09	2.2	310.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.16	22.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.33 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .38 AC-FT ( .07 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 377.43.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.40	9.1	380.16

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	9.0	338.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.47 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	66.9	(RUNOFF)
21.97	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.32 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
 WITH .95 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 353.79.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	48.7	357.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.67 WATERSHED INCHES; 65 CFS-HRS; 5.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.62 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	53.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.62 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
 \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	53.8	330.54

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.62 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	73.5	(RUNOFF)
15.84	2.4	(RUNOFF)
23.73	1.0	(RUNOFF)
24.01	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.37 WATERSHED INCHES; 71 CFS-HRS; 5.9 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	106.9	(NULL)
21.94	3.1	(NULL)
24.01	2.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.50 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	57.7	(RUNOFF)
23.76	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.84 WATERSHED INCHES; 72 CFS-HRS; 6.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	673.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 1204 CFS-HRS; 99.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	796.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 1359 CFS-HRS; 112.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	887.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 1509 CFS-HRS; 124.7 ACRE-  
 FEET.

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OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	848.7	291.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 1509 CFS-HRS; 124.7 ACRE-  
 FEET.

OPERATION RESVOR      STRUCTURE    2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	848.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES;      1509 CFS-HRS;      124.7 ACRE-  
 FEET.

OPERATION RUNOFF      XSECTION    45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	66.8	(RUNOFF)
23.09	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.88 WATERSHED INCHES;      89 CFS-HRS;      7.3 ACRE-  
 FEET.

OPERATION RUNOFF      XSECTION    46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	83.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES;      114 CFS-HRS;      9.4 ACRE-  
 FEET.

OPERATION ADDHYD      XSECTION    47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	150.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.84 WATERSHED INCHES;      203 CFS-HRS;      16.7 ACRE-  
 FEET.

OPERATION RUNOFF      XSECTION    48

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	81.7	(RUNOFF)
18.65	2.0	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.84 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	888.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.01 WATERSHED INCHES; 1594 CFS-HRS; 131.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	1020.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 1797 CFS-HRS; 148.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	993.2	285.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 1796 CFS-HRS; 148.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 210 CFS-HRS; 148.4 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

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OPERATION REACH XSECTION 53

\*\*\* MESSAGE - XSECTION 53, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 207 CFS-HRS; 148.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - XSECTION 54, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 189 CFS-HRS; 148.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	51.6	(RUNOFF)
21.97	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.61 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	1013.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.98 WATERSHED INCHES; 1851 CFS-HRS; 152.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - XSECTION 57, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.98 WATERSHED INCHES; 214 CFS-HRS; 152.9 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 58



PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	1013.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.93 WATERSHED INCHES;	1852 CFS-HRS;	153.1 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	31.6	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.01 WATERSHED INCHES;	34 CFS-HRS;	2.8 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	1027.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.91 WATERSHED INCHES;	1887 CFS-HRS;	155.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	18.7	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.95 WATERSHED INCHES;	22 CFS-HRS;	1.8 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	1037.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.89 WATERSHED INCHES;	1908 CFS-HRS;	157.7 ACRE-
FEET.		

OPERATION REACH XSECTION 63

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	997.6	250.42
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.89 WATERSHED INCHES;	1907 CFS-HRS;	157.6 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	15.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.24 WATERSHED INCHES;	23 CFS-HRS;	1.9 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	8.4	334.33
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.24 WATERSHED INCHES;	23 CFS-HRS;	1.9 ACRE-
FEET.		

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.85	8.2	300.61
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.23 WATERSHED INCHES;	23 CFS-HRS;	1.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	55.9	(RUNOFF)
24.02	1.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.98 WATERSHED INCHES;	59 CFS-HRS;	4.8 ACRE-
FEET.		

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

-

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OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.62	18.0	293.76
14.58	3.8	287.79
24.04	1.1	287.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.98 WATERSHED INCHES; 59 CFS-HRS; 4.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.82	25.9	(NULL)
18.87	2.1	(NULL)
24.04	1.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.23 WATERSHED INCHES; 82 CFS-HRS; 6.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	122.6	(RUNOFF)
18.87	3.1	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.47 WATERSHED INCHES; 124 CFS-HRS; 10.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	141.4	(NULL)
18.87	5.2	(NULL)
21.97	4.3	(NULL)
24.03	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.37 WATERSHED INCHES; 206 CFS-HRS; 17.0 ACRE-FEET.

OPERATION REACH XSECTION 70

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	96.0	248.70

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.37 WATERSHED INCHES; 206 CFS-HRS; 17.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	26.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.81 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	9.6	265.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.82 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	8.9	247.79

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.81 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	110.8	(RUNOFF)
15.85	5.4	(RUNOFF)
17.34	4.2	(RUNOFF)
20.86	3.0	(RUNOFF)
24.01	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.58 WATERSHED INCHES; 112 CFS-HRS; 9.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 74

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	1030.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.76 WATERSHED INCHES; 2020 CFS-HRS; 166.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	105.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.40 WATERSHED INCHES; 227 CFS-HRS; 18.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	1123.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.72 WATERSHED INCHES; 2247 CFS-HRS; 185.7 ACRE-  
FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	1122.5	230.56

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.72 WATERSHED INCHES; 2247 CFS-HRS; 185.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	69.0	(RUNOFF)
17.34	2.3	(RUNOFF)

24.01 1.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.03 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-
FEET.

OPERATION ADDHYD XSECTION 79

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.68 1138.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.69 WATERSHED INCHES; 2314 CFS-HRS; 191.2 ACRE-
FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.75 1135.1 216.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.69 WATERSHED INCHES; 2313 CFS-HRS; 191.2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.15 83.3 (RUNOFF)
15.84 3.1 (RUNOFF)
17.34 2.4 (RUNOFF)
24.00 1.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.29 WATERSHED INCHES; 76 CFS-HRS; 6.3 ACRE-
FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.75 1149.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.68 WATERSHED INCHES; 2389 CFS-HRS; 197.4 ACRE-
FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	37.3	(RUNOFF)
19.47	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 84

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.75	1157.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.66 WATERSHED INCHES; 2425 CFS-HRS; 200.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	118.2	(RUNOFF)
18.67	4.1	(RUNOFF)
23.12	3.1	(RUNOFF)
24.01	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.87 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	1197.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.60 WATERSHED INCHES; 2568 CFS-HRS; 212.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	40.2	(RUNOFF)
15.84	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.45 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-
FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.74 1202.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.61 WATERSHED INCHES; 2603 CFS-HRS; 215.1 ACRE-
FEET.

OPERATION DIVERT XSECTION 81

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OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.30 730.0 \* (DIVERT)
\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2349 CFS-HRS; 194.1 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.74 472.9 (DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.25 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 65, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 80.00 FEET BELOW ASSUMED CREST ELEVATION AT 169.00.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 65

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,
AT STRUCTURE 65
\*\*\*

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)



13.26 .0 110.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 89

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 734.2 (NULL)
13.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.35 WATERSHED INCHES; 2349 CFS-HRS; 194.1 ACRE-
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

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EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 89
STARTING TIME = .00 RAIN DEPTH = 7.23 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS
ALTERNATE NO. = 1 STORM NO. =50 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 81.5 (RUNOFF)
12.29 2.1 (RUNOFF)
20.13 1.7 (RUNOFF)
23.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-
FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 81.3 390.61
12.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION(FEET)		
12.27	142.8	(RUNOFF)
20.68	3.4	(RUNOFF)
23.97	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.85 WATERSHED INCHES; 181 CFS-HRS; 15.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	220.1	(NULL)
20.13	5.7	(NULL)
23.12	4.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.91 WATERSHED INCHES; 290 CFS-HRS; 24.0 ACRE-FEET.

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\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,  
 VALUE EXTRAPOLATED.  
 \*\*\*

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	218.8	384.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	218.2	368.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	181.7	(RUNOFF)

20.14	4.8	(RUNOFF)
23.74	3.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.60 WATERSHED INCHES; 237 CFS-HRS; 19.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	387.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.75 WATERSHED INCHES; 526 CFS-HRS; 43.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	386.9	358.49

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.75 WATERSHED INCHES; 526 CFS-HRS; 43.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	203.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.15 WATERSHED INCHES; 291 CFS-HRS; 24.1 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	139.6	377.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

5.58 WATERSHED INCHES; 264 CFS-HRS; 21.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	30.4	(RUNOFF)
15.46	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.03 WATERSHED INCHES; 25 CFS-HRS; 2.1 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	112.3	359.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.57 WATERSHED INCHES; 264 CFS-HRS; 21.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 11

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	146.1	(RUNOFF)
15.81	5.5	(RUNOFF)
20.09	3.2	(RUNOFF)
20.64	3.0	(RUNOFF)
24.02	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.16 WATERSHED INCHES; 146 CFS-HRS; 12.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	458.9	(NULL)
24.00	10.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.61 WATERSHED INCHES; 672 CFS-HRS; 55.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.20	56.4	(RUNOFF)
21.97	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.80 WATERSHED INCHES; 60 CFS-HRS; 4.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.41	552.8	(NULL)
23.98	17.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.84 WATERSHED INCHES; 934 CFS-HRS; 77.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.40	582.5	(NULL)
23.99	18.5	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 994 CFS-HRS; 82.1 ACRE-FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.40	582.5	(NULL)
23.99	18.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 994 CFS-HRS; 82.1 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0, CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16. \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	582.5	335.04
23.99	18.5	331.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 994 CFS-HRS; 82.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	82.4	(RUNOFF)
15.84	2.4	(RUNOFF)
23.05	1.1	(RUNOFF)
23.71	1.0	(RUNOFF)
24.00	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.80 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	109.9	(RUNOFF)
20.10	2.1	(RUNOFF)
24.03	1.6	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.26 WATERSHED INCHES; 126 CFS-HRS; 10.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	148.6	(RUNOFF)
15.84	4.6	(RUNOFF)
17.34	3.5	(RUNOFF)
22.75	2.1	(RUNOFF)
23.06	2.1	(RUNOFF)
24.00	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.41 WATERSHED INCHES; 141 CFS-HRS; 11.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.17	188.2	(NULL)
15.81	6.1	(NULL)
17.31	4.7	(NULL)
21.74	3.0	(NULL)
21.96	3.0	(NULL)
24.01	2.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.08 WATERSHED INCHES; 206 CFS-HRS; 17.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.16	335.1	(NULL)
15.83	10.7	(NULL)
17.33	8.2	(NULL)
19.74	6.1	(NULL)
20.06	6.1	(NULL)
21.95	5.3	(NULL)
24.01	4.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.79 WATERSHED INCHES; 347 CFS-HRS; 28.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 22

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.21	780.5	(NULL)
20.04	30.2	(NULL)
20.58	29.1	(NULL)
21.93	26.8	(NULL)
23.04	24.7	(NULL)
23.68	23.4	(NULL)
24.00	23.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.04 WATERSHED INCHES; 1339 CFS-HRS; 110.6 ACRE-  
FEET.

OPERATION REACH XSECTION 23

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
-------------------------------------	----------------------	------

12.41	731.5	316.89
24.06	23.0	314.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.04 WATERSHED INCHES; 1338 CFS-HRS; 110.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	136.5	(RUNOFF)
20.68	3.0	(RUNOFF)
23.99	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.17 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	131.8	365.04
20.69	3.0	356.63
23.79	2.4	356.57

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.15 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	196.3	(RUNOFF)
18.66	5.1	(RUNOFF)
20.68	4.5	(RUNOFF)
23.98	3.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 246 CFS-HRS; 20.3 ACRE-  
 FEET.



OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	325.1	(NULL)
18.67	8.6	(NULL)
20.68	7.5	(NULL)
23.14	6.2	(NULL)
23.78	5.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.12 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.37	312.6	319.62
20.73	7.5	316.81
23.20	6.2	316.73

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.12 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	154.0	(RUNOFF)
21.94	3.2	(RUNOFF)
24.01	2.7	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.74 WATERSHED INCHES; 183 CFS-HRS; 15.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	854.4	(NULL)
20.07	33.9	(NULL)
24.04	25.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.00 WATERSHED INCHES; 1521 CFS-HRS; 125.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	1164.9	(NULL)
24.04	31.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.03 WATERSHED INCHES; 1935 CFS-HRS; 159.9 ACRE-FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	1164.9	(NULL)
24.04	31.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.03 WATERSHED INCHES; 1935 CFS-HRS; 159.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	220.6	(RUNOFF)
20.86	4.2	(RUNOFF)
24.02	3.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-FEET.

OPERATION REACH XSECTION 32

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	204.5	313.75
20.73	4.3	310.35
24.09	3.3	310.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	33.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.63 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .48 AC-FT ( .09 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 377.99.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	29.2	380.63

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
 \*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	29.2	338.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 35

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	100.5	(RUNOFF)
18.65	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.63 WATERSHED INCHES; 118 CFS-HRS; 9.7 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
 WITH 1.02 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE

REMAINING IN RESERVOIR AT ELEV. 354.08.  
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	84.8	357.61
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.93 WATERSHED INCHES;	105 CFS-HRS;	8.7 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	113.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.84 WATERSHED INCHES;	135 CFS-HRS;	11.2 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	113.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.84 WATERSHED INCHES;	135 CFS-HRS;	11.2 ACRE-
FEET.		

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
\*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	113.8	330.82

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.84 WATERSHED INCHES;	135 CFS-HRS;	11.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	118.6	(RUNOFF)
15.84	3.7	(RUNOFF)
20.07	2.1	(RUNOFF)
20.63	2.0	(RUNOFF)
24.01	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.57 WATERSHED INCHES; 118 CFS-HRS; 9.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	220.1	(NULL)
19.73	5.0	(NULL)
22.73	4.1	(NULL)
23.05	4.0	(NULL)
24.01	3.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.71 WATERSHED INCHES; 253 CFS-HRS; 20.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	99.5	(RUNOFF)
20.67	2.3	(RUNOFF)
23.97	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.94 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	1255.2	(NULL)
24.03	33.3	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.02 WATERSHED INCHES; 2060 CFS-HRS; 170.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	1455.3	(NULL)
24.04	36.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 2314 CFS-HRS; 191.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	1629.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.13 WATERSHED INCHES; 2561 CFS-HRS; 211.6 ACRE-FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	1577.6	291.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.13 WATERSHED INCHES; 2560 CFS-HRS; 211.6 ACRE-FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	1577.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.13 WATERSHED INCHES; 2560 CFS-HRS; 211.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	114.7	(RUNOFF)
23.09	2.4	(RUNOFF)

1

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.00 WATERSHED INCHES; 154 CFS-HRS; 12.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	143.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.90 WATERSHED INCHES; 199 CFS-HRS; 16.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	257.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.94 WATERSHED INCHES; 352 CFS-HRS; 29.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	140.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.03	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.93 WATERSHED INCHES; 149 CFS-HRS; 12.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	1649.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.12 WATERSHED INCHES; 2709 CFS-HRS; 223.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	1884.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.10 WATERSHED INCHES; 3062 CFS-HRS; 253.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	1847.2	287.38

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 3061 CFS-HRS; 252.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	4.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.06 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	4.3	288.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.06 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
 AT XSECTION 54  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .47 WATERSHED INCHES; 2 CFS-HRS; .2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 55

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.20	91.3	(RUNOFF)
18.86	2.1	(RUNOFF)
24.03	1.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.65 WATERSHED INCHES;	97 CFS-HRS;	8.0 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 56

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.48	1884.9	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.08 WATERSHED INCHES;	3157 CFS-HRS;	260.9 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 57

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.27	4.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.79 WATERSHED INCHES;	8 CFS-HRS;	.7 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 58

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.48	1888.2	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.01 WATERSHED INCHES;	3166 CFS-HRS;	261.6 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 59

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.21	61.6	(RUNOFF)
24.02	1.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.86 WATERSHED INCHES;	66 CFS-HRS;	5.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 60

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	1916.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.98 WATERSHED INCHES; 3232 CFS-HRS; 267.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	37.1	(RUNOFF)
18.66	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.78 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	1936.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.96 WATERSHED INCHES; 3274 CFS-HRS; 270.6 ACRE-  
FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.58	1878.7	251.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.96 WATERSHED INCHES; 3273 CFS-HRS; 270.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	25.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.41 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	19.3	335.25

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.41 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-  
FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.67	19.0	300.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.41 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	109.3	(RUNOFF)
23.10	2.1	(RUNOFF)
24.03	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.83 WATERSHED INCHES; 113 CFS-HRS; 9.4 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	52.1	296.06
23.12	2.0	287.56
24.04	1.9	287.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.83 WATERSHED INCHES; 113 CFS-HRS; 9.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.55	67.2	(NULL)
20.86	3.1	(NULL)
24.04	2.5	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.13 WATERSHED INCHES; 151 CFS-HRS; 12.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	220.8	(RUNOFF)
18.64	5.1	(RUNOFF)
21.97	4.1	(RUNOFF)
24.03	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.48 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	249.0	(NULL)
18.87	8.5	(NULL)
20.87	7.5	(NULL)
23.10	6.3	(NULL)
24.03	6.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.33 WATERSHED INCHES; 376 CFS-HRS; 31.1 ACRE-  
FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.39	183.4	249.02
24.09	5.9	247.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.33 WATERSHED INCHES; 376 CFS-HRS; 31.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	45.5	(RUNOFF)
15.83	1.3	(RUNOFF)
17.33	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.90 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
 FEET.

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OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	27.4	267.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.90 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	25.6	248.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.91 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	237.2	(RUNOFF)
15.84	9.7	(RUNOFF)
17.34	7.6	(RUNOFF)
18.86	6.1	(RUNOFF)
21.45	5.1	(RUNOFF)
24.01	4.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.26 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	1949.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.79 WATERSHED INCHES; 3504 CFS-HRS; 289.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	207.0	(NULL)
20.13	8.7	(NULL)
24.09	6.5	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.38 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	2136.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.74 WATERSHED INCHES; 3918 CFS-HRS; 323.8 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 77.  
 \*\*\*

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	2136.0	231.65

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.74 WATERSHED INCHES; 3918 CFS-HRS; 323.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	133.1	(RUNOFF)

15.84	5.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.01	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.89 WATERSHED INCHES; 128 CFS-HRS; 10.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.56	2174.1	(NULL)
23.98	65.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.71 WATERSHED INCHES; 4047 CFS-HRS; 334.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 80

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.64	2156.9	218.63

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.71 WATERSHED INCHES; 4046 CFS-HRS; 334.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	154.4	(RUNOFF)
15.84	5.2	(RUNOFF)
17.34	4.0	(RUNOFF)
19.47	3.1	(RUNOFF)
19.74	3.0	(RUNOFF)
20.05	3.0	(RUNOFF)
24.00	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.24 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.64	2187.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.69 WATERSHED INCHES; 4186 CFS-HRS; 345.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	76.0	(RUNOFF)
17.34	2.3	(RUNOFF)
24.01	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.55 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	2204.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.67 WATERSHED INCHES; 4257 CFS-HRS; 351.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	237.6	(RUNOFF)
18.67	7.0	(RUNOFF)
20.68	6.2	(RUNOFF)
23.12	5.2	(RUNOFF)
24.01	4.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.67 WATERSHED INCHES; 281 CFS-HRS; 23.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	2302.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.59 WATERSHED INCHES; 4538 CFS-HRS; 375.1 ACRE-  
 FEET.



OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	64.3	(RUNOFF)
20.04	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.67 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	2313.4	(NULL)
23.97	74.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.60 WATERSHED INCHES; 4597 CFS-HRS; 379.9 ACRE-FEET.

OPERATION DIVERT XSECTION 81  
OUTPUT #1 HYDROGRAPH

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.00	730.0 *	(DIVERT)
23.97	74.4	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3351 CFS-HRS; 276.9 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	1583.4	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.25 WATERSHED INCHES; 1246 CFS-HRS; 103.0 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 65, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
STARTS 80.00 FEET BELOW ASSUMED CREST ELEVATION AT 169.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 65, TRUNCATED AT 400 POINTS  
 WITH 78.93 AC-FT ( .08 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 168.93.  
 \*\*\*

OPERATION RESVOR STRUCTURE 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.03	768.3	174.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .28 WATERSHED INCHES; 281 CFS-HRS; 23.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 89

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.03	1498.3	(NULL)
23.97	74.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.64 WATERSHED INCHES; 3632 CFS-HRS; 300.1 ACRE-  
 FEET.

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EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 89  
 STARTING TIME = .00 RAIN DEPTH = 8.47 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =99 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	99.6	(RUNOFF)
20.13	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.18 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		
12.35	99.4	390.78
20.19	2.5	389.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.18 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	175.5	(RUNOFF)
20.68	4.1	(RUNOFF)
23.97	3.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.00 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	270.3	(NULL)
20.14	6.8	(NULL)
23.12	5.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.07 WATERSHED INCHES; 359 CFS-HRS; 29.6 ACRE-FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,  
 VALUE EXTRAPOLATED.  
 \*\*\*

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	268.8	384.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.04 WATERSHED INCHES; 357 CFS-HRS; 29.5 ACRE-FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.38 268.4 369.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.05 WATERSHED INCHES; 357 CFS-HRS; 29.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.28 226.3 (RUNOFF)
20.13 5.8 (RUNOFF)
23.74 4.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.74 WATERSHED INCHES; 295 CFS-HRS; 24.4 ACRE-
FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.34 479.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.90 WATERSHED INCHES; 653 CFS-HRS; 54.0 ACRE-
FEET.

OPERATION REACH XSECTION 8

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.40 479.0 358.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.90 WATERSHED INCHES; 653 CFS-HRS; 53.9 ACRE-
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.29 242.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.38 WATERSHED INCHES; 350 CFS-HRS; 28.9 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE

STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 21, TRUNCATED AT 400 POINTS  
WITH 2.68 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 370.65.  
\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.54 153.9 378.71  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.69 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.13 38.4 (RUNOFF)  
15.83 1.2 (RUNOFF)  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.11 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.91 127.4 360.78

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.68 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.18 184.3 (RUNOFF)  
18.87 4.1 (RUNOFF)  
22.76 3.1 (RUNOFF)  
23.09 3.1 (RUNOFF)  
24.03 2.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.26 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	571.3	(NULL)
24.01	12.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.75 WATERSHED INCHES; 837 CFS-HRS; 69.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	69.3	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.95 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	675.4	(NULL)
24.00	20.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1151 CFS-HRS; 95.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	717.1	(NULL)
24.00	21.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	717.1	(NULL)
24.00	21.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.3 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
\*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	717.1	335.71
24.00	21.4	331.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	98.2	(RUNOFF)
17.34	2.2	(RUNOFF)
24.00	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.01 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	130.6	(RUNOFF)
21.97	2.1	(RUNOFF)
24.03	1.8	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.49 WATERSHED INCHES; 151 CFS-HRS; 12.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	179.0	(RUNOFF)
15.84	5.4	(RUNOFF)
17.34	4.2	(RUNOFF)
19.75	3.1	(RUNOFF)
20.05	3.1	(RUNOFF)
24.00	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.60 WATERSHED INCHES; 172 CFS-HRS; 14.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	224.0	(NULL)
15.81	7.2	(NULL)
17.31	5.5	(NULL)
20.07	4.1	(NULL)
23.07	3.2	(NULL)
23.73	3.1	(NULL)
24.01	3.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.29 WATERSHED INCHES; 247 CFS-HRS; 20.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	401.6	(NULL)
15.83	12.6	(NULL)
17.33	9.7	(NULL)
20.06	7.2	(NULL)
21.95	6.2	(NULL)
24.01	5.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.99 WATERSHED INCHES; 419 CFS-HRS; 34.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 22

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	978.4	(NULL)
18.81	37.0	(NULL)



19.71	35.2	(NULL)
20.05	34.7	(NULL)
20.58	33.4	(NULL)
21.93	30.8	(NULL)
23.04	28.4	(NULL)
23.69	27.1	(NULL)
24.00	26.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.19 WATERSHED INCHES; 1643 CFS-HRS; 135.8 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.38	922.4	317.25
24.06	26.7	314.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.19 WATERSHED INCHES; 1642 CFS-HRS; 135.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.25	165.8	(RUNOFF)
18.66	4.1	(RUNOFF)
20.68	3.6	(RUNOFF)
23.12	3.0	(RUNOFF)
24.00	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.34 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.30	160.7	365.43
18.69	4.1	356.71

20.69	3.6	356.67
23.15	3.0	356.62
24.03	2.8	356.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.35 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	237.1	(RUNOFF)
18.65	6.1	(RUNOFF)
20.67	5.3	(RUNOFF)
23.98	4.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.26 WATERSHED INCHES; 302 CFS-HRS; 25.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	395.1	(NULL)
18.66	10.2	(NULL)
20.14	9.4	(NULL)
20.68	8.9	(NULL)
23.14	7.4	(NULL)
23.78	7.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.30 WATERSHED INCHES; 509 CFS-HRS; 42.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	384.2	319.84
20.20	9.4	316.93
20.74	8.9	316.91
23.20	7.4	316.81
23.83	7.0	316.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.29 WATERSHED INCHES; 509 CFS-HRS; 42.0 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 28

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.24	190.4	(RUNOFF)
20.67	4.2	(RUNOFF)
24.01	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.89 WATERSHED INCHES; 228 CFS-HRS; 18.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.33	1077.4	(NULL)
20.08	39.1	(NULL)
23.07	31.9	(NULL)
24.04	29.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.15 WATERSHED INCHES; 1869 CFS-HRS; 154.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.35	1459.8	(NULL)
24.04	36.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.18 WATERSHED INCHES; 2378 CFS-HRS; 196.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.35	1459.8	(NULL)
24.04	36.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.18 WATERSHED INCHES; 2378 CFS-HRS; 196.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
-----------------	----------------------	------

ELEVATION (FEET)		
12.21	264.7	(RUNOFF)
20.66	5.1	(RUNOFF)
23.11	4.2	(RUNOFF)
24.02	3.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-FEET.

OPERATION REACH XSECTION 32

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.31	244.6	314.09
20.73	5.1	310.41
23.19	4.2	310.34
24.09	3.9	310.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.16	39.4	(RUNOFF)
15.84	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.86 WATERSHED INCHES; 43 CFS-HRS; 3.5 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
WITH .53 AC-FT ( .10 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 378.24.  
\*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.23	32.9	380.81

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.68 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
\*\*\*

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OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	32.9	338.30
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.68 WATERSHED INCHES;	36 CFS-HRS;	3.0 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	118.2	(RUNOFF)
20.86	2.0	(RUNOFF)
24.02	1.6	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
7.86 WATERSHED INCHES;	139 CFS-HRS;	11.5 ACRE-
FEET.		

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
 WITH 1.05 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 354.18.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	96.1	357.96
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
7.15 WATERSHED INCHES;	127 CFS-HRS;	10.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	128.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
7.04 WATERSHED INCHES;	163 CFS-HRS;	13.5 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	128.6	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
 \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	128.6	330.88

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	142.5	(RUNOFF)
15.84	4.4	(RUNOFF)
17.34	3.4	(RUNOFF)
21.96	2.2	(RUNOFF)
22.75	2.0	(RUNOFF)
23.07	2.0	(RUNOFF)
24.01	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.77 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	260.3	(NULL)
18.82	6.2	(NULL)
21.95	5.0	(NULL)
24.01	4.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.91 WATERSHED INCHES; 306 CFS-HRS; 25.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	121.2	(RUNOFF)
18.64	3.2	(RUNOFF)
23.76	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.10 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	1571.2	(NULL)
24.04	38.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.17 WATERSHED INCHES; 2533 CFS-HRS; 209.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	1817.2	(NULL)
24.04	42.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.24 WATERSHED INCHES; 2841 CFS-HRS; 234.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	2017.4	(NULL)
24.03	47.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.29 WATERSHED INCHES; 3141 CFS-HRS; 259.5 ACRE-FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	1960.9	292.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.29 WATERSHED INCHES; 3140 CFS-HRS; 259.5 ACRE-FEET.

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OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	1960.9	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.29 WATERSHED INCHES;	3140 CFS-HRS;	259.5 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	140.0	(RUNOFF)
20.10	3.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.16 WATERSHED INCHES;	190 CFS-HRS;	15.7 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	175.7	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.06 WATERSHED INCHES;	245 CFS-HRS;	20.3 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	315.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.10 WATERSHED INCHES;	435 CFS-HRS;	36.0 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	171.6	(RUNOFF)
21.97	3.0	(RUNOFF)
24.03	2.6	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.09 WATERSHED INCHES;	184 CFS-HRS;	15.2 ACRE-



FEET.

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OPERATION ADDHYD XSECTION 49

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK ELEVATION (FEET) 12.40 2049.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 6.28 WATERSHED INCHES; 3324 CFS-HRS; 274.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK ELEVATION (FEET) 12.39 2343.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 6.26 WATERSHED INCHES; 3759 CFS-HRS; 310.7 ACRE-FEET.

OPERATION REACH XSECTION 51

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK ELEVATION (FEET) 12.48 2299.2 287.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 6.25 WATERSHED INCHES; 3758 CFS-HRS; 310.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 52

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK ELEVATION (FEET) 12.17 8.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 1.63 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT, UNLESS NEW RATING TABLE VALUES ARE INSERTED. \*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	8.0	288.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.63 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .85 WATERSHED INCHES; 4 CFS-HRS; .3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	112.9	(RUNOFF)
21.97	2.0	(RUNOFF)
24.03	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.79 WATERSHED INCHES; 120 CFS-HRS; 9.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	2346.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.24 WATERSHED INCHES; 3878 CFS-HRS; 320.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	9.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.28 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	2352.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.16 WATERSHED INCHES; 3891 CFS-HRS; 321.6 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	78.5	(RUNOFF)
24.02	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.92 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	2388.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.13 WATERSHED INCHES; 3976 CFS-HRS; 328.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	47.3	(RUNOFF)
21.96	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	2414.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

6.10 WATERSHED INCHES; 4030 CFS-HRS; 333.0 ACRE-  
FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.57 2354.7 251.75

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.10 WATERSHED INCHES; 4029 CFS-HRS; 332.9 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.36 30.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.55 24.7 335.67

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.63 24.4 301.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.19 139.6 (RUNOFF)  
20.10 3.1 (RUNOFF)

24.02 2.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.89 WATERSHED INCHES; 145 CFS-HRS; 11.9 ACRE-
FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE
TIME INCREMENT OF .043 HOURS.
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES
FIRST NEGATIVE VALUE IS 0 CFS.
\*\*\*

OPERATION RESVOR STRUCTURE 62

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Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows: 12.42 (70.1, 297.03), 20.12 (3.1, 287.70), 24.04 (2.3, 287.60)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.89 WATERSHED INCHES; 145 CFS-HRS; 11.9 ACRE-
FEET.

OPERATION ADDHYD XSECTION 67

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows: 12.51 (90.2, NULL), 18.87 (4.3, NULL), 23.11 (3.2, NULL), 24.04 (3.0, NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.22 WATERSHED INCHES; 191 CFS-HRS; 15.8 ACRE-
FEET.

OPERATION RUNOFF XSECTION 68

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows: 12.19 (273.8, (RUNOFF)), 18.64 (6.1, (RUNOFF)), 18.87 (6.0, (RUNOFF)), 20.87 (5.3, (RUNOFF)), 24.02 (4.2, (RUNOFF))

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.60 WATERSHED INCHES; 281 CFS-HRS; 23.3 ACRE-

FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	323.9	(NULL)
18.87	10.3	(NULL)
20.64	9.2	(NULL)
20.86	9.0	(NULL)
21.97	8.3	(NULL)
23.75	7.2	(NULL)
24.03	7.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.44 WATERSHED INCHES; 473 CFS-HRS; 39.1 ACRE-  
FEET.

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OPERATION REACH XSECTION 70

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	243.9	249.18
20.14	9.6	247.80
24.09	7.1	247.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.44 WATERSHED INCHES; 473 CFS-HRS; 39.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	54.7	(RUNOFF)
17.33	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	44.5	267.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.07 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	40.6	248.21
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.05 WATERSHED INCHES;	46 CFS-HRS;	3.8 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 73

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	312.6	(RUNOFF)
15.84	12.1	(RUNOFF)
17.34	9.4	(RUNOFF)
19.75	7.1	(RUNOFF)
20.08	7.0	(RUNOFF)
21.96	6.2	(RUNOFF)
24.01	5.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.26 WATERSHED INCHES;	302 CFS-HRS;	25.0 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	2448.2	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.92 WATERSHED INCHES;	4331 CFS-HRS;	357.9 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	274.2	(NULL)
20.14	10.4	(NULL)
23.14	8.3	(NULL)
24.09	7.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.49 WATERSHED INCHES;	519 CFS-HRS;	42.9 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	2684.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.87 WATERSHED INCHES; 4850 CFS-HRS; 400.8 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 77.  
 \*\*\*

OPERATION REACH XSECTION 77

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	2684.8	232.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.87 WATERSHED INCHES; 4850 CFS-HRS; 400.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	171.1	(RUNOFF)
15.84	6.1	(RUNOFF)
17.34	4.7	(RUNOFF)
21.96	3.1	(RUNOFF)
24.01	2.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.96 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	2733.9	(NULL)
23.98	76.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.84 WATERSHED INCHES; 5013 CFS-HRS; 414.3 ACRE-  
 FEET.



OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	2706.7	219.52

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.84 WATERSHED INCHES; 5012 CFS-HRS; 414.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	194.0	(RUNOFF)
15.84	6.3	(RUNOFF)
17.34	4.9	(RUNOFF)
22.42	3.0	(RUNOFF)
24.00	2.8	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.34 WATERSHED INCHES; 177 CFS-HRS; 14.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	2745.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.82 WATERSHED INCHES; 5189 CFS-HRS; 428.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	97.7	(RUNOFF)
15.84	3.6	(RUNOFF)
20.07	2.1	(RUNOFF)
24.01	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
12.62 2768.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.79 WATERSHED INCHES; 5281 CFS-HRS; 436.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	307.5	(RUNOFF)
18.67	8.6	(RUNOFF)
20.68	7.6	(RUNOFF)
23.12	6.3	(RUNOFF)
24.01	5.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.71 WATERSHED INCHES; 361 CFS-HRS; 29.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 86

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.61	2893.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.71 WATERSHED INCHES; 5642 CFS-HRS; 466.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	76.9	(RUNOFF)
15.84	2.2	(RUNOFF)
22.42	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.87 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.61	2906.8	(NULL)
23.97	88.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.72 WATERSHED INCHES; 5713 CFS-HRS; 472.1 ACRE-
FEET.

OPERATION DIVERT XSECTION 81
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
11.94 730.0 \* (DIVERT)
23.97 88.1 (DIVERT)
\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3878 CFS-HRS; 320.4 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.61 2176.8 (DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 1835 CFS-HRS; 151.6 ACRE-
FEET.

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\*\*\* MESSAGE - STRUCTURE 65, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 80.00 FEET BELOW ASSUMED CREST ELEVATION AT 169.00.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 65, TRUNCATED AT 400 POINTS
WITH 78.93 AC-FT ( .08 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 168.93.
\*\*\*

OPERATION RESVOR STRUCTURE 65

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.80 1882.7 178.73

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.86 WATERSHED INCHES; 860 CFS-HRS; 71.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 89

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION (FEET)  
 12.80 2612.7 (NULL)  
 23.97 88.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.74 WATERSHED INCHES; 4738 CFS-HRS; 391.5 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4  
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)
RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 9, ARC 2							
MAIN TIME INCREMENT .060 HOURS							
ALTERNATE 1		STORM 2					
STRUCTURE 11	RESVOR	.09	1.39	382.15	12.47	51	566.7
XSECTION 8	REACH	.17	1.31	357.10	12.52	84	494.1
STRUCTURE 21	RESVOR	.07	1.91	374.07	13.56F	10F	142.9
STRUCTURE 22	RESVOR	.07	1.91	353.09	13.68F	10F	142.9
STRUCTURE 23	RESVOR	.32	1.39	---	12.47	112	350.0
XSECTION 16	REACH	.32	1.39	332.30	12.47	112	350.0
XSECTION 20	ADDHYD	.05	2.19	---	12.17	71	1420.0
XSECTION 23	REACH	.41	1.52	315.42	12.41	167	407.3
STRUCTURE 31	RESVOR	.05	1.55	362.31	12.46	28	560.0
XSECTION 30	ADDHYD	.60	1.50	---	12.38	276	460.0
STRUCTURE 1	RESVOR	.60	1.50	---	12.38	276	460.0
STRUCTURE 32	RESVOR	.01	2.01	379.28	13.56R	1R	100.0
STRUCTURE 33	RESVOR	.03	2.08	355.98	12.47	18	600.0
STRUCTURE 34	RESVOR	.04	2.06	---	12.48	18	450.0
XSECTION 41	ADDHYD	.64	1.50	---	12.36	301	470.3
XSECTION 44	REACH	.77	1.57	290.18	12.52	375	487.0
STRUCTURE 2	RESVOR	.77	1.57	---	12.52	375	487.0
XSECTION 49	ADDHYD	.82	1.56	---	12.51	393	479.3
XSECTION 51	REACH	.93	1.54	284.60	12.61	435	467.7
XSECTION 60	ADDHYD	1.01	1.49	---	12.60	449	444.6

XSECTION	63	REACH	1.02	1.48	249.57	12.77	427	418.6
STRUCTURE	61	RESVOR	.01	1.71	332.36	12.74	5	500.0
STRUCTURE	62	RESVOR	.05	.83	290.42	12.43	12	240.0
STRUCTURE	63	RESVOR	.01	1.40	263.40	12.49	3	300.0
XSECTION	76	ADDHYD	1.28	1.36	---	12.74	474	370.3
XSECTION	77	REACH	1.28	1.36	229.25	12.81	474	370.3
XSECTION	88	ADDHYD	1.55	1.28	---	12.79	508	327.7
XSECTION	81	DIVERT	.00	1.28	---	12.79	508	*****

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ALTERNATE 1		STORM 2						
XSECTION	82	DIVERT	1.55	.00	---	.00	0	.0
STRUCTURE	65	RESVOR	1.55	.00	---	.00	0	.0
XSECTION	89	ADDHYD	1.55	1.28	---	12.79	508	327.7
RAINFALL OF		4.91 inches AND		24.00 hr DURATION, BEGINS AT		.0 hrs.		
ALTERNATE 1		STORM 10						
STRUCTURE	11	RESVOR	.09	2.81	383.02	12.34	121	1344.4
XSECTION	8	REACH	.17	2.70	357.82	12.43	212	1247.1
STRUCTURE	21	RESVOR	.07	3.49	376.27	12.68	61	871.4
STRUCTURE	22	RESVOR	.07	3.49	355.97	12.81	57	814.3
STRUCTURE	23	RESVOR	.32	2.79	---	12.41	279	871.9
XSECTION	16	REACH	.32	2.79	333.39	12.41	279	871.9
XSECTION	20	ADDHYD	.05	3.82	---	12.17	122	2440.0
XSECTION	23	REACH	.41	2.96	316.13	12.39	380	926.8
STRUCTURE	31	RESVOR	.05	3.02	363.94	12.32	78	1560.0
XSECTION	30	ADDHYD	.60	2.94	---	12.37	622	1036.7
STRUCTURE	1	RESVOR	.60	2.94	---	12.37	622	1036.7
STRUCTURE	32	RESVOR	.01	3.48	380.16	12.40	9	900.0
STRUCTURE	33	RESVOR	.03	3.67	357.05	12.32	49	1633.3
STRUCTURE	34	RESVOR	.04	3.62	---	12.35	54	1350.0
XSECTION	41	ADDHYD	.64	2.93	---	12.36	673	1051.6
XSECTION	44	REACH	.77	3.02	291.04	12.45	849	1102.6

STRUCTURE	2	RESVOR	.77	3.02	---	12.45	849	1102.6
XSECTION	49	ADDHYD	.82	3.01	---	12.44	889	1084.1
XSECTION	51	REACH	.93	2.99	285.96	12.52	993	1067.7
XSECTION	60	ADDHYD	1.01	2.91	---	12.51	1028	1017.8
XSECTION	63	REACH	1.02	2.89	250.42	12.64	998	978.4
STRUCTURE	61	RESVOR	.01	3.24	334.33	12.74	8	800.0
STRUCTURE	62	RESVOR	.05	1.98	293.76	12.62	18	360.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:

F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 10							
STRUCTURE 63	RESVOR	.01	2.82	265.90	12.33	10	1000.0
XSECTION 76	ADDHYD	1.28	2.72	---	12.62	1123	877.3
XSECTION 77	REACH	1.28	2.72	230.56	12.68	1122	876.6
XSECTION 88	ADDHYD	1.55	2.61	---	12.74	1203	776.1
XSECTION 81	DIVERT	.00	2.61	---	12.30F	730F*****	
XSECTION 82	DIVERT	1.55	.25	---	12.74	473	305.2
STRUCTURE 65	RESVOR	1.55	.00	---	24.01	0	.0
XSECTION 89	ADDHYD	1.55	2.35	---	13.17	734	473.5

RAINFALL OF 7.23 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 50							
STRUCTURE 11	RESVOR	.09	4.89	384.18	12.32	219	2433.3
XSECTION 8	REACH	.17	4.75	358.49	12.41	387	2276.5
STRUCTURE 21	RESVOR	.07	5.58	377.76	12.51	140	2000.0
STRUCTURE 22	RESVOR	.07	5.57	359.61	12.80	112	1600.0
STRUCTURE 23	RESVOR	.32	4.83	---	12.40	583	1821.9
XSECTION 16	REACH	.32	4.83	335.04	12.40	583	1821.9
XSECTION 20	ADDHYD	.05	6.08	---	12.17	188	3760.0
XSECTION 23	REACH	.41	5.04	316.89	12.41	731	1782.9
STRUCTURE 31	RESVOR	.05	5.15	365.04	12.30	132	2640.0
XSECTION 30	ADDHYD	.60	5.03	---	12.36	1165	1941.7
STRUCTURE 1	RESVOR	.60	5.03	---	12.36	1165	1941.7
STRUCTURE 32	RESVOR	.01	5.55	380.63	12.24	29	2900.0

STRUCTURE	33	RESVOR	.03	5.93	357.61	12.27	85	2833.3
STRUCTURE	34	RESVOR	.04	5.84	---	12.26	114	2850.0
XSECTION	41	ADDHYD	.64	5.02	---	12.34	1255	1960.9
XSECTION	44	REACH	.77	5.13	291.98	12.42	1578	2049.4
STRUCTURE	2	RESVOR	.77	5.13	---	12.42	1578	2049.4
XSECTION	49	ADDHYD	.82	5.12	---	12.41	1649	2011.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ALTERNATE	1	STORM	50					
XSECTION	51	REACH	.93	5.09	287.38	12.49	1847	1986.0
XSECTION	60	ADDHYD	1.01	4.98	---	12.48	1917	1898.0
XSECTION	63	REACH	1.02	4.96	251.35	12.58	1879	1842.2
STRUCTURE	61	RESVOR	.01	5.41	335.25	12.57	19	1900.0
STRUCTURE	62	RESVOR	.05	3.83	296.06	12.44	52	1040.0
STRUCTURE	63	RESVOR	.01	4.90	267.40	12.24	27	2700.0
XSECTION	76	ADDHYD	1.28	4.74	---	12.57	2136	1668.8
XSECTION	77	REACH	1.28	4.74	231.65	12.57	2136	1668.8
XSECTION	88	ADDHYD	1.55	4.60	---	12.62	2313	1492.3
XSECTION	81	DIVERT	.00	4.60	---	12.00F	730F*****	
XSECTION	82	DIVERT	1.55	1.25	---	12.62	1583	1021.3
STRUCTURE	65	RESVOR	1.55	.28	174.34	13.03	768	495.5
XSECTION	89	ADDHYD	1.55	3.64	---	13.03	1498	966.5

RAINFALL OF 8.47 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE	1	STORM	99					
STRUCTURE	11	RESVOR	.09	6.04	384.78	12.32	269	2988.9
XSECTION	8	REACH	.17	5.90	358.76	12.40	479	2817.6
STRUCTURE	21	RESVOR	.07	6.69	378.71	12.54	154	2200.0
STRUCTURE	22	RESVOR	.07	6.68	360.78	12.91	127	1814.3
STRUCTURE	23	RESVOR	.32	5.96	---	12.36	717	2240.6
XSECTION	16	REACH	.32	5.96	335.71	12.36	717	2240.6
XSECTION	20	ADDHYD	.05	7.29	---	12.17	224	4480.0
XSECTION	23	REACH	.41	6.19	317.25	12.38	922	2248.8

STRUCTURE	31	RESVOR	.05	6.35	365.43	12.30	161	3220.0
XSECTION	30	ADDHYD	.60	6.18	---	12.35	1460	2433.3
STRUCTURE	1	RESVOR	.60	6.18	---	12.35	1460	2433.3
STRUCTURE	32	RESVOR	.01	6.68	380.81	12.23	33	3300.0
STRUCTURE	33	RESVOR	.03	7.15	357.96	12.29	96	3200.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AREA	AMOUNT	ELEVATION	TIME	RATE
ID	OPERATION	(SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	99					
STRUCTURE	34	RESVOR	.04	7.04	---	12.27	129	3225.0
XSECTION	41	ADDHYD	.64	6.17	---	12.34	1571	2454.7
XSECTION	44	REACH	.77	6.29	292.39	12.41	1961	2546.8
STRUCTURE	2	RESVOR	.77	6.29	---	12.41	1961	2546.8
XSECTION	49	ADDHYD	.82	6.28	---	12.40	2050	2500.0
XSECTION	51	REACH	.93	6.25	287.98	12.48	2299	2472.0
XSECTION	60	ADDHYD	1.01	6.13	---	12.47	2389	2365.3
XSECTION	63	REACH	1.02	6.10	251.75	12.57	2355	2308.8
STRUCTURE	61	RESVOR	.01	6.61	335.67	12.55	25	2500.0
STRUCTURE	62	RESVOR	.05	4.89	297.03	12.42	70	1400.0
STRUCTURE	63	RESVOR	.01	6.07	267.78	12.19	44	4400.0
XSECTION	76	ADDHYD	1.28	5.87	---	12.55	2685	2097.7
XSECTION	77	REACH	1.28	5.87	232.07	12.55	2685	2097.7
XSECTION	88	ADDHYD	1.55	5.72	---	12.61	2907	1875.5
XSECTION	81	DIVERT	.00	5.72	---	11.94F	730F*****	
XSECTION	82	DIVERT	1.55	1.84	---	12.61	2177	1404.5
STRUCTURE	65	RESVOR	1.55	.86	178.73	12.80	1883	1214.8
XSECTION	89	ADDHYD	1.55	4.74	---	12.80	2613	1685.8

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH COEFF	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION				ROUTING PARAMETERS				ATT- KIN (C)
			INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR	PEAK RATIO Q/I	
	(FT)	(FT)	PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)	(k*)	(Q*)	
BASEFLOW IS .0 CFS											
	ALTERNATE	1	STORM	2							
2	1170		24	12.3	23	12.4	1.55	1.37	.029	.952	
	.58										
5	797		51	12.5	50	12.5	2.26	1.19	.019	.989	
	.75?										
8	1221		85	12.4	84	12.5	1.15	1.48	.009	.990	
	.76?										
16	920		112	12.5	112	12.5	3.61	1.49	.001	1.000	
	1.00?										
23	1379		200	12.2	167	12.4	1.09	1.16	.056	.836	
	.34										
27	1021		84	12.3	77	12.4	1.10	1.18	.061	.910	
	.41										
32	1603		76	12.2	68	12.4	1.28	1.33	.055	.899	
	.48										
34	583		1	13.6	1	13.7	1.14	1.62	.001	.998	
	.49										
37	934		18	12.5	18	12.5	2.31	1.55	.002	.999	
	.92?										
44	1428		404	12.4	375	12.5	.45	1.34	.034	.928	
	.41										
51	1275		451	12.5	435	12.6	.58	1.31	.026	.965	
	.48										
53	652		0	.0	0	.0	.000	.00	.000	.000	
	.00										
63	1959		452	12.6	427	12.8	.77	1.28	.041	.943	
	.36										
65	1283		5	12.7	5	12.8	2.47	1.43	.012	.996	
	.53										
70	2166		68	12.2	60	12.3	1.68	1.37	.040	.883	
	.47										
72	1081		3	12.5	3	12.7	1.50	1.61	.007	.994	
	.49										
77	884		474	12.7	473	12.8	1.92	1.22	.008	.998	
	.87?										
80	1296		479	12.8	479	12.8	1.59	1.44	.003	1.000	
	1.00?										

ALTERNATE	1	STORM	10						
2	1170	48	12.3	45	12.4	1.90	1.19	.047	.937
.52									
5	797	121	12.4	120	12.4	2.00	1.25	.016	.996
.87?									
8	1221	213	12.4	212	12.4	1.26	1.44	.009	.993
.88?									
16	920	279	12.4	279	12.4	3.70	1.48	.001	1.000
1.00?									
23	1379	425	12.2	379	12.4	.70	1.27	.036	.892
.44									
27	1021	191	12.3	174	12.4	.73	1.29	.043	.911
.52									
32	1603	136	12.2	125	12.3	1.35	1.31	.047	.925
.52									
34	583	9	12.4	9	12.5	1.14	1.62	.004	.994
.86?									

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;  
 LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION				ROUTING PARAMETERS							
XSEC ID	REACH LENGTH	FLOOD PLAIN LENGTH	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR	PEAK RATIO Q/I	ATT- KIN (C)
			PEAK	TIME	PEAK	TIME	COEFF	POWER			
COEFF	(FT)	(FT)	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)	(Q*)	
	ALTERNATE	1	STORM	10							
37	934		54	12.4	54	12.4	2.32	1.54	.003	1.000	
1.00?											
44	1428		883	12.4	845	12.5	.29	1.44	.022	.957	
.53											
51	1275		1021	12.4	992	12.5	.45	1.37	.019	.972	
.59											
53	652		0	12.5	0	12.7	2.05	1.40	.010	.932	
.47											
63	1959		1034	12.5	996	12.7	.44	1.40	.026	.963	
.48											
65	1283		8	12.7	8	12.8	2.46	1.41	.010	.978	
.59											
70	2166		141	12.2	96	12.4	1.92	1.04	.168	.679	
.21											

72	1081	9	12.4	9	12.4	1.48	1.55	.008	.934
.61									
77	884	1122	12.6	1120	12.7	1.95	1.22	.009	.998
.95?									
80	1296	1136	12.7	1131	12.7	3.48	1.16	.012	.995
.86?									
ALTERNATE		1	STORM	50					
-----									
2	1170	81	12.3	81	12.4	.29	2.00	.003	.998
.94?									
5	797	217	12.3	216	12.4	1.85	1.28	.012	.995
.95?									
8	1221	387	12.4	386	12.4	1.29	1.44	.008	.999
.96?									
16	920	580	12.4	580	12.4	4.23	1.43	.001	1.000
1.00?									
23	1379	768	12.2	731	12.4	.61	1.30	.030	.952
.50									
27	1021	323	12.3	312	12.4	.40	1.45	.021	.967
.65									
32	1603	216	12.2	204	12.3	1.38	1.30	.040	.944
.56									
34	583	29	12.2	29	12.2	1.14	1.61	.006	1.000
1.00?									
37	934	113	12.2	113	12.2	2.43	1.51	.004	1.000
1.00?									
44	1428	1625	12.3	1578	12.4	.26	1.46	.017	.971
.62									
51	1275	1875	12.4	1847	12.5	.43	1.38	.017	.985
.66									
53	652	5	12.2	4	12.2	2.05	1.40	.017	.927
.75?									
63	1959	1936	12.5	1875	12.6	.36	1.44	.020	.969
.56									
65	1283	19	12.6	19	12.7	2.49	1.38	.012	.986
.67?									
70	2166	245	12.2	183	12.4	1.61	1.09	.134	.745
.24									

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SUMMARY TABLE 2

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MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.

QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;

ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION

ROUTING PARAMETERS

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FLOOD      INFLOW      OUTFLOW      Q-A EQ.      PEAK      ATT-

XSEC ID	REACH LENGTH (FT)	PLAIN LENGTH (FT)	PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)	LENGTH FACTOR (k*)	RATIO Q/I (Q*)	KIN (C)
ALTERNATE		1	STORM	50							
72	1081		27	12.2	25	12.3	1.66	1.42	.017	.927	
.70?											
77	884		2128	12.5	2128	12.5	1.75	1.24	.007	1.000	
1.00?											
80	1296		2168	12.5	2154	12.7	5.29	1.05	.023	.993	
.76?											
ALTERNATE		1	STORM	99							
2	1170		99	12.3	99	12.4	.27	2.00	.002	.999	
.97?											
5	797		267	12.3	267	12.4	1.81	1.28	.011	.998	
.97?											
8	1221		478	12.4	478	12.4	1.30	1.43	.007	1.000	
.99?											
16	920		717	12.4	717	12.4	4.47	1.41	.001	1.000	
1.00?											
23	1379		976	12.2	921	12.4	.75	1.26	.035	.943	
.49											
27	1021		392	12.3	384	12.4	.35	1.48	.017	.980	
.70?											
32	1603		260	12.2	244	12.3	1.50	1.27	.043	.941	
.55											
34	583		33	12.2	33	12.2	1.15	1.61	.005	1.000	
1.00?											
37	934		127	12.3	127	12.3	2.45	1.51	.003	1.000	
1.00?											
44	1428		2012	12.3	1960	12.4	.25	1.46	.016	.974	
.65											
51	1275		2330	12.4	2299	12.5	.43	1.38	.016	.987	
.69?											
53	652		8	12.2	8	12.2	2.05	1.40	.017	.971	
.83?											
63	1959		2411	12.5	2345	12.5	.35	1.44	.018	.972	
.59											
65	1283		25	12.5	24	12.7	2.51	1.37	.012	.982	
.70?											
70	2166		320	12.2	243	12.4	1.26	1.16	.113	.761	
.27											
72	1081		44	12.2	39	12.2	1.69	1.41	.021	.888	
.76?											
77	884		2683	12.5	2683	12.5	1.58	1.26	.007	1.000	
1.00?											
80	1296		2733	12.5	2695	12.6	6.14	1.01	.029	.986	
.71?											

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

03/31/\*\* CN MGMT- EXISTING COND.- 2,10,50,100 yr NOAA Dis

2.04TEST  
09:57:12  
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SUMMARY, JOB NO. 1

PAGE

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....			
		2	10	50	99
STRUCTURE 65	1.55				
ALTERNATE 1		0	0	768	1883
STRUCTURE 63	.01				
ALTERNATE 1		3	10	27	44
STRUCTURE 62	.05				
ALTERNATE 1		12	18	52	70
STRUCTURE 61	.01				
ALTERNATE 1		5	8	19	25
STRUCTURE 34	.04				
ALTERNATE 1		18	54	114	129
STRUCTURE 33	.03				
ALTERNATE 1		18	49	85	96
STRUCTURE 32	.01				
ALTERNATE 1		1?	9	29	33
STRUCTURE 31	.05				
ALTERNATE 1		28	78	132	161
STRUCTURE 23	.32				
ALTERNATE 1		112	279	583	717
STRUCTURE 22	.07				
ALTERNATE 1		10	57	112	127
STRUCTURE 21	.07				
ALTERNATE 1		10	61	140	154
STRUCTURE 11	.09				
ALTERNATE 1		51	121	219	269
STRUCTURE 2	.77				
ALTERNATE 1		375	849	1578	1961

STRUCTURE 1 .60  
-----

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION

03/31/\*\* CN MGMT- EXISTING COND.- 2,10,50,100 yr NOAA Dis

2.04TEST

09:57:12

SUMMARY, JOB NO. 1

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SUMMARY TABLE 3  
-----

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....			
		2	10	50	99
STRUCTURE 1	.60				
-----					
ALTERNATE 1		276	622	1165	1460
XSECTION 8	.17				
-----					
ALTERNATE 1		84	212	387	479
XSECTION 16	.32				
-----					
ALTERNATE 1		112	279	583	717
XSECTION 20	.05				
-----					
ALTERNATE 1		71	122	188	224
XSECTION 23	.41				
-----					
ALTERNATE 1		167	380	731	922
XSECTION 30	.60				
-----					
ALTERNATE 1		276	622	1165	1460
XSECTION 41	.64				
-----					
ALTERNATE 1		301	673	1255	1571
XSECTION 44	.77				
-----					
ALTERNATE 1		375	849	1578	1961
XSECTION 49	.82				
-----					
ALTERNATE 1		393	889	1649	2050
XSECTION 51	.93				
-----					
ALTERNATE 1		435	993	1847	2299
XSECTION 60	1.01				

-----						
ALTERNATE	1		449	1028	1917	2389
XSECTION	63	1.02				
-----						
ALTERNATE	1		427	998	1879	2355
XSECTION	76	1.28				
-----						
ALTERNATE	1		474	1123	2136	2685
XSECTION	77	1.28				
-----						
ALTERNATE	1		474	1122	2136	2685

1  
 TR20 ----- SCS  
 -

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 03/31/\*\* CN MGMT- EXISTING COND.- 2,10,50,100 yr NOAA Dis  
 2.04TEST  
 09:57:12 SUMMARY, JOB NO. 1 PAGE  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....			
		2	10	50	99
-----					
XSECTION	81	.00			
-----					
ALTERNATE	1		508	730	730
XSECTION	82	1.55			
-----					
ALTERNATE	1		0	473	1583
XSECTION	88	1.55			
-----					
ALTERNATE	1		508	1203	2313
XSECTION	89	1.55			
-----					
ALTERNATE	1		508	734	1498

1  
 TR20 ----- SCS  
 -

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 03/31/\*\* CN MGMT- EXISTING COND.- 2,10,50,100 yr NOAA Dis  
 2.04TEST

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST  
FILES

INPUT = h1ug2.dat , GIVEN DATA FILE  
OUTPUT = h1ug2.OUT , DATED  
03/31/\*\*,09:57:12

FILES GENERATED - DATED 03/31/\*\*,09:57:12

NONE!

TOTAL NUMBER OF WARNINGS = 37, MESSAGES = 32

\*\*\* TR-20 RUN COMPLETED \*\*\*



1

\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20  
 HYDROLOGY\*\*\*\*\*

JOB TR-20		NOPLOTS		
TITLE	Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,			
TITLE	CN MGMT- EXISTING COND.- 2,10,50,100 yr NOAA Dis			
2 XSECTN	002	1.0	389.50	
8		389.00	0.00	0.00
8		389.25	1.65	1.06
8		389.50	6.25	2.75
8		389.75	14.40	5.06
8		390.00	26.75	8.00
8		390.25	45.54	14.33
8		390.50	68.67	15.00
8		390.75	96.11	18.88
8		391.00	127.89	23.00
8		391.25	164.08	27.38
8		391.50	204.77	32.00
8		391.75	250.06	36.88
9	ENDTBL			
2 XSECTN	005	1.0	367.00	
8		366.00	0.00	0.00
8		366.50	3.51	1.5
8		367.00	13.55	4.00
8		367.50	30.53	9.00
8		367.75	47.87	13.00
8		368.00	72.23	18.00
8		368.25	104.79	23.98
8		368.50	146.13	30.94
8		368.75	197.14	38.86
8		369.00	258.63	47.75
8		369.25	331.41	57.61
8		369.50	416.25	68.44
9	ENDTBL			
3	STRUCT	11		
8		380.00	0.00	0.00
8		381.00	2.70	0.53
8		382.20	53.00	1.16
8		383.80	186.80	1.40
9	ENDTBL			
2 XSECTN	008	1.0	330.00	
8		356.00	0.00	0.00
8		356.50	20.21	6.94
8		357.00	68.51	15.75
8		357.50	144.11	26.44
8		358.00	248.93	39.00
8		358.50	389.07	53.25
8		359.00	561.31	69.00
8		359.50	767.14	86.25
8		360.00	1008.16	105.00
8		361.00	1375.68	147.50
8		361.50	1604.19	171.38
9	ENDTBL			

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

2	XSECTN	016	1.0	333.08	
8			331.08	0.00	0.00
8			332.08	80.21	8.00
8			333.08	225.50	16.00
8			333.58	310.09	20.00
8			334.08	399.94	24.00
8			334.58	493.86	28.00
8			335.08	590.97	32.00
8			335.58	690.67	36.00
8			336.08	792.47	40.00
8			336.58	896.02	44.00
9	ENDTBL				
2	XSECTN	023	1.0	314.40	
8			313.22	0.00	0.00
8			313.51	1.10	0.89
8			313.81	3.51	1.84
8			314.10	16.22	5.61
8			314.40	34.66	9.74
8			314.68	48.28	24.71
8			314.96	79.66	42.09
8			315.24	126.64	61.87
8			315.52	189.07	84.06
8			315.80	267.27	108.64
8			316.08	361.75	135.63
8			316.36	473.14	165.02
8			316.64	602.11	196.81
8			316.92	749.37	231.00
8			317.20	878.70	277.25
8			317.48	1103.89	329.14
8			317.76	1358.10	382.70
8			318.04	1640.58	437.94
8			318.32	1950.87	494.86
8			318.60	2288.69	553.45
9	ENDTBL				
3	STRUCT	21			
8			364.00	0.00	0.00
8			366.00	0.30	0.55
8			368.00	0.50	1.31
8			369.00	3.20	1.80
8			370.00	5.20	2.29
8			372.00	7.80	3.48
8			374.00	9.60	5.00
8			375.00	10.40	5.86
8			376.00	45.30	6.79
8			376.50	74.10	7.31
8			377.00	106.80	7.83
8			378.00	149.80	8.90
8			379.00	155.60	10.06
8			380.00	162.00	11.29
9	ENDTBL				

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

3	STRUCT	22			
8			352.50	0.00	0.00
8			358.65	100.00	0.91
8			361.76	140.00	3.28
8			363.64	160.00	5.47
8			366.18	180.00	9.58
8			368.71	200.00	14.77

8			370.61	250.00	19.31
9	ENDTBL				
3	STRUCT	23			
9	ENDTBL				
2	XSECTN	027	1.0	317.00	
8			316.00	0.00	0.00
8			316.50	2.68	2.59
8			317.00	10.37	6.88
8			317.50	24.26	12.84
8			318.00	45.55	20.50
8			318.50	70.64	34.75
8			319.00	137.01	60.50
8			319.25	200.57	76.25
8			319.50	273.06	92.00
8			319.75	353.76	107.75
8			320.00	442.13	123.50
8			320.50	640.03	155.00
8			321.00	863.72	186.50
9	ENDTBL				
2	XSECTN	032	1.0	313.00	
8			310.00	0.00	0.00
8			311.00	12.25	5.50
8			312.00	52.16	16.00
8			312.50	83.38	23.13
8			313.00	123.94	31.50
8			313.25	148.02	36.16
8			313.50	174.79	41.13
8			313.75	204.34	46.41
8			314.00	236.81	52.00
8			314.50	278.65	65.75
8			315.00	353.72	84.00
9	ENDTBL				
2	XSECTN	034	1.0	338.50	
8			338.00	0.00	0.00
8			338.10	4.87	2.46
8			338.25	22.73	6.38
8			338.50	73.99	13.53
8			338.75	149.34	21.45
8			339.00	247.95	30.13
8			339.50	515.65	49.78
9	ENDTBL				
2	XSECTN	037	1.0	331.00	
8			330.00	0.00	0.00

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			330.25	14.29	3.25
8			330.50	46.85	7.00
8			330.75	95.34	11.25
8			331.00	159.64	16.00
8			331.25	240.13	21.25
8			331.50	337.44	27.00
8			331.75	452.26	33.25
8			332.00	585.36	40.00
8			332.50	875.33	55.81
8			333.00	1272.05	75.25
9	ENDTBL				
2	XSECTN	044	1.0	288.90	
8			287.68	0.00	0.00
8			287.99	1.15	0.94

8			288.29	3.69	1.95
8			288.60	17.06	5.98
8			288.90	36.44	10.37
8			289.19	63.07	39.25
8			289.47	121.85	69.50
8			289.76	206.05	101.12
8			290.05	313.23	134.09
8			290.33	442.07	168.42
8			290.62	591.78	204.12
8			290.91	761.87	241.18
8			291.19	952.02	279.60
8			291.48	1162.04	319.38
8			291.77	1391.84	360.52
8			292.05	1641.40	403.02
8			292.34	1910.74	446.89
8			292.63	2199.92	492.11
8			292.91	2509.04	538.70
8			293.20	2838.22	586.65
9	ENDTBL				
3	STRUCT	31			
8			356.38	0.0	0.00
8			357.26	10.90	0.02
8			357.50	12.30	0.03
8			358.00	14.70	0.05
8			359.00	18.70	0.10
8			360.00	22.00	0.16
8			361.00	24.90	0.25
8			361.50	26.20	0.30
8			362.00	27.50	0.36
8			362.50	28.70	0.43
8			362.90	29.60	0.49
8			363.50	51.30	0.60
8			363.75	65.70	0.67
8			364.00	82.60	0.72
8			364.20	83.30	0.83
8			364.60	100.00	0.88

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			366.80	260.00	1.47
8			366.92	340.00	1.49
8			366.98	380.00	1.50
9	ENDTBL				
3	STRUCT	32			
8			375.40	0.00	0.00
8			379.36	1.00	0.74
8			380.00	5.00	0.89
8			380.20	10.00	0.94
8			380.33	15.00	0.98
8			380.45	20.00	1.01
8			380.55	25.00	1.04
8			380.65	30.00	1.06
8			381.19	40.00	1.21
8			381.78	44.00	1.39
8			382.59	66.00	1.66
8			382.79	88.00	1.75
8			382.89	110.00	1.79
8			382.97	132.00	1.83
9	ENDTBL				
3	STRUCT	33			

8			350.00	0.00	0.00
8			354.30	1.00	1.08
8			354.47	2.00	1.15
8			354.87	5.00	1.30
8			355.38	10.00	1.50
8			356.18	20.00	1.84
8			356.88	40.00	2.15
8			357.27	60.00	2.33
8			357.46	80.00	2.42
8			358.08	100.00	2.73
8			358.14	120.00	2.76
8			358.19	140.00	2.78
8			358.25	171.00	2.81
8			358.27	180.00	2.82
9	ENDTBL				
3	STRUCT	34			
9	ENDTBL				
2	XSECTN	051	1.0	282.40	
8			281.10	0.00	0.00
8			281.42	1.24	1.09
8			281.75	3.96	2.26
8			282.07	18.30	6.92
8			282.40	39.09	12.00
8			282.88	67.33	37.27
8			283.36	131.17	65.87
8			283.84	225.10	97.78
8			284.32	348.01	133.01
8			284.80	499.91	171.56
8			285.28	681.29	213.43

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			285.76	892.92	258.61
8			286.24	1135.70	307.11
8			286.72	1410.63	358.94
8			287.20	1718.74	414.08
8			287.68	2061.13	472.54
8			288.16	2438.87	534.31
8			288.64	2853.08	599.41
8			289.12	3301.76	667.84
8			289.60	3785.91	739.78
9	ENDTBL				
2	XSECTN	053	1.0	289.00	
8			288.00	0.00	0.00
8			288.50	9.00	2.88
8			289.00	34.26	7.50
8			289.50	79.27	13.88
8			290.00	147.75	22.00
8			290.50	227.49	31.94
8			291.00	332.02	43.75
8			291.50	463.75	57.44
8			291.75	540.56	64.98
8			292.00	625.07	73.00
9	ENDTBL				
2	XSECTN	063	1.0	248.40	
8			247.07	0.00	0.00
8			247.41	1.85	1.14
8			247.74	5.93	2.35
8			248.07	27.43	7.18
8			248.40	58.61	12.46

8		248.67	89.70	40.04
8		248.95	158.39	68.99
8		249.22	256.90	99.30
8		249.49	382.40	130.99
8		249.77	533.43	164.04
8		250.04	709.09	198.46
8		250.31	908.86	234.24
8		250.59	1132.40	271.40
8		250.86	1379.55	309.92
8		251.13	1650.25	349.81
8		251.41	1944.49	391.07
8		251.68	2262.35	433.69
8		251.95	2603.94	477.69
8		252.23	2969.40	523.05
8		252.50	3358.93	569.78
9	ENDTBL			
3	STRUCT	61		
8		329.75	0.00	0.00
8		330.00	1.56	0.01
8		332.00	4.37	0.13
8		334.00	5.96	0.39
8		334.10	6.01	0.40

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		334.50	10.20	0.47
8		335.00	16.10	0.56
8		336.00	28.91	0.75
8		337.00	40.10	0.97
9	ENDTBL			
3	STRUCT	62		
8		287.30	0.00	0.00
8		288.00	5.45	0.01
8		289.00	9.05	0.05
8		290.00	11.60	0.13
8		292.00	15.35	0.50
8		294.00	18.40	1.19
8		294.30	18.92	1.26
8		294.50	20.73	1.40
8		295.00	36.40	1.60
8		295.40	38.00	1.80
8		296.00	51.10	2.15
8		297.00	69.60	2.75
8		298.00	86.80	3.44
8		298.68	98.50	3.91
8		298.80	107.56	4.00
9	ENDTBL			
3	STRUCT	63		
8		259.43	0.00	0.00
8		260.00	1.30	0.026
8		260.50	1.70	0.050
8		261.00	2.10	0.075
8		261.50	2.40	0.095
8		262.00	2.70	0.119
8		262.50	2.90	0.160
8		263.00	3.20	0.205
8		263.50	3.40	0.245
8		264.00	3.60	0.285
8		264.50	3.80	0.360
8		265.00	3.90	0.415

8		265.50	4.10	0.480
8		266.00	11.00	0.537
8		266.50	15.40	0.620
8		267.00	16.00	0.709
8		267.50	30.30	0.798
8		268.00	56.00	0.887
8		268.50	145.68	0.976
9	ENDTBL			
2	XSECTN 065	1.0	300.50	
8		300.00	0.00	0.00
8		300.10	0.29	0.23
8		300.25	1.47	0.69
8		300.40	3.55	1.28
8		300.50	5.48	1.75
8		300.60	7.88	2.28

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		300.75	12.45	3.19
8		300.90	18.28	4.23
8		301.00	22.91	5.00
8		301.10	28.18	5.83
8		301.25	37.36	7.19
8		301.40	48.14	8.68
8		301.50	56.26	9.75
9	ENDTBL			
2	XSECTN 070	1.0	248.40	
8		247.07	0.00	0.00
8		247.41	1.85	1.14
8		247.74	5.93	2.35
8		248.07	27.43	7.18
8		248.40	58.61	12.46
8		248.67	89.70	40.04
8		248.95	158.39	68.99
8		249.22	256.90	99.30
8		249.49	382.40	130.99
8		249.77	533.43	164.04
8		250.04	709.09	198.46
8		250.31	908.86	234.24
8		250.59	1132.40	271.40
8		250.86	1379.55	309.92
8		251.13	1650.25	349.81
8		251.41	1944.49	391.07
8		251.68	2262.35	433.69
8		251.95	2603.94	477.69
8		252.23	2969.40	523.05
8		252.50	3358.93	569.78
9	ENDTBL			
2	XSECTN 072	1.0	248.40	
8		247.07	0.00	0.00
8		247.41	1.85	1.14
8		247.74	5.93	2.35
8		248.07	27.43	7.18
8		248.40	58.61	12.46
8		248.67	89.70	40.04
8		248.95	158.39	68.99
8		249.22	256.90	99.30
8		249.49	382.40	130.99
8		249.77	533.43	164.04
8		250.04	709.09	198.46

8		250.31	908.86	234.24
8		250.59	1132.40	271.40
8		250.86	1379.55	309.92
8		251.13	1650.25	349.81
8		251.41	1944.49	391.07
8		251.68	2262.35	433.69
8		251.95	2603.94	477.69
8		252.23	2969.40	523.05

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8		252.50	3358.93	569.78
9	ENDTBL			
2	XSECTN	077	1.0	229.00
8			226.00	0.00
8			226.50	11.73
8			227.00	42.97
8			227.50	96.50
8			228.00	175.93
8			228.50	258.13
8			229.00	385.22
8			229.50	561.82
8			230.00	793.74
8			230.50	1079.38
8			231.00	1462.49
8			231.50	1953.75
8			232.00	2564.16
8			232.50	3408.70
8			233.00	4351.01
9	ENDTBL			
2	XSECTN	080	1.0	212.00
8			210.50	0.00
8			210.75	4.72
8			211.00	15.68
8			211.25	32.36
8			211.50	54.93
8			211.75	83.70
8			212.00	119.05
8			212.25	163.87
8			212.50	215.35
8			212.75	273.55
8			213.00	338.57
8			214.00	669.42
8			215.00	806.07
8			216.00	1088.03
8			217.00	1451.30
8			218.00	1978.93
8			219.00	2262.06
8			220.00	3115.20
8			221.00	4892.67
9	ENDTBL			
3	STRUCT	03		
8			265.00	0.00
8			266.81	100.00
8			268.63	200.00
8			269.76	300.00
8			270.81	400.00
8			271.72	500.00
8			272.59	600.00
8			273.41	700.00



8	274.21	800.00	7.101
1			

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8	275.01	900.00	8.013
8	276.00	1025.00	9.223
8	276.61	1143.95	10.007
8	277.45	1373.75	11.134
8	278.33	1678.37	12.382
8	279.24	2056.25	13.758

9 ENDTBL

5 RAINFL 9

.1

8	0.0000	0.0013	0.0023	0.0034	0.0044
8	0.0055	0.0065	0.0076	0.0087	0.0098
8	0.0109	0.0121	0.0132	0.0143	0.0155
8	0.0167	0.0178	0.0190	0.0202	0.0214
8	0.0226	0.0238	0.0251	0.0263	0.0276
8	0.0288	0.0301	0.0314	0.0327	0.0340
8	0.0353	0.0366	0.0379	0.0393	0.0406
8	0.0420	0.0434	0.0447	0.0461	0.0475
8	0.0489	0.0504	0.0518	0.0532	0.0547
8	0.0562	0.0576	0.0591	0.0606	0.0621
8	0.0636	0.0651	0.0667	0.0682	0.0697
8	0.0713	0.0729	0.0745	0.0760	0.0776
8	0.0793	0.0809	0.0826	0.0843	0.0861
8	0.0879	0.0898	0.0916	0.0936	0.0955
8	0.0975	0.0996	0.1017	0.1038	0.1060
8	0.1082	0.1104	0.1127	0.1150	0.1174
8	0.1198	0.1223	0.1247	0.1273	0.1298
8	0.1324	0.1351	0.1378	0.1405	0.1432
8	0.1461	0.1490	0.1521	0.1554	0.1588
8	0.1623	0.1660	0.1699	0.1739	0.1780
8	0.1823	0.1868	0.1914	0.1961	0.2010
8	0.2061	0.2117	0.2179	0.2247	0.2321
8	0.2400	0.2490	0.2591	0.2702	0.2825
8	0.2955	0.3157	0.3370	0.3662	0.4067
8	0.4766	0.5933	0.6338	0.6630	0.6843
8	0.7045	0.7176	0.7298	0.7409	0.7510
8	0.7600	0.7679	0.7753	0.7821	0.7883
8	0.7939	0.7990	0.8039	0.8086	0.8132
8	0.8177	0.8220	0.8261	0.8301	0.8340
8	0.8377	0.8412	0.8446	0.8479	0.8510
8	0.8540	0.8568	0.8595	0.8622	0.8649
8	0.8676	0.8702	0.8727	0.8753	0.8778
8	0.8802	0.8826	0.8850	0.8873	0.8896
8	0.8918	0.8940	0.8962	0.8983	0.9004
8	0.9025	0.9045	0.9064	0.9084	0.9103
8	0.9121	0.9139	0.9157	0.9174	0.9191
8	0.9208	0.9224	0.9240	0.9256	0.9271
8	0.9287	0.9303	0.9318	0.9334	0.9349
8	0.9364	0.9379	0.9394	0.9409	0.9424
8	0.9439	0.9453	0.9468	0.9482	0.9496
8	0.9511	0.9525	0.9539	0.9553	0.9566
8	0.9580	0.9594	0.9607	0.9621	0.9634

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		0.9647		0.9660	0.9673	0.9686	0.9699	
8		0.9712		0.9724	0.9737	0.9749	0.9762	
8		0.9774		0.9786	0.9798	0.9810	0.9822	
8		0.9834		0.9845	0.9857	0.9868	0.9879	
8		0.9891		0.9902	0.9913	0.9924	0.9935	
8		0.9945		0.9956	0.9967	0.9977	0.9987	
8		1.0000		1.0000	1.0000	1.0000	1.0000	
9	ENDTBL							
6	RUNOFF	1 001		1	0.0336	80.992	0.4051	DA1
6	REACH	3 002	1	2	1170.0		1	
6	RUNOFF	1 003		1	0.0580	79.488	0.3751	DA2
6	ADDHYD	4 004	1 2 3				1	DA1+2
6	RESVOR	2 11 3		1			1	1
	SWMF10							
6	REACH	3 005	1	2	797.0		1	
6	RUNOFF	1 006		3	0.0798	77.284	0.3921	DA3
6	ADDHYD	4 007	2 3 4				1	
	DA12+3							
6	REACH	3 008	4	7	1221.0		1	1 SA1-
	SA2							
6	RUNOFF	1 009		1	0.0734	90.928	0.4221	DA1
6	RESVOR	2 21 1		2			1	1
	SWMF13							
6	RUNOFF	1 010		3	0.0097	72.007	0.1281	DA7
6	RESVOR	2 22 2 3 4					1	1 HWY
	STOR							
6	RUNOFF	1 011		2	0.0544	73.278	0.2201	DA2
6	ADDHYD	4 012	7 2 3				1	
	SA1+DA2							
6	RUNOFF	1 013		5	0.0193	79.062	0.2481	DA3
6	ADDHYD	4 014	4 3 6				1	
	DA17+2							
6	ADDHYD	4 015	6 5 3				1	
	DA172+3							
6	RESVOR	2 23 3		1			1	1
	HWYSTOR2							
6	REACH	3 016	1	2	920.0		1	1
6	RUNOFF	1 017		3	0.0211	87.900	0.1641	DA4
6	RUNOFF	1 018		4	0.0313	91.880	0.2551	DA5
6	RUNOFF	1 019		5	0.0404	84.467	0.1681	DA6
6	ADDHYD	4 020	3 4 6				1	1 DA4+5
6	ADDHYD	4 021	6 5 1				1	
	DA123+6							
6	ADDHYD	4 022	2 1 3				1	
	DA45+6							
6	REACH	3 023	3	7	1379.0		1	1 SA2-
	SA3							
6	RUNOFF	1 024		1	0.0505	82.333	0.3401	DA1
6	RESVOR	2 31 1		2			1	1 SWMF3
6	RUNOFF	1 025		3	0.0748	81.676	0.3581	DA2
6	ADDHYD	4 026	2 3 4				1	DA1+2
6	REACH	3 027	4	1	1021.0		1	
6	RUNOFF	1 028		2	0.0599	78.523	0.3231	DA3
6	ADDHYD	4 029	7 2 3				1	
	SA2+DA3							
6	ADDHYD	4 030	1 3 5				1	
	DA12+3							
6	RUNOFF	1 031		1	0.0692	86.978	0.2761	DA4
6	REACH	3 032	1	6	1603.0		1	
6	RUNOFF	1 033		2	0.0084	95.000	0.1921	DA5
6	RESVOR	2 32 2		3			1	1
	SWMF11							
6	REACH	3 034	3	7	583.0		1	

6 RUNOFF 1 035 1 0.0275 94.960 0.2481 DA6  
 6 RESVOR 2 33 1 2 1 1 SWMF8  
 1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

6 ADDHYD 4 036 7 2 1 1 DA5+6  
 6 RESVOR 2 34 1 2 1 1  
 HWYSTOR3  
 6 REACH 3 037 2 4 934.0 1  
 6 RUNOFF 1 038 1 0.0328 85.878 0.1901 DA7  
 6 ADDHYD 4 039 4 1 3 1  
 DA56+7  
 6 RUNOFF 1 040 2 0.0393 80.311 0.3671 DA8  
 6 ADDHYD 4 041 5 2 1 1 DA3+8  
 6 ADDHYD 4 042 6 1 2 1 DA4+8  
 6 ADDHYD 4 043 3 2 1 1 DA7+8  
 6 REACH 3 044 1 7 1428.0 1 1 SA3-  
 SA4  
 6 RUNOFF 1 045 1 0.0477 80.798 0.4121 DA1  
 6 RUNOFF 1 046 2 0.0628 79.968 0.4401 DA2  
 6 ADDHYD 4 047 1 2 3 1 DA1+2  
 6 RUNOFF 1 048 1 0.0469 80.250 0.2491 DA3  
 6 ADDHYD 4 049 7 1 2 1  
 SA3+DA3  
 6 ADDHYD 4 050 2 3 4 1  
 DA12+3  
 6 REACH 3 051 4 7 1275.0 1 1 SA4-  
 SA5  
 6 RUNOFF 1 052 1 0.0087 41.639 0.1631 DA1  
 6 REACH 3 053 1 5 652.0 1  
 6 RUNOFF 1 054 1 0.0072 33.729 0.2561 DA2  
 6 RUNOFF 1 055 2 0.0322 77.752 0.2491 DA3  
 6 ADDHYD 4 056 7 2 4 1  
 SA4+DA3  
 6 ADDHYD 4 057 5 1 3 1 DA1+2  
 6 ADDHYD 4 058 4 3 5 1  
 DA12+3  
 6 RUNOFF 1 059 1 0.0266 70.478 0.2611 DA4  
 6 ADDHYD 4 060 5 1 2 1 1  
 DA123+4  
 6 RESVOR 2 03 2 1 1 1 PROP3  
 6 RUNOFF 1 061 3 0.0173 69.728 0.2971 DA5  
 6 ADDHYD 4 062 1 3 6 1 1  
 DA1234+5  
 6 REACH 3 063 6 7 1959.0 1 1 SA5-  
 SA6  
 6 RUNOFF 1 064 1 0.0110 84.520 0.5211 DA1  
 6 RESVOR 2 61 1 2 1 1  
 SWMF19  
 6 REACH 3 065 2 3 1283.0 1  
 6 RUNOFF 1 066 1 0.0458 70.198 0.2391 DA2  
 6 RESVOR 2 62 1 2 1 1  
 SWMF18  
 6 ADDHYD 4 067 3 2 4 1 DA1+2  
 6 RUNOFF 1 068 5 0.0778 76.176 0.2281 DA3  
 6 ADDHYD 4 069 4 5 1 1  
 DA12+3  
 6 REACH 3 070 1 2 2166.0 1  
 6 RUNOFF 1 071 1 0.0119 80.036 0.1221 DA4  
 6 RESVOR 2 63 1 3 1 1 SWMF2

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6 REACH 3 072 3 4 1081.0 1
6 RUNOFF 1 073 5 0.1100 64.864 0.2051 DA5
6 ADDHYD 4 074 7 5 1 1
SA5+DA5
6 ADDHYD 4 075 2 4 6 1
DA123+4
6 ADDHYD 4 076 1 6 2 1 1
DA12345
6 REACH 3 077 2 7 884.0 1 1 SA6-
SA7
6 RUNOFF 1 078 2 0.0510 70.802 0.1971 DA1
6 ADDHYD 4 079 7 2 1 1
SA6+DA1
6 REACH 3 080 1 2 1296.0 1

```

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

```

6 RUNOFF 1 081 3 0.0513 73.958 0.1621 DA3
6 ADDHYD 4 082 2 3 4 1 DA1+3
6 RUNOFF 1 083 1 0.0313 67.555 0.1861 DA2
6 ADDHYD 4 084 4 1 2 1
DA13+2
6 RUNOFF 1 085 3 0.1187 68.693 0.3211 DA4
6 ADDHYD 4 086 2 3 1 1
DA123+4
6 RUNOFF 1 087 4 0.0159 86.785 0.1421 DA5
6 ADDHYD 4 088 1 4 7 1 1
DA1234+5
ENDATA
7 INCREM 6 .06
7 COMPUT 7 001 088 0.0 3.19 1.09 2 1 2
ENDCMP 1
7 COMPUT 7 001 088 0.0 4.91 1.09 2 1 10
ENDCMP 1
7 COMPUT 7 001 088 0.0 7.23 1.09 2 1 50
ENDCMP 1
7 COMPUT 7 001 088 0.0 8.47 1.09 2 1 99
ENDCMP 1
ENDJOB 2

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\*\*\*\*\*END OF 80-80  
LIST\*\*\*\*\*

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TR20 ----- SCS
-
Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,
VERSION
03/31/** CN MGMT- EXISTING COND.- 2,10,50,100 yr NOAA Dis
2.04TEST
10:07:10 PASS 1 JOB NO. 1 PAGE
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EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .060 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88
STARTING TIME = .00 RAIN DEPTH = 3.19 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS

```

ALTERNATE NO. = 1

STORM NO. = 2

RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	23.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.46 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	22.7	389.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.46 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	39.9	(RUNOFF)
23.14	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.36 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	60.4	(NULL)
23.10	1.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 83 CFS-HRS; 6.8 ACRE-FEET.

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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2.04TEST

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OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	50.9	382.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 82 CFS-HRS; 6.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	50.4	367.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 82 CFS-HRS; 6.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	47.5	(RUNOFF)
23.75	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.22 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	85.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	84.4	357.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

1 TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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PASS 1 JOB NO. 1

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
 12.30    77.8    (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.24 WATERSHED INCHES;                  106 CFS-HRS;                  8.8 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR      STRUCTURE 21

PEAK TIME(HRS)                                  PEAK DISCHARGE(CFS)                                  PEAK  
 ELEVATION(FEET)  
 13.56    9.7 \*    374.07  
    \* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.91 WATERSHED INCHES;                  91 CFS-HRS;                  7.5 ACRE-FEET.

OPERATION RUNOFF      XSECTION 10

PEAK TIME(HRS)                                  PEAK DISCHARGE(CFS)                                  PEAK  
 ELEVATION(FEET)  
 12.13    6.6    (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .92 WATERSHED INCHES;                  6 CFS-HRS;                  .5 ACRE-FEET.

OPERATION RESVOR      STRUCTURE 22

PEAK TIME(HRS)                                  PEAK DISCHARGE(CFS)                                  PEAK  
 ELEVATION(FEET)  
 13.68    9.6 \*    353.09  
    \* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.91 WATERSHED INCHES;                  90 CFS-HRS;                  7.5 ACRE-FEET.

OPERATION RUNOFF      XSECTION 11

PEAK TIME(HRS)                                  PEAK DISCHARGE(CFS)                                  PEAK  
 ELEVATION(FEET)  
 12.19    33.2    (RUNOFF)  
 19.76    1.0    (RUNOFF)  
 20.09    1.0    (RUNOFF)

1

TR20 ----- SCS

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PASS    1    JOB NO.    1

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .99 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	98.2	(NULL)
24.00	3.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.24 WATERSHED INCHES; 180 CFS-HRS; 14.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	15.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.33 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	105.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 270 CFS-HRS; 22.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	112.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	112.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
 FEET.

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\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
\*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	112.5	332.30
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.39 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-		
FEET.		

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	29.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.98 WATERSHED INCHES; 27 CFS-HRS; 2.2 ACRE-		
FEET.		

OPERATION RUNOFF XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	43.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.33 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-		
FEET.		

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	48.6	(RUNOFF)
19.47	1.0	(RUNOFF)
19.75	1.0	(RUNOFF)
20.06	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.71 WATERSHED INCHES; 44 CFS-HRS; 3.7 ACRE-		
FEET.		

OPERATION ADDHYD XSECTION 20

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	71.1	(NULL)
15.81	2.5	(NULL)
24.01	1.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.19 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	119.3	(NULL)
15.83	4.3	(NULL)
17.33	3.3	(NULL)
21.95	2.1	(NULL)
24.01	1.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.98 WATERSHED INCHES; 118 CFS-HRS; 9.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	200.7	(NULL)
23.99	9.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.52 WATERSHED INCHES; 405 CFS-HRS; 33.4 ACRE-  
FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	166.9	315.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.52 WATERSHED INCHES; 404 CFS-HRS; 33.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	41.6	(RUNOFF)
20.68	1.1	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.

OPERATION RESVOR STRUCTURE 31

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows show values for 12.46, 20.70 hours.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 25

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows show values for 12.27, 23.97 hours.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 1.51 WATERSHED INCHES; 73 CFS-HRS; 6.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 26

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows show values for 12.29, 18.68, 23.78 hours.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-FEET.

OPERATION REACH XSECTION 27

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET).

ELEVATION(FEET)		
12.43	76.6	318.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	42.0	(RUNOFF)
23.12	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.30 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	201.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 455 CFS-HRS; 37.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	275.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.50 WATERSHED INCHES; 578 CFS-HRS; 47.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	76.8	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	68.8	312.27
24.15	1.3	310.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	14.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.63 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .28 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 376.89.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
 AT STRUCTURE 32  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.56	1.0	379.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.01 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 34, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 34

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
 AT XSECTION 34  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.68	1.0	338.02
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.00 WATERSHED INCHES;	11 CFS-HRS;	.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	41.8	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.63 WATERSHED INCHES;	47 CFS-HRS;	3.9 ACRE-
FEET.		

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OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	17.5	355.98
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.08 WATERSHED INCHES;	37 CFS-HRS;	3.1 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	18.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.06 WATERSHED INCHES;	48 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	18.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.06 WATERSHED INCHES;	48 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	18.2	330.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	40.3	(RUNOFF)
17.34	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.81 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	43.8	(NULL)
24.01	2.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.94 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	28.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.41 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	301.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.50 WATERSHED INCHES; 614 CFS-HRS; 50.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	369.9	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.54 WATERSHED INCHES;	699 CFS-HRS;	57.7 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	403.9	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.57 WATERSHED INCHES;	783 CFS-HRS;	64.7 ACRE-
FEEET.		

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	375.3	290.18

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.57 WATERSHED INCHES;	782 CFS-HRS;	64.6 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	33.3	(RUNOFF)
20.10	1.1 *	(RUNOFF)
	* FIRST POINT OF FLAT PEAK	
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.45 WATERSHED INCHES;	45 CFS-HRS;	3.7 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	40.7	(RUNOFF)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 56 CFS-HRS; 4.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	74.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.42 WATERSHED INCHES; 101 CFS-HRS; 8.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	40.1	(RUNOFF)
20.10	1.1	(RUNOFF)
20.65	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.41 WATERSHED INCHES; 43 CFS-HRS; 3.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	392.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 825 CFS-HRS; 68.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	451.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.54 WATERSHED INCHES; 926 CFS-HRS; 76.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
12.61 435.2 284.60

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.54 WATERSHED INCHES; 925 CFS-HRS; 76.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.54 WATERSHED INCHES; 145 CFS-HRS; 76.5 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 53

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 54

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\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.21 24.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.25 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	443.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.53 WATERSHED INCHES; 951 CFS-HRS; 78.6 ACRE-FEET.

\*\*\* WARNING - XSECTION 57  
 NO HYDROGRAPH IN INPUT LOCATION 5 OR 1 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	443.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.51 WATERSHED INCHES; 951 CFS-HRS; 78.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	12.3	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .85 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	448.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.49 WATERSHED INCHES; 966 CFS-HRS; 79.8 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.71 433.0 271.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.49 WATERSHED INCHES; 965 CFS-HRS; 79.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.25 7.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.81 WATERSHED INCHES; 9 CFS-HRS; .7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.70 435.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.48 WATERSHED INCHES; 974 CFS-HRS; 80.5 ACRE-  
FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.88 412.6 249.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.47 WATERSHED INCHES; 974 CFS-HRS; 80.5 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.37 8.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	4.7	332.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.86	4.6	300.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	21.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .83 WATERSHED INCHES; 25 CFS-HRS; 2.0 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	12.4	290.42

1 TR20 ----- SCS  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .83 WATERSHED INCHES; 25 CFS-HRS; 2.0 ACRE-

FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.58	16.5	(NULL)
20.11	1.0	(NULL)
20.66	1.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.00 WATERSHED INCHES;		37 CFS-HRS;
FEET.		3.0 ACRE-

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	55.7	(RUNOFF)
24.03	1.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.15 WATERSHED INCHES;		58 CFS-HRS;
FEET.		4.8 ACRE-

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	68.6	(NULL)
23.10	2.1	(NULL)
23.75	2.0	(NULL)
24.03	2.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.09 WATERSHED INCHES;		95 CFS-HRS;
FEET.		7.8 ACRE-

OPERATION REACH XSECTION 70

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	60.1	248.41
23.17	2.1	247.43
24.09	2.0	247.42
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.09 WATERSHED INCHES;		95 CFS-HRS;
FEET.		7.8 ACRE-

1 TR20 ----- SCS

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OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	13.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	3.4	263.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	3.3	247.53

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	34.3	(RUNOFF)
15.86	2.4	(RUNOFF)
24.02	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .59 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.88	421.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 1016 CFS-HRS; 83.9 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 75

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.32	63.1	(NULL)
18.71	3.1	(NULL)
24.09	2.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.11 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.86	454.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.36 WATERSHED INCHES; 1121 CFS-HRS; 92.6 ACRE-  
FEET.

OPERATION REACH XSECTION 77

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.93	453.7	229.19

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.36 WATERSHED INCHES; 1121 CFS-HRS; 92.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	27.4	(RUNOFF)
17.35	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.86 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.93	459.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.34 WATERSHED INCHES; 1149 CFS-HRS; 95.0 ACRE-  
FEET.

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\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 80.  
 \*\*\*

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.93	459.2	213.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.34 WATERSHED INCHES; 1149 CFS-HRS; 95.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	36.0	(RUNOFF)
19.47	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.03 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.93	465.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.33 WATERSHED INCHES; 1183 CFS-HRS; 97.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	13.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .71 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.92	468.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.31 WATERSHED INCHES; 1197 CFS-HRS; 98.9 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	43.1	(RUNOFF)
18.68	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.76 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.92	481.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.27 WATERSHED INCHES; 1255 CFS-HRS; 103.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	22.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.89 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.92	483.9	(NULL)
23.97	28.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.28 WATERSHED INCHES; 1275 CFS-HRS; 105.3 ACRE-  
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

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EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
STARTING TIME = .00 RAIN DEPTH = 4.91 RAIN DURATION = 1.00  
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. =10 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 48.0 (RUNOFF)  
23.10 1.1 \* (RUNOFF)  
\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.90 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.41 45.0 390.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.90 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.28 82.2 (RUNOFF)  
20.68 2.2 (RUNOFF)  
23.98 1.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.77 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.32 122.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.82 WATERSHED INCHES; 166 CFS-HRS; 13.8 ACRE-  
FEET.

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OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	121.3	383.02
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.81 WATERSHED INCHES;	166 CFS-HRS;	13.7 ACRE-
FEEET.		

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	120.5	368.34
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.81 WATERSHED INCHES;	166 CFS-HRS;	13.7 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	101.9	(RUNOFF)
23.73	2.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.57 WATERSHED INCHES;	132 CFS-HRS;	10.9 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	213.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.70 WATERSHED INCHES;	298 CFS-HRS;	24.7 ACRE-
FEEET.		

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	212.2	357.82
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.70 WATERSHED INCHES;	299 CFS-HRS;	24.7 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 9  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	132.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.88 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	60.8	376.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.49 WATERSHED INCHES; 165 CFS-HRS; 13.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	16.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.13 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.81	56.5	355.97

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.49 WATERSHED INCHES; 165 CFS-HRS; 13.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	77.9	(RUNOFF)
15.82	3.3	(RUNOFF)
18.86	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.23 WATERSHED INCHES; 78 CFS-HRS; 6.5 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	249.3	(NULL)
24.00	6.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.59 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	32.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	262.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.80 WATERSHED INCHES; 540 CFS-HRS; 44.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	278.8	(NULL)
23.98	12.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.41	278.8	(NULL)
23.98	12.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-  
FEET.

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\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
\*\*\*

OPERATION REACH XSECTION 16

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.41	278.8	333.39
23.98	12.6	331.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.15	52.0	(RUNOFF)
17.34	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.57 WATERSHED INCHES; 49 CFS-HRS; 4.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 18

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.20	72.1	(RUNOFF)
23.75	1.0	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.99 WATERSHED INCHES; 81 CFS-HRS; 6.7 ACRE-

FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	90.5	(RUNOFF)
17.34	2.3	(RUNOFF)
24.00	1.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.23 WATERSHED INCHES;		7.0 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 20

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	121.6	(NULL)
15.81	4.1	(NULL)
17.31	3.1	(NULL)
21.75	2.0	(NULL)
21.96	2.0	(NULL)
24.01	1.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.82 WATERSHED INCHES;		10.7 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	211.4	(NULL)
15.83	7.0	(NULL)
17.33	5.4	(NULL)
19.41	4.1	(NULL)
19.74	4.0	(NULL)
20.06	4.0	(NULL)
23.06	3.2	(NULL)
24.01	3.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.56 WATERSHED INCHES;		17.6 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
-----------------------------------	---------------------	------



12.19	426.8	(NULL)
20.04	21.6	(NULL)
20.56	20.8	(NULL)
23.03	16.9	(NULL)
24.00	15.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.96 WATERSHED INCHES; 787 CFS-HRS; 65.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.39	379.7	316.13
24.04	15.6	314.09

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.96 WATERSHED INCHES; 786 CFS-HRS; 65.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.25	81.4	(RUNOFF)
20.13	2.0	(RUNOFF)
23.99	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.03 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	78.5	363.94
20.15	2.0	356.54
23.79	1.5	356.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 99 CFS-HRS; 8.1 ACRE-

FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	115.6	(RUNOFF)
18.66	3.3	(RUNOFF)
23.77	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.97 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 26

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TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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2.04TEST  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	190.6	(NULL)
20.14	5.0	(NULL)
23.14	4.0	(NULL)
23.78	3.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.40	174.0	319.15
20.20	5.0	316.65
23.20	4.0	316.59

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	87.6	(RUNOFF)
21.94	2.0	(RUNOFF)
24.01	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.68 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	457.0	(NULL)
24.03	17.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 890 CFS-HRS; 73.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	621.6	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.94 WATERSHED INCHES; 1132 CFS-HRS; 93.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	137.5	(RUNOFF)
18.66	3.2	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	125.9	313.02
18.72	3.2	310.26
24.09	2.2	310.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
12.16 22.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.33 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
WITH .38 AC-FT ( .07 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 377.43.  
\*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.40 9.1 380.16

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.48 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
FEET.

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2.04TEST  
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OPERATION REACH XSECTION 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.47 9.0 338.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.47 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.19 66.9 (RUNOFF)  
21.97 1.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.32 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
WITH .95 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 353.79.  
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	48.7	357.05
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.67 WATERSHED INCHES;	65 CFS-HRS;	5.4 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.62 WATERSHED INCHES;	84 CFS-HRS;	6.9 ACRE-
FEEET.		

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.62 WATERSHED INCHES;	84 CFS-HRS;	6.9 ACRE-
FEEET.		

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0, CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37. \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	330.54

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.62 WATERSHED INCHES;	84 CFS-HRS;	6.9 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	73.5	(RUNOFF)
15.84	2.4	(RUNOFF)
23.73	1.0	(RUNOFF)
24.01	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.37 WATERSHED INCHES; 71 CFS-HRS; 5.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	106.9	(NULL)
21.94	3.1	(NULL)
24.01	2.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.50 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	57.7	(RUNOFF)
23.76	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.84 WATERSHED INCHES; 72 CFS-HRS; 6.0 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	673.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 1204 CFS-HRS; 99.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	796.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 1359 CFS-HRS; 112.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	887.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.02 WATERSHED INCHES;	1509 CFS-HRS;	124.7 ACRE-
FEET.		

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	848.7	291.04
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.02 WATERSHED INCHES;	1509 CFS-HRS;	124.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	66.8	(RUNOFF)
23.09	1.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.88 WATERSHED INCHES;	89 CFS-HRS;	7.3 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 46

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	83.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.81 WATERSHED INCHES;	114 CFS-HRS;	9.4 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	150.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.84 WATERSHED INCHES;	203 CFS-HRS;	16.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	81.7	(RUNOFF)
18.65	2.0	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.84 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.44	888.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.01 WATERSHED INCHES; 1594 CFS-HRS; 131.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.42	1020.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 1797 CFS-HRS; 148.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 51

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 TR20 ----- SCS  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.52	993.2	285.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 1796 CFS-HRS; 148.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 210 CFS-HRS; 148.4 ACRE-



FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT, UNLESS NEW RATING TABLE VALUES ARE INSERTED. \*\*\*

OPERATION REACH XSECTION 53

\*\*\* MESSAGE - XSECTION 53, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)). \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.99 WATERSHED INCHES; 207 CFS-HRS; 148.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - XSECTION 54, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)). \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.99 WATERSHED INCHES; 189 CFS-HRS; 148.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 55

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows show values for runoff at different elevations.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.61 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-FEET.

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OPERATION ADDHYD XSECTION 56

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Row shows values for runoff at 12.52 feet elevation.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.98 WATERSHED INCHES; 1851 CFS-HRS; 152.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - XSECTION 57, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).

\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.98 WATERSHED INCHES; 214 CFS-HRS; 152.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	1013.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 1852 CFS-HRS; 153.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	31.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.01 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	1027.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.91 WATERSHED INCHES; 1887 CFS-HRS; 155.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 3

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 TR20 ----- SCS

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	973.1	275.59

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.91 WATERSHED INCHES; 1886 CFS-HRS; 155.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
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ELEVATION(FEET)  
12.24 18.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.95 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.62 980.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.89 WATERSHED INCHES; 1908 CFS-HRS; 157.6 ACRE-  
FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.76 949.5 250.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.89 WATERSHED INCHES; 1907 CFS-HRS; 157.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.37 15.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.24 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.74 8.4 334.33

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.24 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.85	8.2	300.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.23 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	55.9	(RUNOFF)
24.02	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.98 WATERSHED INCHES; 59 CFS-HRS; 4.8 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	18.0	293.76
14.58	3.8	287.79
24.04	1.1	287.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.98 WATERSHED INCHES; 59 CFS-HRS; 4.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	25.9	(NULL)
18.87	2.1	(NULL)
24.04	1.5	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.23 WATERSHED INCHES; 82 CFS-HRS; 6.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	122.6	(RUNOFF)
18.87	3.1	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.47 WATERSHED INCHES; 124 CFS-HRS; 10.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	141.4	(NULL)
18.87	5.2	(NULL)
21.97	4.3	(NULL)
24.03	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.37 WATERSHED INCHES; 206 CFS-HRS; 17.0 ACRE-  
FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.45	96.0	248.70

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.37 WATERSHED INCHES; 206 CFS-HRS; 17.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	26.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.81 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 63

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
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12.33 9.6 265.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.82 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-
FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.44 8.9 247.79

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-
FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.18 110.8 (RUNOFF)
15.85 5.4 (RUNOFF)
17.34 4.2 (RUNOFF)
20.86 3.0 (RUNOFF)
24.01 2.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.58 WATERSHED INCHES; 112 CFS-HRS; 9.3 ACRE-
FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.75 974.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.76 WATERSHED INCHES; 2019 CFS-HRS; 166.9 ACRE-
FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.44 105.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.40 WATERSHED INCHES; 227 CFS-HRS; 18.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 76

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.73	1057.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.72 WATERSHED INCHES;	2246 CFS-HRS;	185.6 ACRE-
FEET.		

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	1056.3	230.46
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.72 WATERSHED INCHES;	2246 CFS-HRS;	185.6 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	69.0	(RUNOFF)
17.34	2.3	(RUNOFF)
24.01	1.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.03 WATERSHED INCHES;	67 CFS-HRS;	5.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	1069.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.69 WATERSHED INCHES;	2313 CFS-HRS;	191.1 ACRE-
FEET.		

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.86	1067.5	215.93
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.69 WATERSHED INCHES;	2312 CFS-HRS;	191.1 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 81

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	83.3	(RUNOFF)
15.84	3.1	(RUNOFF)
17.34	2.4	(RUNOFF)
24.00	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.29 WATERSHED INCHES; 76 CFS-HRS; 6.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.86	1080.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.68 WATERSHED INCHES; 2388 CFS-HRS; 197.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	37.3	(RUNOFF)
19.47	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.86	1087.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.66 WATERSHED INCHES; 2424 CFS-HRS; 200.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	118.2	(RUNOFF)
18.67	4.1	(RUNOFF)
23.12	3.1	(RUNOFF)
24.01	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.87 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-  
 FEET.



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OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.85	1119.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.60 WATERSHED INCHES; 2567 CFS-HRS; 212.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	40.2	(RUNOFF)
15.84	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.45 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.85	1124.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.61 WATERSHED INCHES; 2602 CFS-HRS; 215.1 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
 STARTING TIME = .00 RAIN DEPTH = 7.23 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =50 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	81.5	(RUNOFF)
20.13	2.1	(RUNOFF)
23.08	1.7	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-  
FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	81.3	390.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	142.8	(RUNOFF)
20.68	3.4	(RUNOFF)
23.97	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.85 WATERSHED INCHES; 181 CFS-HRS; 15.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	220.1	(NULL)
20.13	5.7	(NULL)
23.12	4.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.91 WATERSHED INCHES; 290 CFS-HRS; 24.0 ACRE-  
FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,  
VALUE EXTRAPOLATED.  
\*\*\*

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	218.8	384.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.89 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-  
FEET.

OPERATION REACH XSECTION 5  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	218.2	368.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	181.7	(RUNOFF)
20.14	4.8	(RUNOFF)
23.74	3.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.60 WATERSHED INCHES; 237 CFS-HRS; 19.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	387.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.75 WATERSHED INCHES; 526 CFS-HRS; 43.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	386.9	358.49

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.75 WATERSHED INCHES; 526 CFS-HRS; 43.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	203.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.15 WATERSHED INCHES; 291 CFS-HRS; 24.1 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

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OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.51 139.6 377.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.58 WATERSHED INCHES; 264 CFS-HRS; 21.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.13 30.4 (RUNOFF)  
15.46 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.03 WATERSHED INCHES; 25 CFS-HRS; 2.1 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.80 112.3 359.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.57 WATERSHED INCHES; 264 CFS-HRS; 21.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.18 146.1 (RUNOFF)  
15.81 5.5 (RUNOFF)  
20.09 3.2 (RUNOFF)  
20.64 3.0 (RUNOFF)  
24.02 2.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.16 WATERSHED INCHES; 146 CFS-HRS; 12.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	458.9	(NULL)
24.00	10.2	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.61 WATERSHED INCHES; 672 CFS-HRS; 55.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	56.4	(RUNOFF)
21.97	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.80 WATERSHED INCHES; 60 CFS-HRS; 4.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	552.8	(NULL)
23.98	17.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.84 WATERSHED INCHES; 934 CFS-HRS; 77.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	582.5	(NULL)
23.99	18.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 994 CFS-HRS; 82.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	582.5	(NULL)
23.99	18.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 994 CFS-HRS; 82.1 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	582.5	335.04
23.99	18.5	331.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 994 CFS-HRS; 82.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	82.4	(RUNOFF)
15.84	2.4	(RUNOFF)
23.05	1.1	(RUNOFF)
23.71	1.0	(RUNOFF)
24.00	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.80 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	109.9	(RUNOFF)
20.10	2.1	(RUNOFF)
24.03	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.26 WATERSHED INCHES; 126 CFS-HRS; 10.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	148.6	(RUNOFF)
15.84	4.6	(RUNOFF)
17.34	3.5	(RUNOFF)
22.75	2.1	(RUNOFF)
23.06	2.1	(RUNOFF)
24.00	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.41 WATERSHED INCHES; 141 CFS-HRS; 11.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	188.2	(NULL)
15.81	6.1	(NULL)
17.31	4.7	(NULL)
21.74	3.0	(NULL)
21.96	3.0	(NULL)
24.01	2.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.08 WATERSHED INCHES; 206 CFS-HRS; 17.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	335.1	(NULL)
15.83	10.7	(NULL)
17.33	8.2	(NULL)
19.74	6.1	(NULL)
20.06	6.1	(NULL)
21.95	5.3	(NULL)
24.01	4.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.79 WATERSHED INCHES; 347 CFS-HRS; 28.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION (FEET)		
12.21	780.5	(NULL)
20.04	30.2	(NULL)
20.58	29.1	(NULL)
21.93	26.8	(NULL)
23.04	24.7	(NULL)
23.68	23.4	(NULL)
24.00	23.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.04 WATERSHED INCHES; 1339 CFS-HRS; 110.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.41	731.5	316.89
24.06	23.0	314.21

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.04 WATERSHED INCHES; 1338 CFS-HRS; 110.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.25	136.5	(RUNOFF)
20.68	3.0	(RUNOFF)
23.99	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.17 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.30	131.8	365.04
20.69	3.0	356.63
23.79	2.4	356.57



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.15 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	196.3	(RUNOFF)
18.66	5.1	(RUNOFF)
20.68	4.5	(RUNOFF)
23.98	3.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 246 CFS-HRS; 20.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.28	325.1	(NULL)
18.67	8.6	(NULL)
20.68	7.5	(NULL)
23.14	6.2	(NULL)
23.78	5.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.12 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	312.6	319.62
20.73	7.5	316.81
23.20	6.2	316.73

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.12 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.24	154.0	(RUNOFF)
21.94	3.2	(RUNOFF)

24.01 2.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.74 WATERSHED INCHES; 183 CFS-HRS; 15.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.33 854.4 (NULL)
20.07 33.9 (NULL)
24.04 25.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.00 WATERSHED INCHES; 1521 CFS-HRS; 125.7 ACRE-
FEET.

OPERATION ADDHYD XSECTION 30

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.36 1164.9 (NULL)
24.04 31.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.03 WATERSHED INCHES; 1935 CFS-HRS; 159.9 ACRE-
FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.21 220.6 (RUNOFF)
20.86 4.2 (RUNOFF)
24.02 3.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-
FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.31 204.5 313.75
20.73 4.3 310.35
24.09 3.3 310.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.16 33.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.63 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
WITH .48 AC-FT ( .09 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 377.99.  
\*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.24 29.2 380.63

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-  
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
\*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.24 29.2 338.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.19 100.5 (RUNOFF)  
18.65 2.0 (RUNOFF)  
24.02 1.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.63 WATERSHED INCHES; 118 CFS-HRS; 9.7 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
WITH 1.02 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 354.08.  
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.27 84.8 357.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.93 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.26 113.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.84 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-  
FEET.

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OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.26 113.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.84 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-  
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
\*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.26 113.8 330.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

5.84 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	118.6	(RUNOFF)
15.84	3.7	(RUNOFF)
20.07	2.1	(RUNOFF)
20.63	2.0	(RUNOFF)
24.01	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.57 WATERSHED INCHES; 118 CFS-HRS; 9.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	220.1	(NULL)
19.73	5.0	(NULL)
22.73	4.1	(NULL)
23.05	4.0	(NULL)
24.01	3.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.71 WATERSHED INCHES; 253 CFS-HRS; 20.9 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	99.5	(RUNOFF)
20.67	2.3	(RUNOFF)
23.97	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.94 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.34	1255.2	(NULL)
24.03	33.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 2060 CFS-HRS; 170.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	1455.3	(NULL)
24.04	36.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 2314 CFS-HRS; 191.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	1629.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.13 WATERSHED INCHES; 2561 CFS-HRS; 211.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	1577.6	291.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.13 WATERSHED INCHES; 2560 CFS-HRS; 211.6 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	114.7	(RUNOFF)
23.09	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.00 WATERSHED INCHES; 154 CFS-HRS; 12.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
12.31 143.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.90 WATERSHED INCHES; 199 CFS-HRS; 16.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 257.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.94 WATERSHED INCHES; 352 CFS-HRS; 29.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.20 140.0 (RUNOFF)  
18.86 3.1 (RUNOFF)  
24.03 2.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.93 WATERSHED INCHES; 149 CFS-HRS; 12.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.41 1649.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.12 WATERSHED INCHES; 2709 CFS-HRS; 223.9 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.39 1884.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.10 WATERSHED INCHES; 3062 CFS-HRS; 253.0 ACRE-  
FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	1847.2	287.38

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 3061 CFS-HRS; 252.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	4.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.06 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT, UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	4.3	288.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.06 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS, AT XSECTION 54  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	.6	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .47 WATERSHED INCHES; 2 CFS-HRS; .2 ACRE-FEET.

OPERATION RUNOFF XSECTION 55



PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	91.3	(RUNOFF)
18.86	2.1	(RUNOFF)
24.03	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.65 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	1884.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.08 WATERSHED INCHES; 3157 CFS-HRS; 260.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	4.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .79 WATERSHED INCHES; 8 CFS-HRS; .7 ACRE-FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	1888.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.01 WATERSHED INCHES; 3166 CFS-HRS; 261.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	61.6	(RUNOFF)
24.02	1.1	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.86 WATERSHED INCHES; 66 CFS-HRS; 5.5 ACRE-

FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	1916.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.98 WATERSHED INCHES; 3232 CFS-HRS; 267.1 ACRE-FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.53	1889.1	278.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.98 WATERSHED INCHES; 3231 CFS-HRS; 267.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	37.1	(RUNOFF)
18.66	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.78 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	1906.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.96 WATERSHED INCHES; 3273 CFS-HRS; 270.5 ACRE-FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	1844.8	251.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.95 WATERSHED INCHES; 3271 CFS-HRS; 270.3 ACRE-FEET.

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OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	25.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.41 WATERSHED INCHES;	38 CFS-HRS;	3.2 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	19.3	335.25
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.41 WATERSHED INCHES;	38 CFS-HRS;	3.2 ACRE-
FEET.		

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.67	19.0	300.92
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.41 WATERSHED INCHES;	38 CFS-HRS;	3.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	109.3	(RUNOFF)
23.10	2.1	(RUNOFF)
24.03	2.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.83 WATERSHED INCHES;	113 CFS-HRS;	9.4 ACRE-
FEET.		

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 62

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.44	52.1	296.06
23.12	2.0	287.56
24.04	1.9	287.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.83 WATERSHED INCHES; 113 CFS-HRS; 9.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.55	67.2	(NULL)
20.86	3.1	(NULL)
24.04	2.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.13 WATERSHED INCHES; 151 CFS-HRS; 12.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	220.8	(RUNOFF)
18.64	5.1	(RUNOFF)
21.97	4.1	(RUNOFF)
24.03	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	249.0	(NULL)
18.87	8.5	(NULL)
20.87	7.5	(NULL)
23.10	6.3	(NULL)
24.03	6.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.33 WATERSHED INCHES; 376 CFS-HRS; 31.1 ACRE-FEET.

OPERATION REACH XSECTION 70

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.39	183.4	249.02
24.09	5.9	247.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.33 WATERSHED INCHES; 376 CFS-HRS; 31.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.12	45.5	(RUNOFF)
15.83	1.3	(RUNOFF)
17.33	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.90 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.24	27.4	267.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.90 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	25.6	248.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.91 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	237.2	(RUNOFF)
15.84	9.7	(RUNOFF)
17.34	7.6	(RUNOFF)
18.86	6.1	(RUNOFF)
21.45	5.1	(RUNOFF)
24.01	4.3	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.26 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	1909.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.79 WATERSHED INCHES; 3503 CFS-HRS; 289.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	207.0	(NULL)
20.13	8.7	(NULL)
24.09	6.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.38 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	2085.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.74 WATERSHED INCHES; 3917 CFS-HRS; 323.7 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 77.  
 \*\*\*

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	2085.9	231.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.74 WATERSHED INCHES; 3917 CFS-HRS; 323.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 78  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	133.1	(RUNOFF)
15.84	5.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.01	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.89 WATERSHED INCHES; 128 CFS-HRS; 10.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	2119.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.71 WATERSHED INCHES; 4045 CFS-HRS; 334.3 ACRE-  
FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.70	2102.0	218.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.71 WATERSHED INCHES; 4044 CFS-HRS; 334.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	154.4	(RUNOFF)
15.84	5.2	(RUNOFF)
17.34	4.0	(RUNOFF)
19.47	3.1	(RUNOFF)
19.74	3.0	(RUNOFF)
20.05	3.0	(RUNOFF)
24.00	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.24 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	2128.9	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.69 WATERSHED INCHES; 4184 CFS-HRS; 345.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	76.0	(RUNOFF)
17.34	2.3	(RUNOFF)
24.01	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.55 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	2144.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.67 WATERSHED INCHES; 4256 CFS-HRS; 351.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	237.6	(RUNOFF)
18.67	7.0	(RUNOFF)
20.68	6.2	(RUNOFF)
23.12	5.2	(RUNOFF)
24.01	4.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.67 WATERSHED INCHES; 281 CFS-HRS; 23.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		



12.68 2230.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.59 WATERSHED INCHES; 4537 CFS-HRS; 374.9 ACRE-
FEET.

OPERATION RUNOFF XSECTION 87

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.13 64.3 (RUNOFF)
20.04 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.67 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.68 2239.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.60 WATERSHED INCHES; 4595 CFS-HRS; 379.8 ACRE-
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88
STARTING TIME = .00 RAIN DEPTH = 8.47 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS
ALTERNATE NO. = 1 STORM NO. =99 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.29 99.6 (RUNOFF)
20.13 2.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.18 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-
FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION(FEET)		
12.35	99.4	390.78
20.19	2.5	389.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.18 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-FEET.

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OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	175.5	(RUNOFF)
20.68	4.1	(RUNOFF)
23.97	3.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.00 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	270.3	(NULL)
20.14	6.8	(NULL)
23.12	5.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.07 WATERSHED INCHES; 359 CFS-HRS; 29.6 ACRE-FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,  
 VALUE EXTRAPOLATED.  
 \*\*\*

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	268.8	384.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.04 WATERSHED INCHES; 357 CFS-HRS; 29.5 ACRE-FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.38 268.4 369.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.05 WATERSHED INCHES; 357 CFS-HRS; 29.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 6

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.28 226.3 (RUNOFF)
20.13 5.8 (RUNOFF)
23.74 4.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.74 WATERSHED INCHES; 295 CFS-HRS; 24.4 ACRE-
FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.34 479.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.90 WATERSHED INCHES; 653 CFS-HRS; 54.0 ACRE-
FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.40 479.0 358.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.90 WATERSHED INCHES; 653 CFS-HRS; 53.9 ACRE-
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.29 242.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.38 WATERSHED INCHES; 350 CFS-HRS; 28.9 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE

STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 21, TRUNCATED AT 400 POINTS  
WITH 2.68 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 370.65.  
\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.54	153.9	378.71

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.69 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.13	38.4	(RUNOFF)
15.83	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.11 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.91	127.4	360.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.68 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	184.3	(RUNOFF)
18.87	4.1	(RUNOFF)
22.76	3.1	(RUNOFF)
23.09	3.1	(RUNOFF)
24.03	2.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.26 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	571.3	(NULL)
24.01	12.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.75 WATERSHED INCHES; 837 CFS-HRS; 69.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	69.3	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.95 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	675.4	(NULL)
24.00	20.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1151 CFS-HRS; 95.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	717.1	(NULL)
24.00	21.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	717.1	(NULL)
24.00	21.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.3 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	717.1	335.71
24.00	21.4	331.35

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	98.2	(RUNOFF)
17.34	2.2	(RUNOFF)
24.00	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.01 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	130.6	(RUNOFF)
21.97	2.1	(RUNOFF)
24.03	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.49 WATERSHED INCHES; 151 CFS-HRS; 12.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	179.0	(RUNOFF)
15.84	5.4	(RUNOFF)
17.34	4.2	(RUNOFF)
19.75	3.1	(RUNOFF)
20.05	3.1	(RUNOFF)
24.00	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.60 WATERSHED INCHES; 172 CFS-HRS; 14.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 20

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	224.0	(NULL)
15.81	7.2	(NULL)
17.31	5.5	(NULL)
20.07	4.1	(NULL)
23.07	3.2	(NULL)
23.73	3.1	(NULL)
24.01	3.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.29 WATERSHED INCHES; 247 CFS-HRS; 20.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	401.6	(NULL)
15.83	12.6	(NULL)
17.33	9.7	(NULL)
20.06	7.2	(NULL)
21.95	6.2	(NULL)
24.01	5.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.99 WATERSHED INCHES; 419 CFS-HRS; 34.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	978.4	(NULL)
18.81	37.0	(NULL)

19.71	35.2	(NULL)
20.05	34.7	(NULL)
20.58	33.4	(NULL)
21.93	30.8	(NULL)
23.04	28.4	(NULL)
23.69	27.1	(NULL)
24.00	26.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.19 WATERSHED INCHES; 1643 CFS-HRS; 135.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	922.4	317.25
24.06	26.7	314.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.19 WATERSHED INCHES; 1642 CFS-HRS; 135.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.25	165.8	(RUNOFF)
18.66	4.1	(RUNOFF)
20.68	3.6	(RUNOFF)
23.12	3.0	(RUNOFF)
24.00	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.34 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	160.7	365.43
18.69	4.1	356.71



20.69	3.6	356.67
23.15	3.0	356.62
24.03	2.8	356.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.35 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	237.1	(RUNOFF)
18.65	6.1	(RUNOFF)
20.67	5.3	(RUNOFF)
23.98	4.1	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.26 WATERSHED INCHES; 302 CFS-HRS; 25.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	395.1	(NULL)
18.66	10.2	(NULL)
20.14	9.4	(NULL)
20.68	8.9	(NULL)
23.14	7.4	(NULL)
23.78	7.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.30 WATERSHED INCHES; 509 CFS-HRS; 42.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	384.2	319.84
20.20	9.4	316.93
20.74	8.9	316.91
23.20	7.4	316.81
23.83	7.0	316.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.29 WATERSHED INCHES; 509 CFS-HRS; 42.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.24	190.4	(RUNOFF)
20.67	4.2	(RUNOFF)
24.01	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.89 WATERSHED INCHES; 228 CFS-HRS; 18.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 29

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.33	1077.4	(NULL)
20.08	39.1	(NULL)
23.07	31.9	(NULL)
24.04	29.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.15 WATERSHED INCHES; 1869 CFS-HRS; 154.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.35	1459.8	(NULL)
24.04	36.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.18 WATERSHED INCHES; 2378 CFS-HRS; 196.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.21	264.7	(RUNOFF)
20.66	5.1	(RUNOFF)
23.11	4.2	(RUNOFF)
24.02	3.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	244.6	314.09
20.73	5.1	310.41
23.19	4.2	310.34
24.09	3.9	310.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 33

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	39.4	(RUNOFF)
15.84	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.86 WATERSHED INCHES; 43 CFS-HRS; 3.5 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .53 AC-FT ( .10 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 378.24.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	32.9	380.81

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
 \*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	32.9	338.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	118.2	(RUNOFF)
20.86	2.0	(RUNOFF)
24.02	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.86 WATERSHED INCHES; 139 CFS-HRS; 11.5 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
 WITH 1.05 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 354.18.  
 \*\*\*

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OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	96.1	357.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.15 WATERSHED INCHES; 127 CFS-HRS; 10.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	128.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	128.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.

\*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	128.6	330.88

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 38

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	142.5	(RUNOFF)
15.84	4.4	(RUNOFF)
17.34	3.4	(RUNOFF)
21.96	2.2	(RUNOFF)
22.75	2.0	(RUNOFF)
23.07	2.0	(RUNOFF)
24.01	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.77 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	260.3	(NULL)
18.82	6.2	(NULL)
21.95	5.0	(NULL)
24.01	4.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.91 WATERSHED INCHES; 306 CFS-HRS; 25.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	121.2	(RUNOFF)
18.64	3.2	(RUNOFF)
23.76	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

6.10 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.34	1571.2	(NULL)
24.04	38.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.17 WATERSHED INCHES; 2533 CFS-HRS; 209.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 42

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.33	1817.2	(NULL)
24.04	42.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.24 WATERSHED INCHES; 2841 CFS-HRS; 234.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.32	2017.4	(NULL)
24.03	47.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.29 WATERSHED INCHES; 3141 CFS-HRS; 259.5 ACRE-  
FEET.

OPERATION REACH XSECTION 44

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.41	1960.9	292.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.29 WATERSHED INCHES; 3140 CFS-HRS; 259.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
-----------------	----------------------	------

ELEVATION(FEET)			
12.29	140.0		(RUNOFF)
20.10	3.5		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.16 WATERSHED INCHES; 190 CFS-HRS; 15.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	175.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.06 WATERSHED INCHES; 245 CFS-HRS; 20.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	315.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 435 CFS-HRS; 36.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	171.6	(RUNOFF)
21.97	3.0	(RUNOFF)
24.03	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.09 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	2049.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.28 WATERSHED INCHES; 3324 CFS-HRS; 274.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	2343.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.26 WATERSHED INCHES; 3759 CFS-HRS; 310.7 ACRE-FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	2299.2	287.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.25 WATERSHED INCHES; 3758 CFS-HRS; 310.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 52

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	8.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.63 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	8.0	288.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.63 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-FEET.

OPERATION RUNOFF XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		



12.32 1.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.85 WATERSHED INCHES; 4 CFS-HRS; .3 ACRE-
FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.20 112.9 (RUNOFF)
21.97 2.0 (RUNOFF)
24.03 1.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.79 WATERSHED INCHES; 120 CFS-HRS; 9.9 ACRE-
FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.47 2346.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.24 WATERSHED INCHES; 3878 CFS-HRS; 320.5 ACRE-
FEET.

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OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.25 9.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.28 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.47 2352.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.16 WATERSHED INCHES; 3891 CFS-HRS; 321.6 ACRE-
FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	78.5	(RUNOFF)
24.02	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.92 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	2388.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.13 WATERSHED INCHES; 3976 CFS-HRS; 328.6 ACRE-FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 3, VALUE EXTRAPOLATED. \*\*\*

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	2356.6	279.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.12 WATERSHED INCHES; 3974 CFS-HRS; 328.4 ACRE-FEET.

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OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	47.3	(RUNOFF)
21.96	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	2379.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 4028 CFS-HRS; 332.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	2320.0	251.73

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 4027 CFS-HRS; 332.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	30.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	24.7	335.67

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 65

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	24.4	301.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.19	139.6	(RUNOFF)
20.10	3.1	(RUNOFF)
24.02	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 145 CFS-HRS; 11.9 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.42	70.1	297.03
20.12	3.1	287.70
24.04	2.3	287.60

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 145 CFS-HRS; 11.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.51	90.2	(NULL)
18.87	4.3	(NULL)
23.11	3.2	(NULL)
24.04	3.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.22 WATERSHED INCHES; 191 CFS-HRS; 15.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 68

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	273.8	(RUNOFF)
18.64	6.1	(RUNOFF)
18.87	6.0	(RUNOFF)
20.87	5.3	(RUNOFF)
24.02	4.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.60 WATERSHED INCHES; 281 CFS-HRS; 23.3 ACRE-
FEET.

OPERATION ADDHYD XSECTION 69

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows include values like 12.20, 18.87, 20.64, 20.86, 21.97, 23.75, 24.03 and discharge values like 323.9, 10.3, 9.2, 9.0, 8.3, 7.2, 7.2.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.44 WATERSHED INCHES; 473 CFS-HRS; 39.1 ACRE-
FEET.

OPERATION REACH XSECTION 70

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows include values like 12.38, 20.14, 24.09 and discharge values like 243.9, 9.6, 7.1.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.44 WATERSHED INCHES; 473 CFS-HRS; 39.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 71

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows include values like 12.12, 17.33 and discharge values like 54.7, 1.2.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 63

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Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Row includes values like 12.19 and discharge value 44.5.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

6.07 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.27 40.6 248.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.18 312.6 (RUNOFF)  
15.84 12.1 (RUNOFF)  
17.34 9.4 (RUNOFF)  
19.75 7.1 (RUNOFF)  
20.08 7.0 (RUNOFF)  
21.96 6.2 (RUNOFF)  
24.01 5.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.26 WATERSHED INCHES; 302 CFS-HRS; 25.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.61 2403.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.92 WATERSHED INCHES; 4329 CFS-HRS; 357.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.35 274.2 (NULL)  
20.14 10.4 (NULL)  
23.14 8.3 (NULL)  
24.09 7.8 (NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.49 WATERSHED INCHES; 519 CFS-HRS; 42.9 ACRE-

FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	2629.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.87 WATERSHED INCHES; 4848 CFS-HRS; 400.6 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 77.  
 \*\*\*

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	2629.4	232.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.87 WATERSHED INCHES; 4848 CFS-HRS; 400.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	171.1	(RUNOFF)
15.84	6.1	(RUNOFF)
17.34	4.7	(RUNOFF)
21.96	3.1	(RUNOFF)
24.01	2.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.96 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	2673.0	(NULL)
23.97	77.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.84 WATERSHED INCHES; 5011 CFS-HRS; 414.1 ACRE-FEET.

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OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	2645.7	219.45
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.83 WATERSHED INCHES;	5010 CFS-HRS;	414.0 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	194.0	(RUNOFF)
15.84	6.3	(RUNOFF)
17.34	4.9	(RUNOFF)
22.42	3.0	(RUNOFF)
24.00	2.8	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.34 WATERSHED INCHES;	177 CFS-HRS;	14.6 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	2679.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.82 WATERSHED INCHES;	5187 CFS-HRS;	428.6 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	97.7	(RUNOFF)
15.84	3.6	(RUNOFF)
20.07	2.1	(RUNOFF)
24.01	1.6	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.57 WATERSHED INCHES;	92 CFS-HRS;	7.6 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	2699.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.79 WATERSHED INCHES; 5279 CFS-HRS; 436.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	307.5	(RUNOFF)
18.67	8.6	(RUNOFF)
20.68	7.6	(RUNOFF)
23.12	6.3	(RUNOFF)
24.01	5.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.71 WATERSHED INCHES; 361 CFS-HRS; 29.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.66	2808.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.70 WATERSHED INCHES; 5640 CFS-HRS; 466.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	76.9	(RUNOFF)
15.84	2.2	(RUNOFF)
22.42	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.87 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.66	2820.6	(NULL)
23.97	88.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.72 WATERSHED INCHES; 5710 CFS-HRS; 471.9 ACRE-  
FEET.

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EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 9, ARC 2							
MAIN TIME INCREMENT .060 HOURS							
ALTERNATE	1	STORM	2				
STRUCTURE 11	RESVOR	.09	1.39	382.15	12.47	51	566.7
XSECTION 8	REACH	.17	1.31	357.10	12.52	84	494.1
STRUCTURE 21	RESVOR	.07	1.91	374.07	13.56F	10F	142.9
STRUCTURE 22	RESVOR	.07	1.91	353.09	13.68F	10F	142.9
STRUCTURE 23	RESVOR	.32	1.39	---	12.47	112	350.0
XSECTION 16	REACH	.32	1.39	332.30	12.47	112	350.0
XSECTION 20	ADDHYD	.05	2.19	---	12.17	71	1420.0
XSECTION 23	REACH	.41	1.52	315.42	12.41	167	407.3
STRUCTURE 31	RESVOR	.05	1.55	362.31	12.46	28	560.0
STRUCTURE 32	RESVOR	.01	2.01	379.28	13.56R	1R	100.0
STRUCTURE 33	RESVOR	.03	2.08	355.98	12.47	18	600.0
STRUCTURE 34	RESVOR	.04	2.06	---	12.48	18	450.0
XSECTION 44	REACH	.77	1.57	290.18	12.52	375	487.0
XSECTION 51	REACH	.93	1.54	284.60	12.61	435	467.7
XSECTION 60	ADDHYD	1.01	1.49	---	12.60	449	444.6
STRUCTURE 3	RESVOR	1.01	1.49	271.11	12.71	433	428.7
XSECTION 62	ADDHYD	1.02	1.48	---	12.70	436	427.5
XSECTION 63	REACH	1.02	1.47	249.55	12.88	413	404.9
STRUCTURE 61	RESVOR	.01	1.71	332.36	12.74	5	500.0
STRUCTURE 62	RESVOR	.05	.83	290.42	12.43	12	240.0
STRUCTURE 63	RESVOR	.01	1.40	263.40	12.49	3	300.0
XSECTION 76	ADDHYD	1.28	1.36	---	12.86	455	355.5

XSECTION	77	REACH	1.28	1.36	229.19	12.93	454	354.7
XSECTION	88	ADDHYD	1.55	1.28	---	12.92	484	312.3

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)
RAINFALL OF 4.91 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
ALTERNATE 1 STORM 10							
STRUCTURE 11	RESVOR	.09	2.81	383.02	12.34	121	1344.4
XSECTION 8	REACH	.17	2.70	357.82	12.43	212	1247.1
STRUCTURE 21	RESVOR	.07	3.49	376.27	12.68	61	871.4
STRUCTURE 22	RESVOR	.07	3.49	355.97	12.81	57	814.3
STRUCTURE 23	RESVOR	.32	2.79	---	12.41	279	871.9
XSECTION 16	REACH	.32	2.79	333.39	12.41	279	871.9
XSECTION 20	ADDHYD	.05	3.82	---	12.17	122	2440.0
XSECTION 23	REACH	.41	2.96	316.13	12.39	380	926.8
STRUCTURE 31	RESVOR	.05	3.02	363.94	12.32	78	1560.0
STRUCTURE 32	RESVOR	.01	3.48	380.16	12.40	9	900.0
STRUCTURE 33	RESVOR	.03	3.67	357.05	12.32	49	1633.3
STRUCTURE 34	RESVOR	.04	3.62	---	12.35	54	1350.0
XSECTION 44	REACH	.77	3.02	291.04	12.45	849	1102.6
XSECTION 51	REACH	.93	2.99	285.96	12.52	993	1067.7
XSECTION 60	ADDHYD	1.01	2.91	---	12.51	1028	1017.8
STRUCTURE 3	RESVOR	1.01	2.91	275.59	12.63	973	963.4
XSECTION 62	ADDHYD	1.02	2.89	---	12.62	981	961.8
XSECTION 63	REACH	1.02	2.89	250.36	12.76	949	930.4
STRUCTURE 61	RESVOR	.01	3.24	334.33	12.74	8	800.0
STRUCTURE 62	RESVOR	.05	1.98	293.76	12.62	18	360.0
STRUCTURE 63	RESVOR	.01	2.82	265.90	12.33	10	1000.0
XSECTION 76	ADDHYD	1.28	2.72	---	12.73	1057	825.8
XSECTION 77	REACH	1.28	2.72	230.46	12.80	1056	825.0
XSECTION 88	ADDHYD	1.55	2.61	---	12.85	1124	725.2

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SUMMARY TABLE 1

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)
RAINFALL OF 7.23 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
ALTERNATE 1 STORM 50							
STRUCTURE 11	RESVOR	.09	4.89	384.18	12.32	219	2433.3
XSECTION 8	REACH	.17	4.75	358.49	12.41	387	2276.5
STRUCTURE 21	RESVOR	.07	5.58	377.76	12.51	140	2000.0
STRUCTURE 22	RESVOR	.07	5.57	359.61	12.80	112	1600.0
STRUCTURE 23	RESVOR	.32	4.83	---	12.40	583	1821.9
XSECTION 16	REACH	.32	4.83	335.04	12.40	583	1821.9
XSECTION 20	ADDHYD	.05	6.08	---	12.17	188	3760.0
XSECTION 23	REACH	.41	5.04	316.89	12.41	731	1782.9
STRUCTURE 31	RESVOR	.05	5.15	365.04	12.30	132	2640.0
STRUCTURE 32	RESVOR	.01	5.55	380.63	12.24	29	2900.0
STRUCTURE 33	RESVOR	.03	5.93	357.61	12.27	85	2833.3
STRUCTURE 34	RESVOR	.04	5.84	---	12.26	114	2850.0
XSECTION 44	REACH	.77	5.13	291.98	12.42	1578	2049.4
XSECTION 51	REACH	.93	5.09	287.38	12.49	1847	1986.0
XSECTION 60	ADDHYD	1.01	4.98	---	12.48	1917	1898.0
STRUCTURE 3	RESVOR	1.01	4.98	278.84	12.53	1889	1870.3
XSECTION 62	ADDHYD	1.02	4.96	---	12.52	1907	1869.6
XSECTION 63	REACH	1.02	4.95	251.32	12.64	1845	1808.8
STRUCTURE 61	RESVOR	.01	5.41	335.25	12.57	19	1900.0
STRUCTURE 62	RESVOR	.05	3.83	296.06	12.44	52	1040.0
STRUCTURE 63	RESVOR	.01	4.90	267.40	12.24	27	2700.0
XSECTION 76	ADDHYD	1.28	4.74	---	12.62	2086	1629.7
XSECTION 77	REACH	1.28	4.74	231.61	12.62	2086	1629.7
XSECTION 88	ADDHYD	1.55	4.60	---	12.68	2240	1445.2

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SUMMARY TABLE 1

-----  
 SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)
RAINFALL OF		8.47 inches	AND	24.00 hr	DURATION,	BEGINS AT	.0 hrs.
ALTERNATE		1	STORM	99			
STRUCTURE 11	RESVOR	.09	6.04	384.78	12.32	269	2988.9
XSECTION 8	REACH	.17	5.90	358.76	12.40	479	2817.6
STRUCTURE 21	RESVOR	.07	6.69	378.71	12.54	154	2200.0
STRUCTURE 22	RESVOR	.07	6.68	360.78	12.91	127	1814.3
STRUCTURE 23	RESVOR	.32	5.96	---	12.36	717	2240.6
XSECTION 16	REACH	.32	5.96	335.71	12.36	717	2240.6
XSECTION 20	ADDHYD	.05	7.29	---	12.17	224	4480.0
XSECTION 23	REACH	.41	6.19	317.25	12.38	922	2248.8
STRUCTURE 31	RESVOR	.05	6.35	365.43	12.30	161	3220.0
STRUCTURE 32	RESVOR	.01	6.68	380.81	12.23	33	3300.0
STRUCTURE 33	RESVOR	.03	7.15	357.96	12.29	96	3200.0
STRUCTURE 34	RESVOR	.04	7.04	---	12.27	129	3225.0
XSECTION 44	REACH	.77	6.29	292.39	12.41	1961	2546.8
XSECTION 51	REACH	.93	6.25	287.98	12.48	2299	2472.0
XSECTION 60	ADDHYD	1.01	6.13	---	12.47	2389	2365.3
STRUCTURE 3	RESVOR	1.01	6.12	279.96	12.51	2357	2333.7
XSECTION 62	ADDHYD	1.02	6.10	---	12.51	2379	2332.4
XSECTION 63	REACH	1.02	6.10	251.73	12.62	2320	2274.5
STRUCTURE 61	RESVOR	.01	6.61	335.67	12.55	25	2500.0
STRUCTURE 62	RESVOR	.05	4.89	297.03	12.42	70	1400.0
STRUCTURE 63	RESVOR	.01	6.07	267.78	12.19	44	4400.0
XSECTION 76	ADDHYD	1.28	5.87	---	12.60	2629	2053.9
XSECTION 77	REACH	1.28	5.87	232.04	12.60	2629	2053.9
XSECTION 88	ADDHYD	1.55	5.72	---	12.66	2821	1820.0

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SUMMARY TABLE 2  
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MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

		HYDROGRAPH INFORMATION				ROUTING PARAMETERS					
XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
BASEFLOW IS		.0 CFS									
ALTERNATE		1	STORM	2							
2	1170		24	12.3	23	12.4	1.55	1.37	.029	.952	
	.58										
5	797		51	12.5	50	12.5	2.26	1.19	.019	.989	
	.75?										
8	1221		85	12.4	84	12.5	1.15	1.48	.009	.990	
	.76?										
16	920		112	12.5	112	12.5	3.61	1.49	.001	1.000	
	1.00?										
23	1379		200	12.2	167	12.4	1.09	1.16	.056	.836	
	.34										
27	1021		84	12.3	77	12.4	1.10	1.18	.061	.910	
	.41										
32	1603		76	12.2	68	12.4	1.28	1.33	.055	.899	
	.48										
34	583		1	13.6	1	13.7	1.14	1.62	.001	.998	
	.49										
37	934		18	12.5	18	12.5	2.31	1.55	.002	.999	
	.92?										
44	1428		404	12.4	375	12.5	.45	1.34	.034	.928	
	.41										
51	1275		451	12.5	435	12.6	.58	1.31	.026	.965	
	.48										
53	652		0	.0	0	.0	.000	.00	.000	.000	
	.00										
63	1959		435	12.7	412	12.9	.80	1.27	.040	.947	
	.35										
65	1283		5	12.7	5	12.8	2.47	1.43	.012	.996	
	.53										
70	2166		68	12.2	60	12.3	1.68	1.37	.040	.883	
	.47										
72	1081		3	12.5	3	12.7	1.50	1.61	.007	.994	
	.49										
77	884		454	12.8	453	13.0	1.92	1.22	.008	.997	
	.87?										
80	1296		458	12.9	458	12.9	1.59	1.44	.003	1.000	
	1.00?										
ALTERNATE		1	STORM	10							
2	1170		48	12.3	45	12.4	1.90	1.19	.047	.937	
	.52										
5	797		121	12.4	120	12.4	2.00	1.25	.016	.996	
	.87?										
8	1221		213	12.4	212	12.4	1.26	1.44	.009	.993	
	.88?										
16	920		279	12.4	279	12.4	3.70	1.48	.001	1.000	
	1.00?										

23	1379	425	12.2	379	12.4	.70	1.27	.036	.892
.44									
27	1021	191	12.3	174	12.4	.73	1.29	.043	.911
.52									
32	1603	136	12.2	125	12.3	1.35	1.31	.047	.925
.52									
34	583	9	12.4	9	12.5	1.14	1.62	.004	.994
.86?									

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.

QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION

ROUTING PARAMETERS

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
	ALTERNATE	1	STORM	10							
37	934		54	12.4	54	12.4	2.32	1.54	.003	1.000	
1.00?											
44	1428		883	12.4	845	12.5	.29	1.44	.022	.957	
.53											
51	1275		1021	12.4	992	12.5	.45	1.37	.019	.972	
.59											
53	652		0	12.5	0	12.7	2.05	1.40	.010	.932	
.47											
63	1959		978	12.6	948	12.8	.45	1.39	.025	.969	
.47											
65	1283		8	12.7	8	12.8	2.46	1.41	.010	.978	
.59											
70	2166		141	12.2	96	12.4	1.92	1.04	.168	.679	
.21											
72	1081		9	12.4	9	12.4	1.48	1.55	.008	.934	
.61											
77	884		1056	12.7	1055	12.8	1.95	1.22	.008	.999	
.94?											
80	1296		1069	12.8	1066	12.8	3.30	1.18	.011	.997	
.87?											
	ALTERNATE	1	STORM	50							
2	1170		81	12.3	81	12.4	.29	2.00	.003	.998	

.94?									
5	797	217	12.3	216	12.4	1.85	1.28	.012	.995
.95?									
8	1221	387	12.4	386	12.4	1.29	1.44	.008	.999
.96?									
16	920	580	12.4	580	12.4	4.23	1.43	.001	1.000
1.00?									
23	1379	768	12.2	731	12.4	.61	1.30	.030	.952
.50									
27	1021	323	12.3	312	12.4	.40	1.45	.021	.967
.65									
32	1603	216	12.2	204	12.3	1.38	1.30	.040	.944
.56									
34	583	29	12.2	29	12.2	1.14	1.61	.006	1.000
1.00?									
37	934	113	12.2	113	12.2	2.43	1.51	.004	1.000
1.00?									
44	1428	1625	12.3	1578	12.4	.26	1.46	.017	.971
.62									
51	1275	1875	12.4	1847	12.5	.43	1.38	.017	.985
.66									
53	652	5	12.2	4	12.2	2.05	1.40	.017	.927
.75?									
63	1959	1904	12.5	1840	12.7	.37	1.44	.019	.966
.56									
65	1283	19	12.6	19	12.7	2.49	1.38	.012	.986
.67?									
70	2166	245	12.2	183	12.4	1.61	1.09	.134	.745
.24									

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.

QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;

ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION

ROUTING PARAMETERS

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
	ALTERNATE	1	STORM	50							
72	1081		27	12.2	25	12.3	1.66	1.42	.017	.927	
.70?											
77	884		2080	12.6	2080	12.6	1.76	1.24	.007	1.000	



1.00?									
80	1296	2115	12.6	2096	12.7	5.02	1.07	.020	.991
.78?									
ALTERNATE	1	STORM	99						
2	1170	99	12.3	99	12.4	.27	2.00	.002	.999
.97?									
5	797	267	12.3	267	12.4	1.81	1.28	.011	.998
.97?									
8	1221	478	12.4	478	12.4	1.30	1.43	.007	1.000
.99?									
16	920	717	12.4	717	12.4	4.47	1.41	.001	1.000
1.00?									
23	1379	976	12.2	921	12.4	.75	1.26	.035	.943
.49									
27	1021	392	12.3	384	12.4	.35	1.48	.017	.980
.70?									
32	1603	260	12.2	244	12.3	1.50	1.27	.043	.941
.55									
34	583	33	12.2	33	12.2	1.15	1.61	.005	1.000
1.00?									
37	934	127	12.3	127	12.3	2.45	1.51	.003	1.000
1.00?									
44	1428	2012	12.3	1960	12.4	.25	1.46	.016	.974
.65									
51	1275	2330	12.4	2299	12.5	.43	1.38	.016	.987
.69?									
53	652	8	12.2	8	12.2	2.05	1.40	.017	.971
.83?									
63	1959	2369	12.5	2317	12.6	.36	1.44	.017	.978
.59									
65	1283	25	12.5	24	12.7	2.51	1.37	.012	.982
.70?									
70	2166	320	12.2	243	12.4	1.26	1.16	.113	.761
.27									
72	1081	44	12.2	39	12.2	1.69	1.41	.021	.888
.76?									
77	884	2629	12.6	2629	12.6	1.62	1.25	.007	1.000
1.00?									
80	1296	2673	12.6	2641	12.7	6.10	1.01	.028	.988
.72?									

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 03/31/\*\* CN MGMT- EXISTING COND.- 2,10,50,100 yr NOAA Dis  
 2.04TEST  
 10:07:10 SUMMARY, JOB NO. 1 PAGE  
 98

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....
		2 10 50 99

STRUCTURE	63		.01				
-----							
ALTERNATE	1			3	10	27	44
STRUCTURE	62		.05				
-----							
ALTERNATE	1			12	18	52	70
STRUCTURE	61		.01				
-----							
ALTERNATE	1			5	8	19	25
STRUCTURE	34		.04				
-----							
ALTERNATE	1			18	54	114	129
STRUCTURE	33		.03				
-----							
ALTERNATE	1			18	49	85	96
STRUCTURE	32		.01				
-----							
ALTERNATE	1			1?	9	29	33
STRUCTURE	31		.05				
-----							
ALTERNATE	1			28	78	132	161
STRUCTURE	23		.32				
-----							
ALTERNATE	1			112	279	583	717
STRUCTURE	22		.07				
-----							
ALTERNATE	1			10	57	112	127
STRUCTURE	21		.07				
-----							
ALTERNATE	1			10	61	140	154
STRUCTURE	11		.09				
-----							
ALTERNATE	1			51	121	219	269
STRUCTURE	3		1.01				
-----							
ALTERNATE	1			433	973	1889	2357
XSECTION	8		.17				
-----							
ALTERNATE	1			84	212	387	479
XSECTION	16		.32				
-----							

1

TR20 ----- SCS

-

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION

03/31/\*\* CN MGMT- EXISTING COND.- 2,10,50,100 yr NOAA Dis  
2.04TEST  
10:07:10

SUMMARY, JOB NO. 1

PAGE

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....			
		2	10	50	99
XSECTION 16	.32				
ALTERNATE 1		112	279	583	717
XSECTION 20	.05				
ALTERNATE 1		71	122	188	224
XSECTION 23	.41				
ALTERNATE 1		167	380	731	922
XSECTION 44	.77				
ALTERNATE 1		375	849	1578	1961
XSECTION 51	.93				
ALTERNATE 1		435	993	1847	2299
XSECTION 60	1.01				
ALTERNATE 1		449	1028	1917	2389
XSECTION 62	1.02				
ALTERNATE 1		436	981	1907	2379
XSECTION 63	1.02				
ALTERNATE 1		413	949	1845	2320
XSECTION 76	1.28				
ALTERNATE 1		455	1057	2086	2629
XSECTION 77	1.28				
ALTERNATE 1		454	1056	2086	2629
XSECTION 88	1.55				
ALTERNATE 1		484	1124	2240	2821

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 03/31/\*\* CN MGMT- EXISTING COND.- 2,10,50,100 yr NOAA Dis  
 2.04TEST

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST  
FILES

INPUT = pond3.dat , GIVEN DATA FILE  
OUTPUT = pond3.OUT , DATED  
03/31/\*\*,10:07:10

FILES GENERATED - DATED 03/31/\*\*,10:07:10

NONE!

TOTAL NUMBER OF WARNINGS = 37, MESSAGES = 23

\*\*\* TR-20 RUN COMPLETED \*\*\*

1

\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20  
HYDROLOGY\*\*\*\*\*

JOB TR-20		NOPLOTS		
TITLE	Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,			
TITLE	CN MGMT- EXISTING COND.- 2,10,50,100 yr NOAA Dis			
2 XSECTN	002	1.0	389.50	
8		389.00	0.00	0.00
8		389.25	1.65	1.06
8		389.50	6.25	2.75
8		389.75	14.40	5.06
8		390.00	26.75	8.00
8		390.25	45.54	14.33
8		390.50	68.67	15.00
8		390.75	96.11	18.88
8		391.00	127.89	23.00
8		391.25	164.08	27.38
8		391.50	204.77	32.00
8		391.75	250.06	36.88
9	ENDTBL			
2 XSECTN	005	1.0	367.00	
8		366.00	0.00	0.00
8		366.50	3.51	1.5
8		367.00	13.55	4.00
8		367.50	30.53	9.00
8		367.75	47.87	13.00
8		368.00	72.23	18.00
8		368.25	104.79	23.98
8		368.50	146.13	30.94
8		368.75	197.14	38.86
8		369.00	258.63	47.75
8		369.25	331.41	57.61
8		369.50	416.25	68.44
9	ENDTBL			
3	STRUCT	11		
8		380.00	0.00	0.00
8		381.00	2.70	0.53
8		382.20	53.00	1.16
8		383.80	186.80	1.40
9	ENDTBL			
2 XSECTN	008	1.0	330.00	
8		356.00	0.00	0.00
8		356.50	20.21	6.94
8		357.00	68.51	15.75
8		357.50	144.11	26.44
8		358.00	248.93	39.00
8		358.50	389.07	53.25
8		359.00	561.31	69.00
8		359.50	767.14	86.25
8		360.00	1008.16	105.00
8		361.00	1375.68	147.50
8		361.50	1604.19	171.38
9	ENDTBL			

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

2	XSECTN	016	1.0	333.08	
8			331.08	0.00	0.00
8			332.08	80.21	8.00
8			333.08	225.50	16.00
8			333.58	310.09	20.00
8			334.08	399.94	24.00
8			334.58	493.86	28.00
8			335.08	590.97	32.00
8			335.58	690.67	36.00
8			336.08	792.47	40.00
8			336.58	896.02	44.00
9	ENDTBL				
2	XSECTN	023	1.0	314.40	
8			313.22	0.00	0.00
8			313.51	1.10	0.89
8			313.81	3.51	1.84
8			314.10	16.22	5.61
8			314.40	34.66	9.74
8			314.68	48.28	24.71
8			314.96	79.66	42.09
8			315.24	126.64	61.87
8			315.52	189.07	84.06
8			315.80	267.27	108.64
8			316.08	361.75	135.63
8			316.36	473.14	165.02
8			316.64	602.11	196.81
8			316.92	749.37	231.00
8			317.20	878.70	277.25
8			317.48	1103.89	329.14
8			317.76	1358.10	382.70
8			318.04	1640.58	437.94
8			318.32	1950.87	494.86
8			318.60	2288.69	553.45
9	ENDTBL				
3	STRUCT	21			
8			364.00	0.00	0.00
8			366.00	0.30	0.55
8			368.00	0.50	1.31
8			369.00	3.20	1.80
8			370.00	5.20	2.29
8			372.00	7.80	3.48
8			374.00	9.60	5.00
8			375.00	10.40	5.86
8			376.00	45.30	6.79
8			376.50	74.10	7.31
8			377.00	106.80	7.83
8			378.00	149.80	8.90
8			379.00	155.60	10.06
8			380.00	162.00	11.29
9	ENDTBL				

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

3	STRUCT	22			
8			352.50	0.00	0.00
8			358.65	100.00	0.91
8			361.76	140.00	3.28
8			363.64	160.00	5.47
8			366.18	180.00	9.58
8			368.71	200.00	14.77

8			370.61	250.00	19.31
9	ENDTBL				
3	STRUCT	23			
9	ENDTBL				
2	XSECTN	027	1.0	317.00	
8			316.00	0.00	0.00
8			316.50	2.68	2.59
8			317.00	10.37	6.88
8			317.50	24.26	12.84
8			318.00	45.55	20.50
8			318.50	70.64	34.75
8			319.00	137.01	60.50
8			319.25	200.57	76.25
8			319.50	273.06	92.00
8			319.75	353.76	107.75
8			320.00	442.13	123.50
8			320.50	640.03	155.00
8			321.00	863.72	186.50
9	ENDTBL				
2	XSECTN	032	1.0	313.00	
8			310.00	0.00	0.00
8			311.00	12.25	5.50
8			312.00	52.16	16.00
8			312.50	83.38	23.13
8			313.00	123.94	31.50
8			313.25	148.02	36.16
8			313.50	174.79	41.13
8			313.75	204.34	46.41
8			314.00	236.81	52.00
8			314.50	278.65	65.75
8			315.00	353.72	84.00
9	ENDTBL				
2	XSECTN	034	1.0	338.50	
8			338.00	0.00	0.00
8			338.10	4.87	2.46
8			338.25	22.73	6.38
8			338.50	73.99	13.53
8			338.75	149.34	21.45
8			339.00	247.95	30.13
8			339.50	515.65	49.78
9	ENDTBL				
2	XSECTN	037	1.0	331.00	
8			330.00	0.00	0.00

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			330.25	14.29	3.25
8			330.50	46.85	7.00
8			330.75	95.34	11.25
8			331.00	159.64	16.00
8			331.25	240.13	21.25
8			331.50	337.44	27.00
8			331.75	452.26	33.25
8			332.00	585.36	40.00
8			332.50	875.33	55.81
8			333.00	1272.05	75.25
9	ENDTBL				
2	XSECTN	044	1.0	288.90	
8			287.68	0.00	0.00
8			287.99	1.15	0.94

8			288.29	3.69	1.95
8			288.60	17.06	5.98
8			288.90	36.44	10.37
8			289.19	63.07	39.25
8			289.47	121.85	69.50
8			289.76	206.05	101.12
8			290.05	313.23	134.09
8			290.33	442.07	168.42
8			290.62	591.78	204.12
8			290.91	761.87	241.18
8			291.19	952.02	279.60
8			291.48	1162.04	319.38
8			291.77	1391.84	360.52
8			292.05	1641.40	403.02
8			292.34	1910.74	446.89
8			292.63	2199.92	492.11
8			292.91	2509.04	538.70
8			293.20	2838.22	586.65
9	ENDTBL				
3	STRUCT	31			
8			356.38	0.0	0.00
8			357.26	10.90	0.02
8			357.50	12.30	0.03
8			358.00	14.70	0.05
8			359.00	18.70	0.10
8			360.00	22.00	0.16
8			361.00	24.90	0.25
8			361.50	26.20	0.30
8			362.00	27.50	0.36
8			362.50	28.70	0.43
8			362.90	29.60	0.49
8			363.50	51.30	0.60
8			363.75	65.70	0.67
8			364.00	82.60	0.72
8			364.20	83.30	0.83
8			364.60	100.00	0.88

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			366.80	260.00	1.47
8			366.92	340.00	1.49
8			366.98	380.00	1.50
9	ENDTBL				
3	STRUCT	32			
8			375.40	0.00	0.00
8			379.36	1.00	0.74
8			380.00	5.00	0.89
8			380.20	10.00	0.94
8			380.33	15.00	0.98
8			380.45	20.00	1.01
8			380.55	25.00	1.04
8			380.65	30.00	1.06
8			381.19	40.00	1.21
8			381.78	44.00	1.39
8			382.59	66.00	1.66
8			382.79	88.00	1.75
8			382.89	110.00	1.79
8			382.97	132.00	1.83
9	ENDTBL				
3	STRUCT	33			



8			350.00	0.00	0.00
8			354.30	1.00	1.08
8			354.47	2.00	1.15
8			354.87	5.00	1.30
8			355.38	10.00	1.50
8			356.18	20.00	1.84
8			356.88	40.00	2.15
8			357.27	60.00	2.33
8			357.46	80.00	2.42
8			358.08	100.00	2.73
8			358.14	120.00	2.76
8			358.19	140.00	2.78
8			358.25	171.00	2.81
8			358.27	180.00	2.82
9	ENDTBL				
3	STRUCT	34			
9	ENDTBL				
3	STRUCT	02			
8			295.00	0.00	0.00
8			297.06	100.00	0.942
8			298.88	200.00	1.948
8			299.50	250.00	2.334
8			300.13	300.00	2.741
8			301.47	400.00	3.690
8			302.00	437.50	4.089
8			303.31	853.50	5.156
8			303.75	1069.10	5.534
8			304.20	1317.66	5.934
8			305.27	2019.83	6.939

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

9	ENDTBL				
2	XSECTN	051	1.0	282.40	
8			281.10	0.00	0.00
8			281.42	1.24	1.09
8			281.75	3.96	2.26
8			282.07	18.30	6.92
8			282.40	39.09	12.00
8			282.88	67.33	37.27
8			283.36	131.17	65.87
8			283.84	225.10	97.78
8			284.32	348.01	133.01
8			284.80	499.91	171.56
8			285.28	681.29	213.43
8			285.76	892.92	258.61
8			286.24	1135.70	307.11
8			286.72	1410.63	358.94
8			287.20	1718.74	414.08
8			287.68	2061.13	472.54
8			288.16	2438.87	534.31
8			288.64	2853.08	599.41
8			289.12	3301.76	667.84
8			289.60	3785.91	739.78
9	ENDTBL				
2	XSECTN	053	1.0	289.00	
8			288.00	0.00	0.00
8			288.50	9.00	2.88
8			289.00	34.26	7.50
8			289.50	79.27	13.88

8		290.00	147.75	22.00
8		290.50	227.49	31.94
8		291.00	332.02	43.75
8		291.50	463.75	57.44
8		291.75	540.56	64.98
8		292.00	625.07	73.00
9	ENDTBL			
2	XSECTN 063	1.0	248.40	
8		247.07	0.00	0.00
8		247.41	1.85	1.14
8		247.74	5.93	2.35
8		248.07	27.43	7.18
8		248.40	58.61	12.46
8		248.67	89.70	40.04
8		248.95	158.39	68.99
8		249.22	256.90	99.30
8		249.49	382.40	130.99
8		249.77	533.43	164.04
8		250.04	709.09	198.46
8		250.31	908.86	234.24
8		250.59	1132.40	271.40
8		250.86	1379.55	309.92

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8		251.13	1650.25	349.81
8		251.41	1944.49	391.07
8		251.68	2262.35	433.69
8		251.95	2603.94	477.69
8		252.23	2969.40	523.05
8		252.50	3358.93	569.78
9	ENDTBL			
3	STRUCT 61			
8		329.75	0.00	0.00
8		330.00	1.56	0.01
8		332.00	4.37	0.13
8		334.00	5.96	0.39
8		334.10	6.01	0.40
8		334.50	10.20	0.47
8		335.00	16.10	0.56
8		336.00	28.91	0.75
8		337.00	40.10	0.97
9	ENDTBL			
3	STRUCT 62			
8		287.30	0.00	0.00
8		288.00	5.45	0.01
8		289.00	9.05	0.05
8		290.00	11.60	0.13
8		292.00	15.35	0.50
8		294.00	18.40	1.19
8		294.30	18.92	1.26
8		294.50	20.73	1.40
8		295.00	36.40	1.60
8		295.40	38.00	1.80
8		296.00	51.10	2.15
8		297.00	69.60	2.75
8		298.00	86.80	3.44
8		298.68	98.50	3.91
8		298.80	107.56	4.00
9	ENDTBL			

3	STRUCT	63			
8			259.43	0.00	0.00
8			260.00	1.30	0.026
8			260.50	1.70	0.050
8			261.00	2.10	0.075
8			261.50	2.40	0.095
8			262.00	2.70	0.119
8			262.50	2.90	0.160
8			263.00	3.20	0.205
8			263.50	3.40	0.245
8			264.00	3.60	0.285
8			264.50	3.80	0.360
8			265.00	3.90	0.415
8			265.50	4.10	0.480
8			266.00	11.00	0.537

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			266.50	15.40	0.620
8			267.00	16.00	0.709
8			267.50	30.30	0.798
8			268.00	56.00	0.887
8			268.50	145.68	0.976
9	ENDTBL				
2	XSECTN	065	1.0	300.50	
8			300.00	0.00	0.00
8			300.10	0.29	0.23
8			300.25	1.47	0.69
8			300.40	3.55	1.28
8			300.50	5.48	1.75
8			300.60	7.88	2.28
8			300.75	12.45	3.19
8			300.90	18.28	4.23
8			301.00	22.91	5.00
8			301.10	28.18	5.83
8			301.25	37.36	7.19
8			301.40	48.14	8.68
8			301.50	56.26	9.75
9	ENDTBL				
2	XSECTN	070	1.0	248.40	
8			247.07	0.00	0.00
8			247.41	1.85	1.14
8			247.74	5.93	2.35
8			248.07	27.43	7.18
8			248.40	58.61	12.46
8			248.67	89.70	40.04
8			248.95	158.39	68.99
8			249.22	256.90	99.30
8			249.49	382.40	130.99
8			249.77	533.43	164.04
8			250.04	709.09	198.46
8			250.31	908.86	234.24
8			250.59	1132.40	271.40
8			250.86	1379.55	309.92
8			251.13	1650.25	349.81
8			251.41	1944.49	391.07
8			251.68	2262.35	433.69
8			251.95	2603.94	477.69
8			252.23	2969.40	523.05
8			252.50	3358.93	569.78

9	ENDTBL				
2	XSECTN	072	1.0	248.40	
8			247.07	0.00	0.00
8			247.41	1.85	1.14
8			247.74	5.93	2.35
8			248.07	27.43	7.18
8			248.40	58.61	12.46
8			248.67	89.70	40.04

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			248.95	158.39	68.99
8			249.22	256.90	99.30
8			249.49	382.40	130.99
8			249.77	533.43	164.04
8			250.04	709.09	198.46
8			250.31	908.86	234.24
8			250.59	1132.40	271.40
8			250.86	1379.55	309.92
8			251.13	1650.25	349.81
8			251.41	1944.49	391.07
8			251.68	2262.35	433.69
8			251.95	2603.94	477.69
8			252.23	2969.40	523.05
8			252.50	3358.93	569.78
9	ENDTBL				
2	XSECTN	077	1.0	229.00	
8			226.00	0.00	0.00
8			226.50	11.73	5.31
8			227.00	42.97	13.25
8			227.50	96.50	23.81
8			228.00	175.93	37.00
8			228.50	258.13	54.25
8			229.00	385.22	77.00
8			229.50	561.82	105.25
8			230.00	793.74	139.00
8			230.50	1079.38	179.94
8			231.00	1462.49	229.75
8			231.50	1953.75	288.44
8			232.00	2564.16	356.00
8			232.50	3408.70	429.13
8			233.00	4351.01	504.50
9	ENDTBL				
2	XSECTN	080	1.0	212.00	
8			210.50	0.00	0.00
8			210.75	4.72	2.23
8			211.00	15.68	4.92
8			211.25	32.36	8.06
8			211.50	54.93	11.67
8			211.75	83.70	15.73
8			212.00	119.05	20.25
8			212.25	163.87	25.14
8			212.50	215.35	30.31
8			212.75	273.55	35.77
8			213.00	338.57	41.50
8			214.00	669.42	67.25
8			215.00	806.07	99.00
8			216.00	1088.03	138.25
8			217.00	1451.30	187.50
8			218.00	1978.93	249.25

8		219.00	2262.06	340.00
1				

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		220.00	3115.20	476.25	
8		221.00	4892.67	639.25	
9	ENDTBL				
5	RAINFL 9	.1			
8	0.0000	0.0013	0.0023	0.0034	0.0044
8	0.0055	0.0065	0.0076	0.0087	0.0098
8	0.0109	0.0121	0.0132	0.0143	0.0155
8	0.0167	0.0178	0.0190	0.0202	0.0214
8	0.0226	0.0238	0.0251	0.0263	0.0276
8	0.0288	0.0301	0.0314	0.0327	0.0340
8	0.0353	0.0366	0.0379	0.0393	0.0406
8	0.0420	0.0434	0.0447	0.0461	0.0475
8	0.0489	0.0504	0.0518	0.0532	0.0547
8	0.0562	0.0576	0.0591	0.0606	0.0621
8	0.0636	0.0651	0.0667	0.0682	0.0697
8	0.0713	0.0729	0.0745	0.0760	0.0776
8	0.0793	0.0809	0.0826	0.0843	0.0861
8	0.0879	0.0898	0.0916	0.0936	0.0955
8	0.0975	0.0996	0.1017	0.1038	0.1060
8	0.1082	0.1104	0.1127	0.1150	0.1174
8	0.1198	0.1223	0.1247	0.1273	0.1298
8	0.1324	0.1351	0.1378	0.1405	0.1432
8	0.1461	0.1490	0.1521	0.1554	0.1588
8	0.1623	0.1660	0.1699	0.1739	0.1780
8	0.1823	0.1868	0.1914	0.1961	0.2010
8	0.2061	0.2117	0.2179	0.2247	0.2321
8	0.2400	0.2490	0.2591	0.2702	0.2825
8	0.2955	0.3157	0.3370	0.3662	0.4067
8	0.4766	0.5933	0.6338	0.6630	0.6843
8	0.7045	0.7176	0.7298	0.7409	0.7510
8	0.7600	0.7679	0.7753	0.7821	0.7883
8	0.7939	0.7990	0.8039	0.8086	0.8132
8	0.8177	0.8220	0.8261	0.8301	0.8340
8	0.8377	0.8412	0.8446	0.8479	0.8510
8	0.8540	0.8568	0.8595	0.8622	0.8649
8	0.8676	0.8702	0.8727	0.8753	0.8778
8	0.8802	0.8826	0.8850	0.8873	0.8896
8	0.8918	0.8940	0.8962	0.8983	0.9004
8	0.9025	0.9045	0.9064	0.9084	0.9103
8	0.9121	0.9139	0.9157	0.9174	0.9191
8	0.9208	0.9224	0.9240	0.9256	0.9271
8	0.9287	0.9303	0.9318	0.9334	0.9349
8	0.9364	0.9379	0.9394	0.9409	0.9424
8	0.9439	0.9453	0.9468	0.9482	0.9496
8	0.9511	0.9525	0.9539	0.9553	0.9566
8	0.9580	0.9594	0.9607	0.9621	0.9634
8	0.9647	0.9660	0.9673	0.9686	0.9699
8	0.9712	0.9724	0.9737	0.9749	0.9762
8	0.9774	0.9786	0.9798	0.9810	0.9822
8	0.9834	0.9845	0.9857	0.9868	0.9879

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		0.9891		0.9902		0.9913		0.9924		0.9935	
8		0.9945		0.9956		0.9967		0.9977		0.9987	
8		1.0000		1.0000		1.0000		1.0000		1.0000	
9	ENDTBL										
6	RUNOFF	1	001		1	0.0336		80.992		0.4051	DA1
6	REACH	3	002	1	2	1170.0				1	
6	RUNOFF	1	003		1	0.0580		79.488		0.3751	DA2
6	ADDHYD	4	004	1	2	3				1	DA1+2
6	RESVOR	2		11	3	1				1	1
SWMF10											
6	REACH	3	005	1	2	797.0				1	
6	RUNOFF	1	006		3	0.0798		77.284		0.3921	DA3
6	ADDHYD	4	007	2	3	4				1	
DA12+3											
6	REACH	3	008	4	7	1221.0				1	1 SA1-
SA2											
6	RUNOFF	1	009		1	0.0734		90.928		0.4221	DA1
6	RESVOR	2		21	1	2				1	1
SWMF13											
6	RUNOFF	1	010		3	0.0097		72.007		0.1281	DA7
6	RESVOR	2		22	2	3	4			1	1 HWY
STOR											
6	RUNOFF	1	011		2	0.0544		73.278		0.2201	DA2
6	ADDHYD	4	012	7	2	3				1	
SA1+DA2											
6	RUNOFF	1	013		5	0.0193		79.062		0.2481	DA3
6	ADDHYD	4	014	4	3	6				1	
DA17+2											
6	ADDHYD	4	015	6	5	3				1	
DA172+3											
6	RESVOR	2		23	3	1				1	1
HWYSTOR2											
6	REACH	3	016	1	2	920.0				1	1
6	RUNOFF	1	017		3	0.0211		87.900		0.1641	DA4
6	RUNOFF	1	018		4	0.0313		91.880		0.2551	DA5
6	RUNOFF	1	019		5	0.0404		84.467		0.1681	DA6
6	ADDHYD	4	020	3	4	6				1	1 DA4+5
6	ADDHYD	4	021	6	5	1				1	
DA123+6											
6	ADDHYD	4	022	2	1	3				1	
DA45+6											
6	REACH	3	023	3	7	1379.0				1	1 SA2-
SA3											
6	RUNOFF	1	024		1	0.0505		82.333		0.3401	DA1
6	RESVOR	2		31	1	2				1	1 SWMF3
6	RUNOFF	1	025		3	0.0748		81.676		0.3581	DA2
6	ADDHYD	4	026	2	3	4				1	DA1+2
6	REACH	3	027	4	1	1021.0				1	
6	RUNOFF	1	028		2	0.0599		78.523		0.3231	DA3
6	ADDHYD	4	029	7	2	3				1	
SA2+DA3											
6	ADDHYD	4	030	1	3	5				1	
DA12+3											
6	RUNOFF	1	031		1	0.0692		86.978		0.2761	DA4
6	REACH	3	032	1	6	1603.0				1	
6	RUNOFF	1	033		2	0.0084		95.000		0.1921	DA5
6	RESVOR	2		32	2	3				1	1
SWMF11											
6	REACH	3	034	3	7	583.0				1	
6	RUNOFF	1	035		1	0.0275		94.960		0.2481	DA6
6	RESVOR	2		33	1	2				1	1 SWMF8
6	ADDHYD	4	036	7	2	1				1	DA5+6
6	RESVOR	2		34	1	2				1	1

HWYSTOR3  
 6 REACH 3 037 2 4 934.0 1  
 6 RUNOFF 1 038 1 0.0328 85.878 0.1901 DA7  
 1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

6 ADDHYD 4 039 4 1 3 1  
 DA56+7  
 6 RUNOFF 1 040 2 0.0393 80.311 0.3671 DA8  
 6 ADDHYD 4 041 5 2 1 1 DA3+8  
 6 ADDHYD 4 042 6 1 2 1 DA4+8  
 6 ADDHYD 4 043 3 2 1 1 DA7+8  
 6 REACH 3 044 1 2 1428.0 1 1 SA3-  
 SA4  
 6 RESVOR 2 02 2 7 1 1 PROP2  
 6 RUNOFF 1 045 1 0.0477 80.798 0.4121 DA1  
 6 RUNOFF 1 046 2 0.0628 79.968 0.4401 DA2  
 6 ADDHYD 4 047 1 2 3 1 DA1+2  
 6 RUNOFF 1 048 1 0.0469 80.250 0.2491 DA3  
 6 ADDHYD 4 049 7 1 2 1 1  
 SA3+DA3  
 6 ADDHYD 4 050 2 3 4 1  
 DA12+3  
 6 REACH 3 051 4 7 1275.0 1 1 SA4-  
 SA5  
 6 RUNOFF 1 052 1 0.0087 41.639 0.1631 DA1  
 6 REACH 3 053 1 5 652.0 1  
 6 RUNOFF 1 054 1 0.0072 33.729 0.2561 DA2  
 6 RUNOFF 1 055 2 0.0322 77.752 0.2491 DA3  
 6 ADDHYD 4 056 7 2 4 1  
 SA4+DA3  
 6 ADDHYD 4 057 5 1 3 1 DA1+2  
 6 ADDHYD 4 058 4 3 5 1  
 DA12+3  
 6 RUNOFF 1 059 1 0.0266 70.478 0.2611 DA4  
 6 ADDHYD 4 060 5 1 2 1 1  
 DA123+4  
 6 RUNOFF 1 061 3 0.0173 69.728 0.2971 DA5  
 6 ADDHYD 4 062 2 3 6 1  
 DA1234+5  
 6 REACH 3 063 6 7 1959.0 1 1 SA5-  
 SA6  
 6 RUNOFF 1 064 1 0.0110 84.520 0.5211 DA1  
 6 RESVOR 2 61 1 2 1 1  
 SWMF19  
 6 REACH 3 065 2 3 1283.0 1  
 6 RUNOFF 1 066 1 0.0458 70.198 0.2391 DA2  
 6 RESVOR 2 62 1 2 1 1  
 SWMF18  
 6 ADDHYD 4 067 3 2 4 1 DA1+2  
 6 RUNOFF 1 068 5 0.0778 76.176 0.2281 DA3  
 6 ADDHYD 4 069 4 5 1 1  
 DA12+3  
 6 REACH 3 070 1 2 2166.0 1  
 6 RUNOFF 1 071 1 0.0119 80.036 0.1221 DA4  
 6 RESVOR 2 63 1 3 1 1 SWMF2  
 6 REACH 3 072 3 4 1081.0 1  
 6 RUNOFF 1 073 5 0.1100 64.864 0.2051 DA5  
 6 ADDHYD 4 074 7 5 1 1  
 SA5+DA5

6	ADDHYD	4	075	2	4	6				1	
DA123+4											
6	ADDHYD	4	076	1	6	2				1	1
DA12345											
6	REACH	3	077	2		7	884.0			1	1 SA6-
SA7											
6	RUNOFF	1	078			2	0.0510	70.802	0.1971		DA1
6	ADDHYD	4	079	7	2	1				1	
SA6+DA1											
6	REACH	3	080	1		2	1296.0			1	
6	RUNOFF	1	081			3	0.0513	73.958	0.1621		DA3
6	ADDHYD	4	082	2	3	4				1	DA1+3
6	RUNOFF	1	083			1	0.0313	67.555	0.1861		DA2
6	ADDHYD	4	084	4	1	2				1	
DA13+2											

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

6	RUNOFF	1	085			3	0.1187	68.693	0.3211		DA4	
6	ADDHYD	4	086	2	3	1				1		
DA123+4												
6	RUNOFF	1	087			4	0.0159	86.785	0.1421		DA5	
6	ADDHYD	4	088	1	4	7				1	1	
DA1234+5												
ENDATA												
7	INCREM	6					.06					
7	COMPUT	7	001	088			0.0	3.19	1.09	2	1	2
ENDCMP 1												
7	COMPUT	7	001	088			0.0	4.91	1.09	2	1	10
ENDCMP 1												
7	COMPUT	7	001	088			0.0	7.23	1.09	2	1	50
ENDCMP 1												
7	COMPUT	7	001	088			0.0	8.47	1.09	2	1	99
ENDCMP 1												
ENDJOB 2												

\*\*\*\*\*END OF 80-80  
 LIST\*\*\*\*\*

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION

03/31/\*\* CN MGMT- EXISTING COND.- 2,10,50,100 yr NOAA Dis

2.04TEST

10:08:06

PASS 1 JOB NO. 1

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EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .060 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88

STARTING TIME = .00	RAIN DEPTH = 3.19	RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2	MAIN TIME INCREMENT = .060 HOURS	
ALTERNATE NO. = 1	STORM NO. = 2	RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1



PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	23.9	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.46 WATERSHED INCHES;	32 CFS-HRS;	2.6 ACRE-
FEET.		

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	22.7	389.92
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.46 WATERSHED INCHES;	32 CFS-HRS;	2.6 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	39.9	(RUNOFF)
23.14	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.36 WATERSHED INCHES;	51 CFS-HRS;	4.2 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	60.4	(NULL)
23.10	1.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.40 WATERSHED INCHES;	83 CFS-HRS;	6.8 ACRE-
FEET.		

1 TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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 03/31/\*\* CN MGMT- EXISTING COND.- 2,10,50,100 yr NOAA Dis  
 2.04TEST  
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OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	50.9	382.15
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.39 WATERSHED INCHES;	82 CFS-HRS;	6.8 ACRE-
FEET.		

OPERATION REACH XSECTION 5

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.56 50.4 367.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 82 CFS-HRS; 6.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.30 47.5 (RUNOFF)  
 23.75 1.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.22 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.44 85.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.52 84.4 357.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

1  
 TR20 ----- SCS  
 -  
 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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 2.04TEST  
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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.30 77.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.24 WATERSHED INCHES; 106 CFS-HRS; 8.8 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE

STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
13.56 9.7 \* 374.07  
\* FIRST POINT OF FLAT PEAK  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.91 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.13 6.6 (RUNOFF)  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.92 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
13.68 9.6 \* 353.09  
\* FIRST POINT OF FLAT PEAK  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.91 WATERSHED INCHES; 90 CFS-HRS; 7.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.19 33.2 (RUNOFF)  
19.76 1.0 (RUNOFF)  
20.09 1.0 (RUNOFF)

1

TR20 ----- SCS

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2.04TEST

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

.99 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	98.2	(NULL)
24.00	3.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.24 WATERSHED INCHES; 180 CFS-HRS; 14.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	15.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.33 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	105.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.40 WATERSHED INCHES; 270 CFS-HRS; 22.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	112.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.39 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	112.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.39 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
FEET.

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\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
\*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	112.5	332.30
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.39 WATERSHED INCHES;	287 CFS-HRS;	23.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	29.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.98 WATERSHED INCHES;	27 CFS-HRS;	2.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	43.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.33 WATERSHED INCHES;	47 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	48.6	(RUNOFF)
19.47	1.0	(RUNOFF)
19.75	1.0	(RUNOFF)
20.06	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.71 WATERSHED INCHES;	44 CFS-HRS;	3.7 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 20

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	71.1	(NULL)
15.81	2.5	(NULL)
24.01	1.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.19 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	119.3	(NULL)
15.83	4.3	(NULL)
17.33	3.3	(NULL)
21.95	2.1	(NULL)
24.01	1.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.98 WATERSHED INCHES; 118 CFS-HRS; 9.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	200.7	(NULL)
23.99	9.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.52 WATERSHED INCHES; 405 CFS-HRS; 33.4 ACRE-  
FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.41	166.9	315.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.52 WATERSHED INCHES; 404 CFS-HRS; 33.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	41.6	(RUNOFF)
20.68	1.1	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	28.2	362.31
20.70	1.1	356.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	58.7	(RUNOFF)
23.97	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.51 WATERSHED INCHES; 73 CFS-HRS; 6.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	84.2	(NULL)
18.68	3.2	(NULL)
23.78	2.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	76.6	318.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	42.0	(RUNOFF)
23.12	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.30 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	201.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.49 WATERSHED INCHES; 455 CFS-HRS; 37.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	275.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.50 WATERSHED INCHES; 578 CFS-HRS; 47.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	76.8	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-  
FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		



12.38	68.8	312.27
24.15	1.3	310.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.16	14.0	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.63 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .28 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 376.89.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
 AT STRUCTURE 32  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.56	1.0	379.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.01 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 34, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 34

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
 AT XSECTION 34  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.68	1.0	338.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.00 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.19	41.8	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.63 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

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OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		355.98
12.47	17.5	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.08 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(NULL)
12.48	18.3	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(NULL)
12.48	18.3	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		330.28
12.54	18.2	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	40.3	(RUNOFF)
17.34	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.81 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	43.8	(NULL)
24.01	2.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.94 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	28.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.41 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	301.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.50 WATERSHED INCHES; 614 CFS-HRS; 50.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	369.9	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.54 WATERSHED INCHES;	699 CFS-HRS;	57.7 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	403.9	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.57 WATERSHED INCHES;	783 CFS-HRS;	64.7 ACRE-
FEET.		

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	375.3	290.18

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.57 WATERSHED INCHES;	782 CFS-HRS;	64.6 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.65	356.6	300.89

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.57 WATERSHED INCHES;	782 CFS-HRS;	64.6 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	33.3	(RUNOFF)
20.10	1.1 *	(RUNOFF)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.45 WATERSHED INCHES;	45 CFS-HRS;	3.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	40.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 56 CFS-HRS; 4.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	74.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.42 WATERSHED INCHES; 101 CFS-HRS; 8.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	40.1	(RUNOFF)
20.10	1.1	(RUNOFF)
20.65	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.41 WATERSHED INCHES; 43 CFS-HRS; 3.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	369.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 824 CFS-HRS; 68.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.59	414.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.54 WATERSHED INCHES; 925 CFS-HRS; 76.5 ACRE-  
FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.73 403.3 284.49

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.54 WATERSHED INCHES; 925 CFS-HRS; 76.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.54 WATERSHED INCHES; 145 CFS-HRS; 76.4 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

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OPERATION REACH XSECTION 53

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)

12.21 24.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.25 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 409.7 (NULL)
12.72

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.53 WATERSHED INCHES; 951 CFS-HRS; 78.6 ACRE-
FEET.

\*\*\* WARNING - XSECTION 57
NO HYDROGRAPH IN INPUT LOCATION 5 OR 1 FOR ADDHYD OPERATION.
\*\*\*

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 58

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 409.7 (NULL)
12.72

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.50 WATERSHED INCHES; 951 CFS-HRS; 78.6 ACRE-
FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 12.3 (RUNOFF)
12.23

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.85 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-
FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.72	413.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 965 CFS-HRS; 79.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	7.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .81 WATERSHED INCHES; 9 CFS-HRS; .7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.71	416.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.48 WATERSHED INCHES; 974 CFS-HRS; 80.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.89	397.5	249.52

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 974 CFS-HRS; 80.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	8.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
 FEET.



OPERATION RESVOR    STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	4.7	332.36
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.71 WATERSHED INCHES;	12 CFS-HRS;	1.0 ACRE-
FEEET.		

OPERATION REACH    XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.86	4.6	300.46
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.71 WATERSHED INCHES;	12 CFS-HRS;	1.0 ACRE-
FEEET.		

OPERATION RUNOFF    XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	21.6	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.83 WATERSHED INCHES;	25 CFS-HRS;	2.0 ACRE-
FEEET.		

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR    STRUCTURE 62

1  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	12.4	290.42
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.83 WATERSHED INCHES;	25 CFS-HRS;	2.0 ACRE-
FEEET.		

OPERATION ADDHYD    XSECTION 67

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.58	16.5	(NULL)
20.11	1.0	(NULL)
20.66	1.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.00 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	55.7	(RUNOFF)
24.03	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.15 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	68.6	(NULL)
23.10	2.1	(NULL)
23.75	2.0	(NULL)
24.03	2.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.09 WATERSHED INCHES; 95 CFS-HRS; 7.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	60.1	248.41
23.17	2.1	247.43
24.09	2.0	247.42

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.09 WATERSHED INCHES; 95 CFS-HRS; 7.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
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ELEVATION(FEET)  
12.13 13.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.40 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.49 3.4 263.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.40 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.64 3.3 247.53

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.39 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.20 34.3 (RUNOFF)  
15.86 2.4 (RUNOFF)  
24.02 1.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.59 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.89 406.3 (NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.39 WATERSHED INCHES; 1016 CFS-HRS; 83.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.32	63.1	(NULL)
18.71	3.1	(NULL)
24.09	2.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.11 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.87	439.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.36 WATERSHED INCHES; 1121 CFS-HRS; 92.6 ACRE-  
FEET.

OPERATION REACH XSECTION 77

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.94	438.4	229.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.36 WATERSHED INCHES; 1121 CFS-HRS; 92.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	27.4	(RUNOFF)
17.35	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.86 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.93	443.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.34 WATERSHED INCHES; 1149 CFS-HRS; 95.0 ACRE-  
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 80.  
\*\*\*

OPERATION REACH XSECTION 80

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.93 443.8 213.32  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.34 WATERSHED INCHES; 1149 CFS-HRS; 95.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.16 36.0 (RUNOFF)  
19.47 1.0 (RUNOFF)  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.03 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.93 449.8 (NULL)  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.33 WATERSHED INCHES; 1183 CFS-HRS; 97.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.18 13.2 (RUNOFF)  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.71 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.93 452.6 (NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.31 WATERSHED INCHES; 1197 CFS-HRS; 98.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	43.1	(RUNOFF)
18.68	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.76 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.92	465.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.27 WATERSHED INCHES; 1255 CFS-HRS; 103.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	22.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.89 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.92	468.5	(NULL)
23.97	28.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.28 WATERSHED INCHES; 1275 CFS-HRS; 105.3 ACRE-  
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

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EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
STARTING TIME = .00 RAIN DEPTH = 4.91 RAIN DURATION = 1.00  
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. =10 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 48.0 (RUNOFF)  
23.10 1.1 \* (RUNOFF)  
\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.90 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.41 45.0 390.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.90 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.28 82.2 (RUNOFF)  
20.68 2.2 (RUNOFF)  
23.98 1.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.77 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.32 122.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.82 WATERSHED INCHES; 166 CFS-HRS; 13.8 ACRE-  
FEET.

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OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	121.3	383.02
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.81 WATERSHED INCHES;	166 CFS-HRS;	13.7 ACRE-
FEEET.		

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	120.5	368.34
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.81 WATERSHED INCHES;	166 CFS-HRS;	13.7 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	101.9	(RUNOFF)
23.73	2.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.57 WATERSHED INCHES;	132 CFS-HRS;	10.9 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	213.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.70 WATERSHED INCHES;	298 CFS-HRS;	24.7 ACRE-
FEEET.		

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	212.2	357.82
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.70 WATERSHED INCHES;	299 CFS-HRS;	24.7 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 9



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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.30	132.1	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.88 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	60.8	376.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.49 WATERSHED INCHES; 165 CFS-HRS; 13.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.13	16.1	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.13 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.81	56.5	355.97

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.49 WATERSHED INCHES; 165 CFS-HRS; 13.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.19	77.9	(RUNOFF)
15.82	3.3	(RUNOFF)

18.86	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.23 WATERSHED INCHES; 78 CFS-HRS; 6.5 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	249.3	(NULL)
24.00	6.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.59 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	32.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	262.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.80 WATERSHED INCHES; 540 CFS-HRS; 44.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	278.8	(NULL)
23.98	12.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	278.8	(NULL)
23.98	12.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-FEET.

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\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	278.8	333.39
23.98	12.6	331.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	52.0	(RUNOFF)
17.34	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.57 WATERSHED INCHES; 49 CFS-HRS; 4.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	72.1	(RUNOFF)
23.75	1.0	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.99 WATERSHED INCHES; 81 CFS-HRS; 6.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	90.5	(RUNOFF)
17.34	2.3	(RUNOFF)
24.00	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.23 WATERSHED INCHES; 84 CFS-HRS; 7.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 20

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	121.6	(NULL)
15.81	4.1	(NULL)
17.31	3.1	(NULL)
21.75	2.0	(NULL)
21.96	2.0	(NULL)
24.01	1.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.82 WATERSHED INCHES; 129 CFS-HRS; 10.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	211.4	(NULL)
15.83	7.0	(NULL)
17.33	5.4	(NULL)
19.41	4.1	(NULL)
19.74	4.0	(NULL)
20.06	4.0	(NULL)
23.06	3.2	(NULL)
24.01	3.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.56 WATERSHED INCHES; 213 CFS-HRS; 17.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	426.8	(NULL)
20.04	21.6	(NULL)
20.56	20.8	(NULL)
23.03	16.9	(NULL)

24.00 15.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.96 WATERSHED INCHES; 787 CFS-HRS; 65.0 ACRE-
FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.39 379.7 316.13
24.04 15.6 314.09

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.96 WATERSHED INCHES; 786 CFS-HRS; 65.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.25 81.4 (RUNOFF)
20.13 2.0 (RUNOFF)
23.99 1.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.03 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-
FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE
TIME INCREMENT OF .043 HOURS.
\*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES
FIRST NEGATIVE VALUE IS 0 CFS.
\*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.32 78.5 363.94
20.15 2.0 356.54
23.79 1.5 356.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.02 WATERSHED INCHES; 99 CFS-HRS; 8.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	115.6	(RUNOFF)
18.66	3.3	(RUNOFF)
23.77	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.97 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 26  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	190.6	(NULL)
20.14	5.0	(NULL)
23.14	4.0	(NULL)
23.78	3.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-  
FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.40	174.0	319.15
20.20	5.0	316.65
23.20	4.0	316.59

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	87.6	(RUNOFF)
21.94	2.0	(RUNOFF)
24.01	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.68 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	457.0	(NULL)
24.03	17.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 890 CFS-HRS; 73.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	621.6	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.94 WATERSHED INCHES; 1132 CFS-HRS; 93.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	137.5	(RUNOFF)
18.66	3.2	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	125.9	313.02
18.72	3.2	310.26
24.09	2.2	310.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	22.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

4.33 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
WITH .38 AC-FT ( .07 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 377.43.  
\*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.40 9.1 380.16  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.48 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
FEET.

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OPERATION REACH XSECTION 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.47 9.0 338.13  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.47 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.19 66.9 (RUNOFF)  
21.97 1.1 (RUNOFF)  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.32 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
WITH .95 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 353.79.  
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.32 48.7 357.05



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.67 WATERSHED INCHES; 65 CFS-HRS; 5.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.62 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.62 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
 \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	330.54

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.62 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	73.5	(RUNOFF)
15.84	2.4	(RUNOFF)
23.73	1.0	(RUNOFF)
24.01	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.37 WATERSHED INCHES; 71 CFS-HRS; 5.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	106.9	(NULL)
21.94	3.1	(NULL)
24.01	2.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.50 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	57.7	(RUNOFF)
23.76	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.84 WATERSHED INCHES; 72 CFS-HRS; 6.0 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	673.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.93 WATERSHED INCHES; 1204 CFS-HRS; 99.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.34	796.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 1359 CFS-HRS; 112.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	887.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 1509 CFS-HRS; 124.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	848.7	291.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 1509 CFS-HRS; 124.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	844.6	303.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 1507 CFS-HRS; 124.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 45

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	66.8	(RUNOFF)
23.09	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.88 WATERSHED INCHES; 89 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	83.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 114 CFS-HRS; 9.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
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ELEVATION(FEET)		
12.31	150.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.84 WATERSHED INCHES; 203 CFS-HRS; 16.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	81.7	(RUNOFF)
18.65	2.0	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.84 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	879.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.01 WATERSHED INCHES; 1593 CFS-HRS; 131.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	1003.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 1796 CFS-HRS; 148.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	974.1	285.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 1795 CFS-HRS; 148.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 210 CFS-HRS; 148.4 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 53

\*\*\* MESSAGE - XSECTION 53, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 207 CFS-HRS; 148.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - XSECTION 54, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 189 CFS-HRS; 148.4 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	51.6	(RUNOFF)
21.97	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.61 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	992.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.98 WATERSHED INCHES; 1850 CFS-HRS; 152.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - XSECTION 57, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.98 WATERSHED INCHES; 214 CFS-HRS; 152.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.56 992.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.93 WATERSHED INCHES; 1852 CFS-HRS; 153.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.21 31.6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.01 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.56 1005.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.91 WATERSHED INCHES; 1886 CFS-HRS; 155.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.24 18.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.95 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.55 1014.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.89 WATERSHED INCHES; 1908 CFS-HRS; 157.7 ACRE-  
FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.68 971.7 250.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.89 WATERSHED INCHES; 1907 CFS-HRS; 157.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.37 15.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.24 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 61

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.74 8.4 334.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.24 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.85 8.2 300.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.23 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	55.9	(RUNOFF)
24.02	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 59 CFS-HRS; 4.8 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	18.0	293.76
14.58	3.8	287.79
24.04	1.1	287.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 59 CFS-HRS; 4.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 67

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	25.9	(NULL)
18.87	2.1	(NULL)
24.04	1.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.23 WATERSHED INCHES; 82 CFS-HRS; 6.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------



ELEVATION(FEET)			
12.19	122.6		(RUNOFF)
18.87	3.1		(RUNOFF)
24.02	2.2		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.47 WATERSHED INCHES; 124 CFS-HRS; 10.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	141.4	(NULL)
18.87	5.2	(NULL)
21.97	4.3	(NULL)
24.03	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 206 CFS-HRS; 17.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	96.0	248.70

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 206 CFS-HRS; 17.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	26.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
 FEET.

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OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	9.6	265.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.82 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-

FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	8.9	247.79
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.81 WATERSHED INCHES;	22 CFS-HRS;	1.8 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	110.8	(RUNOFF)
15.85	5.4	(RUNOFF)
17.34	4.2	(RUNOFF)
20.86	3.0	(RUNOFF)
24.01	2.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.58 WATERSHED INCHES;	112 CFS-HRS;	9.3 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	1000.2	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.76 WATERSHED INCHES;	2019 CFS-HRS;	166.8 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	105.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.40 WATERSHED INCHES;	227 CFS-HRS;	18.8 ACRE-
FEET.		

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OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
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ELEVATION(FEET)  
12.67 1089.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.72 WATERSHED INCHES; 2246 CFS-HRS; 185.6 ACRE-  
FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.73 1088.0 230.51

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.72 WATERSHED INCHES; 2246 CFS-HRS; 185.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.18 69.0 (RUNOFF)  
17.34 2.3 (RUNOFF)  
24.01 1.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.03 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.73 1102.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.69 WATERSHED INCHES; 2313 CFS-HRS; 191.1 ACRE-  
FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.80 1099.6 216.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.69 WATERSHED INCHES; 2312 CFS-HRS; 191.1 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 81

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.15	83.3	(RUNOFF)
15.84	3.1	(RUNOFF)
17.34	2.4	(RUNOFF)
24.00	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.29 WATERSHED INCHES; 76 CFS-HRS; 6.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.80	1113.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.68 WATERSHED INCHES; 2388 CFS-HRS; 197.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.17	37.3	(RUNOFF)
19.47	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 84

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.79	1120.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.66 WATERSHED INCHES; 2424 CFS-HRS; 200.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 85

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.25	118.2	(RUNOFF)
18.67	4.1	(RUNOFF)
23.12	3.1	(RUNOFF)
24.01	2.8	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.87 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.79	1156.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.60 WATERSHED INCHES; 2567 CFS-HRS; 212.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	40.2	(RUNOFF)
15.84	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.45 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.79	1162.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.61 WATERSHED INCHES; 2602 CFS-HRS; 215.1 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
 STARTING TIME = .00 RAIN DEPTH = 7.23 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =50 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
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ELEVATION(FEET)		
12.29	81.5	(RUNOFF)
20.13	2.1	(RUNOFF)
23.08	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	81.3	390.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	142.8	(RUNOFF)
20.68	3.4	(RUNOFF)
23.97	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.85 WATERSHED INCHES; 181 CFS-HRS; 15.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	220.1	(NULL)
20.13	5.7	(NULL)
23.12	4.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.91 WATERSHED INCHES; 290 CFS-HRS; 24.0 ACRE-  
 FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,  
 VALUE EXTRAPOLATED.  
 \*\*\*

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	218.8	384.18

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	218.2	368.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	181.7	(RUNOFF)
20.14	4.8	(RUNOFF)
23.74	3.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.60 WATERSHED INCHES; 237 CFS-HRS; 19.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	387.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.75 WATERSHED INCHES; 526 CFS-HRS; 43.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	386.9	358.49

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.75 WATERSHED INCHES; 526 CFS-HRS; 43.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	203.5	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.15 WATERSHED INCHES; 291 CFS-HRS; 24.1 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.51	139.6	377.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.58 WATERSHED INCHES; 264 CFS-HRS; 21.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	30.4	(RUNOFF)
15.46	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.03 WATERSHED INCHES; 25 CFS-HRS; 2.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.80	112.3	359.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.57 WATERSHED INCHES; 264 CFS-HRS; 21.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	146.1	(RUNOFF)
15.81	5.5	(RUNOFF)
20.09	3.2	(RUNOFF)
20.64	3.0	(RUNOFF)
24.02	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.16 WATERSHED INCHES; 146 CFS-HRS; 12.1 ACRE-  
 FEET.



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OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	458.9	(NULL)
24.00	10.2	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.61 WATERSHED INCHES;		55.5 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	56.4	(RUNOFF)
21.97	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.80 WATERSHED INCHES;		4.9 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	552.8	(NULL)
23.98	17.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.84 WATERSHED INCHES;		77.2 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	582.5	(NULL)
23.99	18.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.83 WATERSHED INCHES;		82.1 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.40	582.5	(NULL)
23.99	18.5	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 994 CFS-HRS; 82.1 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	582.5	335.04
23.99	18.5	331.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 994 CFS-HRS; 82.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	82.4	(RUNOFF)
15.84	2.4	(RUNOFF)
23.05	1.1	(RUNOFF)
23.71	1.0	(RUNOFF)
24.00	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.80 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	109.9	(RUNOFF)
20.10	2.1	(RUNOFF)
24.03	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.26 WATERSHED INCHES; 126 CFS-HRS; 10.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	148.6	(RUNOFF)
15.84	4.6	(RUNOFF)
17.34	3.5	(RUNOFF)
22.75	2.1	(RUNOFF)
23.06	2.1	(RUNOFF)
24.00	2.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.41 WATERSHED INCHES; 141 CFS-HRS; 11.6 ACRE- FEET.		

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	188.2	(NULL)
15.81	6.1	(NULL)
17.31	4.7	(NULL)
21.74	3.0	(NULL)
21.96	3.0	(NULL)
24.01	2.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.08 WATERSHED INCHES; 206 CFS-HRS; 17.0 ACRE- FEET.		

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	335.1	(NULL)
15.83	10.7	(NULL)
17.33	8.2	(NULL)
19.74	6.1	(NULL)
20.06	6.1	(NULL)
21.95	5.3	(NULL)
24.01	4.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.79 WATERSHED INCHES; 347 CFS-HRS; 28.6 ACRE- FEET.		

OPERATION ADDHYD XSECTION 22

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.21	780.5	(NULL)
20.04	30.2	(NULL)
20.58	29.1	(NULL)
21.93	26.8	(NULL)
23.04	24.7	(NULL)
23.68	23.4	(NULL)
24.00	23.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.04 WATERSHED INCHES; 1339 CFS-HRS; 110.6 ACRE-  
FEET.

OPERATION REACH XSECTION 23

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.41	731.5	316.89
24.06	23.0	314.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.04 WATERSHED INCHES; 1338 CFS-HRS; 110.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.25	136.5	(RUNOFF)
20.68	3.0	(RUNOFF)
23.99	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.17 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.30	131.8	365.04
20.69	3.0	356.63
23.79	2.4	356.57

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.15 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.26	196.3	(RUNOFF)
18.66	5.1	(RUNOFF)
20.68	4.5	(RUNOFF)
23.98	3.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 246 CFS-HRS; 20.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.28	325.1	(NULL)
18.67	8.6	(NULL)
20.68	7.5	(NULL)
23.14	6.2	(NULL)
23.78	5.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.12 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.37	312.6	319.62
20.73	7.5	316.81
23.20	6.2	316.73

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.12 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.24	154.0	(RUNOFF)
21.94	3.2	(RUNOFF)
24.01	2.7	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.74 WATERSHED INCHES; 183 CFS-HRS; 15.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.33	854.4	(NULL)
20.07	33.9	(NULL)
24.04	25.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.00 WATERSHED INCHES; 1521 CFS-HRS; 125.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	1164.9	(NULL)
24.04	31.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.03 WATERSHED INCHES; 1935 CFS-HRS; 159.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	220.6	(RUNOFF)
20.86	4.2	(RUNOFF)
24.02	3.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-  
FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	204.5	313.75
20.73	4.3	310.35
24.09	3.3	310.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 33

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	33.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.63 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
WITH .48 AC-FT ( .09 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 377.99.  
\*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	29.2	380.63

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-  
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
\*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	29.2	338.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	100.5	(RUNOFF)
18.65	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.63 WATERSHED INCHES; 118 CFS-HRS; 9.7 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS WITH 1.02 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE REMAINING IN RESERVOIR AT ELEV. 354.08. \*\*\*

OPERATION RESVOR STRUCTURE 33

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.27 84.8 357.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 5.93 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.26 113.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 5.84 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.26 113.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 5.84 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0, CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37. \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.26 113.8 330.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 5.84 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-FEET.



OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	118.6	(RUNOFF)
15.84	3.7	(RUNOFF)
20.07	2.1	(RUNOFF)
20.63	2.0	(RUNOFF)
24.01	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.57 WATERSHED INCHES; 118 CFS-HRS; 9.7 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	220.1	(NULL)
19.73	5.0	(NULL)
22.73	4.1	(NULL)
23.05	4.0	(NULL)
24.01	3.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.71 WATERSHED INCHES; 253 CFS-HRS; 20.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	99.5	(RUNOFF)
20.67	2.3	(RUNOFF)
23.97	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.94 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.34	1255.2	(NULL)
24.03	33.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.02 WATERSHED INCHES; 2060 CFS-HRS; 170.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	1455.3	(NULL)
24.04	36.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 2314 CFS-HRS; 191.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 43

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	1629.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.13 WATERSHED INCHES; 2561 CFS-HRS; 211.6 ACRE-FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	1577.6	291.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.13 WATERSHED INCHES; 2560 CFS-HRS; 211.6 ACRE-FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	1574.8	304.59

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.13 WATERSHED INCHES; 2559 CFS-HRS; 211.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	114.7	(RUNOFF)
23.09	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

5.00 WATERSHED INCHES; 154 CFS-HRS; 12.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.31 143.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.90 WATERSHED INCHES; 199 CFS-HRS; 16.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 257.9 (NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.94 WATERSHED INCHES; 352 CFS-HRS; 29.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.20 140.0 (RUNOFF)  
18.86 3.1 (RUNOFF)  
24.03 2.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.93 WATERSHED INCHES; 149 CFS-HRS; 12.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.43 1642.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.11 WATERSHED INCHES; 2708 CFS-HRS; 223.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)

12.41 1869.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.09 WATERSHED INCHES; 3061 CFS-HRS; 252.9 ACRE-
FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.50 1832.3 287.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.09 WATERSHED INCHES; 3059 CFS-HRS; 252.8 ACRE-
FEET.

OPERATION RUNOFF XSECTION 52

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.18 4.6 (RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.06 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-
FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,
UNLESS NEW RATING TABLE VALUES ARE INSERTED.
\*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.26 4.3 288.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.06 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,
AT XSECTION 54
\*\*\*

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.54 .6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .47 WATERSHED INCHES; 2 CFS-HRS; .2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	91.3	(RUNOFF)
18.86	2.1	(RUNOFF)
24.03	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.65 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	1868.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.08 WATERSHED INCHES; 3156 CFS-HRS; 260.8 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	4.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .79 WATERSHED INCHES; 8 CFS-HRS; .7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	1871.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.01 WATERSHED INCHES; 3164 CFS-HRS; 261.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	61.6	(RUNOFF)
24.02	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.86 WATERSHED INCHES; 66 CFS-HRS; 5.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	1898.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.98 WATERSHED INCHES; 3230 CFS-HRS; 267.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	37.1	(RUNOFF)
18.66	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.78 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-FEET.

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OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	1917.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.96 WATERSHED INCHES; 3273 CFS-HRS; 270.4 ACRE-FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	1859.5	251.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.95 WATERSHED INCHES; 3271 CFS-HRS; 270.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	25.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.41 WATERSHED INCHES;	38 CFS-HRS;	3.2 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	19.3	335.25
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.41 WATERSHED INCHES;	38 CFS-HRS;	3.2 ACRE-
FEET.		

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.67	19.0	300.92
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.41 WATERSHED INCHES;	38 CFS-HRS;	3.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 66

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	109.3	(RUNOFF)
23.10	2.1	(RUNOFF)
24.03	2.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.83 WATERSHED INCHES;	113 CFS-HRS;	9.4 ACRE-
FEET.		

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.44	52.1	296.06
23.12	2.0	287.56
24.04	1.9	287.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.83 WATERSHED INCHES; 113 CFS-HRS; 9.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.55	67.2	(NULL)
20.86	3.1	(NULL)
24.04	2.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.13 WATERSHED INCHES; 151 CFS-HRS; 12.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	220.8	(RUNOFF)
18.64	5.1	(RUNOFF)
21.97	4.1	(RUNOFF)
24.03	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.48 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-FEET.

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OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	249.0	(NULL)
18.87	8.5	(NULL)
20.87	7.5	(NULL)
23.10	6.3	(NULL)
24.03	6.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.33 WATERSHED INCHES; 376 CFS-HRS; 31.1 ACRE-FEET.



OPERATION REACH XSECTION 70

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	183.4	249.02
24.09	5.9	247.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.33 WATERSHED INCHES; 376 CFS-HRS; 31.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	45.5	(RUNOFF)
15.83	1.3	(RUNOFF)
17.33	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.90 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	27.4	267.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.90 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	25.6	248.04

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.91 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	237.2	(RUNOFF)

15.84	9.7	(RUNOFF)
17.34	7.6	(RUNOFF)
18.86	6.1	(RUNOFF)
21.45	5.1	(RUNOFF)
24.01	4.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.26 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.59	1927.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.79 WATERSHED INCHES; 3503 CFS-HRS; 289.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	207.0	(NULL)
20.13	8.7	(NULL)
24.09	6.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.38 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.59	2108.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.74 WATERSHED INCHES; 3917 CFS-HRS; 323.7 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 77.  
 \*\*\*

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OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.59 2108.4 231.63

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.74 WATERSHED INCHES; 3917 CFS-HRS; 323.7 ACRE-
FEET.

OPERATION RUNOFF XSECTION 78

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows show values for 12.17, 15.84, 18.86, and 24.01 hours.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.89 WATERSHED INCHES; 128 CFS-HRS; 10.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 79

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Row shows value for 12.58 hours with (NULL) peak.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.71 WATERSHED INCHES; 4045 CFS-HRS; 334.3 ACRE-
FEET.

OPERATION REACH XSECTION 80

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Row shows values for 12.66 hours.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.71 WATERSHED INCHES; 4044 CFS-HRS; 334.2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 81

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Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows show values for 12.15, 15.84, 17.34, 19.47, 19.74, 20.05, and 24.00 hours.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.24 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.66	2159.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.69 WATERSHED INCHES; 4184 CFS-HRS; 345.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	76.0	(RUNOFF)
17.34	2.3	(RUNOFF)
24.01	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.55 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.66	2175.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.67 WATERSHED INCHES; 4256 CFS-HRS; 351.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 85

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	237.6	(RUNOFF)
18.67	7.0	(RUNOFF)
20.68	6.2	(RUNOFF)
23.12	5.2	(RUNOFF)
24.01	4.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.67 WATERSHED INCHES; 281 CFS-HRS; 23.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	2267.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.59 WATERSHED INCHES; 4537 CFS-HRS; 374.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	64.3	(RUNOFF)
20.04	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.67 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	2277.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.60 WATERSHED INCHES; 4595 CFS-HRS; 379.7 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
 STARTING TIME = .00 RAIN DEPTH = 8.47 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =99 RAIN TABLE NO. = 9

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OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	99.6	(RUNOFF)
20.13	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.18 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-

FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	99.4	390.78
20.19	2.5	389.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.18 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	175.5	(RUNOFF)
20.68	4.1	(RUNOFF)
23.97	3.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.00 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	270.3	(NULL)
20.14	6.8	(NULL)
23.12	5.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.07 WATERSHED INCHES; 359 CFS-HRS; 29.6 ACRE-FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,  
 VALUE EXTRAPOLATED.  
 \*\*\*

OPERATION RESVOR STRUCTURE 11

1 TR20 ----- SCS

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	268.8	384.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.04 WATERSHED INCHES; 357 CFS-HRS; 29.5 ACRE-FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)

12.38 268.4 369.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.05 WATERSHED INCHES; 357 CFS-HRS; 29.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)

12.28 226.3 (RUNOFF)  
 20.13 5.8 (RUNOFF)  
 23.74 4.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.74 WATERSHED INCHES; 295 CFS-HRS; 24.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)

12.34 479.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.90 WATERSHED INCHES; 653 CFS-HRS; 54.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)

12.40 479.0 358.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.90 WATERSHED INCHES; 653 CFS-HRS; 53.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)

12.29 242.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.38 WATERSHED INCHES; 350 CFS-HRS; 28.9 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 21, TRUNCATED AT 400 POINTS
WITH 2.68 AC-FT (.06 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 370.65.
\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.54 153.9 378.71

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.69 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.13 38.4 (RUNOFF)
15.83 1.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.11 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.91 127.4 360.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.68 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 11

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)



12.18	184.3	(RUNOFF)
18.87	4.1	(RUNOFF)
22.76	3.1	(RUNOFF)
23.09	3.1	(RUNOFF)
24.03	2.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.26 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	571.3	(NULL)
24.01	12.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.75 WATERSHED INCHES; 837 CFS-HRS; 69.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	69.3	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.95 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	675.4	(NULL)
24.00	20.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1151 CFS-HRS; 95.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	717.1	(NULL)
24.00	21.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.36	717.1	(NULL)
24.00	21.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.3 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.36	717.1	335.71
24.00	21.4	331.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.14	98.2	(RUNOFF)
17.34	2.2	(RUNOFF)
24.00	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.01 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 18

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.20	130.6	(RUNOFF)
21.97	2.1	(RUNOFF)
24.03	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.49 WATERSHED INCHES; 151 CFS-HRS; 12.5 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 19

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.15	179.0	(RUNOFF)
15.84	5.4	(RUNOFF)
17.34	4.2	(RUNOFF)
19.75	3.1	(RUNOFF)
20.05	3.1	(RUNOFF)
24.00	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.60 WATERSHED INCHES; 172 CFS-HRS; 14.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.17	224.0	(NULL)
15.81	7.2	(NULL)
17.31	5.5	(NULL)
20.07	4.1	(NULL)
23.07	3.2	(NULL)
23.73	3.1	(NULL)
24.01	3.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.29 WATERSHED INCHES; 247 CFS-HRS; 20.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.16	401.6	(NULL)
15.83	12.6	(NULL)
17.33	9.7	(NULL)
20.06	7.2	(NULL)
21.95	6.2	(NULL)
24.01	5.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.99 WATERSHED INCHES; 419 CFS-HRS; 34.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	978.4	(NULL)
18.81	37.0	(NULL)
19.71	35.2	(NULL)
20.05	34.7	(NULL)
20.58	33.4	(NULL)
21.93	30.8	(NULL)
23.04	28.4	(NULL)
23.69	27.1	(NULL)
24.00	26.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.19 WATERSHED INCHES; 1643 CFS-HRS; 135.8 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	922.4	317.25
24.06	26.7	314.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.19 WATERSHED INCHES; 1642 CFS-HRS; 135.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	165.8	(RUNOFF)
18.66	4.1	(RUNOFF)
20.68	3.6	(RUNOFF)
23.12	3.0	(RUNOFF)
24.00	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.34 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.30	160.7	365.43
18.69	4.1	356.71
20.69	3.6	356.67
23.15	3.0	356.62
24.03	2.8	356.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.35 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.26	237.1	(RUNOFF)
18.65	6.1	(RUNOFF)
20.67	5.3	(RUNOFF)
23.98	4.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.26 WATERSHED INCHES; 302 CFS-HRS; 25.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.28	395.1	(NULL)
18.66	10.2	(NULL)
20.14	9.4	(NULL)
20.68	8.9	(NULL)
23.14	7.4	(NULL)
23.78	7.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.30 WATERSHED INCHES; 509 CFS-HRS; 42.1 ACRE-  
FEET.

OPERATION REACH XSECTION 27

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.36	384.2	319.84
20.20	9.4	316.93
20.74	8.9	316.91
23.20	7.4	316.81
23.83	7.0	316.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.29 WATERSHED INCHES; 509 CFS-HRS; 42.0 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	190.4	(RUNOFF)
20.67	4.2	(RUNOFF)
24.01	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.89 WATERSHED INCHES; 228 CFS-HRS; 18.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	1077.4	(NULL)
20.08	39.1	(NULL)
23.07	31.9	(NULL)
24.04	29.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.15 WATERSHED INCHES; 1869 CFS-HRS; 154.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	1459.8	(NULL)
24.04	36.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.18 WATERSHED INCHES; 2378 CFS-HRS; 196.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	264.7	(RUNOFF)
20.66	5.1	(RUNOFF)
23.11	4.2	(RUNOFF)
24.02	3.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-FEET.

OPERATION REACH XSECTION 32

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	244.6	314.09
20.73	5.1	310.41
23.19	4.2	310.34
24.09	3.9	310.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.16	39.4	(RUNOFF)
15.84	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.86 WATERSHED INCHES; 43 CFS-HRS; 3.5 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS WITH .53 AC-FT ( .10 WATERSHED INCHES) FLOOD STORAGE REMAINING IN RESERVOIR AT ELEV. 378.24.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	32.9	380.81

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0, CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
 \*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	32.9	338.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 35

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.19	118.2	(RUNOFF)
20.86	2.0	(RUNOFF)
24.02	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.86 WATERSHED INCHES; 139 CFS-HRS; 11.5 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
WITH 1.05 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 354.18.  
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.29	96.1	357.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.15 WATERSHED INCHES; 127 CFS-HRS; 10.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.27	128.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.27	128.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-  
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
\*\*\*

OPERATION REACH XSECTION 37



PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	128.6	330.88

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	142.5	(RUNOFF)
15.84	4.4	(RUNOFF)
17.34	3.4	(RUNOFF)
21.96	2.2	(RUNOFF)
22.75	2.0	(RUNOFF)
23.07	2.0	(RUNOFF)
24.01	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.77 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	260.3	(NULL)
18.82	6.2	(NULL)
21.95	5.0	(NULL)
24.01	4.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.91 WATERSHED INCHES; 306 CFS-HRS; 25.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	121.2	(RUNOFF)
18.64	3.2	(RUNOFF)
23.76	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.10 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	1571.2	(NULL)
24.04	38.9	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.17 WATERSHED INCHES; 2533 CFS-HRS; 209.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	1817.2	(NULL)
24.04	42.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.24 WATERSHED INCHES; 2841 CFS-HRS; 234.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	2017.4	(NULL)
24.03	47.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.29 WATERSHED INCHES; 3141 CFS-HRS; 259.5 ACRE-  
FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	1960.9	292.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.29 WATERSHED INCHES; 3140 CFS-HRS; 259.5 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	1958.6	305.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

6.29 WATERSHED INCHES; 3139 CFS-HRS; 259.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	140.0	(RUNOFF)
20.10	3.5	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.16 WATERSHED INCHES; 190 CFS-HRS; 15.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	175.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.06 WATERSHED INCHES; 245 CFS-HRS; 20.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	315.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.10 WATERSHED INCHES; 435 CFS-HRS; 36.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	171.6	(RUNOFF)
21.97	3.0	(RUNOFF)
24.03	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.09 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
12.42 2041.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.28 WATERSHED INCHES; 3323 CFS-HRS; 274.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.41 2322.0 (NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.25 WATERSHED INCHES; 3758 CFS-HRS; 310.6 ACRE-  
FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.49 2282.4 287.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.25 WATERSHED INCHES; 3756 CFS-HRS; 310.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 52

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.17 8.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.63 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.24 8.0 288.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.63 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-

FEET.

OPERATION RUNOFF XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .85 WATERSHED INCHES; 4 CFS-HRS; .3 ACRE-FEET.

OPERATION RUNOFF XSECTION 55

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	112.9	(RUNOFF)
21.97	2.0	(RUNOFF)
24.03	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.79 WATERSHED INCHES; 120 CFS-HRS; 9.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	2327.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.24 WATERSHED INCHES; 3876 CFS-HRS; 320.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	9.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.28 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	2332.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.15 WATERSHED INCHES; 3889 CFS-HRS; 321.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	78.5	(RUNOFF)
24.02	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.92 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	2367.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.12 WATERSHED INCHES; 3974 CFS-HRS; 328.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	47.3	(RUNOFF)
21.96	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	2391.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 4028 CFS-HRS; 332.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.59	2330.1	251.73
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.10 WATERSHED INCHES;	4027 CFS-HRS;	332.8 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	30.8	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.61 WATERSHED INCHES;	47 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	24.7	335.67

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.61 WATERSHED INCHES;	47 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	24.4	301.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.61 WATERSHED INCHES;	47 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	139.6	(RUNOFF)
20.10	3.1	(RUNOFF)
24.02	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.89 WATERSHED INCHES;	145 CFS-HRS;	11.9 ACRE-
FEET.		

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS. \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS. \*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.42	70.1	297.03
20.12	3.1	287.70
24.04	2.3	287.60

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.89 WATERSHED INCHES; 145 CFS-HRS; 11.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.51	90.2	(NULL)
18.87	4.3	(NULL)
23.11	3.2	(NULL)
24.04	3.0	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.22 WATERSHED INCHES; 191 CFS-HRS; 15.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	273.8	(RUNOFF)
18.64	6.1	(RUNOFF)
18.87	6.0	(RUNOFF)
20.87	5.3	(RUNOFF)
24.02	4.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.60 WATERSHED INCHES; 281 CFS-HRS; 23.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------



ELEVATION(FEET)		
12.20	323.9	(NULL)
18.87	10.3	(NULL)
20.64	9.2	(NULL)
20.86	9.0	(NULL)
21.97	8.3	(NULL)
23.75	7.2	(NULL)
24.03	7.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.44 WATERSHED INCHES; 473 CFS-HRS; 39.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	243.9	249.18
20.14	9.6	247.80
24.09	7.1	247.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.44 WATERSHED INCHES; 473 CFS-HRS; 39.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	54.7	(RUNOFF)
17.33	1.2	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	44.5	267.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.07 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.27 40.6 248.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-
FEET.

OPERATION RUNOFF XSECTION 73

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include times from 12.18 to 24.01 and corresponding discharge values.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.26 WATERSHED INCHES; 302 CFS-HRS; 25.0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 74

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Row includes time 12.58 and discharge 2419.7.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.92 WATERSHED INCHES; 4329 CFS-HRS; 357.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 75

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Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include times from 12.35 to 24.09.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.49 WATERSHED INCHES; 519 CFS-HRS; 42.9 ACRE-
FEET.

OPERATION ADDHYD XSECTION 76

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Row includes time 12.57 and discharge 2654.1.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.87 WATERSHED INCHES; 4848 CFS-HRS; 400.7 ACRE-
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 77.
\*\*\*

OPERATION REACH XSECTION 77

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.57 2654.1 232.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.87 WATERSHED INCHES; 4848 CFS-HRS; 400.7 ACRE-
FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.17 171.1 (RUNOFF)
15.84 6.1 (RUNOFF)
17.34 4.7 (RUNOFF)
21.96 3.1 (RUNOFF)
24.01 2.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.96 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-
FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.56 2701.2 (NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.84 WATERSHED INCHES; 5012 CFS-HRS; 414.2 ACRE-
FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.65 2674.0 219.48

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

5.83 WATERSHED INCHES; 5010 CFS-HRS; 414.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	194.0	(RUNOFF)
15.84	6.3	(RUNOFF)
17.34	4.9	(RUNOFF)
22.42	3.0	(RUNOFF)
24.00	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.34 WATERSHED INCHES; 177 CFS-HRS; 14.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.64	2710.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.82 WATERSHED INCHES; 5187 CFS-HRS; 428.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	97.7	(RUNOFF)
15.84	3.6	(RUNOFF)
20.07	2.1	(RUNOFF)
24.01	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.57 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 84

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.64	2732.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.79 WATERSHED INCHES; 5279 CFS-HRS; 436.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	307.5	(RUNOFF)
18.67	8.6	(RUNOFF)
20.68	7.6	(RUNOFF)
23.12	6.3	(RUNOFF)
24.01	5.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.71 WATERSHED INCHES; 361 CFS-HRS; 29.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.63	2851.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.70 WATERSHED INCHES; 5640 CFS-HRS; 466.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	76.9	(RUNOFF)
15.84	2.2	(RUNOFF)
22.42	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.87 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.63	2864.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.72 WATERSHED INCHES; 5710 CFS-HRS; 471.9 ACRE-  
 FEET.

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EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4  
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				AMOUNT	ELEVATION	TIME	RATE
ID	OPERATION	AREA (SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)
RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 9, ARC 2							
MAIN TIME INCREMENT .060 HOURS							
ALTERNATE		1	2				
STRUCTURE 11	RESVOR	.09	1.39	382.15	12.47	51	566.7
XSECTION 8	REACH	.17	1.31	357.10	12.52	84	494.1
STRUCTURE 21	RESVOR	.07	1.91	374.07	13.56F	10F	142.9
STRUCTURE 22	RESVOR	.07	1.91	353.09	13.68F	10F	142.9
STRUCTURE 23	RESVOR	.32	1.39	---	12.47	112	350.0
XSECTION 16	REACH	.32	1.39	332.30	12.47	112	350.0
XSECTION 20	ADDHYD	.05	2.19	---	12.17	71	1420.0
XSECTION 23	REACH	.41	1.52	315.42	12.41	167	407.3
STRUCTURE 31	RESVOR	.05	1.55	362.31	12.46	28	560.0
STRUCTURE 32	RESVOR	.01	2.01	379.28	13.56R	1R	100.0
STRUCTURE 33	RESVOR	.03	2.08	355.98	12.47	18	600.0
STRUCTURE 34	RESVOR	.04	2.06	---	12.48	18	450.0
XSECTION 44	REACH	.77	1.57	290.18	12.52	375	487.0
STRUCTURE 2	RESVOR	.77	1.57	300.89	12.65	357	463.6
XSECTION 49	ADDHYD	.82	1.56	---	12.63	369	450.0
XSECTION 51	REACH	.93	1.54	284.49	12.73	403	433.3
XSECTION 60	ADDHYD	1.01	1.49	---	12.72	414	409.9
XSECTION 63	REACH	1.02	1.47	249.52	12.89	397	389.2
STRUCTURE 61	RESVOR	.01	1.71	332.36	12.74	5	500.0
STRUCTURE 62	RESVOR	.05	.83	290.42	12.43	12	240.0
STRUCTURE 63	RESVOR	.01	1.40	263.40	12.49	3	300.0
XSECTION 76	ADDHYD	1.28	1.36	---	12.87	439	343.0
XSECTION 77	REACH	1.28	1.36	229.15	12.94	438	342.2
XSECTION 88	ADDHYD	1.55	1.28	---	12.92	468	301.9

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 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF		4.91 inches AND	24.00 hr DURATION,	BEGINS AT		.0 hrs.	
ALTERNATE	1	STORM	10				
STRUCTURE 11	RESVOR	.09	2.81	383.02	12.34	121	1344.4
XSECTION 8	REACH	.17	2.70	357.82	12.43	212	1247.1
STRUCTURE 21	RESVOR	.07	3.49	376.27	12.68	61	871.4
STRUCTURE 22	RESVOR	.07	3.49	355.97	12.81	57	814.3
STRUCTURE 23	RESVOR	.32	2.79	---	12.41	279	871.9
XSECTION 16	REACH	.32	2.79	333.39	12.41	279	871.9
XSECTION 20	ADDHYD	.05	3.82	---	12.17	122	2440.0
XSECTION 23	REACH	.41	2.96	316.13	12.39	380	926.8
STRUCTURE 31	RESVOR	.05	3.02	363.94	12.32	78	1560.0
STRUCTURE 32	RESVOR	.01	3.48	380.16	12.40	9	900.0
STRUCTURE 33	RESVOR	.03	3.67	357.05	12.32	49	1633.3
STRUCTURE 34	RESVOR	.04	3.62	---	12.35	54	1350.0
XSECTION 44	REACH	.77	3.02	291.04	12.45	849	1102.6
STRUCTURE 2	RESVOR	.77	3.02	303.28	12.49	845	1097.4
XSECTION 49	ADDHYD	.82	3.01	---	12.48	879	1072.0
XSECTION 51	REACH	.93	2.99	285.92	12.56	974	1047.3
XSECTION 60	ADDHYD	1.01	2.91	---	12.56	1006	996.0
XSECTION 63	REACH	1.02	2.89	250.39	12.68	972	952.9
STRUCTURE 61	RESVOR	.01	3.24	334.33	12.74	8	800.0
STRUCTURE 62	RESVOR	.05	1.98	293.76	12.62	18	360.0
STRUCTURE 63	RESVOR	.01	2.82	265.90	12.33	10	1000.0
XSECTION 76	ADDHYD	1.28	2.72	---	12.67	1089	850.8
XSECTION 77	REACH	1.28	2.72	230.51	12.73	1088	850.0
XSECTION 88	ADDHYD	1.55	2.61	---	12.79	1162	749.7

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SUMMARY TABLE 1

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 SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:

F-FLAT TOP HYDROGRAPH    T-TRUNCATED HYDROGRAPH    R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 7.23 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
ALTERNATE 1 STORM 50							
STRUCTURE 11	RESVOR	.09	4.89	384.18	12.32	219	2433.3
XSECTION 8	REACH	.17	4.75	358.49	12.41	387	2276.5
STRUCTURE 21	RESVOR	.07	5.58	377.76	12.51	140	2000.0
STRUCTURE 22	RESVOR	.07	5.57	359.61	12.80	112	1600.0
STRUCTURE 23	RESVOR	.32	4.83	---	12.40	583	1821.9
XSECTION 16	REACH	.32	4.83	335.04	12.40	583	1821.9
XSECTION 20	ADDHYD	.05	6.08	---	12.17	188	3760.0
XSECTION 23	REACH	.41	5.04	316.89	12.41	731	1782.9
STRUCTURE 31	RESVOR	.05	5.15	365.04	12.30	132	2640.0
STRUCTURE 32	RESVOR	.01	5.55	380.63	12.24	29	2900.0
STRUCTURE 33	RESVOR	.03	5.93	357.61	12.27	85	2833.3
STRUCTURE 34	RESVOR	.04	5.84	---	12.26	114	2850.0
XSECTION 44	REACH	.77	5.13	291.98	12.42	1578	2049.4
STRUCTURE 2	RESVOR	.77	5.13	304.59	12.44	1575	2045.5
XSECTION 49	ADDHYD	.82	5.11	---	12.43	1642	2002.4
XSECTION 51	REACH	.93	5.09	287.36	12.50	1832	1969.9
XSECTION 60	ADDHYD	1.01	4.98	---	12.50	1898	1879.2
XSECTION 63	REACH	1.02	4.95	251.33	12.60	1860	1823.5
STRUCTURE 61	RESVOR	.01	5.41	335.25	12.57	19	1900.0
STRUCTURE 62	RESVOR	.05	3.83	296.06	12.44	52	1040.0
STRUCTURE 63	RESVOR	.01	4.90	267.40	12.24	27	2700.0
XSECTION 76	ADDHYD	1.28	4.74	---	12.59	2108	1646.9
XSECTION 77	REACH	1.28	4.74	231.63	12.59	2108	1646.9
XSECTION 88	ADDHYD	1.55	4.60	---	12.64	2278	1469.7

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH    T-TRUNCATED HYDROGRAPH    R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				ELEVATION	TIME	RATE	RATE
ID	OPERATION	AREA	AMOUNT	ELEVATION	TIME	RATE	RATE



			(SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)
RAINFALL OF 8.47 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.								
ALTERNATE 1 STORM 99								
STRUCTURE	11	RESVOR	.09	6.04	384.78	12.32	269	2988.9
XSECTION	8	REACH	.17	5.90	358.76	12.40	479	2817.6
STRUCTURE	21	RESVOR	.07	6.69	378.71	12.54	154	2200.0
STRUCTURE	22	RESVOR	.07	6.68	360.78	12.91	127	1814.3
STRUCTURE	23	RESVOR	.32	5.96	---	12.36	717	2240.6
XSECTION	16	REACH	.32	5.96	335.71	12.36	717	2240.6
XSECTION	20	ADDHYD	.05	7.29	---	12.17	224	4480.0
XSECTION	23	REACH	.41	6.19	317.25	12.38	922	2248.8
STRUCTURE	31	RESVOR	.05	6.35	365.43	12.30	161	3220.0
STRUCTURE	32	RESVOR	.01	6.68	380.81	12.23	33	3300.0
STRUCTURE	33	RESVOR	.03	7.15	357.96	12.29	96	3200.0
STRUCTURE	34	RESVOR	.04	7.04	---	12.27	129	3225.0
XSECTION	44	REACH	.77	6.29	292.39	12.41	1961	2546.8
STRUCTURE	2	RESVOR	.77	6.29	305.18	12.43	1959	2544.2
XSECTION	49	ADDHYD	.82	6.28	---	12.42	2042	2490.2
XSECTION	51	REACH	.93	6.25	287.96	12.49	2282	2453.8
XSECTION	60	ADDHYD	1.01	6.12	---	12.49	2367	2343.6
XSECTION	63	REACH	1.02	6.10	251.73	12.59	2330	2284.3
STRUCTURE	61	RESVOR	.01	6.61	335.67	12.55	25	2500.0
STRUCTURE	62	RESVOR	.05	4.89	297.03	12.42	70	1400.0
STRUCTURE	63	RESVOR	.01	6.07	267.78	12.19	44	4400.0
XSECTION	76	ADDHYD	1.28	5.87	---	12.57	2654	2073.4
XSECTION	77	REACH	1.28	5.87	232.05	12.57	2654	2073.4
XSECTION	88	ADDHYD	1.55	5.72	---	12.63	2864	1847.7

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.

QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION						ROUTING PARAMETERS					
XSEC ID	REACH LENGTH	FLOOD PLAIN		INFLOW		OUTFLOW		Q-A EQ.		PEAK RATIO Q/I	ATT-KIN (C)
		LENGTH	COEFF	PEAK	TIME	PEAK	TIME	COEFF	POWER		
	(FT)	(FT)		(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)	(Q*)

BASEFLOW IS .0 CFS

ALTERNATE	1	STORM	2						
2	1170	24	12.3	23	12.4	1.55	1.37	.029	.952
.58									
5	797	51	12.5	50	12.5	2.26	1.19	.019	.989
.75?									
8	1221	85	12.4	84	12.5	1.15	1.48	.009	.990
.76?									
16	920	112	12.5	112	12.5	3.61	1.49	.001	1.000
1.00?									
23	1379	200	12.2	167	12.4	1.09	1.16	.056	.836
.34									
27	1021	84	12.3	77	12.4	1.10	1.18	.061	.910
.41									
32	1603	76	12.2	68	12.4	1.28	1.33	.055	.899
.48									
34	583	1	13.6	1	13.7	1.14	1.62	.001	.998
.49									
37	934	18	12.5	18	12.5	2.31	1.55	.002	.999
.92?									
44	1428	404	12.4	375	12.5	.45	1.34	.034	.928
.41									
51	1275	414	12.6	403	12.7	.61	1.30	.024	.974
.47									
53	652	0	.0	0	.0	.000	.00	.000	.000
.00									
63	1959	416	12.7	397	12.9	.82	1.26	.040	.955
.35									
65	1283	5	12.7	5	12.8	2.47	1.43	.012	.996
.53									
70	2166	68	12.2	60	12.3	1.68	1.37	.040	.883
.47									
72	1081	3	12.5	3	12.7	1.50	1.61	.007	.994
.49									
77	884	438	12.8	438	13.0	1.92	1.22	.008	.999
.87?									
80	1296	443	13.0	443	13.0	1.58	1.44	.003	1.000
1.00?									

ALTERNATE	1	STORM	10						
2	1170	48	12.3	45	12.4	1.90	1.19	.047	.937
.52									
5	797	121	12.4	120	12.4	2.00	1.25	.016	.996
.87?									
8	1221	213	12.4	212	12.4	1.26	1.44	.009	.993
.88?									
16	920	279	12.4	279	12.4	3.70	1.48	.001	1.000
1.00?									
23	1379	425	12.2	379	12.4	.70	1.27	.036	.892
.44									
27	1021	191	12.3	174	12.4	.73	1.29	.043	.911
.52									
32	1603	136	12.2	125	12.3	1.35	1.31	.047	.925
.52									
34	583	9	12.4	9	12.5	1.14	1.62	.004	.994
.86?									

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.

QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;

ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

		HYDROGRAPH INFORMATION				ROUTING PARAMETERS					
XSEC REACH ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
	ALTERNATE	1	STORM	10							
37	934		54	12.4	54	12.4	2.32	1.54	.003	1.000	
44	1428		883	12.4	845	12.5	.29	1.44	.022	.957	
51	1275		998	12.4	971	12.5	.45	1.37	.019	.973	
53	652		0	12.5	0	12.7	2.05	1.40	.010	.932	
63	1959		1013	12.5	969	12.7	.44	1.40	.025	.956	
65	1283		8	12.7	8	12.8	2.46	1.41	.010	.978	
70	2166		141	12.2	96	12.4	1.92	1.04	.168	.679	
72	1081		9	12.4	9	12.4	1.48	1.55	.008	.934	
77	884		1089	12.7	1088	12.7	1.96	1.22	.008	.999	
80	1296		1102	12.7	1098	12.8	3.40	1.17	.011	.997	
	ALTERNATE	1	STORM	50							
2	1170		81	12.3	81	12.4	.29	2.00	.003	.998	
5	797		217	12.3	216	12.4	1.85	1.28	.012	.995	
8	1221		387	12.4	386	12.4	1.29	1.44	.008	.999	
16	920		580	12.4	580	12.4	4.23	1.43	.001	1.000	
23	1379		768	12.2	731	12.4	.61	1.30	.030	.952	

27	1021	323	12.3	312	12.4	.40	1.45	.021	.967
.65									
32	1603	216	12.2	204	12.3	1.38	1.30	.040	.944
.56									
34	583	29	12.2	29	12.2	1.14	1.61	.006	1.000
1.00?									
37	934	113	12.2	113	12.2	2.43	1.51	.004	1.000
1.00?									
44	1428	1625	12.3	1578	12.4	.26	1.46	.017	.971
.62									
51	1275	1869	12.4	1826	12.5	.43	1.38	.017	.977
.66									
53	652	5	12.2	4	12.2	2.05	1.40	.017	.927
.75?									
63	1959	1915	12.5	1859	12.6	.37	1.44	.019	.971
.56									
65	1283	19	12.6	19	12.7	2.49	1.38	.012	.986
.67?									
70	2166	245	12.2	183	12.4	1.61	1.09	.134	.745
.24									

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION				ROUTING PARAMETERS						
XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		PEAK RATIO Q/I	ATT-KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)		
	ALTERNATE	1	STORM	50						
72	1081		27	12.2	25	12.3	1.66	1.42	.017	.927
.70?										
77	884		2107	12.6	2107	12.6	1.75	1.24	.007	1.000
1.00?										
80	1296		2142	12.6	2130	12.7	5.15	1.06	.022	.995
.77?										
	ALTERNATE	1	STORM	99						
2	1170		99	12.3	99	12.4	.27	2.00	.002	.999
.97?										
5	797		267	12.3	267	12.4	1.81	1.28	.011	.998
.97?										

8	1221	478	12.4	478	12.4	1.30	1.43	.007	1.000
.99?									
16	920	717	12.4	717	12.4	4.47	1.41	.001	1.000
1.00?									
23	1379	976	12.2	921	12.4	.75	1.26	.035	.943
.49									
27	1021	392	12.3	384	12.4	.35	1.48	.017	.980
.70?									
32	1603	260	12.2	244	12.3	1.50	1.27	.043	.941
.55									
34	583	33	12.2	33	12.2	1.15	1.61	.005	1.000
1.00?									
37	934	127	12.3	127	12.3	2.45	1.51	.003	1.000
1.00?									
44	1428	2012	12.3	1960	12.4	.25	1.46	.016	.974
.65									
51	1275	2319	12.4	2279	12.5	.43	1.38	.016	.983
.69?									
53	652	8	12.2	8	12.2	2.05	1.40	.017	.971
.83?									
63	1959	2392	12.5	2327	12.6	.36	1.44	.018	.973
.59									
65	1283	25	12.5	24	12.7	2.51	1.37	.012	.982
.70?									
70	2166	320	12.2	243	12.4	1.26	1.16	.113	.761
.27									
72	1081	44	12.2	39	12.2	1.69	1.41	.021	.888
.76?									
77	884	2642	12.5	2642	12.5	1.61	1.26	.007	1.000
1.00?									
80	1296	2692	12.5	2672	12.7	6.11	1.01	.028	.992
.71?									

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION

03/31/\*\* CN MGMT- EXISTING COND.- 2,10,50,100 yr NOAA Dis

2.04TEST

10:08:06

SUMMARY, JOB NO. 1

PAGE

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....			
		2	10	50	99
STRUCTURE 63	.01				
-----	-----				
ALTERNATE 1		3	10	27	44
STRUCTURE 62	.05				
-----	-----				
ALTERNATE 1		12	18	52	70

STRUCTURE	61	.01				
ALTERNATE	1		5	8	19	25
STRUCTURE	34	.04				
ALTERNATE	1		18	54	114	129
STRUCTURE	33	.03				
ALTERNATE	1		18	49	85	96
STRUCTURE	32	.01				
ALTERNATE	1		1?	9	29	33
STRUCTURE	31	.05				
ALTERNATE	1		28	78	132	161
STRUCTURE	23	.32				
ALTERNATE	1		112	279	583	717
STRUCTURE	22	.07				
ALTERNATE	1		10	57	112	127
STRUCTURE	21	.07				
ALTERNATE	1		10	61	140	154
STRUCTURE	11	.09				
ALTERNATE	1		51	121	219	269
STRUCTURE	2	.77				
ALTERNATE	1		357	845	1575	1959
XSECTION	8	.17				
ALTERNATE	1		84	212	387	479
XSECTION	16	.32				

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION

03/31/\*\* CN MGMT- EXISTING COND.- 2,10,50,100 yr NOAA Dis

2.04TEST

10:08:06

99

SUMMARY, JOB NO. 1

PAGE

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/  
STRUCTURE DRAINAGE  
AREA STORM NUMBERS.....

ID	(SQ MI)	2	10	50	99
XSECTION 16	.32				
-----					
ALTERNATE 1		112	279	583	717
XSECTION 20	.05				
-----					
ALTERNATE 1		71	122	188	224
XSECTION 23	.41				
-----					
ALTERNATE 1		167	380	731	922
XSECTION 44	.77				
-----					
ALTERNATE 1		375	849	1578	1961
XSECTION 49	.82				
-----					
ALTERNATE 1		369	879	1642	2042
XSECTION 51	.93				
-----					
ALTERNATE 1		403	974	1832	2282
XSECTION 60	1.01				
-----					
ALTERNATE 1		414	1006	1898	2367
XSECTION 63	1.02				
-----					
ALTERNATE 1		397	972	1860	2330
XSECTION 76	1.28				
-----					
ALTERNATE 1		439	1089	2108	2654
XSECTION 77	1.28				
-----					
ALTERNATE 1		438	1088	2108	2654
XSECTION 88	1.55				
-----					
ALTERNATE 1		468	1162	2278	2864

1  
 TR20 ----- SCS  
 -

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 03/31/\*\* CN MGMT- EXISTING COND.- 2,10,50,100 yr NOAA Dis  
 2.04TEST

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST  
FILES

INPUT = pond2.dat , GIVEN DATA FILE  
OUTPUT = pond2.OUT , DATED  
03/31/\*\*,10:08:06

FILES GENERATED - DATED 03/31/\*\*,10:08:06

NONE!

TOTAL NUMBER OF WARNINGS = 36, MESSAGES = 23

\*\*\* TR-20 RUN COMPLETED \*\*\*



1

\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20  
HYDROLOGY\*\*\*\*\*

JOB	TR-20	TITLE	NOPLOTS
TITLE	Ellicott City Flood Study-	All Combined SAs-	MGMT STRUCTURES,
TITLE	CN MGMT-	EXISTING COND.-	2,10,50,100 yr NOAA Dis
2	XSECTN	002	1.0 389.50
8			389.00 0.00 0.00
8			389.25 1.65 1.06
8			389.50 6.25 2.75
8			389.75 14.40 5.06
8			390.00 26.75 8.00
8			390.25 45.54 14.33
8			390.50 68.67 15.00
8			390.75 96.11 18.88
8			391.00 127.89 23.00
8			391.25 164.08 27.38
8			391.50 204.77 32.00
8			391.75 250.06 36.88
9	ENDTBL		
2	XSECTN	005	1.0 367.00
8			366.00 0.00 0.00
8			366.50 3.51 1.5
8			367.00 13.55 4.00
8			367.50 30.53 9.00
8			367.75 47.87 13.00
8			368.00 72.23 18.00
8			368.25 104.79 23.98
8			368.50 146.13 30.94
8			368.75 197.14 38.86
8			369.00 258.63 47.75
8			369.25 331.41 57.61
8			369.50 416.25 68.44
9	ENDTBL		
3	STRUCT	11	
8			380.00 0.00 0.00
8			381.00 2.70 0.53
8			382.20 53.00 1.16
8			383.80 186.80 1.40
9	ENDTBL		
2	XSECTN	008	1.0 330.00
8			356.00 0.00 0.00
8			356.50 20.21 6.94
8			357.00 68.51 15.75
8			357.50 144.11 26.44
8			358.00 248.93 39.00
8			358.50 389.07 53.25
8			359.00 561.31 69.00
8			359.50 767.14 86.25
8			360.00 1008.16 105.00
8			361.00 1375.68 147.50
8			361.50 1604.19 171.38
9	ENDTBL		

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

2	XSECTN	016	1.0	333.08	
8			331.08	0.00	0.00
8			332.08	80.21	8.00
8			333.08	225.50	16.00
8			333.58	310.09	20.00
8			334.08	399.94	24.00
8			334.58	493.86	28.00
8			335.08	590.97	32.00
8			335.58	690.67	36.00
8			336.08	792.47	40.00
8			336.58	896.02	44.00
9	ENDTBL				
2	XSECTN	023	1.0	314.40	
8			313.22	0.00	0.00
8			313.51	1.10	0.89
8			313.81	3.51	1.84
8			314.10	16.22	5.61
8			314.40	34.66	9.74
8			314.68	48.28	24.71
8			314.96	79.66	42.09
8			315.24	126.64	61.87
8			315.52	189.07	84.06
8			315.80	267.27	108.64
8			316.08	361.75	135.63
8			316.36	473.14	165.02
8			316.64	602.11	196.81
8			316.92	749.37	231.00
8			317.20	878.70	277.25
8			317.48	1103.89	329.14
8			317.76	1358.10	382.70
8			318.04	1640.58	437.94
8			318.32	1950.87	494.86
8			318.60	2288.69	553.45
9	ENDTBL				
3	STRUCT	21			
8			364.00	0.00	0.00
8			366.00	0.30	0.55
8			368.00	0.50	1.31
8			369.00	3.20	1.80
8			370.00	5.20	2.29
8			372.00	7.80	3.48
8			374.00	9.60	5.00
8			375.00	10.40	5.86
8			376.00	45.30	6.79
8			376.50	74.10	7.31
8			377.00	106.80	7.83
8			378.00	149.80	8.90
8			379.00	155.60	10.06
8			380.00	162.00	11.29
9	ENDTBL				

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

3	STRUCT	22			
8			352.50	0.00	0.00
8			358.65	100.00	0.91
8			361.76	140.00	3.28
8			363.64	160.00	5.47
8			366.18	180.00	9.58
8			368.71	200.00	14.77

8			370.61	250.00	19.31
9	ENDTBL				
3	STRUCT	23			
9	ENDTBL				
2	XSECTN	027	1.0	317.00	
8			316.00	0.00	0.00
8			316.50	2.68	2.59
8			317.00	10.37	6.88
8			317.50	24.26	12.84
8			318.00	45.55	20.50
8			318.50	70.64	34.75
8			319.00	137.01	60.50
8			319.25	200.57	76.25
8			319.50	273.06	92.00
8			319.75	353.76	107.75
8			320.00	442.13	123.50
8			320.50	640.03	155.00
8			321.00	863.72	186.50
9	ENDTBL				
2	XSECTN	032	1.0	313.00	
8			310.00	0.00	0.00
8			311.00	12.25	5.50
8			312.00	52.16	16.00
8			312.50	83.38	23.13
8			313.00	123.94	31.50
8			313.25	148.02	36.16
8			313.50	174.79	41.13
8			313.75	204.34	46.41
8			314.00	236.81	52.00
8			314.50	278.65	65.75
8			315.00	353.72	84.00
9	ENDTBL				
2	XSECTN	034	1.0	338.50	
8			338.00	0.00	0.00
8			338.10	4.87	2.46
8			338.25	22.73	6.38
8			338.50	73.99	13.53
8			338.75	149.34	21.45
8			339.00	247.95	30.13
8			339.50	515.65	49.78
9	ENDTBL				
2	XSECTN	037	1.0	331.00	
8			330.00	0.00	0.00

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			330.25	14.29	3.25
8			330.50	46.85	7.00
8			330.75	95.34	11.25
8			331.00	159.64	16.00
8			331.25	240.13	21.25
8			331.50	337.44	27.00
8			331.75	452.26	33.25
8			332.00	585.36	40.00
8			332.50	875.33	55.81
8			333.00	1272.05	75.25
9	ENDTBL				
2	XSECTN	044	1.0	288.90	
8			287.68	0.00	0.00
8			287.99	1.15	0.94

8			288.29	3.69	1.95
8			288.60	17.06	5.98
8			288.90	36.44	10.37
8			289.19	63.07	39.25
8			289.47	121.85	69.50
8			289.76	206.05	101.12
8			290.05	313.23	134.09
8			290.33	442.07	168.42
8			290.62	591.78	204.12
8			290.91	761.87	241.18
8			291.19	952.02	279.60
8			291.48	1162.04	319.38
8			291.77	1391.84	360.52
8			292.05	1641.40	403.02
8			292.34	1910.74	446.89
8			292.63	2199.92	492.11
8			292.91	2509.04	538.70
8			293.20	2838.22	586.65
9	ENDTBL				
3	STRUCT	31			
8			356.38	0.0	0.00
8			357.26	10.90	0.02
8			357.50	12.30	0.03
8			358.00	14.70	0.05
8			359.00	18.70	0.10
8			360.00	22.00	0.16
8			361.00	24.90	0.25
8			361.50	26.20	0.30
8			362.00	27.50	0.36
8			362.50	28.70	0.43
8			362.90	29.60	0.49
8			363.50	51.30	0.60
8			363.75	65.70	0.67
8			364.00	82.60	0.72
8			364.20	83.30	0.83
8			364.60	100.00	0.88

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			366.80	260.00	1.47
8			366.92	340.00	1.49
8			366.98	380.00	1.50
9	ENDTBL				
3	STRUCT	32			
8			375.40	0.00	0.00
8			379.36	1.00	0.74
8			380.00	5.00	0.89
8			380.20	10.00	0.94
8			380.33	15.00	0.98
8			380.45	20.00	1.01
8			380.55	25.00	1.04
8			380.65	30.00	1.06
8			381.19	40.00	1.21
8			381.78	44.00	1.39
8			382.59	66.00	1.66
8			382.79	88.00	1.75
8			382.89	110.00	1.79
8			382.97	132.00	1.83
9	ENDTBL				
3	STRUCT	33			

8			350.00	0.00	0.00
8			354.30	1.00	1.08
8			354.47	2.00	1.15
8			354.87	5.00	1.30
8			355.38	10.00	1.50
8			356.18	20.00	1.84
8			356.88	40.00	2.15
8			357.27	60.00	2.33
8			357.46	80.00	2.42
8			358.08	100.00	2.73
8			358.14	120.00	2.76
8			358.19	140.00	2.78
8			358.25	171.00	2.81
8			358.27	180.00	2.82
9	ENDTBL				
3	STRUCT	34			
9	ENDTBL				
3	STRUCT	02			
9	ENDTBL				
3	STRUCT	01			
8			308.00	0.00	0.00
8			310.42	100.00	3.248
8			312.15	200.00	5.766
8			312.86	250.00	6.857
8			313.58	300.00	7.993
8			315.06	400.00	10.420
8			316.00	454.00	12.045
8			316.85	597.18	13.542
8			317.89	897.54	15.453

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			318.81	1251.79	17.190
9	ENDTBL				
2	XSECTN	051	1.0	282.40	
8			281.10	0.00	0.00
8			281.42	1.24	1.09
8			281.75	3.96	2.26
8			282.07	18.30	6.92
8			282.40	39.09	12.00
8			282.88	67.33	37.27
8			283.36	131.17	65.87
8			283.84	225.10	97.78
8			284.32	348.01	133.01
8			284.80	499.91	171.56
8			285.28	681.29	213.43
8			285.76	892.92	258.61
8			286.24	1135.70	307.11
8			286.72	1410.63	358.94
8			287.20	1718.74	414.08
8			287.68	2061.13	472.54
8			288.16	2438.87	534.31
8			288.64	2853.08	599.41
8			289.12	3301.76	667.84
8			289.60	3785.91	739.78
9	ENDTBL				
2	XSECTN	053	1.0	289.00	
8			288.00	0.00	0.00
8			288.50	9.00	2.88
8			289.00	34.26	7.50

8		289.50	79.27	13.88
8		290.00	147.75	22.00
8		290.50	227.49	31.94
8		291.00	332.02	43.75
8		291.50	463.75	57.44
8		291.75	540.56	64.98
8		292.00	625.07	73.00
9	ENDTBL			
2	XSECTN	063	1.0	248.40
8		247.07	0.00	0.00
8		247.41	1.85	1.14
8		247.74	5.93	2.35
8		248.07	27.43	7.18
8		248.40	58.61	12.46
8		248.67	89.70	40.04
8		248.95	158.39	68.99
8		249.22	256.90	99.30
8		249.49	382.40	130.99
8		249.77	533.43	164.04
8		250.04	709.09	198.46
8		250.31	908.86	234.24
8		250.59	1132.40	271.40

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		250.86	1379.55	309.92
8		251.13	1650.25	349.81
8		251.41	1944.49	391.07
8		251.68	2262.35	433.69
8		251.95	2603.94	477.69
8		252.23	2969.40	523.05
8		252.50	3358.93	569.78
9	ENDTBL			
3	STRUCT	61		
8		329.75	0.00	0.00
8		330.00	1.56	0.01
8		332.00	4.37	0.13
8		334.00	5.96	0.39
8		334.10	6.01	0.40
8		334.50	10.20	0.47
8		335.00	16.10	0.56
8		336.00	28.91	0.75
8		337.00	40.10	0.97
9	ENDTBL			
3	STRUCT	62		
8		287.30	0.00	0.00
8		288.00	5.45	0.01
8		289.00	9.05	0.05
8		290.00	11.60	0.13
8		292.00	15.35	0.50
8		294.00	18.40	1.19
8		294.30	18.92	1.26
8		294.50	20.73	1.40
8		295.00	36.40	1.60
8		295.40	38.00	1.80
8		296.00	51.10	2.15
8		297.00	69.60	2.75
8		298.00	86.80	3.44
8		298.68	98.50	3.91
8		298.80	107.56	4.00

9	ENDTBL				
3	STRUCT	63			
8			259.43	0.00	0.00
8			260.00	1.30	0.026
8			260.50	1.70	0.050
8			261.00	2.10	0.075
8			261.50	2.40	0.095
8			262.00	2.70	0.119
8			262.50	2.90	0.160
8			263.00	3.20	0.205
8			263.50	3.40	0.245
8			264.00	3.60	0.285
8			264.50	3.80	0.360
8			265.00	3.90	0.415
8			265.50	4.10	0.480

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			266.00	11.00	0.537
8			266.50	15.40	0.620
8			267.00	16.00	0.709
8			267.50	30.30	0.798
8			268.00	56.00	0.887
8			268.50	145.68	0.976
9	ENDTBL				
2	XSECTN	065	1.0	300.50	
8			300.00	0.00	0.00
8			300.10	0.29	0.23
8			300.25	1.47	0.69
8			300.40	3.55	1.28
8			300.50	5.48	1.75
8			300.60	7.88	2.28
8			300.75	12.45	3.19
8			300.90	18.28	4.23
8			301.00	22.91	5.00
8			301.10	28.18	5.83
8			301.25	37.36	7.19
8			301.40	48.14	8.68
8			301.50	56.26	9.75
9	ENDTBL				
2	XSECTN	070	1.0	248.40	
8			247.07	0.00	0.00
8			247.41	1.85	1.14
8			247.74	5.93	2.35
8			248.07	27.43	7.18
8			248.40	58.61	12.46
8			248.67	89.70	40.04
8			248.95	158.39	68.99
8			249.22	256.90	99.30
8			249.49	382.40	130.99
8			249.77	533.43	164.04
8			250.04	709.09	198.46
8			250.31	908.86	234.24
8			250.59	1132.40	271.40
8			250.86	1379.55	309.92
8			251.13	1650.25	349.81
8			251.41	1944.49	391.07
8			251.68	2262.35	433.69
8			251.95	2603.94	477.69
8			252.23	2969.40	523.05

8		252.50	3358.93	569.78
9	ENDTBL			
2	XSECTN 072	1.0	248.40	
8		247.07	0.00	0.00
8		247.41	1.85	1.14
8		247.74	5.93	2.35
8		248.07	27.43	7.18
8		248.40	58.61	12.46

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8		248.67	89.70	40.04
8		248.95	158.39	68.99
8		249.22	256.90	99.30
8		249.49	382.40	130.99
8		249.77	533.43	164.04
8		250.04	709.09	198.46
8		250.31	908.86	234.24
8		250.59	1132.40	271.40
8		250.86	1379.55	309.92
8		251.13	1650.25	349.81
8		251.41	1944.49	391.07
8		251.68	2262.35	433.69
8		251.95	2603.94	477.69
8		252.23	2969.40	523.05
8		252.50	3358.93	569.78
9	ENDTBL			
2	XSECTN 077	1.0	229.00	
8		226.00	0.00	0.00
8		226.50	11.73	5.31
8		227.00	42.97	13.25
8		227.50	96.50	23.81
8		228.00	175.93	37.00
8		228.50	258.13	54.25
8		229.00	385.22	77.00
8		229.50	561.82	105.25
8		230.00	793.74	139.00
8		230.50	1079.38	179.94
8		231.00	1462.49	229.75
8		231.50	1953.75	288.44
8		232.00	2564.16	356.00
8		232.50	3408.70	429.13
8		233.00	4351.01	504.50
9	ENDTBL			
2	XSECTN 080	1.0	212.00	
8		210.50	0.00	0.00
8		210.75	4.72	2.23
8		211.00	15.68	4.92
8		211.25	32.36	8.06
8		211.50	54.93	11.67
8		211.75	83.70	15.73
8		212.00	119.05	20.25
8		212.25	163.87	25.14
8		212.50	215.35	30.31
8		212.75	273.55	35.77
8		213.00	338.57	41.50
8		214.00	669.42	67.25
8		215.00	806.07	99.00
8		216.00	1088.03	138.25
8		217.00	1451.30	187.50



8		218.00	1978.93	249.25
1				

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		219.00	2262.06	340.00	
8		220.00	3115.20	476.25	
8		221.00	4892.67	639.25	
9	ENDTBL				
5	RAINFL 9	.1			
8	0.0000	0.0013	0.0023	0.0034	0.0044
8	0.0055	0.0065	0.0076	0.0087	0.0098
8	0.0109	0.0121	0.0132	0.0143	0.0155
8	0.0167	0.0178	0.0190	0.0202	0.0214
8	0.0226	0.0238	0.0251	0.0263	0.0276
8	0.0288	0.0301	0.0314	0.0327	0.0340
8	0.0353	0.0366	0.0379	0.0393	0.0406
8	0.0420	0.0434	0.0447	0.0461	0.0475
8	0.0489	0.0504	0.0518	0.0532	0.0547
8	0.0562	0.0576	0.0591	0.0606	0.0621
8	0.0636	0.0651	0.0667	0.0682	0.0697
8	0.0713	0.0729	0.0745	0.0760	0.0776
8	0.0793	0.0809	0.0826	0.0843	0.0861
8	0.0879	0.0898	0.0916	0.0936	0.0955
8	0.0975	0.0996	0.1017	0.1038	0.1060
8	0.1082	0.1104	0.1127	0.1150	0.1174
8	0.1198	0.1223	0.1247	0.1273	0.1298
8	0.1324	0.1351	0.1378	0.1405	0.1432
8	0.1461	0.1490	0.1521	0.1554	0.1588
8	0.1623	0.1660	0.1699	0.1739	0.1780
8	0.1823	0.1868	0.1914	0.1961	0.2010
8	0.2061	0.2117	0.2179	0.2247	0.2321
8	0.2400	0.2490	0.2591	0.2702	0.2825
8	0.2955	0.3157	0.3370	0.3662	0.4067
8	0.4766	0.5933	0.6338	0.6630	0.6843
8	0.7045	0.7176	0.7298	0.7409	0.7510
8	0.7600	0.7679	0.7753	0.7821	0.7883
8	0.7939	0.7990	0.8039	0.8086	0.8132
8	0.8177	0.8220	0.8261	0.8301	0.8340
8	0.8377	0.8412	0.8446	0.8479	0.8510
8	0.8540	0.8568	0.8595	0.8622	0.8649
8	0.8676	0.8702	0.8727	0.8753	0.8778
8	0.8802	0.8826	0.8850	0.8873	0.8896
8	0.8918	0.8940	0.8962	0.8983	0.9004
8	0.9025	0.9045	0.9064	0.9084	0.9103
8	0.9121	0.9139	0.9157	0.9174	0.9191
8	0.9208	0.9224	0.9240	0.9256	0.9271
8	0.9287	0.9303	0.9318	0.9334	0.9349
8	0.9364	0.9379	0.9394	0.9409	0.9424
8	0.9439	0.9453	0.9468	0.9482	0.9496
8	0.9511	0.9525	0.9539	0.9553	0.9566
8	0.9580	0.9594	0.9607	0.9621	0.9634
8	0.9647	0.9660	0.9673	0.9686	0.9699
8	0.9712	0.9724	0.9737	0.9749	0.9762
8	0.9774	0.9786	0.9798	0.9810	0.9822

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		0.9834		0.9845		0.9857		0.9868		0.9879	
8		0.9891		0.9902		0.9913		0.9924		0.9935	
8		0.9945		0.9956		0.9967		0.9977		0.9987	
8		1.0000		1.0000		1.0000		1.0000		1.0000	
9	ENDTBL										
6	RUNOFF	1	001			1		0.0336	80.992	0.4051	DA1
6	REACH	3	002	1	2			1170.0		1	
6	RUNOFF	1	003			1		0.0580	79.488	0.3751	DA2
6	ADDHYD	4	004	1	2	3				1	DA1+2
6	RESVOR	2		11	3	1				1	1
SWMF10											
6	REACH	3	005	1	2			797.0		1	
6	RUNOFF	1	006			3		0.0798	77.284	0.3921	DA3
6	ADDHYD	4	007	2	3	4				1	
DA12+3											
6	REACH	3	008	4	7			1221.0		1	1 SA1-
SA2											
6	RUNOFF	1	009			1		0.0734	90.928	0.4221	DA1
6	RESVOR	2		21	1	2				1	1
SWMF13											
6	RUNOFF	1	010			3		0.0097	72.007	0.1281	DA7
6	RESVOR	2		22	2	3	4			1	1 HWY
STOR											
6	RUNOFF	1	011			2		0.0544	73.278	0.2201	DA2
6	ADDHYD	4	012	7	2	3				1	
SA1+DA2											
6	RUNOFF	1	013			5		0.0193	79.062	0.2481	DA3
6	ADDHYD	4	014	4	3	6				1	
DA17+2											
6	ADDHYD	4	015	6	5	3				1	
DA172+3											
6	RESVOR	2		23	3	1				1	1
HWYSTOR2											
6	REACH	3	016	1	2			920.0		1	1
6	RUNOFF	1	017			3		0.0211	87.900	0.1641	DA4
6	RUNOFF	1	018			4		0.0313	91.880	0.2551	DA5
6	RUNOFF	1	019			5		0.0404	84.467	0.1681	DA6
6	ADDHYD	4	020	3	4	6				1	1 DA4+5
6	ADDHYD	4	021	6	5	1				1	
DA123+6											
6	ADDHYD	4	022	2	1	3				1	
DA45+6											
6	REACH	3	023	3	7			1379.0		1	1 SA2-
SA3											
6	RUNOFF	1	024			1		0.0505	82.333	0.3401	DA1
6	RESVOR	2		31	1	2				1	1 SWMF3
6	RUNOFF	1	025			3		0.0748	81.676	0.3581	DA2
6	ADDHYD	4	026	2	3	4				1	DA1+2
6	REACH	3	027	4	1			1021.0		1	
6	RUNOFF	1	028			2		0.0599	78.523	0.3231	DA3
6	ADDHYD	4	029	7	2	3				1	
SA2+DA3											
6	ADDHYD	4	030	1	3	2				1	1
DA12+3											
6	RESVOR	2		01	2	5				1	1 PROP1
6	RUNOFF	1	031			1		0.0692	86.978	0.2761	DA4
6	REACH	3	032	1	6			1603.0		1	
6	RUNOFF	1	033			2		0.0084	95.000	0.1921	DA5
6	RESVOR	2		32	2	3				1	1
SWMF11											
6	REACH	3	034	3	7			583.0		1	
6	RUNOFF	1	035			1		0.0275	94.960	0.2481	DA6
6	RESVOR	2		33	1	2				1	1 SWMF8

6 ADDHYD 4 036 7 2 1 1 DA5+6  
 6 RESVOR 2 34 1 2 1 1  
 HWYSTOR3  
 1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)

\*\*\*\*\*

6 REACH 3 037 2 4 934.0 1  
 6 RUNOFF 1 038 1 0.0328 85.878 0.1901 DA7  
 6 ADDHYD 4 039 4 1 3 1  
 DA56+7  
 6 RUNOFF 1 040 2 0.0393 80.311 0.3671 DA8  
 6 ADDHYD 4 041 5 2 1 1 1 DA3+8  
 6 ADDHYD 4 042 6 1 2 1 DA4+8  
 6 ADDHYD 4 043 3 2 1 1 DA7+8  
 6 REACH 3 044 1 2 1428.0 1 1 SA3-  
 SA4  
 6 RESVOR 2 02 2 7 1 1 PROP2  
 6 RUNOFF 1 045 1 0.0477 80.798 0.4121 DA1  
 6 RUNOFF 1 046 2 0.0628 79.968 0.4401 DA2  
 6 ADDHYD 4 047 1 2 3 1 DA1+2  
 6 RUNOFF 1 048 1 0.0469 80.250 0.2491 DA3  
 6 ADDHYD 4 049 7 1 2 1 1  
 SA3+DA3  
 6 ADDHYD 4 050 2 3 4 1  
 DA12+3  
 6 REACH 3 051 4 7 1275.0 1 1 SA4-  
 SA5  
 6 RUNOFF 1 052 1 0.0087 41.639 0.1631 DA1  
 6 REACH 3 053 1 5 652.0 1  
 6 RUNOFF 1 054 1 0.0072 33.729 0.2561 DA2  
 6 RUNOFF 1 055 2 0.0322 77.752 0.2491 DA3  
 6 ADDHYD 4 056 7 2 4 1  
 SA4+DA3  
 6 ADDHYD 4 057 5 1 3 1 DA1+2  
 6 ADDHYD 4 058 4 3 5 1  
 DA12+3  
 6 RUNOFF 1 059 1 0.0266 70.478 0.2611 DA4  
 6 ADDHYD 4 060 5 1 2 1 1  
 DA123+4  
 6 RUNOFF 1 061 3 0.0173 69.728 0.2971 DA5  
 6 ADDHYD 4 062 2 3 6 1  
 DA1234+5  
 6 REACH 3 063 6 7 1959.0 1 1 SA5-  
 SA6  
 6 RUNOFF 1 064 1 0.0110 84.520 0.5211 DA1  
 6 RESVOR 2 61 1 2 1 1  
 SWMF19  
 6 REACH 3 065 2 3 1283.0 1  
 6 RUNOFF 1 066 1 0.0458 70.198 0.2391 DA2  
 6 RESVOR 2 62 1 2 1 1  
 SWMF18  
 6 ADDHYD 4 067 3 2 4 1 DA1+2  
 6 RUNOFF 1 068 5 0.0778 76.176 0.2281 DA3  
 6 ADDHYD 4 069 4 5 1 1  
 DA12+3  
 6 REACH 3 070 1 2 2166.0 1  
 6 RUNOFF 1 071 1 0.0119 80.036 0.1221 DA4  
 6 RESVOR 2 63 1 3 1 1 SWMF2  
 6 REACH 3 072 3 4 1081.0 1  
 6 RUNOFF 1 073 5 0.1100 64.864 0.2051 DA5

6	ADDHYD	4	074	7	5	1			1	
SA5+DA5										
6	ADDHYD	4	075	2	4	6			1	
DA123+4										
6	ADDHYD	4	076	1	6	2			1	1
DA12345										
6	REACH	3	077	2	7		884.0		1	1 SA6-
SA7										
6	RUNOFF	1	078			2	0.0510	70.802	0.1971	DA1
6	ADDHYD	4	079	7	2	1			1	
SA6+DA1										
6	REACH	3	080	1	2		1296.0		1	
6	RUNOFF	1	081			3	0.0513	73.958	0.1621	DA3
6	ADDHYD	4	082	2	3	4			1	DA1+3

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

6	RUNOFF	1	083			1	0.0313	67.555	0.1861	DA2
6	ADDHYD	4	084	4	1	2			1	
DA13+2										
6	RUNOFF	1	085			3	0.1187	68.693	0.3211	DA4
6	ADDHYD	4	086	2	3	1			1	
DA123+4										
6	RUNOFF	1	087			4	0.0159	86.785	0.1421	DA5
6	ADDHYD	4	088	1	4	7			1	1
DA1234+5										
ENDATA										
7	INCREM	6					.06			
7	COMPUT	7	001	088			0.0	3.19	1.09	2 1 2
ENDCMP 1										
7	COMPUT	7	001	088			0.0	4.91	1.09	2 1 10
ENDCMP 1										
7	COMPUT	7	001	088			0.0	7.23	1.09	2 1 50
ENDCMP 1										
7	COMPUT	7	001	088			0.0	8.47	1.09	2 1 99
ENDCMP 1										
ENDJOB 2										

\*\*\*\*\*END OF 80-80  
 LIST\*\*\*\*\*

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 TR20 ----- SCS  
 -  
 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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 03/31/\*\* CN MGMT- EXISTING COND.- 2,10,50,100 yr NOAA Dis  
 2.04TEST  
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EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .060 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
 STARTING TIME = .00 RAIN DEPTH = 3.19 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. = 2 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	23.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.46 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	22.7	389.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.46 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	39.9	(RUNOFF)
23.14	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.36 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	60.4	(NULL)
23.10	1.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 83 CFS-HRS; 6.8 ACRE-FEET.

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OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	50.9	382.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.39 WATERSHED INCHES; 82 CFS-HRS; 6.8 ACRE-  
FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.56 50.4 367.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.39 WATERSHED INCHES; 82 CFS-HRS; 6.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 47.5 (RUNOFF)  
23.75 1.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.22 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.44 85.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.52 84.4 357.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 9

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 77.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.24 WATERSHED INCHES; 106 CFS-HRS; 8.8 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
13.56 9.7 \* 374.07
\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.91 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.13 6.6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.92 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
13.68 9.6 \* 353.09
\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.91 WATERSHED INCHES; 90 CFS-HRS; 7.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.19 33.2 (RUNOFF)
19.76 1.0 (RUNOFF)
20.09 1.0 (RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .99 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	98.2	(NULL)
24.00	3.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.24 WATERSHED INCHES; 180 CFS-HRS; 14.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	15.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.33 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	105.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 270 CFS-HRS; 22.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	112.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	112.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
 FEET.

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\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	112.5	332.30
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.39 WATERSHED INCHES;	287 CFS-HRS;	23.7 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	29.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.98 WATERSHED INCHES;	27 CFS-HRS;	2.2 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	43.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.33 WATERSHED INCHES;	47 CFS-HRS;	3.9 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	48.6	(RUNOFF)
19.47	1.0	(RUNOFF)
19.75	1.0	(RUNOFF)
20.06	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.71 WATERSHED INCHES;	44 CFS-HRS;	3.7 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 20

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	71.1	(NULL)
15.81	2.5	(NULL)
24.01	1.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.19 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	119.3	(NULL)
15.83	4.3	(NULL)
17.33	3.3	(NULL)
21.95	2.1	(NULL)
24.01	1.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 118 CFS-HRS; 9.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	200.7	(NULL)
23.99	9.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 405 CFS-HRS; 33.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	166.9	315.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 404 CFS-HRS; 33.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	41.6	(RUNOFF)
20.68	1.1	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.46	28.2	362.31
20.70	1.1	356.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.27	58.7	(RUNOFF)
23.97	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.51 WATERSHED INCHES; 73 CFS-HRS; 6.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.29	84.2	(NULL)
18.68	3.2	(NULL)
23.78	2.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-  
FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.43	76.6	318.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	42.0	(RUNOFF)
23.12	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.30 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	201.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 455 CFS-HRS; 37.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	275.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.50 WATERSHED INCHES; 578 CFS-HRS; 47.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.71	217.4	312.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.50 WATERSHED INCHES; 577 CFS-HRS; 47.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
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ELEVATION(FEET)			
12.21	76.8		(RUNOFF)
24.03	1.4		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-  
 FEET.

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OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	68.8	312.27
24.15	1.3	310.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	14.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.63 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .28 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 376.89.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
 AT STRUCTURE 32  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.56	1.0	379.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.01 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 34, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.

\*\*\*

OPERATION REACH XSECTION 34

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS, AT XSECTION 34 \*\*\*

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 13.68 1.0 338.02

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.00 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE- FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.19 41.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.63 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE- FEET.

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.47 17.5 355.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.08 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE- FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.48 18.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE- FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION(FEET)  
12.48                              18.3                              (NULL)  
  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.06 WATERSHED INCHES;              48 CFS-HRS;              3.9 ACRE-  
FEET.

OPERATION REACH      XSECTION    37

PEAK TIME(HRS)                              PEAK DISCHARGE(CFS)                              PEAK  
ELEVATION(FEET)  
12.54                              18.2                              330.28  
  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.06 WATERSHED INCHES;              48 CFS-HRS;              3.9 ACRE-  
FEET.

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OPERATION RUNOFF      XSECTION    38

PEAK TIME(HRS)                              PEAK DISCHARGE(CFS)                              PEAK  
ELEVATION(FEET)  
12.17                              40.3                              (RUNOFF)  
17.34                              1.1                              (RUNOFF)  
  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.81 WATERSHED INCHES;              38 CFS-HRS;              3.2 ACRE-  
FEET.

OPERATION ADDHYD      XSECTION    39

PEAK TIME(HRS)                              PEAK DISCHARGE(CFS)                              PEAK  
ELEVATION(FEET)  
12.19                              43.8                              (NULL)  
24.01                              2.1                              (NULL)  
  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.94 WATERSHED INCHES;              86 CFS-HRS;              7.1 ACRE-  
FEET.

OPERATION RUNOFF      XSECTION    40

PEAK TIME(HRS)                              PEAK DISCHARGE(CFS)                              PEAK  
ELEVATION(FEET)  
12.28                              28.2                              (RUNOFF)  
  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.41 WATERSHED INCHES;              36 CFS-HRS;              3.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	229.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 613 CFS-HRS; 50.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	271.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.53 WATERSHED INCHES; 698 CFS-HRS; 57.7 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.53	301.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.57 WATERSHED INCHES; 782 CFS-HRS; 64.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.73	289.3	289.99

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 781 CFS-HRS; 64.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.73	289.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 781 CFS-HRS; 64.5 ACRE-  
 FEET.



OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	33.3	(RUNOFF)
20.10	1.1 *	(RUNOFF)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.45 WATERSHED INCHES; 45 CFS-HRS; 3.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	40.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 56 CFS-HRS; 4.7 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	74.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.42 WATERSHED INCHES; 101 CFS-HRS; 8.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	40.1	(RUNOFF)
20.10	1.1	(RUNOFF)
20.65	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.41 WATERSHED INCHES; 43 CFS-HRS; 3.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.71	299.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 824 CFS-HRS; 68.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	339.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.54 WATERSHED INCHES; 925 CFS-HRS; 76.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.78	333.1	284.26

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.54 WATERSHED INCHES; 924 CFS-HRS; 76.4 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.54 WATERSHED INCHES; 145 CFS-HRS; 76.4 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 53

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET) 24.1 (RUNOFF)  
12.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.25 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET) 338.9 (NULL)  
12.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.53 WATERSHED INCHES; 950 CFS-HRS; 78.5 ACRE-  
FEET.

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\*\*\* WARNING - XSECTION 57  
NO HYDROGRAPH IN INPUT LOCATION 5 OR 1 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET) 338.9 (NULL)  
12.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.50 WATERSHED INCHES; 950 CFS-HRS; 78.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	12.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .85 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.76	342.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 965 CFS-HRS; 79.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	7.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .81 WATERSHED INCHES; 9 CFS-HRS; .7 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.75	345.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 974 CFS-HRS; 80.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.96	333.1	249.38

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 973 CFS-HRS; 80.4 ACRE-

FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.37	8.2	
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.71 WATERSHED INCHES;	12 CFS-HRS;	1.0 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	4.7	332.36
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.71 WATERSHED INCHES;	12 CFS-HRS;	1.0 ACRE-
FEET.		

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.86	4.6	300.46
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.71 WATERSHED INCHES;	12 CFS-HRS;	1.0 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 66

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.21	21.6	
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.83 WATERSHED INCHES;	25 CFS-HRS;	2.0 ACRE-
FEET.		

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	12.4	290.42
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.83 WATERSHED INCHES;	25 CFS-HRS;	2.0 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.58	16.5	(NULL)
20.11	1.0	(NULL)
20.66	1.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.00 WATERSHED INCHES;	37 CFS-HRS;	3.0 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	55.7	(RUNOFF)
24.03	1.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.15 WATERSHED INCHES;	58 CFS-HRS;	4.8 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 69

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	68.6	(NULL)
23.10	2.1	(NULL)
23.75	2.0	(NULL)
24.03	2.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.09 WATERSHED INCHES;	95 CFS-HRS;	7.8 ACRE-
FEET.		

OPERATION REACH XSECTION 70

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		
12.32	60.1	248.41
23.17	2.1	247.43
24.09	2.0	247.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.09 WATERSHED INCHES; 95 CFS-HRS; 7.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.13	13.2	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	3.4	263.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	3.3	247.53

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.20	34.3	(RUNOFF)
15.86	2.4	(RUNOFF)
24.02	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .59 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.95	341.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 1015 CFS-HRS; 83.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	63.1	(NULL)
18.71	3.1	(NULL)
24.09	2.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.11 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.91	372.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.36 WATERSHED INCHES; 1120 CFS-HRS; 92.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.98	372.1	228.95

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.36 WATERSHED INCHES; 1120 CFS-HRS; 92.5 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	27.4	(RUNOFF)
17.35	1.1	(RUNOFF)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .86 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.98	377.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.34 WATERSHED INCHES; 1148 CFS-HRS; 94.9 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 80.  
 \*\*\*

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.98	377.3	213.12

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.34 WATERSHED INCHES; 1148 CFS-HRS; 94.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	36.0	(RUNOFF)
19.47	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.03 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.97	383.0	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.33 WATERSHED INCHES; 1182 CFS-HRS; 97.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	13.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .71 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.97	385.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.31 WATERSHED INCHES; 1196 CFS-HRS; 98.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	43.1	(RUNOFF)
18.68	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .76 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.95	398.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.27 WATERSHED INCHES; 1254 CFS-HRS; 103.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	22.5	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.89 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.95	401.0	(NULL)
23.97	28.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.28 WATERSHED INCHES; 1274 CFS-HRS; 105.3 ACRE-  
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88

STARTING TIME = .00	RAIN DEPTH = 4.91	RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2	MAIN TIME INCREMENT = .060 HOURS	
ALTERNATE NO. = 1	STORM NO. =10	RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.30	48.0	(RUNOFF)
23.10	1.1 *	(RUNOFF)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.90 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION REACH XSECTION 2

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.41	45.0	390.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.90 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 3

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.28	82.2	(RUNOFF)

20.68	2.2	(RUNOFF)
23.98	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.77 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	122.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.82 WATERSHED INCHES; 166 CFS-HRS; 13.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	121.3	383.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 166 CFS-HRS; 13.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	120.5	368.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 166 CFS-HRS; 13.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	101.9	(RUNOFF)
23.73	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.57 WATERSHED INCHES; 132 CFS-HRS; 10.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	213.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.70 WATERSHED INCHES;	298 CFS-HRS;	24.7 ACRE-
FEET.		

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	212.2	357.82
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.70 WATERSHED INCHES;	299 CFS-HRS;	24.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	132.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.88 WATERSHED INCHES;	184 CFS-HRS;	15.2 ACRE-
FEET.		

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	60.8	376.27
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.49 WATERSHED INCHES;	165 CFS-HRS;	13.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	16.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.13 WATERSHED INCHES;	13 CFS-HRS;	1.1 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 22

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.81	56.5	355.97
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.49 WATERSHED INCHES;	165 CFS-HRS;	13.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	77.9	(RUNOFF)
15.82	3.3	(RUNOFF)
18.86	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.23 WATERSHED INCHES;	78 CFS-HRS;	6.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	249.3	(NULL)
24.00	6.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.59 WATERSHED INCHES;	377 CFS-HRS;	31.1 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	32.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.73 WATERSHED INCHES;	34 CFS-HRS;	2.8 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	262.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.80 WATERSHED INCHES;	540 CFS-HRS;	44.7 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 15  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	278.8	(NULL)
23.98	12.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	278.8	(NULL)
23.98	12.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-  
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
\*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	278.8	333.39
23.98	12.6	331.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	52.0	(RUNOFF)
17.34	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.57 WATERSHED INCHES; 49 CFS-HRS; 4.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 18

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	72.1	(RUNOFF)
23.75	1.0	(RUNOFF)
24.02	1.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.99 WATERSHED INCHES; 81 CFS-HRS; 6.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	90.5	(RUNOFF)
17.34	2.3	(RUNOFF)
24.00	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.23 WATERSHED INCHES; 84 CFS-HRS; 7.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	121.6	(NULL)
15.81	4.1	(NULL)
17.31	3.1	(NULL)
21.75	2.0	(NULL)
21.96	2.0	(NULL)
24.01	1.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.82 WATERSHED INCHES; 129 CFS-HRS; 10.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	211.4	(NULL)
15.83	7.0	(NULL)
17.33	5.4	(NULL)
19.41	4.1	(NULL)
19.74	4.0	(NULL)
20.06	4.0	(NULL)
23.06	3.2	(NULL)
24.01	3.0	(NULL)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.56 WATERSHED INCHES; 213 CFS-HRS; 17.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 22

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Table with 3 columns: PEAK TIME(HRS), PEAK DISCHARGE(CFS), PEAK ELEVATION(FEET). Rows show peak data for times 12.19, 20.04, 20.56, 23.03, and 24.00.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.96 WATERSHED INCHES; 787 CFS-HRS; 65.0 ACRE-
FEET.

OPERATION REACH XSECTION 23

Table with 3 columns: PEAK TIME(HRS), PEAK DISCHARGE(CFS), PEAK ELEVATION(FEET). Rows show peak data for times 12.39 and 24.04.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.96 WATERSHED INCHES; 786 CFS-HRS; 65.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 24

Table with 3 columns: PEAK TIME(HRS), PEAK DISCHARGE(CFS), PEAK ELEVATION(FEET). Rows show peak data for times 12.25, 20.13, and 23.99.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.03 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-
FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE
TIME INCREMENT OF .043 HOURS.
\*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES
FIRST NEGATIVE VALUE IS 0 CFS.
\*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	78.5	363.94
20.15	2.0	356.54
23.79	1.5	356.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 99 CFS-HRS; 8.1 ACRE-FEET.

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OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	115.6	(RUNOFF)
18.66	3.3	(RUNOFF)
23.77	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.97 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	190.6	(NULL)
20.14	5.0	(NULL)
23.14	4.0	(NULL)
23.78	3.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.40	174.0	319.15
20.20	5.0	316.65
23.20	4.0	316.59

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	87.6	(RUNOFF)
21.94	2.0	(RUNOFF)
24.01	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.68 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 29

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	457.0	(NULL)
24.03	17.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 890 CFS-HRS; 73.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	621.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.94 WATERSHED INCHES; 1132 CFS-HRS; 93.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	501.1	316.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.94 WATERSHED INCHES; 1130 CFS-HRS; 93.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	137.5	(RUNOFF)
18.66	3.2	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
FEET.

OPERATION REACH XSECTION 32

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.31	125.9	313.02
18.72	3.2	310.26
24.09	2.2	310.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 33

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.16	22.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.33 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
WITH .38 AC-FT ( .07 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 377.43.  
\*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.40	9.1	380.16

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.48 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
FEET.

OPERATION REACH XSECTION 34

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.47	9.0	338.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.47 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	66.9	(RUNOFF)
21.97	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.32 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
 WITH .95 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 353.79.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	48.7	357.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.67 WATERSHED INCHES; 65 CFS-HRS; 5.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.62 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.62 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
 \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	330.54
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.62 WATERSHED INCHES;	84 CFS-HRS;	6.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	73.5	(RUNOFF)
15.84	2.4	(RUNOFF)
23.73	1.0	(RUNOFF)
24.01	1.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.37 WATERSHED INCHES;	71 CFS-HRS;	5.9 ACRE-
FEET.		

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OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	106.9	(NULL)
21.94	3.1	(NULL)
24.01	2.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.50 WATERSHED INCHES;	155 CFS-HRS;	12.8 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	57.7	(RUNOFF)
23.76	1.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.84 WATERSHED INCHES;	72 CFS-HRS;	6.0 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
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ELEVATION(FEET)  
12.61 528.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.93 WATERSHED INCHES; 1202 CFS-HRS; 99.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.58 594.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.98 WATERSHED INCHES; 1357 CFS-HRS; 112.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.43 650.6 (NULL)  
12.55 654.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.02 WATERSHED INCHES; 1507 CFS-HRS; 124.5 ACRE-  
FEET.

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OPERATION REACH XSECTION 44

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.65 645.6 290.71

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.02 WATERSHED INCHES; 1506 CFS-HRS; 124.4 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.65 645.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.02 WATERSHED INCHES; 1506 CFS-HRS; 124.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	66.8	(RUNOFF)
23.09	1.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.88 WATERSHED INCHES;	89 CFS-HRS;	7.3 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	83.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.81 WATERSHED INCHES;	114 CFS-HRS;	9.4 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	150.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.84 WATERSHED INCHES;	203 CFS-HRS;	16.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 48

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	81.7	(RUNOFF)
18.65	2.0	(RUNOFF)
24.03	1.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.84 WATERSHED INCHES;	86 CFS-HRS;	7.1 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	668.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.01 WATERSHED INCHES;	1591 CFS-HRS;	131.5 ACRE-



FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	767.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 1794 CFS-HRS; 148.3 ACRE-FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	755.9	285.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.98 WATERSHED INCHES; 1793 CFS-HRS; 148.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.98 WATERSHED INCHES; 210 CFS-HRS; 148.2 ACRE-FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT, UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

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OPERATION REACH XSECTION 53

\*\*\* MESSAGE - XSECTION 53, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.98 WATERSHED INCHES; 207 CFS-HRS; 148.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - XSECTION 54, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.98 WATERSHED INCHES; 189 CFS-HRS; 148.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	51.6	(RUNOFF)
21.97	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.61 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	771.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.97 WATERSHED INCHES; 1847 CFS-HRS; 152.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - XSECTION 57, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.97 WATERSHED INCHES; 214 CFS-HRS; 152.7 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	772.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 1849 CFS-HRS; 152.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.21 31.6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.01 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.61 783.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.90 WATERSHED INCHES; 1884 CFS-HRS; 155.7 ACRE-
FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.24 18.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.95 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.60 791.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.89 WATERSHED INCHES; 1905 CFS-HRS; 157.5 ACRE-
FEET.

OPERATION REACH XSECTION 63

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.77 774.4 250.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.88 WATERSHED INCHES; 1904 CFS-HRS; 157.4 ACRE-
FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION(FEET)  
12.37 15.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.24 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.74 8.4 334.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.24 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.85 8.2 300.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.23 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.20 55.9 (RUNOFF)  
24.02 1.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.98 WATERSHED INCHES; 59 CFS-HRS; 4.8 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

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OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)

12.62	18.0	293.76
14.58	3.8	287.79
24.04	1.1	287.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 59 CFS-HRS; 4.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.82	25.9	(NULL)
18.87	2.1	(NULL)
24.04	1.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.23 WATERSHED INCHES; 82 CFS-HRS; 6.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	122.6	(RUNOFF)
18.87	3.1	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.47 WATERSHED INCHES; 124 CFS-HRS; 10.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	141.4	(NULL)
18.87	5.2	(NULL)
21.97	4.3	(NULL)
24.03	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 206 CFS-HRS; 17.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 70

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.45	96.0	248.70

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 206 CFS-HRS; 17.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.12	26.5	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	9.6	265.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.82 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	8.9	247.79

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.18	110.8	(RUNOFF)
15.85	5.4	(RUNOFF)
17.34	4.2	(RUNOFF)
20.86	3.0	(RUNOFF)
24.01	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.58 WATERSHED INCHES; 112 CFS-HRS; 9.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.75	799.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.76 WATERSHED INCHES;	2016 CFS-HRS;	166.6 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	105.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.40 WATERSHED INCHES;	227 CFS-HRS;	18.8 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.71	882.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.72 WATERSHED INCHES;	2244 CFS-HRS;	185.4 ACRE-
FEET.		

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.78	882.0	230.15
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.72 WATERSHED INCHES;	2243 CFS-HRS;	185.4 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	69.0	(RUNOFF)
17.34	2.3	(RUNOFF)
24.01	1.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.03 WATERSHED INCHES;	67 CFS-HRS;	5.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 79

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.77	895.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.69 WATERSHED INCHES;	2310 CFS-HRS;	190.9 ACRE-
FEET.		

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.84	894.9	215.32
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.69 WATERSHED INCHES;	2309 CFS-HRS;	190.8 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	83.3	(RUNOFF)
15.84	3.1	(RUNOFF)
17.34	2.4	(RUNOFF)
24.00	1.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.29 WATERSHED INCHES;	76 CFS-HRS;	6.3 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.83	908.2	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.67 WATERSHED INCHES;	2385 CFS-HRS;	197.1 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	37.3	(RUNOFF)
19.47	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.78 WATERSHED INCHES;	36 CFS-HRS;	3.0 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 84



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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.83	915.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.65 WATERSHED INCHES; 2421 CFS-HRS; 200.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	118.2	(RUNOFF)
18.67	4.1	(RUNOFF)
23.12	3.1	(RUNOFF)
24.01	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.87 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	950.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.59 WATERSHED INCHES; 2564 CFS-HRS; 211.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	40.2	(RUNOFF)
15.84	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.45 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	955.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.60 WATERSHED INCHES; 2600 CFS-HRS; 214.8 ACRE-

FEET.

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EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
STARTING TIME = .00 RAIN DEPTH = 7.23 RAIN DURATION = 1.00  
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. =50 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.29	81.5	(RUNOFF)
20.13	2.1	(RUNOFF)
23.08	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.35	81.3	390.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.27	142.8	(RUNOFF)
20.68	3.4	(RUNOFF)
23.97	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.85 WATERSHED INCHES; 181 CFS-HRS; 15.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	220.1	(NULL)

20.13	5.7	(NULL)
23.12	4.5	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.91 WATERSHED INCHES; 290 CFS-HRS; 24.0 ACRE-FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11, VALUE EXTRAPOLATED.  
 \*\*\*

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	218.8	384.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	218.2	368.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	181.7	(RUNOFF)
20.14	4.8	(RUNOFF)
23.74	3.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.60 WATERSHED INCHES; 237 CFS-HRS; 19.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	387.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

4.75 WATERSHED INCHES; 526 CFS-HRS; 43.5 ACRE-  
FEET.

OPERATION REACH XSECTION 8

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	386.9	358.49

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.75 WATERSHED INCHES; 526 CFS-HRS; 43.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	203.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.15 WATERSHED INCHES; 291 CFS-HRS; 24.1 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE

STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	139.6	377.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.58 WATERSHED INCHES; 264 CFS-HRS; 21.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	30.4	(RUNOFF)
15.46	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.03 WATERSHED INCHES; 25 CFS-HRS; 2.1 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	112.3	359.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.57 WATERSHED INCHES; 264 CFS-HRS; 21.8 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	146.1	(RUNOFF)
15.81	5.5	(RUNOFF)
20.09	3.2	(RUNOFF)
20.64	3.0	(RUNOFF)
24.02	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.16 WATERSHED INCHES; 146 CFS-HRS; 12.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	458.9	(NULL)
24.00	10.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.61 WATERSHED INCHES; 672 CFS-HRS; 55.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	56.4	(RUNOFF)
21.97	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.80 WATERSHED INCHES; 60 CFS-HRS; 4.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)			
12.41	552.8		(NULL)
23.98	17.6		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.84 WATERSHED INCHES; 934 CFS-HRS; 77.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	582.5	(NULL)
23.99	18.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 994 CFS-HRS; 82.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	582.5	(NULL)
23.99	18.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 994 CFS-HRS; 82.1 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	582.5	335.04
23.99	18.5	331.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 994 CFS-HRS; 82.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	82.4	(RUNOFF)

15.84	2.4	(RUNOFF)
23.05	1.1	(RUNOFF)
23.71	1.0	(RUNOFF)
24.00	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.80 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 18

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	109.9	(RUNOFF)
20.10	2.1	(RUNOFF)
24.03	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.26 WATERSHED INCHES; 126 CFS-HRS; 10.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	148.6	(RUNOFF)
15.84	4.6	(RUNOFF)
17.34	3.5	(RUNOFF)
22.75	2.1	(RUNOFF)
23.06	2.1	(RUNOFF)
24.00	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.41 WATERSHED INCHES; 141 CFS-HRS; 11.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	188.2	(NULL)
15.81	6.1	(NULL)
17.31	4.7	(NULL)
21.74	3.0	(NULL)
21.96	3.0	(NULL)
24.01	2.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.08 WATERSHED INCHES; 206 CFS-HRS; 17.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	335.1	(NULL)
15.83	10.7	(NULL)
17.33	8.2	(NULL)
19.74	6.1	(NULL)
20.06	6.1	(NULL)
21.95	5.3	(NULL)
24.01	4.6	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.79 WATERSHED INCHES; 347 CFS-HRS; 28.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	780.5	(NULL)
20.04	30.2	(NULL)
20.58	29.1	(NULL)
21.93	26.8	(NULL)
23.04	24.7	(NULL)
23.68	23.4	(NULL)
24.00	23.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.04 WATERSHED INCHES; 1339 CFS-HRS; 110.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.41	731.5	316.89
24.06	23.0	314.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.04 WATERSHED INCHES; 1338 CFS-HRS; 110.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	136.5	(RUNOFF)
20.68	3.0	(RUNOFF)
23.99	2.3	(RUNOFF)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.17 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	131.8	365.04
20.69	3.0	356.63
23.79	2.4	356.57

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.15 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	196.3	(RUNOFF)
18.66	5.1	(RUNOFF)
20.68	4.5	(RUNOFF)
23.98	3.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 246 CFS-HRS; 20.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.28	325.1	(NULL)
18.67	8.6	(NULL)
20.68	7.5	(NULL)
23.14	6.2	(NULL)
23.78	5.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.12 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.37	312.6	319.62
20.73	7.5	316.81
23.20	6.2	316.73

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.12 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 28

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	154.0	(RUNOFF)
21.94	3.2	(RUNOFF)
24.01	2.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.74 WATERSHED INCHES; 183 CFS-HRS; 15.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	854.4	(NULL)
20.07	33.9	(NULL)
24.04	25.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.00 WATERSHED INCHES; 1521 CFS-HRS; 125.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	1164.9	(NULL)
24.04	31.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.03 WATERSHED INCHES; 1935 CFS-HRS; 159.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	1121.8	318.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 1932 CFS-HRS; 159.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	220.6	(RUNOFF)
20.86	4.2	(RUNOFF)
24.02	3.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-FEET.

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OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	204.5	313.75
20.73	4.3	310.35
24.09	3.3	310.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	33.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.63 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .48 AC-FT ( .09 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 377.99.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	29.2	380.63

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
 \*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	29.2	338.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 35

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	100.5	(RUNOFF)
18.65	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.63 WATERSHED INCHES; 118 CFS-HRS; 9.7 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
 WITH 1.02 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 354.08.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	84.8	357.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.93 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	113.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.84 WATERSHED INCHES;	135 CFS-HRS;	11.2 ACRE-
FEEET.		

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	113.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.84 WATERSHED INCHES;	135 CFS-HRS;	11.2 ACRE-
FEEET.		

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
 \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	113.8	330.82

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.84 WATERSHED INCHES;	135 CFS-HRS;	11.2 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	118.6	(RUNOFF)
15.84	3.7	(RUNOFF)
20.07	2.1	(RUNOFF)
20.63	2.0	(RUNOFF)
24.01	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.57 WATERSHED INCHES;	118 CFS-HRS;	9.7 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION (FEET)		
12.20	220.1	(NULL)
19.73	5.0	(NULL)
22.73	4.1	(NULL)
23.05	4.0	(NULL)
24.01	3.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.71 WATERSHED INCHES; 253 CFS-HRS; 20.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.27	99.5	(RUNOFF)
20.67	2.3	(RUNOFF)
23.97	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.94 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.44	1193.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.01 WATERSHED INCHES; 2057 CFS-HRS; 170.0 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 42

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.42	1360.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.08 WATERSHED INCHES; 2311 CFS-HRS; 191.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.40	1487.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

5.12 WATERSHED INCHES; 2556 CFS-HRS; 211.2 ACRE-  
FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.51 1438.6 291.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.12 WATERSHED INCHES; 2555 CFS-HRS; 211.1 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.51 1438.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.12 WATERSHED INCHES; 2555 CFS-HRS; 211.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.29 114.7 (RUNOFF)  
23.09 2.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.00 WATERSHED INCHES; 154 CFS-HRS; 12.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 46

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.31 143.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.90 WATERSHED INCHES; 199 CFS-HRS; 16.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 257.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.94 WATERSHED INCHES; 352 CFS-HRS; 29.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.20 140.0 (RUNOFF)
18.86 3.1 (RUNOFF)
24.03 2.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.93 WATERSHED INCHES; 149 CFS-HRS; 12.3 ACRE-
FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.50 1492.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.11 WATERSHED INCHES; 2704 CFS-HRS; 223.5 ACRE-
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.48 1687.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.09 WATERSHED INCHES; 3056 CFS-HRS; 252.6 ACRE-
FEET.

OPERATION REACH XSECTION 51

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.57 1652.1 287.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.08 WATERSHED INCHES; 3055 CFS-HRS; 252.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 52



PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	4.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.06 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	4.3	288.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.06 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
 AT XSECTION 54  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .47 WATERSHED INCHES; 2 CFS-HRS; .2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	91.3	(RUNOFF)
18.86	2.1	(RUNOFF)
24.03	1.5	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.65 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	1684.9	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.07 WATERSHED INCHES;	3152 CFS-HRS;	260.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	4.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.79 WATERSHED INCHES;	8 CFS-HRS;	.7 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	1687.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.00 WATERSHED INCHES;	3160 CFS-HRS;	261.1 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	61.6	(RUNOFF)
24.02	1.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.86 WATERSHED INCHES;	66 CFS-HRS;	5.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	1710.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.97 WATERSHED INCHES;	3226 CFS-HRS;	266.6 ACRE-
FEET.		

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OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	37.1	(RUNOFF)
18.66	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.78 WATERSHED INCHES;	42 CFS-HRS;	3.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	1726.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.95 WATERSHED INCHES;	3268 CFS-HRS;	270.1 ACRE-
FEET.		

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.67	1678.4	251.16
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.95 WATERSHED INCHES;	3266 CFS-HRS;	269.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	25.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.41 WATERSHED INCHES;	38 CFS-HRS;	3.2 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	19.3	335.25
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.41 WATERSHED INCHES;	38 CFS-HRS;	3.2 ACRE-
FEET.		

OPERATION REACH XSECTION 65

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.67	19.0	300.92
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.41 WATERSHED INCHES;	38 CFS-HRS;	3.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	109.3	(RUNOFF)
23.10	2.1	(RUNOFF)
24.03	2.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.83 WATERSHED INCHES;	113 CFS-HRS;	9.4 ACRE-
FEET.		

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	52.1	296.06
23.12	2.0	287.56
24.04	1.9	287.55
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.83 WATERSHED INCHES;	113 CFS-HRS;	9.4 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	67.2	(NULL)
20.86	3.1	(NULL)
24.04	2.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.13 WATERSHED INCHES;	151 CFS-HRS;	12.5 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 68

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	220.8	(RUNOFF)
18.64	5.1	(RUNOFF)
21.97	4.1	(RUNOFF)
24.03	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.48 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	249.0	(NULL)
18.87	8.5	(NULL)
20.87	7.5	(NULL)
23.10	6.3	(NULL)
24.03	6.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.33 WATERSHED INCHES; 376 CFS-HRS; 31.1 ACRE-  
FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	183.4	249.02
24.09	5.9	247.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.33 WATERSHED INCHES; 376 CFS-HRS; 31.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	45.5	(RUNOFF)
15.83	1.3	(RUNOFF)
17.33	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.90 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
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ELEVATION(FEET)

12.24 27.4 267.40

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 4.90 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.32 25.6 248.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 4.91 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.18 237.2 (RUNOFF) 15.84 9.7 (RUNOFF) 17.34 7.6 (RUNOFF) 18.86 6.1 (RUNOFF) 21.45 5.1 (RUNOFF) 24.01 4.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 3.26 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.66 1734.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 4.78 WATERSHED INCHES; 3498 CFS-HRS; 289.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.37 207.0 (NULL) 20.13 8.7 (NULL) 24.09 6.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.38 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.65	1906.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.74 WATERSHED INCHES; 3912 CFS-HRS; 323.3 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 77.  
 \*\*\*

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.65	1906.2	231.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.74 WATERSHED INCHES; 3912 CFS-HRS; 323.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	133.1	(RUNOFF)
15.84	5.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.01	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.89 WATERSHED INCHES; 128 CFS-HRS; 10.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.65	1936.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.70 WATERSHED INCHES; 4040 CFS-HRS; 333.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.72	1930.2	217.91

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.70 WATERSHED INCHES; 4039 CFS-HRS; 333.8 ACRE-FEET.

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OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	154.4	(RUNOFF)
15.84	5.2	(RUNOFF)
17.34	4.0	(RUNOFF)
19.47	3.1	(RUNOFF)
19.74	3.0	(RUNOFF)
20.05	3.0	(RUNOFF)
24.00	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.24 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.72	1956.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.69 WATERSHED INCHES; 4179 CFS-HRS; 345.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	76.0	(RUNOFF)
17.34	2.3	(RUNOFF)
24.01	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.55 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-FEET.



OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.72	1970.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.66 WATERSHED INCHES; 4251 CFS-HRS; 351.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 85

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	237.6	(RUNOFF)
18.67	7.0	(RUNOFF)
20.68	6.2	(RUNOFF)
23.12	5.2	(RUNOFF)
24.01	4.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.67 WATERSHED INCHES; 281 CFS-HRS; 23.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.70	2050.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.58 WATERSHED INCHES; 4532 CFS-HRS; 374.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	64.3	(RUNOFF)
20.04	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.67 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.70	2059.5	(NULL)

23.97 75.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.59 WATERSHED INCHES; 4590 CFS-HRS; 379.3 ACRE-
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

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EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88
STARTING TIME = .00 RAIN DEPTH = 8.47 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS
ALTERNATE NO. = 1 STORM NO. =99 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1
PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.29 99.6 (RUNOFF)
20.13 2.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.18 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-
FEET.

OPERATION REACH XSECTION 2
PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.35 99.4 390.78
20.19 2.5 389.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.18 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 3
PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.27 175.5 (RUNOFF)
20.68 4.1 (RUNOFF)
23.97 3.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.00 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	270.3	(NULL)
20.14	6.8	(NULL)
23.12	5.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.07 WATERSHED INCHES; 359 CFS-HRS; 29.6 ACRE-  
 FEET.

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\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,  
 VALUE EXTRAPOLATED.  
 \*\*\*

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	268.8	384.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.04 WATERSHED INCHES; 357 CFS-HRS; 29.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	268.4	369.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.05 WATERSHED INCHES; 357 CFS-HRS; 29.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	226.3	(RUNOFF)
20.13	5.8	(RUNOFF)
23.74	4.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.74 WATERSHED INCHES; 295 CFS-HRS; 24.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
12.34 479.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.90 WATERSHED INCHES; 653 CFS-HRS; 54.0 ACRE-  
FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.40 479.0 358.76

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.90 WATERSHED INCHES; 653 CFS-HRS; 53.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.29 242.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.38 WATERSHED INCHES; 350 CFS-HRS; 28.9 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE

STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 21, TRUNCATED AT 400 POINTS  
WITH 2.68 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 370.65.  
\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.54 153.9 378.71

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.69 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	38.4	(RUNOFF)
15.83	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.11 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.91	127.4	360.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-FEET.

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OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	184.3	(RUNOFF)
18.87	4.1	(RUNOFF)
22.76	3.1	(RUNOFF)
23.09	3.1	(RUNOFF)
24.03	2.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.26 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	571.3	(NULL)
24.01	12.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.75 WATERSHED INCHES; 837 CFS-HRS; 69.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	69.3	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.95 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	675.4	(NULL)
24.00	20.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1151 CFS-HRS; 95.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	717.1	(NULL)
24.00	21.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	717.1	(NULL)
24.00	21.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.3 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	717.1	335.71
24.00	21.4	331.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.14	98.2	(RUNOFF)
17.34	2.2	(RUNOFF)
24.00	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.01 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 18

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	130.6	(RUNOFF)
21.97	2.1	(RUNOFF)
24.03	1.8	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.49 WATERSHED INCHES; 151 CFS-HRS; 12.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	179.0	(RUNOFF)
15.84	5.4	(RUNOFF)
17.34	4.2	(RUNOFF)
19.75	3.1	(RUNOFF)
20.05	3.1	(RUNOFF)
24.00	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.60 WATERSHED INCHES; 172 CFS-HRS; 14.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	224.0	(NULL)
15.81	7.2	(NULL)
17.31	5.5	(NULL)
20.07	4.1	(NULL)

23.07	3.2	(NULL)
23.73	3.1	(NULL)
24.01	3.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.29 WATERSHED INCHES; 247 CFS-HRS; 20.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	401.6	(NULL)
15.83	12.6	(NULL)
17.33	9.7	(NULL)
20.06	7.2	(NULL)
21.95	6.2	(NULL)
24.01	5.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.99 WATERSHED INCHES; 419 CFS-HRS; 34.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	978.4	(NULL)
18.81	37.0	(NULL)
19.71	35.2	(NULL)
20.05	34.7	(NULL)
20.58	33.4	(NULL)
21.93	30.8	(NULL)
23.04	28.4	(NULL)
23.69	27.1	(NULL)
24.00	26.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.19 WATERSHED INCHES; 1643 CFS-HRS; 135.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	922.4	317.25
24.06	26.7	314.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.19 WATERSHED INCHES; 1642 CFS-HRS; 135.7 ACRE-  
 FEET.



OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	165.8	(RUNOFF)
18.66	4.1	(RUNOFF)
20.68	3.6	(RUNOFF)
23.12	3.0	(RUNOFF)
24.00	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.34 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	160.7	365.43
18.69	4.1	356.71
20.69	3.6	356.67
23.15	3.0	356.62
24.03	2.8	356.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.35 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	237.1	(RUNOFF)
18.65	6.1	(RUNOFF)
20.67	5.3	(RUNOFF)
23.98	4.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.26 WATERSHED INCHES; 302 CFS-HRS; 25.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.28	395.1	(NULL)
18.66	10.2	(NULL)
20.14	9.4	(NULL)
20.68	8.9	(NULL)
23.14	7.4	(NULL)
23.78	7.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.30 WATERSHED INCHES; 509 CFS-HRS; 42.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.36	384.2	319.84
20.20	9.4	316.93
20.74	8.9	316.91
23.20	7.4	316.81
23.83	7.0	316.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.29 WATERSHED INCHES; 509 CFS-HRS; 42.0 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 28

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.24	190.4	(RUNOFF)
20.67	4.2	(RUNOFF)
24.01	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.89 WATERSHED INCHES; 228 CFS-HRS; 18.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.33	1077.4	(NULL)
20.08	39.1	(NULL)
23.07	31.9	(NULL)
24.04	29.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

6.15 WATERSHED INCHES; 1869 CFS-HRS; 154.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.35	1459.8	(NULL)
24.04	36.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.18 WATERSHED INCHES; 2378 CFS-HRS; 196.5 ACRE-  
FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 1,  
VALUE EXTRAPOLATED.  
\*\*\*

OPERATION RESVOR STRUCTURE 1

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.42	1414.8	319.23

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.17 WATERSHED INCHES; 2374 CFS-HRS; 196.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 31

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.21	264.7	(RUNOFF)
20.66	5.1	(RUNOFF)
23.11	4.2	(RUNOFF)
24.02	3.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-  
FEET.

OPERATION REACH XSECTION 32

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.31	244.6	314.09
20.73	5.1	310.41
23.19	4.2	310.34
24.09	3.9	310.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	39.4	(RUNOFF)
15.84	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.86 WATERSHED INCHES; 43 CFS-HRS; 3.5 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .53 AC-FT ( .10 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 378.24.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	32.9	380.81

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
 \*\*\*

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OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	32.9	338.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	118.2	(RUNOFF)
20.86	2.0	(RUNOFF)

24.02 1.6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.86 WATERSHED INCHES; 139 CFS-HRS; 11.5 ACRE-
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS
WITH 1.05 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 354.18.
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.29 96.1 357.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.15 WATERSHED INCHES; 127 CFS-HRS; 10.5 ACRE-
FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.27 128.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.27 128.6 (NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.
\*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.27 128.6 330.88

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 38

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	142.5	(RUNOFF)
15.84	4.4	(RUNOFF)
17.34	3.4	(RUNOFF)
21.96	2.2	(RUNOFF)
22.75	2.0	(RUNOFF)
23.07	2.0	(RUNOFF)
24.01	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.77 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 39

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	260.3	(NULL)
18.82	6.2	(NULL)
21.95	5.0	(NULL)
24.01	4.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.91 WATERSHED INCHES; 306 CFS-HRS; 25.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	121.2	(RUNOFF)
18.64	3.2	(RUNOFF)
23.76	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.41 1508.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.16 WATERSHED INCHES; 2529 CFS-HRS; 209.0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.39 1730.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.23 WATERSHED INCHES; 2837 CFS-HRS; 234.4 ACRE-
FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.38 1902.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.28 WATERSHED INCHES; 3134 CFS-HRS; 259.0 ACRE-
FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.48 1844.0 292.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.27 WATERSHED INCHES; 3133 CFS-HRS; 258.9 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 2

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.48 1844.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.27 WATERSHED INCHES; 3133 CFS-HRS; 258.9 ACRE-
FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION(FEET)			
12.29	140.0		(RUNOFF)
20.10	3.5		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.16 WATERSHED INCHES; 190 CFS-HRS; 15.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	175.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.06 WATERSHED INCHES; 245 CFS-HRS; 20.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	315.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 435 CFS-HRS; 36.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	171.6	(RUNOFF)
21.97	3.0	(RUNOFF)
24.03	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.09 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	1915.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.26 WATERSHED INCHES; 3317 CFS-HRS; 274.1 ACRE-  
 FEET.



OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	2176.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.24 WATERSHED INCHES; 3752 CFS-HRS; 310.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	2132.0	287.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.24 WATERSHED INCHES; 3750 CFS-HRS; 309.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	8.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.63 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	8.0	288.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.63 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 54

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.32 1.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.85 WATERSHED INCHES; 4 CFS-HRS; .3 ACRE-
FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.20 112.9 (RUNOFF)
21.97 2.0 (RUNOFF)
24.03 1.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.79 WATERSHED INCHES; 120 CFS-HRS; 9.9 ACRE-
FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.54 2171.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.23 WATERSHED INCHES; 3870 CFS-HRS; 319.9 ACRE-
FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.25 9.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.28 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.54 2176.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.15 WATERSHED INCHES; 3884 CFS-HRS; 320.9 ACRE-
FEET.

OPERATION RUNOFF XSECTION 59

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	78.5	(RUNOFF)
24.02	1.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.92 WATERSHED INCHES;	85 CFS-HRS;	7.0 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.53	2207.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.11 WATERSHED INCHES;	3968 CFS-HRS;	327.9 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	47.3	(RUNOFF)
21.96	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.83 WATERSHED INCHES;	54 CFS-HRS;	4.5 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.53	2229.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.09 WATERSHED INCHES;	4022 CFS-HRS;	332.4 ACRE-
FEEET.		

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	2170.2	251.60
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.09 WATERSHED INCHES;	4020 CFS-HRS;	332.2 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 64

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	30.8	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.61 WATERSHED INCHES;	47 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	24.7	335.67
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.61 WATERSHED INCHES;	47 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	24.4	301.03
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.61 WATERSHED INCHES;	47 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	139.6	(RUNOFF)
20.10	3.1	(RUNOFF)
24.02	2.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.89 WATERSHED INCHES;	145 CFS-HRS;	11.9 ACRE-
FEET.		

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	70.1	297.03
20.12	3.1	287.70
24.04	2.3	287.60

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.89 WATERSHED INCHES; 145 CFS-HRS; 11.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	90.2	(NULL)
18.87	4.3	(NULL)
23.11	3.2	(NULL)
24.04	3.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.22 WATERSHED INCHES; 191 CFS-HRS; 15.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	273.8	(RUNOFF)
18.64	6.1	(RUNOFF)
18.87	6.0	(RUNOFF)
20.87	5.3	(RUNOFF)
24.02	4.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.60 WATERSHED INCHES; 281 CFS-HRS; 23.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	323.9	(NULL)
18.87	10.3	(NULL)
20.64	9.2	(NULL)
20.86	9.0	(NULL)
21.97	8.3	(NULL)
23.75	7.2	(NULL)
24.03	7.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.44 WATERSHED INCHES; 473 CFS-HRS; 39.1 ACRE-  
FEET.

OPERATION REACH XSECTION 70

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	243.9	249.18
20.14	9.6	247.80
24.09	7.1	247.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.44 WATERSHED INCHES; 473 CFS-HRS; 39.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	54.7	(RUNOFF)
17.33	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	44.5	267.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.07 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	40.6	248.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	312.6	(RUNOFF)
15.84	12.1	(RUNOFF)
17.34	9.4	(RUNOFF)
19.75	7.1	(RUNOFF)
20.08	7.0	(RUNOFF)
21.96	6.2	(RUNOFF)

24.01 5.3 (RUNOFF)
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.26 WATERSHED INCHES; 302 CFS-HRS; 25.0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.62 2252.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.91 WATERSHED INCHES; 4322 CFS-HRS; 357.2 ACRE-
FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.35 274.2 (NULL)
20.14 10.4 (NULL)
23.14 8.3 (NULL)
24.09 7.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.49 WATERSHED INCHES; 519 CFS-HRS; 42.9 ACRE-
FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.62 2475.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.86 WATERSHED INCHES; 4841 CFS-HRS; 400.1 ACRE-
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 77.
\*\*\*

OPERATION REACH XSECTION 77

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.62 2475.3 231.93

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

5.86 WATERSHED INCHES; 4841 CFS-HRS; 400.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 78

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	171.1	(RUNOFF)
15.84	6.1	(RUNOFF)
17.34	4.7	(RUNOFF)
21.96	3.1	(RUNOFF)
24.01	2.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.96 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	2517.2	(NULL)
23.97	78.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.83 WATERSHED INCHES; 5005 CFS-HRS; 413.6 ACRE-  
FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	2491.5	219.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.83 WATERSHED INCHES; 5002 CFS-HRS; 413.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	194.0	(RUNOFF)
15.84	6.3	(RUNOFF)
17.34	4.9	(RUNOFF)
22.42	3.0	(RUNOFF)
24.00	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.34 WATERSHED INCHES; 177 CFS-HRS; 14.6 ACRE-



FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	2524.7	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.81 WATERSHED INCHES; 5179 CFS-HRS; 428.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	97.7	(RUNOFF)
15.84	3.6	(RUNOFF)
20.07	2.1	(RUNOFF)
24.01	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.57 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	2545.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.78 WATERSHED INCHES; 5271 CFS-HRS; 435.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	307.5	(RUNOFF)
18.67	8.6	(RUNOFF)
20.68	7.6	(RUNOFF)
23.12	6.3	(RUNOFF)
24.01	5.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.71 WATERSHED INCHES; 361 CFS-HRS; 29.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	2651.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.70 WATERSHED INCHES; 5632 CFS-HRS; 465.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 87

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	76.9	(RUNOFF)
15.84	2.2	(RUNOFF)
22.42	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.87 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	2662.6	(NULL)
23.97	89.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.71 WATERSHED INCHES; 5703 CFS-HRS; 471.3 ACRE-FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF		3.19 inches	AND	24.00 hr	DURATION, BEGINS AT	.0 hrs.	
RAINTABLE NUMBER		9,	ARC	2			
MAIN TIME INCREMENT		.060 HOURS					
ALTERNATE	1	STORM	2				
STRUCTURE 11	RESVOR	.09	1.39	382.15	12.47	51	566.7
XSECTION 8	REACH	.17	1.31	357.10	12.52	84	494.1
STRUCTURE 21	RESVOR	.07	1.91	374.07	13.56F	10F	142.9
STRUCTURE 22	RESVOR	.07	1.91	353.09	13.68F	10F	142.9
STRUCTURE 23	RESVOR	.32	1.39	---	12.47	112	350.0
XSECTION 16	REACH	.32	1.39	332.30	12.47	112	350.0
XSECTION 20	ADDHYD	.05	2.19	---	12.17	71	1420.0
XSECTION 23	REACH	.41	1.52	315.42	12.41	167	407.3
STRUCTURE 31	RESVOR	.05	1.55	362.31	12.46	28	560.0
XSECTION 30	ADDHYD	.60	1.50	---	12.38	276	460.0
STRUCTURE 1	RESVOR	.60	1.50	312.40	12.71	217	361.7
STRUCTURE 32	RESVOR	.01	2.01	379.28	13.56R	1R	100.0
STRUCTURE 33	RESVOR	.03	2.08	355.98	12.47	18	600.0
STRUCTURE 34	RESVOR	.04	2.06	---	12.48	18	450.0
XSECTION 41	ADDHYD	.64	1.49	---	12.68	229	357.8
XSECTION 44	REACH	.77	1.56	289.99	12.73	289	375.3
STRUCTURE 2	RESVOR	.77	1.56	---	12.73	289	375.3
XSECTION 49	ADDHYD	.82	1.56	---	12.71	300	365.9
XSECTION 51	REACH	.93	1.54	284.26	12.78	333	358.1
XSECTION 60	ADDHYD	1.01	1.49	---	12.76	343	339.6
XSECTION 63	REACH	1.02	1.47	249.38	12.96	333	326.5
STRUCTURE 61	RESVOR	.01	1.71	332.36	12.74	5	500.0
STRUCTURE 62	RESVOR	.05	.83	290.42	12.43	12	240.0
STRUCTURE 63	RESVOR	.01	1.40	263.40	12.49	3	300.0
XSECTION 76	ADDHYD	1.28	1.36	---	12.91	372	290.6
XSECTION 77	REACH	1.28	1.36	228.95	12.98	372	290.6
XSECTION 88	ADDHYD	1.55	1.28	---	12.95	401	258.7

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A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STANDARD

PEAK DISCHARGE

STRUCTURE	CONTROL	DRAINAGE	RUNOFF				
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 4.91 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
ALTERNATE 1		STORM	10				
STRUCTURE 11	RESVOR	.09	2.81	383.02	12.34	121	1344.4
XSECTION 8	REACH	.17	2.70	357.82	12.43	212	1247.1
STRUCTURE 21	RESVOR	.07	3.49	376.27	12.68	61	871.4
STRUCTURE 22	RESVOR	.07	3.49	355.97	12.81	57	814.3
STRUCTURE 23	RESVOR	.32	2.79	---	12.41	279	871.9
XSECTION 16	REACH	.32	2.79	333.39	12.41	279	871.9
XSECTION 20	ADDHYD	.05	3.82	---	12.17	122	2440.0
XSECTION 23	REACH	.41	2.96	316.13	12.39	380	926.8
STRUCTURE 31	RESVOR	.05	3.02	363.94	12.32	78	1560.0
XSECTION 30	ADDHYD	.60	2.94	---	12.37	622	1036.7
STRUCTURE 1	RESVOR	.60	2.94	316.28	12.62	501	835.0
STRUCTURE 32	RESVOR	.01	3.48	380.16	12.40	9	900.0
STRUCTURE 33	RESVOR	.03	3.67	357.05	12.32	49	1633.3
STRUCTURE 34	RESVOR	.04	3.62	---	12.35	54	1350.0
XSECTION 41	ADDHYD	.64	2.93	---	12.61	528	825.0
XSECTION 44	REACH	.77	3.02	290.71	12.65	646	839.0
STRUCTURE 2	RESVOR	.77	3.02	---	12.65	646	839.0
XSECTION 49	ADDHYD	.82	3.01	---	12.63	668	814.6
XSECTION 51	REACH	.93	2.98	285.45	12.64	756	812.9
XSECTION 60	ADDHYD	1.01	2.90	---	12.61	783	775.2
XSECTION 63	REACH	1.02	2.88	250.13	12.77	774	758.8
STRUCTURE 61	RESVOR	.01	3.24	334.33	12.74	8	800.0
STRUCTURE 62	RESVOR	.05	1.98	293.76	12.62	18	360.0
STRUCTURE 63	RESVOR	.01	2.82	265.90	12.33	10	1000.0

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 SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

ALTERNATE		1	STORM	10				
XSECTION	76	ADDHYD	1.28	2.72	---	12.71	882	689.1
XSECTION	77	REACH	1.28	2.72	230.15	12.78	882	689.1
XSECTION	88	ADDHYD	1.55	2.60	---	12.80	955	616.1

RAINFALL OF 7.23 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE		1	STORM	50				
STRUCTURE	11	RESVOR	.09	4.89	384.18	12.32	219	2433.3
XSECTION	8	REACH	.17	4.75	358.49	12.41	387	2276.5
STRUCTURE	21	RESVOR	.07	5.58	377.76	12.51	140	2000.0
STRUCTURE	22	RESVOR	.07	5.57	359.61	12.80	112	1600.0
STRUCTURE	23	RESVOR	.32	4.83	---	12.40	583	1821.9
XSECTION	16	REACH	.32	4.83	335.04	12.40	583	1821.9
XSECTION	20	ADDHYD	.05	6.08	---	12.17	188	3760.0
XSECTION	23	REACH	.41	5.04	316.89	12.41	731	1782.9
STRUCTURE	31	RESVOR	.05	5.15	365.04	12.30	132	2640.0
XSECTION	30	ADDHYD	.60	5.03	---	12.36	1165	1941.7
STRUCTURE	1	RESVOR	.60	5.02	318.47	12.45	1122	1870.0
STRUCTURE	32	RESVOR	.01	5.55	380.63	12.24	29	2900.0
STRUCTURE	33	RESVOR	.03	5.93	357.61	12.27	85	2833.3
STRUCTURE	34	RESVOR	.04	5.84	---	12.26	114	2850.0
XSECTION	41	ADDHYD	.64	5.01	---	12.44	1193	1864.1
XSECTION	44	REACH	.77	5.12	291.82	12.51	1439	1868.8
STRUCTURE	2	RESVOR	.77	5.12	---	12.51	1439	1868.8
XSECTION	49	ADDHYD	.82	5.11	---	12.50	1493	1820.7
XSECTION	51	REACH	.93	5.08	287.10	12.57	1652	1776.3
XSECTION	60	ADDHYD	1.01	4.97	---	12.56	1711	1694.1
XSECTION	63	REACH	1.02	4.95	251.16	12.67	1678	1645.1
STRUCTURE	61	RESVOR	.01	5.41	335.25	12.57	19	1900.0
STRUCTURE	62	RESVOR	.05	3.83	296.06	12.44	52	1040.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)

ALTERNATE 1 STORM 50

STRUCTURE	63	RESVOR	.01	4.90	267.40	12.24	27	2700.0
XSECTION	76	ADDHYD	1.28	4.74	---	12.65	1906	1489.1
XSECTION	77	REACH	1.28	4.74	231.45	12.65	1906	1489.1
XSECTION	88	ADDHYD	1.55	4.59	---	12.70	2060	1329.0

RAINFALL OF 8.47 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 99

STRUCTURE	11	RESVOR	.09	6.04	384.78	12.32	269	2988.9
XSECTION	8	REACH	.17	5.90	358.76	12.40	479	2817.6
STRUCTURE	21	RESVOR	.07	6.69	378.71	12.54	154	2200.0
STRUCTURE	22	RESVOR	.07	6.68	360.78	12.91	127	1814.3
STRUCTURE	23	RESVOR	.32	5.96	---	12.36	717	2240.6
XSECTION	16	REACH	.32	5.96	335.71	12.36	717	2240.6
XSECTION	20	ADDHYD	.05	7.29	---	12.17	224	4480.0
XSECTION	23	REACH	.41	6.19	317.25	12.38	922	2248.8
STRUCTURE	31	RESVOR	.05	6.35	365.43	12.30	161	3220.0
XSECTION	30	ADDHYD	.60	6.18	---	12.35	1460	2433.3
STRUCTURE	1	RESVOR	.60	6.17	319.23	12.42	1415	2358.3
STRUCTURE	32	RESVOR	.01	6.68	380.81	12.23	33	3300.0
STRUCTURE	33	RESVOR	.03	7.15	357.96	12.29	96	3200.0
STRUCTURE	34	RESVOR	.04	7.04	---	12.27	129	3225.0
XSECTION	41	ADDHYD	.64	6.16	---	12.41	1508	2356.3
XSECTION	44	REACH	.77	6.27	292.27	12.48	1844	2394.8
STRUCTURE	2	RESVOR	.77	6.27	---	12.48	1844	2394.8
XSECTION	49	ADDHYD	.82	6.26	---	12.47	1916	2336.6
XSECTION	51	REACH	.93	6.24	287.77	12.54	2132	2292.5
XSECTION	60	ADDHYD	1.01	6.11	---	12.53	2208	2186.1
XSECTION	63	REACH	1.02	6.09	251.60	12.63	2170	2127.5
STRUCTURE	61	RESVOR	.01	6.61	335.67	12.55	25	2500.0

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 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE AREA	RUNOFF AMOUNT	PEAK DISCHARGE			
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ID	OPERATION	(SQ MI)	(IN)				

ALTERNATE 1 STORM 99

STRUCTURE	62	RESVOR	.05	4.89	297.03	12.42	70	1400.0
STRUCTURE	63	RESVOR	.01	6.07	267.78	12.19	44	4400.0
XSECTION	76	ADDHYD	1.28	5.86	---	12.62	2475	1933.6
XSECTION	77	REACH	1.28	5.86	231.93	12.62	2475	1933.6
XSECTION	88	ADDHYD	1.55	5.71	---	12.68	2663	1718.1

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.

QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

		HYDROGRAPH INFORMATION				ROUTING PARAMETERS					
XSEC	REACH	FLOOD PLAIN	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR	PEAK RATIO Q/I	ATT-KIN
			PEAK	TIME	PEAK	TIME	COEFF	POWER			
ID	LENGTH	LENGTH	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)	(Q*)	(C)
COEFF	(FT)	(FT)									
BASEFLOW IS		.0 CFS									
ALTERNATE		1	STORM		2						
2	1170		24	12.3	23	12.4	1.55	1.37	.029	.952	
.58											
5	797		51	12.5	50	12.5	2.26	1.19	.019	.989	
.75?											
8	1221		85	12.4	84	12.5	1.15	1.48	.009	.990	
.76?											
16	920		112	12.5	112	12.5	3.61	1.49	.001	1.000	
1.00?											
23	1379		200	12.2	167	12.4	1.09	1.16	.056	.836	
.34											
27	1021		84	12.3	77	12.4	1.10	1.18	.061	.910	
.41											
32	1603		76	12.2	68	12.4	1.28	1.33	.055	.899	
.48											
34	583		1	13.6	1	13.7	1.14	1.62	.001	.998	
.49											
37	934		18	12.5	18	12.5	2.31	1.55	.002	.999	
.92?											
44	1428		301	12.5	289	12.7	.56	1.29	.030	.961	
.37											
51	1275		339	12.6	333	12.8	.68	1.28	.022	.982	
.44											
53	652		0	.0	0	.0	.000	.00	.000	.000	
.00											

63	1959	345	12.8	333	13.0	.98	1.22	.038	.966
.32									
65	1283	5	12.7	5	12.8	2.47	1.43	.012	.996
.53									
70	2166	68	12.2	60	12.3	1.68	1.37	.040	.883
.47									
72	1081	3	12.5	3	12.7	1.50	1.61	.007	.994
.49									
77	884	372	12.9	372	13.0	1.88	1.23	.006	.999
.85?									
80	1296	377	13.0	377	13.0	1.57	1.44	.002	1.000
1.00?									

ALTERNATE 1 STORM 10

2	1170	48	12.3	45	12.4	1.90	1.19	.047	.937
.52									
5	797	121	12.4	120	12.4	2.00	1.25	.016	.996
.87?									
8	1221	213	12.4	212	12.4	1.26	1.44	.009	.993
.88?									
16	920	279	12.4	279	12.4	3.70	1.48	.001	1.000
1.00?									
23	1379	425	12.2	379	12.4	.70	1.27	.036	.892
.44									
27	1021	191	12.3	174	12.4	.73	1.29	.043	.911
.52									
32	1603	136	12.2	125	12.3	1.35	1.31	.047	.925
.52									
34	583	9	12.4	9	12.5	1.14	1.62	.004	.994
.86?									

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.

QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0; ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION

ROUTING PARAMETERS

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN		INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN (C)
		LENGTH (FT)	COEFF	PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
		ALTERNATE	1	STORM	10							
37	934			54	12.4	54	12.4	2.32	1.54	.003	1.000	



1.00?									
44	1428	654	12.5	645	12.7	.33	1.41	.018	.987
.48									
51	1275	767	12.5	756	12.7	.48	1.35	.015	.984
.55									
53	652	0	12.5	0	12.7	2.05	1.40	.010	.932
.47									
63	1959	791	12.6	774	12.8	.51	1.37	.022	.979
.44									
65	1283	8	12.7	8	12.8	2.46	1.41	.010	.978
.59									
70	2166	141	12.2	96	12.4	1.92	1.04	.168	.679
.21									
72	1081	9	12.4	9	12.4	1.48	1.55	.008	.934
.61									
77	884	882	12.7	882	12.8	1.91	1.22	.007	1.000
.93?									
80	1296	895	12.8	895	12.8	2.68	1.23	.007	1.000
.91?									

ALTERNATE	1	STORM	50
-----------	---	-------	----

2	1170	81	12.3	81	12.4	.29	2.00	.003	.998
.94?									
5	797	217	12.3	216	12.4	1.85	1.28	.012	.995
.95?									
8	1221	387	12.4	386	12.4	1.29	1.44	.008	.999
.96?									
16	920	580	12.4	580	12.4	4.23	1.43	.001	1.000
1.00?									
23	1379	768	12.2	731	12.4	.61	1.30	.030	.952
.50									
27	1021	323	12.3	312	12.4	.40	1.45	.021	.967
.65									
32	1603	216	12.2	204	12.3	1.38	1.30	.040	.944
.56									
34	583	29	12.2	29	12.2	1.14	1.61	.006	1.000
1.00?									
37	934	113	12.2	113	12.2	2.43	1.51	.004	1.000
1.00?									
44	1428	1481	12.4	1431	12.5	.26	1.46	.016	.966
.61									
51	1275	1688	12.5	1645	12.6	.43	1.38	.015	.975
.65									
53	652	5	12.2	4	12.2	2.05	1.40	.017	.927
.75?									
63	1959	1721	12.5	1677	12.7	.37	1.43	.018	.975
.55									
65	1283	19	12.6	19	12.7	2.49	1.38	.012	.986
.67?									
70	2166	245	12.2	183	12.4	1.61	1.09	.134	.745
.24									

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

03/31/\*\* CN MGMT- EXISTING COND.- 2,10,50,100 yr NOAA Dis

2.04TEST  
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SUMMARY, JOB NO. 1

PAGE

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH COEFF	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION				ROUTING PARAMETERS				
			INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT- KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
	ALTERNATE	1	STORM	50							
72	1081		27	12.2	25	12.3	1.66	1.42	.017	.927	
	.70?										
77	884		1906	12.7	1906	12.7	1.79	1.23	.007	1.000	
	1.00?										
80	1296		1935	12.7	1930	12.7	4.35	1.11	.014	.997	
	.85?										
	ALTERNATE	1	STORM	99							
2	1170		99	12.3	99	12.4	.27	2.00	.002	.999	
	.97?										
5	797		267	12.3	267	12.4	1.81	1.28	.011	.998	
	.97?										
8	1221		478	12.4	478	12.4	1.30	1.43	.007	1.000	
	.99?										
16	920		717	12.4	717	12.4	4.47	1.41	.001	1.000	
	1.00?										
23	1379		976	12.2	921	12.4	.75	1.26	.035	.943	
	.49										
27	1021		392	12.3	384	12.4	.35	1.48	.017	.980	
	.70?										
32	1603		260	12.2	244	12.3	1.50	1.27	.043	.941	
	.55										
34	583		33	12.2	33	12.2	1.15	1.61	.005	1.000	
	1.00?										
37	934		127	12.3	127	12.3	2.45	1.51	.003	1.000	
	1.00?										
44	1428		1898	12.4	1844	12.5	.25	1.46	.015	.971	
	.64										
51	1275		2164	12.4	2132	12.5	.43	1.38	.015	.985	
	.68?										
53	652		8	12.2	8	12.2	2.05	1.40	.017	.971	
	.83?										
63	1959		2228	12.5	2162	12.7	.36	1.44	.017	.970	
	.58										
65	1283		25	12.5	24	12.7	2.51	1.37	.012	.982	
	.70?										
70	2166		320	12.2	243	12.4	1.26	1.16	.113	.761	
	.27										
72	1081		44	12.2	39	12.2	1.69	1.41	.021	.888	

.76?  
 77 884 2472 12.6 2472 12.6 1.68 1.25 .006 1.000  
 1.00?  
 80 1296 2516 12.6 2484 12.7 5.99 1.02 .026 .987  
 .72?

1  
 TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 03/31/\*\* CN MGMT- EXISTING COND.- 2,10,50,100 yr NOAA Dis  
 2.04TEST  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....			
		2	10	50	99
STRUCTURE 63	.01				
ALTERNATE 1		3	10	27	44
STRUCTURE 62	.05				
ALTERNATE 1		12	18	52	70
STRUCTURE 61	.01				
ALTERNATE 1		5	8	19	25
STRUCTURE 34	.04				
ALTERNATE 1		18	54	114	129
STRUCTURE 33	.03				
ALTERNATE 1		18	49	85	96
STRUCTURE 32	.01				
ALTERNATE 1		1?	9	29	33
STRUCTURE 31	.05				
ALTERNATE 1		28	78	132	161
STRUCTURE 23	.32				
ALTERNATE 1		112	279	583	717
STRUCTURE 22	.07				
ALTERNATE 1		10	57	112	127
STRUCTURE 21	.07				

ALTERNATE	1		10	61	140	154
STRUCTURE	11	.09				
-----						
ALTERNATE	1		51	121	219	269
STRUCTURE	2	.77				
-----						
ALTERNATE	1		289	646	1439	1844
STRUCTURE	1	.60				
-----						
ALTERNATE	1		217	501	1122	1415
XSECTION	8	.17				
-----						

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION

03/31/\*\* CN MGMT- EXISTING COND.- 2,10,50,100 yr NOAA Dis

2.04TEST

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SUMMARY, JOB NO. 1

PAGE

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....			
		2	10	50	99
XSECTION 8	.17				
-----					
ALTERNATE 1		84	212	387	479
XSECTION 16	.32				
-----					
ALTERNATE 1		112	279	583	717
XSECTION 20	.05				
-----					
ALTERNATE 1		71	122	188	224
XSECTION 23	.41				
-----					
ALTERNATE 1		167	380	731	922
XSECTION 30	.60				
-----					
ALTERNATE 1		276	622	1165	1460
XSECTION 41	.64				
-----					
ALTERNATE 1		229	528	1193	1508
XSECTION 44	.77				
-----					
ALTERNATE 1		289	646	1439	1844

XSECTION 49 .82

-----  
ALTERNATE 1 300 668 1493 1916

XSECTION 51 .93

-----  
ALTERNATE 1 333 756 1652 2132

XSECTION 60 1.01

-----  
ALTERNATE 1 343 783 1711 2208

XSECTION 63 1.02

-----  
ALTERNATE 1 333 774 1678 2170

XSECTION 76 1.28

-----  
ALTERNATE 1 372 882 1906 2475

XSECTION 77 1.28

-----  
ALTERNATE 1 372 882 1906 2475

XSECTION 88 1.55

-----  
ALTERNATE 1 401 955 2060 2663

1  
TR20 ----- SCS  
-

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION  
03/31/\*\* CN MGMT- EXISTING COND.- 2,10,50,100 yr NOAA Dis  
2.04TEST

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST  
FILES

INPUT = pond1.dat , GIVEN DATA FILE  
OUTPUT = pond1.OUT , DATED  
03/31/\*\*,10:08:46

FILES GENERATED - DATED 03/31/\*\*,10:08:46

NONE!

TOTAL NUMBER OF WARNINGS = 37, MESSAGES = 23

\*\*\* TR-20 RUN COMPLETED \*\*\*

1

\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20  
HYDROLOGY\*\*\*\*\*

JOB TR-20		NOPLOTS		
TITLE Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,				
TITLE CN MGMT- PROP COND.- 2,10,50,100 yr NOAA Dist				
2	XSECTN 002	1.0	389.50	
8		389.00	0.00	0.00
8		389.25	1.65	1.06
8		389.50	6.25	2.75
8		389.75	14.40	5.06
8		390.00	26.75	8.00
8		390.25	45.54	14.33
8		390.50	68.67	15.00
8		390.75	96.11	18.88
8		391.00	127.89	23.00
8		391.25	164.08	27.38
8		391.50	204.77	32.00
8		391.75	250.06	36.88
9	ENDTBL			
2	XSECTN 005	1.0	367.00	
8		366.00	0.00	0.00
8		366.50	3.51	1.5
8		367.00	13.55	4.00
8		367.50	30.53	9.00
8		367.75	47.87	13.00
8		368.00	72.23	18.00
8		368.25	104.79	23.98
8		368.50	146.13	30.94
8		368.75	197.14	38.86
8		369.00	258.63	47.75
8		369.25	331.41	57.61
8		369.50	416.25	68.44
9	ENDTBL			
3	STRUCT 11			
8		380.00	0.00	0.00
8		381.00	2.70	0.53
8		382.20	53.00	1.16
8		383.80	186.80	1.40
9	ENDTBL			
2	XSECTN 008	1.0	330.00	
8		356.00	0.00	0.00
8		356.50	20.21	6.94
8		357.00	68.51	15.75
8		357.50	144.11	26.44
8		358.00	248.93	39.00
8		358.50	389.07	53.25
8		359.00	561.31	69.00
8		359.50	767.14	86.25
8		360.00	1008.16	105.00
8		361.00	1375.68	147.50
8		361.50	1604.19	171.38
9	ENDTBL			

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

2	XSECTN	016	1.0	333.08	
8			331.08	0.00	0.00
8			332.08	80.21	8.00
8			333.08	225.50	16.00
8			333.58	310.09	20.00
8			334.08	399.94	24.00
8			334.58	493.86	28.00
8			335.08	590.97	32.00
8			335.58	690.67	36.00
8			336.08	792.47	40.00
8			336.58	896.02	44.00
9	ENDTBL				
2	XSECTN	023	1.0	314.40	
8			313.22	0.00	0.00
8			313.51	1.10	0.89
8			313.81	3.51	1.84
8			314.10	16.22	5.61
8			314.40	34.66	9.74
8			314.68	48.28	24.71
8			314.96	79.66	42.09
8			315.24	126.64	61.87
8			315.52	189.07	84.06
8			315.80	267.27	108.64
8			316.08	361.75	135.63
8			316.36	473.14	165.02
8			316.64	602.11	196.81
8			316.92	749.37	231.00
8			317.20	878.70	277.25
8			317.48	1103.89	329.14
8			317.76	1358.10	382.70
8			318.04	1640.58	437.94
8			318.32	1950.87	494.86
8			318.60	2288.69	553.45
9	ENDTBL				
3	STRUCT	21			
8			364.00	0.00	0.00
8			366.00	0.30	0.55
8			368.00	0.50	1.31
8			369.00	3.20	1.80
8			370.00	5.20	2.29
8			372.00	7.80	3.48
8			374.00	9.60	5.00
8			375.00	10.40	5.86
8			376.00	45.30	6.79
8			376.50	74.10	7.31
8			377.00	106.80	7.83
8			378.00	149.80	8.90
8			379.00	155.60	10.06
8			380.00	162.00	11.29
9	ENDTBL				

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

3	STRUCT	22			
8			352.50	0.00	0.00
8			358.65	100.00	0.91
8			361.76	140.00	3.28
8			363.64	160.00	5.47
8			366.18	180.00	9.58
8			368.71	200.00	14.77



8			370.61	250.00	19.31
9	ENDTBL				
3	STRUCT	23			
9	ENDTBL				
2	XSECTN	027	1.0	317.00	
8			316.00	0.00	0.00
8			316.50	2.68	2.59
8			317.00	10.37	6.88
8			317.50	24.26	12.84
8			318.00	45.55	20.50
8			318.50	70.64	34.75
8			319.00	137.01	60.50
8			319.25	200.57	76.25
8			319.50	273.06	92.00
8			319.75	353.76	107.75
8			320.00	442.13	123.50
8			320.50	640.03	155.00
8			321.00	863.72	186.50
9	ENDTBL				
2	XSECTN	032	1.0	313.00	
8			310.00	0.00	0.00
8			311.00	12.25	5.50
8			312.00	52.16	16.00
8			312.50	83.38	23.13
8			313.00	123.94	31.50
8			313.25	148.02	36.16
8			313.50	174.79	41.13
8			313.75	204.34	46.41
8			314.00	236.81	52.00
8			314.50	278.65	65.75
8			315.00	353.72	84.00
9	ENDTBL				
2	XSECTN	034	1.0	338.50	
8			338.00	0.00	0.00
8			338.10	4.87	2.46
8			338.25	22.73	6.38
8			338.50	73.99	13.53
8			338.75	149.34	21.45
8			339.00	247.95	30.13
8			339.50	515.65	49.78
9	ENDTBL				
2	XSECTN	037	1.0	331.00	
8			330.00	0.00	0.00

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			330.25	14.29	3.25
8			330.50	46.85	7.00
8			330.75	95.34	11.25
8			331.00	159.64	16.00
8			331.25	240.13	21.25
8			331.50	337.44	27.00
8			331.75	452.26	33.25
8			332.00	585.36	40.00
8			332.50	875.33	55.81
8			333.00	1272.05	75.25
9	ENDTBL				
2	XSECTN	044	1.0	288.90	
8			287.68	0.00	0.00
8			287.99	1.15	0.94

8			288.29	3.69	1.95
8			288.60	17.06	5.98
8			288.90	36.44	10.37
8			289.19	63.07	39.25
8			289.47	121.85	69.50
8			289.76	206.05	101.12
8			290.05	313.23	134.09
8			290.33	442.07	168.42
8			290.62	591.78	204.12
8			290.91	761.87	241.18
8			291.19	952.02	279.60
8			291.48	1162.04	319.38
8			291.77	1391.84	360.52
8			292.05	1641.40	403.02
8			292.34	1910.74	446.89
8			292.63	2199.92	492.11
8			292.91	2509.04	538.70
8			293.20	2838.22	586.65
9	ENDTBL				
3	STRUCT	31			
8			356.38	0.0	0.00
8			357.26	10.90	0.02
8			357.50	12.30	0.03
8			358.00	14.70	0.05
8			359.00	18.70	0.10
8			360.00	22.00	0.16
8			361.00	24.90	0.25
8			361.50	26.20	0.30
8			362.00	27.50	0.36
8			362.50	28.70	0.43
8			362.90	29.60	0.49
8			363.50	51.30	0.60
8			363.75	65.70	0.67
8			364.00	82.60	0.72
8			364.20	83.30	0.83
8			364.60	100.00	0.88

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			366.80	260.00	1.47
8			366.92	340.00	1.49
8			366.98	380.00	1.50
9	ENDTBL				
3	STRUCT	32			
8			375.40	0.00	0.00
8			379.36	1.00	0.74
8			380.00	5.00	0.89
8			380.20	10.00	0.94
8			380.33	15.00	0.98
8			380.45	20.00	1.01
8			380.55	25.00	1.04
8			380.65	30.00	1.06
8			381.19	40.00	1.21
8			381.78	44.00	1.39
8			382.59	66.00	1.66
8			382.79	88.00	1.75
8			382.89	110.00	1.79
8			382.97	132.00	1.83
9	ENDTBL				
3	STRUCT	33			

8			350.00	0.00	0.00
8			354.30	1.00	1.08
8			354.47	2.00	1.15
8			354.87	5.00	1.30
8			355.38	10.00	1.50
8			356.18	20.00	1.84
8			356.88	40.00	2.15
8			357.27	60.00	2.33
8			357.46	80.00	2.42
8			358.08	100.00	2.73
8			358.14	120.00	2.76
8			358.19	140.00	2.78
8			358.25	171.00	2.81
8			358.27	180.00	2.82
9	ENDTBL				
3	STRUCT	34			
9	ENDTBL				
3	STRUCT	02			
9	ENDTBL				
2	XSECTN	051	1.0	282.40	
8			281.10	0.00	0.00
8			281.42	1.24	1.09
8			281.75	3.96	2.26
8			282.07	18.30	6.92
8			282.40	39.09	12.00
8			282.88	67.33	37.27
8			283.36	131.17	65.87
8			283.84	225.10	97.78
8			284.32	348.01	133.01

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			284.80	499.91	171.56
8			285.28	681.29	213.43
8			285.76	892.92	258.61
8			286.24	1135.70	307.11
8			286.72	1410.63	358.94
8			287.20	1718.74	414.08
8			287.68	2061.13	472.54
8			288.16	2438.87	534.31
8			288.64	2853.08	599.41
8			289.12	3301.76	667.84
8			289.60	3785.91	739.78
9	ENDTBL				
2	XSECTN	053	1.0	289.00	
8			288.00	0.00	0.00
8			288.50	9.00	2.88
8			289.00	34.26	7.50
8			289.50	79.27	13.88
8			290.00	147.75	22.00
8			290.50	227.49	31.94
8			291.00	332.02	43.75
8			291.50	463.75	57.44
8			291.75	540.56	64.98
8			292.00	625.07	73.00
9	ENDTBL				
2	XSECTN	063	1.0	248.40	
8			247.07	0.00	0.00
8			247.41	1.85	1.14
8			247.74	5.93	2.35

8		248.07	27.43	7.18
8		248.40	58.61	12.46
8		248.67	89.70	40.04
8		248.95	158.39	68.99
8		249.22	256.90	99.30
8		249.49	382.40	130.99
8		249.77	533.43	164.04
8		250.04	709.09	198.46
8		250.31	908.86	234.24
8		250.59	1132.40	271.40
8		250.86	1379.55	309.92
8		251.13	1650.25	349.81
8		251.41	1944.49	391.07
8		251.68	2262.35	433.69
8		251.95	2603.94	477.69
8		252.23	2969.40	523.05
8		252.50	3358.93	569.78
9	ENDTBL			
3	STRUCT	61		
8		329.75	0.00	0.00
8		330.00	1.56	0.01
8		332.00	4.37	0.13

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		334.00	5.96	0.39
8		334.10	6.01	0.40
8		334.50	10.20	0.47
8		335.00	16.10	0.56
8		336.00	28.91	0.75
8		337.00	40.10	0.97
9	ENDTBL			
3	STRUCT	62		
8		287.30	0.00	0.00
8		288.00	5.45	0.01
8		289.00	9.05	0.05
8		290.00	11.60	0.13
8		292.00	15.35	0.50
8		294.00	18.40	1.19
8		294.30	18.92	1.26
8		294.50	20.73	1.40
8		295.00	36.40	1.60
8		295.40	38.00	1.80
8		296.00	51.10	2.15
8		297.00	69.60	2.75
8		298.00	86.80	3.44
8		298.68	98.50	3.91
8		298.80	107.56	4.00
9	ENDTBL			
3	STRUCT	63		
8		259.43	0.00	0.00
8		260.00	1.30	0.026
8		260.50	1.70	0.050
8		261.00	2.10	0.075
8		261.50	2.40	0.095
8		262.00	2.70	0.119
8		262.50	2.90	0.160
8		263.00	3.20	0.205
8		263.50	3.40	0.245
8		264.00	3.60	0.285

8			264.50	3.80	0.360
8			265.00	3.90	0.415
8			265.50	4.10	0.480
8			266.00	11.00	0.537
8			266.50	15.40	0.620
8			267.00	16.00	0.709
8			267.50	30.30	0.798
8			268.00	56.00	0.887
8			268.50	145.68	0.976
9	ENDTBL				
2	XSECTN	065	1.0	300.50	
8			300.00	0.00	0.00
8			300.10	0.29	0.23
8			300.25	1.47	0.69
8			300.40	3.55	1.28

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			300.50	5.48	1.75
8			300.60	7.88	2.28
8			300.75	12.45	3.19
8			300.90	18.28	4.23
8			301.00	22.91	5.00
8			301.10	28.18	5.83
8			301.25	37.36	7.19
8			301.40	48.14	8.68
8			301.50	56.26	9.75
9	ENDTBL				
2	XSECTN	070	1.0	248.40	
8			247.07	0.00	0.00
8			247.41	1.85	1.14
8			247.74	5.93	2.35
8			248.07	27.43	7.18
8			248.40	58.61	12.46
8			248.67	89.70	40.04
8			248.95	158.39	68.99
8			249.22	256.90	99.30
8			249.49	382.40	130.99
8			249.77	533.43	164.04
8			250.04	709.09	198.46
8			250.31	908.86	234.24
8			250.59	1132.40	271.40
8			250.86	1379.55	309.92
8			251.13	1650.25	349.81
8			251.41	1944.49	391.07
8			251.68	2262.35	433.69
8			251.95	2603.94	477.69
8			252.23	2969.40	523.05
8			252.50	3358.93	569.78
9	ENDTBL				
2	XSECTN	072	1.0	248.40	
8			247.07	0.00	0.00
8			247.41	1.85	1.14
8			247.74	5.93	2.35
8			248.07	27.43	7.18
8			248.40	58.61	12.46
8			248.67	89.70	40.04
8			248.95	158.39	68.99
8			249.22	256.90	99.30
8			249.49	382.40	130.99

8	249.77	533.43	164.04
8	250.04	709.09	198.46
8	250.31	908.86	234.24
8	250.59	1132.40	271.40
8	250.86	1379.55	309.92
8	251.13	1650.25	349.81
8	251.41	1944.49	391.07
8	251.68	2262.35	433.69

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8	251.95	2603.94	477.69
8	252.23	2969.40	523.05
8	252.50	3358.93	569.78
9	ENDTBL		
2	XSECTN 077	1.0	229.00
8		226.00	0.00
8		226.50	11.73
8		227.00	42.97
8		227.50	96.50
8		228.00	175.93
8		228.50	258.13
8		229.00	385.22
8		229.50	561.82
8		230.00	793.74
8		230.50	1079.38
8		231.00	1462.49
8		231.50	1953.75
8		232.00	2564.16
8		232.50	3408.70
8		233.00	4351.01
9	ENDTBL		
2	XSECTN 080	1.0	212.00
8		210.50	0.00
8		210.75	4.72
8		211.00	15.68
8		211.25	32.36
8		211.50	54.93
8		211.75	83.70
8		212.00	119.05
8		212.25	163.87
8		212.50	215.35
8		212.75	273.55
8		213.00	338.57
8		214.00	669.42
8		215.00	806.07
8		216.00	1088.03
8		217.00	1451.30
8		218.00	1978.93
8		219.00	2262.06
8		220.00	3115.20
8		221.00	4892.67
9	ENDTBL		
3	STRUCT 03		
9	ENDTBL		
3	STRUCT 24		
9	ENDTBL		
3	STRUCT 35		
8		326.00	0.00
8		330.20	10.00

8		330.31	15.00	3.81
1				

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		330.40	20.00	3.91
8		330.57	30.00	4.09
8		330.71	40.00	4.24
8		330.83	50.00	4.39
8		331.09	80.00	4.68
8		332.62	100.00	6.56
8		334.97	125.00	9.87
8		335.52	135.00	10.75
8		336.10	157.48	11.70
8		336.22	166.53	11.89
8		336.45	252.42	12.28

9 ENDTBL  
 3 STRUCT 65  
 9 ENDTBL  
 3 STRUCT 01  
 9 ENDTBL

5 RAINFL 9		.1			
8	0.0000	0.0013	0.0023	0.0034	0.0044
8	0.0055	0.0065	0.0076	0.0087	0.0098
8	0.0109	0.0121	0.0132	0.0143	0.0155
8	0.0167	0.0178	0.0190	0.0202	0.0214
8	0.0226	0.0238	0.0251	0.0263	0.0276
8	0.0288	0.0301	0.0314	0.0327	0.0340
8	0.0353	0.0366	0.0379	0.0393	0.0406
8	0.0420	0.0434	0.0447	0.0461	0.0475
8	0.0489	0.0504	0.0518	0.0532	0.0547
8	0.0562	0.0576	0.0591	0.0606	0.0621
8	0.0636	0.0651	0.0667	0.0682	0.0697
8	0.0713	0.0729	0.0745	0.0760	0.0776
8	0.0793	0.0809	0.0826	0.0843	0.0861
8	0.0879	0.0898	0.0916	0.0936	0.0955
8	0.0975	0.0996	0.1017	0.1038	0.1060
8	0.1082	0.1104	0.1127	0.1150	0.1174
8	0.1198	0.1223	0.1247	0.1273	0.1298
8	0.1324	0.1351	0.1378	0.1405	0.1432
8	0.1461	0.1490	0.1521	0.1554	0.1588
8	0.1623	0.1660	0.1699	0.1739	0.1780
8	0.1823	0.1868	0.1914	0.1961	0.2010
8	0.2061	0.2117	0.2179	0.2247	0.2321
8	0.2400	0.2490	0.2591	0.2702	0.2825
8	0.2955	0.3157	0.3370	0.3662	0.4067
8	0.4766	0.5933	0.6338	0.6630	0.6843
8	0.7045	0.7176	0.7298	0.7409	0.7510
8	0.7600	0.7679	0.7753	0.7821	0.7883
8	0.7939	0.7990	0.8039	0.8086	0.8132
8	0.8177	0.8220	0.8261	0.8301	0.8340
8	0.8377	0.8412	0.8446	0.8479	0.8510
8	0.8540	0.8568	0.8595	0.8622	0.8649
8	0.8676	0.8702	0.8727	0.8753	0.8778
8	0.8802	0.8826	0.8850	0.8873	0.8896

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8	0.8918	0.8940	0.8962	0.8983	0.9004		
8	0.9025	0.9045	0.9064	0.9084	0.9103		
8	0.9121	0.9139	0.9157	0.9174	0.9191		
8	0.9208	0.9224	0.9240	0.9256	0.9271		
8	0.9287	0.9303	0.9318	0.9334	0.9349		
8	0.9364	0.9379	0.9394	0.9409	0.9424		
8	0.9439	0.9453	0.9468	0.9482	0.9496		
8	0.9511	0.9525	0.9539	0.9553	0.9566		
8	0.9580	0.9594	0.9607	0.9621	0.9634		
8	0.9647	0.9660	0.9673	0.9686	0.9699		
8	0.9712	0.9724	0.9737	0.9749	0.9762		
8	0.9774	0.9786	0.9798	0.9810	0.9822		
8	0.9834	0.9845	0.9857	0.9868	0.9879		
8	0.9891	0.9902	0.9913	0.9924	0.9935		
8	0.9945	0.9956	0.9967	0.9977	0.9987		
8	1.0000	1.0000	1.0000	1.0000	1.0000		
9	ENDTBL						
6	RUNOFF	1 001	1	0.0336	80.992	0.4051	DA1
6	REACH	3 002	1 2	1170.0		1	
6	RUNOFF	1 003	1	0.0580	79.488	0.3751	DA2
6	ADDHYD	4 004	1 2 3			1	DA1+2
6	RESVOR	2 11 3	1			1	1
	SWMF10						
6	REACH	3 005	1 2	797.0		1	
6	RUNOFF	1 006	3	0.0798	77.284	0.3921	DA3
6	ADDHYD	4 007	2 3 4			1	
	DA12+3						
6	REACH	3 008	4 7	1221.0		1	1 SA1-
	SA2						
6	RUNOFF	1 009	1	0.0734	90.928	0.4221	DA1
6	RESVOR	2 21 1	2			1	1
	SWMF13						
6	RUNOFF	1 010	3	0.0097	72.007	0.1281	DA7
6	RESVOR	2 22 2 3 4				1	1 HWY
	STOR						
6	RUNOFF	1 011	2	0.0544	73.278	0.2201	DA2
6	ADDHYD	4 012	7 2 3			1	
	SA1+DA2						
6	RUNOFF	1 013	5	0.0193	79.062	0.2481	DA3
6	ADDHYD	4 014	4 3 6			1	
	DA17+2						
6	ADDHYD	4 015	6 5 3			1	
	DA172+3						
6	RESVOR	2 23 3	1			1 1 1 1	1 CNCPT
	1						
6	REACH	3 016	1 2	920.0		1	1
6	RUNOFF	1 017	3	0.0211	87.900	0.1641	DA4
6	RUNOFF	1 118	1	0.0253	93.221	0.2231	DA5A
6	RESVOR	2 24 1	4			1 1 1 1	1 CNCPT
	2						
6	RUNOFF	1 119	5	0.0059	86.148	0.1361	DA5B
6	ADDHYD	4 120	4 5 6			1	
	DA5a+5b						
6	ADDHYD	4 020	3 6 4			1	1 DA4+5
6	RUNOFF	1 019	5	0.0404	84.467	0.1681	DA6
6	ADDHYD	4 022	4 5 3			1	
	DA45+6						
6	ADDHYD	4 021	2 3 1			1	
	DA123+6						
6	REACH	3 023	1 7	1379.0		1	1 SA2-
	SA3						
6	RUNOFF	1 024	1	0.0505	82.333	0.3401	DA1
6	RESVOR	2 31 1	2			1	1 SWMF3



6 RUNOFF 1 025 3 0.0748 81.676 0.3581 DA2  
1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

6 ADDHYD 4 026 2 3 4 1 DA1+2  
6 REACH 3 027 4 1 1021.0 1  
6 RUNOFF 1 028 2 0.0599 78.523 0.3231 DA3  
6 ADDHYD 4 029 7 2 3 1  
SA2+DA3  
6 ADDHYD 4 030 1 3 2 1  
DA12+3  
6 RESVOR 2 01 2 5 1 1 PROP1  
6 RUNOFF 1 031 1 0.0692 86.978 0.2761 DA4  
6 REACH 3 032 1 6 1603.0 1  
6 RUNOFF 1 033 2 0.0084 95.000 0.1921 DA5  
6 RESVOR 2 32 2 3 1 1  
SWMF11  
6 REACH 3 034 3 7 583.0 1  
6 RUNOFF 1 035 1 0.0275 94.960 0.2481 DA6  
6 RESVOR 2 33 1 2 1 1 SWMF8  
6 ADDHYD 4 036 7 2 1 1 DA5+6  
6 RESVOR 2 34 1 2 1 1  
HWYSTOR3  
6 REACH 3 037 2 4 934.0 1  
6 RUNOFF 1 138 1 0.0280 89.879 0.1551 DA7a  
6 ADDHYD 4 139 4 1 3 1  
DA56+7a  
6 RESVOR 2 35 3 2 1 1 1 1 1  
PONDH5  
6 RUNOFF 1 140 3 0.0048 62.603 0.1261 DA7b  
6 ADDHYD 4 141 2 3 4 1 1  
DA7a+7b  
6 RUNOFF 1 040 2 0.0393 80.311 0.3671 DA8  
6 ADDHYD 4 041 5 2 1 1 DA3+8  
6 ADDHYD 4 042 6 1 2 1 DA4+8  
6 ADDHYD 4 043 4 2 1 1 DA7+8  
6 REACH 3 044 1 2 1428.0 1 SA3-  
SA4  
6 RESVOR 2 02 2 7 1 1 PROP2  
6 RUNOFF 1 045 1 0.0477 80.798 0.4121 DA1  
6 RUNOFF 1 046 2 0.0628 79.968 0.4401 DA2  
6 ADDHYD 4 047 1 2 3 1 DA1+2  
6 RUNOFF 1 048 1 0.0469 80.250 0.2491 DA3  
6 ADDHYD 4 049 7 1 2 1 1  
SA3+DA3  
6 ADDHYD 4 050 2 3 4 1  
DA12+3  
6 REACH 3 051 4 7 1275.0 1 1 SA4-  
SA5  
6 RUNOFF 1 052 1 0.0087 41.639 0.1631 DA1  
6 REACH 3 053 1 5 652.0 1  
6 RUNOFF 1 054 1 0.0072 33.729 0.2561 DA2  
6 RUNOFF 1 055 2 0.0322 77.752 0.2491 DA3  
6 ADDHYD 4 056 7 2 4 1  
SA4+DA3  
6 ADDHYD 4 057 5 1 3 1 DA1+2  
6 ADDHYD 4 058 4 3 5 1  
DA12+3  
6 RUNOFF 1 059 1 0.0266 70.478 0.2611 DA4  
6 ADDHYD 4 060 5 1 2 1 1

DA123+4										
6	RESVOR	2	03	2	1				1	1 PROP3
6	RUNOFF	1	061		3	0.0173	69.728	0.2971		DA5
6	ADDHYD	4	062	1	3				1	
DA1234+5										
6	REACH	3	063	6	7	1959.0			1	1 SA5-
SA6										
6	RUNOFF	1	064		1	0.0110	84.520	0.5211		DA1
6	RESVOR	2	61	1	2				1	1
SWMF19										
6	REACH	3	065	2	3	1283.0			1	

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

6	RUNOFF	1	066		1	0.0458	70.198	0.2391		DA2	
6	RESVOR	2	62	1	2				1	1	
SWMF18											
6	ADDHYD	4	067	3	2				1	DA1+2	
6	RUNOFF	1	068		5	0.0778	76.176	0.2281		DA3	
6	ADDHYD	4	069	4	5				1		
DA12+3											
6	REACH	3	070	1	2	2166.0			1		
6	RUNOFF	1	071		1	0.0119	80.036	0.1221		DA4	
6	RESVOR	2	63	1	3				1	1 SWMF2	
6	REACH	3	072	3	4	1081.0			1		
6	RUNOFF	1	073		5	0.1100	64.864	0.2051		DA5	
6	ADDHYD	4	074	7	5				1		
SA5+DA5											
6	ADDHYD	4	075	2	4				1		
DA123+4											
6	ADDHYD	4	076	1	6				1	1	
DA12345											
6	REACH	3	077	2	7	884.0			1	1 SA6-	
SA7											
6	RUNOFF	1	078		2	0.0510	70.802	0.1971		DA1	
6	ADDHYD	4	079	7	2				1		
SA6+DA1											
6	REACH	3	080	1	2	1296.0			1		
6	RUNOFF	1	081		3	0.0513	73.958	0.1621		DA3	
6	ADDHYD	4	082	2	3				1	DA1+3	
6	RUNOFF	1	083		1	0.0313	67.555	0.1861		DA2	
6	ADDHYD	4	084	4	1				1		
DA13+2											
6	RUNOFF	1	085		3	0.1187	68.693	0.3211		DA4	
6	ADDHYD	4	086	2	3				1		
DA123+4											
6	RUNOFF	1	087		4	0.0159	86.785	0.1421		DA5	
6	ADDHYD	4	088	1	4				1	1	
DA1234+5											
ENDATA											
7	INCREM	6				.06					
7	COMPUT	7	001	088		0.0	3.19	1.09	2	1	2
ENDCMP											
7	COMPUT	7	001	088		0.0	4.91	1.09	2	1	10
ENDCMP											
7	COMPUT	7	001	088		0.0	7.23	1.09	2	1	50
ENDCMP											
7	COMPUT	7	001	088		0.0	8.47	1.09	2	1	99
ENDCMP											
ENDJOB											

\*\*\*\*\*END OF 80-80  
LIST\*\*\*\*\*

1  
TR20 ----- SCS  
-

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION

03/31/\*\* CN MGMT- PROP COND.- 2,10,50,100 yr NOAA Dist

2.04TEST

10:09:33

PASS 1 JOB NO. 1

PAGE

1

EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .060 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
STARTING TIME = .00 RAIN DEPTH = 3.19 RAIN DURATION = 1.00  
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. = 2 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 23.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.46 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-  
FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.41 22.7 389.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.46 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.29 39.9 (RUNOFF)  
23.14 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.36 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.32 60.4 (NULL)  
23.10 1.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 83 CFS-HRS; 6.8 ACRE-  
 FEET.

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

03/31/\*\* CN MGMT- PROP COND.- 2,10,50,100 yr NOAA Dist

2.04TEST

10:09:33

PASS 1 JOB NO. 1

PAGE

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OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	50.9	382.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 82 CFS-HRS; 6.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	50.4	367.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 82 CFS-HRS; 6.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	47.5	(RUNOFF)
23.75	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.22 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	85.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		
12.52	84.4	357.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 9

1 TR20 ----- SCS  
 -

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

03/31/\*\* CN MGMT- PROP COND.- 2,10,50,100 yr NOAA Dist

2.04TEST

10:09:33

PASS 1 JOB NO. 1

PAGE

3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	77.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.24 WATERSHED INCHES; 106 CFS-HRS; 8.8 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE

STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.56	9.7 *	374.07

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.91 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	6.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .92 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.68	9.6 *	353.09

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.91 WATERSHED INCHES; 90 CFS-HRS; 7.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	33.2	(RUNOFF)
19.76	1.0	(RUNOFF)
20.09	1.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .99 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	98.2	(NULL)
24.00	3.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.24 WATERSHED INCHES; 180 CFS-HRS; 14.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	15.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.33 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	105.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 270 CFS-HRS; 22.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.47 112.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.47 112.5 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32

HRS	MAIN	TIME	INCREMENT	ALTERNATE	STORM	DRAINAGE	AREA
6.42 CFS	.00	.01	.01	.01	.01	.01	.01
.01							
6.90 CFS	.01	.01	.01	.02	.02	.02	.02
.02							

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7.38 CFS	.02	.02	.03	.03	.03	.03	.03
.03							
7.86 CFS	.04	.04	.04	.04	.04	.05	.05
.05							
8.34 CFS	.05	.06	.06	.06	.06	.07	.07
.07							
8.82 CFS	.08	.08	.08	.09	.09	.09	.10
.10							
9.30 CFS	.10	.11	.11	.12	.12	.13	.13
.14							
9.78 CFS	.15	.16	.17	.18	.21	.23	.25
.27							
10.26 CFS	.31	.34	.39	.44	.51	.58	.67
.76							
10.74 CFS	.87	.99	1.12	1.28	1.46	1.68	1.95
2.26							
11.22 CFS	2.62	3.05	3.53	4.07	4.68	5.37	6.27
7.55							
11.70 CFS	9.10	10.95	13.41	16.79	21.82	30.00	43.07
62.74							
12.18 CFS	81	94	102	108	112	112	111
107							
12.66 CFS	101	94	88	81	74	69	63
58							
13.14 CFS	54.01	50.27	47.04	44.22	41.73	39.53	37.58
35.83							
13.62 CFS	34.24	32.82	31.57	30.46	29.47	28.61	27.85
27.19							
14.10 CFS	26.60	26.07	25.58	25.13	24.73	24.36	24.01
23.68							
14.58 CFS	23.34	23.00	22.67	22.36	22.06	21.76	21.45

21.14								
15.06	CFS	20.84	20.53	20.22	19.92	19.64	19.39	19.16
18.96								
15.54	CFS	18.79	18.62	18.45	18.29	18.14	18.03	17.92
17.80								
16.02	CFS	17.68	17.55	17.44	17.34	17.24	17.12	17.01
16.90								
16.50	CFS	16.79	16.67	16.56	16.46	16.36	16.25	16.14
16.03								
16.98	CFS	15.94	15.85	15.75	15.63	15.51	15.40	15.30
15.21								
17.46	CFS	15.10	14.98	14.85	14.74	14.64	14.53	14.42
14.31								
17.94	CFS	14.21	14.12	14.03	13.93	13.82	13.72	13.63
13.53								
18.42	CFS	13.42	13.33	13.25	13.19	13.12	13.04	12.97
12.91								
18.90	CFS	12.84	12.76	12.68	12.60	12.53	12.46	12.39
12.33								
19.38	CFS	12.26	12.20	12.15	12.08	12.01	11.93	11.87
11.81								
19.86	CFS	11.73	11.65	11.59	11.55	11.50	11.44	11.37
11.31								
20.34	CFS	11.25	11.17	11.09	11.02	10.98	10.93	10.87
10.80								
20.82	CFS	10.75	10.71	10.64	10.57	10.51	10.45	10.39
10.33								
21.30	CFS	10.27	10.20	10.13	10.06	9.98	9.89	9.80
9.72								
21.78	CFS	9.65	9.56	9.49	9.43	9.35	9.27	9.19
9.11								
22.26	CFS	9.04	8.97	8.90	8.84	8.78	8.71	8.64
8.56								
22.74	CFS	8.50	8.43	8.36	8.28	8.22	8.18	8.13
8.07								
23.22	CFS	8.01	7.95	7.89	7.83	7.77	7.70	7.63
7.58								
23.70	CFS	7.54	7.49	7.43	7.35	7.29	7.27	7.21
6.92								
24.18	CFS	6.49	6.07	5.70	5.37	5.07	4.82	4.62
4.45								
24.66	CFS	4.31	4.17	4.05	3.94	3.83	3.72	3.62
3.53								
25.14	CFS	3.43	3.34	3.25	3.17	3.08	3.00	2.92
2.85								
25.62	CFS	2.77	2.70	2.63	2.56	2.49	2.43	2.37
2.30								
26.10	CFS	2.24	2.19	2.13	2.07	2.02	1.97	1.91
1.86								
26.58	CFS	1.82	1.77	1.72	1.68	1.63	1.59	1.55
1.51								
27.06	CFS	1.47	1.43	1.39	1.36	1.32	1.29	1.25
1.22								
27.54	CFS	1.19	1.16	1.13	1.10	1.07	1.04	1.01
.99								
28.02	CFS	.96	.94	.91	.89	.88	.87	.85
.84								
28.50	CFS	.83	.82	.82	.81	.80	.79	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
 FEET.



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DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	28	18	14	12	10	8	3	1
DURATION(HRS)	18	18						
FLOW(CFS)	1	1 TRUNCATED						

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
\*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	112.5	332.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.39 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	29.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.98 WATERSHED INCHES; 27 CFS-HRS; 2.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	38.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.46 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	38.3	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
SQ.MI.  
3.96 CFS .00 .01 .01 .02 .02 .03 .03  
.04

4.44 CFS	.04	.05	.06	.06	.07	.07	.08
.08							
4.92 CFS	.09	.09	.10	.10	.11	.12	.12
.13							
5.40 CFS	.13	.13	.14	.15	.16	.16	.17
.17							
5.88 CFS	.17	.18	.19	.20	.20	.21	.21
.22							
6.36 CFS	.23	.24	.25	.26	.27	.27	.28
.29							

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	PASS	1	JOB NO.	1			PAGE
6.84 CFS	.30	.31	.32	.33	.34	.35	.36
.37							
7.32 CFS	.38	.39	.40	.41	.42	.43	.44
.45							
7.80 CFS	.47	.48	.49	.51	.52	.53	.54
.55							
8.28 CFS	.56	.58	.59	.60	.61	.63	.64
.66							
8.76 CFS	.67	.68	.69	.70	.72	.74	.76
.78							
9.24 CFS	.81	.85	.88	.92	.95	.98	1.01
1.05							
9.72 CFS	1.09	1.13	1.17	1.20	1.24	1.28	1.32
1.37							
10.20 CFS	1.41	1.45	1.49	1.52	1.57	1.62	1.68
1.76							
10.68 CFS	1.86	1.98	2.11	2.25	2.40	2.54	2.70
2.88							
11.16 CFS	3.10	3.35	3.61	3.89	4.17	4.46	4.76
5.33							
11.64 CFS	6.31	7.30	8.24	9.57	11.45	14.16	18.49
25.13							
12.12 CFS	33.95	38.32	34.22	26.78	20.79	16.56	13.66
11.76							
12.60 CFS	10.15	8.59	7.39	6.62	6.09	5.67	5.32
4.98							
13.08 CFS	4.66	4.35	4.08	3.86	3.67	3.49	3.31
3.13							
13.56 CFS	2.95	2.79	2.65	2.55	2.46	2.40	2.34
2.30							
14.04 CFS	2.27	2.22	2.18	2.12	2.07	2.03	2.00
1.96							
14.52 CFS	1.92	1.87	1.81	1.77	1.73	1.69	1.65
1.61							
15.00 CFS	1.56	1.52	1.48	1.43	1.39	1.37	1.35
1.35							
15.48 CFS	1.34	1.34	1.33	1.31	1.29	1.27	1.27
1.27							
15.96 CFS	1.26	1.24	1.22	1.20	1.20	1.19	1.18
1.16							
16.44 CFS	1.15	1.14	1.12	1.11	1.10	1.10	1.08
1.07							
16.92 CFS	1.06	1.05	1.05	1.04	1.02	.99	.98
.98							

17.40 CFS	.98	.96	.94	.92	.91	.90	.90
.88							
17.88 CFS	.87	.86	.85	.85	.83	.82	.81
.80							
18.36 CFS	.80	.78	.77	.78	.79	.79	.78
.77							
18.84 CFS	.78	.78	.77	.76	.75	.75	.75
.75							
19.32 CFS	.75	.75	.75	.75	.74	.73	.73
.73							
19.80 CFS	.73	.72	.71	.71	.72	.72	.72
.71							
20.28 CFS	.70	.70	.69	.68	.68	.69	.69
.69							
20.76 CFS	.68	.68	.68	.67	.66	.66	.65
.65							
21.24 CFS	.65	.65	.65	.65	.65	.65	.64
.63							
21.72 CFS	.63	.63	.62	.62	.63	.63	.62
.61							
22.20 CFS	.60	.60	.60	.60	.60	.60	.60
.59							
22.68 CFS	.58	.58	.58	.57	.56	.56	.57
.57							
23.16 CFS	.57	.56	.56	.55	.55	.55	.54
.53							
23.64 CFS	.53	.54	.54	.53	.52	.52	.54
.53							
24.12 CFS	.41	.25	.13	.07	.03	.02	.01
.00							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.46 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4	2	1	1	1	1	1	1
DURATION(HRS)	16							
FLOW(CFS)	0							

OPERATION RUNOFF XSECTION 119

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.13	8.3	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.83 WATERSHED INCHES; 7 CFS-HRS; .6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	45.6	(NULL)
17.32	1.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.34 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	74.7	(NULL)
15.84	2.5	(NULL)
24.00	1.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.19 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	48.6	(RUNOFF)
19.47	1.0	(RUNOFF)
19.75	1.0	(RUNOFF)
20.06	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.71 WATERSHED INCHES; 44 CFS-HRS; 3.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	123.2	(NULL)
15.84	4.2	(NULL)
17.34	3.3	(NULL)
21.95	2.1	(NULL)
24.00	1.9	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 119 CFS-HRS; 9.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	202.7	(NULL)
20.01	14.0	(NULL)
23.01	10.1	(NULL)
24.00	9.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 404 CFS-HRS; 33.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.39	166.2	315.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 404 CFS-HRS; 33.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	41.6	(RUNOFF)
20.68	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.46	28.2	362.31
20.70	1.1	356.47

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	58.7	(RUNOFF)
23.97	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.51 WATERSHED INCHES; 73 CFS-HRS; 6.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	84.2	(NULL)
18.68	3.2	(NULL)
23.78	2.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-  
FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.43	76.6	318.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	42.0	(RUNOFF)
23.12	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.30 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	203.0	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 454 CFS-HRS; 37.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	275.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.50 WATERSHED INCHES; 577 CFS-HRS; 47.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	275.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.50 WATERSHED INCHES; 577 CFS-HRS; 47.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	76.8	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	68.8	312.27
24.15	1.3	310.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	14.0	(RUNOFF)

1

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.63 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
WITH .28 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 376.89.  
\*\*\*

OPERATION RESVOR STRUCTURE 32

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
AT STRUCTURE 32  
\*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.56	1.0	379.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.01 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 34, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 34

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
AT XSECTION 34  
\*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.68	1.0	338.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.00 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	41.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.63 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------



	ELEVATION(FEET)			
1	12.47	17.5		355.98
	-----			SCS

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.08 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	18.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	18.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	18.2	330.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	42.9	(RUNOFF)
17.34	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.15 WATERSHED INCHES; 39 CFS-HRS; 3.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	44.6	(NULL)
23.69	2.0	(NULL)
24.00	2.0	(NULL)

1  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.10 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.93	8.1	329.42

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06 SQ.MI.

HRS	CFS	ELEV	CFS	ELEV	CFS	ELEV	CFS	ELEV
5.76	.01	326.00	.01	326.00	.01	326.00	.01	326.00
6.24	.02	326.01	.02	326.01	.02	326.01	.02	326.01
6.72	.04	326.01	.03	326.01	.03	326.01	.04	326.02
7.20	.07	326.02	.05	326.02	.06	326.02	.06	326.03
7.68	.10	326.03	.08	326.03	.09	326.04	.09	326.04
8.16	.15	326.05	.11	326.05	.12	326.05	.13	326.06
8.64	.20	326.06	.16	326.07	.17	326.07	.18	326.08
9.12	.27	326.09	.21	326.09	.22	326.09	.23	326.10
9.60	.35	326.11	.28	326.09	.30	326.10	.32	326.10

.36								
9.60 ELEV	326.12	326.12	326.13	326.13	326.13	326.14	326.14	
326.15								
10.08 CFS	.37	.39	.40	.41	.43	.44	.46	
.48								
10.08 ELEV	326.16	326.16	326.17	326.17	326.18	326.19	326.19	
326.20								
10.56 CFS	.49	.51	.53	.55	.58	.60	.63	
.65								
10.56 ELEV	326.21	326.22	326.22	326.23	326.24	326.25	326.26	
326.27								
11.04 CFS	.68	.71	.75	.78	.82	.87	.91	
.96								
11.04 ELEV	326.29	326.30	326.31	326.33	326.35	326.36	326.38	
326.41								
11.52 CFS	1.02	1.08	1.15	1.24	1.34	1.46	1.60	
1.78								
11.52 ELEV	326.43	326.45	326.49	326.52	326.56	326.61	326.67	
326.75								
12.00 CFS	2.03	2.37	2.84	3.39	3.88	4.28	4.65	
5.00								
12.00 ELEV	326.85	327.00	327.19	327.42	327.63	327.80	327.95	
328.10								
12.48 CFS	5.33	5.65	5.94	6.21	6.45	6.67	6.87	
7.05								
12.48 ELEV	328.24	328.37	328.50	328.61	328.71	328.80	328.88	
328.96								
12.96 CFS	7.21	7.35	7.48	7.59	7.69	7.77	7.85	
7.91								
12.96 ELEV	329.03	329.09	329.14	329.19	329.23	329.26	329.30	
329.32								
13.44 CFS	7.97	8.02	8.05	8.08	8.11	8.12	8.14	
8.14								
13.44 ELEV	329.35	329.37	329.38	329.40	329.41	329.41	329.42	
329.42								
13.92 CFS	8.15	8.14	8.14	8.13	8.12	8.11	8.10	
8.08								
13.92 ELEV	329.42	329.42	329.42	329.42	329.41	329.41	329.40	
329.39								
14.40 CFS	8.06	8.04	8.01	7.99	7.96	7.93	7.90	
7.87								
14.40 ELEV	329.38	329.38	329.37	329.36	329.34	329.33	329.32	
329.31								
14.88 CFS	7.84	7.81	7.77	7.73	7.70	7.66	7.62	
7.58								

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14.88 ELEV	329.29	329.28	329.26	329.25	329.23	329.22	329.20	
329.18								
15.36 CFS	7.54	7.50	7.46	7.41	7.37	7.33	7.29	
7.25								
15.36 ELEV	329.17	329.15	329.13	329.11	329.10	329.08	329.06	
329.04								
15.84 CFS	7.20	7.16	7.12	7.08	7.04	6.99	6.95	
6.91								
15.84 ELEV	329.03	329.01	328.99	328.97	328.96	328.94	328.92	

328.90							
16.32 CFS	6.87	6.83	6.78	6.74	6.70	6.66	6.62
6.58							
16.32 ELEV	328.88	328.87	328.85	328.83	328.81	328.80	328.78
328.76							
16.80 CFS	6.53	6.49	6.45	6.41	6.37	6.33	6.29
6.25							
16.80 ELEV	328.74	328.73	328.71	328.69	328.68	328.66	328.64
328.62							
17.28 CFS	6.21	6.17	6.13	6.09	6.05	6.01	5.97
5.93							
17.28 ELEV	328.61	328.59	328.57	328.56	328.54	328.52	328.51
328.49							
17.76 CFS	5.89	5.85	5.81	5.77	5.73	5.69	5.65
5.62							
17.76 ELEV	328.47	328.46	328.44	328.42	328.41	328.39	328.37
328.36							
18.24 CFS	5.58	5.54	5.50	5.46	5.43	5.39	5.35
5.31							
18.24 ELEV	328.34	328.33	328.31	328.29	328.28	328.26	328.25
328.23							
18.72 CFS	5.28	5.24	5.21	5.17	5.14	5.10	5.07
5.03							
18.72 ELEV	328.22	328.20	328.19	328.17	328.16	328.14	328.13
328.11							
19.20 CFS	5.00	4.97	4.93	4.90	4.87	4.84	4.81
4.77							
19.20 ELEV	328.10	328.09	328.07	328.06	328.04	328.03	328.02
328.01							
19.68 CFS	4.74	4.71	4.68	4.65	4.62	4.59	4.57
4.54							
19.68 ELEV	327.99	327.98	327.97	327.95	327.94	327.93	327.92
327.91							
20.16 CFS	4.51	4.48	4.45	4.43	4.40	4.37	4.34
4.32							
20.16 ELEV	327.89	327.88	327.87	327.86	327.85	327.84	327.82
327.81							
20.64 CFS	4.29	4.27	4.24	4.21	4.19	4.16	4.14
4.11							
20.64 ELEV	327.80	327.79	327.78	327.77	327.76	327.75	327.74
327.73							
21.12 CFS	4.09	4.07	4.04	4.02	4.00	3.97	3.95
3.93							
21.12 ELEV	327.72	327.71	327.70	327.69	327.68	327.67	327.66
327.65							
21.60 CFS	3.90	3.88	3.86	3.84	3.82	3.80	3.77
3.75							
21.60 ELEV	327.64	327.63	327.62	327.61	327.60	327.59	327.59
327.58							
22.08 CFS	3.73	3.71	3.69	3.67	3.65	3.63	3.61
3.59							
22.08 ELEV	327.57	327.56	327.55	327.54	327.53	327.52	327.52
327.51							
22.56 CFS	3.57	3.55	3.53	3.51	3.50	3.48	3.46
3.44							
22.56 ELEV	327.50	327.49	327.48	327.48	327.47	327.46	327.45
327.44							
23.04 CFS	3.42	3.40	3.39	3.37	3.35	3.33	3.32
3.30							
23.04 ELEV	327.44	327.43	327.42	327.42	327.41	327.40	327.39
327.39							
23.52 CFS	3.28	3.27	3.25	3.23	3.22	3.20	3.18
3.17							
23.52 ELEV	327.38	327.37	327.36	327.36	327.35	327.34	327.34

327.33								
24.00 CFS	3.15	3.14	3.12	3.10	3.08	3.05	3.03	
3.01								
24.00 ELEV	327.32	327.32	327.31	327.30	327.29	327.28	327.27	
327.26								
24.48 CFS	2.99	2.97	2.95	2.93	2.90	2.88	2.86	
2.84								
24.48 ELEV	327.26	327.25	327.24	327.23	327.22	327.21	327.20	
327.19								
24.96 CFS	2.82	2.80	2.78	2.76	2.74	2.72	2.70	
2.69								
24.96 ELEV	327.19	327.18	327.17	327.16	327.15	327.14	327.14	
327.13								
25.44 CFS	2.67	2.65	2.63	2.61	2.59	2.57	2.56	
2.54								
25.44 ELEV	327.12	327.11	327.10	327.10	327.09	327.08	327.07	
327.07								
25.92 CFS	2.52	2.50	2.49	2.47	2.45	2.43	2.42	
2.40								
25.92 ELEV	327.06	327.05	327.04	327.04	327.03	327.02	327.02	
327.01								
26.40 CFS	2.38	2.37	2.35	2.34	2.32	2.30		
26.40 ELEV	327.00	326.99	326.99	326.98	326.97	326.97		

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 1.85 WATERSHED INCHES; 76 CFS-HRS; 6.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	
FLOW(CFS)	8	7	5	4	4	3	2 TRUNCATED	

OPERATION RUNOFF XSECTION 140

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.14 1.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) .50 WATERSHED INCHES; 2 CFS-HRS; .1 ACRE-FEET.

\*\*\* WARNING - XSECTION 141 VOLUME TRUNCATED AT 28.% IN LOCATION 2 ADDING HYDROGRAPHS. \*\*\*

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 13.90 8.3 (NULL)

\*\*\* WARNING - XSECTION 141, HYDROGRAPH VOLUME TRUNCATED AT 2 CFS

ADDHYD ( 28. % OF MAX. HYDROGRAPH COORDINATE)  
MAIN TIME INCREMENT TOO SMALL.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.75 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.28 28.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.41 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.36 301.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.49 WATERSHED INCHES; 613 CFS-HRS; 50.7 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.37 369.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.53 WATERSHED INCHES; 698 CFS-HRS; 57.7 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 43  
VOLUME TRUNCATED AT 28.% AND 0.% WHEN ADDING HYDROGRAPHS  
IN LOCATIONS 4 AND 2.  
\*\*\*

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.37 374.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.55 WATERSHED INCHES; 774 CFS-HRS; 64.0 ACRE-  
FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.53 345.3 290.12

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.55 WATERSHED INCHES; 774 CFS-HRS; 63.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.53 345.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.55 WATERSHED INCHES; 774 CFS-HRS; 63.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.31 33.3 (RUNOFF)  
20.10 1.1 \* (RUNOFF)  
\* FIRST POINT OF FLAT PEAK

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.45 WATERSHED INCHES; 45 CFS-HRS; 3.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.33 40.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.39 WATERSHED INCHES; 56 CFS-HRS; 4.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)

12.32 74.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.42 WATERSHED INCHES; 101 CFS-HRS; 8.3 ACRE-
FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.20 40.1 (RUNOFF)
20.10 1.1 (RUNOFF)
20.65 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.41 WATERSHED INCHES; 43 CFS-HRS; 3.5 ACRE-
FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.52 361.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.54 WATERSHED INCHES; 816 CFS-HRS; 67.5 ACRE-
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.48 420.0 (NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.53 WATERSHED INCHES; 917 CFS-HRS; 75.8 ACRE-
FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.62 404.2 284.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.53 WATERSHED INCHES; 917 CFS-HRS; 75.7 ACRE-
FEET.

OPERATION RUNOFF XSECTION 52



\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.53 WATERSHED INCHES; 145 CFS-HRS; 75.7 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 53

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	24.1	(RUNOFF)

1

TR20 ----- SCS  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.25 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	412.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.52 WATERSHED INCHES; 943 CFS-HRS; 77.9 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 57  
NO HYDROGRAPH IN INPUT LOCATION 5 OR 1 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.61 412.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.49 WATERSHED INCHES; 943 CFS-HRS; 77.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.23 12.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.85 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.61 417.6 (NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.47 WATERSHED INCHES; 957 CFS-HRS; 79.1 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.61 417.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 957 CFS-HRS; 79.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.25 7.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .81 WATERSHED INCHES; 9 CFS-HRS; .7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.60 421.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.46 WATERSHED INCHES; 966 CFS-HRS; 79.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.78 396.1 249.52

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.46 WATERSHED INCHES; 965 CFS-HRS; 79.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.37 8.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
 FEET.

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OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)

12.74 4.7 332.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-
FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.86 4.6 300.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.21 21.6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.83 WATERSHED INCHES; 25 CFS-HRS; 2.0 ACRE-
FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE
TIME INCREMENT OF .043 HOURS.
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES
FIRST NEGATIVE VALUE IS 0 CFS.
\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.43 12.4 290.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.83 WATERSHED INCHES; 25 CFS-HRS; 2.0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 67

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.58 16.5 (NULL)
20.11 1.0 (NULL)

20.66 1.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.00 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.20 55.7 (RUNOFF)
24.03 1.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.15 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.20 68.6 (NULL)
23.10 2.1 (NULL)
23.75 2.0 (NULL)
24.03 2.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.09 WATERSHED INCHES; 95 CFS-HRS; 7.8 ACRE-
FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.32 60.1 248.41
23.17 2.1 247.43
24.09 2.0 247.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.09 WATERSHED INCHES; 95 CFS-HRS; 7.8 ACRE-
FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.13 13.2 (RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.40 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-

FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	3.4	263.40
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.40 WATERSHED INCHES;	11 CFS-HRS;	.9 ACRE-
FEET.		

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	3.3	247.53
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.39 WATERSHED INCHES;	11 CFS-HRS;	.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	34.3	(RUNOFF)
15.86	2.4	(RUNOFF)
24.02	1.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.59 WATERSHED INCHES;	42 CFS-HRS;	3.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.78	405.9	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.38 WATERSHED INCHES;	1007 CFS-HRS;	83.2 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	63.1	(NULL)
18.71	3.1	(NULL)
24.09	2.2	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.11 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.75	442.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.35 WATERSHED INCHES; 1112 CFS-HRS; 91.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.83	442.2	229.16

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.35 WATERSHED INCHES; 1112 CFS-HRS; 91.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	27.4	(RUNOFF)
17.35	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .86 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	448.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.33 WATERSHED INCHES; 1140 CFS-HRS; 94.2 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 80.  
 \*\*\*

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	448.1	213.33

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.33 WATERSHED INCHES; 1140 CFS-HRS; 94.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	36.0	(RUNOFF)
19.47	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.03 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	454.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.32 WATERSHED INCHES; 1174 CFS-HRS; 97.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	13.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.71 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	457.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.30 WATERSHED INCHES; 1189 CFS-HRS; 98.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	43.1	(RUNOFF)



18.68 2.0 (RUNOFF)  
24.02 1.4 (RUNOFF)

1

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.76 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.80 473.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.26 WATERSHED INCHES; 1247 CFS-HRS; 103.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.13 22.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.89 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.80 476.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.27 WATERSHED INCHES; 1266 CFS-HRS; 104.6 ACRE-  
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
STARTING TIME = .00 RAIN DEPTH = 4.91 RAIN DURATION = 1.00  
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. =10 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)

12.30 48.0 (RUNOFF)  
23.10 1.1 \* (RUNOFF)

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\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.90 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.41 45.0 390.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.90 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.28 82.2 (RUNOFF)  
20.68 2.2 (RUNOFF)  
23.98 1.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.77 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.32 122.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.82 WATERSHED INCHES; 166 CFS-HRS; 13.8 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.34 121.3 383.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.81 WATERSHED INCHES; 166 CFS-HRS; 13.7 ACRE-  
FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	120.5	368.34

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.81 WATERSHED INCHES; 166 CFS-HRS; 13.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	101.9	(RUNOFF)
23.73	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.57 WATERSHED INCHES; 132 CFS-HRS; 10.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	213.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.70 WATERSHED INCHES; 298 CFS-HRS; 24.7 ACRE-  
FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	212.2	357.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.70 WATERSHED INCHES; 299 CFS-HRS; 24.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	132.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.88 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-

FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	60.8	376.27
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.49 WATERSHED INCHES;	165 CFS-HRS;	13.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	16.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.13 WATERSHED INCHES;	13 CFS-HRS;	1.1 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.81	56.5	355.97
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.49 WATERSHED INCHES;	165 CFS-HRS;	13.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	77.9	(RUNOFF)
15.82	3.3	(RUNOFF)
18.86	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.23 WATERSHED INCHES;	78 CFS-HRS;	6.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	249.3	(NULL)
24.00	6.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.59 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	32.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	262.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.80 WATERSHED INCHES; 540 CFS-HRS; 44.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	278.8	(NULL)
23.98	12.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	278.8	(NULL)
23.98	12.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32

HRS	SQ.MI.	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	.32
4.56	CFS	.00	.01	.01	.01	.01	.01	.01	.01	.01	.01
.01											
5.04	CFS	.01	.02	.02	.02	.02	.02	.02	.02	.02	.02
.02											
5.52	CFS	.03	.03	.03	.03	.03	.03	.03	.04	.04	.04
.04											
6.00	CFS	.04	.05	.05	.05	.05	.05	.05	.06	.06	.06
.06											
6.48	CFS	.06	.07	.07	.07	.07	.08	.08	.08	.08	.08
.09											
6.96	CFS	.09	.09	.10	.10	.10	.11	.11	.11	.11	.12
.12											
7.44	CFS	.12	.13	.13	.14	.14	.14	.14	.16	.16	.17
.19											
7.92	CFS	.20	.22	.24	.26	.26	.28	.28	.30	.30	.33
.37											
8.40	CFS	.41	.45	.50	.56	.56	.62	.62	.68	.68	.74
.81											
8.88	CFS	.87	.94	1.01	1.08	1.08	1.16	1.16	1.24	1.24	1.33
1.44											
9.36	CFS	1.56	1.68	1.82	1.97	1.97	2.12	2.12	2.28	2.28	2.45
2.63											
9.84	CFS	2.82	3.02	3.22	3.43	3.43	3.66	3.66	3.89	3.89	4.14
4.39											
10.32	CFS	4.65	4.91	5.19	5.48	5.48	5.80	5.80	6.16	6.16	6.57
7.04											
10.80	CFS	7.58	8.23	9.02	9.89	9.89	10.85	10.85	11.93	11.93	13.16
14.53											
11.28	CFS	16.03	17.69	19.49	21.40	21.40	24.55	24.55	29.09	29.09	34.60
40.47											
11.76	CFS	47	55	65	79	79	99	99	131	131	176
216											

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 VERSION

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12.24	CFS	236	255	276	279	274	263	248			
230											
12.72	CFS	212	195	178	163	152	143	133			
124											
13.20	CFS	115	107	100	93	87	81	76			
71											
13.68	CFS	67.02	63.18	59.72	56.61	53.84	51.39	49.22			
47.27											
14.16	CFS	45.52	43.92	42.49	41.19	40.02	38.94	37.92			
36.93											
14.64	CFS	35.99	35.17	34.47	33.86	33.28	32.70	32.15			
31.61											
15.12	CFS	31.06	30.50	29.97	29.49	29.06	28.68	28.35			
28.07											
15.60	CFS	27.80	27.54	27.27	27.04	26.87	26.71	26.53			
26.32											
16.08	CFS	26.13	25.95	25.79	25.63	25.46	25.29	25.12			
24.94											

16.56	CFS	24.76	24.58	24.42	24.27	24.11	23.93	23.77
23.63								
17.04	CFS	23.49	23.34	23.17	22.97	22.79	22.64	22.50
22.32								
17.52	CFS	22.12	21.92	21.74	21.57	21.40	21.21	21.02
20.85								
18.00	CFS	20.69	20.54	20.37	20.19	20.03	19.88	19.74
19.57								
18.48	CFS	19.42	19.32	19.24	19.16	19.06	18.96	18.91
18.85								
18.96	CFS	18.76	18.67	18.59	18.52	18.44	18.38	18.32
18.26								
19.44	CFS	18.21	18.16	18.10	18.02	17.94	17.89	17.83
17.74								
19.92	CFS	17.65	17.59	17.56	17.52	17.45	17.38	17.32
17.25								
20.40	CFS	17.17	17.06	16.99	16.95	16.91	16.83	16.75
16.70								
20.88	CFS	16.66	16.58	16.48	16.38	16.29	16.21	16.12
16.04								
21.36	CFS	15.96	15.89	15.82	15.75	15.66	15.55	15.48
15.41								
21.84	CFS	15.32	15.24	15.18	15.11	15.01	14.92	14.84
14.75								
22.32	CFS	14.67	14.60	14.53	14.46	14.39	14.29	14.19
14.13								
22.80	CFS	14.05	13.95	13.84	13.77	13.73	13.67	13.59
13.51								
23.28	CFS	13.44	13.37	13.30	13.23	13.12	13.02	12.96
12.91								
23.76	CFS	12.86	12.77	12.67	12.59	12.60	12.53	12.06
11.31								
24.24	CFS	10.58	9.94	9.38	8.91	8.54	8.27	8.03
7.82								
24.72	CFS	7.62	7.44	7.27	7.10	6.94	6.78	6.63
6.49								
25.20	CFS	6.34	6.21	6.07	5.94	5.81	5.69	5.57
5.45								
25.68	CFS	5.33	5.21	5.10	4.99	4.88	4.78	4.67
4.56								
26.16	CFS	4.45	4.33	4.22	4.11	4.00	3.90	3.80
3.70								
26.64	CFS	3.60	3.50	3.41	3.32	3.23	3.15	3.07
2.98								
27.12	CFS	2.91	2.83	2.75	2.68			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	56	28	22	18	16	14	7	4

DURATION(HRS) 18  
 FLOW(CFS) 3 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	278.8	333.39
23.98	12.6	331.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	52.0	(RUNOFF)
17.34	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.57 WATERSHED INCHES; 49 CFS-HRS; 4.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	62.5	(RUNOFF)
20.87	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.13 WATERSHED INCHES; 67 CFS-HRS; 5.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	62.5	(NULL)
20.87	1.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
SQ.MI.

HRS	0.00	0.01	0.02	0.03	0.04	0.05	0.06
2.70 CFS							
.07							
3.18 CFS	.08	.09	.10	.11	.12	.13	.14
.15							
3.66 CFS	.16	.17	.18	.19	.20	.21	.22
.23							
4.14 CFS	.24	.26	.26	.27	.28	.29	.30
.32							
4.62 CFS	.32	.33	.34	.35	.36	.37	.38
.39							
5.10 CFS	.40	.41	.42	.43	.44	.44	.45



.46								
5.58 CFS	.48	.49	.50	.51	.51	.51	.52	
.54								
6.06 CFS	.56	.57	.58	.59	.60	.62	.64	
.66								
6.54 CFS	.67	.69	.71	.72	.73	.76	.78	
.79								
7.02 CFS	.80	.83	.85	.88	.89	.91	.92	
.95								
7.50 CFS	.97	.98	1.00	1.01	1.04	1.06	1.08	
1.10								
7.98 CFS	1.13	1.15	1.17	1.20	1.21	1.22	1.25	
1.27								
8.46 CFS	1.29	1.30	1.33	1.36	1.39	1.41	1.43	
1.44								
8.94 CFS	1.45	1.48	1.52	1.56	1.60	1.65	1.71	
1.78								

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9.42 CFS	1.84	1.89	1.94	2.00	2.07	2.15	2.22
2.28							
9.90 CFS	2.34	2.40	2.46	2.54	2.62	2.69	2.76
2.82							
10.38 CFS	2.88	2.96	3.04	3.14	3.28	3.45	3.66
3.89							
10.86 CFS	4.14	4.39	4.64	4.89	5.20	5.58	6.01
6.46							
11.34 CFS	6.91	7.39	7.87	8.38	9.33	10.96	12.62
14.21							
11.82 CFS	16.37	19.43	23.86	31.02	41.88	55.81	62.53
55.51							
12.30 CFS	43.24	33.49	26.63	21.92	18.82	16.21	13.72
11.81							
12.78 CFS	10.56	9.69	9.03	8.46	7.93	7.41	6.90
6.47							
13.26 CFS	6.13	5.82	5.53	5.24	4.96	4.69	4.43
4.21							
13.74 CFS	4.04	3.90	3.80	3.71	3.65	3.59	3.52
3.45							
14.22 CFS	3.36	3.28	3.21	3.16	3.10	3.03	2.95
2.87							
14.70 CFS	2.79	2.73	2.67	2.61	2.54	2.47	2.41
2.33							
15.18 CFS	2.26	2.20	2.16	2.14	2.13	2.12	2.11
2.10							
15.66 CFS	2.07	2.03	2.01	2.01	2.00	1.98	1.95
1.92							
16.14 CFS	1.90	1.89	1.88	1.86	1.84	1.82	1.79
1.77							
16.62 CFS	1.75	1.74	1.73	1.71	1.69	1.67	1.66
1.65							
17.10 CFS	1.63	1.60	1.57	1.54	1.54	1.54	1.52
1.48							
17.58 CFS	1.45	1.43	1.42	1.41	1.39	1.37	1.35
1.34							
18.06 CFS	1.33	1.31	1.29	1.27	1.26	1.25	1.23

1.22								
18.54 CFS	1.23	1.24	1.24	1.23	1.22	1.22	1.22	1.22
1.21								
19.02 CFS	1.19	1.19	1.18	1.18	1.18	1.18	1.18	1.18
1.18								
19.50 CFS	1.18	1.17	1.15	1.14	1.15	1.14	1.13	1.13
1.12								
19.98 CFS	1.12	1.13	1.14	1.13	1.11	1.11	1.10	1.10
1.09								
20.46 CFS	1.07	1.07	1.08	1.09	1.08	1.06	1.06	1.06
1.07								
20.94 CFS	1.06	1.04	1.03	1.03	1.02	1.02	1.02	1.02
1.02								
21.42 CFS	1.02	1.02	1.02	1.01	.99	.99	.99	.99
.98								
21.90 CFS	.98	.99	.98	.97	.96	.95	.95	.95
.95								
22.38 CFS	.94	.94	.94	.94	.92	.91	.91	.91
.91								
22.86 CFS	.90	.88	.88	.90	.90	.89	.88	.88
.87								
23.34 CFS	.87	.87	.86	.84	.83	.84	.85	.85
.85								
23.82 CFS	.84	.82	.81	.84	.84	.65	.38	.38
.20								
24.30 CFS	.10	.05	.03	.01	.01	.00		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.13 WATERSHED INCHES; 67 CFS-HRS; 5.6 ACRE-FEET.

DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	6	3	2	2	1	1	1	1
DURATION (HRS)	18	18						
FLOW (CFS)	1	0						

OPERATION RUNOFF XSECTION 119

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET) 12.13 15.0 (RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.40 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 120

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET) 12.17 75.8 (NULL)

15.82	2.4	(NULL)
23.73	1.0	(NULL)
24.01	1.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.99 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	127.1	(NULL)
15.83	4.1	(NULL)
17.33	3.1	(NULL)
21.45	2.1	(NULL)
21.75	2.0	(NULL)
21.95	2.0	(NULL)
24.01	1.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.82 WATERSHED INCHES; 129 CFS-HRS; 10.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	90.5	(RUNOFF)
17.34	2.3	(RUNOFF)
24.00	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.23 WATERSHED INCHES; 84 CFS-HRS; 7.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	217.5	(NULL)
15.84	7.0	(NULL)
17.34	5.4	(NULL)
19.43	4.1	(NULL)
19.74	4.0	(NULL)
20.06	4.0	(NULL)
23.06	3.2	(NULL)
23.72	3.0	(NULL)
24.00	3.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

3.56 WATERSHED INCHES; 213 CFS-HRS; 17.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.19	429.3	(NULL)
20.04	21.6	(NULL)
20.57	20.8	(NULL)
23.03	16.9	(NULL)
24.00	15.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.96 WATERSHED INCHES; 785 CFS-HRS; 64.9 ACRE-  
FEET.

OPERATION REACH XSECTION 23

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.37	376.3	316.12
24.05	15.6	314.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.95 WATERSHED INCHES; 784 CFS-HRS; 64.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.25	81.4	(RUNOFF)
20.13	2.0	(RUNOFF)
23.99	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.03 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-  
FEET.

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\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	78.5	363.94
20.15	2.0	356.54
23.79	1.5	356.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 99 CFS-HRS; 8.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	115.6	(RUNOFF)
18.66	3.3	(RUNOFF)
23.77	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.97 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	190.6	(NULL)
20.14	5.0	(NULL)
23.14	4.0	(NULL)
23.78	3.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	174.0	319.15
20.20	5.0	316.65
23.20	4.0	316.59

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		
12.25	87.6	(RUNOFF)
21.94	2.0	(RUNOFF)
24.01	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.68 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	457.6	(NULL)
24.04	17.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.92 WATERSHED INCHES; 888 CFS-HRS; 73.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	619.1	(NULL)
24.03	21.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 1129 CFS-HRS; 93.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	619.1	(NULL)
24.03	21.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 1129 CFS-HRS; 93.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	137.5	(RUNOFF)
18.66	3.2	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-
FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.31 125.9 313.02
18.72 3.2 310.26
24.09 2.2 310.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-
FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.16 22.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.33 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS
WITH .38 AC-FT ( .07 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 377.43.
\*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.40 9.1 380.16

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.48 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-
FEET.

OPERATION REACH XSECTION 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.47 9.0 338.13

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.47 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-
FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	66.9	(RUNOFF)
21.97	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.32 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
 WITH .95 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 353.79.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	48.7	357.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.67 WATERSHED INCHES; 65 CFS-HRS; 5.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.62 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.62 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
 \*\*\*

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03/31/\*\* CN MGMT- PROP COND.- 2,10,50,100 yr NOAA Dist

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OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	330.54
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.62 WATERSHED INCHES;	84 CFS-HRS;	6.9 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	73.1	(RUNOFF)
15.84	2.2	(RUNOFF)
22.41	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.77 WATERSHED INCHES;	68 CFS-HRS;	5.6 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	101.1	(NULL)
20.82	3.2	(NULL)
24.00	2.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.69 WATERSHED INCHES;	152 CFS-HRS;	12.6 ACRE-
FEEET.		

OPERATION RESVOR STRUCTURE 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	52.6	330.85

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06 SQ.MI.

4.02 CFS	.00	.01	.01	.01	.01	.01	.01
.01							
4.02 ELEV	326.00	326.00	326.00	326.00	326.00	326.00	326.01
326.01							
4.50 CFS	.02	.02	.02	.02	.02	.03	.03
.03							
4.50 ELEV	326.01	326.01	326.01	326.01	326.01	326.01	326.01
326.01							
4.98 CFS	.03	.04	.04	.04	.05	.05	.05
.06							
4.98 ELEV	326.01	326.02	326.02	326.02	326.02	326.02	326.02
326.02							
5.46 CFS	.06	.07	.07	.07	.08	.08	.09
.09							
5.46 ELEV	326.03	326.03	326.03	326.03	326.03	326.04	326.04
326.04							

5.94 CFS	.10	.10	.11	.11	.12	.12	.13
.14							
5.94 ELEV	326.04	326.04	326.05	326.05	326.05	326.05	326.05
326.06							
6.42 CFS	.14	.15	.15	.16	.17	.18	.18
.19							

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6.42 ELEV	326.06	326.06	326.07	326.07	326.07	326.07	326.08
326.08							
6.90 CFS	.20	.21	.21	.22	.23	.24	.25
.26							
6.90 ELEV	326.08	326.09	326.09	326.09	326.10	326.10	326.10
326.11							
7.38 CFS	.27	.27	.28	.29	.30	.31	.32
.34							
7.38 ELEV	326.11	326.12	326.12	326.12	326.13	326.13	326.14
326.14							
7.86 CFS	.35	.36	.37	.38	.39	.40	.42
.43							
7.86 ELEV	326.15	326.15	326.15	326.16	326.16	326.17	326.18
326.18							
8.34 CFS	.44	.46	.47	.48	.50	.51	.52
.54							
8.34 ELEV	326.19	326.19	326.20	326.20	326.21	326.21	326.22
326.23							
8.82 CFS	.55	.57	.58	.60	.61	.63	.65
.66							
8.82 ELEV	326.23	326.24	326.24	326.25	326.26	326.26	326.27
326.28							
9.30 CFS	.68	.70	.72	.74	.76	.78	.80
.82							
9.30 ELEV	326.29	326.29	326.30	326.31	326.32	326.33	326.34
326.35							
9.78 CFS	.85	.87	.90	.92	.95	.98	1.00
1.03							
9.78 ELEV	326.36	326.37	326.38	326.39	326.40	326.41	326.42
326.43							
10.26 CFS	1.06	1.09	1.12	1.16	1.19	1.22	1.26
1.30							
10.26 ELEV	326.45	326.46	326.47	326.49	326.50	326.51	326.53
326.55							
10.74 CFS	1.34	1.38	1.43	1.48	1.53	1.59	1.65
1.71							
10.74 ELEV	326.56	326.58	326.60	326.62	326.64	326.67	326.69
326.72							
11.22 CFS	1.78	1.86	1.94	2.03	2.13	2.23	2.34
2.50							
11.22 ELEV	326.75	326.78	326.82	326.85	326.89	326.94	326.98
327.05							
11.70 CFS	2.68	2.90	3.16	3.49	3.90	4.45	5.20
6.22							
11.70 ELEV	327.13	327.22	327.33	327.47	327.64	327.87	328.18
328.61							
12.18 CFS	7.43	8.62	9.71	20.86	35.26	44.96	50.03
52.53							

12.18 ELEV	329.12	329.62	330.08	330.41	330.64	330.77	330.83
330.85							
12.66 CFS	51.20	48.59	45.70	42.63	39.80	37.24	34.90
32.73							
12.66 ELEV	330.84	330.81	330.78	330.74	330.71	330.67	330.64
330.61							
13.14 CFS	30.70	28.99	27.46	26.00	24.60	23.26	21.99
20.80							
13.14 ELEV	330.58	330.55	330.53	330.50	330.48	330.46	330.43
330.41							
13.62 CFS	19.71	18.75	17.84	16.99	16.20	15.46	14.81
14.28							
13.62 ELEV	330.39	330.38	330.36	330.35	330.33	330.32	330.31
330.29							
14.10 CFS	13.76	13.27	12.79	12.34	11.92	11.52	11.15
10.80							
14.10 ELEV	330.28	330.27	330.26	330.25	330.24	330.23	330.23
330.22							
14.58 CFS	10.47	10.15	9.99	9.97	9.94	9.92	9.89
9.85							
14.58 ELEV	330.21	330.20	330.20	330.19	330.18	330.16	330.15
330.14							
15.06 CFS	9.82	9.78	9.74	9.70	9.66	9.62	9.58
9.54							
15.06 ELEV	330.12	330.11	330.09	330.08	330.06	330.04	330.02
330.00							
15.54 CFS	9.49	9.45	9.40	9.36	9.31	9.26	9.22
9.17							
15.54 ELEV	329.99	329.97	329.95	329.93	329.91	329.89	329.87
329.85							
16.02 CFS	9.12	9.08	9.03	8.98	8.93	8.89	8.84
8.79							
16.02 ELEV	329.83	329.81	329.79	329.77	329.75	329.73	329.71
329.69							
16.50 CFS	8.74	8.69	8.65	8.60	8.55	8.50	8.45
8.40							
16.50 ELEV	329.67	329.65	329.63	329.61	329.59	329.57	329.55
329.53							
16.98 CFS	8.36	8.31	8.26	8.21	8.16	8.11	8.07
8.02							
16.98 ELEV	329.51	329.49	329.47	329.45	329.43	329.41	329.39
329.37							
17.46 CFS	7.97	7.92	7.88	7.83	7.78	7.73	7.69
7.64							
17.46 ELEV	329.35	329.33	329.31	329.29	329.27	329.25	329.23
329.21							
17.94 CFS	7.59	7.55	7.50	7.45	7.41	7.36	7.31
7.27							
17.94 ELEV	329.19	329.17	329.15	329.13	329.11	329.09	329.07
329.05							

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18.42 CFS	7.22	7.18	7.13	7.09	7.04	7.00	6.95
6.91							
18.42 ELEV	329.03	329.01	328.99	328.98	328.96	328.94	328.92
328.90							

18.90 CFS	6.87	6.82	6.78	6.74	6.69	6.65	6.61
6.57							
18.90 ELEV	328.88	328.87	328.85	328.83	328.81	328.79	328.78
328.76							
19.38 CFS	6.53	6.49	6.45	6.41	6.37	6.33	6.29
6.25							
19.38 ELEV	328.74	328.73	328.71	328.69	328.68	328.66	328.64
328.63							
19.86 CFS	6.21	6.18	6.14	6.10	6.06	6.03	5.99
5.95							
19.86 ELEV	328.61	328.59	328.58	328.56	328.55	328.53	328.52
328.50							
20.34 CFS	5.92	5.88	5.85	5.81	5.78	5.74	5.71
5.68							
20.34 ELEV	328.49	328.47	328.46	328.44	328.43	328.41	328.40
328.38							
20.82 CFS	5.64	5.61	5.58	5.54	5.51	5.48	5.44
5.41							
20.82 ELEV	328.37	328.36	328.34	328.33	328.31	328.30	328.29
328.27							
21.30 CFS	5.38	5.35	5.32	5.29	5.26	5.23	5.20
5.17							
21.30 ELEV	328.26	328.25	328.23	328.22	328.21	328.20	328.18
328.17							
21.78 CFS	5.14	5.11	5.08	5.05	5.02	4.99	4.96
4.94							
21.78 ELEV	328.16	328.15	328.13	328.12	328.11	328.10	328.09
328.07							
22.26 CFS	4.91	4.88	4.85	4.83	4.80	4.77	4.75
4.72							
22.26 ELEV	328.06	328.05	328.04	328.03	328.02	328.00	327.99
327.98							
22.74 CFS	4.69	4.67	4.64	4.61	4.59	4.56	4.54
4.51							
22.74 ELEV	327.97	327.96	327.95	327.94	327.93	327.92	327.91
327.90							
23.22 CFS	4.49	4.46	4.44	4.41	4.39	4.36	4.34
4.32							
23.22 ELEV	327.88	327.87	327.86	327.85	327.84	327.83	327.82
327.81							
23.70 CFS	4.29	4.27	4.25	4.22	4.20	4.18	4.16
4.13							
23.70 ELEV	327.80	327.79	327.78	327.77	327.76	327.75	327.75
327.74							
24.18 CFS	4.10	4.07	4.04	4.01	3.97	3.94	3.91
3.88							
24.18 ELEV	327.72	327.71	327.70	327.68	327.67	327.66	327.64
327.63							
24.66 CFS	3.85	3.82	3.79	3.76	3.73	3.70	3.67
3.64							
24.66 ELEV	327.62	327.60	327.59	327.58	327.56	327.55	327.54
327.53							
25.14 CFS	3.61	3.58	3.55	3.52	3.50	3.47	3.44
3.42							
25.14 ELEV	327.52	327.50	327.49	327.48	327.47	327.46	327.45
327.43							
25.62 CFS	3.39	3.36	3.34	3.31			
25.62 ELEV	327.42	327.41	327.40	327.39			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.33 WATERSHED INCHES; 137 CFS-HRS; 11.4 ACRE-  
 FEET.

DURATION (HRS) 2 4 6 8 10 12 13

FLOW(CFS) 12 9 7 6 5 4 3 TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 12.13 5.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.43 WATERSHED INCHES; 4 CFS-HRS; .4 ACRE-
FEET.

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OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 12.61 53.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.20 WATERSHED INCHES; 142 CFS-HRS; 11.7 ACRE-
FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 12.27 57.7 (RUNOFF)
23.76 1.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.84 WATERSHED INCHES; 72 CFS-HRS; 6.0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 12.35 671.2 (NULL)
24.03 22.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.93 WATERSHED INCHES; 1201 CFS-HRS; 99.3 ACRE-
FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 12.34 794.8 (NULL)

24.03 24.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.98 WATERSHED INCHES; 1357 CFS-HRS; 112.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.36 815.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.00 WATERSHED INCHES; 1496 CFS-HRS; 123.6 ACRE-
FEET.

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OPERATION REACH XSECTION 44

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.48 784.1 290.94

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.99 WATERSHED INCHES; 1495 CFS-HRS; 123.5 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.48 784.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.99 WATERSHED INCHES; 1495 CFS-HRS; 123.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.30 66.8 (RUNOFF)
23.09 1.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.88 WATERSHED INCHES; 89 CFS-HRS; 7.3 ACRE-
FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	83.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.81 WATERSHED INCHES;	114 CFS-HRS;	9.4 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	150.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.84 WATERSHED INCHES;	203 CFS-HRS;	16.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 48

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	81.7	(RUNOFF)
18.65	2.0	(RUNOFF)
24.03	1.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.84 WATERSHED INCHES;	86 CFS-HRS;	7.1 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	819.2	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.98 WATERSHED INCHES;	1580 CFS-HRS;	130.6 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	945.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.97 WATERSHED INCHES;	1783 CFS-HRS;	147.4 ACRE-
FEET.		

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	922.5	285.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.97 WATERSHED INCHES; 1782 CFS-HRS; 147.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.97 WATERSHED INCHES; 210 CFS-HRS; 147.3 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

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OPERATION REACH XSECTION 53

\*\*\* MESSAGE - XSECTION 53, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.97 WATERSHED INCHES; 207 CFS-HRS; 147.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - XSECTION 54, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.97 WATERSHED INCHES; 189 CFS-HRS; 147.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	51.6	(RUNOFF)
21.97	1.1	(RUNOFF)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.61 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	941.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.95 WATERSHED INCHES; 1836 CFS-HRS; 151.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - XSECTION 57, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.95 WATERSHED INCHES; 214 CFS-HRS; 151.8 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	941.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.91 WATERSHED INCHES; 1838 CFS-HRS; 151.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	31.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.01 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	955.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.89 WATERSHED INCHES; 1873 CFS-HRS; 154.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.54 955.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.89 WATERSHED INCHES; 1873 CFS-HRS; 154.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.24 18.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.95 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 62

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.54 964.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.87 WATERSHED INCHES; 1894 CFS-HRS; 156.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.67 929.8 250.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.87 WATERSHED INCHES; 1893 CFS-HRS; 156.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.37 15.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.24 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	8.4	334.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.24 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.85	8.2	300.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.23 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	55.9	(RUNOFF)
24.02	1.1	(RUNOFF)

1

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 59 CFS-HRS; 4.8 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	18.0	293.76
14.58	3.8	287.79

24.04 1.1 287.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.98 WATERSHED INCHES; 59 CFS-HRS; 4.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.82 25.9 (NULL)
18.87 2.1 (NULL)
24.04 1.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.23 WATERSHED INCHES; 82 CFS-HRS; 6.7 ACRE-
FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.19 122.6 (RUNOFF)
18.87 3.1 (RUNOFF)
24.02 2.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.47 WATERSHED INCHES; 124 CFS-HRS; 10.3 ACRE-
FEET.

OPERATION ADDHYD XSECTION 69

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.19 141.4 (NULL)
18.87 5.2 (NULL)
21.97 4.3 (NULL)
24.03 3.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.37 WATERSHED INCHES; 206 CFS-HRS; 17.0 ACRE-
FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.45 96.0 248.70

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.37 WATERSHED INCHES; 206 CFS-HRS; 17.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.12 26.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.81 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.33 9.6 265.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.82 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.44 8.9 247.79

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.81 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 73

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.18 110.8 (RUNOFF)  
15.85 5.4 (RUNOFF)  
17.34 4.2 (RUNOFF)  
20.86 3.0 (RUNOFF)  
24.01 2.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.58 WATERSHED INCHES; 112 CFS-HRS; 9.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.66	959.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.74 WATERSHED INCHES;	2006 CFS-HRS;	165.7 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	105.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.40 WATERSHED INCHES;	227 CFS-HRS;	18.8 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	1050.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.70 WATERSHED INCHES;	2233 CFS-HRS;	184.5 ACRE-
FEET.		

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.71	1049.5	230.45
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.70 WATERSHED INCHES;	2232 CFS-HRS;	184.5 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 78

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	69.0	(RUNOFF)
17.34	2.3	(RUNOFF)
24.01	1.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.03 WATERSHED INCHES;	67 CFS-HRS;	5.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.70	1064.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.68 WATERSHED INCHES; 2299 CFS-HRS; 190.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.77	1062.4	215.91

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.68 WATERSHED INCHES; 2298 CFS-HRS; 189.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	83.3	(RUNOFF)
15.84	3.1	(RUNOFF)
17.34	2.4	(RUNOFF)
24.00	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.29 WATERSHED INCHES; 76 CFS-HRS; 6.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.77	1076.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.66 WATERSHED INCHES; 2374 CFS-HRS; 196.2 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	37.3	(RUNOFF)
19.47	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.77	1083.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.64 WATERSHED INCHES; 2410 CFS-HRS; 199.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	118.2	(RUNOFF)
18.67	4.1	(RUNOFF)
23.12	3.1	(RUNOFF)
24.01	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.87 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.76	1122.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.58 WATERSHED INCHES; 2553 CFS-HRS; 211.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	40.2	(RUNOFF)
15.84	1.2	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.45 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
 FEET.



OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.76	1127.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.59 WATERSHED INCHES; 2589 CFS-HRS; 213.9 ACRE-FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
 STARTING TIME = .00 RAIN DEPTH = 7.23 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =50 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	81.5	(RUNOFF)
20.13	2.1	(RUNOFF)
23.08	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	81.3	390.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 3

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	142.8	(RUNOFF)
20.68	3.4	(RUNOFF)
23.97	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.85 WATERSHED INCHES; 181 CFS-HRS; 15.0 ACRE-FEET.

FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	220.1	(NULL)
20.13	5.7	(NULL)
23.12	4.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.91 WATERSHED INCHES; 290 CFS-HRS; 24.0 ACRE-  
 FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,  
 VALUE EXTRAPOLATED.  
 \*\*\*

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	218.8	384.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.39	218.2	368.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	181.7	(RUNOFF)
20.14	4.8	(RUNOFF)
23.74	3.6	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.60 WATERSHED INCHES; 237 CFS-HRS; 19.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	387.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.75 WATERSHED INCHES; 526 CFS-HRS; 43.5 ACRE-FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	386.9	358.49

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.75 WATERSHED INCHES; 526 CFS-HRS; 43.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	203.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.15 WATERSHED INCHES; 291 CFS-HRS; 24.1 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	139.6	377.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.58 WATERSHED INCHES; 264 CFS-HRS; 21.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 10

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
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ELEVATION(FEET)			
12.13	30.4		(RUNOFF)
15.46	1.0		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.03 WATERSHED INCHES; 25 CFS-HRS; 2.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	112.3	359.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.57 WATERSHED INCHES; 264 CFS-HRS; 21.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	146.1	(RUNOFF)
15.81	5.5	(RUNOFF)
20.09	3.2	(RUNOFF)
20.64	3.0	(RUNOFF)
24.02	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.16 WATERSHED INCHES; 146 CFS-HRS; 12.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	458.9	(NULL)
24.00	10.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.61 WATERSHED INCHES; 672 CFS-HRS; 55.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	56.4	(RUNOFF)
21.97	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.80 WATERSHED INCHES; 60 CFS-HRS; 4.9 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 14

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.41	552.8	(NULL)
23.98	17.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.84 WATERSHED INCHES; 934 CFS-HRS; 77.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.40	582.5	(NULL)
23.99	18.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 994 CFS-HRS; 82.1 ACRE-FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.40	582.5	(NULL)
23.99	18.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32 SQ.MI.

HRS	3.36 CFS	.02	3.84 CFS	.03	4.32 CFS	.06	4.80 CFS	.09	5.28 CFS	.13	5.76 CFS	.24	6.24 CFS	.54	6.72 CFS	1.11	7.20 CFS	1.95	7.68 CFS	3.07	8.16 CFS	4.37	8.64 CFS	5.89	9.12 CFS
.00	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04
.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06
.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08
.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10
.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14
.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26
.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19
2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08
3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23
4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56
6.13	6.13	6.13	6.13	6.13	6.13	6.13	6.13	6.13	6.13	6.13	6.13	6.13	6.13	6.13	6.13	6.13	6.13	6.13	6.13	6.13	6.13	6.13	6.13	6.13	6.13

9.13								
9.60 CFS	9.65	10.20	10.78	11.37	11.98	12.58	13.20	
13.84								
10.08 CFS	14.50	15.17	16.36	18.12	19.64	20.94	22.12	
23.22								
10.56 CFS	24.31	25.47	26.73	28.13	29.67	31.35	33.20	
35.17								
11.04 CFS	37.31	39.71	42.42	45.46	48.79	52.44	56.44	
60.74								
11.52 CFS	65	71	80	90	101	115	133	
159								
12.00 CFS	196	253	342	437	496	542	574	
580								
12.48 CFS	548	502	454	408	368	335	307	
283								
12.96 CFS	263	245	230	217	194	174	158	
145								

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13.44 CFS	135	125	117	110	104	98	93	
88								
13.92 CFS	83.99	80.31	77.06	74.15	71.51	69.11	66.93	
64.96								
14.40 CFS	63.17	61.51	59.92	58.38	56.88	55.44	54.09	
52.79								
14.88 CFS	51.51	50.24	48.99	47.78	46.55	45.34	44.17	
43.08								
15.36 CFS	42.09	41.20	40.41	39.71	39.09	38.55	38.07	
37.69								
15.84 CFS	37.42	37.17	36.89	36.58	36.29	36.02	35.78	
35.55								
16.32 CFS	35.29	35.03	34.78	34.51	34.23	33.96	33.72	
33.50								
16.80 CFS	33.26	33.00	32.75	32.54	32.34	32.12	31.85	
31.55								
17.28 CFS	31.28	31.07	30.86	30.61	30.31	30.02	29.75	
29.50								
17.76 CFS	29.26	28.99	28.72	28.47	28.25	28.03	27.78	
27.53								
18.24 CFS	27.30	27.09	26.89	26.65	26.44	26.30	26.21	
26.12								
18.72 CFS	25.98	25.87	25.81	25.75	25.64	25.52	25.42	
25.32								
19.20 CFS	25.23	25.14	25.06	25.00	24.93	24.88	24.81	
24.70								
19.68 CFS	24.59	24.53	24.46	24.34	24.21	24.13	24.11	
24.06								
20.16 CFS	23.97	23.88	23.80	23.72	23.59	23.45	23.35	
23.30								
20.64 CFS	23.25	23.15	23.04	22.98	22.94	22.84	22.73	
22.62								
21.12 CFS	22.53	22.44	22.35	22.27	22.20	22.14	22.08	
22.02								
21.60 CFS	21.92	21.81	21.73	21.67	21.57	21.49	21.46	
21.38								
22.08 CFS	21.27	21.17	21.08	20.99	20.91	20.83	20.76	

20.70								
22.56	CFS	20.63	20.50	20.39	20.33	20.25	20.12	19.99
19.91								
23.04	CFS	19.88	19.84	19.75	19.65	19.57	19.50	19.42
19.32								
23.52	CFS	19.18	19.03	18.95	18.89	18.82	18.69	18.55
18.44								
24.00	CFS	18.47	18.38	17.60	16.37	15.16	14.04	12.94
11.87								
24.48	CFS	10.89	10.27	9.94	9.68	9.48	9.29	9.13
8.97								
24.96	CFS	8.83	8.69	8.56	8.43	8.30	8.18	8.06
7.95								
25.44	CFS	7.84	7.72	7.62	7.51	7.40	7.30	7.20
7.10								
25.92	CFS	7.00	6.90	6.80	6.70	6.59	6.47	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 994 CFS-HRS; 82.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	96	45	33	26	23	21	16	8

DURATION(HRS) 17  
 FLOW(CFS) 6 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.40	582.5	335.04
23.99	18.5	331.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 994 CFS-HRS; 82.1 ACRE-FEET.

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OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	82.4	(RUNOFF)
15.84	2.4	(RUNOFF)
23.05	1.1	(RUNOFF)
23.71	1.0	(RUNOFF)
24.00	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.80 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.18	94.7	(RUNOFF)
24.03	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.18	94.7	(NULL)
24.03	1.3	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	.03
1.86 CFS	.00	.01	.02	.03	.05	.06	.08			
.10										
2.34 CFS	.12	.14	.16	.18	.20	.22	.24			
.26										
2.82 CFS	.28	.29	.31	.33	.34	.36	.38			
.39										
3.30 CFS	.41	.44	.45	.47	.49	.51	.53			
.53										
3.78 CFS	.54	.56	.58	.60	.62	.64	.66			
.68										
4.26 CFS	.69	.69	.71	.73	.76	.77	.78			
.78										
4.74 CFS	.80	.82	.84	.86	.87	.88	.89			
.91										
5.22 CFS	.93	.95	.96	.96	.97	.99	1.02			
1.04										
5.70 CFS	1.06	1.06	1.06	1.06	1.08	1.11	1.14			
1.16										
6.18 CFS	1.17	1.19	1.21	1.24	1.27	1.30	1.33			
1.36										
6.66 CFS	1.39	1.40	1.42	1.46	1.50	1.51	1.53			
1.57										
7.14 CFS	1.62	1.66	1.68	1.70	1.73	1.76	1.80			
1.82										
7.62 CFS	1.84	1.87	1.90	1.93	1.97	2.00	2.04			
2.08										
8.10 CFS	2.11	2.15	2.16	2.18	2.23	2.26	2.28			
2.30										
8.58 CFS	2.35	2.40	2.44	2.47	2.49	2.50	2.52			
2.57										
9.06 CFS	2.63	2.69	2.75	2.83	2.93	3.04	3.14			
3.22										
9.54 CFS	3.30	3.40	3.50	3.62	3.74	3.84	3.92			
4.01										
10.02 CFS	4.11	4.23	4.35	4.47	4.56	4.65	4.75			
4.86										



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10.50	CFS	4.98	5.13	5.35	5.63	5.96	6.32	6.70
7.09								
10.98	CFS	7.48	7.87	8.34	8.93	9.60	10.28	10.98
11.71								
11.46	CFS	12.45	13.22	14.67	17.18	19.73	22.14	25.44
30.09								
11.94	CFS	36.74	47.54	63.94	84.78	94.66	83.99	65.37
50.49								
12.42	CFS	40.07	32.94	28.24	24.31	20.56	17.68	15.80
14.50								
12.90	CFS	13.50	12.65	11.85	11.07	10.32	9.67	9.16
8.69								
13.38	CFS	8.26	7.83	7.40	7.00	6.61	6.28	6.02
5.83								
13.86	CFS	5.67	5.54	5.44	5.35	5.25	5.14	5.01
4.89								
14.34	CFS	4.79	4.71	4.62	4.52	4.40	4.27	4.16
4.07								
14.82	CFS	3.98	3.89	3.79	3.68	3.59	3.48	3.37
3.28								
15.30	CFS	3.22	3.18	3.17	3.16	3.15	3.13	3.08
3.03								
15.78	CFS	2.99	2.99	2.99	2.95	2.91	2.86	2.83
2.82								
16.26	CFS	2.80	2.77	2.73	2.70	2.67	2.63	2.60
2.58								
16.74	CFS	2.57	2.55	2.51	2.48	2.47	2.46	2.43
2.39								
17.22	CFS	2.33	2.30	2.29	2.29	2.26	2.21	2.16
2.13								
17.70	CFS	2.12	2.10	2.07	2.03	2.01	2.00	1.98
1.95								
18.18	CFS	1.92	1.89	1.88	1.87	1.84	1.82	1.82
1.84								
18.66	CFS	1.85	1.83	1.81	1.82	1.82	1.80	1.78
1.76								
19.14	CFS	1.76	1.76	1.75	1.75	1.75	1.75	1.75
1.74								
19.62	CFS	1.72	1.70	1.70	1.70	1.68	1.66	1.66
1.69								
20.10	CFS	1.69	1.68	1.66	1.65	1.64	1.61	1.59
1.59								
20.58	CFS	1.60	1.62	1.60	1.58	1.58	1.59	1.57
1.55								
21.06	CFS	1.53	1.53	1.52	1.52	1.52	1.52	1.52
1.52								
21.54	CFS	1.52	1.49	1.47	1.47	1.47	1.46	1.46
1.47								
22.02	CFS	1.46	1.44	1.42	1.41	1.41	1.41	1.40
1.40								
22.50	CFS	1.40	1.39	1.37	1.35	1.35	1.35	1.33
1.31								
22.98	CFS	1.31	1.34	1.34	1.33	1.31	1.30	1.29
1.29								
23.46	CFS	1.28	1.25	1.23	1.24	1.26	1.27	1.24

1.21								
23.94 CFS	1.20	1.25	1.25	.97	.57	.29	.15	
.08								
24.42 CFS	.04	.02	.01	.00				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	9	5	3	2	2	2	2	1

DURATION(HRS)	18	20	21
FLOW(CFS)	1	1	0

OPERATION RUNOFF XSECTION 119

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				(RUNOFF)
12.13		24.0		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.59 WATERSHED INCHES; 21 CFS-HRS; 1.8 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				(NULL)
12.17		115.9		(NULL)
15.82		3.7		(NULL)
20.07		2.1		(NULL)
24.01		1.6		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.26 WATERSHED INCHES; 126 CFS-HRS; 10.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				(NULL)
12.16		197.1		(NULL)
15.83		6.1		(NULL)
17.33		4.7		(NULL)
20.85		3.3		(NULL)
21.75		3.0		(NULL)
21.95		3.0		(NULL)
24.01		2.6		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

6.08 WATERSHED INCHES; 205 CFS-HRS; 16.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.15	148.6	(RUNOFF)
15.84	4.6	(RUNOFF)
17.34	3.5	(RUNOFF)
22.75	2.1	(RUNOFF)
23.06	2.1	(RUNOFF)
24.00	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.41 WATERSHED INCHES; 141 CFS-HRS; 11.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 22

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.15	345.1	(NULL)
15.84	10.7	(NULL)
17.34	8.2	(NULL)
19.74	6.1	(NULL)
20.06	6.1	(NULL)
21.95	5.3	(NULL)
24.01	4.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.78 WATERSHED INCHES; 346 CFS-HRS; 28.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.20	781.8	(NULL)
18.82	32.3	(NULL)
20.04	30.2	(NULL)
20.58	29.1	(NULL)
20.80	28.7	(NULL)
21.93	26.8	(NULL)
22.71	25.2	(NULL)
23.04	24.7	(NULL)
23.68	23.4	(NULL)
24.00	23.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.03 WATERSHED INCHES; 1335 CFS-HRS; 110.3 ACRE-

FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.40	724.5	316.87
24.06	23.0	314.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.03 WATERSHED INCHES; 1334 CFS-HRS; 110.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.25	136.5	(RUNOFF)
20.68	3.0	(RUNOFF)
23.99	2.3	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.17 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	131.8	365.04
20.69	3.0	356.63
23.79	2.4	356.57

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.15 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	196.3	(RUNOFF)

18.66	5.1	(RUNOFF)
20.68	4.5	(RUNOFF)
23.98	3.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 246 CFS-HRS; 20.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	325.1	(NULL)
18.67	8.6	(NULL)
20.68	7.5	(NULL)
23.14	6.2	(NULL)
23.78	5.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.12 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.37	312.6	319.62
20.73	7.5	316.81
23.20	6.2	316.73

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.12 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	154.0	(RUNOFF)
21.94	3.2	(RUNOFF)
24.01	2.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.74 WATERSHED INCHES; 183 CFS-HRS; 15.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
-----------------------------------	---------------------	------

12.32	855.9	(NULL)
20.08	33.8	(NULL)
23.08	27.6	(NULL)
24.04	25.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.99 WATERSHED INCHES; 1517 CFS-HRS; 125.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	1160.2	(NULL)
24.04	31.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 1932 CFS-HRS; 159.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	1160.2	(NULL)
24.04	31.5	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 1932 CFS-HRS; 159.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	220.6	(RUNOFF)
20.86	4.2	(RUNOFF)
24.02	3.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	204.5	313.75
20.73	4.3	310.35
24.09	3.3	310.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 33.8 (RUNOFF)
12.16

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.63 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS
WITH .48 AC-FT ( .09 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 377.99.
\*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 29.2 380.63
12.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-
FEET.

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\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.
\*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 29.2 338.28
12.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 100.5 (RUNOFF)
12.19 2.0 (RUNOFF)
18.65

24.02 1.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.63 WATERSHED INCHES; 118 CFS-HRS; 9.7 ACRE-
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS
WITH 1.02 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 354.08.
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.27 84.8 357.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.93 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-
FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.26 113.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.84 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 34

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.26 113.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.84 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.
\*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.26 113.8 330.82



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.84 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	113.8	(RUNOFF)
15.84	3.3	(RUNOFF)
17.34	2.5	(RUNOFF)
18.61	2.0	(RUNOFF)
18.84	2.0	(RUNOFF)
24.00	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.03 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	206.2	(NULL)
18.82	5.1	(NULL)
21.94	4.1	(NULL)
24.00	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.92 WATERSHED INCHES; 244 CFS-HRS; 20.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 35

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.47	98.6	332.51

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06 SQ.MI.

HRS	2.88 CFS	3.36 CFS	3.84 CFS	4.32 CFS	4.80 CFS	5.28 CFS	5.76 CFS	6.24 CFS
2.88 ELEV	326.00	326.00	326.00	326.00	326.00	326.00	326.00	326.01
3.36 ELEV	326.01	326.01	326.01	326.01	326.01	326.01	326.01	326.02
3.84 ELEV	326.02	326.02	326.02	326.02	326.02	326.02	326.02	326.02

.09								
3.84 ELEV	326.02	326.02	326.02	326.03	326.03	326.03	326.03	
326.04								
4.32 CFS	.09	.10	.11	.11	.12	.13	.13	
.14								
4.32 ELEV	326.04	326.04	326.04	326.05	326.05	326.05	326.06	
326.06								
4.80 CFS	.15	.16	.17	.18	.18	.19	.20	
.21								
4.80 ELEV	326.06	326.07	326.07	326.07	326.08	326.08	326.08	
326.09								
5.28 CFS	.22	.23	.24	.25	.26	.27	.28	
.29								
5.28 ELEV	326.09	326.10	326.10	326.10	326.11	326.11	326.12	
326.12								
5.76 CFS	.30	.31	.32	.33	.35	.36	.37	
.38								
5.76 ELEV	326.13	326.13	326.14	326.14	326.15	326.15	326.16	
326.16								
6.24 CFS	.39	.41	.42	.43	.45	.46	.47	
.49								
6.24 ELEV	326.17	326.17	326.18	326.18	326.19	326.19	326.20	
326.20								
6.72 CFS	.50	.52	.53	.55	.56	.58	.60	
.61								
6.72 ELEV	326.21	326.22	326.22	326.23	326.24	326.24	326.25	
326.26								
7.20 CFS	.63	.65	.67	.68	.70	.72	.74	
.76								
7.20 ELEV	326.26	326.27	326.28	326.29	326.30	326.30	326.31	
326.32								
7.68 CFS	.78	.80	.82	.84	.86	.88	.90	
.93								
7.68 ELEV	326.33	326.34	326.34	326.35	326.36	326.37	326.38	
326.39								
8.16 CFS	.95	.97	.99	1.02	1.04	1.07	1.09	
1.11								
8.16 ELEV	326.40	326.41	326.42	326.43	326.44	326.45	326.46	
326.47								
8.64 CFS	1.14	1.17	1.19	1.22	1.24	1.27	1.30	
1.32								
8.64 ELEV	326.48	326.49	326.50	326.51	326.52	326.53	326.54	
326.56								
9.12 CFS	1.35	1.38	1.41	1.44	1.48	1.51	1.54	
1.58								
9.12 ELEV	326.57	326.58	326.59	326.61	326.62	326.63	326.65	
326.66								
9.60 CFS	1.62	1.65	1.69	1.73	1.78	1.82	1.86	
1.91								
9.60 ELEV	326.68	326.69	326.71	326.73	326.75	326.76	326.78	
326.80								
10.08 CFS	1.95	2.00	2.05	2.10	2.15	2.20	2.26	
2.32								
10.08 ELEV	326.82	326.84	326.86	326.88	326.90	326.93	326.95	
326.98								
10.56 CFS	2.39	2.46	2.54	2.63	2.73	2.84	2.96	
3.09								
10.56 ELEV	327.00	327.03	327.07	327.11	327.15	327.19	327.24	
327.30								
11.04 CFS	3.22	3.37	3.53	3.70	3.89	4.10	4.32	
4.56								
11.04 ELEV	327.35	327.42	327.48	327.56	327.64	327.72	327.81	
327.91								
11.52 CFS	4.81	5.09	5.42	5.80	6.22	6.71	7.29	

8.00								
11.52	ELEV	328.02	328.14	328.28	328.43	328.61	328.82	329.06
329.36								
12.00	CFS	8.94	13.84	49.29	83.43	89.28	93.74	96.79
98.34								
12.00	ELEV	329.76	330.28	330.82	331.35	331.80	332.14	332.37
332.49								
12.48	CFS	98.62	98.16	97.10	95.58	93.74	91.68	89.46
87.12								
12.48	ELEV	332.51	332.48	332.40	332.28	332.14	331.98	331.81
331.63								
12.96	CFS	84.71	82.28	78.99	60.45	49.15	43.81	39.58
36.14								
12.96	ELEV	331.45	331.26	331.08	330.92	330.82	330.76	330.70
330.66								
13.44	CFS	33.30	30.89	28.97	27.36	25.86	24.50	23.25
22.13								

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13.44	ELEV	330.62	330.58	330.55	330.53	330.50	330.48	330.46
330.44								
13.92	CFS	21.12	20.22	19.47	18.78	18.14	17.53	16.95
16.41								
13.92	ELEV	330.42	330.40	330.39	330.38	330.37	330.36	330.35
330.34								
14.40	CFS	15.91	15.43	14.99	14.62	14.25	13.88	13.52
13.18								
14.40	ELEV	330.33	330.32	330.31	330.30	330.29	330.29	330.28
330.27								
14.88	CFS	12.84	12.51	12.19	11.87	11.56	11.26	10.96
10.69								
14.88	ELEV	330.26	330.26	330.25	330.24	330.23	330.23	330.22
330.22								
15.36	CFS	10.43	10.20	10.00	9.98	9.97	9.95	9.93
9.91								
15.36	ELEV	330.21	330.20	330.20	330.19	330.19	330.18	330.17
330.16								
15.84	CFS	9.89	9.87	9.84	9.82	9.79	9.77	9.74
9.71								
15.84	ELEV	330.15	330.14	330.13	330.12	330.11	330.10	330.09
330.08								
16.32	CFS	9.68	9.65	9.62	9.59	9.56	9.52	9.49
9.46								
16.32	ELEV	330.07	330.05	330.04	330.03	330.01	330.00	329.99
329.97								
16.80	CFS	9.42	9.39	9.36	9.32	9.29	9.25	9.21
9.18								
16.80	ELEV	329.96	329.94	329.93	329.91	329.90	329.89	329.87
329.85								
17.28	CFS	9.14	9.10	9.07	9.03	8.99	8.95	8.91
8.87								
17.28	ELEV	329.84	329.82	329.81	329.79	329.78	329.76	329.74
329.73								
17.76	CFS	8.83	8.79	8.75	8.71	8.67	8.63	8.59
8.54								
17.76	ELEV	329.71	329.69	329.68	329.66	329.64	329.62	329.61

329.59							
18.24 CFS	8.50	8.46	8.42	8.38	8.33	8.29	8.25
8.21							
18.24 ELEV	329.57	329.55	329.54	329.52	329.50	329.48	329.47
329.45							
18.72 CFS	8.17	8.13	8.09	8.05	8.01	7.96	7.92
7.88							
18.72 ELEV	329.43	329.41	329.40	329.38	329.36	329.35	329.33
329.31							
19.20 CFS	7.84	7.80	7.77	7.73	7.69	7.65	7.61
7.57							
19.20 ELEV	329.29	329.28	329.26	329.25	329.23	329.21	329.20
329.18							
19.68 CFS	7.54	7.50	7.46	7.42	7.39	7.35	7.32
7.28							
19.68 ELEV	329.17	329.15	329.13	329.12	329.10	329.09	329.07
329.06							
20.16 CFS	7.24	7.21	7.17	7.14	7.10	7.07	7.04
7.00							
20.16 ELEV	329.04	329.03	329.01	329.00	328.98	328.97	328.95
328.94							
20.64 CFS	6.97	6.93	6.90	6.87	6.84	6.80	6.77
6.74							
20.64 ELEV	328.93	328.91	328.90	328.88	328.87	328.86	328.84
328.83							
21.12 CFS	6.71	6.67	6.64	6.61	6.58	6.55	6.52
6.49							
21.12 ELEV	328.82	328.80	328.79	328.78	328.76	328.75	328.74
328.72							
21.60 CFS	6.46	6.43	6.39	6.36	6.33	6.31	6.28
6.25							
21.60 ELEV	328.71	328.70	328.69	328.67	328.66	328.65	328.64
328.62							
22.08 CFS	6.22	6.19	6.16	6.13	6.10	6.07	6.05
6.02							
22.08 ELEV	328.61	328.60	328.59	328.57	328.56	328.55	328.54
328.53							
22.56 CFS	5.99	5.96	5.93	5.91	5.88	5.85	5.82
5.80							
22.56 ELEV	328.52	328.50	328.49	328.48	328.47	328.46	328.45
328.43							
23.04 CFS	5.77	5.74	5.72	5.69	5.66	5.64	5.61
5.59							
23.04 ELEV	328.42	328.41	328.40	328.39	328.38	328.37	328.36
328.35							
23.52 CFS	5.56	5.53	5.51	5.48	5.46	5.43	5.41
5.38							
23.52 ELEV	328.34	328.32	328.31	328.30	328.29	328.28	328.27
328.26							
24.00 CFS	5.36	5.33	5.30	5.27	5.23	5.19	5.14
5.10							
24.00 ELEV	328.25	328.24	328.23	328.21	328.20	328.18	328.16
328.14							
24.48 CFS	5.05	5.01	4.97	4.92	4.88	4.84	4.79
4.75							
24.48 ELEV	328.12	328.10	328.09	328.07	328.05	328.03	328.01
328.00							
24.96 CFS	4.71	4.67	4.63	4.59	4.55		
24.96 ELEV	327.98	327.96	327.94	327.93	327.91		

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.43 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-  
FEET.

DURATION (HRS)	2	4	6	8	10	12	14
FLOW (CFS)	19	10	9	7	6	5	5 TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.13	11.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.03 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.45	101.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.26 WATERSHED INCHES; 233 CFS-HRS; 19.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.27	99.5	(RUNOFF)
20.67	2.3	(RUNOFF)
23.97	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.94 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.34	1251.5	(NULL)
24.04	33.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.01 WATERSHED INCHES; 2057 CFS-HRS; 170.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 42

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	1458.5	(NULL)
24.04	36.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.08 WATERSHED INCHES; 2311 CFS-HRS; 191.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	1558.3	(NULL)
24.03	42.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.09 WATERSHED INCHES; 2541 CFS-HRS; 210.0 ACRE-  
FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	1508.0	291.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.09 WATERSHED INCHES; 2540 CFS-HRS; 209.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	1508.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.09 WATERSHED INCHES; 2540 CFS-HRS; 209.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	114.7	(RUNOFF)
23.09	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.00 WATERSHED INCHES; 154 CFS-HRS; 12.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 46  
1

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	143.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	4.90 WATERSHED INCHES;	199 CFS-HRS;
	FEET.	16.4 ACRE-

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	257.9	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	4.94 WATERSHED INCHES;	352 CFS-HRS;
	FEET.	29.1 ACRE-

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	140.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.03	2.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	4.93 WATERSHED INCHES;	149 CFS-HRS;
	FEET.	12.3 ACRE-

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	1575.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	5.08 WATERSHED INCHES;	2689 CFS-HRS;
	FEET.	222.2 ACRE-

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	1803.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		

5.06 WATERSHED INCHES; 3041 CFS-HRS; 251.3 ACRE-  
FEET.

OPERATION REACH XSECTION 51

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	1769.2	287.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.06 WATERSHED INCHES; 3040 CFS-HRS; 251.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	4.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.06 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	4.3	288.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.06 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
AT XSECTION 54  
\*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.47 WATERSHED INCHES; 2 CFS-HRS; .2 ACRE-



FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	91.3	(RUNOFF)
18.86	2.1	(RUNOFF)
24.03	1.5	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.65 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	1805.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.05 WATERSHED INCHES; 3137 CFS-HRS; 259.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	4.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .79 WATERSHED INCHES; 8 CFS-HRS; .7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	1808.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.98 WATERSHED INCHES; 3145 CFS-HRS; 259.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	61.6	(RUNOFF)

24.02 1.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.86 WATERSHED INCHES; 66 CFS-HRS; 5.5 ACRE-
FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 1835.6 (NULL)
12.49

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.95 WATERSHED INCHES; 3211 CFS-HRS; 265.4 ACRE-
FEET.

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OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 1835.6 (NULL)
12.49

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.95 WATERSHED INCHES; 3211 CFS-HRS; 265.4 ACRE-
FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 37.1 (RUNOFF)
12.23 1.0 (RUNOFF)
18.66

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.78 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-
FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 1854.7 (NULL)
12.49

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.93 WATERSHED INCHES; 3253 CFS-HRS; 268.8 ACRE-
FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	1801.8	251.27
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.93 WATERSHED INCHES;	3252 CFS-HRS;	268.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	25.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.41 WATERSHED INCHES;	38 CFS-HRS;	3.2 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 61

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	19.3	335.25
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.41 WATERSHED INCHES;	38 CFS-HRS;	3.2 ACRE-
FEET.		

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.67	19.0	300.92
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.41 WATERSHED INCHES;	38 CFS-HRS;	3.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	109.3	(RUNOFF)
23.10	2.1	(RUNOFF)
24.03	2.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.83 WATERSHED INCHES;	113 CFS-HRS;	9.4 ACRE-
FEET.		

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS. \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS. \*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.44	52.1	296.06
23.12	2.0	287.56
24.04	1.9	287.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.83 WATERSHED INCHES; 113 CFS-HRS; 9.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 67

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.55	67.2	(NULL)
20.86	3.1	(NULL)
24.04	2.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.13 WATERSHED INCHES; 151 CFS-HRS; 12.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	220.8	(RUNOFF)
18.64	5.1	(RUNOFF)
21.97	4.1	(RUNOFF)
24.03	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.48 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	249.0	(NULL)

18.87	8.5	(NULL)
20.87	7.5	(NULL)
23.10	6.3	(NULL)
24.03	6.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.33 WATERSHED INCHES; 376 CFS-HRS; 31.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	183.4	249.02
24.09	5.9	247.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.33 WATERSHED INCHES; 376 CFS-HRS; 31.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	45.5	(RUNOFF)
15.83	1.3	(RUNOFF)
17.33	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.90 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	27.4	267.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.90 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	25.6	248.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.91 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-

FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	237.2	(RUNOFF)
15.84	9.7	(RUNOFF)
17.34	7.6	(RUNOFF)
18.86	6.1	(RUNOFF)
21.45	5.1	(RUNOFF)
24.01	4.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.26 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.59	1869.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.76 WATERSHED INCHES; 3483 CFS-HRS; 287.9 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.37	207.0	(NULL)
20.13	8.7	(NULL)
24.09	6.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.38 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.58	2051.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.72 WATERSHED INCHES; 3897 CFS-HRS; 322.1 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,

CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 77.  
 \*\*\*

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.58	2051.4	231.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.72 WATERSHED INCHES; 3897 CFS-HRS; 322.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	133.1	(RUNOFF)
15.84	5.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.01	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.89 WATERSHED INCHES; 128 CFS-HRS; 10.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 79

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.58	2088.0	(NULL)
23.97	66.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.69 WATERSHED INCHES; 4025 CFS-HRS; 332.7 ACRE-FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.66	2077.4	218.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.69 WATERSHED INCHES; 4024 CFS-HRS; 332.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	154.4	(RUNOFF)
15.84	5.2	(RUNOFF)
17.34	4.0	(RUNOFF)
19.47	3.1	(RUNOFF)
19.74	3.0	(RUNOFF)
20.05	3.0	(RUNOFF)
24.00	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.24 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.65	2106.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.67 WATERSHED INCHES; 4164 CFS-HRS; 344.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	76.0	(RUNOFF)
17.34	2.3	(RUNOFF)
24.01	1.3	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.55 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.65	2123.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.65 WATERSHED INCHES; 4236 CFS-HRS; 350.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
-----------------------------------	---------------------	------



12.25	237.6	(RUNOFF)
18.67	7.0	(RUNOFF)
20.68	6.2	(RUNOFF)
23.12	5.2	(RUNOFF)
24.01	4.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.67 WATERSHED INCHES; 281 CFS-HRS; 23.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	2216.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 4517 CFS-HRS; 373.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	64.3	(RUNOFF)
20.04	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.67 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	2227.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.58 WATERSHED INCHES; 4575 CFS-HRS; 378.1 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
 STARTING TIME = .00 RAIN DEPTH = 8.47 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =99 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	99.6	(RUNOFF)
20.13	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.18 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	99.4	390.78
20.19	2.5	389.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.18 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	175.5	(RUNOFF)
20.68	4.1	(RUNOFF)
23.97	3.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.00 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-FEET.

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OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	270.3	(NULL)
20.14	6.8	(NULL)
23.12	5.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.07 WATERSHED INCHES; 359 CFS-HRS; 29.6 ACRE-FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,  
VALUE EXTRAPOLATED.  
\*\*\*

OPERATION RESVOR      STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	268.8	384.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.04 WATERSHED INCHES;      357 CFS-HRS;      29.5 ACRE-FEET.

OPERATION REACH      XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	268.4	369.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.05 WATERSHED INCHES;      357 CFS-HRS;      29.5 ACRE-FEET.

OPERATION RUNOFF      XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	226.3	(RUNOFF)
20.13	5.8	(RUNOFF)
23.74	4.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.74 WATERSHED INCHES;      295 CFS-HRS;      24.4 ACRE-FEET.

OPERATION ADDHYD      XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	479.2	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.90 WATERSHED INCHES;      653 CFS-HRS;      54.0 ACRE-FEET.

OPERATION REACH      XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	479.0	358.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.90 WATERSHED INCHES;      653 CFS-HRS;      53.9 ACRE-

FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	242.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.38 WATERSHED INCHES; 350 CFS-HRS; 28.9 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 21, TRUNCATED AT 400 POINTS WITH  
 2.68 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE REMAINING IN RESERVOIR AT ELEV. 370.65.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	153.9	378.71

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.69 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	38.4	(RUNOFF)
15.83	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.11 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-FEET.

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OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.91	127.4	360.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	184.3	(RUNOFF)
18.87	4.1	(RUNOFF)
22.76	3.1	(RUNOFF)
23.09	3.1	(RUNOFF)
24.03	2.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.26 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	571.3	(NULL)
24.01	12.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.75 WATERSHED INCHES; 837 CFS-HRS; 69.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	69.3	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.95 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	675.4	(NULL)
24.00	20.3	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1151 CFS-HRS; 95.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	717.1	(NULL)
24.00	21.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	717.1	(NULL)
24.00	21.4	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32  
 SQ.MI.

2.94 CFS	.00	.01	.01	.01	.01	.01	.01
.02							
3.42 CFS	.02	.02	.02	.03	.03	.03	.04
.04							
3.90 CFS	.04	.05	.05	.05	.06	.06	.07
.07							
4.38 CFS	.07	.08	.08	.09	.09	.10	.10
.11							
4.86 CFS	.12	.12	.13	.13	.14	.16	.17
.19							
5.34 CFS	.21	.23	.25	.27	.30	.34	.38
.42							
5.82 CFS	.47	.53	.59	.65	.72	.79	.86
.93							
6.30 CFS	1.01	1.09	1.17	1.25	1.35	1.45	1.57
1.68							
6.78 CFS	1.80	1.93	2.06	2.19	2.32	2.47	2.62
2.77							
7.26 CFS	2.93	3.09	3.25	3.41	3.58	3.75	3.92
4.09							
7.74 CFS	4.27	4.46	4.65	4.84	5.05	5.25	5.47
5.68							
8.22 CFS	5.88	6.09	6.34	6.65	6.98	7.33	7.71
8.11							
8.70 CFS	8.51	8.91	9.30	9.68	10.06	10.46	10.89
11.33							
9.18 CFS	11.78	12.28	12.83	13.40	13.97	14.56	16.17
17.55							
9.66 CFS	18.75	19.86	20.90	21.89	22.84	23.79	24.75
25.74							
10.14 CFS	26.75	27.77	28.76	29.74	30.73	31.74	32.79
33.91							
10.62 CFS	35.17	36.62	38.28	40.16	42.26	44.60	47.13
49.87							
11.10 CFS	52.94	56.42	60.35	64.63	69.30	74.37	79.78
85.57							
11.58 CFS	93	104	116	130	148	171	203
252							
12.06 CFS	347	461	576	654	703	717	700
656							

12.54	CFS	598	537	481	433	394	362	335
312								
13.02	CFS	292	275	259	245	232	222	212
200								
13.50	CFS	172	152	138	128	119	112	106
101								
13.98	CFS	96.00	92.07	88.58	85.43	82.57	79.99	77.65
75.52								
14.46	CFS	73.55	71.66	69.82	68.02	66.31	64.69	63.13
61.60								
14.94	CFS	60.07	58.58	57.12	55.66	54.20	52.79	51.49
50.31								
15.42	CFS	49.25	48.31	47.48	46.70	45.97	45.25	44.63
44.13								
15.90	CFS	43.67	43.17	42.65	42.15	41.70	41.29	40.90
40.52								

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16.38	CFS	40.16	39.84	39.52	39.18	38.85	38.57	38.31
38.03								
16.86	CFS	37.72	37.43	37.18	36.95	36.69	36.38	36.02
35.70								
17.34	CFS	35.46	35.22	34.92	34.56	34.21	33.90	33.61
33.33								
17.82	CFS	33.01	32.69	32.39	32.13	31.88	31.59	31.30
31.02								
18.30	CFS	30.78	30.55	30.27	30.02	29.87	29.77	29.66
29.50								
18.78	CFS	29.37	29.31	29.24	29.12	28.98	28.87	28.77
28.67								
19.26	CFS	28.58	28.50	28.43	28.37	28.32	28.25	28.13
28.01								
19.74	CFS	27.95	27.87	27.73	27.59	27.51	27.49	27.44
27.35								
20.22	CFS	27.24	27.15	27.06	26.92	26.75	26.64	26.59
26.53								
20.70	CFS	26.42	26.30	26.24	26.19	26.08	25.95	25.83
25.72								
21.18	CFS	25.62	25.52	25.43	25.35	25.29	25.23	25.16
25.05								
21.66	CFS	24.92	24.84	24.77	24.65	24.57	24.53	24.44
24.32								
22.14	CFS	24.20	24.10	24.00	23.91	23.82	23.74	23.67
23.59								
22.62	CFS	23.45	23.32	23.25	23.15	23.01	22.86	22.77
22.75								
23.10	CFS	22.70	22.59	22.48	22.40	22.32	22.24	22.13
21.98								
23.58	CFS	21.83	21.76	21.72	21.66	21.54	21.39	21.28
21.36								
24.06	CFS	21.29	20.37	18.92	17.46	16.14	14.84	13.58
12.43								
24.54	CFS	11.42	10.93	10.65	10.43	10.23	10.05	9.88
9.72								
25.02	CFS	9.57	9.43	9.29	9.15	9.02	8.89	8.77
8.65								

25.50 CFS 8.53 8.41 8.29 8.18 8.07 7.95 7.85  
7.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.3 ACRE-  
FEET.

DURATION(HRS) 2 4 6 8 10 12 14 16  
FLOW(CFS) 118 55 38 30 27 24 21 10

DURATION(HRS) 17  
FLOW(CFS) 8 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
\*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.36 717.1 335.71  
24.00 21.4 331.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 17

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.14 98.2 (RUNOFF)  
17.34 2.2 (RUNOFF)  
24.00 1.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.01 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.18 111.9 (RUNOFF)  
18.86 2.1 (RUNOFF)  
19.75 2.0 (RUNOFF)  
24.02 1.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.65 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-



FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	111.9	(NULL)
18.86	2.1	(NULL)
19.75	2.0	(NULL)
24.02	1.5	(NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99							
	MAIN	TIME	INCREMENT = .060 hr,	DRAINAGE AREA = .03				
1.62 CFS	.00	.01	.02	.04	.06	.09	.11	
.14								
2.10 CFS	.16	.19	.21	.24	.26	.29	.31	
.33								
2.58 CFS	.35	.38	.40	.43	.45	.47	.49	
.51								
3.06 CFS	.53	.55	.57	.59	.62	.65	.67	
.68								
3.54 CFS	.71	.73	.75	.76	.77	.79	.82	
.84								
4.02 CFS	.86	.89	.92	.94	.95	.95	.97	
1.00								
4.50 CFS	1.03	1.05	1.05	1.06	1.08	1.10	1.12	
1.14								
4.98 CFS	1.16	1.17	1.18	1.20	1.23	1.26	1.26	
1.26								
5.46 CFS	1.27	1.30	1.33	1.36	1.37	1.38	1.38	
1.37								
5.94 CFS	1.39	1.44	1.48	1.49	1.50	1.53	1.56	
1.58								
6.42 CFS	1.62	1.66	1.70	1.74	1.77	1.79	1.81	
1.86								
6.90 CFS	1.90	1.91	1.94	1.99	2.04	2.09	2.12	
2.14								
7.38 CFS	2.17	2.22	2.26	2.28	2.31	2.33	2.38	
2.42								
7.86 CFS	2.45	2.50	2.54	2.58	2.62	2.67	2.68	
2.70								
8.34 CFS	2.76	2.80	2.82	2.85	2.90	2.96	3.01	
3.04								
8.82 CFS	3.06	3.08	3.10	3.15	3.23	3.30	3.37	
3.46								
9.30 CFS	3.59	3.72	3.83	3.93	4.03	4.14	4.27	
4.41								
9.78 CFS	4.55	4.66	4.77	4.87	4.99	5.13	5.28	
5.41								
10.26 CFS	5.53	5.63	5.74	5.87	6.02	6.20	6.45	
6.78								

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10.74 CFS	7.18	7.61	8.06	8.53	8.98	9.45	10.02
-----------	------	------	------	------	------	------	-------

10.70								
11.22 CFS	11.50	12.31	13.15	14.01	14.87	15.75	17.47	
20.49								
11.70 CFS	23	26	30	36	44	56	75	
100								
12.18 CFS	112	99	77	60	47	39	33	
29								
12.66 CFS	24.19	20.77	18.57	17.06	15.88	14.87	13.92	
13.02								
13.14 CFS	12.13	11.38	10.76	10.22	9.71	9.20	8.70	
8.22								
13.62 CFS	7.77	7.38	7.08	6.85	6.66	6.51	6.40	
6.29								
14.10 CFS	6.17	6.04	5.89	5.75	5.63	5.53	5.43	
5.31								
14.58 CFS	5.17	5.02	4.89	4.78	4.68	4.57	4.45	
4.33								
15.06 CFS	4.22	4.09	3.96	3.85	3.78	3.74	3.72	
3.71								
15.54 CFS	3.70	3.67	3.62	3.56	3.52	3.51	3.51	
3.47								
16.02 CFS	3.41	3.36	3.33	3.31	3.29	3.25	3.21	
3.18								
16.50 CFS	3.14	3.09	3.06	3.04	3.02	2.99	2.95	
2.92								
16.98 CFS	2.90	2.88	2.85	2.80	2.74	2.70	2.69	
2.69								
17.46 CFS	2.65	2.59	2.54	2.50	2.49	2.47	2.43	
2.39								
17.94 CFS	2.36	2.35	2.33	2.29	2.25	2.22	2.21	
2.19								
18.42 CFS	2.16	2.13	2.14	2.16	2.17	2.15	2.13	
2.13								
18.90 CFS	2.13	2.11	2.08	2.07	2.06	2.06	2.06	
2.06								
19.38 CFS	2.06	2.06	2.06	2.05	2.02	2.00	2.00	
2.00								
19.86 CFS	1.97	1.95	1.95	1.98	1.99	1.97	1.95	
1.93								
20.34 CFS	1.92	1.90	1.86	1.86	1.88	1.90	1.88	
1.86								
20.82 CFS	1.86	1.86	1.85	1.82	1.80	1.79	1.79	
1.79								
21.30 CFS	1.79	1.78	1.78	1.78	1.78	1.75	1.72	
1.72								
21.78 CFS	1.73	1.71	1.71	1.72	1.72	1.69	1.67	
1.66								
22.26 CFS	1.65	1.65	1.65	1.65	1.65	1.64	1.61	
1.58								
22.74 CFS	1.59	1.59	1.56	1.54	1.54	1.57	1.58	
1.56								
23.22 CFS	1.53	1.52	1.52	1.51	1.50	1.47	1.45	
1.46								
23.70 CFS	1.48	1.48	1.46	1.42	1.41	1.47	1.46	
1.13								
24.18 CFS	.67	.35	.18	.09	.05	.02	.01	
.00								

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.65 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-  
 FEET.

DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	11	6	4	3	2	2	2	2

DURATION (HRS)	18	20	21
FLOW (CFS)	1	1	0

OPERATION RUNOFF XSECTION 119

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.13	28.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.81 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 120

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.17	137.4	(NULL)
15.82	4.3	(NULL)
17.32	3.3	(NULL)
21.96	2.1	(NULL)
24.01	1.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.49 WATERSHED INCHES; 151 CFS-HRS; 12.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.16	234.3	(NULL)
15.83	7.2	(NULL)
17.33	5.5	(NULL)
19.74	4.1	(NULL)
20.06	4.1	(NULL)
23.06	3.2	(NULL)
23.72	3.1	(NULL)
24.00	3.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.30 WATERSHED INCHES; 246 CFS-HRS; 20.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.15	179.0	(RUNOFF)

15.84	5.4	(RUNOFF)
17.34	4.2	(RUNOFF)
19.75	3.1	(RUNOFF)
20.05	3.1	(RUNOFF)
24.00	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.60 WATERSHED INCHES; 172 CFS-HRS; 14.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.15	413.1	(NULL)
15.84	12.6	(NULL)
17.34	9.7	(NULL)
19.74	7.2	(NULL)
20.06	7.2	(NULL)
21.95	6.2	(NULL)
24.00	5.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.99 WATERSHED INCHES; 418 CFS-HRS; 34.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.20	991.1	(NULL)
18.82	37.0	(NULL)
19.72	35.2	(NULL)
20.05	34.7	(NULL)
20.59	33.4	(NULL)
20.80	32.9	(NULL)
21.94	30.8	(NULL)
23.04	28.5	(NULL)
23.69	27.1	(NULL)
24.00	26.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.18 WATERSHED INCHES; 1640 CFS-HRS; 135.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.37	915.7	317.25
20.07	34.7	314.40

24.06 26.7 314.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.18 WATERSHED INCHES; 1639 CFS-HRS; 135.4 ACRE-
FEET.

OPERATION RUNOFF XSECTION 24

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Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows include values like 12.25, 18.66, 20.68, 23.12, 24.00 and corresponding discharge and elevation data.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.34 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-
FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE
TIME INCREMENT OF .043 HOURS.
\*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES
FIRST NEGATIVE VALUE IS 0 CFS.
\*\*\*

OPERATION RESVOR STRUCTURE 31

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows include values like 12.30, 18.69, 20.69, 23.15, 24.03 and corresponding discharge and elevation data.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.35 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 25

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows include values like 12.26, 18.65, 20.67, 23.98 and corresponding discharge and elevation data.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.26 WATERSHED INCHES; 302 CFS-HRS; 25.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 26

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	395.1	(NULL)
18.66	10.2	(NULL)
20.14	9.4	(NULL)
20.68	8.9	(NULL)
23.14	7.4	(NULL)
23.78	7.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.30 WATERSHED INCHES; 509 CFS-HRS; 42.1 ACRE-  
FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	384.2	319.84
20.20	9.4	316.93
20.74	8.9	316.91
23.20	7.4	316.81
23.83	7.0	316.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.29 WATERSHED INCHES; 509 CFS-HRS; 42.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	190.4	(RUNOFF)
20.67	4.2	(RUNOFF)
24.01	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.89 WATERSHED INCHES; 228 CFS-HRS; 18.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	1078.7	(NULL)

20.09	39.0	(NULL)
23.08	31.9	(NULL)
24.05	29.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.14 WATERSHED INCHES; 1866 CFS-HRS; 154.2 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	1455.6	(NULL)
24.04	36.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.17 WATERSHED INCHES; 2375 CFS-HRS; 196.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	1455.6	(NULL)
24.04	36.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.17 WATERSHED INCHES; 2375 CFS-HRS; 196.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	264.7	(RUNOFF)
20.66	5.1	(RUNOFF)
23.11	4.2	(RUNOFF)
24.02	3.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	244.6	314.09
20.73	5.1	310.41
23.19	4.2	310.34

24.09 3.9 310.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 33

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.16 39.4 (RUNOFF)
15.84 1.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.86 WATERSHED INCHES; 43 CFS-HRS; 3.5 ACRE-
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS
WITH .53 AC-FT ( .10 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 378.24.
\*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.23 32.9 380.81

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.68 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.
\*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.23 32.9 338.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.68 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)



12.19	118.2	(RUNOFF)
20.86	2.0	(RUNOFF)
24.02	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.86 WATERSHED INCHES; 139 CFS-HRS; 11.5 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
 WITH 1.05 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 354.18.  
 \*\*\*

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OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	96.1	357.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.15 WATERSHED INCHES; 127 CFS-HRS; 10.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	128.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	128.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
 \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)			
12.27		128.6	330.88
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)			
7.04 WATERSHED INCHES;		163 CFS-HRS;	13.5 ACRE-
FEET.			

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	135.6	(RUNOFF)
15.84	3.9	(RUNOFF)
20.84	2.1	(RUNOFF)
24.00	1.7	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
7.24 WATERSHED INCHES;	131 CFS-HRS;	10.8 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	245.1	(NULL)
20.83	5.1	(NULL)
24.00	4.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
7.13 WATERSHED INCHES;	294 CFS-HRS;	24.3 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	109.4	333.51

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06 SQ.MI.  
 HRS CFS ELEV HRS CFS ELEV HRS CFS ELEV HRS CFS ELEV HRS CFS ELEV HRS CFS ELEV  
 2.58 CFS .00 .01 .01 .01 .01 .02 .02  
 .02  
 2.58 ELEV 326.00 326.00 326.00 326.00 326.01 326.01 326.01  
 326.01  
 3.06 CFS .02 .03 .03 .04 .04 .05 .05  
 .06  
 3.06 ELEV 326.01 326.01 326.01 326.02 326.02 326.02 326.02  
 326.02  
 3.54 CFS .06 .07 .08 .08 .09 .10 .10  
 .11

3.54 ELEV	326.03	326.03	326.03	326.04	326.04	326.04	326.04
326.05							
4.02 CFS	.12	.13	.14	.15	.16	.17	.17
.18							
4.02 ELEV	326.05	326.05	326.06	326.06	326.07	326.07	326.07
326.08							
4.50 CFS	.19	.20	.22	.23	.24	.25	.26
.27							
4.50 ELEV	326.08	326.09	326.09	326.09	326.10	326.10	326.11
326.11							
4.98 CFS	.28	.29	.31	.32	.33	.34	.36
.37							
4.98 ELEV	326.12	326.12	326.13	326.13	326.14	326.14	326.15
326.16							
5.46 CFS	.38	.40	.41	.42	.44	.45	.47
.48							
5.46 ELEV	326.16	326.17	326.17	326.18	326.18	326.19	326.20
326.20							
5.94 CFS	.50	.51	.53	.54	.56	.57	.59
.61							
5.94 ELEV	326.21	326.21	326.22	326.23	326.23	326.24	326.25
326.26							
6.42 CFS	.62	.64	.66	.68	.70	.72	.73
.75							
6.42 ELEV	326.26	326.27	326.28	326.28	326.29	326.30	326.31
326.32							
6.90 CFS	.77	.79	.81	.84	.86	.88	.90
.92							
6.90 ELEV	326.33	326.33	326.34	326.35	326.36	326.37	326.38
326.39							
7.38 CFS	.95	.97	.99	1.02	1.04	1.07	1.09
1.12							
7.38 ELEV	326.40	326.41	326.42	326.43	326.44	326.45	326.46
326.47							
7.86 CFS	1.14	1.17	1.20	1.23	1.25	1.28	1.31
1.34							
7.86 ELEV	326.48	326.49	326.50	326.51	326.53	326.54	326.55
326.56							
8.34 CFS	1.37	1.40	1.43	1.46	1.49	1.52	1.55
1.58							
8.34 ELEV	326.57	326.59	326.60	326.61	326.62	326.64	326.65
326.66							
8.82 CFS	1.61	1.65	1.68	1.71	1.75	1.78	1.82
1.85							
8.82 ELEV	326.68	326.69	326.70	326.72	326.73	326.75	326.76
326.78							

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9.30 CFS	1.89	1.93	1.97	2.01	2.06	2.10	2.15
2.20							
9.30 ELEV	326.79	326.81	326.83	326.85	326.86	326.88	326.90
326.92							
9.78 CFS	2.25	2.31	2.37	2.43	2.51	2.58	2.66
2.75							
9.78 ELEV	326.95	326.97	326.99	327.02	327.05	327.08	327.12
327.15							

10.26 CFS	2.84	2.93	3.03	3.13	3.24	3.35	3.47
3.59							
10.26 ELEV	327.19	327.23	327.27	327.32	327.36	327.41	327.46
327.51							
10.74 CFS	3.72	3.86	4.01	4.17	4.33	4.51	4.70
4.90							
10.74 ELEV	327.56	327.62	327.68	327.75	327.82	327.89	327.97
328.06							
11.22 CFS	5.12	5.35	5.60	5.87	6.16	6.46	6.80
7.20							
11.22 ELEV	328.15	328.25	328.35	328.47	328.59	328.71	328.86
329.02							
11.70 CFS	7.65	8.16	8.76	9.48	15.53	37.13	73.75
85.47							
11.70 ELEV	329.21	329.43	329.68	329.98	330.32	330.67	331.04
331.51							
12.18 CFS	93	100	104	107	109	109	109
109							
12.18 ELEV	332.10	332.64	333.00	333.26	333.43	333.50	333.49
333.43							
12.66 CFS	107	106	104	103	101	98	95
93							
12.66 ELEV	333.32	333.19	333.03	332.86	332.69	332.48	332.27
332.05							
13.14 CFS	89.67	86.89	84.17	81.52	71.45	54.38	45.63
40.30							
13.14 ELEV	331.83	331.62	331.41	331.21	331.02	330.87	330.78
330.71							
13.62 CFS	36.11	32.76	30.06	28.17	26.54	25.12	23.88
22.80							
13.62 ELEV	330.66	330.61	330.57	330.54	330.51	330.49	330.47
330.45							
14.10 CFS	21.84	20.99	20.21	19.54	18.94	18.38	17.85
17.35							
14.10 ELEV	330.43	330.42	330.40	330.39	330.38	330.37	330.36
330.35							
14.58 CFS	16.87	16.40	15.95	15.51	15.10	14.75	14.42
14.08							
14.58 ELEV	330.34	330.34	330.33	330.32	330.31	330.30	330.30
330.29							
15.06 CFS	13.74	13.41	13.07	12.74	12.42	12.12	11.85
11.60							
15.06 ELEV	330.28	330.27	330.27	330.26	330.25	330.25	330.24
330.24							
15.54 CFS	11.37	11.16	10.95	10.76	10.57	10.40	10.25
10.11							
15.54 ELEV	330.23	330.23	330.22	330.22	330.21	330.21	330.21
330.20							
16.02 CFS	10.00	9.99	9.97	9.96	9.95	9.93	9.92
9.90							
16.02 ELEV	330.20	330.19	330.19	330.18	330.18	330.17	330.16
330.16							
16.50 CFS	9.88	9.86	9.84	9.82	9.79	9.77	9.75
9.72							
16.50 ELEV	330.15	330.14	330.13	330.12	330.11	330.10	330.09
330.08							
16.98 CFS	9.70	9.67	9.64	9.62	9.59	9.56	9.53
9.50							
16.98 ELEV	330.07	330.06	330.05	330.04	330.03	330.01	330.00
329.99							
17.46 CFS	9.46	9.43	9.40	9.37	9.33	9.30	9.26
9.23							
17.46 ELEV	329.97	329.96	329.95	329.93	329.92	329.90	329.89
329.88							

17.94 CFS	9.19	9.16	9.12	9.08	9.04	9.01	8.97
8.93							
17.94 ELEV	329.86	329.85	329.83	329.81	329.80	329.78	329.77
329.75							
18.42 CFS	8.89	8.85	8.81	8.78	8.74	8.70	8.66
8.62							
18.42 ELEV	329.73	329.72	329.70	329.69	329.67	329.65	329.64
329.62							
18.90 CFS	8.59	8.55	8.51	8.47	8.44	8.40	8.36
8.32							
18.90 ELEV	329.61	329.59	329.57	329.56	329.54	329.53	329.51
329.50							
19.38 CFS	8.29	8.25	8.21	8.18	8.14	8.11	8.07
8.04							
19.38 ELEV	329.48	329.47	329.45	329.44	329.42	329.40	329.39
329.38							
19.86 CFS	8.00	7.96	7.93	7.90	7.86	7.83	7.79
7.76							
19.86 ELEV	329.36	329.35	329.33	329.32	329.30	329.29	329.27
329.26							
20.34 CFS	7.73	7.69	7.66	7.62	7.59	7.56	7.52
7.49							
20.34 ELEV	329.24	329.23	329.22	329.20	329.19	329.17	329.16
329.15							
20.82 CFS	7.46	7.43	7.40	7.36	7.33	7.30	7.27
7.24							

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20.82 ELEV	329.13	329.12	329.11	329.09	329.08	329.07	329.05
329.04							
21.30 CFS	7.20	7.17	7.14	7.11	7.08	7.05	7.02
6.99							
21.30 ELEV	329.03	329.01	329.00	328.99	328.97	328.96	328.95
328.94							
21.78 CFS	6.96	6.93	6.90	6.87	6.84	6.81	6.78
6.76							
21.78 ELEV	328.92	328.91	328.90	328.89	328.87	328.86	328.85
328.84							
22.26 CFS	6.73	6.70	6.67	6.64	6.61	6.59	6.56
6.53							
22.26 ELEV	328.83	328.81	328.80	328.79	328.78	328.77	328.75
328.74							
22.74 CFS	6.50	6.47	6.45	6.42	6.39	6.36	6.34
6.31							
22.74 ELEV	328.73	328.72	328.71	328.70	328.68	328.67	328.66
328.65							
23.22 CFS	6.28	6.26	6.23	6.20	6.18	6.15	6.12
6.10							
23.22 ELEV	328.64	328.63	328.62	328.61	328.59	328.58	328.57
328.56							
23.70 CFS	6.07	6.05	6.02	5.99	5.97	5.94	5.92
5.89							
23.70 ELEV	328.55	328.54	328.53	328.52	328.51	328.50	328.49
328.47							
24.18 CFS	5.85	5.81	5.76	5.71	5.67	5.62	5.57
5.52							

24.18 ELEV	328.46	328.44	328.42	328.40	328.38	328.36	328.34
328.32							
24.66 CFS	5.47	5.42	5.37	5.32	5.27	5.22	5.18
24.66 ELEV	328.30	328.28	328.25	328.23	328.21	328.19	328.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.57 WATERSHED INCHES; 271 CFS-HRS; 22.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	13
FLOW(CFS)	24	10	9	8	7	6	5 TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.13		15.0		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.98 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.48		113.2		(NULL)
23.97		6.2		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.39 WATERSHED INCHES; 283 CFS-HRS; 23.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 40

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PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.26		121.2		(RUNOFF)
18.64		3.2		(RUNOFF)
23.76		2.2		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.33		1568.0		(NULL)

20.07	51.3	(NULL)
24.04	38.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.17 WATERSHED INCHES; 2530 CFS-HRS; 209.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	1815.2	(NULL)
20.09	56.6	(NULL)
24.04	42.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.24 WATERSHED INCHES; 2838 CFS-HRS; 234.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	1926.3	(NULL)
24.03	48.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.24 WATERSHED INCHES; 3117 CFS-HRS; 257.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.43	1871.9	292.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.24 WATERSHED INCHES; 3116 CFS-HRS; 257.5 ACRE-  
 FEET.

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OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.43	1871.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.24 WATERSHED INCHES; 3116 CFS-HRS; 257.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	140.0	(RUNOFF)
20.10	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.16 WATERSHED INCHES; 190 CFS-HRS; 15.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	175.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.06 WATERSHED INCHES; 245 CFS-HRS; 20.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	315.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.10 WATERSHED INCHES; 435 CFS-HRS; 36.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	171.6	(RUNOFF)
21.97	3.0	(RUNOFF)
24.03	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.09 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.42	1956.3	(NULL)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.23 WATERSHED INCHES; 3300 CFS-HRS; 272.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	2239.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.22 WATERSHED INCHES; 3735 CFS-HRS; 308.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	2201.6	287.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.21 WATERSHED INCHES; 3734 CFS-HRS; 308.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	8.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.63 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	8.0	288.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.63 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .85 WATERSHED INCHES; 4 CFS-HRS; .3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	112.9	(RUNOFF)
21.97	2.0	(RUNOFF)
24.03	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.79 WATERSHED INCHES; 120 CFS-HRS; 9.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	2247.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.20 WATERSHED INCHES; 3854 CFS-HRS; 318.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	9.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.28 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	2252.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.12 WATERSHED INCHES; 3867 CFS-HRS; 319.6 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	78.5	(RUNOFF)
24.02	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.92 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	2287.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.09 WATERSHED INCHES; 3952 CFS-HRS; 326.6 ACRE-FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	2287.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.09 WATERSHED INCHES; 3952 CFS-HRS; 326.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	47.3	(RUNOFF)
21.96	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	2312.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.07 WATERSHED INCHES; 4006 CFS-HRS; 331.0 ACRE-FEET.

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OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.58	2253.5	251.67

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.06 WATERSHED INCHES; 4004 CFS-HRS; 330.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	30.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	24.7	335.67

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	24.4	301.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	139.6	(RUNOFF)
20.10	3.1	(RUNOFF)
24.02	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 145 CFS-HRS; 11.9 ACRE-  
 FEET.

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\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.42	70.1	297.03
20.12	3.1	287.70
24.04	2.3	287.60

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.89 WATERSHED INCHES; 145 CFS-HRS; 11.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.51	90.2	(NULL)
18.87	4.3	(NULL)
23.11	3.2	(NULL)
24.04	3.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.22 WATERSHED INCHES; 191 CFS-HRS; 15.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	273.8	(RUNOFF)
18.64	6.1	(RUNOFF)
18.87	6.0	(RUNOFF)
20.87	5.3	(RUNOFF)
24.02	4.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.60 WATERSHED INCHES; 281 CFS-HRS; 23.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 69

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.20	323.9	(NULL)
18.87	10.3	(NULL)
20.64	9.2	(NULL)
20.86	9.0	(NULL)
21.97	8.3	(NULL)
23.75	7.2	(NULL)
24.03	7.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.44 WATERSHED INCHES; 473 CFS-HRS; 39.1 ACRE-FEET.

OPERATION REACH XSECTION 70

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.38	243.9	249.18
20.14	9.6	247.80
24.09	7.1	247.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.44 WATERSHED INCHES; 473 CFS-HRS; 39.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.12	54.7	(RUNOFF)
17.33	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.19	44.5	267.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.07 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-FEET.

OPERATION REACH XSECTION 72

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.27	40.6	248.21

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	312.6	(RUNOFF)
15.84	12.1	(RUNOFF)
17.34	9.4	(RUNOFF)
19.75	7.1	(RUNOFF)
20.08	7.0	(RUNOFF)
21.96	6.2	(RUNOFF)
24.01	5.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.26 WATERSHED INCHES; 302 CFS-HRS; 25.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.57	2344.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.89 WATERSHED INCHES; 4306 CFS-HRS; 355.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	274.2	(NULL)
20.14	10.4	(NULL)
23.14	8.3	(NULL)
24.09	7.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.49 WATERSHED INCHES; 519 CFS-HRS; 42.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.56	2580.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

5.84 WATERSHED INCHES; 4825 CFS-HRS; 398.8 ACRE-  
FEET.

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\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 77.  
\*\*\*

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	2580.4	232.01

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.84 WATERSHED INCHES; 4825 CFS-HRS; 398.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	171.1	(RUNOFF)
15.84	6.1	(RUNOFF)
17.34	4.7	(RUNOFF)
21.96	3.1	(RUNOFF)
24.01	2.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.96 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	2628.2	(NULL)
23.98	78.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.81 WATERSHED INCHES; 4989 CFS-HRS; 412.3 ACRE-  
FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	2602.8	219.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.81 WATERSHED INCHES; 4987 CFS-HRS; 412.2 ACRE-



FEET.

OPERATION RUNOFF XSECTION 81

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.15	194.0	(RUNOFF)
15.84	6.3	(RUNOFF)
17.34	4.9	(RUNOFF)
22.42	3.0	(RUNOFF)
24.00	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.34 WATERSHED INCHES; 177 CFS-HRS; 14.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.64	2640.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.79 WATERSHED INCHES; 5164 CFS-HRS; 426.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.17	97.7	(RUNOFF)
15.84	3.6	(RUNOFF)
20.07	2.1	(RUNOFF)
24.01	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.57 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 84

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.63	2662.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.76 WATERSHED INCHES; 5256 CFS-HRS; 434.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 85

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	307.5	(RUNOFF)
18.67	8.6	(RUNOFF)
20.68	7.6	(RUNOFF)
23.12	6.3	(RUNOFF)
24.01	5.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.71 WATERSHED INCHES; 361 CFS-HRS; 29.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.62	2784.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.68 WATERSHED INCHES; 5617 CFS-HRS; 464.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	76.9	(RUNOFF)
15.84	2.2	(RUNOFF)
22.42	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.87 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.62	2797.8	(NULL)
23.97	90.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.69 WATERSHED INCHES; 5688 CFS-HRS; 470.0 ACRE-  
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.  
RAINTABLE NUMBER 9, ARC 2  
MAIN TIME INCREMENT .060 HOURS

ALTERNATE	1	STORM	2					
STRUCTURE 11	RESVOR	.09	1.39	382.15	12.47	51	566.7	
XSECTION 8	REACH	.17	1.31	357.10	12.52	84	494.1	
STRUCTURE 21	RESVOR	.07	1.91	374.07	13.56F	10F	142.9	
STRUCTURE 22	RESVOR	.07	1.91	353.09	13.68F	10F	142.9	
STRUCTURE 23	RESVOR	.32	1.39	---	12.47	112	350.0	
XSECTION 16	REACH	.32	1.39	332.30	12.47	112	350.0	
STRUCTURE 24	RESVOR	.03	2.46	---	12.18	38	1266.7	
XSECTION 20	ADDHYD	.05	2.19	---	12.16	75	1500.0	
XSECTION 23	REACH	.41	1.52	315.42	12.39	166	404.9	
STRUCTURE 31	RESVOR	.05	1.55	362.31	12.46	28	560.0	
STRUCTURE 1	RESVOR	.60	1.50	---	12.37	275	458.3	
STRUCTURE 32	RESVOR	.01	2.01	379.28	13.56R	1R	100.0	
STRUCTURE 33	RESVOR	.03	2.08	355.98	12.47	18	600.0	
STRUCTURE 34	RESVOR	.04	2.06	---	12.48	18	450.0	
STRUCTURE 35	RESVOR	.06	1.85	329.42	13.93T	8T	133.3	
XSECTION 141	ADDHYD	.07	1.75	---	13.90T	8T	114.3	
XSECTION 44	REACH	.77	1.55	290.12	12.53	345	448.1	
STRUCTURE 2	RESVOR	.77	1.55	---	12.53	345	448.1	
XSECTION 49	ADDHYD	.82	1.54	---	12.52	362	441.5	
XSECTION 51	REACH	.93	1.53	284.50	12.62	404	434.4	
XSECTION 60	ADDHYD	1.01	1.47	---	12.61	418	413.9	
STRUCTURE 3	RESVOR	1.01	1.47	---	12.61	418	413.9	
XSECTION 63	REACH	1.02	1.46	249.52	12.78	396	388.2	
STRUCTURE 61	RESVOR	.01	1.71	332.36	12.74	5	500.0	
STRUCTURE 62	RESVOR	.05	.83	290.42	12.43	12	240.0	
STRUCTURE 63	RESVOR	.01	1.40	263.40	12.49	3	300.0	
XSECTION 76	ADDHYD	1.28	1.35	---	12.75	443	346.1	
XSECTION 77	REACH	1.28	1.35	229.16	12.83	442	345.3	

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL		DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE		
	OPERATION					TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE		1	STORM	2				
XSECTION	88	ADDHYD	1.55	1.27	---	12.80	476	307.1
RAINFALL OF		4.91 inches AND		24.00 hr	DURATION, BEGINS AT		.0 hrs.	
ALTERNATE		1	STORM	10				
STRUCTURE	11	RESVOR	.09	2.81	383.02	12.34	121	1344.4
XSECTION	8	REACH	.17	2.70	357.82	12.43	212	1247.1
STRUCTURE	21	RESVOR	.07	3.49	376.27	12.68	61	871.4
STRUCTURE	22	RESVOR	.07	3.49	355.97	12.81	57	814.3
STRUCTURE	23	RESVOR	.32	2.79	---	12.41	279	871.9
XSECTION	16	REACH	.32	2.79	333.39	12.41	279	871.9
STRUCTURE	24	RESVOR	.03	4.13	---	12.18	63	2100.0
XSECTION	20	ADDHYD	.05	3.82	---	12.16	127	2540.0
XSECTION	23	REACH	.41	2.95	316.12	12.37	376	917.1
STRUCTURE	31	RESVOR	.05	3.02	363.94	12.32	78	1560.0
STRUCTURE	1	RESVOR	.60	2.93	---	12.37	619	1031.7
STRUCTURE	32	RESVOR	.01	3.48	380.16	12.40	9	900.0
STRUCTURE	33	RESVOR	.03	3.67	357.05	12.32	49	1633.3
STRUCTURE	34	RESVOR	.04	3.62	---	12.35	54	1350.0
STRUCTURE	35	RESVOR	.06	3.33	330.85	12.61	53	883.3
XSECTION	141	ADDHYD	.07	3.20	---	12.61	54	771.4
XSECTION	44	REACH	.77	2.99	290.94	12.48	784	1018.2
STRUCTURE	2	RESVOR	.77	2.99	---	12.48	784	1018.2
XSECTION	49	ADDHYD	.82	2.98	---	12.47	819	998.8
XSECTION	51	REACH	.93	2.97	285.82	12.55	923	992.5
XSECTION	60	ADDHYD	1.01	2.89	---	12.54	955	945.5
STRUCTURE	3	RESVOR	1.01	2.89	---	12.54	955	945.5
XSECTION	63	REACH	1.02	2.87	250.34	12.67	930	911.8
STRUCTURE	61	RESVOR	.01	3.24	334.33	12.74	8	800.0
STRUCTURE	62	RESVOR	.05	1.98	293.76	12.62	18	360.0

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 SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD		DRAINAGE	RUNOFF	PEAK DISCHARGE			
	CONTROL	OPERATION			AREA	ELEVATION	TIME	RATE
ID			(SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)
ALTERNATE		1	STORM	10				
STRUCTURE 63	RESVOR		.01	2.82	265.90	12.33	10	1000.0
XSECTION 76	ADDHYD		1.28	2.70	---	12.64	1050	820.3
XSECTION 77	REACH		1.28	2.70	230.45	12.71	1049	819.5
XSECTION 88	ADDHYD		1.55	2.59	---	12.76	1128	727.7
RAINFALL OF		7.23 inches AND	24.00 hr	DURATION,	BEGINS AT	.0 hrs.		
ALTERNATE		1	STORM	50				
STRUCTURE 11	RESVOR		.09	4.89	384.18	12.32	219	2433.3
XSECTION 8	REACH		.17	4.75	358.49	12.41	387	2276.5
STRUCTURE 21	RESVOR		.07	5.58	377.76	12.51	140	2000.0
STRUCTURE 22	RESVOR		.07	5.57	359.61	12.80	112	1600.0
STRUCTURE 23	RESVOR		.32	4.83	---	12.40	583	1821.9
XSECTION 16	REACH		.32	4.83	335.04	12.40	583	1821.9
STRUCTURE 24	RESVOR		.03	6.42	---	12.18	95	3166.7
XSECTION 20	ADDHYD		.05	6.08	---	12.16	197	3940.0
XSECTION 23	REACH		.41	5.03	316.87	12.40	725	1768.3
STRUCTURE 31	RESVOR		.05	5.15	365.04	12.30	132	2640.0
STRUCTURE 1	RESVOR		.60	5.02	---	12.35	1160	1933.3
STRUCTURE 32	RESVOR		.01	5.55	380.63	12.24	29	2900.0
STRUCTURE 33	RESVOR		.03	5.93	357.61	12.27	85	2833.3
STRUCTURE 34	RESVOR		.04	5.84	---	12.26	114	2850.0
STRUCTURE 35	RESVOR		.06	5.43	332.51	12.47	99	1650.0
XSECTION 141	ADDHYD		.07	5.26	---	12.45	102	1457.1
XSECTION 44	REACH		.77	5.09	291.90	12.44	1508	1958.4
STRUCTURE 2	RESVOR		.77	5.09	---	12.44	1508	1958.4
XSECTION 49	ADDHYD		.82	5.08	---	12.43	1575	1920.7
XSECTION 51	REACH		.93	5.06	287.27	12.50	1769	1902.2
XSECTION 60	ADDHYD		1.01	4.95	---	12.49	1836	1817.8
STRUCTURE 3	RESVOR		1.01	4.95	---	12.49	1836	1817.8

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL		DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE		
	ID	OPERATION				TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE		1	STORM	50				
XSECTION	63	REACH	1.02	4.93	251.27	12.60	1802	1766.7
STRUCTURE	61	RESVOR	.01	5.41	335.25	12.57	19	1900.0
STRUCTURE	62	RESVOR	.05	3.83	296.06	12.44	52	1040.0
STRUCTURE	63	RESVOR	.01	4.90	267.40	12.24	27	2700.0
XSECTION	76	ADDHYD	1.28	4.72	---	12.58	2051	1602.3
XSECTION	77	REACH	1.28	4.72	231.58	12.58	2051	1602.3
XSECTION	88	ADDHYD	1.55	4.58	---	12.63	2227	1436.8
RAINFALL OF		8.47 inches AND		24.00 hr	DURATION,	BEGINS AT	.0 hrs.	
ALTERNATE		1	STORM	99				
STRUCTURE	11	RESVOR	.09	6.04	384.78	12.32	269	2988.9
XSECTION	8	REACH	.17	5.90	358.76	12.40	479	2817.6
STRUCTURE	21	RESVOR	.07	6.69	378.71	12.54	154	2200.0
STRUCTURE	22	RESVOR	.07	6.68	360.78	12.91	127	1814.3
STRUCTURE	23	RESVOR	.32	5.96	---	12.36	717	2240.6
XSECTION	16	REACH	.32	5.96	335.71	12.36	717	2240.6
STRUCTURE	24	RESVOR	.03	7.65	---	12.18	112	3733.3
XSECTION	20	ADDHYD	.05	7.30	---	12.16	234	4680.0
XSECTION	23	REACH	.41	6.18	317.25	12.37	916	2234.1
STRUCTURE	31	RESVOR	.05	6.35	365.43	12.30	161	3220.0
STRUCTURE	1	RESVOR	.60	6.17	---	12.34	1456	2426.7
STRUCTURE	32	RESVOR	.01	6.68	380.81	12.23	33	3300.0
STRUCTURE	33	RESVOR	.03	7.15	357.96	12.29	96	3200.0
STRUCTURE	34	RESVOR	.04	7.04	---	12.27	129	3225.0
STRUCTURE	35	RESVOR	.06	6.57	333.51	12.50	109	1816.7
XSECTION	141	ADDHYD	.07	6.39	---	12.48	113	1614.3
XSECTION	44	REACH	.77	6.24	292.30	12.43	1872	2431.2
STRUCTURE	2	RESVOR	.77	6.24	---	12.43	1872	2431.2
XSECTION	49	ADDHYD	.82	6.23	---	12.42	1956	2385.4

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ALTERNATE	1	STORM	99					
XSECTION	51	REACH	.93	6.21	287.86	12.49	2202	2367.7
XSECTION	60	ADDHYD	1.01	6.09	---	12.48	2288	2265.3
STRUCTURE	3	RESVOR	1.01	6.09	---	12.48	2288	2265.3
XSECTION	63	REACH	1.02	6.06	251.67	12.58	2253	2208.8
STRUCTURE	61	RESVOR	.01	6.61	335.67	12.55	25	2500.0
STRUCTURE	62	RESVOR	.05	4.89	297.03	12.42	70	1400.0
STRUCTURE	63	RESVOR	.01	6.07	267.78	12.19	44	4400.0
XSECTION	76	ADDHYD	1.28	5.84	---	12.56	2580	2015.6
XSECTION	77	REACH	1.28	5.84	232.01	12.56	2580	2015.6
XSECTION	88	ADDHYD	1.55	5.69	---	12.62	2798	1805.2

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION				ROUTING PARAMETERS							
XSEC ID	REACH LENGTH COEFF	FLOOD INFLOW		OUTFLOW		Q-A EQ.		PEAK RATIO Q/I	ATT- KIN (C)		
		PLAIN LENGTH	PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)			POWER (M)	LENGTH FACTOR (k*)
	(FT)	(FT)	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)	(Q*)	(C)

BASEFLOW IS .0 CFS

ALTERNATE	1	STORM	2						
2 1170 .58		24 12.3		23 12.4	1.55	1.37	.029	.952	
5 797 .75?		51 12.5		50 12.5	2.26	1.19	.019	.989	
8 1221 .76?		85 12.4		84 12.5	1.15	1.48	.009	.990	
16 920 1.00?		112 12.5		112 12.5	3.61	1.49	.001	1.000	
23 1379 .34		202 12.2		166 12.4	1.09	1.16	.057	.819	
27 1021 .41		84 12.3		77 12.4	1.10	1.18	.061	.910	
32 1603 .48		76 12.2		68 12.4	1.28	1.33	.055	.899	
34 583 .49		1 13.6		1 13.7	1.14	1.62	.001	.998	
37 934 .92?		18 12.5		18 12.5	2.31	1.55	.002	.999	
44 1428 .40		375 12.4		345 12.5	.47	1.33	.033	.921	
51 1275 .47		420 12.5		404 12.6	.61	1.30	.025	.961	
53 652 .00		0 .0		0 .0	.000	.00	.000	.000	
63 1959 .35		421 12.6		396 12.8	.82	1.26	.040	.941	
65 1283 .53		5 12.7		5 12.8	2.47	1.43	.012	.996	
70 2166 .47		68 12.2		60 12.3	1.68	1.37	.040	.883	
72 1081 .49		3 12.5		3 12.7	1.50	1.61	.007	.994	
77 884 .87?		442 12.8		442 12.8	1.92	1.22	.008	.999	
80 1296 1.00?		448 12.8		448 12.8	1.59	1.44	.003	1.000	

ALTERNATE	1	STORM	10						
2 1170 .52		48 12.3		45 12.4	1.90	1.19	.047	.937	
5 797 .87?		121 12.4		120 12.4	2.00	1.25	.016	.996	
8 1221 .88?		213 12.4		212 12.4	1.26	1.44	.009	.993	
16 920 1.00?		279 12.4		279 12.4	3.70	1.48	.001	1.000	
23 1379 .44		429 12.2		376 12.4	.70	1.28	.037	.878	
27 1021 .52		191 12.3		174 12.4	.73	1.29	.043	.911	
32 1603 .52		136 12.2		125 12.3	1.35	1.31	.047	.925	
34 583 .86?		9 12.4		9 12.5	1.14	1.62	.004	.994	

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MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION					ROUTING PARAMETERS						
XSEC ID	REACH LENGTH COEFF	FLOOD PLAIN	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR	PEAK RATIO Q/I	ATT- KIN
		LENGTH	PEAK	TIME	PEAK	TIME	COEFF	POWER			
	(FT)	(FT)	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)	(Q*)	(C)
	ALTERNATE	1	STORM	10							
37	934		54	12.4	54	12.4	2.32	1.54	.003	1.000	
	1.00?										
44	1428		815	12.4	784	12.5	.30	1.43	.021	.962	
	.52										
51	1275		944	12.4	922	12.5	.46	1.36	.018	.977	
	.58										
53	652		0	12.5	0	12.7	2.05	1.40	.010	.932	
	.47										
63	1959		964	12.5	930	12.7	.46	1.39	.025	.964	
	.47										
65	1283		8	12.7	8	12.8	2.46	1.41	.010	.978	
	.59										
70	2166		141	12.2	96	12.4	1.92	1.04	.168	.679	
	.21										
72	1081		9	12.4	9	12.4	1.48	1.55	.008	.934	
	.61										
77	884		1049	12.7	1049	12.7	1.95	1.22	.008	1.000	
	.94?										
80	1296		1063	12.7	1062	12.8	3.28	1.18	.011	.999	
	.87?										
	ALTERNATE	1	STORM	50							
2	1170		81	12.3	81	12.4	.29	2.00	.003	.998	
	.94?										
5	797		217	12.3	216	12.4	1.85	1.28	.012	.995	
	.95?										
8	1221		387	12.4	386	12.4	1.29	1.44	.008	.999	
	.96?										
16	920		580	12.4	580	12.4	4.23	1.43	.001	1.000	
	1.00?										
23	1379		774	12.2	724	12.4	.62	1.30	.031	.935	
	.50										
27	1021		323	12.3	312	12.4	.40	1.45	.021	.967	
	.65										

32	1603	216	12.2	204	12.3	1.38	1.30	.040	.944
.56									
34	583	29	12.2	29	12.2	1.14	1.61	.006	1.000
1.00?									
37	934	113	12.2	113	12.2	2.43	1.51	.004	1.000
1.00?									
44	1428	1545	12.3	1505	12.4	.26	1.46	.017	.974
.61									
51	1275	1802	12.4	1764	12.5	.43	1.38	.016	.979
.66									
53	652	5	12.2	4	12.2	2.05	1.40	.017	.927
.75?									
63	1959	1853	12.5	1802	12.6	.37	1.44	.019	.972
.56									
65	1283	19	12.6	19	12.7	2.49	1.38	.012	.986
.67?									
70	2166	245	12.2	183	12.4	1.61	1.09	.134	.745
.24									

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MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

		HYDROGRAPH INFORMATION				ROUTING PARAMETERS					
XSEC ID	REACH LENGTH	FLOOD PLAIN LENGTH	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR	PEAK RATIO Q/I	ATT-KIN
			PEAK	TIME	PEAK	TIME	COEFF	POWER			
COEFF	(FT)	(FT)	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)	(Q*)	(C)
ALTERNATE		1	STORM	50							
72	1081		27	12.2	25	12.3	1.66	1.42	.017	.927	
.70?											
77	884		2049	12.6	2049	12.6	1.76	1.24	.007	1.000	
1.00?											
80	1296		2084	12.6	2077	12.7	4.86	1.07	.019	.997	
.80?											
ALTERNATE		1	STORM	99							
2	1170		99	12.3	99	12.4	.27	2.00	.002	.999	
.97?											
5	797		267	12.3	267	12.4	1.81	1.28	.011	.998	
.97?											
8	1221		478	12.4	478	12.4	1.30	1.43	.007	1.000	
.99?											

16	920	717	12.4	717	12.4	4.47	1.41	.001	1.000
1.00?									
23	1379	980	12.2	915	12.4	.75	1.26	.035	.934
.49									
27	1021	392	12.3	384	12.4	.35	1.48	.017	.980
.70?									
32	1603	260	12.2	244	12.3	1.50	1.27	.043	.941
.55									
34	583	33	12.2	33	12.2	1.15	1.61	.005	1.000
1.00?									
37	934	127	12.3	127	12.3	2.45	1.51	.003	1.000
1.00?									
44	1428	1912	12.3	1871	12.4	.25	1.46	.015	.978
.64									
51	1275	2233	12.4	2200	12.5	.43	1.38	.015	.985
.68?									
53	652	8	12.2	8	12.2	2.05	1.40	.017	.971
.83?									
63	1959	2313	12.5	2249	12.6	.36	1.44	.017	.972
.59									
65	1283	25	12.5	24	12.7	2.51	1.37	.012	.982
.70?									
70	2166	320	12.2	243	12.4	1.26	1.16	.113	.761
.27									
72	1081	44	12.2	39	12.2	1.69	1.41	.021	.888
.76?									
77	884	2574	12.5	2574	12.5	1.66	1.25	.007	1.000
1.00?									
80	1296	2624	12.5	2599	12.7	6.06	1.01	.027	.990
.72?									

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....			
		2	10	50	99
STRUCTURE 63	.01				
-----					
ALTERNATE 1		3	10	27	44
STRUCTURE 62	.05				
-----					
ALTERNATE 1		12	18	52	70
STRUCTURE 61	.01				
-----					

ALTERNATE	1	5	8	19	25
STRUCTURE	35	.06			
ALTERNATE	1	8	53	99	109
STRUCTURE	34	.04			
ALTERNATE	1	18	54	114	129
STRUCTURE	33	.03			
ALTERNATE	1	18	49	85	96
STRUCTURE	32	.01			
ALTERNATE	1	1?	9	29	33
STRUCTURE	31	.05			
ALTERNATE	1	28	78	132	161
STRUCTURE	24	.03			
ALTERNATE	1	38	63	95	112
STRUCTURE	23	.32			
ALTERNATE	1	112	279	583	717
STRUCTURE	22	.07			
ALTERNATE	1	10	57	112	127
STRUCTURE	21	.07			
ALTERNATE	1	10	61	140	154
STRUCTURE	11	.09			
ALTERNATE	1	51	121	219	269
STRUCTURE	3	1.01			

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION

03/31/\*\* CN MGMT- PROP COND.- 2,10,50,100 yr NOAA Dist

2.04TEST

10:09:33

SUMMARY, JOB NO. 1

PAGE

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....	2	10	50	99
------------------------------	-----------------------------	--------------------	---	----	----	----

STRUCTURE	3	1.01				
ALTERNATE	1		418	955	1836	2288
STRUCTURE	2	.77				
ALTERNATE	1		345	784	1508	1872
STRUCTURE	1	.60				
ALTERNATE	1		275	619	1160	1456
XSECTION	8	.17				
ALTERNATE	1		84	212	387	479
XSECTION	16	.32				
ALTERNATE	1		112	279	583	717
XSECTION	20	.05				
ALTERNATE	1		75	127	197	234
XSECTION	23	.41				
ALTERNATE	1		166	376	725	916
XSECTION	44	.77				
ALTERNATE	1		345	784	1508	1872
XSECTION	49	.82				
ALTERNATE	1		362	819	1575	1956
XSECTION	51	.93				
ALTERNATE	1		404	923	1769	2202
XSECTION	60	1.01				
ALTERNATE	1		418	955	1836	2288
XSECTION	63	1.02				
ALTERNATE	1		396	930	1802	2253
XSECTION	76	1.28				
ALTERNATE	1		443	1050	2051	2580
XSECTION	77	1.28				
ALTERNATE	1		442	1049	2051	2580

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION

03/31/\*\* CN MGMT- PROP COND.- 2,10,50,100 yr NOAA Dist

2.04TEST

10:09:33

SUMMARY, JOB NO. 1

PAGE

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....			
		2	10	50	99
XSECTION 88	1.55				
-----					
ALTERNATE 1		476	1128	2227	2798
XSECTION 141	.07				
-----					
ALTERNATE 1		8	54	102	113

1 TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 03/31/\*\* CN MGMT- PROP COND.- 2,10,50,100 yr NOAA Dist  
 2.04TEST

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST  
 FILES

INPUT = pondh5.dat , GIVEN DATA FILE  
 OUTPUT = pondh5.OUT , DATED  
 03/31/\*\*,10:09:33

FILES GENERATED - DATED 03/31/\*\*,10:09:33

NONE!

TOTAL NUMBER OF WARNINGS = 39, MESSAGES = 23

\*\*\* TR-20 RUN COMPLETED \*\*\*

1

\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20  
HYDROLOGY\*\*\*\*\*

JOB TR-20		NOPLOTS			
TITLE Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,					
TITLE CN MGMT- PROP COND.- 2,10,50,100 yr NOAA Dist					
2	XSECTN	002	1.0	389.50	
8			389.00	0.00	0.00
8			389.25	1.65	1.06
8			389.50	6.25	2.75
8			389.75	14.40	5.06
8			390.00	26.75	8.00
8			390.25	45.54	14.33
8			390.50	68.67	15.00
8			390.75	96.11	18.88
8			391.00	127.89	23.00
8			391.25	164.08	27.38
8			391.50	204.77	32.00
8			391.75	250.06	36.88
9	ENDTBL				
2	XSECTN	005	1.0	367.00	
8			366.00	0.00	0.00
8			366.50	3.51	1.5
8			367.00	13.55	4.00
8			367.50	30.53	9.00
8			367.75	47.87	13.00
8			368.00	72.23	18.00
8			368.25	104.79	23.98
8			368.50	146.13	30.94
8			368.75	197.14	38.86
8			369.00	258.63	47.75
8			369.25	331.41	57.61
8			369.50	416.25	68.44
9	ENDTBL				
3	STRUCT	11			
8			380.00	0.00	0.00
8			381.00	2.70	0.53
8			382.20	53.00	1.16
8			383.80	186.80	1.40
9	ENDTBL				
2	XSECTN	008	1.0	330.00	
8			356.00	0.00	0.00
8			356.50	20.21	6.94
8			357.00	68.51	15.75
8			357.50	144.11	26.44
8			358.00	248.93	39.00
8			358.50	389.07	53.25
8			359.00	561.31	69.00
8			359.50	767.14	86.25
8			360.00	1008.16	105.00
8			361.00	1375.68	147.50
8			361.50	1604.19	171.38
9	ENDTBL				

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

2	XSECTN	016	1.0	333.08	
8			331.08	0.00	0.00
8			332.08	80.21	8.00
8			333.08	225.50	16.00
8			333.58	310.09	20.00
8			334.08	399.94	24.00
8			334.58	493.86	28.00
8			335.08	590.97	32.00
8			335.58	690.67	36.00
8			336.08	792.47	40.00
8			336.58	896.02	44.00
9	ENDTBL				
2	XSECTN	023	1.0	314.40	
8			313.22	0.00	0.00
8			313.51	1.10	0.89
8			313.81	3.51	1.84
8			314.10	16.22	5.61
8			314.40	34.66	9.74
8			314.68	48.28	24.71
8			314.96	79.66	42.09
8			315.24	126.64	61.87
8			315.52	189.07	84.06
8			315.80	267.27	108.64
8			316.08	361.75	135.63
8			316.36	473.14	165.02
8			316.64	602.11	196.81
8			316.92	749.37	231.00
8			317.20	878.70	277.25
8			317.48	1103.89	329.14
8			317.76	1358.10	382.70
8			318.04	1640.58	437.94
8			318.32	1950.87	494.86
8			318.60	2288.69	553.45
9	ENDTBL				
3	STRUCT	21			
8			364.00	0.00	0.00
8			366.00	0.30	0.55
8			368.00	0.50	1.31
8			369.00	3.20	1.80
8			370.00	5.20	2.29
8			372.00	7.80	3.48
8			374.00	9.60	5.00
8			375.00	10.40	5.86
8			376.00	45.30	6.79
8			376.50	74.10	7.31
8			377.00	106.80	7.83
8			378.00	149.80	8.90
8			379.00	155.60	10.06
8			380.00	162.00	11.29
9	ENDTBL				

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

3	STRUCT	22			
8			352.50	0.00	0.00
8			358.65	100.00	0.91
8			361.76	140.00	3.28
8			363.64	160.00	5.47
8			366.18	180.00	9.58
8			368.71	200.00	14.77



8			370.61	250.00	19.31
9	ENDTBL				
3	STRUCT	23			
9	ENDTBL				
2	XSECTN	027	1.0	317.00	
8			316.00	0.00	0.00
8			316.50	2.68	2.59
8			317.00	10.37	6.88
8			317.50	24.26	12.84
8			318.00	45.55	20.50
8			318.50	70.64	34.75
8			319.00	137.01	60.50
8			319.25	200.57	76.25
8			319.50	273.06	92.00
8			319.75	353.76	107.75
8			320.00	442.13	123.50
8			320.50	640.03	155.00
8			321.00	863.72	186.50
9	ENDTBL				
2	XSECTN	032	1.0	313.00	
8			310.00	0.00	0.00
8			311.00	12.25	5.50
8			312.00	52.16	16.00
8			312.50	83.38	23.13
8			313.00	123.94	31.50
8			313.25	148.02	36.16
8			313.50	174.79	41.13
8			313.75	204.34	46.41
8			314.00	236.81	52.00
8			314.50	278.65	65.75
8			315.00	353.72	84.00
9	ENDTBL				
2	XSECTN	034	1.0	338.50	
8			338.00	0.00	0.00
8			338.10	4.87	2.46
8			338.25	22.73	6.38
8			338.50	73.99	13.53
8			338.75	149.34	21.45
8			339.00	247.95	30.13
8			339.50	515.65	49.78
9	ENDTBL				
2	XSECTN	037	1.0	331.00	
8			330.00	0.00	0.00

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			330.25	14.29	3.25
8			330.50	46.85	7.00
8			330.75	95.34	11.25
8			331.00	159.64	16.00
8			331.25	240.13	21.25
8			331.50	337.44	27.00
8			331.75	452.26	33.25
8			332.00	585.36	40.00
8			332.50	875.33	55.81
8			333.00	1272.05	75.25
9	ENDTBL				
2	XSECTN	044	1.0	288.90	
8			287.68	0.00	0.00
8			287.99	1.15	0.94

8		288.29	3.69	1.95
8		288.60	17.06	5.98
8		288.90	36.44	10.37
8		289.19	63.07	39.25
8		289.47	121.85	69.50
8		289.76	206.05	101.12
8		290.05	313.23	134.09
8		290.33	442.07	168.42
8		290.62	591.78	204.12
8		290.91	761.87	241.18
8		291.19	952.02	279.60
8		291.48	1162.04	319.38
8		291.77	1391.84	360.52
8		292.05	1641.40	403.02
8		292.34	1910.74	446.89
8		292.63	2199.92	492.11
8		292.91	2509.04	538.70
8		293.20	2838.22	586.65
9	ENDTBL			
3	STRUCT	31		
8		356.38	0.0	0.00
8		357.26	10.90	0.02
8		357.50	12.30	0.03
8		358.00	14.70	0.05
8		359.00	18.70	0.10
8		360.00	22.00	0.16
8		361.00	24.90	0.25
8		361.50	26.20	0.30
8		362.00	27.50	0.36
8		362.50	28.70	0.43
8		362.90	29.60	0.49
8		363.50	51.30	0.60
8		363.75	65.70	0.67
8		364.00	82.60	0.72
8		364.20	83.30	0.83
8		364.60	100.00	0.88

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		366.80	260.00	1.47
8		366.92	340.00	1.49
8		366.98	380.00	1.50
9	ENDTBL			
3	STRUCT	32		
8		375.40	0.00	0.00
8		379.36	1.00	0.74
8		380.00	5.00	0.89
8		380.20	10.00	0.94
8		380.33	15.00	0.98
8		380.45	20.00	1.01
8		380.55	25.00	1.04
8		380.65	30.00	1.06
8		381.19	40.00	1.21
8		381.78	44.00	1.39
8		382.59	66.00	1.66
8		382.79	88.00	1.75
8		382.89	110.00	1.79
8		382.97	132.00	1.83
9	ENDTBL			
3	STRUCT	33		

8			350.00	0.00	0.00
8			354.30	1.00	1.08
8			354.47	2.00	1.15
8			354.87	5.00	1.30
8			355.38	10.00	1.50
8			356.18	20.00	1.84
8			356.88	40.00	2.15
8			357.27	60.00	2.33
8			357.46	80.00	2.42
8			358.08	100.00	2.73
8			358.14	120.00	2.76
8			358.19	140.00	2.78
8			358.25	171.00	2.81
8			358.27	180.00	2.82
9	ENDTBL				
3	STRUCT	34			
9	ENDTBL				
3	STRUCT	02			
9	ENDTBL				
2	XSECTN	051	1.0	282.40	
8			281.10	0.00	0.00
8			281.42	1.24	1.09
8			281.75	3.96	2.26
8			282.07	18.30	6.92
8			282.40	39.09	12.00
8			282.88	67.33	37.27
8			283.36	131.17	65.87
8			283.84	225.10	97.78
8			284.32	348.01	133.01

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			284.80	499.91	171.56
8			285.28	681.29	213.43
8			285.76	892.92	258.61
8			286.24	1135.70	307.11
8			286.72	1410.63	358.94
8			287.20	1718.74	414.08
8			287.68	2061.13	472.54
8			288.16	2438.87	534.31
8			288.64	2853.08	599.41
8			289.12	3301.76	667.84
8			289.60	3785.91	739.78
9	ENDTBL				
2	XSECTN	053	1.0	289.00	
8			288.00	0.00	0.00
8			288.50	9.00	2.88
8			289.00	34.26	7.50
8			289.50	79.27	13.88
8			290.00	147.75	22.00
8			290.50	227.49	31.94
8			291.00	332.02	43.75
8			291.50	463.75	57.44
8			291.75	540.56	64.98
8			292.00	625.07	73.00
9	ENDTBL				
2	XSECTN	063	1.0	248.40	
8			247.07	0.00	0.00
8			247.41	1.85	1.14
8			247.74	5.93	2.35

8		248.07	27.43	7.18
8		248.40	58.61	12.46
8		248.67	89.70	40.04
8		248.95	158.39	68.99
8		249.22	256.90	99.30
8		249.49	382.40	130.99
8		249.77	533.43	164.04
8		250.04	709.09	198.46
8		250.31	908.86	234.24
8		250.59	1132.40	271.40
8		250.86	1379.55	309.92
8		251.13	1650.25	349.81
8		251.41	1944.49	391.07
8		251.68	2262.35	433.69
8		251.95	2603.94	477.69
8		252.23	2969.40	523.05
8		252.50	3358.93	569.78
9	ENDTBL			
3	STRUCT	61		
8		329.75	0.00	0.00
8		330.00	1.56	0.01
8		332.00	4.37	0.13

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		334.00	5.96	0.39
8		334.10	6.01	0.40
8		334.50	10.20	0.47
8		335.00	16.10	0.56
8		336.00	28.91	0.75
8		337.00	40.10	0.97
9	ENDTBL			
3	STRUCT	62		
8		287.30	0.00	0.00
8		288.00	5.45	0.01
8		289.00	9.05	0.05
8		290.00	11.60	0.13
8		292.00	15.35	0.50
8		294.00	18.40	1.19
8		294.30	18.92	1.26
8		294.50	20.73	1.40
8		295.00	36.40	1.60
8		295.40	38.00	1.80
8		296.00	51.10	2.15
8		297.00	69.60	2.75
8		298.00	86.80	3.44
8		298.68	98.50	3.91
8		298.80	107.56	4.00
9	ENDTBL			
3	STRUCT	63		
8		259.43	0.00	0.00
8		260.00	1.30	0.026
8		260.50	1.70	0.050
8		261.00	2.10	0.075
8		261.50	2.40	0.095
8		262.00	2.70	0.119
8		262.50	2.90	0.160
8		263.00	3.20	0.205
8		263.50	3.40	0.245
8		264.00	3.60	0.285

8			264.50	3.80	0.360
8			265.00	3.90	0.415
8			265.50	4.10	0.480
8			266.00	11.00	0.537
8			266.50	15.40	0.620
8			267.00	16.00	0.709
8			267.50	30.30	0.798
8			268.00	56.00	0.887
8			268.50	145.68	0.976
9	ENDTBL				
2	XSECTN	065	1.0	300.50	
8			300.00	0.00	0.00
8			300.10	0.29	0.23
8			300.25	1.47	0.69
8			300.40	3.55	1.28

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			300.50	5.48	1.75
8			300.60	7.88	2.28
8			300.75	12.45	3.19
8			300.90	18.28	4.23
8			301.00	22.91	5.00
8			301.10	28.18	5.83
8			301.25	37.36	7.19
8			301.40	48.14	8.68
8			301.50	56.26	9.75
9	ENDTBL				
2	XSECTN	070	1.0	248.40	
8			247.07	0.00	0.00
8			247.41	1.85	1.14
8			247.74	5.93	2.35
8			248.07	27.43	7.18
8			248.40	58.61	12.46
8			248.67	89.70	40.04
8			248.95	158.39	68.99
8			249.22	256.90	99.30
8			249.49	382.40	130.99
8			249.77	533.43	164.04
8			250.04	709.09	198.46
8			250.31	908.86	234.24
8			250.59	1132.40	271.40
8			250.86	1379.55	309.92
8			251.13	1650.25	349.81
8			251.41	1944.49	391.07
8			251.68	2262.35	433.69
8			251.95	2603.94	477.69
8			252.23	2969.40	523.05
8			252.50	3358.93	569.78
9	ENDTBL				
2	XSECTN	072	1.0	248.40	
8			247.07	0.00	0.00
8			247.41	1.85	1.14
8			247.74	5.93	2.35
8			248.07	27.43	7.18
8			248.40	58.61	12.46
8			248.67	89.70	40.04
8			248.95	158.39	68.99
8			249.22	256.90	99.30
8			249.49	382.40	130.99

8	249.77	533.43	164.04
8	250.04	709.09	198.46
8	250.31	908.86	234.24
8	250.59	1132.40	271.40
8	250.86	1379.55	309.92
8	251.13	1650.25	349.81
8	251.41	1944.49	391.07
8	251.68	2262.35	433.69

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8	251.95	2603.94	477.69
8	252.23	2969.40	523.05
8	252.50	3358.93	569.78
9	ENDTBL		
2	XSECTN 077	1.0	229.00
8		226.00	0.00
8		226.50	11.73
8		227.00	42.97
8		227.50	96.50
8		228.00	175.93
8		228.50	258.13
8		229.00	385.22
8		229.50	561.82
8		230.00	793.74
8		230.50	1079.38
8		231.00	1462.49
8		231.50	1953.75
8		232.00	2564.16
8		232.50	3408.70
8		233.00	4351.01
9	ENDTBL		
2	XSECTN 080	1.0	212.00
8		210.50	0.00
8		210.75	4.72
8		211.00	15.68
8		211.25	32.36
8		211.50	54.93
8		211.75	83.70
8		212.00	119.05
8		212.25	163.87
8		212.50	215.35
8		212.75	273.55
8		213.00	338.57
8		214.00	669.42
8		215.00	806.07
8		216.00	1088.03
8		217.00	1451.30
8		218.00	1978.93
8		219.00	2262.06
8		220.00	3115.20
8		221.00	4892.67
9	ENDTBL		
3	STRUCT 03		
9	ENDTBL		
3	STRUCT 24		
8		345.00	0.00
8		346.82	10.00
8		353.59	25.00
8		357.97	50.00

8		358.32	75.00	11.05
1				

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		358.61	100.00	11.43
8		358.87	125.00	11.77
8		359.11	150.00	12.09
8		359.35	175.00	12.41
8		360.02	205.00	13.34
8		360.74	209.00	14.40
8		361.38	352.23	15.42

9 ENDTBL  
 3 STRUCT 35  
 9 ENDTBL  
 3 STRUCT 65  
 9 ENDTBL  
 3 STRUCT 01  
 9 ENDTBL

5 RAINFL 9		.1			
8	0.0000	0.0013	0.0023	0.0034	0.0044
8	0.0055	0.0065	0.0076	0.0087	0.0098
8	0.0109	0.0121	0.0132	0.0143	0.0155
8	0.0167	0.0178	0.0190	0.0202	0.0214
8	0.0226	0.0238	0.0251	0.0263	0.0276
8	0.0288	0.0301	0.0314	0.0327	0.0340
8	0.0353	0.0366	0.0379	0.0393	0.0406
8	0.0420	0.0434	0.0447	0.0461	0.0475
8	0.0489	0.0504	0.0518	0.0532	0.0547
8	0.0562	0.0576	0.0591	0.0606	0.0621
8	0.0636	0.0651	0.0667	0.0682	0.0697
8	0.0713	0.0729	0.0745	0.0760	0.0776
8	0.0793	0.0809	0.0826	0.0843	0.0861
8	0.0879	0.0898	0.0916	0.0936	0.0955
8	0.0975	0.0996	0.1017	0.1038	0.1060
8	0.1082	0.1104	0.1127	0.1150	0.1174
8	0.1198	0.1223	0.1247	0.1273	0.1298
8	0.1324	0.1351	0.1378	0.1405	0.1432
8	0.1461	0.1490	0.1521	0.1554	0.1588
8	0.1623	0.1660	0.1699	0.1739	0.1780
8	0.1823	0.1868	0.1914	0.1961	0.2010
8	0.2061	0.2117	0.2179	0.2247	0.2321
8	0.2400	0.2490	0.2591	0.2702	0.2825
8	0.2955	0.3157	0.3370	0.3662	0.4067
8	0.4766	0.5933	0.6338	0.6630	0.6843
8	0.7045	0.7176	0.7298	0.7409	0.7510
8	0.7600	0.7679	0.7753	0.7821	0.7883
8	0.7939	0.7990	0.8039	0.8086	0.8132
8	0.8177	0.8220	0.8261	0.8301	0.8340
8	0.8377	0.8412	0.8446	0.8479	0.8510
8	0.8540	0.8568	0.8595	0.8622	0.8649
8	0.8676	0.8702	0.8727	0.8753	0.8778
8	0.8802	0.8826	0.8850	0.8873	0.8896
8	0.8918	0.8940	0.8962	0.8983	0.9004
8	0.9025	0.9045	0.9064	0.9084	0.9103

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8	0.9121	0.9139	0.9157	0.9174	0.9191		
8	0.9208	0.9224	0.9240	0.9256	0.9271		
8	0.9287	0.9303	0.9318	0.9334	0.9349		
8	0.9364	0.9379	0.9394	0.9409	0.9424		
8	0.9439	0.9453	0.9468	0.9482	0.9496		
8	0.9511	0.9525	0.9539	0.9553	0.9566		
8	0.9580	0.9594	0.9607	0.9621	0.9634		
8	0.9647	0.9660	0.9673	0.9686	0.9699		
8	0.9712	0.9724	0.9737	0.9749	0.9762		
8	0.9774	0.9786	0.9798	0.9810	0.9822		
8	0.9834	0.9845	0.9857	0.9868	0.9879		
8	0.9891	0.9902	0.9913	0.9924	0.9935		
8	0.9945	0.9956	0.9967	0.9977	0.9987		
8	1.0000	1.0000	1.0000	1.0000	1.0000		
9	ENDTBL						
6	RUNOFF	1 001	1	0.0336	80.992	0.4051	DA1
6	REACH	3 002	1 2	1170.0		1	
6	RUNOFF	1 003	1	0.0580	79.488	0.3751	DA2
6	ADDHYD	4 004	1 2 3			1	DA1+2
6	RESVOR	2 11 3	1			1	1
	SWMF10						
6	REACH	3 005	1 2	797.0		1	
6	RUNOFF	1 006	3	0.0798	77.284	0.3921	DA3
6	ADDHYD	4 007	2 3 4			1	
	DA12+3						
6	REACH	3 008	4 7	1221.0		1	1 SA1-
	SA2						
6	RUNOFF	1 009	1	0.0734	90.928	0.4221	DA1
6	RESVOR	2 21 1	2			1	1
	SWMF13						
6	RUNOFF	1 010	3	0.0097	72.007	0.1281	DA7
6	RESVOR	2 22 2 3 4				1	1 HWY
	STOR						
6	RUNOFF	1 011	2	0.0544	73.278	0.2201	DA2
6	ADDHYD	4 012	7 2 3			1	
	SA1+DA2						
6	RUNOFF	1 013	5	0.0193	79.062	0.2481	DA3
6	ADDHYD	4 014	4 3 6			1	
	DA17+2						
6	ADDHYD	4 015	6 5 3			1	
	DA172+3						
6	RESVOR	2 23 3	1			1 1 1 1	1
	PONDH7						
6	REACH	3 016	1 2	920.0		1	1
6	RUNOFF	1 017	3	0.0211	87.900	0.1641	DA4
6	RUNOFF	1 118	1	0.0253	93.221	0.2231	DA5A
6	RESVOR	2 24 1	4			1 1 1 1	1
	PONDH6						
6	RUNOFF	1 119	5	0.0059	86.148	0.1361	DA5B
6	ADDHYD	4 120	4 5 6			1	1
	DA5a+5b						
6	ADDHYD	4 020	3 6 4			1	1 DA4+5
6	RUNOFF	1 019	5	0.0404	84.467	0.1681	DA6
6	ADDHYD	4 022	4 5 3			1	
	DA45+6						
6	ADDHYD	4 021	2 3 1			1	
	DA123+6						
6	REACH	3 023	1 7	1379.0		1	1 SA2-
	SA3						
6	RUNOFF	1 024	1	0.0505	82.333	0.3401	DA1
6	RESVOR	2 31 1	2			1	1 SWMF3
6	RUNOFF	1 025	3	0.0748	81.676	0.3581	DA2
6	ADDHYD	4 026	2 3 4			1	DA1+2



6 REACH 3 027 4 1 1021.0 1  
1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

6 RUNOFF	1 028	2	0.0599	78.523	0.3231		DA3
6 ADDHYD	4 029	7 2 3			1		
SA2+DA3							
6 ADDHYD	4 030	1 3 2			1		
DA12+3							
6 RESVOR	2 01	2 5			1	1	PROP1
6 RUNOFF	1 031	1	0.0692	86.978	0.2761		DA4
6 REACH	3 032	1 6	1603.0		1		
6 RUNOFF	1 033	2	0.0084	95.000	0.1921		DA5
6 RESVOR	2 32	2 3			1	1	
SWMF11							
6 REACH	3 034	3 7	583.0		1		
6 RUNOFF	1 035	1	0.0275	94.960	0.2481		DA6
6 RESVOR	2 33	1 2			1	1	SWMF8
6 ADDHYD	4 036	7 2 1			1		DA5+6
6 RESVOR	2 34	1 2			1	1	
HWYSTOR3							
6 REACH	3 037	2 4	934.0		1		
6 RUNOFF	1 138	1	0.0280	89.879	0.1551		DA7a
6 ADDHYD	4 139	4 1 3			1		
DA56+7a							
6 RESVOR	2 35	3 2			1 1 1 1	1	
PONDH5							
6 RUNOFF	1 140	3	0.0048	62.603	0.1261		DA7b
6 ADDHYD	4 141	2 3 4			1	1	
DA7a+7b							
6 RUNOFF	1 040	2	0.0393	80.311	0.3671		DA8
6 ADDHYD	4 041	5 2 1			1		DA3+8
6 ADDHYD	4 042	6 1 2			1		DA4+8
6 ADDHYD	4 043	4 2 1			1		DA7+8
6 REACH	3 044	1 2	1428.0		1	1	SA3-
SA4							
6 RESVOR	2 02	2 7			1	1	PROP2
6 RUNOFF	1 045	1	0.0477	80.798	0.4121		DA1
6 RUNOFF	1 046	2	0.0628	79.968	0.4401		DA2
6 ADDHYD	4 047	1 2 3			1		DA1+2
6 RUNOFF	1 048	1	0.0469	80.250	0.2491		DA3
6 ADDHYD	4 049	7 1 2			1	1	
SA3+DA3							
6 ADDHYD	4 050	2 3 4			1		
DA12+3							
6 REACH	3 051	4 7	1275.0		1	1	SA4-
SA5							
6 RUNOFF	1 052	1	0.0087	41.639	0.1631		DA1
6 REACH	3 053	1 5	652.0		1		
6 RUNOFF	1 054	1	0.0072	33.729	0.2561		DA2
6 RUNOFF	1 055	2	0.0322	77.752	0.2491		DA3
6 ADDHYD	4 056	7 2 4			1		
SA4+DA3							
6 ADDHYD	4 057	5 1 3			1		DA1+2
6 ADDHYD	4 058	4 3 5			1		
DA12+3							
6 RUNOFF	1 059	1	0.0266	70.478	0.2611		DA4
6 ADDHYD	4 060	5 1 2			1	1	
DA123+4							
6 RESVOR	2 03	2 1			1	1	PROP3

6	RUNOFF	1	061		3	0.0173	69.728	0.2971		DA5
6	ADDHYD	4	062	1	3			1		
DA1234+5										
6	REACH	3	063	6	7	1959.0		1	1	SA5-
SA6										
6	RUNOFF	1	064		1	0.0110	84.520	0.5211		DA1
6	RESVOR	2		61	1			1	1	
SWMF19										
6	REACH	3	065	2	3	1283.0		1		
6	RUNOFF	1	066		1	0.0458	70.198	0.2391		DA2
6	RESVOR	2		62	1			1	1	
SWMF18										

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

6	ADDHYD	4	067	3	2			1		DA1+2	
6	RUNOFF	1	068		5	0.0778	76.176	0.2281		DA3	
6	ADDHYD	4	069	4	5			1			
DA12+3											
6	REACH	3	070	1	2	2166.0		1			
6	RUNOFF	1	071		1	0.0119	80.036	0.1221		DA4	
6	RESVOR	2		63	1			1	1	SWMF2	
6	REACH	3	072	3	4	1081.0		1			
6	RUNOFF	1	073		5	0.1100	64.864	0.2051		DA5	
6	ADDHYD	4	074	7	5			1			
SA5+DA5											
6	ADDHYD	4	075	2	4			1			
DA123+4											
6	ADDHYD	4	076	1	6			1	1		
DA12345											
6	REACH	3	077	2	7	884.0		1	1	SA6-	
SA7											
6	RUNOFF	1	078		2	0.0510	70.802	0.1971		DA1	
6	ADDHYD	4	079	7	2			1			
SA6+DA1											
6	REACH	3	080	1	2	1296.0		1			
6	RUNOFF	1	081		3	0.0513	73.958	0.1621		DA3	
6	ADDHYD	4	082	2	3			1		DA1+3	
6	RUNOFF	1	083		1	0.0313	67.555	0.1861		DA2	
6	ADDHYD	4	084	4	1			1			
DA13+2											
6	RUNOFF	1	085		3	0.1187	68.693	0.3211		DA4	
6	ADDHYD	4	086	2	3			1			
DA123+4											
6	RUNOFF	1	087		4	0.0159	86.785	0.1421		DA5	
6	ADDHYD	4	088	1	4			1	1		
DA1234+5											
ENDATA											
7	INCREM	6				.06					
7	COMPUT	7	001	088		0.0	3.19	1.09	2	1	2
ENDCMP											
7	COMPUT	7	001	088		0.0	4.91	1.09	2	1	10
ENDCMP											
7	COMPUT	7	001	088		0.0	7.23	1.09	2	1	50
ENDCMP											
7	COMPUT	7	001	088		0.0	8.47	1.09	2	1	99
ENDCMP											
ENDJOB											

\*\*\*\*\*END OF 80-80

LIST\*\*\*\*\*

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

03/31/\*\* CN MGMT- PROP COND.- 2,10,50,100 yr NOAA Dist

2.04TEST

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EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .060 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88
STARTING TIME = .00 RAIN DEPTH = 3.19 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS
ALTERNATE NO. = 1 STORM NO. = 2 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.30 23.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.46 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-
FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.41 22.7 389.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.46 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-
FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.29 39.9 (RUNOFF)
23.14 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.36 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-
FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.32 60.4 (NULL)
23.10 1.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.40 WATERSHED INCHES; 83 CFS-HRS; 6.8 ACRE-  
FEET.

1

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OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	50.9	382.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.39 WATERSHED INCHES; 82 CFS-HRS; 6.8 ACRE-  
FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	50.4	367.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.39 WATERSHED INCHES; 82 CFS-HRS; 6.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	47.5	(RUNOFF)
23.75	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.22 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	85.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	84.4	357.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 9

1
TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,
VERSION
03/31/\*\* CN MGMT- PROP COND.- 2,10,50,100 yr NOAA Dist
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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.30 77.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.24 WATERSHED INCHES; 106 CFS-HRS; 8.8 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
13.56 9.7 \* 374.07
\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.91 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.13 6.6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.92 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
13.68 9.6 \* 353.09
\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.91 WATERSHED INCHES; 90 CFS-HRS; 7.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	33.2	(RUNOFF)
19.76	1.0	(RUNOFF)
20.09	1.0	(RUNOFF)

1

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.99 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.48	98.2	(NULL)
24.00	3.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.24 WATERSHED INCHES; 180 CFS-HRS; 14.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	15.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.33 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.50	105.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.40 WATERSHED INCHES; 270 CFS-HRS; 22.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
12.47 112.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.39 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.47 112.5 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32  
SQ.MI.  
6.42 CFS .00 .01 .01 .01 .01 .01 .01  
.01  
6.90 CFS .01 .01 .01 .02 .02 .02 .02  
.02

1

TR20 ----- SCS

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7.38 CFS	.02	.02	.03	.03	.03	.03	.03
.03							
7.86 CFS	.04	.04	.04	.04	.04	.05	.05
.05							
8.34 CFS	.05	.06	.06	.06	.06	.07	.07
.07							
8.82 CFS	.08	.08	.08	.09	.09	.09	.10
.10							
9.30 CFS	.10	.11	.11	.12	.12	.13	.13
.14							
9.78 CFS	.15	.16	.17	.18	.21	.23	.25
.27							
10.26 CFS	.31	.34	.39	.44	.51	.58	.67
.76							
10.74 CFS	.87	.99	1.12	1.28	1.46	1.68	1.95
2.26							
11.22 CFS	2.62	3.05	3.53	4.07	4.68	5.37	6.27
7.55							
11.70 CFS	9.10	10.95	13.41	16.79	21.82	30.00	43.07
62.74							
12.18 CFS	81	94	102	108	112	112	111
107							
12.66 CFS	101	94	88	81	74	69	63
58							
13.14 CFS	54.01	50.27	47.04	44.22	41.73	39.53	37.58
35.83							
13.62 CFS	34.24	32.82	31.57	30.46	29.47	28.61	27.85
27.19							
14.10 CFS	26.60	26.07	25.58	25.13	24.73	24.36	24.01
23.68							
14.58 CFS	23.34	23.00	22.67	22.36	22.06	21.76	21.45
21.14							
15.06 CFS	20.84	20.53	20.22	19.92	19.64	19.39	19.16

18.96								
15.54	CFS	18.79	18.62	18.45	18.29	18.14	18.03	17.92
17.80								
16.02	CFS	17.68	17.55	17.44	17.34	17.24	17.12	17.01
16.90								
16.50	CFS	16.79	16.67	16.56	16.46	16.36	16.25	16.14
16.03								
16.98	CFS	15.94	15.85	15.75	15.63	15.51	15.40	15.30
15.21								
17.46	CFS	15.10	14.98	14.85	14.74	14.64	14.53	14.42
14.31								
17.94	CFS	14.21	14.12	14.03	13.93	13.82	13.72	13.63
13.53								
18.42	CFS	13.42	13.33	13.25	13.19	13.12	13.04	12.97
12.91								
18.90	CFS	12.84	12.76	12.68	12.60	12.53	12.46	12.39
12.33								
19.38	CFS	12.26	12.20	12.15	12.08	12.01	11.93	11.87
11.81								
19.86	CFS	11.73	11.65	11.59	11.55	11.50	11.44	11.37
11.31								
20.34	CFS	11.25	11.17	11.09	11.02	10.98	10.93	10.87
10.80								
20.82	CFS	10.75	10.71	10.64	10.57	10.51	10.45	10.39
10.33								
21.30	CFS	10.27	10.20	10.13	10.06	9.98	9.89	9.80
9.72								
21.78	CFS	9.65	9.56	9.49	9.43	9.35	9.27	9.19
9.11								
22.26	CFS	9.04	8.97	8.90	8.84	8.78	8.71	8.64
8.56								
22.74	CFS	8.50	8.43	8.36	8.28	8.22	8.18	8.13
8.07								
23.22	CFS	8.01	7.95	7.89	7.83	7.77	7.70	7.63
7.58								
23.70	CFS	7.54	7.49	7.43	7.35	7.29	7.27	7.21
6.92								
24.18	CFS	6.49	6.07	5.70	5.37	5.07	4.82	4.62
4.45								
24.66	CFS	4.31	4.17	4.05	3.94	3.83	3.72	3.62
3.53								
25.14	CFS	3.43	3.34	3.25	3.17	3.08	3.00	2.92
2.85								
25.62	CFS	2.77	2.70	2.63	2.56	2.49	2.43	2.37
2.30								
26.10	CFS	2.24	2.19	2.13	2.07	2.02	1.97	1.91
1.86								
26.58	CFS	1.82	1.77	1.72	1.68	1.63	1.59	1.55
1.51								
27.06	CFS	1.47	1.43	1.39	1.36	1.32	1.29	1.25
1.22								
27.54	CFS	1.19	1.16	1.13	1.10	1.07	1.04	1.01
.99								
28.02	CFS	.96	.94	.91	.89	.88	.87	.85
.84								
28.50	CFS	.83	.82	.82	.81	.80	.79	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
 FEET.

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DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	28	18	14	12	10	8	3	1
DURATION(HRS)	18	18						
FLOW(CFS)	1	1	TRUNCATED					

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	112.5	332.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	29.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 27 CFS-HRS; 2.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	38.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.46 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.59	10.4	347.01

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
 SQ.MI.  
 4.32 CFS .00 .01 .01 .01 .01 .01 .02  
 .02  
 4.32 ELEV 345.00 345.00 345.00 345.00 345.00 345.00 345.00  
 345.00

4.80 CFS	.02	.02	.03	.03	.03	.04	.04
.04							
4.80 ELEV	345.00	345.00	345.00	345.01	345.01	345.01	345.01
345.01							
5.28 CFS	.05	.05	.05	.06	.06	.06	.07
.07							
5.28 ELEV	345.01	345.01	345.01	345.01	345.01	345.01	345.01
345.01							

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5.76 CFS	.08	.08	.08	.09	.09	.10	.10
.11							
5.76 ELEV	345.01	345.01	345.02	345.02	345.02	345.02	345.02
345.02							
6.24 CFS	.11	.12	.12	.12	.13	.14	.14
.15							
6.24 ELEV	345.02	345.02	345.02	345.02	345.02	345.02	345.03
345.03							
6.72 CFS	.15	.16	.16	.17	.18	.18	.19
.20							
6.72 ELEV	345.03	345.03	345.03	345.03	345.03	345.03	345.03
345.04							
7.20 CFS	.20	.21	.22	.23	.23	.24	.25
.26							
7.20 ELEV	345.04	345.04	345.04	345.04	345.04	345.04	345.05
345.05							
7.68 CFS	.27	.27	.28	.29	.30	.31	.32
.33							
7.68 ELEV	345.05	345.05	345.05	345.05	345.05	345.06	345.06
345.06							
8.16 CFS	.34	.35	.36	.37	.38	.39	.40
.41							
8.16 ELEV	345.06	345.06	345.06	345.07	345.07	345.07	345.07
345.07							
8.64 CFS	.42	.43	.44	.45	.46	.47	.48
.49							
8.64 ELEV	345.08	345.08	345.08	345.08	345.08	345.09	345.09
345.09							
9.12 CFS	.50	.52	.53	.54	.56	.57	.59
.60							
9.12 ELEV	345.09	345.09	345.10	345.10	345.10	345.10	345.11
345.11							
9.60 CFS	.62	.64	.66	.68	.70	.72	.74
.77							
9.60 ELEV	345.11	345.12	345.12	345.12	345.13	345.13	345.14
345.14							
10.08 CFS	.79	.82	.84	.87	.90	.92	.95
.98							
10.08 ELEV	345.14	345.15	345.15	345.16	345.16	345.17	345.17
345.18							
10.56 CFS	1.01	1.04	1.08	1.11	1.16	1.20	1.25
1.31							
10.56 ELEV	345.18	345.19	345.20	345.20	345.21	345.22	345.23
345.24							
11.04 CFS	1.37	1.43	1.50	1.58	1.66	1.76	1.86
1.97							

11.04 ELEV	345.25	345.26	345.27	345.29	345.30	345.32	345.34
345.36							
11.52 CFS	2.09	2.22	2.38	2.58	2.81	3.09	3.42
3.84							
11.52 ELEV	345.38	345.40	345.43	345.47	345.51	345.56	345.62
345.70							
12.00 CFS	4.40	5.18	6.28	7.62	8.90	9.87	10.17
10.30							
12.00 ELEV	345.80	345.94	346.14	346.39	346.62	346.80	346.90
346.96							
12.48 CFS	10.37	10.41	10.42	10.40	10.36	10.31	10.25
10.19							
12.48 ELEV	346.99	347.00	347.01	347.00	346.98	346.96	346.93
346.90							
12.96 CFS	10.11	10.04	9.87	9.63	9.39	9.15	8.91
8.67							
12.96 ELEV	346.87	346.84	346.80	346.75	346.71	346.66	346.62
346.58							
13.44 CFS	8.43	8.20	7.96	7.74	7.51	7.29	7.08
6.87							
13.44 ELEV	346.53	346.49	346.45	346.41	346.37	346.33	346.29
346.25							
13.92 CFS	6.67	6.47	6.28	6.10	5.93	5.76	5.59
5.43							
13.92 ELEV	346.21	346.18	346.14	346.11	346.08	346.05	346.02
345.99							
14.40 CFS	5.28	5.13	4.99	4.85	4.71	4.58	4.46
4.33							
14.40 ELEV	345.96	345.93	345.91	345.88	345.86	345.83	345.81
345.79							
14.88 CFS	4.21	4.10	3.98	3.87	3.77	3.66	3.56
3.47							
14.88 ELEV	345.77	345.75	345.73	345.71	345.69	345.67	345.65
345.63							
15.36 CFS	3.37	3.28	3.19	3.11	3.03	2.95	2.88
2.81							
15.36 ELEV	345.61	345.60	345.58	345.57	345.55	345.54	345.52
345.51							
15.84 CFS	2.74	2.67	2.61	2.55	2.49	2.43	2.38
2.32							
15.84 ELEV	345.50	345.49	345.47	345.46	345.45	345.44	345.43
345.42							
16.32 CFS	2.27	2.22	2.18	2.13	2.08	2.04	2.00
1.96							
16.32 ELEV	345.41	345.40	345.40	345.39	345.38	345.37	345.36
345.36							
16.80 CFS	1.92	1.88	1.84	1.81	1.77	1.74	1.71
1.68							
16.80 ELEV	345.35	345.34	345.34	345.33	345.32	345.32	345.31
345.31							
17.28 CFS	1.65	1.62	1.59	1.56	1.53	1.51	1.48
1.45							

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17.28 ELEV	345.30	345.29	345.29	345.28	345.28	345.27	345.27
345.26							

17.76 CFS	1.43	1.40	1.38	1.36	1.34	1.31	1.29
1.27							
17.76 ELEV	345.26	345.26	345.25	345.25	345.24	345.24	345.24
345.23							
18.24 CFS	1.25	1.23	1.21	1.19	1.17	1.16	1.14
1.12							
18.24 ELEV	345.23	345.22	345.22	345.22	345.21	345.21	345.21
345.20							
18.72 CFS	1.11	1.09	1.08	1.07	1.05	1.04	1.03
1.01							
18.72 ELEV	345.20	345.20	345.20	345.19	345.19	345.19	345.19
345.18							
19.20 CFS	1.00	.99	.98	.97	.96	.95	.94
.93							
19.20 ELEV	345.18	345.18	345.18	345.18	345.17	345.17	345.17
345.17							
19.68 CFS	.92	.91	.91	.90	.89	.88	.87
.87							
19.68 ELEV	345.17	345.17	345.16	345.16	345.16	345.16	345.16
345.16							
20.16 CFS	.86	.85	.85	.84	.83	.83	.82
.81							
20.16 ELEV	345.16	345.16	345.15	345.15	345.15	345.15	345.15
345.15							
20.64 CFS	.81	.80	.80	.79	.79	.78	.78
.77							
20.64 ELEV	345.15	345.15	345.15	345.14	345.14	345.14	345.14
345.14							
21.12 CFS	.77	.76	.76	.75	.75	.74	.74
.73							
21.12 ELEV	345.14	345.14	345.14	345.14	345.14	345.14	345.13
345.13							
21.60 CFS	.73	.73	.72	.72	.71	.71	.71
.70							
21.60 ELEV	345.13	345.13	345.13	345.13	345.13	345.13	345.13
345.13							
22.08 CFS	.70	.69	.69	.69	.68	.68	.68
.67							
22.08 ELEV	345.13	345.13	345.13	345.13	345.12	345.12	345.12
345.12							
22.56 CFS	.67	.67	.66	.66	.65	.65	.65
.64							
22.56 ELEV	345.12	345.12	345.12	345.12	345.12	345.12	345.12
345.12							
23.04 CFS	.64	.64	.63	.63	.63	.62	.62
.62							
23.04 ELEV	345.12	345.12	345.12	345.11	345.11	345.11	345.11
345.11							
23.52 CFS	.61	.61	.61	.60	.60	.60	.60
.59							
23.52 ELEV	345.11	345.11	345.11	345.11	345.11	345.11	345.11
345.11							
24.00 CFS	.59	.59	.58	.57	.55	.53	.51
.49							
24.00 ELEV	345.11	345.11	345.11	345.10	345.10	345.10	345.09
345.09							
24.48 CFS	.47	.45	.43	.41	.39	.37	.35
.34							
24.48 ELEV	345.09	345.08	345.08	345.07	345.07	345.07	345.06
345.06							
24.96 CFS	.32	.31	.30	.28	.27	.26	.25
.23							
24.96 ELEV	345.06	345.06	345.05	345.05	345.05	345.05	345.04
345.04							

25.44 CFS	.22	.21	.20	.20	.19	.18	.17
.16							
25.44 ELEV	345.04	345.04	345.04	345.04	345.03	345.03	345.03
345.03							
25.92 CFS	.16	.15	.14	.14	.13	.12	.12
.11							
25.92 ELEV	345.03	345.03	345.03	345.02	345.02	345.02	345.02
345.02							
26.40 CFS	.11	.10	.10	.09	.09	.09	.08
.08							
26.40 ELEV	345.02	345.02	345.02	345.02	345.02	345.02	345.01
345.01							
26.88 CFS	.07	.07	.07	.06	.06	.06	.06
.05							
26.88 ELEV	345.01	345.01	345.01	345.01	345.01	345.01	345.01
345.01							
27.36 CFS	.05	.05	.05	.04	.04		
27.36 ELEV	345.01	345.01	345.01	345.01	345.01		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.45 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	15
FLOW(CFS)	6	3	2	1	1	1	1	0

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OPERATION RUNOFF XSECTION 119

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.13		8.3		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.83 WATERSHED INCHES; 7 CFS-HRS; .6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.17		14.8		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.34 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.15		44.1		(NULL)

24.00 1.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.19 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	48.6	(RUNOFF)
19.47	1.0	(RUNOFF)
19.75	1.0	(RUNOFF)
20.06	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.71 WATERSHED INCHES; 44 CFS-HRS; 3.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	92.7	(NULL)
18.58	3.0	(NULL)
22.74	2.0	(NULL)
23.05	2.0	(NULL)
24.00	1.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 118 CFS-HRS; 9.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	172.3	(NULL)
23.99	9.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 404 CFS-HRS; 33.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.51	148.1	315.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 404 CFS-HRS; 33.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	41.6	(RUNOFF)
20.68	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	28.2	362.31
20.70	1.1	356.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	58.7	(RUNOFF)
23.97	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.51 WATERSHED INCHES; 73 CFS-HRS; 6.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	84.2	(NULL)

18.68	3.2	(NULL)
23.78	2.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	76.6	318.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	42.0	(RUNOFF)
23.12	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.30 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
 FEET.

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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2.04TEST

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OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	178.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 454 CFS-HRS; 37.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	253.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.50 WATERSHED INCHES; 577 CFS-HRS; 47.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1



PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	253.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.50 WATERSHED INCHES; 577 CFS-HRS; 47.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	76.8	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	68.8	312.27
24.15	1.3	310.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-FEET.

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OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	14.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.63 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .28 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 376.89.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
 AT STRUCTURE 32

\*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.56	1.0	379.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.01 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 34, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 34

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
 AT XSECTION 34  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.68	1.0	338.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.00 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	41.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.63 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

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OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	17.5	355.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.08 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	18.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.06 WATERSHED INCHES;	48 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	18.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.06 WATERSHED INCHES;	48 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	18.2	330.28
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.06 WATERSHED INCHES;	48 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	42.9	(RUNOFF)
17.34	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.15 WATERSHED INCHES;	39 CFS-HRS;	3.2 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 139

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	44.6	(NULL)
23.69	2.0	(NULL)
24.00	2.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.10 WATERSHED INCHES;	86 CFS-HRS;	7.1 ACRE-

FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.15	44.6	(NULL)
23.69	2.0	(NULL)
24.00	2.0	(NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2							
	MAIN	TIME	INCREMENT = .060 hr,	DRAINAGE AREA = .06				
4.32 CFS	.00	.01	.01	.01	.01	.01	.01	.01
.01								
4.80 CFS	.01	.01	.01	.01	.01	.01	.02	.02
.02								
5.28 CFS	.02	.02	.02	.02	.02	.02	.02	.03
.04								
5.76 CFS	.04	.05	.06	.07	.08	.09	.09	.09
.10								
6.24 CFS	.11	.12	.13	.13	.14	.15	.16	.16
.17								
6.72 CFS	.18	.19	.20	.21	.22	.23	.24	.24
.26								
7.20 CFS	.27	.28	.29	.30	.31	.33	.34	.34
.35								
7.68 CFS	.36	.38	.39	.40	.42	.44	.45	.45
.47								
8.16 CFS	.48	.49	.51	.53	.54	.55	.57	.57
.59								
8.64 CFS	.61	.63	.64	.66	.67	.69	.71	.71
.74								
9.12 CFS	.76	.79	.82	.86	.89	.93	.96	.96
.99								
9.60 CFS	1.03	1.08	1.12	1.16	1.20	1.24	1.28	1.28
1.33								
10.08 CFS	1.38	1.43	1.48	1.52	1.57	1.62	1.67	1.67
1.73								
10.56 CFS	1.81	1.91	2.03	2.16	2.30	2.45	2.60	2.60
2.75								
11.04 CFS	2.90	3.13	3.38	3.65	3.93	4.22	4.54	4.54
4.85								
11.52 CFS	5.17	6.08	7.32	8.20	9.23	10.98	13.42	13.42
16.89								
12.00 CFS	23.15	32.13	43.42	43.83	36.16	32.51	31.33	31.33
30.26								
12.48 CFS	29.47	28.63	26.82	24.94	23.51	22.21	20.95	20.95
19.72								
12.96 CFS	18.54	17.40	16.31	15.30	14.48	13.76	13.06	13.06
12.40								
13.44 CFS	11.77	11.16	10.59	10.06	9.59	9.17	8.79	8.79
8.45								
13.92 CFS	8.19	7.95	7.73	7.50	7.28	7.07	6.88	6.88
6.71								
14.40 CFS	6.55	6.39	6.22	6.05	5.90	5.75	5.63	5.63
5.50								
14.88 CFS	5.37	5.24	5.12	5.00	4.87	4.75	4.65	4.65
4.57								
15.36 CFS	4.49	4.43	4.37	4.32	4.26	4.20	4.14	4.14
4.10								
15.84 CFS	4.08	4.04	3.99	3.93	3.89	3.85	3.82	3.82
3.79								

16.32 CFS	3.74	3.70	3.67	3.63	3.58	3.55	3.53
3.50							
16.80 CFS	3.46	3.42	3.39	3.37	3.34	3.31	3.26
3.22							
17.28 CFS	3.19	3.19	3.16	3.11	3.07	3.03	3.01
2.99							
17.76 CFS	2.96	2.92	2.89	2.86	2.85	2.82	2.78
2.75							
18.24 CFS	2.73	2.71	2.68	2.65	2.63	2.63	2.62
2.60							
18.72 CFS	2.57	2.56	2.57	2.56	2.54	2.53	2.52
2.52							
19.20 CFS	2.51	2.51	2.51	2.50	2.50	2.49	2.48
2.46							

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19.68 CFS	2.46	2.46	2.45	2.43	2.42	2.43	2.44
2.43							
20.16 CFS	2.41	2.40	2.39	2.39	2.36	2.35	2.36
2.37							
20.64 CFS	2.36	2.34	2.33	2.34	2.33	2.31	2.30
2.29							
21.12 CFS	2.29	2.28	2.28	2.28	2.27	2.27	2.27
2.26							
21.60 CFS	2.23	2.22	2.23	2.23	2.21	2.21	2.22
2.20							
22.08 CFS	2.18	2.17	2.17	2.16	2.16	2.16	2.15
2.15							
22.56 CFS	2.14	2.11	2.11	2.12	2.10	2.08	2.08
2.08							
23.04 CFS	2.10	2.08	2.07	2.06	2.05	2.05	2.04
2.03							
23.52 CFS	2.01	2.00	2.01	2.02	2.01	1.98	1.97
1.97							
24.00 CFS	2.02	1.97	1.70	1.52	1.45	1.41	1.40
1.38							
24.48 CFS	1.38	1.37	1.36	1.36	1.35	1.34	1.34
1.33							
24.96 CFS	1.32	1.32	1.31	1.30	1.29	1.29	1.28
1.27							
25.44 CFS	1.27	1.26	1.25	1.25	1.24	1.23	1.23
1.22							
25.92 CFS	1.21	1.21	1.20	1.19	1.19	1.18	1.17
1.17							
26.40 CFS	1.16	1.16	1.15	1.14	1.14	1.13	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.10 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-FEET.

DURATION (HRS)	2	4	6	8	10	12	14
FLOW (CFS)	9	4	3	3	2	2	1 TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .50 WATERSHED INCHES; 2 CFS-HRS; .1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	46.0	(NULL)
24.00	2.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	28.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.41 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	278.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 613 CFS-HRS; 50.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	347.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.53 WATERSHED INCHES; 698 CFS-HRS; 57.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	378.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.57 WATERSHED INCHES;	784 CFS-HRS;	64.8 ACRE-
FEET.		

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	353.1	290.14
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.57 WATERSHED INCHES;	784 CFS-HRS;	64.8 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	353.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.57 WATERSHED INCHES;	784 CFS-HRS;	64.8 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 45

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	33.3	(RUNOFF)
20.10	1.1 *	(RUNOFF)
	* FIRST POINT OF FLAT PEAK	
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.45 WATERSHED INCHES;	45 CFS-HRS;	3.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	40.7	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.39 WATERSHED INCHES;	56 CFS-HRS;	4.7 ACRE-

FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	74.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.42 WATERSHED INCHES;	101 CFS-HRS;	8.3 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	40.1	(RUNOFF)
20.10	1.1	(RUNOFF)
20.65	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.41 WATERSHED INCHES;	43 CFS-HRS;	3.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	369.2	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.56 WATERSHED INCHES;	827 CFS-HRS;	68.3 ACRE-
FEET.		

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OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	426.9	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.54 WATERSHED INCHES;	928 CFS-HRS;	76.6 ACRE-
FEET.		

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	412.7	284.52



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.54 WATERSHED INCHES; 927 CFS-HRS; 76.6 ACRE-
FEET.

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.54 WATERSHED INCHES; 145 CFS-HRS; 76.6 ACRE-
FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,
UNLESS NEW RATING TABLE VALUES ARE INSERTED.
\*\*\*

OPERATION REACH XSECTION 53

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

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OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.21 24.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.25 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	421.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.53 WATERSHED INCHES; 953 CFS-HRS; 78.8 ACRE-FEET.

\*\*\* WARNING - XSECTION 57  
 NO HYDROGRAPH IN INPUT LOCATION 5 OR 1 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	421.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.51 WATERSHED INCHES; 953 CFS-HRS; 78.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	12.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .85 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-FEET.

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 2.04TEST  
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OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	426.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 968 CFS-HRS; 80.0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	426.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.49 WATERSHED INCHES;	968 CFS-HRS;	80.0 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	7.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.81 WATERSHED INCHES;	9 CFS-HRS;	.7 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	429.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.48 WATERSHED INCHES;	977 CFS-HRS;	80.7 ACRE-
FEEET.		

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.78	406.3	249.53
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.48 WATERSHED INCHES;	976 CFS-HRS;	80.6 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 64

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	8.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.71 WATERSHED INCHES;	12 CFS-HRS;	1.0 ACRE-

FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	4.7	332.36
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.71 WATERSHED INCHES;	12 CFS-HRS;	1.0 ACRE-
FEET.		

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.86	4.6	300.46
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.71 WATERSHED INCHES;	12 CFS-HRS;	1.0 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	21.6	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.83 WATERSHED INCHES;	25 CFS-HRS;	2.0 ACRE-
FEET.		

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	12.4	290.42
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.83 WATERSHED INCHES;	25 CFS-HRS;	2.0 ACRE-
FEET.		

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OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.58	16.5	(NULL)
20.11	1.0	(NULL)
20.66	1.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.00 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	55.7	(RUNOFF)
24.03	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.15 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	68.6	(NULL)
23.10	2.1	(NULL)
23.75	2.0	(NULL)
24.03	2.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.09 WATERSHED INCHES; 95 CFS-HRS; 7.8 ACRE-  
FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	60.1	248.41
23.17	2.1	247.43
24.09	2.0	247.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.09 WATERSHED INCHES; 95 CFS-HRS; 7.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 71

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	13.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.40 WATERSHED INCHES;	11 CFS-HRS;	.9 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	3.4	263.40
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.40 WATERSHED INCHES;	11 CFS-HRS;	.9 ACRE-
FEET.		

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	3.3	247.53
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.39 WATERSHED INCHES;	11 CFS-HRS;	.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	34.3	(RUNOFF)
15.86	2.4	(RUNOFF)
24.02	1.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.59 WATERSHED INCHES;	42 CFS-HRS;	3.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.78	416.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.39 WATERSHED INCHES;	1018 CFS-HRS;	84.1 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 75

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	63.1	(NULL)
18.71	3.1	(NULL)
24.09	2.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.11 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.75	453.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.36 WATERSHED INCHES; 1123 CFS-HRS; 92.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	452.4	229.19

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.36 WATERSHED INCHES; 1123 CFS-HRS; 92.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	27.4	(RUNOFF)
17.35	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .86 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	458.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.34 WATERSHED INCHES; 1151 CFS-HRS; 95.1 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 80.  
 \*\*\*

-

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OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	458.4	213.36
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.34 WATERSHED INCHES;	1151 CFS-HRS;	95.1 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	36.0	(RUNOFF)
19.47	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.03 WATERSHED INCHES;	34 CFS-HRS;	2.8 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	465.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.33 WATERSHED INCHES;	1185 CFS-HRS;	97.9 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	13.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.71 WATERSHED INCHES;	14 CFS-HRS;	1.2 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	468.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.32 WATERSHED INCHES;	1199 CFS-HRS;	99.1 ACRE-
FEEET.		



OPERATION RUNOFF XSECTION 85

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	43.1	(RUNOFF)
18.68	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .76 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	483.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.27 WATERSHED INCHES; 1258 CFS-HRS; 103.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	22.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.89 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	486.6	(NULL)
23.97	28.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.28 WATERSHED INCHES; 1277 CFS-HRS; 105.5 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
 STARTING TIME = .00 RAIN DEPTH = 4.91 RAIN DURATION = 1.00

ANT. RUNOFF COND. = 2                      MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1                         STORM NO. =10                                 RAIN TABLE NO. = 9

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OPERATION RUNOFF    XSECTION    1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	48.0	(RUNOFF)
23.10	1.1 *	(RUNOFF)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.90 WATERSHED INCHES;                      63 CFS-HRS;                      5.2 ACRE-FEET.

OPERATION REACH    XSECTION    2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	45.0	390.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.90 WATERSHED INCHES;                      63 CFS-HRS;                      5.2 ACRE-FEET.

OPERATION RUNOFF    XSECTION    3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	82.2	(RUNOFF)
20.68	2.2	(RUNOFF)
23.98	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.77 WATERSHED INCHES;                      104 CFS-HRS;                      8.6 ACRE-FEET.

OPERATION ADDHYD    XSECTION    4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	122.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.82 WATERSHED INCHES;                      166 CFS-HRS;                      13.8 ACRE-FEET.

OPERATION RESVOR    STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	121.3	383.02

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 166 CFS-HRS; 13.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	120.5	368.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 166 CFS-HRS; 13.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	101.9	(RUNOFF)
23.73	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.57 WATERSHED INCHES; 132 CFS-HRS; 10.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	213.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.70 WATERSHED INCHES; 298 CFS-HRS; 24.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	212.2	357.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.70 WATERSHED INCHES; 299 CFS-HRS; 24.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.30	132.1	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.88 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-FEET.

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\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE

STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00. THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.

\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		376.27
12.68	60.8	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.49 WATERSHED INCHES; 165 CFS-HRS; 13.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.13	16.1	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.13 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		355.97
12.81	56.5	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.49 WATERSHED INCHES; 165 CFS-HRS; 13.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.19	77.9	(RUNOFF)
15.82	3.3	(RUNOFF)
18.86	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.23 WATERSHED INCHES; 78 CFS-HRS; 6.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	249.3	(NULL)
24.00	6.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.59 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	32.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	262.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.80 WATERSHED INCHES; 540 CFS-HRS; 44.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	278.8	(NULL)
23.98	12.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	278.8	(NULL)
23.98	12.6	(NULL)

	HYDROGRAPH POINTS FOR				ALTERNATE = 1,	STORM =10		
HRS	MAIN	TIME	INCREMENT =	.060 hr,	DRAINAGE	AREA =	.32	
SQ.MI.								
4.56 CFS	.00	.01	.01	.01	.01	.01	.01	.01
.01								
5.04 CFS	.01	.02	.02	.02	.02	.02	.02	.02
.02								
5.52 CFS	.03	.03	.03	.03	.03	.03	.04	.04
.04								
6.00 CFS	.04	.05	.05	.05	.05	.05	.06	.06
.06								
6.48 CFS	.06	.07	.07	.07	.08	.08	.08	.08
.09								
6.96 CFS	.09	.09	.10	.10	.11	.11	.11	.12
.12								

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7.44 CFS	.12	.13	.13	.14	.14	.16	.17
.19							
7.92 CFS	.20	.22	.24	.26	.28	.30	.33
.37							
8.40 CFS	.41	.45	.50	.56	.62	.68	.74
.81							
8.88 CFS	.87	.94	1.01	1.08	1.16	1.24	1.33
1.44							
9.36 CFS	1.56	1.68	1.82	1.97	2.12	2.28	2.45
2.63							
9.84 CFS	2.82	3.02	3.22	3.43	3.66	3.89	4.14
4.39							
10.32 CFS	4.65	4.91	5.19	5.48	5.80	6.16	6.57
7.04							
10.80 CFS	7.58	8.23	9.02	9.89	10.85	11.93	13.16
14.53							
11.28 CFS	16.03	17.69	19.49	21.40	24.55	29.09	34.60
40.47							
11.76 CFS	47	55	65	79	99	131	176
216							
12.24 CFS	236	255	276	279	274	263	248
230							
12.72 CFS	212	195	178	163	152	143	133
124							
13.20 CFS	115	107	100	93	87	81	76
71							
13.68 CFS	67.02	63.18	59.72	56.61	53.84	51.39	49.22
47.27							
14.16 CFS	45.52	43.92	42.49	41.19	40.02	38.94	37.92
36.93							

14.64	CFS	35.99	35.17	34.47	33.86	33.28	32.70	32.15
31.61								
15.12	CFS	31.06	30.50	29.97	29.49	29.06	28.68	28.35
28.07								
15.60	CFS	27.80	27.54	27.27	27.04	26.87	26.71	26.53
26.32								
16.08	CFS	26.13	25.95	25.79	25.63	25.46	25.29	25.12
24.94								
16.56	CFS	24.76	24.58	24.42	24.27	24.11	23.93	23.77
23.63								
17.04	CFS	23.49	23.34	23.17	22.97	22.79	22.64	22.50
22.32								
17.52	CFS	22.12	21.92	21.74	21.57	21.40	21.21	21.02
20.85								
18.00	CFS	20.69	20.54	20.37	20.19	20.03	19.88	19.74
19.57								
18.48	CFS	19.42	19.32	19.24	19.16	19.06	18.96	18.91
18.85								
18.96	CFS	18.76	18.67	18.59	18.52	18.44	18.38	18.32
18.26								
19.44	CFS	18.21	18.16	18.10	18.02	17.94	17.89	17.83
17.74								
19.92	CFS	17.65	17.59	17.56	17.52	17.45	17.38	17.32
17.25								
20.40	CFS	17.17	17.06	16.99	16.95	16.91	16.83	16.75
16.70								
20.88	CFS	16.66	16.58	16.48	16.38	16.29	16.21	16.12
16.04								
21.36	CFS	15.96	15.89	15.82	15.75	15.66	15.55	15.48
15.41								
21.84	CFS	15.32	15.24	15.18	15.11	15.01	14.92	14.84
14.75								
22.32	CFS	14.67	14.60	14.53	14.46	14.39	14.29	14.19
14.13								
22.80	CFS	14.05	13.95	13.84	13.77	13.73	13.67	13.59
13.51								
23.28	CFS	13.44	13.37	13.30	13.23	13.12	13.02	12.96
12.91								
23.76	CFS	12.86	12.77	12.67	12.59	12.60	12.53	12.06
11.31								
24.24	CFS	10.58	9.94	9.38	8.91	8.54	8.27	8.03
7.82								
24.72	CFS	7.62	7.44	7.27	7.10	6.94	6.78	6.63
6.49								
25.20	CFS	6.34	6.21	6.07	5.94	5.81	5.69	5.57
5.45								
25.68	CFS	5.33	5.21	5.10	4.99	4.88	4.78	4.67
4.56								
26.16	CFS	4.45	4.33	4.22	4.11	4.00	3.90	3.80
3.70								
26.64	CFS	3.60	3.50	3.41	3.32	3.23	3.15	3.07
2.98								
27.12	CFS	2.91	2.83	2.75	2.68			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-  
 FEET.

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PAGE

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	56	28	22	18	16	14	7	4

DURATION(HRS) 18  
FLOW(CFS) 3 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
\*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.41		278.8		333.39
23.98		12.6		331.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.15		52.0		(RUNOFF)
17.34		1.2		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.57 WATERSHED INCHES; 49 CFS-HRS; 4.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.18		62.5		(RUNOFF)
20.87		1.1		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.13 WATERSHED INCHES; 67 CFS-HRS; 5.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.67		13.4		348.34

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
SQ.MI.  
3.00 CFS .00 .01 .01 .01 .02 .02 .02  
.03  
3.00 ELEV 345.00 345.00 345.00 345.00 345.00 345.00 345.00  
345.00



3.48 CFS	.03	.04	.04	.05	.05	.06	.06
.07							

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PASS	2	JOB NO.	1	PAGE
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3.48 ELEV	345.01	345.01	345.01	345.01	345.01	345.01	345.01
345.01							
3.96 CFS	.07	.08	.09	.09	.10	.11	.11
.12							
3.96 ELEV	345.01	345.01	345.02	345.02	345.02	345.02	345.02
345.02							
4.44 CFS	.13	.14	.14	.15	.16	.17	.18
.18							
4.44 ELEV	345.02	345.02	345.03	345.03	345.03	345.03	345.03
345.03							
4.92 CFS	.19	.20	.21	.22	.22	.23	.24
.25							
4.92 ELEV	345.03	345.04	345.04	345.04	345.04	345.04	345.04
345.05							
5.40 CFS	.26	.27	.28	.28	.29	.30	.31
.32							
5.40 ELEV	345.05	345.05	345.05	345.05	345.05	345.06	345.06
345.06							
5.88 CFS	.33	.34	.35	.36	.36	.37	.38
.39							
5.88 ELEV	345.06	345.06	345.06	345.06	345.07	345.07	345.07
345.07							
6.36 CFS	.40	.41	.42	.43	.45	.46	.47
.48							
6.36 ELEV	345.07	345.08	345.08	345.08	345.08	345.08	345.09
345.09							
6.84 CFS	.49	.50	.52	.53	.54	.56	.57
.58							
6.84 ELEV	345.09	345.09	345.09	345.10	345.10	345.10	345.10
345.11							
7.32 CFS	.60	.61	.63	.64	.66	.67	.69
.70							
7.32 ELEV	345.11	345.11	345.11	345.12	345.12	345.12	345.13
345.13							
7.80 CFS	.72	.73	.75	.77	.78	.80	.82
.83							
7.80 ELEV	345.13	345.13	345.14	345.14	345.14	345.15	345.15
345.15							
8.28 CFS	.85	.87	.89	.90	.92	.94	.96
.98							
8.28 ELEV	345.15	345.16	345.16	345.16	345.17	345.17	345.17
345.18							
8.76 CFS	1.00	1.01	1.03	1.05	1.07	1.09	1.11
1.13							
8.76 ELEV	345.18	345.18	345.19	345.19	345.19	345.20	345.20
345.21							
9.24 CFS	1.15	1.18	1.20	1.23	1.26	1.29	1.32
1.35							
9.24 ELEV	345.21	345.21	345.22	345.22	345.23	345.23	345.24
345.25							
9.72 CFS	1.38	1.42	1.46	1.50	1.54	1.58	1.62
1.66							

9.72 ELEV	345.25	345.26	345.27	345.27	345.28	345.29	345.29
345.30							
10.20 CFS	1.71	1.75	1.80	1.84	1.89	1.94	1.99
2.05							
10.20 ELEV	345.31	345.32	345.33	345.34	345.34	345.35	345.36
345.37							
10.68 CFS	2.11	2.17	2.24	2.32	2.41	2.51	2.61
2.72							
10.68 ELEV	345.38	345.40	345.41	345.42	345.44	345.46	345.47
345.49							
11.16 CFS	2.84	2.97	3.12	3.28	3.45	3.64	3.84
4.06							
11.16 ELEV	345.52	345.54	345.57	345.60	345.63	345.66	345.70
345.74							
11.64 CFS	4.34	4.67	5.06	5.52	6.08	6.78	7.71
9.00							
11.64 ELEV	345.79	345.85	345.92	346.01	346.11	346.23	346.40
346.64							
12.12 CFS	10.27	11.02	11.75	12.33	12.73	13.00	13.17
13.28							
12.12 ELEV	346.94	347.28	347.61	347.87	348.05	348.17	348.25
348.30							
12.60 CFS	13.35	13.37	13.36	13.33	13.28	13.22	13.15
13.07							
12.60 ELEV	348.33	348.34	348.34	348.32	348.30	348.27	348.24
348.21							
13.08 CFS	12.99	12.90	12.81	12.71	12.60	12.50	12.39
12.28							
13.08 ELEV	348.17	348.13	348.09	348.04	347.99	347.95	347.90
347.85							
13.56 CFS	12.16	12.04	11.93	11.81	11.69	11.57	11.45
11.33							
13.56 ELEV	347.80	347.74	347.69	347.64	347.58	347.53	347.47
347.42							
14.04 CFS	11.21	11.09	10.97	10.86	10.74	10.63	10.51
10.40							
14.04 ELEV	347.37	347.31	347.26	347.21	347.16	347.10	347.05
347.00							
14.52 CFS	10.29	10.18	10.06	9.86	9.54	9.24	8.94
8.66							
14.52 ELEV	346.95	346.90	346.85	346.80	346.74	346.68	346.63
346.58							
15.00 CFS	8.38	8.11	7.86	7.61	7.36	7.13	6.91
6.69							
15.00 ELEV	346.53	346.48	346.43	346.38	346.34	346.30	346.26
346.22							

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15.48 CFS	6.49	6.29	6.10	5.92	5.75	5.58	5.42
5.27							
15.48 ELEV	346.18	346.15	346.11	346.08	346.05	346.02	345.99
345.96							
15.96 CFS	5.12	4.98	4.84	4.71	4.59	4.46	4.35
4.24							
15.96 ELEV	345.93	345.91	345.88	345.86	345.83	345.81	345.79
345.77							

16.44 CFS	4.13	4.02	3.92	3.83	3.73	3.64	3.56
3.47							
16.44 ELEV	345.75	345.73	345.71	345.70	345.68	345.66	345.65
345.63							
16.92 CFS	3.39	3.31	3.24	3.17	3.10	3.03	2.96
2.90							
16.92 ELEV	345.62	345.60	345.59	345.58	345.56	345.55	345.54
345.53							
17.40 CFS	2.84	2.78	2.72	2.67	2.61	2.56	2.51
2.46							
17.40 ELEV	345.52	345.51	345.50	345.49	345.48	345.47	345.46
345.45							
17.88 CFS	2.41	2.36	2.32	2.27	2.23	2.19	2.15
2.11							
17.88 ELEV	345.44	345.43	345.42	345.41	345.41	345.40	345.39
345.38							
18.36 CFS	2.07	2.03	2.00	1.96	1.93	1.90	1.87
1.84							
18.36 ELEV	345.38	345.37	345.36	345.36	345.35	345.35	345.34
345.33							
18.84 CFS	1.81	1.79	1.76	1.73	1.71	1.69	1.66
1.64							
18.84 ELEV	345.33	345.32	345.32	345.32	345.31	345.31	345.30
345.30							
19.32 CFS	1.62	1.60	1.58	1.56	1.55	1.53	1.51
1.50							
19.32 ELEV	345.30	345.29	345.29	345.28	345.28	345.28	345.28
345.27							
19.80 CFS	1.48	1.46	1.45	1.43	1.42	1.41	1.40
1.38							
19.80 ELEV	345.27	345.27	345.26	345.26	345.26	345.26	345.25
345.25							
20.28 CFS	1.37	1.36	1.35	1.33	1.32	1.31	1.30
1.29							
20.28 ELEV	345.25	345.25	345.25	345.24	345.24	345.24	345.24
345.24							
20.76 CFS	1.28	1.27	1.26	1.25	1.24	1.24	1.23
1.22							
20.76 ELEV	345.23	345.23	345.23	345.23	345.23	345.22	345.22
345.22							
21.24 CFS	1.21	1.20	1.19	1.18	1.18	1.17	1.16
1.16							
21.24 ELEV	345.22	345.22	345.22	345.22	345.21	345.21	345.21
345.21							
21.72 CFS	1.15	1.14	1.13	1.13	1.12	1.11	1.11
1.10							
21.72 ELEV	345.21	345.21	345.21	345.21	345.20	345.20	345.20
345.20							
22.20 CFS	1.10	1.09	1.08	1.08	1.07	1.06	1.06
1.05							
22.20 ELEV	345.20	345.20	345.20	345.20	345.19	345.19	345.19
345.19							
22.68 CFS	1.05	1.04	1.03	1.03	1.02	1.02	1.01
1.01							
22.68 ELEV	345.19	345.19	345.19	345.19	345.19	345.18	345.18
345.18							
23.16 CFS	1.00	1.00	.99	.99	.98	.97	.97
.96							
23.16 ELEV	345.18	345.18	345.18	345.18	345.18	345.18	345.18
345.18							
23.64 CFS	.96	.95	.95	.94	.94	.93	.93
.92							
23.64 ELEV	345.17	345.17	345.17	345.17	345.17	345.17	345.17
345.17							

24.12 CFS	.92	.90	.87	.84	.80	.77	.74
.70							
24.12 ELEV	345.17	345.16	345.16	345.15	345.15	345.14	345.13
345.13							
24.60 CFS	.67	.64	.61	.59	.56	.53	.51
.49							
24.60 ELEV	345.12	345.12	345.11	345.11	345.10	345.10	345.09
345.09							
25.08 CFS	.47	.44	.42	.41	.39	.37	.35
.34							
25.08 ELEV	345.08	345.08	345.08	345.07	345.07	345.07	345.06
345.06							
25.56 CFS	.32	.31	.29	.28	.27	.26	.24
.23							
25.56 ELEV	345.06	345.06	345.05	345.05	345.05	345.05	345.04
345.04							
26.04 CFS	.22	.21	.20	.19	.19	.18	.17
26.04 ELEV	345.04	345.04	345.04	345.04	345.03	345.03	345.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.12 WATERSHED INCHES; 67 CFS-HRS; 5.6 ACRE-  
 FEET.

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DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	11	5	3	2	1	1	1	1
DURATION(HRS)	18	18						
FLOW(CFS)	1	0						

OPERATION RUNOFF XSECTION 119

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.13 15.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.40 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.14 25.5 (NULL)  
 23.99 1.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.98 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.14	77.5	(NULL)
21.94	2.1	(NULL)
24.00	1.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.82 WATERSHED INCHES; 129 CFS-HRS; 10.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	90.5	(RUNOFF)
17.34	2.3	(RUNOFF)
24.00	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.23 WATERSHED INCHES; 84 CFS-HRS; 7.0 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	167.9	(NULL)
18.57	5.0	(NULL)
20.04	4.3	(NULL)
20.60	4.0	(NULL)
23.71	3.1	(NULL)
24.00	3.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.56 WATERSHED INCHES; 213 CFS-HRS; 17.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	378.1	(NULL)
12.35	352.9	(NULL)
20.02	21.9	(NULL)
23.02	17.0	(NULL)
24.00	15.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.96 WATERSHED INCHES; 785 CFS-HRS; 64.8 ACRE-  
FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	344.2	316.03
24.04	15.7	314.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.95 WATERSHED INCHES; 784 CFS-HRS; 64.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	81.4	(RUNOFF)
20.13	2.0	(RUNOFF)
23.99	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.03 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-FEET.

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\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	78.5	363.94
20.15	2.0	356.54
23.79	1.5	356.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 99 CFS-HRS; 8.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	115.6	(RUNOFF)
18.66	3.3	(RUNOFF)

23.77 2.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.97 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 26

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows: 12.30, 20.14, 23.14, 23.78.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-
FEET.

OPERATION REACH XSECTION 27

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows: 12.40, 20.20, 23.20.

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 28

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows: 12.25, 21.94, 24.01.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.68 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 29

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows: 12.32, 24.03.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.92 WATERSHED INCHES; 887 CFS-HRS; 73.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	581.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 1129 CFS-HRS; 93.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	581.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 1129 CFS-HRS; 93.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	137.5	(RUNOFF)
18.66	3.2	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	125.9	313.02
18.72	3.2	310.26
24.09	2.2	310.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33



PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	22.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.33 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .38 AC-FT ( .07 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 377.43.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	9.1	380.16

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	9.0	338.13

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.47 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	66.9	(RUNOFF)
21.97	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.32 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
 WITH .95 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 353.79.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	48.7	357.05
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.67 WATERSHED INCHES;	65 CFS-HRS;	5.4 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.62 WATERSHED INCHES;	84 CFS-HRS;	6.9 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.62 WATERSHED INCHES;	84 CFS-HRS;	6.9 ACRE-
FEET.		

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
 \*\*\*

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OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	330.54
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.62 WATERSHED INCHES;	84 CFS-HRS;	6.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	73.1	(RUNOFF)
15.84	2.2	(RUNOFF)

22.41 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.77 WATERSHED INCHES; 68 CFS-HRS; 5.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 139

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Values include 12.18, 20.82, 24.00 and 101.1, 3.2, 2.6.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.69 WATERSHED INCHES; 152 CFS-HRS; 12.6 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 35

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Values include 12.18, 20.82, 24.00 and 101.1, 3.2, 2.6.

Table with 9 columns: HRS, MAIN, TIME, INCREMENT, ALTERNATE, DRAINAGE, STORM, AREA. Values range from 2.82 to 6.66 CFS and .01 to .84 SQ.MI.

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Table with 9 columns: HRS, MAIN, TIME, INCREMENT, ALTERNATE, DRAINAGE, STORM, AREA. Values range from 7.14 to 8.10 CFS and 1.03 to 1.45 SQ.MI.

1.48								
8.58	CFS	1.52	1.56	1.60	1.62	1.64	1.67	1.70
1.75								
9.06	CFS	1.80	1.84	1.89	1.96	2.04	2.11	2.18
2.24								
9.54	CFS	2.30	2.38	2.46	2.55	2.63	2.70	2.77
2.85								
10.02	CFS	2.94	3.04	3.13	3.22	3.30	3.37	3.47
3.57								
10.50	CFS	3.68	3.81	4.01	4.23	4.49	4.76	5.03
5.31								
10.98	CFS	5.59	5.88	6.29	6.75	7.26	7.76	8.28
8.85								
11.46	CFS	9.39	9.98	12.20	15.17	17.65	20.45	24.74
30.51								
11.94	CFS	38.21	51.44	70.01	93.17	101.14	92.25	87.52
81.28								
12.42	CFS	73.06	65.85	59.74	52.57	45.94	40.64	36.17
33.61								
12.90	CFS	31.69	29.88	28.10	26.39	24.77	23.33	22.03
20.80								
13.38	CFS	19.63	18.53	17.53	16.61	15.74	14.97	14.29
13.67								
13.86	CFS	13.11	12.61	12.15	11.73	11.32	10.93	10.55
10.22								
14.34	CFS	9.91	9.66	9.42	9.16	8.90	8.65	8.43
8.22								
14.82	CFS	8.02	7.81	7.59	7.40	7.20	6.99	6.81
6.67								
15.30	CFS	6.55	6.46	6.37	6.30	6.22	6.13	6.03
5.93								
15.78	CFS	5.87	5.83	5.77	5.69	5.60	5.53	5.48
5.44								
16.26	CFS	5.39	5.32	5.26	5.21	5.15	5.08	5.04
5.00								
16.74	CFS	4.97	4.91	4.85	4.81	4.78	4.75	4.69
4.62								
17.22	CFS	4.56	4.53	4.53	4.49	4.44	4.37	4.32
4.29								
17.70	CFS	4.27	4.23	4.17	4.13	4.10	4.07	4.04
3.98								
18.18	CFS	3.94	3.91	3.88	3.85	3.79	3.77	3.78
3.77								
18.66	CFS	3.75	3.70	3.68	3.69	3.66	3.62	3.59
3.57								
19.14	CFS	3.56	3.55	3.53	3.52	3.51	3.50	3.49
3.46								
19.62	CFS	3.42	3.41	3.42	3.39	3.36	3.34	3.34
3.36								
20.10	CFS	3.34	3.31	3.29	3.28	3.26	3.22	3.19
3.21								
20.58	CFS	3.21	3.21	3.17	3.15	3.16	3.15	3.11
3.09								
21.06	CFS	3.08	3.07	3.06	3.05	3.04	3.03	3.02
3.02								
21.54	CFS	3.00	2.97	2.94	2.96	2.94	2.91	2.92
2.93								
22.02	CFS	2.89	2.87	2.85	2.84	2.83	2.83	2.82
2.81								
22.50	CFS	2.80	2.78	2.74	2.73	2.74	2.72	2.69
2.67								
22.98	CFS	2.68	2.70	2.68	2.65	2.63	2.62	2.61
2.60								
23.46	CFS	2.58	2.54	2.53	2.55	2.56	2.55	2.52

2.49								
23.94 CFS	2.50	2.58	2.49	2.08	1.79	1.67	1.62	
1.60								
24.42 CFS	1.58	1.57	1.56	1.56	1.55	1.54	1.53	
1.52								
24.90 CFS	1.52	1.51	1.50	1.49	1.48	1.47	1.47	
1.46								
25.38 CFS	1.45	1.44	1.44	1.43	1.42	1.41	1.41	
1.40								

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.69 WATERSHED INCHES; 152 CFS-HRS; 12.6 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	15	7	5	4	3	3	3	2

DURATION(HRS) 16  
 FLOW(CFS) 1 TRUNCATED

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OPERATION RUNOFF XSECTION 140

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.13		5.1		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 4 CFS-HRS; .4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.18		105.5		(NULL)
21.93		3.0		(NULL)
24.00		2.7		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.53 WATERSHED INCHES; 157 CFS-HRS; 12.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.27		57.7		(RUNOFF)
23.76		1.2		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.84 WATERSHED INCHES; 72 CFS-HRS; 6.0 ACRE-

FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	631.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 1201 CFS-HRS; 99.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	753.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.98 WATERSHED INCHES; 1356 CFS-HRS; 112.1 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	838.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 1510 CFS-HRS; 124.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	803.8	290.97

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 1509 CFS-HRS; 124.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	803.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

3.02 WATERSHED INCHES; 1509 CFS-HRS; 124.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	66.8	(RUNOFF)
23.09	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.88 WATERSHED INCHES; 89 CFS-HRS; 7.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	83.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.81 WATERSHED INCHES; 114 CFS-HRS; 9.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 47

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	150.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.84 WATERSHED INCHES; 203 CFS-HRS; 16.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	81.7	(RUNOFF)
18.65	2.0	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.84 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
12.44 842.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.01 WATERSHED INCHES; 1595 CFS-HRS; 131.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.42 973.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 1798 CFS-HRS; 148.6 ACRE-  
FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.53 948.8 285.87

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 1797 CFS-HRS; 148.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 210 CFS-HRS; 148.5 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 53

\*\*\* MESSAGE - XSECTION 53, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 207 CFS-HRS; 148.5 ACRE-  
FEET.



OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - XSECTION 54, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 189 CFS-HRS; 148.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	51.6	(RUNOFF)
21.97	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.61 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	968.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.98 WATERSHED INCHES; 1851 CFS-HRS; 153.0 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - XSECTION 57, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.98 WATERSHED INCHES; 214 CFS-HRS; 153.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	969.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.93 WATERSHED INCHES; 1853 CFS-HRS; 153.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	31.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.01 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	983.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.91 WATERSHED INCHES; 1887 CFS-HRS; 156.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	983.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.91 WATERSHED INCHES; 1887 CFS-HRS; 156.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	18.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.95 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	992.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.89 WATERSHED INCHES; 1909 CFS-HRS; 157.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	956.0	250.37
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.89 WATERSHED INCHES;	1908 CFS-HRS;	157.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	15.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.24 WATERSHED INCHES;	23 CFS-HRS;	1.9 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	8.4	334.33
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.24 WATERSHED INCHES;	23 CFS-HRS;	1.9 ACRE-
FEET.		

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.85	8.2	300.61

1 TR20 ----- SCS

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.23 WATERSHED INCHES;	23 CFS-HRS;	1.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	55.9	(RUNOFF)
24.02	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.98 WATERSHED INCHES; 59 CFS-HRS; 4.8 ACRE- FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS. \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS. \*\*\*

OPERATION RESVOR STRUCTURE 62

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows for times 12.62, 14.58, 24.04.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 1.98 WATERSHED INCHES; 59 CFS-HRS; 4.8 ACRE- FEET.

OPERATION ADDHYD XSECTION 67

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows for times 12.82, 18.87, 24.04 with NULL values.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.23 WATERSHED INCHES; 82 CFS-HRS; 6.7 ACRE- FEET.

OPERATION RUNOFF XSECTION 68

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows for times 12.19, 18.87, 24.02 with RUNOFF values.

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.47 WATERSHED INCHES; 124 CFS-HRS; 10.3 ACRE- FEET.

OPERATION ADDHYD XSECTION 69

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK

ELEVATION(FEET)		
12.19	141.4	(NULL)
18.87	5.2	(NULL)
21.97	4.3	(NULL)
24.03	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 206 CFS-HRS; 17.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	96.0	248.70

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.37 WATERSHED INCHES; 206 CFS-HRS; 17.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	26.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	9.6	265.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.82 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	8.9	247.79

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	110.8	(RUNOFF)
15.85	5.4	(RUNOFF)
17.34	4.2	(RUNOFF)
20.86	3.0	(RUNOFF)
24.01	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.58 WATERSHED INCHES; 112 CFS-HRS; 9.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.63	987.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.76 WATERSHED INCHES; 2020 CFS-HRS; 167.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.44	105.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.40 WATERSHED INCHES; 227 CFS-HRS; 18.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.62	1081.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.72 WATERSHED INCHES; 2248 CFS-HRS; 185.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.69	1080.2	230.50

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.72 WATERSHED INCHES; 2247 CFS-HRS; 185.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	69.0	(RUNOFF)
17.34	2.3	(RUNOFF)
24.01	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.03 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	1095.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.70 WATERSHED INCHES; 2314 CFS-HRS; 191.2 ACRE-  
FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.75	1092.6	216.01

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.69 WATERSHED INCHES; 2314 CFS-HRS; 191.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	83.3	(RUNOFF)
15.84	3.1	(RUNOFF)
17.34	2.4	(RUNOFF)
24.00	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.29 WATERSHED INCHES; 76 CFS-HRS; 6.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 82

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.75	1107.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.68 WATERSHED INCHES;	2389 CFS-HRS;	197.5 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	37.3	(RUNOFF)
19.47	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.78 WATERSHED INCHES;	36 CFS-HRS;	3.0 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.75	1115.2	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.66 WATERSHED INCHES;	2425 CFS-HRS;	200.4 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	118.2	(RUNOFF)
18.67	4.1	(RUNOFF)
23.12	3.1	(RUNOFF)
24.01	2.8	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.87 WATERSHED INCHES;	143 CFS-HRS;	11.8 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	1155.2	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.60 WATERSHED INCHES;	2568 CFS-HRS;	212.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 87

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	40.2	(RUNOFF)
15.84	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.45 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	1160.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.61 WATERSHED INCHES; 2604 CFS-HRS; 215.2 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
 STARTING TIME = .00 RAIN DEPTH = 7.23 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =50 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	81.5	(RUNOFF)
20.13	2.1	(RUNOFF)
23.08	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	81.3	390.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 3

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.27	142.8	(RUNOFF)
20.68	3.4	(RUNOFF)
23.97	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.85 WATERSHED INCHES; 181 CFS-HRS; 15.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.30	220.1	(NULL)
20.13	5.7	(NULL)
23.12	4.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.91 WATERSHED INCHES; 290 CFS-HRS; 24.0 ACRE-  
 FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,  
 VALUE EXTRAPOLATED.  
 \*\*\*

OPERATION RESVOR STRUCTURE 11

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.32	218.8	384.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 5

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.39	218.2	368.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	181.7	(RUNOFF)
20.14	4.8	(RUNOFF)
23.74	3.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.60 WATERSHED INCHES; 237 CFS-HRS; 19.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	387.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.75 WATERSHED INCHES; 526 CFS-HRS; 43.5 ACRE-FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	386.9	358.49

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.75 WATERSHED INCHES; 526 CFS-HRS; 43.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	203.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.15 WATERSHED INCHES; 291 CFS-HRS; 24.1 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	139.6	377.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.58 WATERSHED INCHES; 264 CFS-HRS; 21.9 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	30.4	(RUNOFF)
15.46	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.03 WATERSHED INCHES; 25 CFS-HRS; 2.1 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	112.3	359.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.57 WATERSHED INCHES; 264 CFS-HRS; 21.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	146.1	(RUNOFF)
15.81	5.5	(RUNOFF)
20.09	3.2	(RUNOFF)
20.64	3.0	(RUNOFF)
24.02	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.16 WATERSHED INCHES; 146 CFS-HRS; 12.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	458.9	(NULL)
24.00	10.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.61 WATERSHED INCHES; 672 CFS-HRS; 55.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	56.4	(RUNOFF)
21.97	1.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.80 WATERSHED INCHES; 60 CFS-HRS; 4.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	552.8	(NULL)
23.98	17.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.84 WATERSHED INCHES; 934 CFS-HRS; 77.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	582.5	(NULL)
23.99	18.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.83 WATERSHED INCHES; 994 CFS-HRS; 82.1 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	582.5	(NULL)
23.99	18.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32  
SQ.MI.

3.36 CFS	.00	.01	.01	.01	.01	.01	.01
.02							
3.84 CFS	.02	.02	.02	.02	.03	.03	.03
.03							
4.32 CFS	.04	.04	.04	.05	.05	.05	.06
.06							
4.80 CFS	.06	.07	.07	.08	.08	.08	.09

.09							
5.28 CFS	.10	.10	.11	.11	.12	.12	.13
.13							
5.76 CFS	.14	.15	.16	.18	.19	.21	.23
.24							
6.24 CFS	.26	.29	.32	.35	.39	.43	.49
.54							
6.72 CFS	.60	.67	.73	.80	.88	.95	1.03
1.11							
7.20 CFS	1.19	1.28	1.38	1.48	1.59	1.71	1.83
1.95							
7.68 CFS	2.08	2.21	2.34	2.48	2.62	2.77	2.92
3.07							
8.16 CFS	3.23	3.38	3.53	3.70	3.87	4.03	4.19
4.37							
8.64 CFS	4.56	4.74	4.93	5.12	5.30	5.48	5.67
5.89							
9.12 CFS	6.13	6.43	6.80	7.21	7.67	8.15	8.63
9.13							
9.60 CFS	9.65	10.20	10.78	11.37	11.98	12.58	13.20
13.84							
10.08 CFS	14.50	15.17	16.36	18.12	19.64	20.94	22.12
23.22							
10.56 CFS	24.31	25.47	26.73	28.13	29.67	31.35	33.20
35.17							
11.04 CFS	37.31	39.71	42.42	45.46	48.79	52.44	56.44
60.74							
11.52 CFS	65	71	80	90	101	115	133
159							

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12.00 CFS	196	253	342	437	496	542	574
580							
12.48 CFS	548	502	454	408	368	335	307
283							
12.96 CFS	263	245	230	217	194	174	158
145							
13.44 CFS	135	125	117	110	104	98	93
88							
13.92 CFS	83.99	80.31	77.06	74.15	71.51	69.11	66.93
64.96							
14.40 CFS	63.17	61.51	59.92	58.38	56.88	55.44	54.09
52.79							
14.88 CFS	51.51	50.24	48.99	47.78	46.55	45.34	44.17
43.08							
15.36 CFS	42.09	41.20	40.41	39.71	39.09	38.55	38.07
37.69							
15.84 CFS	37.42	37.17	36.89	36.58	36.29	36.02	35.78
35.55							
16.32 CFS	35.29	35.03	34.78	34.51	34.23	33.96	33.72
33.50							
16.80 CFS	33.26	33.00	32.75	32.54	32.34	32.12	31.85
31.55							
17.28 CFS	31.28	31.07	30.86	30.61	30.31	30.02	29.75
29.50							
17.76 CFS	29.26	28.99	28.72	28.47	28.25	28.03	27.78

27.53								
18.24	CFS	27.30	27.09	26.89	26.65	26.44	26.30	26.21
26.12								
18.72	CFS	25.98	25.87	25.81	25.75	25.64	25.52	25.42
25.32								
19.20	CFS	25.23	25.14	25.06	25.00	24.93	24.88	24.81
24.70								
19.68	CFS	24.59	24.53	24.46	24.34	24.21	24.13	24.11
24.06								
20.16	CFS	23.97	23.88	23.80	23.72	23.59	23.45	23.35
23.30								
20.64	CFS	23.25	23.15	23.04	22.98	22.94	22.84	22.73
22.62								
21.12	CFS	22.53	22.44	22.35	22.27	22.20	22.14	22.08
22.02								
21.60	CFS	21.92	21.81	21.73	21.67	21.57	21.49	21.46
21.38								
22.08	CFS	21.27	21.17	21.08	20.99	20.91	20.83	20.76
20.70								
22.56	CFS	20.63	20.50	20.39	20.33	20.25	20.12	19.99
19.91								
23.04	CFS	19.88	19.84	19.75	19.65	19.57	19.50	19.42
19.32								
23.52	CFS	19.18	19.03	18.95	18.89	18.82	18.69	18.55
18.44								
24.00	CFS	18.47	18.38	17.60	16.37	15.16	14.04	12.94
11.87								
24.48	CFS	10.89	10.27	9.94	9.68	9.48	9.29	9.13
8.97								
24.96	CFS	8.83	8.69	8.56	8.43	8.30	8.18	8.06
7.95								
25.44	CFS	7.84	7.72	7.62	7.51	7.40	7.30	7.20
7.10								
25.92	CFS	7.00	6.90	6.80	6.70	6.59	6.47	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 994 CFS-HRS; 82.1 ACRE-FEET.

DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	96	45	33	26	23	21	16	8

DURATION (HRS) 17  
 FLOW (CFS) 6 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.40	582.5	335.04
23.99	18.5	331.31

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 994 CFS-HRS; 82.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.14	82.4	(RUNOFF)
15.84	2.4	(RUNOFF)
23.05	1.1	(RUNOFF)
23.71	1.0	(RUNOFF)
24.00	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.80 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	94.7	(RUNOFF)
24.03	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.73	17.5	350.21

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
 SQ.MI.

HRS	0.00	0.01	0.01	0.01	0.02	0.02	0.03
2.10 CFS	.00	.01	.01	.01	.02	.02	.03
2.10 ELEV	345.00	345.00	345.00	345.00	345.00	345.00	345.01
2.58 CFS	.04	.05	.06	.07	.07	.08	.09
2.58 ELEV	345.01	345.01	345.01	345.01	345.01	345.02	345.02
3.06 CFS	.11	.12	.14	.15	.16	.17	.18
3.06 ELEV	345.02	345.02	345.02	345.03	345.03	345.03	345.03
3.54 CFS	.21	.22	.23	.25	.26	.27	.29
3.54 ELEV	345.04	345.04	345.04	345.04	345.05	345.05	345.05
4.02 CFS	.31	.33	.34	.36	.37	.39	.40
4.02 ELEV	345.06	345.06	345.06	345.07	345.07	345.07	345.07



4.50 CFS	.43	.44	.46	.47	.49	.50	.52
.53							
4.50 ELEV	345.08	345.08	345.08	345.09	345.09	345.09	345.09
345.10							
4.98 CFS	.55	.56	.58	.59	.61	.62	.64
.65							
4.98 ELEV	345.10	345.10	345.10	345.11	345.11	345.11	345.12
345.12							
5.46 CFS	.66	.68	.69	.71	.72	.74	.75
.77							
5.46 ELEV	345.12	345.12	345.13	345.13	345.13	345.13	345.14
345.14							

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5.94 CFS	.78	.79	.81	.82	.84	.85	.87
.89							
5.94 ELEV	345.14	345.14	345.15	345.15	345.15	345.16	345.16
345.16							
6.42 CFS	.90	.92	.94	.96	.97	.99	1.01
1.03							
6.42 ELEV	345.16	345.17	345.17	345.17	345.18	345.18	345.18
345.19							
6.90 CFS	1.05	1.07	1.09	1.11	1.13	1.16	1.18
1.20							
6.90 ELEV	345.19	345.20	345.20	345.20	345.21	345.21	345.21
345.22							
7.38 CFS	1.23	1.25	1.27	1.30	1.32	1.35	1.37
1.39							
7.38 ELEV	345.22	345.23	345.23	345.24	345.24	345.24	345.25
345.25							
7.86 CFS	1.42	1.44	1.47	1.50	1.52	1.55	1.58
1.60							
7.86 ELEV	345.26	345.26	345.27	345.27	345.28	345.28	345.29
345.29							
8.34 CFS	1.63	1.66	1.69	1.71	1.74	1.77	1.80
1.83							
8.34 ELEV	345.30	345.30	345.31	345.31	345.32	345.32	345.33
345.33							
8.82 CFS	1.86	1.89	1.91	1.94	1.97	2.00	2.03
2.07							
8.82 ELEV	345.34	345.34	345.35	345.35	345.36	345.36	345.37
345.38							
9.30 CFS	2.10	2.14	2.19	2.23	2.28	2.33	2.38
2.43							
9.30 ELEV	345.38	345.39	345.40	345.41	345.41	345.42	345.43
345.44							
9.78 CFS	2.49	2.54	2.60	2.66	2.73	2.79	2.86
2.93							
9.78 ELEV	345.45	345.46	345.47	345.48	345.50	345.51	345.52
345.53							
10.26 CFS	3.00	3.07	3.15	3.22	3.30	3.37	3.46
3.55							
10.26 ELEV	345.55	345.56	345.57	345.59	345.60	345.61	345.63
345.65							
10.74 CFS	3.65	3.76	3.89	4.02	4.17	4.32	4.49
4.68							

10.74 ELEV	345.66	345.68	345.71	345.73	345.76	345.79	345.82
345.85							
11.22 CFS	4.89	5.11	5.36	5.63	5.92	6.23	6.58
7.00							
11.22 ELEV	345.89	345.93	345.98	346.02	346.08	346.13	346.20
346.27							
11.70 CFS	7.51	8.11	8.82	9.67	10.25	10.74	11.43
12.40							
11.70 ELEV	346.37	346.48	346.60	346.76	346.93	347.15	347.47
347.90							
12.18 CFS	13.58	14.74	15.66	16.31	16.76	17.06	17.27
17.41							
12.18 ELEV	348.44	348.96	349.38	349.67	349.87	350.01	350.10
350.16							
12.66 CFS	17.48	17.51	17.50	17.46	17.41	17.34	17.26
17.17							
12.66 ELEV	350.20	350.21	350.20	350.19	350.16	350.13	350.10
350.06							
13.14 CFS	17.07	16.97	16.85	16.73	16.60	16.47	16.33
16.19							
13.14 ELEV	350.01	349.96	349.91	349.86	349.80	349.74	349.68
349.62							
13.62 CFS	16.05	15.90	15.75	15.60	15.45	15.30	15.15
15.00							
13.62 ELEV	349.55	349.48	349.42	349.35	349.28	349.21	349.14
349.08							
14.10 CFS	14.85	14.70	14.56	14.41	14.26	14.11	13.97
13.83							
14.10 ELEV	349.01	348.94	348.88	348.81	348.74	348.68	348.61
348.55							
14.58 CFS	13.68	13.54	13.40	13.25	13.11	12.97	12.83
12.69							
14.58 ELEV	348.48	348.42	348.35	348.29	348.22	348.16	348.10
348.03							
15.06 CFS	12.55	12.41	12.28	12.14	12.00	11.87	11.73
11.60							
15.06 ELEV	347.97	347.91	347.85	347.79	347.72	347.66	347.60
347.54							
15.54 CFS	11.47	11.34	11.22	11.09	10.97	10.85	10.73
10.61							
15.54 ELEV	347.48	347.43	347.37	347.31	347.26	347.20	347.15
347.09							
16.02 CFS	10.49	10.37	10.26	10.14	10.03	9.76	9.45
9.15							
16.02 ELEV	347.04	346.99	346.94	346.88	346.83	346.78	346.72
346.66							
16.50 CFS	8.86	8.58	8.31	8.05	7.81	7.57	7.35
7.13							
16.50 ELEV	346.61	346.56	346.51	346.47	346.42	346.38	346.34
346.30							
16.98 CFS	6.92	6.72	6.53	6.34	6.16	5.99	5.83
5.67							
16.98 ELEV	346.26	346.22	346.19	346.15	346.12	346.09	346.06
346.03							
17.46 CFS	5.51	5.37	5.22	5.09	4.95	4.83	4.70
4.58							

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17.46 ELEV 345.83	346.00	345.98	345.95	345.93	345.90	345.88	345.86
17.94 CFS 3.77	4.47	4.36	4.25	4.15	4.05	3.95	3.86
17.94 ELEV 345.69	345.81	345.79	345.77	345.76	345.74	345.72	345.70
18.42 CFS 3.17	3.69	3.60	3.52	3.45	3.37	3.31	3.24
18.42 ELEV 345.58	345.67	345.66	345.64	345.63	345.61	345.60	345.59
18.90 CFS 2.74	3.11	3.05	3.00	2.94	2.89	2.84	2.79
18.90 ELEV 345.50	345.57	345.56	345.55	345.54	345.53	345.52	345.51
19.38 CFS 2.43	2.70	2.66	2.62	2.58	2.54	2.50	2.47
19.38 ELEV 345.44	345.49	345.48	345.48	345.47	345.46	345.46	345.45
19.86 CFS 2.20	2.40	2.37	2.33	2.30	2.28	2.25	2.22
19.86 ELEV 345.40	345.44	345.43	345.42	345.42	345.41	345.41	345.40
20.34 CFS 2.02	2.17	2.15	2.12	2.10	2.08	2.06	2.04
20.34 ELEV 345.37	345.40	345.39	345.39	345.38	345.38	345.37	345.37
20.82 CFS 1.87	2.00	1.98	1.96	1.94	1.92	1.91	1.89
20.82 ELEV 345.34	345.36	345.36	345.36	345.35	345.35	345.35	345.34
21.30 CFS 1.76	1.86	1.84	1.83	1.81	1.80	1.79	1.77
21.30 ELEV 345.32	345.34	345.34	345.33	345.33	345.33	345.33	345.32
21.78 CFS 1.66	1.75	1.73	1.72	1.71	1.70	1.69	1.68
21.78 ELEV 345.30	345.32	345.32	345.31	345.31	345.31	345.31	345.31
22.26 CFS 1.58	1.65	1.64	1.63	1.62	1.61	1.60	1.59
22.26 ELEV 345.29	345.30	345.30	345.30	345.30	345.29	345.29	345.29
22.74 CFS 1.51	1.57	1.56	1.55	1.54	1.53	1.52	1.51
22.74 ELEV 345.27	345.29	345.28	345.28	345.28	345.28	345.28	345.28
23.22 CFS 1.43	1.50	1.49	1.48	1.47	1.46	1.45	1.44
23.22 ELEV 345.26	345.27	345.27	345.27	345.27	345.27	345.26	345.26
23.70 CFS 1.37	1.43	1.42	1.41	1.40	1.39	1.39	1.38
23.70 ELEV 345.25	345.26	345.26	345.26	345.26	345.25	345.25	345.25
24.18 CFS 1.00	1.34	1.30	1.25	1.20	1.15	1.10	1.05
24.18 ELEV 345.18	345.24	345.24	345.23	345.22	345.21	345.20	345.19
24.66 CFS .70	.96	.92	.88	.84	.80	.76	.73
24.66 ELEV 345.13	345.17	345.17	345.16	345.15	345.15	345.14	345.13

25.14 CFS	.66	.63	.61	.58	.55	.53	.50
.48							
25.14 ELEV	345.12	345.12	345.11	345.11	345.10	345.10	345.09
345.09							
25.62 CFS	.46						
25.62 ELEV	345.08						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.38 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	15	11	6	3	2	2	2	1
DURATION(HRS)	18	20	21					
FLOW(CFS)	1	1	0					

OPERATION RUNOFF XSECTION 119

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	24.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.59 WATERSHED INCHES; 21 CFS-HRS; 1.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	36.7	(NULL)
23.99	1.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.23 WATERSHED INCHES; 126 CFS-HRS; 10.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	119.0	(NULL)
20.02	4.1	(NULL)
21.93	3.3	(NULL)
24.00	2.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.06 WATERSHED INCHES; 204 CFS-HRS; 16.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	148.6	(RUNOFF)
15.84	4.6	(RUNOFF)
17.34	3.5	(RUNOFF)
22.75	2.1	(RUNOFF)
23.06	2.1	(RUNOFF)
24.00	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.41 WATERSHED INCHES; 141 CFS-HRS; 11.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 22

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	267.4	(NULL)
20.83	6.1	(NULL)
22.74	5.1	(NULL)
23.05	5.0	(NULL)
24.00	4.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 345 CFS-HRS; 28.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	703.2	(NULL)
12.34	691.8	(NULL)
20.02	30.8	(NULL)
23.03	24.9	(NULL)
24.00	23.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.03 WATERSHED INCHES; 1335 CFS-HRS; 110.3 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.45	679.4	316.79
24.05	23.2	314.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.03 WATERSHED INCHES; 1334 CFS-HRS; 110.2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.25 136.5 (RUNOFF)
20.68 3.0 (RUNOFF)
23.99 2.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.17 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-
FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE
TIME INCREMENT OF .043 HOURS.
\*\*\*

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\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES
FIRST NEGATIVE VALUE IS 0 CFS.
\*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.30 131.8 365.04
20.69 3.0 356.63
23.79 2.4 356.57

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.15 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-
FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.26 196.3 (RUNOFF)
18.66 5.1 (RUNOFF)
20.68 4.5 (RUNOFF)
23.98 3.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.09 WATERSHED INCHES; 246 CFS-HRS; 20.3 ACRE-
FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	325.1	(NULL)
18.67	8.6	(NULL)
20.68	7.5	(NULL)
23.14	6.2	(NULL)
23.78	5.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.12 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.37	312.6	319.62
20.73	7.5	316.81
23.20	6.2	316.73

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.12 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	154.0	(RUNOFF)
21.94	3.2	(RUNOFF)
24.01	2.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.74 WATERSHED INCHES; 183 CFS-HRS; 15.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	787.4	(NULL)
24.04	25.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.99 WATERSHED INCHES; 1517 CFS-HRS; 125.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	1099.7	(NULL)
24.04	31.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 1931 CFS-HRS; 159.6 ACRE-FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	1099.7	(NULL)
24.04	31.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 1931 CFS-HRS; 159.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 31

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	220.6	(RUNOFF)
20.86	4.2	(RUNOFF)
24.02	3.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	204.5	313.75
20.73	4.3	310.35
24.09	3.3	310.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	33.8	(RUNOFF)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.63 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS
WITH .48 AC-FT ( .09 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 377.99.
\*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.24 29.2 380.63

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.
\*\*\*

OPERATION REACH XSECTION 34

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.24 29.2 338.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.19 100.5 (RUNOFF)
18.65 2.0 (RUNOFF)
24.02 1.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.63 WATERSHED INCHES; 118 CFS-HRS; 9.7 ACRE-
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS
WITH 1.02 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 354.08.
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	84.8	357.61
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.93 WATERSHED INCHES;	105 CFS-HRS;	8.7 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	113.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.84 WATERSHED INCHES;	135 CFS-HRS;	11.2 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	113.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.84 WATERSHED INCHES;	135 CFS-HRS;	11.2 ACRE-
FEET.		

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\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
 \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	113.8	330.82
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.84 WATERSHED INCHES;	135 CFS-HRS;	11.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	113.8	(RUNOFF)
15.84	3.3	(RUNOFF)

17.34	2.5	(RUNOFF)
18.61	2.0	(RUNOFF)
18.84	2.0	(RUNOFF)
24.00	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.03 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	206.2	(NULL)
18.82	5.1	(NULL)
21.94	4.1	(NULL)
24.00	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.92 WATERSHED INCHES; 244 CFS-HRS; 20.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	206.2	(NULL)
18.82	5.1	(NULL)
21.94	4.1	(NULL)
24.00	3.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06  
 SQ.MI.  
 2.04 CFS .00 .01 .01 .01 .01 .02 .02  
 .02

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2.52 CFS	.02	.03	.03	.03	.04	.05	.07
.08							
3.00 CFS	.10	.12	.14	.16	.18	.21	.23
.25							
3.48 CFS	.27	.29	.31	.33	.35	.37	.39
.42							
3.96 CFS	.44	.46	.49	.51	.53	.54	.56
.59							
4.44 CFS	.62	.65	.66	.67	.69	.72	.75
.77							
4.92 CFS	.79	.81	.83	.85	.88	.91	.94
.94							
5.40 CFS	.96	.98	1.02	1.05	1.07	1.10	1.11
1.11							
5.88 CFS	1.13	1.17	1.21	1.25	1.25	1.28	1.31
1.34							

6.36 CFS	1.38	1.42	1.46	1.49	1.54	1.57	1.58
1.63							
6.84 CFS	1.69	1.71	1.73	1.78	1.84	1.89	1.94
1.97							
7.32 CFS	2.00	2.04	2.10	2.14	2.17	2.20	2.24
2.30							
7.80 CFS	2.34	2.39	2.45	2.50	2.54	2.60	2.64
2.65							
8.28 CFS	2.71	2.79	2.82	2.84	2.90	2.97	3.04
3.09							
8.76 CFS	3.13	3.16	3.19	3.23	3.33	3.42	3.48
3.57							
9.24 CFS	3.68	3.82	3.94	4.05	4.15	4.25	4.38
4.53							
9.72 CFS	4.68	4.81	4.92	5.03	5.15	5.30	5.46
5.61							
10.20 CFS	5.75	5.87	5.99	6.20	6.65	7.09	7.57
8.22							
10.68 CFS	8.94	9.69	10.48	11.26	12.07	12.86	13.67
14.76							
11.16 CFS	15.97	17.25	18.56	19.89	21.34	22.74	24.21
27.49							
11.64 CFS	32	36	40	46	54	66	91
126							
12.12 CFS	178	206	189	164	142	112	96
84							
12.60 CFS	71.58	63.18	56.48	50.84	46.06	41.97	38.53
36.33							
13.08 CFS	34.48	32.67	31.07	29.60	28.17	26.78	25.45
24.14							
13.56 CFS	22.89	21.71	20.67	19.77	18.95	18.28	17.68
17.13							
14.04 CFS	16.62	16.11	15.61	15.13	14.69	14.30	13.94
13.58							
14.52 CFS	13.20	12.82	12.46	12.13	11.83	11.54	11.24
10.92							
15.00 CFS	10.64	10.36	10.06	9.80	9.58	9.40	9.25
9.12							
15.48 CFS	9.00	8.88	8.74	8.59	8.43	8.33	8.28
8.18							
15.96 CFS	8.05	7.92	7.81	7.73	7.66	7.58	7.47
7.39							
16.44 CFS	7.32	7.23	7.14	7.08	7.03	6.98	6.90
6.82							
16.92 CFS	6.76	6.72	6.67	6.59	6.49	6.39	6.35
6.34							
17.40 CFS	6.28	6.19	6.09	6.02	5.96	5.92	5.87
5.78							
17.88 CFS	5.71	5.67	5.63	5.57	5.49	5.43	5.38
5.34							
18.36 CFS	5.29	5.21	5.18	5.19	5.19	5.15	5.09
5.07							
18.84 CFS	5.08	5.04	4.98	4.95	4.93	4.91	4.89
4.88							
19.32 CFS	4.86	4.85	4.84	4.82	4.80	4.74	4.73
4.74							
19.80 CFS	4.71	4.66	4.64	4.66	4.69	4.66	4.62
4.59							
20.28 CFS	4.58	4.56	4.50	4.46	4.49	4.50	4.50
4.44							
20.76 CFS	4.41	4.43	4.42	4.37	4.34	4.32	4.31
4.29							
21.24 CFS	4.28	4.27	4.26	4.25	4.24	4.23	4.17
4.14							

21.72 CFS	4.16	4.14	4.10	4.12	4.12	4.08	4.04
4.02							
22.20 CFS	4.01	3.99	3.98	3.97	3.96	3.96	3.93
3.87							
22.68 CFS	3.86	3.87	3.84	3.79	3.77	3.79	3.82
3.78							
23.16 CFS	3.74	3.72	3.70	3.69	3.68	3.65	3.59
3.58							
23.64 CFS	3.61	3.62	3.60	3.54	3.49	3.50	3.61
3.48							
24.12 CFS	2.85	2.38	2.16	2.02	1.92	1.82	1.75
1.70							
24.60 CFS	1.69	1.68	1.67	1.67	1.66	1.65	1.64
1.63							
25.08 CFS	1.62	1.61	1.60				

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.92 WATERSHED INCHES; 244 CFS-HRS; 20.2 ACRE-  
FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	24	11	7	5	5	4	4	3

DURATION(HRS)	18	19
FLOW(CFS)	2	2 TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.13 11.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.03 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	215.5	(NULL)
18.82	5.3	(NULL)
22.73	4.1	(NULL)
23.04	4.0	(NULL)
24.00	3.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.72 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	99.5	(RUNOFF)
20.67	2.3	(RUNOFF)
23.97	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.94 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	1188.6	(NULL)
24.03	33.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.01 WATERSHED INCHES; 2056 CFS-HRS; 169.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.34	1387.6	(NULL)
24.04	36.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.08 WATERSHED INCHES; 2311 CFS-HRS; 190.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	1550.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.13 WATERSHED INCHES; 2560 CFS-HRS; 211.6 ACRE-  
FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.42	1502.7	291.89

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

5.13 WATERSHED INCHES; 2559 CFS-HRS; 211.5 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.42 1502.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.13 WATERSHED INCHES; 2559 CFS-HRS; 211.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.29 114.7 (RUNOFF)  
23.09 2.4 (RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.00 WATERSHED INCHES; 154 CFS-HRS; 12.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.31 143.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.90 WATERSHED INCHES; 199 CFS-HRS; 16.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 257.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.94 WATERSHED INCHES; 352 CFS-HRS; 29.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.20 140.0 (RUNOFF)

18.86	3.1	(RUNOFF)
24.03	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.93 WATERSHED INCHES; 149 CFS-HRS; 12.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	1573.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.11 WATERSHED INCHES; 2708 CFS-HRS; 223.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	1808.0	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 3061 CFS-HRS; 252.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	1773.5	287.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 3060 CFS-HRS; 252.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	4.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.06 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.



\*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	4.3	288.24
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.06 WATERSHED INCHES;	6 CFS-HRS;	.5 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS, AT XSECTION 54 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	.6	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.47 WATERSHED INCHES;	2 CFS-HRS;	.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 55

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	91.3	(RUNOFF)
18.86	2.1	(RUNOFF)
24.03	1.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.65 WATERSHED INCHES;	97 CFS-HRS;	8.0 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	1811.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.08 WATERSHED INCHES;	3156 CFS-HRS;	260.8 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	4.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.79 WATERSHED INCHES;	8 CFS-HRS;	.7 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	1814.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.01 WATERSHED INCHES;	3165 CFS-HRS;	261.5 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	61.6	(RUNOFF)
24.02	1.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.86 WATERSHED INCHES;	66 CFS-HRS;	5.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 60

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	1842.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.98 WATERSHED INCHES;	3231 CFS-HRS;	267.0 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	1842.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.98 WATERSHED INCHES;	3231 CFS-HRS;	267.0 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	37.1	(RUNOFF)
18.66	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.78 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	1862.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.96 WATERSHED INCHES; 3273 CFS-HRS; 270.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.58	1808.8	251.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.96 WATERSHED INCHES; 3272 CFS-HRS; 270.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	25.4	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.41 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	19.3	335.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.41 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-

FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.67	19.0	300.92
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.41 WATERSHED INCHES;	38 CFS-HRS;	3.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	109.3	(RUNOFF)
23.10	2.1	(RUNOFF)
24.03	2.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.83 WATERSHED INCHES;	113 CFS-HRS;	9.4 ACRE-
FEET.		

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	52.1	296.06
23.12	2.0	287.56
24.04	1.9	287.55
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.83 WATERSHED INCHES;	113 CFS-HRS;	9.4 ACRE-
FEET.		

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OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	67.2	(NULL)
20.86	3.1	(NULL)

24.04 2.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.13 WATERSHED INCHES; 151 CFS-HRS; 12.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 68

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.19, 18.64, 21.97, 24.03 and 220.8, 5.1, 4.1, 3.5.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.48 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 69

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.21, 18.87, 20.87, 23.10, 24.03 and 249.0, 8.5, 7.5, 6.3, 6.0.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.33 WATERSHED INCHES; 376 CFS-HRS; 31.1 ACRE-
FEET.

OPERATION REACH XSECTION 70

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.39, 24.09 and 183.4, 5.9, 249.02, 247.74.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.33 WATERSHED INCHES; 376 CFS-HRS; 31.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 71

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Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.12, 15.83 and 45.5, 1.3.

17.33 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.90 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.24 27.4 267.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.90 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-
FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.32 25.6 248.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.91 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.18 237.2 (RUNOFF)
15.84 9.7 (RUNOFF)
17.34 7.6 (RUNOFF)
18.86 6.1 (RUNOFF)
21.45 5.1 (RUNOFF)
24.01 4.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.26 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.57 1879.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.79 WATERSHED INCHES; 3503 CFS-HRS; 289.5 ACRE-
FEET.

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OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.37	207.0	(NULL)
20.13	8.7	(NULL)
24.09	6.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.38 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.57	2065.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.74 WATERSHED INCHES; 3917 CFS-HRS; 323.7 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 77.  
 \*\*\*

OPERATION REACH XSECTION 77

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.57	2065.6	231.59

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.74 WATERSHED INCHES; 3917 CFS-HRS; 323.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	133.1	(RUNOFF)
15.84	5.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.01	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.89 WATERSHED INCHES; 128 CFS-HRS; 10.6 ACRE-  
 FEET.

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	2103.7	(NULL)
23.97	65.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.71 WATERSHED INCHES; 4045 CFS-HRS; 334.3 ACRE-FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	2090.7	218.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.71 WATERSHED INCHES; 4044 CFS-HRS; 334.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	154.4	(RUNOFF)
15.84	5.2	(RUNOFF)
17.34	4.0	(RUNOFF)
19.47	3.1	(RUNOFF)
19.74	3.0	(RUNOFF)
20.05	3.0	(RUNOFF)
24.00	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.24 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	2121.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.69 WATERSHED INCHES; 4185 CFS-HRS; 345.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	76.0	(RUNOFF)
17.34	2.3	(RUNOFF)
24.01	1.3	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.55 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.63 2139.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.67 WATERSHED INCHES; 4256 CFS-HRS; 351.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.25 237.6 (RUNOFF)  
18.67 7.0 (RUNOFF)  
20.68 6.2 (RUNOFF)  
23.12 5.2 (RUNOFF)  
24.01 4.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.67 WATERSHED INCHES; 281 CFS-HRS; 23.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.62 2237.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.59 WATERSHED INCHES; 4537 CFS-HRS; 375.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.13 64.3 (RUNOFF)  
20.04 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.67 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 88

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	2248.9	(NULL)
23.97	74.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.60 WATERSHED INCHES; 4596 CFS-HRS; 379.8 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
 STARTING TIME = .00 RAIN DEPTH = 8.47 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =99 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	99.6	(RUNOFF)
20.13	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.18 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	99.4	390.78
20.19	2.5	389.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.18 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	175.5	(RUNOFF)
20.68	4.1	(RUNOFF)
23.97	3.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.00 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	270.3	(NULL)
20.14	6.8	(NULL)
23.12	5.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.07 WATERSHED INCHES; 359 CFS-HRS; 29.6 ACRE-FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,  
 VALUE EXTRAPOLATED.  
 \*\*\*

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	268.8	384.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.04 WATERSHED INCHES; 357 CFS-HRS; 29.5 ACRE-FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	268.4	369.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.05 WATERSHED INCHES; 357 CFS-HRS; 29.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.28	226.3	(RUNOFF)
20.13	5.8	(RUNOFF)
23.74	4.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.74 WATERSHED INCHES; 295 CFS-HRS; 24.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.34 479.2 (NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.90 WATERSHED INCHES; 653 CFS-HRS; 54.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.40 479.0 358.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.90 WATERSHED INCHES; 653 CFS-HRS; 53.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.29 242.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.38 WATERSHED INCHES; 350 CFS-HRS; 28.9 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 21, TRUNCATED AT 400 POINTS  
 WITH 2.68 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 370.65.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.54 153.9 378.71

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.69 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	38.4	(RUNOFF)
15.83	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.11 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-FEET.

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OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.91	127.4	360.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	184.3	(RUNOFF)
18.87	4.1	(RUNOFF)
22.76	3.1	(RUNOFF)
23.09	3.1	(RUNOFF)
24.03	2.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.26 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	571.3	(NULL)
24.01	12.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.75 WATERSHED INCHES; 837 CFS-HRS; 69.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	69.3	(RUNOFF)

24.02 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.95 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.37 675.4 (NULL)
24.00 20.3 (NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.96 WATERSHED INCHES; 1151 CFS-HRS; 95.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.36 717.1 (NULL)
24.00 21.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.3 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.36 717.1 (NULL)
24.00 21.4 (NULL)

Table with 9 columns: HRS, MAIN, TIME, INCREMENT, ALTERNATE, DRAINAGE AREA, STORM, etc. It lists hydrograph points for various flow rates (2.94 CFS to 5.82 CFS) and time intervals (.01 to .42 hours).

.93								
6.30 CFS	1.01	1.09	1.17	1.25	1.35	1.45	1.57	
1.68								
6.78 CFS	1.80	1.93	2.06	2.19	2.32	2.47	2.62	
2.77								
7.26 CFS	2.93	3.09	3.25	3.41	3.58	3.75	3.92	
4.09								
7.74 CFS	4.27	4.46	4.65	4.84	5.05	5.25	5.47	
5.68								
8.22 CFS	5.88	6.09	6.34	6.65	6.98	7.33	7.71	
8.11								
8.70 CFS	8.51	8.91	9.30	9.68	10.06	10.46	10.89	
11.33								
9.18 CFS	11.78	12.28	12.83	13.40	13.97	14.56	16.17	
17.55								
9.66 CFS	18.75	19.86	20.90	21.89	22.84	23.79	24.75	
25.74								
10.14 CFS	26.75	27.77	28.76	29.74	30.73	31.74	32.79	
33.91								
10.62 CFS	35.17	36.62	38.28	40.16	42.26	44.60	47.13	
49.87								
11.10 CFS	52.94	56.42	60.35	64.63	69.30	74.37	79.78	
85.57								
11.58 CFS	93	104	116	130	148	171	203	
252								
12.06 CFS	347	461	576	654	703	717	700	
656								
12.54 CFS	598	537	481	433	394	362	335	
312								
13.02 CFS	292	275	259	245	232	222	212	
200								
13.50 CFS	172	152	138	128	119	112	106	
101								
13.98 CFS	96.00	92.07	88.58	85.43	82.57	79.99	77.65	
75.52								
14.46 CFS	73.55	71.66	69.82	68.02	66.31	64.69	63.13	
61.60								
14.94 CFS	60.07	58.58	57.12	55.66	54.20	52.79	51.49	
50.31								
15.42 CFS	49.25	48.31	47.48	46.70	45.97	45.25	44.63	
44.13								
15.90 CFS	43.67	43.17	42.65	42.15	41.70	41.29	40.90	
40.52								

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16.38 CFS	40.16	39.84	39.52	39.18	38.85	38.57	38.31
38.03							
16.86 CFS	37.72	37.43	37.18	36.95	36.69	36.38	36.02
35.70							
17.34 CFS	35.46	35.22	34.92	34.56	34.21	33.90	33.61
33.33							
17.82 CFS	33.01	32.69	32.39	32.13	31.88	31.59	31.30
31.02							
18.30 CFS	30.78	30.55	30.27	30.02	29.87	29.77	29.66
29.50							
18.78 CFS	29.37	29.31	29.24	29.12	28.98	28.87	28.77

28.67								
19.26	CFS	28.58	28.50	28.43	28.37	28.32	28.25	28.13
28.01								
19.74	CFS	27.95	27.87	27.73	27.59	27.51	27.49	27.44
27.35								
20.22	CFS	27.24	27.15	27.06	26.92	26.75	26.64	26.59
26.53								
20.70	CFS	26.42	26.30	26.24	26.19	26.08	25.95	25.83
25.72								
21.18	CFS	25.62	25.52	25.43	25.35	25.29	25.23	25.16
25.05								
21.66	CFS	24.92	24.84	24.77	24.65	24.57	24.53	24.44
24.32								
22.14	CFS	24.20	24.10	24.00	23.91	23.82	23.74	23.67
23.59								
22.62	CFS	23.45	23.32	23.25	23.15	23.01	22.86	22.77
22.75								
23.10	CFS	22.70	22.59	22.48	22.40	22.32	22.24	22.13
21.98								
23.58	CFS	21.83	21.76	21.72	21.66	21.54	21.39	21.28
21.36								
24.06	CFS	21.29	20.37	18.92	17.46	16.14	14.84	13.58
12.43								
24.54	CFS	11.42	10.93	10.65	10.43	10.23	10.05	9.88
9.72								
25.02	CFS	9.57	9.43	9.29	9.15	9.02	8.89	8.77
8.65								
25.50	CFS	8.53	8.41	8.29	8.18	8.07	7.95	7.85
7.74								

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.3 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	118	55	38	30	27	24	21	10

DURATION(HRS) 17  
 FLOW(CFS) 8 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.36		717.1		335.71
24.00		21.4		331.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	98.2	(RUNOFF)
17.34	2.2	(RUNOFF)
24.00	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.01 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	111.9	(RUNOFF)
18.86	2.1	(RUNOFF)
19.75	2.0	(RUNOFF)
24.02	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.65 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.75	19.8	351.23

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
SQ.MI.

1.86 CFS	.00	.01	.01	.02	.02	.03	.04
.05							
1.86 ELEV	345.00	345.00	345.00	345.00	345.00	345.01	345.01
345.01							
2.34 CFS	.05	.06	.08	.09	.10	.11	.12
.14							
2.34 ELEV	345.01	345.01	345.01	345.02	345.02	345.02	345.02
345.02							
2.82 CFS	.15	.16	.18	.19	.21	.22	.24
.25							
2.82 ELEV	345.03	345.03	345.03	345.04	345.04	345.04	345.04
345.05							
3.30 CFS	.27	.29	.30	.32	.34	.35	.37
.39							
3.30 ELEV	345.05	345.05	345.05	345.06	345.06	345.06	345.07
345.07							
3.78 CFS	.40	.42	.44	.46	.47	.49	.51
.53							
3.78 ELEV	345.07	345.08	345.08	345.08	345.09	345.09	345.09
345.10							
4.26 CFS	.55	.57	.58	.60	.62	.64	.66
.67							
4.26 ELEV	345.10	345.10	345.11	345.11	345.11	345.12	345.12
345.12							
4.74 CFS	.69	.71	.73	.75	.76	.78	.80

.82								
4.74 ELEV	345.13	345.13	345.13	345.14	345.14	345.14	345.15	
345.15								
5.22 CFS	.84	.85	.87	.89	.91	.92	.94	
.96								
5.22 ELEV	345.15	345.16	345.16	345.16	345.16	345.17	345.17	
345.17								
5.70 CFS	.98	1.00	1.01	1.03	1.04	1.06	1.08	
1.10								
5.70 ELEV	345.18	345.18	345.18	345.19	345.19	345.19	345.20	
345.20								
6.18 CFS	1.12	1.13	1.15	1.17	1.19	1.21	1.23	
1.25								
6.18 ELEV	345.20	345.21	345.21	345.21	345.22	345.22	345.22	
345.23								
6.66 CFS	1.28	1.30	1.32	1.34	1.37	1.39	1.42	
1.44								
6.66 ELEV	345.23	345.24	345.24	345.24	345.25	345.25	345.26	
345.26								

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7.14 CFS	1.47	1.49	1.52	1.55	1.58	1.60	1.63	
1.66								
7.14 ELEV	345.27	345.27	345.28	345.28	345.29	345.29	345.30	
345.30								
7.62 CFS	1.69	1.72	1.75	1.77	1.80	1.83	1.87	
1.90								
7.62 ELEV	345.31	345.31	345.32	345.32	345.33	345.33	345.34	
345.35								
8.10 CFS	1.93	1.96	1.99	2.02	2.06	2.09	2.12	
2.15								
8.10 ELEV	345.35	345.36	345.36	345.37	345.37	345.38	345.39	
345.39								
8.58 CFS	2.18	2.22	2.25	2.29	2.32	2.36	2.39	
2.42								
8.58 ELEV	345.40	345.40	345.41	345.42	345.42	345.43	345.43	
345.44								
9.06 CFS	2.46	2.49	2.53	2.57	2.61	2.66	2.71	
2.76								
9.06 ELEV	345.45	345.45	345.46	345.47	345.48	345.48	345.49	
345.50								
9.54 CFS	2.82	2.87	2.93	3.00	3.06	3.13	3.20	
3.28								
9.54 ELEV	345.51	345.52	345.53	345.55	345.56	345.57	345.58	
345.60								
10.02 CFS	3.35	3.43	3.51	3.59	3.67	3.76	3.85	
3.93								
10.02 ELEV	345.61	345.62	345.64	345.65	345.67	345.68	345.70	
345.72								
10.50 CFS	4.02	4.12	4.22	4.32	4.44	4.58	4.72	
4.88								
10.50 ELEV	345.73	345.75	345.77	345.79	345.81	345.83	345.86	
345.89								
10.98 CFS	5.06	5.24	5.45	5.67	5.91	6.18	6.47	
6.79								
10.98 ELEV	345.92	345.95	345.99	346.03	346.08	346.12	346.18	

346.24							
11.46 CFS	7.13	7.50	7.91	8.41	9.02	9.73	10.19
10.54							
11.46 ELEV	346.30	346.37	346.44	346.53	346.64	346.77	346.91
347.06							
11.94 CFS	10.99	11.59	12.42	13.57	14.99	16.38	17.48
18.26							
11.94 ELEV	347.27	347.54	347.91	348.43	349.07	349.70	350.20
350.55							
12.42 CFS	18.80	19.17	19.43	19.61	19.71	19.76	19.75
19.72							
12.42 ELEV	350.79	350.96	351.08	351.16	351.20	351.22	351.22
351.21							
12.90 CFS	19.67	19.61	19.53	19.44	19.33	19.21	19.09
18.96							
12.90 ELEV	351.19	351.16	351.12	351.08	351.03	350.98	350.92
350.86							
13.38 CFS	18.82	18.68	18.53	18.37	18.21	18.05	17.88
17.72							
13.38 ELEV	350.80	350.74	350.67	350.60	350.53	350.45	350.38
350.30							
13.86 CFS	17.55	17.38	17.21	17.05	16.88	16.71	16.55
16.38							
13.86 ELEV	350.23	350.15	350.07	350.00	349.92	349.85	349.78
349.70							
14.34 CFS	16.22	16.06	15.89	15.73	15.57	15.41	15.25
15.09							
14.34 ELEV	349.63	349.55	349.48	349.41	349.33	349.26	349.19
349.12							
14.82 CFS	14.93	14.77	14.62	14.46	14.30	14.15	13.99
13.84							
14.82 ELEV	349.05	348.97	348.90	348.83	348.76	348.69	348.62
348.55							
15.30 CFS	13.68	13.53	13.38	13.23	13.09	12.94	12.80
12.66							
15.30 ELEV	348.48	348.41	348.35	348.28	348.21	348.15	348.08
348.02							
15.78 CFS	12.52	12.38	12.24	12.11	11.98	11.84	11.71
11.59							
15.78 ELEV	347.96	347.89	347.83	347.77	347.71	347.65	347.59
347.54							
16.26 CFS	11.46	11.33	11.21	11.09	10.96	10.84	10.72
10.61							
16.26 ELEV	347.48	347.42	347.37	347.31	347.26	347.20	347.15
347.09							
16.74 CFS	10.49	10.38	10.26	10.15	10.04	9.79	9.48
9.18							
16.74 ELEV	347.04	346.99	346.94	346.89	346.84	346.78	346.73
346.67							
17.22 CFS	8.89	8.62	8.35	8.10	7.85	7.62	7.39
7.17							
17.22 ELEV	346.62	346.57	346.52	346.47	346.43	346.39	346.35
346.31							
17.70 CFS	6.96	6.76	6.57	6.38	6.20	6.03	5.86
5.70							
17.70 ELEV	346.27	346.23	346.20	346.16	346.13	346.10	346.07
346.04							
18.18 CFS	5.55	5.40	5.26	5.12	4.99	4.86	4.74
4.62							
18.18 ELEV	346.01	345.98	345.96	345.93	345.91	345.88	345.86
345.84							
18.66 CFS	4.51	4.41	4.30	4.21	4.11	4.02	3.94
3.85							

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18.66 ELEV	345.82	345.80	345.78	345.77	345.75	345.73	345.72
345.70							
19.14 CFS	3.77	3.70	3.62	3.55	3.49	3.42	3.36
3.30							
19.14 ELEV	345.69	345.67	345.66	345.65	345.63	345.62	345.61
345.60							
19.62 CFS	3.25	3.19	3.14	3.09	3.04	2.99	2.94
2.90							
19.62 ELEV	345.59	345.58	345.57	345.56	345.55	345.54	345.54
345.53							
20.10 CFS	2.86	2.82	2.78	2.74	2.70	2.67	2.63
2.60							
20.10 ELEV	345.52	345.51	345.51	345.50	345.49	345.49	345.48
345.47							
20.58 CFS	2.57	2.54	2.51	2.48	2.45	2.42	2.40
2.37							
20.58 ELEV	345.47	345.46	345.46	345.45	345.45	345.44	345.44
345.43							
21.06 CFS	2.35	2.32	2.30	2.28	2.25	2.23	2.21
2.19							
21.06 ELEV	345.43	345.42	345.42	345.41	345.41	345.41	345.40
345.40							
21.54 CFS	2.18	2.16	2.14	2.12	2.10	2.08	2.07
2.05							
21.54 ELEV	345.40	345.39	345.39	345.39	345.38	345.38	345.38
345.37							
22.02 CFS	2.04	2.02	2.01	1.99	1.98	1.96	1.95
1.93							
22.02 ELEV	345.37	345.37	345.37	345.36	345.36	345.36	345.35
345.35							
22.50 CFS	1.92	1.91	1.90	1.88	1.87	1.86	1.84
1.83							
22.50 ELEV	345.35	345.35	345.35	345.34	345.34	345.34	345.34
345.33							
22.98 CFS	1.82	1.81	1.80	1.79	1.77	1.76	1.75
1.74							
22.98 ELEV	345.33	345.33	345.33	345.32	345.32	345.32	345.32
345.32							
23.46 CFS	1.73	1.72	1.71	1.70	1.69	1.68	1.67
1.66							
23.46 ELEV	345.32	345.31	345.31	345.31	345.31	345.31	345.30
345.30							
23.94 CFS	1.65	1.64	1.63	1.62	1.58	1.54	1.48
1.42							
23.94 ELEV	345.30	345.30	345.30	345.29	345.29	345.28	345.27
345.26							
24.42 CFS	1.36	1.30	1.24	1.18	1.13	1.08	1.03
.99							
24.42 ELEV	345.25	345.24	345.23	345.22	345.21	345.20	345.19
345.18							
24.90 CFS	.94	.90	.86	.82	.78	.75	.71
.68							
24.90 ELEV	345.17	345.16	345.16	345.15	345.14	345.14	345.13
345.12							
25.38 CFS	.65	.62					

25.38 ELEV 345.12 345.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.60 WATERSHED INCHES; 124 CFS-HRS; 10.3 ACRE-
FEET.

DURATION (HRS) 2 4 6 8 10 12 14 16
FLOW (CFS) 16 12 8 4 3 2 2 2

DURATION (HRS) 18 20 21
FLOW (CFS) 1 1 1 TRUNCATED

OPERATION RUNOFF XSECTION 119

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK
ELEVATION (FEET) 12.13 28.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.81 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-
FEET.

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OPERATION ADDHYD XSECTION 120

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK
ELEVATION (FEET) 12.14 42.7 (NULL)
23.99 2.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.45 WATERSHED INCHES; 150 CFS-HRS; 12.4 ACRE-
FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK
ELEVATION (FEET) 12.14 140.8 (NULL)
20.01 5.0 (NULL)
20.80 4.4 (NULL)
24.00 3.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.27 WATERSHED INCHES; 245 CFS-HRS; 20.3 ACRE-
FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK
ELEVATION (FEET)

12.15	179.0	(RUNOFF)
15.84	5.4	(RUNOFF)
17.34	4.2	(RUNOFF)
19.75	3.1	(RUNOFF)
20.05	3.1	(RUNOFF)
24.00	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.60 WATERSHED INCHES; 172 CFS-HRS; 14.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	319.7	(NULL)
20.04	8.1	(NULL)
20.83	7.3	(NULL)
21.94	6.6	(NULL)
22.74	6.0	(NULL)
24.00	5.6	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.98 WATERSHED INCHES; 418 CFS-HRS; 34.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	885.5	(NULL)
20.03	35.6	(NULL)
23.03	28.7	(NULL)
23.68	27.3	(NULL)
24.00	27.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.18 WATERSHED INCHES; 1639 CFS-HRS; 135.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.41	848.2	317.13
24.06	26.9	314.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.17 WATERSHED INCHES; 1638 CFS-HRS; 135.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	165.8	(RUNOFF)
18.66	4.1	(RUNOFF)
20.68	3.6	(RUNOFF)
23.12	3.0	(RUNOFF)
24.00	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.34 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 31

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	160.7	365.43
18.69	4.1	356.71
20.69	3.6	356.67
23.15	3.0	356.62
24.03	2.8	356.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.35 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	237.1	(RUNOFF)
18.65	6.1	(RUNOFF)
20.67	5.3	(RUNOFF)
23.98	4.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.26 WATERSHED INCHES; 302 CFS-HRS; 25.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	395.1	(NULL)
18.66	10.2	(NULL)
20.14	9.4	(NULL)
20.68	8.9	(NULL)
23.14	7.4	(NULL)
23.78	7.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.30 WATERSHED INCHES; 509 CFS-HRS; 42.1 ACRE-  
FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	384.2	319.84
20.20	9.4	316.93
20.74	8.9	316.91
23.20	7.4	316.81
23.83	7.0	316.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.29 WATERSHED INCHES; 509 CFS-HRS; 42.0 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	190.4	(RUNOFF)
20.67	4.2	(RUNOFF)
24.01	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.89 WATERSHED INCHES; 228 CFS-HRS; 18.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	994.8	(NULL)
24.04	30.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.14 WATERSHED INCHES; 1865 CFS-HRS; 154.2 ACRE-  
FEET.



OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	1378.6	(NULL)
24.04	37.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.17 WATERSHED INCHES; 2375 CFS-HRS; 196.2 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	1378.6	(NULL)
24.04	37.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.17 WATERSHED INCHES; 2375 CFS-HRS; 196.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 31

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	264.7	(RUNOFF)
20.66	5.1	(RUNOFF)
23.11	4.2	(RUNOFF)
24.02	3.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-  
FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	244.6	314.09
20.73	5.1	310.41
23.19	4.2	310.34
24.09	3.9	310.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	39.4	(RUNOFF)
15.84	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.86 WATERSHED INCHES; 43 CFS-HRS; 3.5 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
WITH .53 AC-FT ( .10 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 378.24.  
\*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	32.9	380.81

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.68 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
\*\*\*

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OPERATION REACH XSECTION 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	32.9	338.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.68 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	118.2	(RUNOFF)
20.86	2.0	(RUNOFF)
24.02	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.86 WATERSHED INCHES; 139 CFS-HRS; 11.5 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS WITH 1.05 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE REMAINING IN RESERVOIR AT ELEV. 354.18. \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.29 96.1 357.96 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 7.15 WATERSHED INCHES; 127 CFS-HRS; 10.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.27 128.6 (NULL) RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.27 128.6 (NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0, CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37. \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.27 128.6 330.88 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.14	135.6	(RUNOFF)
15.84	3.9	(RUNOFF)
20.84	2.1	(RUNOFF)
24.00	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.24 WATERSHED INCHES; 131 CFS-HRS; 10.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	245.1	(NULL)
20.83	5.1	(NULL)
24.00	4.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.13 WATERSHED INCHES; 294 CFS-HRS; 24.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	245.1	(NULL)
20.83	5.1	(NULL)
24.00	4.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06 SQ.MI.

1.74 CFS	.00	.01	.01	.01	.01	.02	.02
.02							
2.22 CFS	.02	.03	.03	.04	.05	.07	.10
.12							

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2.70 CFS	.15	.17	.20	.23	.25	.28	.30
.33							
3.18 CFS	.35	.38	.41	.44	.46	.48	.52
.55							
3.66 CFS	.57	.58	.61	.64	.67	.70	.73
.76							
4.14 CFS	.80	.82	.83	.85	.89	.93	.96
.98							
4.62 CFS	.99	1.02	1.05	1.09	1.11	1.14	1.16
1.19							
5.10 CFS	1.21	1.25	1.29	1.32	1.32	1.34	1.36
1.41							

5.58 CFS	1.45	1.48	1.51	1.52	1.52	1.54	1.59
1.65							
6.06 CFS	1.69	1.70	1.73	1.78	1.81	1.86	1.91
1.96							
6.54 CFS	2.00	2.06	2.10	2.11	2.16	2.24	2.27
2.29							
7.02 CFS	2.35	2.42	2.49	2.54	2.58	2.61	2.67
2.74							
7.50 CFS	2.79	2.82	2.86	2.91	2.98	3.03	3.09
3.16							
7.98 CFS	3.22	3.27	3.34	3.39	3.41	3.47	3.57
3.60							
8.46 CFS	3.63	3.70	3.78	3.87	3.93	3.97	4.01
4.05							
8.94 CFS	4.10	4.21	4.32	4.39	4.50	4.64	4.81
4.96							
9.42 CFS	5.09	5.21	5.33	5.49	5.66	5.92	6.34
6.72							
9.90 CFS	7.09	7.50	7.99	8.46	8.92	9.34	9.72
10.09							
10.38 CFS	10.48	10.87	11.28	11.74	12.31	13.02	13.78
14.59							
10.86 CFS	15.42	16.28	17.14	18.03	19.20	20.49	21.89
23.33							
11.34 CFS	24.80	26.48	28.15	29.88	33.84	39.18	43.28
48.53							
11.82 CFS	57	69	86	118	163	228	245
216							
12.30 CFS	192	167	144	117	98	84	72
64							
12.78 CFS	58.40	53.18	48.66	44.75	41.25	38.21	36.40
34.78							
13.26 CFS	33.28	31.80	30.35	28.94	27.52	26.17	24.88
23.75							
13.74 CFS	22.75	21.84	21.03	20.31	19.68	19.14	18.58
18.04							
14.22 CFS	17.51	17.03	16.60	16.20	15.80	15.38	14.95
14.53							
14.70 CFS	14.16	13.82	13.49	13.14	12.78	12.45	12.12
11.77							
15.18 CFS	11.44	11.15	10.92	10.73	10.57	10.44	10.32
10.16							
15.66 CFS	9.99	9.81	9.71	9.66	9.55	9.41	9.25
9.13							
16.14 CFS	9.04	8.96	8.87	8.75	8.65	8.56	8.44
8.33							
16.62 CFS	8.24	8.18	8.11	8.00	7.90	7.82	7.77
7.70							
17.10 CFS	7.60	7.48	7.35	7.30	7.29	7.22	7.12
7.00							
17.58 CFS	6.91	6.86	6.81	6.74	6.64	6.57	6.51
6.47							
18.06 CFS	6.41	6.31	6.23	6.18	6.14	6.08	5.99
5.95							
18.54 CFS	5.96	5.96	5.92	5.85	5.82	5.84	5.79
5.73							
19.02 CFS	5.69	5.66	5.64	5.62	5.60	5.59	5.57
5.56							
19.50 CFS	5.55	5.51	5.44	5.43	5.45	5.40	5.35
5.32							
19.98 CFS	5.34	5.37	5.34	5.29	5.26	5.24	5.22
5.15							
20.46 CFS	5.11	5.13	5.15	5.14	5.08	5.05	5.07
5.06							

20.94 CFS	5.00	4.96	4.94	4.92	4.91	4.90	4.88
4.87							
21.42 CFS	4.86	4.86	4.84	4.77	4.74	4.76	4.75
4.70							
21.90 CFS	4.72	4.73	4.68	4.64	4.62	4.60	4.59
4.58							
22.38 CFS	4.57	4.56	4.55	4.52	4.45	4.44	4.46
4.42							
22.86 CFS	4.36	4.34	4.36	4.39	4.36	4.31	4.28
4.27							
23.34 CFS	4.25	4.24	4.21	4.14	4.12	4.16	4.17
4.14							
23.82 CFS	4.08	4.03	4.03	4.18	4.03	3.27	2.72
2.46							
24.30 CFS	2.30	2.18	2.07	1.98	1.89	1.81	1.75
1.74							
24.78 CFS	1.73	1.72	1.71	1.70	1.69		

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.13 WATERSHED INCHES; 294 CFS-HRS; 24.3 ACRE-  
FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	28	14	9	7	5	5	4	3

DURATION(HRS)	18	19
FLOW(CFS)	2	2 TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.13 15.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.98 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	258.1	(NULL)
18.82	6.2	(NULL)
20.83	5.4	(NULL)
21.73	5.0	(NULL)
24.00	4.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.91 WATERSHED INCHES; 306 CFS-HRS; 25.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	121.2	(RUNOFF)
18.64	3.2	(RUNOFF)
23.76	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.10 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.34	1488.7	(NULL)
24.04	39.1	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.16 WATERSHED INCHES; 2529 CFS-HRS; 209.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	1728.0	(NULL)
24.04	43.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.24 WATERSHED INCHES; 2837 CFS-HRS; 234.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	1919.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.29 WATERSHED INCHES; 3139 CFS-HRS; 259.4 ACRE-  
FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.42	1868.2	292.29

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.29 WATERSHED INCHES; 3138 CFS-HRS; 259.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	1868.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.29 WATERSHED INCHES; 3138 CFS-HRS; 259.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	140.0	(RUNOFF)
20.10	3.5	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.16 WATERSHED INCHES; 190 CFS-HRS; 15.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	175.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.06 WATERSHED INCHES; 245 CFS-HRS; 20.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	315.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 435 CFS-HRS; 36.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
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ELEVATION(FEET)		
12.20	171.6	(RUNOFF)
21.97	3.0	(RUNOFF)
24.03	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.09 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	1955.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.27 WATERSHED INCHES; 3322 CFS-HRS; 274.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	2248.5	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.25 WATERSHED INCHES; 3757 CFS-HRS; 310.5 ACRE-FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	2207.6	287.87

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.25 WATERSHED INCHES; 3756 CFS-HRS; 310.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	8.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.63 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN

2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	8.0	288.45
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.63 WATERSHED INCHES;	9 CFS-HRS;	.8 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	1.7	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.85 WATERSHED INCHES;	4 CFS-HRS;	.3 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 55

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	112.9	(RUNOFF)
21.97	2.0	(RUNOFF)
24.03	1.8	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.79 WATERSHED INCHES;	120 CFS-HRS;	9.9 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	2254.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.24 WATERSHED INCHES;	3876 CFS-HRS;	320.3 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
 12.25                                    9.7                                    (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.28 WATERSHED INCHES;            13 CFS-HRS;            1.1 ACRE-  
 FEET.

OPERATION ADDHYD    XSECTION    58

PEAK TIME(HRS)                        PEAK DISCHARGE(CFS)                PEAK  
 ELEVATION(FEET)  
 12.47                                   2260.3                                (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.16 WATERSHED INCHES;            3890 CFS-HRS;            321.4 ACRE-  
 FEET.

OPERATION RUNOFF    XSECTION    59

PEAK TIME(HRS)                        PEAK DISCHARGE(CFS)                PEAK  
 ELEVATION(FEET)  
 12.20                                   78.5                                   (RUNOFF)  
 24.02                                   1.3                                   (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.92 WATERSHED INCHES;            85 CFS-HRS;            7.0 ACRE-  
 FEET.

OPERATION ADDHYD    XSECTION    60

1 TR20 ----- SCS  
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PEAK TIME(HRS)                        PEAK DISCHARGE(CFS)                PEAK  
 ELEVATION(FEET)  
 12.47                                   2296.7                                (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.12 WATERSHED INCHES;            3974 CFS-HRS;            328.4 ACRE-  
 FEET.

OPERATION RESVOR    STRUCTURE    3

PEAK TIME(HRS)                        PEAK DISCHARGE(CFS)                PEAK  
 ELEVATION(FEET)  
 12.47                                   2296.7                                (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.12 WATERSHED INCHES;            3974 CFS-HRS;            328.4 ACRE-  
 FEET.

OPERATION RUNOFF    XSECTION    61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	47.3	(RUNOFF)
21.96	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.83 WATERSHED INCHES;	54 CFS-HRS;	4.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	2322.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.10 WATERSHED INCHES;	4028 CFS-HRS;	332.9 ACRE-
FEET.		

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	2266.9	251.68
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.10 WATERSHED INCHES;	4027 CFS-HRS;	332.8 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	30.8	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.61 WATERSHED INCHES;	47 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	24.7	335.67
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.61 WATERSHED INCHES;	47 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	24.4	301.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	139.6	(RUNOFF)
20.10	3.1	(RUNOFF)
24.02	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.89 WATERSHED INCHES; 145 CFS-HRS; 11.9 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	70.1	297.03
20.12	3.1	287.70
24.04	2.3	287.60

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.89 WATERSHED INCHES; 145 CFS-HRS; 11.9 ACRE-FEET.

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OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	90.2	(NULL)
18.87	4.3	(NULL)
23.11	3.2	(NULL)
24.04	3.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.22 WATERSHED INCHES; 191 CFS-HRS; 15.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	273.8	(RUNOFF)
18.64	6.1	(RUNOFF)
18.87	6.0	(RUNOFF)
20.87	5.3	(RUNOFF)
24.02	4.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.60 WATERSHED INCHES; 281 CFS-HRS; 23.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	323.9	(NULL)
18.87	10.3	(NULL)
20.64	9.2	(NULL)
20.86	9.0	(NULL)
21.97	8.3	(NULL)
23.75	7.2	(NULL)
24.03	7.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.44 WATERSHED INCHES; 473 CFS-HRS; 39.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	243.9	249.18
20.14	9.6	247.80
24.09	7.1	247.76

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.44 WATERSHED INCHES; 473 CFS-HRS; 39.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)			
12.12	54.7		(RUNOFF)
17.33	1.2		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	44.5	267.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.07 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	40.6	248.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	312.6	(RUNOFF)
15.84	12.1	(RUNOFF)
17.34	9.4	(RUNOFF)
19.75	7.1	(RUNOFF)
20.08	7.0	(RUNOFF)
21.96	6.2	(RUNOFF)
24.01	5.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.26 WATERSHED INCHES; 302 CFS-HRS; 25.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	2360.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.92 WATERSHED INCHES; 4329 CFS-HRS; 357.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.35	274.2	(NULL)
20.14	10.4	(NULL)
23.14	8.3	(NULL)
24.09	7.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.49 WATERSHED INCHES; 519 CFS-HRS; 42.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.55	2596.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.87 WATERSHED INCHES; 4848 CFS-HRS; 400.6 ACRE-  
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 77.  
\*\*\*

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.55	2596.9	232.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.87 WATERSHED INCHES; 4848 CFS-HRS; 400.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	171.1	(RUNOFF)
15.84	6.1	(RUNOFF)
17.34	4.7	(RUNOFF)
21.96	3.1	(RUNOFF)
24.01	2.7	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.96 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	2646.0	(NULL)
23.98	76.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.84 WATERSHED INCHES; 5011 CFS-HRS; 414.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	2621.7	219.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.83 WATERSHED INCHES; 5010 CFS-HRS; 414.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	194.0	(RUNOFF)
15.84	6.3	(RUNOFF)
17.34	4.9	(RUNOFF)
22.42	3.0	(RUNOFF)
24.00	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.34 WATERSHED INCHES; 177 CFS-HRS; 14.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	2660.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.82 WATERSHED INCHES; 5187 CFS-HRS; 428.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 83

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	97.7	(RUNOFF)
15.84	3.6	(RUNOFF)
20.07	2.1	(RUNOFF)
24.01	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.57 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.62	2683.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.79 WATERSHED INCHES; 5279 CFS-HRS; 436.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	307.5	(RUNOFF)
18.67	8.6	(RUNOFF)
20.68	7.6	(RUNOFF)
23.12	6.3	(RUNOFF)
24.01	5.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.71 WATERSHED INCHES; 361 CFS-HRS; 29.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.61	2809.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.71 WATERSHED INCHES; 5640 CFS-HRS; 466.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	76.9	(RUNOFF)
15.84	2.2	(RUNOFF)
22.42	1.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.87 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	2823.0	(NULL)
23.97	88.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.72 WATERSHED INCHES; 5710 CFS-HRS; 471.9 ACRE-  
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 9, ARC 2							
MAIN TIME INCREMENT .060 HOURS							
ALTERNATE	1	STORM	2				
STRUCTURE 11	RESVOR	.09	1.39	382.15	12.47	51	566.7
XSECTION 8	REACH	.17	1.31	357.10	12.52	84	494.1
STRUCTURE 21	RESVOR	.07	1.91	374.07	13.56F	10F	142.9
STRUCTURE 22	RESVOR	.07	1.91	353.09	13.68F	10F	142.9
STRUCTURE 23	RESVOR	.32	1.39	---	12.47	112	350.0
XSECTION 16	REACH	.32	1.39	332.30	12.47	112	350.0
STRUCTURE 24	RESVOR	.03	2.45	347.01	12.59	10	333.3
XSECTION 120	ADDHYD	.03	2.34	---	12.17	15	500.0
XSECTION 20	ADDHYD	.05	2.19	---	12.15	44	880.0

XSECTION	23	REACH	.41	1.52	315.34	12.51	148	361.0
STRUCTURE	31	RESVOR	.05	1.55	362.31	12.46	28	560.0
STRUCTURE	1	RESVOR	.60	1.50	---	12.40	253	421.7
STRUCTURE	32	RESVOR	.01	2.01	379.28	13.56R	1R	100.0
STRUCTURE	33	RESVOR	.03	2.08	355.98	12.47	18	600.0
STRUCTURE	34	RESVOR	.04	2.06	---	12.48	18	450.0
STRUCTURE	35	RESVOR	.06	2.10	---	12.15	45	750.0
XSECTION	141	ADDHYD	.07	1.98	---	12.15	46	657.1
XSECTION	44	REACH	.77	1.57	290.14	12.54	353	458.4
STRUCTURE	2	RESVOR	.77	1.57	---	12.54	353	458.4
XSECTION	49	ADDHYD	.82	1.56	---	12.52	369	450.0
XSECTION	51	REACH	.93	1.54	284.52	12.62	413	444.1
XSECTION	60	ADDHYD	1.01	1.49	---	12.61	426	421.8
STRUCTURE	3	RESVOR	1.01	1.49	---	12.61	426	421.8
XSECTION	63	REACH	1.02	1.48	249.53	12.78	406	398.0
STRUCTURE	61	RESVOR	.01	1.71	332.36	12.74	5	500.0
STRUCTURE	62	RESVOR	.05	.83	290.42	12.43	12	240.0
STRUCTURE	63	RESVOR	.01	1.40	263.40	12.49	3	300.0
XSECTION	76	ADDHYD	1.28	1.36	---	12.75	453	353.9

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AREA	AMOUNT	ELEVATION	TIME	RATE
ID	OPERATION	(SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	2					
XSECTION	77	REACH	1.28	1.36	229.19	12.82	452	353.1
XSECTION	88	ADDHYD	1.55	1.28	---	12.80	487	314.2
RAINFALL OF		4.91 inches AND		24.00 hr DURATION,		BEGINS AT		.0 hrs.
ALTERNATE	1	STORM	10					
STRUCTURE	11	RESVOR	.09	2.81	383.02	12.34	121	1344.4
XSECTION	8	REACH	.17	2.70	357.82	12.43	212	1247.1
STRUCTURE	21	RESVOR	.07	3.49	376.27	12.68	61	871.4
STRUCTURE	22	RESVOR	.07	3.49	355.97	12.81	57	814.3
STRUCTURE	23	RESVOR	.32	2.79	---	12.41	279	871.9

XSECTION	16	REACH	.32	2.79	333.39	12.41	279	871.9
STRUCTURE	24	RESVOR	.03	4.12	348.34	12.67	13	433.3
XSECTION	120	ADDHYD	.03	3.98	---	12.14	25	833.3
XSECTION	20	ADDHYD	.05	3.82	---	12.14	77	1540.0
XSECTION	23	REACH	.41	2.95	316.03	12.45	344	839.0
STRUCTURE	31	RESVOR	.05	3.02	363.94	12.32	78	1560.0
STRUCTURE	1	RESVOR	.60	2.93	---	12.39	581	968.3
STRUCTURE	32	RESVOR	.01	3.48	380.16	12.40	9	900.0
STRUCTURE	33	RESVOR	.03	3.67	357.05	12.32	49	1633.3
STRUCTURE	34	RESVOR	.04	3.62	---	12.35	54	1350.0
STRUCTURE	35	RESVOR	.06	3.69	---	12.18	101	1683.3
XSECTION	141	ADDHYD	.07	3.53	---	12.18	106	1514.3
XSECTION	44	REACH	.77	3.02	290.97	12.46	804	1044.2
STRUCTURE	2	RESVOR	.77	3.02	---	12.46	804	1044.2
XSECTION	49	ADDHYD	.82	3.01	---	12.44	843	1028.0
XSECTION	51	REACH	.93	2.99	285.87	12.53	949	1020.4
XSECTION	60	ADDHYD	1.01	2.91	---	12.52	983	973.3
STRUCTURE	3	RESVOR	1.01	2.91	---	12.52	983	973.3
XSECTION	63	REACH	1.02	2.89	250.37	12.64	956	937.3

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ALTERNATE	1	STORM	10					
STRUCTURE	61	RESVOR	.01	3.24	334.33	12.74	8	800.0
STRUCTURE	62	RESVOR	.05	1.98	293.76	12.62	18	360.0
STRUCTURE	63	RESVOR	.01	2.82	265.90	12.33	10	1000.0
XSECTION	76	ADDHYD	1.28	2.72	---	12.62	1081	844.5
XSECTION	77	REACH	1.28	2.72	230.50	12.69	1080	843.8
XSECTION	88	ADDHYD	1.55	2.61	---	12.74	1161	749.0
RAINFALL OF	7.23 inches	AND	24.00 hr	DURATION,	BEGINS AT	.0 hrs.		
ALTERNATE	1	STORM	50					
STRUCTURE	11	RESVOR	.09	4.89	384.18	12.32	219	2433.3
XSECTION	8	REACH	.17	4.75	358.49	12.41	387	2276.5

STRUCTURE	21	RESVOR	.07	5.58	377.76	12.51	140	2000.0
STRUCTURE	22	RESVOR	.07	5.57	359.61	12.80	112	1600.0
STRUCTURE	23	RESVOR	.32	4.83	---	12.40	583	1821.9
XSECTION	16	REACH	.32	4.83	335.04	12.40	583	1821.9
STRUCTURE	24	RESVOR	.03	6.38	350.21	12.73	18	600.0
XSECTION	120	ADDHYD	.03	6.23	---	12.14	37	1233.3
XSECTION	20	ADDHYD	.05	6.06	---	12.14	119	2380.0
XSECTION	23	REACH	.41	5.03	316.79	12.45	679	1656.1
STRUCTURE	31	RESVOR	.05	5.15	365.04	12.30	132	2640.0
STRUCTURE	1	RESVOR	.60	5.02	---	12.37	1100	1833.3
STRUCTURE	32	RESVOR	.01	5.55	380.63	12.24	29	2900.0
STRUCTURE	33	RESVOR	.03	5.93	357.61	12.27	85	2833.3
STRUCTURE	34	RESVOR	.04	5.84	---	12.26	114	2850.0
STRUCTURE	35	RESVOR	.06	5.92	---	12.19	206	3433.3
XSECTION	141	ADDHYD	.07	5.72	---	12.18	216	3085.7
XSECTION	44	REACH	.77	5.13	291.89	12.42	1503	1951.9
STRUCTURE	2	RESVOR	.77	5.13	---	12.42	1503	1951.9
XSECTION	49	ADDHYD	.82	5.11	---	12.41	1574	1919.5

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 1

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)
ALTERNATE	1	STORM	50					
XSECTION	51	REACH	.93	5.09	287.28	12.49	1773	1906.5
XSECTION	60	ADDHYD	1.01	4.98	---	12.48	1843	1824.8
STRUCTURE	3	RESVOR	1.01	4.98	---	12.48	1843	1824.8
XSECTION	63	REACH	1.02	4.96	251.28	12.58	1809	1773.5
STRUCTURE	61	RESVOR	.01	5.41	335.25	12.57	19	1900.0
STRUCTURE	62	RESVOR	.05	3.83	296.06	12.44	52	1040.0
STRUCTURE	63	RESVOR	.01	4.90	267.40	12.24	27	2700.0
XSECTION	76	ADDHYD	1.28	4.74	---	12.57	2066	1614.1
XSECTION	77	REACH	1.28	4.74	231.59	12.57	2066	1614.1
XSECTION	88	ADDHYD	1.55	4.60	---	12.62	2249	1451.0

RAINFALL OF 8.47 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 99

STRUCTURE	11	RESVOR	.09	6.04	384.78	12.32	269	2988.9
XSECTION	8	REACH	.17	5.90	358.76	12.40	479	2817.6
STRUCTURE	21	RESVOR	.07	6.69	378.71	12.54	154	2200.0
STRUCTURE	22	RESVOR	.07	6.68	360.78	12.91	127	1814.3
STRUCTURE	23	RESVOR	.32	5.96	---	12.36	717	2240.6
XSECTION	16	REACH	.32	5.96	335.71	12.36	717	2240.6
STRUCTURE	24	RESVOR	.03	7.60	351.23	12.75	20	666.7
XSECTION	120	ADDHYD	.03	7.45	---	12.14	43	1433.3
XSECTION	20	ADDHYD	.05	7.27	---	12.14	141	2820.0
XSECTION	23	REACH	.41	6.17	317.13	12.41	848	2068.3
STRUCTURE	31	RESVOR	.05	6.35	365.43	12.30	161	3220.0
STRUCTURE	1	RESVOR	.60	6.17	---	12.36	1379	2298.3
STRUCTURE	32	RESVOR	.01	6.68	380.81	12.23	33	3300.0
STRUCTURE	33	RESVOR	.03	7.15	357.96	12.29	96	3200.0
STRUCTURE	34	RESVOR	.04	7.04	---	12.27	129	3225.0
STRUCTURE	35	RESVOR	.06	7.13	---	12.17	245	4083.3

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TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 1

-----  
SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)
ALTERNATE	1	STORM	99					
XSECTION	141	ADDHYD	.07	6.91	---	12.17	258	3685.7
XSECTION	44	REACH	.77	6.29	292.29	12.42	1868	2426.0
STRUCTURE	2	RESVOR	.77	6.29	---	12.42	1868	2426.0
XSECTION	49	ADDHYD	.82	6.27	---	12.40	1956	2385.4
XSECTION	51	REACH	.93	6.25	287.87	12.48	2208	2374.2
XSECTION	60	ADDHYD	1.01	6.12	---	12.47	2297	2274.3
STRUCTURE	3	RESVOR	1.01	6.12	---	12.47	2297	2274.3
XSECTION	63	REACH	1.02	6.10	251.68	12.57	2267	2222.5
STRUCTURE	61	RESVOR	.01	6.61	335.67	12.55	25	2500.0
STRUCTURE	62	RESVOR	.05	4.89	297.03	12.42	70	1400.0
STRUCTURE	63	RESVOR	.01	6.07	267.78	12.19	44	4400.0
XSECTION	76	ADDHYD	1.28	5.87	---	12.55	2597	2028.9
XSECTION	77	REACH	1.28	5.87	232.02	12.55	2597	2028.9
XSECTION	88	ADDHYD	1.55	5.72	---	12.61	2823	1821.3

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.

QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION

ROUTING PARAMETERS

XSEC ID	REACH LENGTH COEFF	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT- KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			

BASEFLOW IS .0 CFS

ALTERNATE	1	STORM	2							
2	1170	24	12.3	23	12.4	1.55	1.37	.029	.952	
.58										
5	797	51	12.5	50	12.5	2.26	1.19	.019	.989	
.75?										
8	1221	85	12.4	84	12.5	1.15	1.48	.009	.990	
.76?										
16	920	112	12.5	112	12.5	3.61	1.49	.001	1.000	
1.00?										
23	1379	172	12.2	148	12.5	1.19	1.14	.052	.862	
.33										
27	1021	84	12.3	77	12.4	1.10	1.18	.061	.910	
.41										
32	1603	76	12.2	68	12.4	1.28	1.33	.055	.899	
.48										
34	583	1	13.6	1	13.7	1.14	1.62	.001	.998	
.49										
37	934	18	12.5	18	12.5	2.31	1.55	.002	.999	
.92?										
44	1428	378	12.4	353	12.5	.47	1.33	.033	.934	
.40										
51	1275	427	12.5	412	12.6	.60	1.30	.025	.966	
.47										
53	652	0	.0	0	.0	.000	.00	.000	.000	
.00										
63	1959	429	12.6	406	12.8	.80	1.27	.040	.946	
.35										
65	1283	5	12.7	5	12.8	2.47	1.43	.012	.996	
.53										
70	2166	68	12.2	60	12.3	1.68	1.37	.040	.883	



.47									
72	1081	3	12.5	3	12.7	1.50	1.61	.007	.994
.49									
77	884	452	12.8	452	12.8	1.92	1.22	.008	.999
.87?									
80	1296	458	12.8	458	12.8	1.59	1.44	.003	1.000
1.00?									

ALTERNATE		1	STORM	10						
2	1170	48	12.3	45	12.4	1.90	1.19	.047	.937	
.52										
5	797	121	12.4	120	12.4	2.00	1.25	.016	.996	
.87?										
8	1221	213	12.4	212	12.4	1.26	1.44	.009	.993	
.88?										
16	920	279	12.4	279	12.4	3.70	1.48	.001	1.000	
1.00?										
23	1379	377	12.2	343	12.4	.74	1.26	.034	.911	
.42										
27	1021	191	12.3	174	12.4	.73	1.29	.043	.911	
.52										
32	1603	136	12.2	125	12.3	1.35	1.31	.047	.925	
.52										
34	583	9	12.4	9	12.5	1.14	1.62	.004	.994	
.86?										

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION				ROUTING PARAMETERS							
XSEC	REACH	FLOOD PLAIN	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR	PEAK RATIO Q/I	ATT- KIN
			PEAK	TIME	PEAK	TIME	COEFF	POWER			
COEFF	(FT)	(FT)	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)	(Q*)	(C)
	ALTERNATE	1	STORM	10							
37	934		54	12.4	54	12.4	2.32	1.54	.003	1.000	
1.00?											
44	1428		836	12.4	802	12.5	.30	1.43	.021	.959	
.52											
51	1275		974	12.4	948	12.5	.45	1.37	.019	.974	
.58											

53	652	0	12.5	0	12.7	2.05	1.40	.010	.932
.47									
63	1959	990	12.5	955	12.7	.45	1.40	.025	.965
.47									
65	1283	8	12.7	8	12.8	2.46	1.41	.010	.978
.59									
70	2166	141	12.2	96	12.4	1.92	1.04	.168	.679
.21									
72	1081	9	12.4	9	12.4	1.48	1.55	.008	.934
.61									
77	884	1079	12.6	1077	12.7	1.96	1.22	.008	.998
.94?									
80	1296	1094	12.7	1090	12.8	3.38	1.17	.011	.996
.87?									

ALTERNATE 1 STORM 50

2	1170	81	12.3	81	12.4	.29	2.00	.003	.998
.94?									
5	797	217	12.3	216	12.4	1.85	1.28	.012	.995
.95?									
8	1221	387	12.4	386	12.4	1.29	1.44	.008	.999
.96?									
16	920	580	12.4	580	12.4	4.23	1.43	.001	1.000
1.00?									
23	1379	693	12.2	677	12.5	.60	1.31	.026	.977
.49									
27	1021	323	12.3	312	12.4	.40	1.45	.021	.967
.65									
32	1603	216	12.2	204	12.3	1.38	1.30	.040	.944
.56									
34	583	29	12.2	29	12.2	1.14	1.61	.006	1.000
1.00?									
37	934	113	12.2	113	12.2	2.43	1.51	.004	1.000
1.00?									
44	1428	1544	12.3	1503	12.4	.26	1.46	.016	.973
.61									
51	1275	1800	12.4	1773	12.5	.43	1.38	.016	.985
.66									
53	652	5	12.2	4	12.2	2.05	1.40	.017	.927
.75?									
63	1959	1862	12.5	1806	12.6	.37	1.44	.019	.970
.56									
65	1283	19	12.6	19	12.7	2.49	1.38	.012	.986
.67?									
70	2166	245	12.2	183	12.4	1.61	1.09	.134	.745
.24									

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.

QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

		HYDROGRAPH INFORMATION				ROUTING PARAMETERS					
XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
ALTERNATE		1	STORM	50							
72	1081		27	12.2	25	12.3	1.66	1.42	.017	.927	
.70?											
77	884		2058	12.5	2058	12.5	1.76	1.24	.007	1.000	
1.00?											
80	1296		2099	12.5	2086	12.7	4.94	1.07	.020	.994	
.79?											
ALTERNATE		1	STORM	99							
2	1170		99	12.3	99	12.4	.27	2.00	.002	.999	
.97?											
5	797		267	12.3	267	12.4	1.81	1.28	.011	.998	
.97?											
8	1221		478	12.4	478	12.4	1.30	1.43	.007	1.000	
.99?											
16	920		717	12.4	717	12.4	4.47	1.41	.001	1.000	
1.00?											
23	1379		885	12.2	848	12.4	.77	1.25	.033	.958	
.47											
27	1021		392	12.3	384	12.4	.35	1.48	.017	.980	
.70?											
32	1603		260	12.2	244	12.3	1.50	1.27	.043	.941	
.55											
34	583		33	12.2	33	12.2	1.15	1.61	.005	1.000	
1.00?											
37	934		127	12.3	127	12.3	2.45	1.51	.003	1.000	
1.00?											
44	1428		1913	12.3	1868	12.4	.25	1.46	.015	.976	
.64											
51	1275		2236	12.4	2208	12.5	.43	1.38	.015	.987	
.68?											
53	652		8	12.2	8	12.2	2.05	1.40	.017	.971	
.83?											
63	1959		2320	12.5	2257	12.5	.36	1.44	.017	.973	
.59											
65	1283		25	12.5	24	12.7	2.51	1.37	.012	.982	
.70?											
70	2166		320	12.2	243	12.4	1.26	1.16	.113	.761	
.27											
72	1081		44	12.2	39	12.2	1.69	1.41	.021	.888	
.76?											
77	884		2595	12.5	2595	12.5	1.64	1.25	.007	1.000	
1.00?											
80	1296		2646	12.5	2612	12.6	6.08	1.01	.027	.987	
.72?											

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....			
		2	10	50	99
STRUCTURE 63	.01				
ALTERNATE 1		3	10	27	44
STRUCTURE 62	.05				
ALTERNATE 1		12	18	52	70
STRUCTURE 61	.01				
ALTERNATE 1		5	8	19	25
STRUCTURE 35	.06				
ALTERNATE 1		45	101	206	245
STRUCTURE 34	.04				
ALTERNATE 1		18	54	114	129
STRUCTURE 33	.03				
ALTERNATE 1		18	49	85	96
STRUCTURE 32	.01				
ALTERNATE 1		1?	9	29	33
STRUCTURE 31	.05				
ALTERNATE 1		28	78	132	161
STRUCTURE 24	.03				
ALTERNATE 1		10	13	18	20
STRUCTURE 23	.32				
ALTERNATE 1		112	279	583	717
STRUCTURE 22	.07				
ALTERNATE 1		10	57	112	127

STRUCTURE 21 .07

-----  
 ALTERNATE 1 10 61 140 154

STRUCTURE 11 .09

-----  
 ALTERNATE 1 51 121 219 269

STRUCTURE 3 1.01

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 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 3

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 STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....			
		2	10	50	99
STRUCTURE 3	1.01				
----- ALTERNATE 1		426	983	1843	2297
STRUCTURE 2	.77				
----- ALTERNATE 1		353	804	1503	1868
STRUCTURE 1	.60				
----- ALTERNATE 1		253	581	1100	1379
XSECTION 8	.17				
----- ALTERNATE 1		84	212	387	479
XSECTION 16	.32				
----- ALTERNATE 1		112	279	583	717
XSECTION 20	.05				
----- ALTERNATE 1		44	77	119	141
XSECTION 23	.41				
----- ALTERNATE 1		148	344	679	848
XSECTION 44	.77				
----- ALTERNATE 1		353	804	1503	1868

XSECTION	49	.82				
ALTERNATE	1		369	843	1574	1956
XSECTION	51	.93				
ALTERNATE	1		413	949	1773	2208
XSECTION	60	1.01				
ALTERNATE	1		426	983	1843	2297
XSECTION	63	1.02				
ALTERNATE	1		406	956	1809	2267
XSECTION	76	1.28				
ALTERNATE	1		453	1081	2066	2597
XSECTION	77	1.28				
ALTERNATE	1		452	1080	2066	2597

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	10	50	99	
XSECTION	88	1.55				
ALTERNATE	1		487	1161	2249	2823
XSECTION	120	.03				
ALTERNATE	1		15	25	37	43
XSECTION	141	.07				
ALTERNATE	1		46	106	216	258

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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2.04TEST

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST  
FILES

INPUT = pondh6.dat , GIVEN DATA FILE  
OUTPUT = pondh6.OUT , DATED  
03/31/\*\*,10:10:13

FILES GENERATED - DATED 03/31/\*\*,10:10:13

NONE!

TOTAL NUMBER OF WARNINGS = 36, MESSAGES = 23

\*\*\* TR-20 RUN COMPLETED \*\*\*

1

\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20  
HYDROLOGY\*\*\*\*\*

JOB TR-20		NOPLOTS			
TITLE Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,					
TITLE CN MGMT- PROP COND.- 2,10,50,100 yr NOAA Dist - CPT H7					
2	XSECTN	002	1.0	389.50	
8			389.00	0.00	0.00
8			389.25	1.65	1.06
8			389.50	6.25	2.75
8			389.75	14.40	5.06
8			390.00	26.75	8.00
8			390.25	45.54	14.33
8			390.50	68.67	15.00
8			390.75	96.11	18.88
8			391.00	127.89	23.00
8			391.25	164.08	27.38
8			391.50	204.77	32.00
8			391.75	250.06	36.88
9	ENDTBL				
2	XSECTN	005	1.0	367.00	
8			366.00	0.00	0.00
8			366.50	3.51	1.5
8			367.00	13.55	4.00
8			367.50	30.53	9.00
8			367.75	47.87	13.00
8			368.00	72.23	18.00
8			368.25	104.79	23.98
8			368.50	146.13	30.94
8			368.75	197.14	38.86
8			369.00	258.63	47.75
8			369.25	331.41	57.61
8			369.50	416.25	68.44
9	ENDTBL				
3	STRUCT	11			
8			380.00	0.00	0.00
8			381.00	2.70	0.53
8			382.20	53.00	1.16
8			383.80	186.80	1.40
9	ENDTBL				
2	XSECTN	008	1.0	330.00	
8			356.00	0.00	0.00
8			356.50	20.21	6.94
8			357.00	68.51	15.75
8			357.50	144.11	26.44
8			358.00	248.93	39.00
8			358.50	389.07	53.25
8			359.00	561.31	69.00
8			359.50	767.14	86.25
8			360.00	1008.16	105.00
8			361.00	1375.68	147.50
8			361.50	1604.19	171.38
9	ENDTBL				

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
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2	XSECTN	016	1.0	333.08		
8			331.08	0.00	0.00	
8			332.08	80.21	8.00	
8			333.08	225.50	16.00	
8			333.58	310.09	20.00	
8			334.08	399.94	24.00	
8			334.58	493.86	28.00	
8			335.08	590.97	32.00	
8			335.58	690.67	36.00	
8			336.08	792.47	40.00	
8			336.58	896.02	44.00	
9	ENDTBL					
2	XSECTN	023	1.0	314.40		
8			313.22	0.00	0.00	
8			313.51	1.10	0.89	
8			313.81	3.51	1.84	
8			314.10	16.22	5.61	
8			314.40	34.66	9.74	
8			314.68	48.28	24.71	
8			314.96	79.66	42.09	
8			315.24	126.64	61.87	
8			315.52	189.07	84.06	
8			315.80	267.27	108.64	
8			316.08	361.75	135.63	
8			316.36	473.14	165.02	
8			316.64	602.11	196.81	
8			316.92	749.37	231.00	
8			317.20	878.70	277.25	
8			317.48	1103.89	329.14	
8			317.76	1358.10	382.70	
8			318.04	1640.58	437.94	
8			318.32	1950.87	494.86	
8			318.60	2288.69	553.45	
9	ENDTBL					
3	STRUCT	21				
8			364.00	0.00	0.00	
8			366.00	0.30	0.55	
8			368.00	0.50	1.31	
8			369.00	3.20	1.80	
8			370.00	5.20	2.29	
8			372.00	7.80	3.48	
8			374.00	9.60	5.00	
8			375.00	10.40	5.86	
8			376.00	45.30	6.79	
8			376.50	74.10	7.31	
8			377.00	106.80	7.83	
8			378.00	149.80	8.90	
8			379.00	155.60	10.06	
8			380.00	162.00	11.29	
9	ENDTBL					

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

3	STRUCT	22				
8			352.50	0.00	0.00	
8			358.65	100.00	0.91	
8			361.76	140.00	3.28	
8			363.64	160.00	5.47	
8			366.18	180.00	9.58	
8			368.71	200.00	14.77	

8			370.61	250.00	19.31
9	ENDTBL				
3	STRUCT	23			
8			333.08	0.00	0.00
8			336.97	100.00	0.03
8			338.11	125.00	0.68
8			339.41	150.00	2.19
8			342.51	200.00	6.68
8			346.05	250.00	12.84
8			346.50	300.00	13.70
8			347.05	400.00	14.76
8			347.50	500.00	15.64
8			347.91	600.00	16.47
8			348.31	700.00	17.30
8			349.01	850.00	18.76
8			350.42	900.00	21.84
8			352.03	1112.97	25.53
9	ENDTBL				
2	XSECTN	027	1.0	317.00	
8			316.00	0.00	0.00
8			316.50	2.68	2.59
8			317.00	10.37	6.88
8			317.50	24.26	12.84
8			318.00	45.55	20.50
8			318.50	70.64	34.75
8			319.00	137.01	60.50
8			319.25	200.57	76.25
8			319.50	273.06	92.00
8			319.75	353.76	107.75
8			320.00	442.13	123.50
8			320.50	640.03	155.00
8			321.00	863.72	186.50
9	ENDTBL				
2	XSECTN	032	1.0	313.00	
8			310.00	0.00	0.00
8			311.00	12.25	5.50
8			312.00	52.16	16.00
8			312.50	83.38	23.13
8			313.00	123.94	31.50
8			313.25	148.02	36.16
8			313.50	174.79	41.13
8			313.75	204.34	46.41
8			314.00	236.81	52.00

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			314.50	278.65	65.75
8			315.00	353.72	84.00
9	ENDTBL				
2	XSECTN	034	1.0	338.50	
8			338.00	0.00	0.00
8			338.10	4.87	2.46
8			338.25	22.73	6.38
8			338.50	73.99	13.53
8			338.75	149.34	21.45
8			339.00	247.95	30.13
8			339.50	515.65	49.78
9	ENDTBL				
2	XSECTN	037	1.0	331.00	
8			330.00	0.00	0.00

8			330.25	14.29	3.25
8			330.50	46.85	7.00
8			330.75	95.34	11.25
8			331.00	159.64	16.00
8			331.25	240.13	21.25
8			331.50	337.44	27.00
8			331.75	452.26	33.25
8			332.00	585.36	40.00
8			332.50	875.33	55.81
8			333.00	1272.05	75.25
9	ENDTBL				
2	XSECTN	044	1.0	288.90	
8			287.68	0.00	0.00
8			287.99	1.15	0.94
8			288.29	3.69	1.95
8			288.60	17.06	5.98
8			288.90	36.44	10.37
8			289.19	63.07	39.25
8			289.47	121.85	69.50
8			289.76	206.05	101.12
8			290.05	313.23	134.09
8			290.33	442.07	168.42
8			290.62	591.78	204.12
8			290.91	761.87	241.18
8			291.19	952.02	279.60
8			291.48	1162.04	319.38
8			291.77	1391.84	360.52
8			292.05	1641.40	403.02
8			292.34	1910.74	446.89
8			292.63	2199.92	492.11
8			292.91	2509.04	538.70
8			293.20	2838.22	586.65
9	ENDTBL				
3	STRUCT	31			
8			356.38	0.0	0.00
8			357.26	10.90	0.02

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			357.50	12.30	0.03
8			358.00	14.70	0.05
8			359.00	18.70	0.10
8			360.00	22.00	0.16
8			361.00	24.90	0.25
8			361.50	26.20	0.30
8			362.00	27.50	0.36
8			362.50	28.70	0.43
8			362.90	29.60	0.49
8			363.50	51.30	0.60
8			363.75	65.70	0.67
8			364.00	82.60	0.72
8			364.20	83.30	0.83
8			364.60	100.00	0.88
8			366.80	260.00	1.47
8			366.92	340.00	1.49
8			366.98	380.00	1.50
9	ENDTBL				
3	STRUCT	32			
8			375.40	0.00	0.00
8			379.36	1.00	0.74

8		380.00	5.00	0.89
8		380.20	10.00	0.94
8		380.33	15.00	0.98
8		380.45	20.00	1.01
8		380.55	25.00	1.04
8		380.65	30.00	1.06
8		381.19	40.00	1.21
8		381.78	44.00	1.39
8		382.59	66.00	1.66
8		382.79	88.00	1.75
8		382.89	110.00	1.79
8		382.97	132.00	1.83
9	ENDTBL			
3	STRUCT	33		
8		350.00	0.00	0.00
8		354.30	1.00	1.08
8		354.47	2.00	1.15
8		354.87	5.00	1.30
8		355.38	10.00	1.50
8		356.18	20.00	1.84
8		356.88	40.00	2.15
8		357.27	60.00	2.33
8		357.46	80.00	2.42
8		358.08	100.00	2.73
8		358.14	120.00	2.76
8		358.19	140.00	2.78
8		358.25	171.00	2.81
8		358.27	180.00	2.82
9	ENDTBL			

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

3	STRUCT	34		
9	ENDTBL			
3	STRUCT	02		
9	ENDTBL			
2	XSECTN	051	1.0	282.40
8			281.10	0.00
8			281.42	1.24
8			281.75	3.96
8			282.07	18.30
8			282.40	39.09
8			282.88	67.33
8			283.36	131.17
8			283.84	225.10
8			284.32	348.01
8			284.80	499.91
8			285.28	681.29
8			285.76	892.92
8			286.24	1135.70
8			286.72	1410.63
8			287.20	1718.74
8			287.68	2061.13
8			288.16	2438.87
8			288.64	2853.08
8			289.12	3301.76
8			289.60	3785.91
9	ENDTBL			
2	XSECTN	053	1.0	289.00
8			288.00	0.00

8			288.50	9.00	2.88
8			289.00	34.26	7.50
8			289.50	79.27	13.88
8			290.00	147.75	22.00
8			290.50	227.49	31.94
8			291.00	332.02	43.75
8			291.50	463.75	57.44
8			291.75	540.56	64.98
8			292.00	625.07	73.00
9	ENDTBL				
2	XSECTN	063	1.0	248.40	
8			247.07	0.00	0.00
8			247.41	1.85	1.14
8			247.74	5.93	2.35
8			248.07	27.43	7.18
8			248.40	58.61	12.46
8			248.67	89.70	40.04
8			248.95	158.39	68.99
8			249.22	256.90	99.30
8			249.49	382.40	130.99
8			249.77	533.43	164.04
8			250.04	709.09	198.46

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			250.31	908.86	234.24
8			250.59	1132.40	271.40
8			250.86	1379.55	309.92
8			251.13	1650.25	349.81
8			251.41	1944.49	391.07
8			251.68	2262.35	433.69
8			251.95	2603.94	477.69
8			252.23	2969.40	523.05
8			252.50	3358.93	569.78
9	ENDTBL				
3	STRUCT	61			
8			329.75	0.00	0.00
8			330.00	1.56	0.01
8			332.00	4.37	0.13
8			334.00	5.96	0.39
8			334.10	6.01	0.40
8			334.50	10.20	0.47
8			335.00	16.10	0.56
8			336.00	28.91	0.75
8			337.00	40.10	0.97
9	ENDTBL				
3	STRUCT	62			
8			287.30	0.00	0.00
8			288.00	5.45	0.01
8			289.00	9.05	0.05
8			290.00	11.60	0.13
8			292.00	15.35	0.50
8			294.00	18.40	1.19
8			294.30	18.92	1.26
8			294.50	20.73	1.40
8			295.00	36.40	1.60
8			295.40	38.00	1.80
8			296.00	51.10	2.15
8			297.00	69.60	2.75
8			298.00	86.80	3.44

8		298.68	98.50	3.91
8		298.80	107.56	4.00
9	ENDTBL			
3	STRUCT	63		
8		259.43	0.00	0.00
8		260.00	1.30	0.026
8		260.50	1.70	0.050
8		261.00	2.10	0.075
8		261.50	2.40	0.095
8		262.00	2.70	0.119
8		262.50	2.90	0.160
8		263.00	3.20	0.205
8		263.50	3.40	0.245
8		264.00	3.60	0.285
8		264.50	3.80	0.360

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8		265.00	3.90	0.415
8		265.50	4.10	0.480
8		266.00	11.00	0.537
8		266.50	15.40	0.620
8		267.00	16.00	0.709
8		267.50	30.30	0.798
8		268.00	56.00	0.887
8		268.50	145.68	0.976
9	ENDTBL			
2	XSECTN	065	1.0	300.50
8		300.00	0.00	0.00
8		300.10	0.29	0.23
8		300.25	1.47	0.69
8		300.40	3.55	1.28
8		300.50	5.48	1.75
8		300.60	7.88	2.28
8		300.75	12.45	3.19
8		300.90	18.28	4.23
8		301.00	22.91	5.00
8		301.10	28.18	5.83
8		301.25	37.36	7.19
8		301.40	48.14	8.68
8		301.50	56.26	9.75
9	ENDTBL			
2	XSECTN	070	1.0	248.40
8		247.07	0.00	0.00
8		247.41	1.85	1.14
8		247.74	5.93	2.35
8		248.07	27.43	7.18
8		248.40	58.61	12.46
8		248.67	89.70	40.04
8		248.95	158.39	68.99
8		249.22	256.90	99.30
8		249.49	382.40	130.99
8		249.77	533.43	164.04
8		250.04	709.09	198.46
8		250.31	908.86	234.24
8		250.59	1132.40	271.40
8		250.86	1379.55	309.92
8		251.13	1650.25	349.81
8		251.41	1944.49	391.07
8		251.68	2262.35	433.69

8		251.95	2603.94	477.69
8		252.23	2969.40	523.05
8		252.50	3358.93	569.78
9	ENDTBL			
2	XSECTN 072	1.0	248.40	
8		247.07	0.00	0.00
8		247.41	1.85	1.14
8		247.74	5.93	2.35

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		248.07	27.43	7.18
8		248.40	58.61	12.46
8		248.67	89.70	40.04
8		248.95	158.39	68.99
8		249.22	256.90	99.30
8		249.49	382.40	130.99
8		249.77	533.43	164.04
8		250.04	709.09	198.46
8		250.31	908.86	234.24
8		250.59	1132.40	271.40
8		250.86	1379.55	309.92
8		251.13	1650.25	349.81
8		251.41	1944.49	391.07
8		251.68	2262.35	433.69
8		251.95	2603.94	477.69
8		252.23	2969.40	523.05
8		252.50	3358.93	569.78
9	ENDTBL			
2	XSECTN 077	1.0	229.00	
8		226.00	0.00	0.00
8		226.50	11.73	5.31
8		227.00	42.97	13.25
8		227.50	96.50	23.81
8		228.00	175.93	37.00
8		228.50	258.13	54.25
8		229.00	385.22	77.00
8		229.50	561.82	105.25
8		230.00	793.74	139.00
8		230.50	1079.38	179.94
8		231.00	1462.49	229.75
8		231.50	1953.75	288.44
8		232.00	2564.16	356.00
8		232.50	3408.70	429.13
8		233.00	4351.01	504.50
9	ENDTBL			
2	XSECTN 080	1.0	212.00	
8		210.50	0.00	0.00
8		210.75	4.72	2.23
8		211.00	15.68	4.92
8		211.25	32.36	8.06
8		211.50	54.93	11.67
8		211.75	83.70	15.73
8		212.00	119.05	20.25
8		212.25	163.87	25.14
8		212.50	215.35	30.31
8		212.75	273.55	35.77
8		213.00	338.57	41.50
8		214.00	669.42	67.25
8		215.00	806.07	99.00

8		216.00	1088.03	138.25
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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		217.00	1451.30	187.50
8		218.00	1978.93	249.25
8		219.00	2262.06	340.00
8		220.00	3115.20	476.25
8		221.00	4892.67	639.25

9 ENDTBL  
 3 STRUCT 03  
 9 ENDTBL  
 3 STRUCT 24  
 9 ENDTBL  
 3 STRUCT 35  
 9 ENDTBL  
 3 STRUCT 65  
 9 ENDTBL  
 3 STRUCT 01  
 9 ENDTBL

5 RAINFL 9		.1			
8	0.0000	0.0013	0.0023	0.0034	0.0044
8	0.0055	0.0065	0.0076	0.0087	0.0098
8	0.0109	0.0121	0.0132	0.0143	0.0155
8	0.0167	0.0178	0.0190	0.0202	0.0214
8	0.0226	0.0238	0.0251	0.0263	0.0276
8	0.0288	0.0301	0.0314	0.0327	0.0340
8	0.0353	0.0366	0.0379	0.0393	0.0406
8	0.0420	0.0434	0.0447	0.0461	0.0475
8	0.0489	0.0504	0.0518	0.0532	0.0547
8	0.0562	0.0576	0.0591	0.0606	0.0621
8	0.0636	0.0651	0.0667	0.0682	0.0697
8	0.0713	0.0729	0.0745	0.0760	0.0776
8	0.0793	0.0809	0.0826	0.0843	0.0861
8	0.0879	0.0898	0.0916	0.0936	0.0955
8	0.0975	0.0996	0.1017	0.1038	0.1060
8	0.1082	0.1104	0.1127	0.1150	0.1174
8	0.1198	0.1223	0.1247	0.1273	0.1298
8	0.1324	0.1351	0.1378	0.1405	0.1432
8	0.1461	0.1490	0.1521	0.1554	0.1588
8	0.1623	0.1660	0.1699	0.1739	0.1780
8	0.1823	0.1868	0.1914	0.1961	0.2010
8	0.2061	0.2117	0.2179	0.2247	0.2321
8	0.2400	0.2490	0.2591	0.2702	0.2825
8	0.2955	0.3157	0.3370	0.3662	0.4067
8	0.4766	0.5933	0.6338	0.6630	0.6843
8	0.7045	0.7176	0.7298	0.7409	0.7510
8	0.7600	0.7679	0.7753	0.7821	0.7883
8	0.7939	0.7990	0.8039	0.8086	0.8132
8	0.8177	0.8220	0.8261	0.8301	0.8340
8	0.8377	0.8412	0.8446	0.8479	0.8510
8	0.8540	0.8568	0.8595	0.8622	0.8649
8	0.8676	0.8702	0.8727	0.8753	0.8778
8	0.8802	0.8826	0.8850	0.8873	0.8896

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*



8	0.8918	0.8940	0.8962	0.8983	0.9004		
8	0.9025	0.9045	0.9064	0.9084	0.9103		
8	0.9121	0.9139	0.9157	0.9174	0.9191		
8	0.9208	0.9224	0.9240	0.9256	0.9271		
8	0.9287	0.9303	0.9318	0.9334	0.9349		
8	0.9364	0.9379	0.9394	0.9409	0.9424		
8	0.9439	0.9453	0.9468	0.9482	0.9496		
8	0.9511	0.9525	0.9539	0.9553	0.9566		
8	0.9580	0.9594	0.9607	0.9621	0.9634		
8	0.9647	0.9660	0.9673	0.9686	0.9699		
8	0.9712	0.9724	0.9737	0.9749	0.9762		
8	0.9774	0.9786	0.9798	0.9810	0.9822		
8	0.9834	0.9845	0.9857	0.9868	0.9879		
8	0.9891	0.9902	0.9913	0.9924	0.9935		
8	0.9945	0.9956	0.9967	0.9977	0.9987		
8	1.0000	1.0000	1.0000	1.0000	1.0000		
9	ENDTBL						
6	RUNOFF	1 001	1	0.0336	80.992	0.4051	DA1
6	REACH	3 002	1 2	1170.0		1	
6	RUNOFF	1 003	1	0.0580	79.488	0.3751	DA2
6	ADDHYD	4 004	1 2 3			1	DA1+2
6	RESVOR	2 11 3	1			1	1
	SWMF10						
6	REACH	3 005	1 2	797.0		1	
6	RUNOFF	1 006	3	0.0798	77.284	0.3921	DA3
6	ADDHYD	4 007	2 3 4			1	
	DA12+3						
6	REACH	3 008	4 7	1221.0		1	1 SA1-
	SA2						
6	RUNOFF	1 009	1	0.0734	90.928	0.4221	DA1
6	RESVOR	2 21 1	2			1	1
	SWMF13						
6	RUNOFF	1 010	3	0.0097	72.007	0.1281	DA7
6	RESVOR	2 22 2 3 4				1	1 HWY
	STOR						
6	RUNOFF	1 011	2	0.0544	73.278	0.2201	DA2
6	ADDHYD	4 012	7 2 3			1	
	SA1+DA2						
6	RUNOFF	1 013	5	0.0193	79.062	0.2481	DA3
6	ADDHYD	4 014	4 3 6			1	
	DA17+2						
6	ADDHYD	4 015	6 5 3			1	1
	DA172+3						
6	RESVOR	2 23 3	1			1 1 1 1	1
	PONDH7						
6	REACH	3 016	1 2	920.0		1	1
6	RUNOFF	1 017	3	0.0211	87.900	0.1641	DA4
6	RUNOFF	1 118	1	0.0253	93.221	0.2231	DA5A
6	RESVOR	2 24 1	4			1 1 1 1	1
	PONDH6						
6	RUNOFF	1 119	5	0.0059	86.148	0.1361	DA5B
6	ADDHYD	4 120	4 5 6			1	
	DA5a+5b						
6	ADDHYD	4 020	3 6 4			1	1 DA4+5
6	RUNOFF	1 019	5	0.0404	84.467	0.1681	DA6
6	ADDHYD	4 022	4 5 3			1	
	DA45+6						
6	ADDHYD	4 021	2 3 1			1	
	DA123+6						
6	REACH	3 023	1 7	1379.0		1	1 SA2-
	SA3						
6	RUNOFF	1 024	1	0.0505	82.333	0.3401	DA1
6	RESVOR	2 31 1	2			1	1 SWMF3

6 RUNOFF 1 025 3 0.0748 81.676 0.3581 DA2  
1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

6 ADDHYD 4 026 2 3 4 1 DA1+2  
6 REACH 3 027 4 1 1021.0 1  
6 RUNOFF 1 028 2 0.0599 78.523 0.3231 DA3  
6 ADDHYD 4 029 7 2 3 1  
SA2+DA3  
6 ADDHYD 4 030 1 3 2 1  
DA12+3  
6 RESVOR 2 01 2 5 1 1 PROP1  
6 RUNOFF 1 031 1 0.0692 86.978 0.2761 DA4  
6 REACH 3 032 1 6 1603.0 1  
6 RUNOFF 1 033 2 0.0084 95.000 0.1921 DA5  
6 RESVOR 2 32 2 3 1 1  
SWMF11  
6 REACH 3 034 3 7 583.0 1  
6 RUNOFF 1 035 1 0.0275 94.960 0.2481 DA6  
6 RESVOR 2 33 1 2 1 1 SWMF8  
6 ADDHYD 4 036 7 2 1 1 DA5+6  
6 RESVOR 2 34 1 2 1 1  
HWYSTOR3  
6 REACH 3 037 2 4 934.0 1  
6 RUNOFF 1 138 1 0.0280 89.879 0.1551 DA7a  
6 ADDHYD 4 139 4 1 3 1  
DA56+7a  
6 RESVOR 2 35 3 2 1 1 1 1 1  
PONDH5  
6 RUNOFF 1 140 3 0.0048 62.603 0.1261 DA7b  
6 ADDHYD 4 141 2 3 4 1 1  
DA7a+7b  
6 RUNOFF 1 040 2 0.0393 80.311 0.3671 DA8  
6 ADDHYD 4 041 5 2 1 1 DA3+8  
6 ADDHYD 4 042 6 1 2 1 DA4+8  
6 ADDHYD 4 043 4 2 1 1 DA7+8  
6 REACH 3 044 1 2 1428.0 1 SA3-  
SA4  
6 RESVOR 2 02 2 7 1 1 PROP2  
6 RUNOFF 1 045 1 0.0477 80.798 0.4121 DA1  
6 RUNOFF 1 046 2 0.0628 79.968 0.4401 DA2  
6 ADDHYD 4 047 1 2 3 1 DA1+2  
6 RUNOFF 1 048 1 0.0469 80.250 0.2491 DA3  
6 ADDHYD 4 049 7 1 2 1 1  
SA3+DA3  
6 ADDHYD 4 050 2 3 4 1  
DA12+3  
6 REACH 3 051 4 7 1275.0 1 1 SA4-  
SA5  
6 RUNOFF 1 052 1 0.0087 41.639 0.1631 DA1  
6 REACH 3 053 1 5 652.0 1  
6 RUNOFF 1 054 1 0.0072 33.729 0.2561 DA2  
6 RUNOFF 1 055 2 0.0322 77.752 0.2491 DA3  
6 ADDHYD 4 056 7 2 4 1  
SA4+DA3  
6 ADDHYD 4 057 5 1 3 1 DA1+2  
6 ADDHYD 4 058 4 3 5 1  
DA12+3  
6 RUNOFF 1 059 1 0.0266 70.478 0.2611 1 DA4  
6 ADDHYD 4 060 5 1 2 1 1

```

DA123+4
6 RESVOR 2 03 2 1 1 1 PROP3
6 RUNOFF 1 061 3 0.0173 69.728 0.2971 DA5
6 ADDHYD 4 062 1 3 6 1 1
DA1234+5
6 REACH 3 063 6 7 1959.0 1 1 SA5-
SA6
6 RUNOFF 1 064 1 0.0110 84.520 0.5211 DA1
6 RESVOR 2 61 1 2 1 1
SWMF19
6 REACH 3 065 2 3 1283.0 1
1
    
```

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

```

6 RUNOFF 1 066 1 0.0458 70.198 0.2391 DA2
6 RESVOR 2 62 1 2 1 1
SWMF18
6 ADDHYD 4 067 3 2 4 1 DA1+2
6 RUNOFF 1 068 5 0.0778 76.176 0.2281 DA3
6 ADDHYD 4 069 4 5 1 1
DA12+3
6 REACH 3 070 1 2 2166.0 1
6 RUNOFF 1 071 1 0.0119 80.036 0.1221 DA4
6 RESVOR 2 63 1 3 1 1 SWMF2
6 REACH 3 072 3 4 1081.0 1
6 RUNOFF 1 073 5 0.1100 64.864 0.2051 1 DA5
6 ADDHYD 4 074 7 5 1 1
SA5+DA5
6 ADDHYD 4 075 2 4 6 1 1
DA123+4
6 ADDHYD 4 076 1 6 2 1 1
DA12345
6 REACH 3 077 2 7 884.0 1 1 SA6-
SA7
6 RUNOFF 1 078 2 0.0510 70.802 0.1971 1 DA1
6 ADDHYD 4 079 7 2 1 1
SA6+DA1
6 REACH 3 080 1 2 1296.0 1
6 RUNOFF 1 081 3 0.0513 73.958 0.1621 DA3
6 ADDHYD 4 082 2 3 4 1 DA1+3
6 RUNOFF 1 083 1 0.0313 67.555 0.1861 DA2
6 ADDHYD 4 084 4 1 2 1
DA13+2
6 RUNOFF 1 085 3 0.1187 68.693 0.3211 1 DA4
6 ADDHYD 4 086 2 3 1 1
DA123+4
6 RUNOFF 1 087 4 0.0159 86.785 0.1421 DA5
6 ADDHYD 4 088 1 4 7 1 1 1
DA1234+5
ENDATA
7 INCREM 6 .06
7 COMPUT 7 001 088 0.0 3.19 1.09 2 1 2
ENDCMP 1
7 COMPUT 7 001 088 0.0 4.91 1.09 2 1 10
ENDCMP 1
7 COMPUT 7 001 088 0.0 7.23 1.09 2 1 50
ENDCMP 1
7 COMPUT 7 001 088 0.0 8.47 1.09 2 1 99
ENDCMP 1
ENDJOB 2
    
```

\*\*\*\*\*END OF 80-80  
LIST\*\*\*\*\*

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EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .060 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
STARTING TIME = .00 RAIN DEPTH = 3.19 RAIN DURATION = 1.00  
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. = 2 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 23.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.46 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-  
FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.41 22.7 389.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.46 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.29 39.9 (RUNOFF)  
23.14 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.36 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.32 60.4 (NULL)  
23.10 1.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 83 CFS-HRS; 6.8 ACRE-  
 FEET.

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OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	50.9	382.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 82 CFS-HRS; 6.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	50.4	367.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 82 CFS-HRS; 6.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	47.5	(RUNOFF)
23.75	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.22 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	85.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		
12.52	84.4	357.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.30	77.8	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.24 WATERSHED INCHES; 106 CFS-HRS; 8.8 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE

STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.56	9.7 *	374.07
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.91 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.13	6.6	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .92 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.68	9.6 *	353.09
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.91 WATERSHED INCHES; 90 CFS-HRS; 7.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	33.2	(RUNOFF)
19.76	1.0	(RUNOFF)
20.09	1.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .99 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	98.2	(NULL)
24.00	3.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.24 WATERSHED INCHES; 180 CFS-HRS; 14.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	15.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.33 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	105.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 270 CFS-HRS; 22.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	112.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.39 WATERSHED INCHES;	287 CFS-HRS;	23.7 ACRE-
FEET.		

\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .006 HOURS.  
\*\*\*

OPERATION RESVOR STRUCTURE 23

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	106.1	337.25
12.95	74.1	335.96
13.06	62.1	335.50
13.17	53.0	335.14

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32  
SQ.MI.

6.42 CFS	.00	.01	.01	.01	.01	.01	.01
.01							
6.42 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
6.90 CFS	.01	.01	.01	.02	.02	.02	.02
.02							
6.90 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
7.38 CFS	.02	.02	.03	.03	.03	.03	.03
.03							
7.38 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
7.86 CFS	.04	.04	.04	.04	.04	.05	.05
.05							
7.86 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
8.34 CFS	.05	.06	.06	.06	.06	.07	.07
.07							
8.34 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
8.82 CFS	.08	.08	.08	.09	.09	.09	.10
.10							
8.82 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
9.30 CFS	.10	.11	.11	.12	.12	.13	.13
.14							
9.30 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.09
333.09							



9.78 CFS	.15	.16	.17	.18	.20	.23	.25
.27							
9.78 ELEV	333.09	333.09	333.09	333.09	333.09	333.09	333.09
333.09							
10.26 CFS	.30	.34	.38	.44	.50	.58	.66
.75							
10.26 ELEV	333.09	333.09	333.09	333.10	333.10	333.10	333.11
333.11							
10.74 CFS	.86	.98	1.12	1.27	1.45	1.67	1.93
2.24							
10.74 ELEV	333.11	333.12	333.12	333.13	333.14	333.14	333.16
333.17							
11.22 CFS	2.60	3.02	3.50	4.04	4.64	5.32	6.21
7.46							
11.22 ELEV	333.18	333.20	333.22	333.24	333.26	333.29	333.32
333.37							
11.70 CFS	9.00	10.83	13.24	16.56	21.46	29.40	42.13
61.35							
11.70 ELEV	333.43	333.50	333.60	333.72	333.91	334.22	334.72
335.47							
12.18 CFS	80	93	100	101	102	104	105
106							
12.18 ELEV	336.20	336.70	336.98	337.01	337.08	337.16	337.22
337.25							
12.66 CFS	106	104	102	89	69	73	60
61							
12.66 ELEV	337.23	337.17	337.06	336.53	335.76	335.94	335.41
335.47							
13.14 CFS	52.02	52.24	45.85	45.46	41.03	40.32	37.17
36.34							
13.14 ELEV	335.10	335.11	334.86	334.85	334.68	334.65	334.53
334.49							
13.62 CFS	34.01	33.15	31.44	30.67	29.41	28.75	27.82
27.29							
13.62 ELEV	334.40	334.37	334.30	334.27	334.22	334.20	334.16
334.14							
14.10 CFS	26.59	26.14	25.58	25.18	24.73	24.39	24.02
23.70							
14.10 ELEV	334.11	334.10	334.07	334.06	334.04	334.03	334.01
334.00							
14.58 CFS	23.35	23.03	22.69	22.39	22.08	21.78	21.47
21.16							
14.58 ELEV	333.99	333.98	333.96	333.95	333.94	333.93	333.92
333.90							
15.06 CFS	20.86	20.55	20.24	19.94	19.65	19.40	19.18
18.98							
15.06 ELEV	333.89	333.88	333.87	333.86	333.84	333.83	333.83
333.82							
15.54 CFS	18.80	18.63	18.46	18.30	18.15	18.03	17.93
17.81							
15.54 ELEV	333.81	333.80	333.80	333.79	333.79	333.78	333.78
333.77							
16.02 CFS	17.69	17.56	17.45	17.34	17.24	17.13	17.02
16.91							
16.02 ELEV	333.77	333.76	333.76	333.75	333.75	333.75	333.74
333.74							

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16.50 CFS	16.80	16.68	16.57	16.46	16.36	16.26	16.15
16.04							
16.50 ELEV	333.73	333.73	333.72	333.72	333.72	333.71	333.71
333.70							
16.98 CFS	15.94	15.85	15.75	15.64	15.52	15.40	15.31
15.22							
16.98 ELEV	333.70	333.70	333.69	333.69	333.68	333.68	333.68
333.67							
17.46 CFS	15.11	14.98	14.86	14.75	14.64	14.54	14.42
14.31							
17.46 ELEV	333.67	333.66	333.66	333.65	333.65	333.65	333.64
333.64							
17.94 CFS	14.22	14.13	14.04	13.94	13.83	13.73	13.63
13.54							
17.94 ELEV	333.63	333.63	333.63	333.62	333.62	333.61	333.61
333.61							
18.42 CFS	13.43	13.33	13.26	13.19	13.13	13.05	12.97
12.91							
18.42 ELEV	333.60	333.60	333.60	333.59	333.59	333.59	333.58
333.58							
18.90 CFS	12.85	12.77	12.68	12.61	12.53	12.46	12.39
12.33							
18.90 ELEV	333.58	333.58	333.57	333.57	333.57	333.56	333.56
333.56							
19.38 CFS	12.27	12.21	12.15	12.09	12.01	11.93	11.87
11.81							
19.38 ELEV	333.56	333.55	333.55	333.55	333.55	333.54	333.54
333.54							
19.86 CFS	11.73	11.66	11.60	11.55	11.50	11.44	11.38
11.31							
19.86 ELEV	333.54	333.53	333.53	333.53	333.53	333.53	333.52
333.52							
20.34 CFS	11.25	11.18	11.09	11.03	10.98	10.93	10.87
10.81							
20.34 ELEV	333.52	333.51	333.51	333.51	333.51	333.51	333.50
333.50							
20.82 CFS	10.76	10.71	10.65	10.58	10.51	10.45	10.39
10.33							
20.82 ELEV	333.50	333.50	333.49	333.49	333.49	333.49	333.48
333.48							
21.30 CFS	10.27	10.20	10.13	10.06	9.99	9.90	9.80
9.72							
21.30 ELEV	333.48	333.48	333.47	333.47	333.47	333.47	333.46
333.46							
21.78 CFS	9.65	9.57	9.49	9.43	9.36	9.28	9.20
9.12							
21.78 ELEV	333.46	333.45	333.45	333.45	333.44	333.44	333.44
333.43							
22.26 CFS	9.04	8.97	8.91	8.84	8.78	8.72	8.64
8.56							
22.26 ELEV	333.43	333.43	333.43	333.42	333.42	333.42	333.42
333.41							
22.74 CFS	8.50	8.44	8.36	8.28	8.22	8.18	8.13
8.07							
22.74 ELEV	333.41	333.41	333.41	333.40	333.40	333.40	333.40
333.39							
23.22 CFS	8.01	7.95	7.89	7.84	7.77	7.70	7.63
7.58							
23.22 ELEV	333.39	333.39	333.39	333.38	333.38	333.38	333.38
333.37							
23.70 CFS	7.54	7.50	7.43	7.36	7.29	7.27	7.22
6.95							

23.70 ELEV	333.37	333.37	333.37	333.37	333.36	333.36	333.36
333.35							
24.18 CFS	6.52	6.10	5.72	5.39	5.09	4.84	4.63
4.46							
24.18 ELEV	333.33	333.32	333.30	333.29	333.28	333.27	333.26
333.25							
24.66 CFS	4.31	4.18	4.06	3.94	3.83	3.73	3.63
3.53							
24.66 ELEV	333.25	333.24	333.24	333.23	333.23	333.23	333.22
333.22							
25.14 CFS	3.43	3.34	3.26	3.17	3.09	3.01	2.93
2.85							
25.14 ELEV	333.21	333.21	333.21	333.20	333.20	333.20	333.19
333.19							
25.62 CFS	2.78	2.71	2.64	2.57	2.50	2.43	2.37
2.31							
25.62 ELEV	333.19	333.19	333.18	333.18	333.18	333.17	333.17
333.17							
26.10 CFS	2.25	2.19	2.13	2.08	2.02	1.97	1.92
1.87							
26.10 ELEV	333.17	333.17	333.16	333.16	333.16	333.16	333.15
333.15							
26.58 CFS	1.82	1.77	1.72	1.68	1.64	1.59	1.55
1.51							
26.58 ELEV	333.15	333.15	333.15	333.15	333.14	333.14	333.14
333.14							
27.06 CFS	1.47	1.43	1.40	1.36	1.32	1.29	1.26
1.22							
27.06 ELEV	333.14	333.14	333.13	333.13	333.13	333.13	333.13
333.13							
27.54 CFS	1.19	1.16	1.13	1.10	1.07	1.04	1.02
.99							
27.54 ELEV	333.13	333.13	333.12	333.12	333.12	333.12	333.12
333.12							
28.02 CFS	.96	.94	.92	.90	.88	.87	.86
.84							

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28.02 ELEV	333.12	333.12	333.12	333.11	333.11	333.11	333.11
333.11							
28.50 CFS	.84	.83	.82	.81	.80	.79	
28.50 ELEV	333.11	333.11	333.11	333.11	333.11	333.11	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.40 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	28	18	14	12	10	8	3	1

DURATION(HRS)	18	18
FLOW(CFS)	1	1 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
\*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.61	106.1	332.26
12.95	74.1	332.00
13.06	62.1	331.85
13.17	53.0	331.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.40 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	29.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.98 WATERSHED INCHES; 27 CFS-HRS; 2.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	38.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.46 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 24

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	38.3	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
SQ.MI.

3.96 CFS	.00	.01	.01	.02	.02	.03	.03
.04							
4.44 CFS	.04	.05	.06	.06	.07	.07	.08
.08							
4.92 CFS	.09	.09	.10	.10	.11	.12	.12
.13							
5.40 CFS	.13	.13	.14	.15	.16	.16	.17

.17							
5.88 CFS	.17	.18	.19	.20	.20	.21	.21
.22							
6.36 CFS	.23	.24	.25	.26	.27	.27	.28
.29							
6.84 CFS	.30	.31	.32	.33	.34	.35	.36
.37							
7.32 CFS	.38	.39	.40	.41	.42	.43	.44
.45							
7.80 CFS	.47	.48	.49	.51	.52	.53	.54
.55							
8.28 CFS	.56	.58	.59	.60	.61	.63	.64
.66							
8.76 CFS	.67	.68	.69	.70	.72	.74	.76
.78							
9.24 CFS	.81	.85	.88	.92	.95	.98	1.01
1.05							
9.72 CFS	1.09	1.13	1.17	1.20	1.24	1.28	1.32
1.37							
10.20 CFS	1.41	1.45	1.49	1.52	1.57	1.62	1.68
1.76							
10.68 CFS	1.86	1.98	2.11	2.25	2.40	2.54	2.70
2.88							
11.16 CFS	3.10	3.35	3.61	3.89	4.17	4.46	4.76
5.33							
11.64 CFS	6.31	7.30	8.24	9.57	11.45	14.16	18.49
25.13							
12.12 CFS	33.95	38.32	34.22	26.78	20.79	16.56	13.66
11.76							
12.60 CFS	10.15	8.59	7.39	6.62	6.09	5.67	5.32
4.98							
13.08 CFS	4.66	4.35	4.08	3.86	3.67	3.49	3.31
3.13							
13.56 CFS	2.95	2.79	2.65	2.55	2.46	2.40	2.34
2.30							
14.04 CFS	2.27	2.22	2.18	2.12	2.07	2.03	2.00
1.96							
14.52 CFS	1.92	1.87	1.81	1.77	1.73	1.69	1.65
1.61							
15.00 CFS	1.56	1.52	1.48	1.43	1.39	1.37	1.35
1.35							
15.48 CFS	1.34	1.34	1.33	1.31	1.29	1.27	1.27
1.27							
15.96 CFS	1.26	1.24	1.22	1.20	1.20	1.19	1.18
1.16							
16.44 CFS	1.15	1.14	1.12	1.11	1.10	1.10	1.08
1.07							
16.92 CFS	1.06	1.05	1.05	1.04	1.02	.99	.98
.98							
17.40 CFS	.98	.96	.94	.92	.91	.90	.90
.88							
17.88 CFS	.87	.86	.85	.85	.83	.82	.81
.80							
18.36 CFS	.80	.78	.77	.78	.79	.79	.78
.77							
18.84 CFS	.78	.78	.77	.76	.75	.75	.75
.75							
19.32 CFS	.75	.75	.75	.75	.74	.73	.73
.73							
19.80 CFS	.73	.72	.71	.71	.72	.72	.72
.71							
20.28 CFS	.70	.70	.69	.68	.68	.69	.69
.69							
20.76 CFS	.68	.68	.68	.67	.66	.66	.65

.65								
21.24 CFS	.65	.65	.65	.65	.65	.65	.65	.64
.63								
21.72 CFS	.63	.63	.62	.62	.63	.63	.63	.62
.61								
22.20 CFS	.60	.60	.60	.60	.60	.60	.60	.60
.59								
22.68 CFS	.58	.58	.58	.57	.56	.56	.56	.57
.57								
23.16 CFS	.57	.56	.56	.55	.55	.55	.55	.54
.53								
23.64 CFS	.53	.54	.54	.53	.52	.52	.52	.54
.53								
24.12 CFS	.41	.25	.13	.07	.03	.02	.02	.01
.00								

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.46 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
FEET.

DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	4	2	1	1	1	1	1	1

DURATION (HRS) 16  
FLOW (CFS) 0

OPERATION RUNOFF XSECTION 119

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
ELEVATION (FEET)  
12.13 8.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.83 WATERSHED INCHES; 7 CFS-HRS; .6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 120

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
ELEVATION (FEET)  
12.17 45.6 (NULL)  
17.32 1.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.34 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
ELEVATION (FEET)

12.16	74.7	(NULL)
15.84	2.5	(NULL)
24.00	1.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.19 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	48.6	(RUNOFF)
19.47	1.0	(RUNOFF)
19.75	1.0	(RUNOFF)
20.06	1.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.71 WATERSHED INCHES; 44 CFS-HRS; 3.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	123.2	(NULL)
15.84	4.2	(NULL)
17.34	3.3	(NULL)
21.95	2.1	(NULL)
24.00	1.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 119 CFS-HRS; 9.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	201.8	(NULL)
12.94	91.0	(NULL)
13.05	77.2	(NULL)
20.01	14.0	(NULL)
23.01	10.1	(NULL)
24.00	9.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 405 CFS-HRS; 33.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	164.7	315.41

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 404 CFS-HRS; 33.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	41.6	(RUNOFF)
20.68	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-FEET.

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\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS. \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS. \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	28.2	362.31
20.70	1.1	356.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	58.7	(RUNOFF)
23.97	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.51 WATERSHED INCHES; 73 CFS-HRS; 6.0 ACRE-FEET.



OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	84.2	(NULL)
18.68	3.2	(NULL)
23.78	2.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-  
FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.43	76.6	318.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 28

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	42.0	(RUNOFF)
23.12	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.30 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	202.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.49 WATERSHED INCHES; 454 CFS-HRS; 37.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	273.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.50 WATERSHED INCHES; 577 CFS-HRS; 47.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	273.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.50 WATERSHED INCHES; 577 CFS-HRS; 47.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	76.8	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 32

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	68.8	312.27
24.15	1.3	310.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	14.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.63 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .28 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 376.89.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS, AT STRUCTURE 32 \*\*\*

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 13.56 1.0 379.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.01 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-FEET.

\*\*\* WARNING - XSECTION 34, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT, UNLESS NEW RATING TABLE VALUES ARE INSERTED. \*\*\*

OPERATION REACH XSECTION 34

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS, AT XSECTION 34 \*\*\*

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 13.68 1.0 338.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.00 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-FEET.

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OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.19 41.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.63 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-FEET.

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.47 17.5 355.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.08 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	18.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	18.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	18.2	330.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 138

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	42.9	(RUNOFF)
17.34	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.15 WATERSHED INCHES; 39 CFS-HRS; 3.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.15	44.6	(NULL)
23.69	2.0	(NULL)
24.00	2.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.10 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	44.6	(NULL)
23.69	2.0	(NULL)
24.00	2.0	(NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2						
	MAIN	TIME INCREMENT = .060 hr,	DRAINAGE AREA = .06				
4.32 CFS	.00	.01	.01	.01	.01	.01	.01
.01							
4.80 CFS	.01	.01	.01	.01	.01	.02	.02
.02							
5.28 CFS	.02	.02	.02	.02	.02	.02	.03
.04							
5.76 CFS	.04	.05	.06	.07	.08	.09	.09
.10							
6.24 CFS	.11	.12	.13	.13	.14	.15	.16
.17							
6.72 CFS	.18	.19	.20	.21	.22	.23	.24
.26							
7.20 CFS	.27	.28	.29	.30	.31	.33	.34
.35							
7.68 CFS	.36	.38	.39	.40	.42	.44	.45
.47							
8.16 CFS	.48	.49	.51	.53	.54	.55	.57
.59							
8.64 CFS	.61	.63	.64	.66	.67	.69	.71
.74							
9.12 CFS	.76	.79	.82	.86	.89	.93	.96
.99							
9.60 CFS	1.03	1.08	1.12	1.16	1.20	1.24	1.28
1.33							
10.08 CFS	1.38	1.43	1.48	1.52	1.57	1.62	1.67
1.73							
10.56 CFS	1.81	1.91	2.03	2.16	2.30	2.45	2.60
2.75							
11.04 CFS	2.90	3.13	3.38	3.65	3.93	4.22	4.54
4.85							
11.52 CFS	5.17	6.08	7.32	8.20	9.23	10.98	13.42
16.89							
12.00 CFS	23.15	32.13	43.42	43.83	36.16	32.51	31.33
30.26							
12.48 CFS	29.47	28.63	26.82	24.94	23.51	22.21	20.95
19.72							
12.96 CFS	18.54	17.40	16.31	15.30	14.48	13.76	13.06
12.40							
13.44 CFS	11.77	11.16	10.59	10.06	9.59	9.17	8.79
8.45							
13.92 CFS	8.19	7.95	7.73	7.50	7.28	7.07	6.88
6.71							
14.40 CFS	6.55	6.39	6.22	6.05	5.90	5.75	5.63
5.50							

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14.88	CFS	5.37	5.24	5.12	5.00	4.87	4.75	4.65
4.57								
15.36	CFS	4.49	4.43	4.37	4.32	4.26	4.20	4.14
4.10								
15.84	CFS	4.08	4.04	3.99	3.93	3.89	3.85	3.82
3.79								
16.32	CFS	3.74	3.70	3.67	3.63	3.58	3.55	3.53
3.50								
16.80	CFS	3.46	3.42	3.39	3.37	3.34	3.31	3.26
3.22								
17.28	CFS	3.19	3.19	3.16	3.11	3.07	3.03	3.01
2.99								
17.76	CFS	2.96	2.92	2.89	2.86	2.85	2.82	2.78
2.75								
18.24	CFS	2.73	2.71	2.68	2.65	2.63	2.63	2.62
2.60								
18.72	CFS	2.57	2.56	2.57	2.56	2.54	2.53	2.52
2.52								
19.20	CFS	2.51	2.51	2.51	2.50	2.50	2.49	2.48
2.46								
19.68	CFS	2.46	2.46	2.45	2.43	2.42	2.43	2.44
2.43								
20.16	CFS	2.41	2.40	2.39	2.39	2.36	2.35	2.36
2.37								
20.64	CFS	2.36	2.34	2.33	2.34	2.33	2.31	2.30
2.29								
21.12	CFS	2.29	2.28	2.28	2.28	2.27	2.27	2.27
2.26								
21.60	CFS	2.23	2.22	2.23	2.23	2.21	2.21	2.22
2.20								
22.08	CFS	2.18	2.17	2.17	2.16	2.16	2.16	2.15
2.15								
22.56	CFS	2.14	2.11	2.11	2.12	2.10	2.08	2.08
2.08								
23.04	CFS	2.10	2.08	2.07	2.06	2.05	2.05	2.04
2.03								
23.52	CFS	2.01	2.00	2.01	2.02	2.01	1.98	1.97
1.97								
24.00	CFS	2.02	1.97	1.70	1.52	1.45	1.41	1.40
1.38								
24.48	CFS	1.38	1.37	1.36	1.36	1.35	1.34	1.34
1.33								
24.96	CFS	1.32	1.32	1.31	1.30	1.29	1.29	1.28
1.27								
25.44	CFS	1.27	1.26	1.25	1.25	1.24	1.23	1.23
1.22								
25.92	CFS	1.21	1.21	1.20	1.19	1.19	1.18	1.17
1.17								
26.40	CFS	1.16	1.16	1.15	1.14	1.14	1.13	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.10 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
FEET.

DURATION (HRS)	2	4	6	8	10	12	14	
FLOW (CFS)	9	4	3	3	2	2	1	TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME (HRS)		PEAK DISCHARGE (CFS)		PEAK
ELEVATION (FEET)				
12.14		1.4		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .50 WATERSHED INCHES; 2 CFS-HRS; .1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME (HRS)		PEAK DISCHARGE (CFS)		PEAK
ELEVATION (FEET)				
12.15		46.0		(NULL)
24.00		2.1		(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME (HRS)		PEAK DISCHARGE (CFS)		PEAK
ELEVATION (FEET)				
12.28		28.2		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.41 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME (HRS)		PEAK DISCHARGE (CFS)		PEAK
ELEVATION (FEET)				
12.35		300.1		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 613 CFS-HRS; 50.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME (HRS)		PEAK DISCHARGE (CFS)		PEAK
ELEVATION (FEET)				
12.36		368.2		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.53 WATERSHED INCHES; 698 CFS-HRS; 57.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	400.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.57 WATERSHED INCHES; 785 CFS-HRS; 64.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	371.3	290.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.57 WATERSHED INCHES; 784 CFS-HRS; 64.8 ACRE-  
 FEET.

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OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	371.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.57 WATERSHED INCHES; 784 CFS-HRS; 64.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	33.3	(RUNOFF)
20.10	1.1 *	(RUNOFF)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.45 WATERSHED INCHES; 45 CFS-HRS; 3.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46



PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	40.7	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.39 WATERSHED INCHES;	56 CFS-HRS;	4.7 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	74.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.42 WATERSHED INCHES;	101 CFS-HRS;	8.3 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	40.1	(RUNOFF)
20.10	1.1	(RUNOFF)
20.65	1.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.41 WATERSHED INCHES;	43 CFS-HRS;	3.5 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	388.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.56 WATERSHED INCHES;	827 CFS-HRS;	68.3 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	448.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.54 WATERSHED INCHES;	928 CFS-HRS;	76.7 ACRE-
FEEET.		

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	431.7	284.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.54 WATERSHED INCHES; 927 CFS-HRS; 76.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.54 WATERSHED INCHES; 145 CFS-HRS; 76.6 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 53

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	24.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.25 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.59 440.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.53 WATERSHED INCHES; 953 CFS-HRS; 78.8 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 57  
NO HYDROGRAPH IN INPUT LOCATION 5 OR 1 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.59 440.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.51 WATERSHED INCHES; 953 CFS-HRS; 78.8 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.23 12.3 (RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
SQ.MI.  
11.64 CFS .36 .53 .75 1.07 1.53 2.25 3.44  
5.60  
12.12 CFS 8.86 11.72 12.23 10.90 9.15 7.73 6.64  
5.84  
12.60 CFS 5.17 4.51 3.95 3.54 3.25 3.02 2.84

2.68								
13.08 CFS	2.52	2.37	2.23	2.11	2.01	1.92	1.83	
1.74								
13.56 CFS	1.65	1.57	1.49	1.43	1.38	1.35	1.32	
1.29								
14.04 CFS	1.27	1.25	1.23	1.21	1.18	1.16	1.14	
1.12								
14.52 CFS	1.10	1.08	1.05	1.02	1.00	.98	.96	
.94								
15.00 CFS	.91	.89	.87	.84	.82	.80	.79	
.79								
15.48 CFS	.79	.78	.78	.77	.76	.75	.75	
.75								
15.96 CFS	.74	.73	.72	.72	.71	.71	.70	
.70								
16.44 CFS	.69	.68	.67	.67	.66	.66	.65	
.65								
16.92 CFS	.64	.63	.63	.63	.62	.61	.60	
.59								
17.40 CFS	.59	.59	.57	.56	.56	.55	.55	
.54								
17.88 CFS	.53	.53	.52	.52	.51	.50	.50	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.85 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.59 445.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.49 WATERSHED INCHES; 968 CFS-HRS; 80.0 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.59 445.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.49 WATERSHED INCHES; 968 CFS-HRS; 80.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.25 7.1 (RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .81 WATERSHED INCHES; 9 CFS-HRS; .7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.59 449.2 (NULL)

		HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2						
		DRAINAGE AREA = 1.02						
HRS	MAIN TIME INCREMENT = .060 hr,							
SQ.MI.								
7.14 CFS	.50	.52	.55	.58	.61	.64	.68	
.71								
7.62 CFS	.75	.80	.84	.88	.93	.98	1.03	
1.08								
8.10 CFS	1.13	1.18	1.24	1.30	1.36	1.42	1.49	
1.55								
8.58 CFS	1.62	1.69	1.76	1.83	1.91	1.98	2.06	
2.14								
9.06 CFS	2.22	2.30	2.38	2.48	2.58	2.69	2.82	
2.96								
9.54 CFS	3.13	3.31	3.52	3.75	4.00	4.28	4.57	
4.88								
10.02 CFS	5.21	5.57	5.94	6.35	6.78	7.23	7.71	
8.20								
10.50 CFS	8.72	9.26	9.83	10.44	11.11	11.85	12.69	
13.64								
10.98 CFS	14.72	15.94	17.29	18.81	20.51	22.42	24.57	
27.01								
11.46 CFS	29.76	32.86	36.41	40.62	45.69	51.87	59.57	
69.37								
11.94 CFS	82	100	126	163	210	261	311	
358								
12.42 CFS	399	430	446	449	441	425	405	
382								
12.90 CFS	359	337	315	293	272	251	232	
214								
13.38 CFS	197	182	169	157	146	137	129	
121								
13.86 CFS	114	108	103	99	94	91	88	
85								
14.34 CFS	82.38	80.13	78.08	76.20	74.46	72.81	71.25	
69.76								
14.82 CFS	68.33	66.95	65.59	64.27	62.98	61.70	60.44	
59.20								
15.30 CFS	57.98	56.80	55.67	54.61	53.63	52.74	51.93	
51.19								
15.78 CFS	50.52	49.92	49.37	48.86	48.37	47.90	47.46	
47.04								
16.26 CFS	46.63	46.22	45.82	45.43	45.05	44.66	44.27	
43.89								
16.74 CFS	43.52	43.15	42.78	42.41	42.06	41.72	41.38	
41.03								
17.22 CFS	40.68	40.32	39.97	39.63	39.27	38.91	38.53	
38.16								
17.70 CFS	37.79	37.43	37.05	36.67	36.30	35.94	35.58	
35.23								
18.18 CFS	34.88	34.54	34.21	33.89	33.57	33.25	32.95	
32.68								

18.66	CFS	32.43	32.19	31.97	31.79	31.62	31.46	31.30
31.15								
19.14	CFS	31.00	30.85	30.70	30.56	30.42	30.28	30.16
30.04								
19.62	CFS	29.92	29.80	29.68	29.56	29.43	29.29	29.15
29.02								
20.10	CFS	28.89	28.77	28.65	28.53	28.42	28.30	28.16
28.02								
20.58	CFS	27.88	27.75	27.61	27.47	27.35	27.23	27.12
27.00								
21.06	CFS	26.88	26.75	26.63	26.50	26.36	26.23	26.11
26.00								
21.54	CFS	25.89	25.78	25.66	25.54	25.42	25.28	25.15
25.01								
22.02	CFS	24.88	24.74	24.60	24.46	24.32	24.18	24.04
23.90								
22.50	CFS	23.76	23.63	23.49	23.35	23.22	23.08	22.94
22.78								
22.98	CFS	22.63	22.50	22.37	22.24	22.11	21.99	21.88
21.77								
23.46	CFS	21.65	21.52	21.38	21.25	21.12	21.00	20.87
20.74								
23.94	CFS	20.61	20.52	20.41	20.16	19.69	19.02	18.19
17.18								
24.42	CFS	15.99	14.67	13.33	12.01	10.82	9.77	8.86
8.11								
24.90	CFS	7.48	6.97	6.55	6.21	5.93	5.69	5.49
5.32								
25.38	CFS	5.17	5.04	4.91	4.80	4.69	4.59	4.49
4.40								

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25.86	CFS	4.31	4.22	4.14	4.05	3.97	3.89	3.82
3.74								
26.34	CFS	3.67	3.60	3.53	3.46	3.39	3.33	3.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.48 WATERSHED INCHES; 977 CFS-HRS; 80.7 ACRE-  
FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.76	423.3	249.57

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.48 WATERSHED INCHES; 976 CFS-HRS; 80.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.37 8.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.74 4.7 332.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-
FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.86 4.6 300.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.21 21.6 (RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.83 WATERSHED INCHES; 25 CFS-HRS; 2.0 ACRE-
FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE
TIME INCREMENT OF .043 HOURS.
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES
FIRST NEGATIVE VALUE IS 0 CFS.
\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.43 12.4 290.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .83 WATERSHED INCHES; 25 CFS-HRS; 2.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.58	16.5	(NULL)
20.11	1.0	(NULL)
20.66	1.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.00 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.20	55.7	(RUNOFF)
24.03	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.15 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.20	68.6	(NULL)
23.10	2.1	(NULL)
23.75	2.0	(NULL)
24.03	2.0	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.09 WATERSHED INCHES; 95 CFS-HRS; 7.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 70

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.32	60.1	248.41
23.17	2.1	247.43
24.09	2.0	247.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.09 WATERSHED INCHES; 95 CFS-HRS; 7.8 ACRE-



FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	13.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.40 WATERSHED INCHES;	11 CFS-HRS;	.9 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	3.4	263.40
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.40 WATERSHED INCHES;	11 CFS-HRS;	.9 ACRE-
FEET.		

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	3.3	247.53
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.39 WATERSHED INCHES;	11 CFS-HRS;	.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	34.3	(RUNOFF)
15.86	2.4	(RUNOFF)
24.02	1.2	(RUNOFF)

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	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2							
	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = .11			
HRS								
SQ.MI.								
11.82 CFS	.39	1.24	3.08	6.90	14.15	26.24	33.87	
32.06								
12.30 CFS	26.87	22.73	19.37	17.02	15.52	13.85	12.00	
10.64								
12.78 CFS	9.83	9.24	8.76	8.33	7.90	7.45	7.01	
6.64								
13.26 CFS	6.35	6.08	5.81	5.55	5.28	5.01	4.76	

4.55							
13.74 CFS	4.40	4.28	4.19	4.12	4.06	4.02	3.96
3.88							
14.22 CFS	3.80	3.72	3.66	3.61	3.56	3.48	3.40
3.31							
14.70 CFS	3.23	3.17	3.11	3.05	2.97	2.90	2.83
2.75							
15.18 CFS	2.67	2.61	2.57	2.55	2.54	2.54	2.54
2.53							
15.66 CFS	2.49	2.45	2.43	2.44	2.44	2.41	2.37
2.34							
16.14 CFS	2.32	2.32	2.31	2.28	2.26	2.24	2.21
2.18							
16.62 CFS	2.16	2.15	2.15	2.13	2.10	2.08	2.07
2.07							
17.10 CFS	2.05	2.01	1.96	1.94	1.95	1.94	1.91
1.87							
17.58 CFS	1.83	1.81	1.81	1.79	1.77	1.74	1.72
1.71							
18.06 CFS	1.70	1.68	1.65	1.63	1.62	1.61	1.58
1.57							
18.54 CFS	1.58	1.60	1.61	1.59	1.57	1.59	1.59
1.57							
19.02 CFS	1.55	1.54	1.54	1.54	1.54	1.54	1.54
1.54							
19.50 CFS	1.54	1.54	1.51	1.50	1.51	1.51	1.48
1.47							
19.98 CFS	1.48	1.50	1.51	1.49	1.47	1.47	1.46
1.44							
20.46 CFS	1.41	1.42	1.44	1.45	1.43	1.41	1.42
1.43							
20.94 CFS	1.41	1.39	1.38	1.37	1.37	1.37	1.37
1.37							
21.42 CFS	1.37	1.38	1.37	1.35	1.33	1.33	1.34
1.32							
21.90 CFS	1.33	1.34	1.33	1.31	1.29	1.29	1.28
1.28							
22.38 CFS	1.28	1.28	1.29	1.28	1.25	1.23	1.24
1.24							
22.86 CFS	1.22	1.20	1.21	1.24	1.24	1.22	1.20
1.20							
23.34 CFS	1.19	1.19	1.18	1.15	1.14	1.15	1.17
1.17							
23.82 CFS	1.15	1.12	1.12	1.18	1.16	.84	.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .59 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.75 433.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 1018 CFS-HRS; 84.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION (FEET)  
 12.32 63.1 (NULL)  
 18.71 3.1 (NULL)  
 24.09 2.2 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .15  
 SQ.MI.  
 10.74 CFS .46 .54 .64 .75 .88 1.01 1.17  
 1.35

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11.22 CFS	1.56	1.81	2.09	2.40	2.77	3.19	3.68
4.35							
11.70 CFS	5.34	6.62	8.15	10.08	12.69	16.46	22.46
31.31							
12.18 CFS	44.47	56.82	62.70	61.76	57.70	52.92	48.54
44.94							
12.66 CFS	41.84	38.92	36.31	33.93	31.86	30.06	28.23
26.32							
13.14 CFS	24.55	22.78	20.99	19.76	18.75	17.87	17.05
16.28							
13.62 CFS	15.53	14.77	14.04	13.37	12.77	12.25	11.78
11.35							
14.10 CFS	10.98	10.63	10.31	10.00	9.68	9.32	8.96
8.64							
14.58 CFS	8.35	8.06	7.73	7.43	7.15	6.92	6.71
6.51							
15.06 CFS	6.33	6.15	5.97	5.80	5.64	5.50	5.39
5.31							
15.54 CFS	5.25	5.21	5.17	5.12	5.06	5.00	4.96
4.93							
16.02 CFS	4.90	4.85	4.79	4.74	4.70	4.66	4.62
4.58							
16.50 CFS	4.54	4.49	4.44	4.39	4.35	4.32	4.28
4.24							
16.98 CFS	4.20	4.16	4.13	4.10	4.05	3.99	3.93
3.89							
17.46 CFS	3.87	3.84	3.78	3.72	3.67	3.63	3.59
3.55							
17.94 CFS	3.50	3.46	3.42	3.39	3.35	3.31	3.27
3.23							
18.42 CFS	3.20	3.17	3.13	3.11	3.11	3.11	3.11
3.09							
18.90 CFS	3.08	3.08	3.06	3.04	3.02	3.01	2.99
2.99							
19.38 CFS	2.98	2.98	2.98	2.98	2.97	2.95	2.93
2.92							
19.86 CFS	2.91	2.89	2.87	2.86	2.86	2.87	2.87
2.86							
20.34 CFS	2.84	2.83	2.80	2.77	2.75	2.75	2.76
2.75							
20.82 CFS	2.74	2.73	2.73	2.72	2.70	2.67	2.66
2.64							
21.30 CFS	2.64	2.63	2.63	2.62	2.62	2.62	2.60
2.58							

21.78 CFS	2.56	2.55	2.54	2.54	2.54	2.53	2.52
2.50							
22.26 CFS	2.48	2.46	2.45	2.45	2.44	2.44	2.43
2.41							
22.74 CFS	2.39	2.37	2.37	2.35	2.33	2.31	2.32
2.32							
23.22 CFS	2.32	2.30	2.29	2.28	2.27	2.25	2.23
2.20							
23.70 CFS	2.19	2.19	2.20	2.19	2.17	2.14	2.16
2.17							
24.18 CFS	2.01	1.66	1.26	.91	.66	.48	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.11 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.73	471.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.36 WATERSHED INCHES; 1123 CFS-HRS; 92.8 ACRE-FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	470.8	229.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.36 WATERSHED INCHES; 1123 CFS-HRS; 92.8 ACRE-FEET.

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OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	27.4	(RUNOFF)
17.35	1.1	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05 SQ.MI.

11.52 CFS	.41	.66	1.01	1.43	1.94	2.73	3.90
5.71							
12.00 CFS	9.08	14.77	23.27	27.41	23.98	19.09	15.59
12.97							
12.48 CFS	11.21	10.12	8.90	7.63	6.74	6.21	5.83

5.51								
12.96 CFS	5.22	4.93	4.64	4.35	4.11	3.93	3.75	
3.58								
13.44 CFS	3.41	3.23	3.07	2.91	2.78	2.69	2.61	
2.55								
13.92 CFS	2.51	2.47	2.44	2.40	2.35	2.30	2.25	
2.21								
14.40 CFS	2.18	2.15	2.10	2.05	1.99	1.94	1.91	
1.87								
14.88 CFS	1.83	1.78	1.74	1.69	1.64	1.59	1.56	
1.53								
15.36 CFS	1.52	1.52	1.52	1.52	1.51	1.48	1.46	
1.45								
15.84 CFS	1.45	1.45	1.43	1.41	1.39	1.38	1.38	
1.37								
16.32 CFS	1.35	1.34	1.33	1.31	1.29	1.28	1.27	
1.27								
16.80 CFS	1.26	1.24	1.23	1.22	1.22	1.21	1.18	
1.15								
17.28 CFS	1.14	1.15	1.14	1.12	1.10	1.08	1.07	
1.06								
17.76 CFS	1.05	1.04	1.02	1.01	1.01	1.00	.98	
.96								
18.24 CFS	.95	.95	.94	.93	.92	.93	.94	
.94								
18.72 CFS	.93	.92	.93	.93	.91	.90	.90	
.90								
19.20 CFS	.90	.90	.90	.90	.90	.90	.90	
.88								
19.68 CFS	.87	.88	.88	.86	.85	.86	.87	
.88								
20.16 CFS	.86	.85	.85	.85	.83	.82	.82	
.84								
20.64 CFS	.84	.83	.82	.82	.83	.82	.80	
.80								
21.12 CFS	.80	.79	.79	.79	.79	.80	.80	
.79								
21.60 CFS	.78	.77	.77	.77	.76	.77	.77	
.77								
22.08 CFS	.75	.75	.74	.74	.74	.74	.74	
.74								
22.56 CFS	.74	.72	.71	.72	.72	.70	.69	
.70								
23.04 CFS	.71	.71	.70	.69	.69	.69	.68	
.68								
23.52 CFS	.66	.65	.66	.67	.68	.66	.64	
.64								
24.00 CFS	.68	.66	.46					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .86 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.80	476.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.34 WATERSHED INCHES; 1151 CFS-HRS; 95.2 ACRE-  
 FEET.

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\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0, CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 80. \*\*\*

OPERATION REACH XSECTION 80

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.80 476.8 213.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.34 WATERSHED INCHES; 1151 CFS-HRS; 95.2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.16 36.0 (RUNOFF)
19.47 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.03 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.80 483.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.33 WATERSHED INCHES; 1185 CFS-HRS; 98.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.18 13.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.71 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-
FEET.

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)

12.80

486.7

(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.32 WATERSHED INCHES; 1200 CFS-HRS; 99.1 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 85

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK (RUNOFF)
12.28	43.1	(RUNOFF)
18.68	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2							
	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = .12			
11.64 CFS	.36	.73	1.34	2.24	3.63	5.85	9.31	
15.85								
12.12 CFS	25.63	36.25	42.25	42.76	38.79	33.81	29.52	
26.06								
12.60 CFS	23.12	20.47	18.08	16.09	14.57	13.42	12.50	
11.69								
13.08 CFS	10.95	10.27	9.65	9.13	8.66	8.25	7.85	
7.48								
13.56 CFS	7.11	6.75	6.42	6.14	5.90	5.72	5.57	
5.45								
14.04 CFS	5.35	5.26	5.17	5.07	4.97	4.87	4.78	
4.70								
14.52 CFS	4.62	4.53	4.42	4.32	4.22	4.13	4.05	
3.96								
15.00 CFS	3.87	3.77	3.68	3.58	3.48	3.40	3.34	
3.31								
15.48 CFS	3.28	3.27	3.26	3.23	3.19	3.16	3.14	
3.12								
15.96 CFS	3.11	3.08	3.04	3.01	2.98	2.97	2.94	
2.92								
16.44 CFS	2.89	2.86	2.83	2.80	2.77	2.75	2.73	
2.71								
16.92 CFS	2.68	2.66	2.64	2.62	2.60	2.56	2.52	
2.49								
17.40 CFS	2.48	2.46	2.43	2.39	2.35	2.32	2.30	
2.28								
17.88 CFS	2.25	2.22	2.20	2.18	2.16	2.13	2.10	
2.08								
18.36 CFS	2.06	2.04	2.02	2.01	2.01	2.02	2.01	
2.00								
18.84 CFS	2.00	2.00	1.99	1.98	1.96	1.95	1.94	
1.94								
19.32 CFS	1.94	1.94	1.94	1.94	1.94	1.93	1.91	
1.90								
19.80 CFS	1.90	1.89	1.87	1.86	1.87	1.88	1.88	
1.87								

20.28 CFS	1.86	1.84	1.83	1.81	1.79	1.79	1.80
1.80							
20.76 CFS	1.80	1.79	1.78	1.78	1.77	1.75	1.74
1.73							
21.24 CFS	1.72	1.72	1.72	1.72	1.72	1.72	1.71
1.69							
21.72 CFS	1.68	1.67	1.67	1.66	1.67	1.66	1.66
1.64							
22.20 CFS	1.63	1.62	1.61	1.61	1.61	1.61	1.60
1.59							
22.68 CFS	1.57	1.56	1.56	1.54	1.53	1.52	1.52
1.53							
23.16 CFS	1.53	1.52	1.51	1.50	1.49	1.48	1.47
1.45							
23.64 CFS	1.44	1.45	1.45	1.45	1.43	1.41	1.42
1.42							
24.12 CFS	1.30	1.04	.74	.48			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .76 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.78 502.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.27 WATERSHED INCHES; 1258 CFS-HRS; 103.9 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.13 22.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.89 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.78 505.8 (NULL)  
 23.97 27.9 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55



SQ.MI.								
7.32 CFS	.50	.52	.55	.58	.61	.65	.69	
.73								
7.80 CFS	.77	.81	.86	.91	.96	1.01	1.06	
1.11								
8.28 CFS	1.17	1.23	1.29	1.35	1.42	1.48	1.55	
1.62								
8.76 CFS	1.69	1.77	1.85	1.93	2.01	2.10	2.19	
2.28								
9.24 CFS	2.37	2.47	2.57	2.67	2.78	2.91	3.04	
3.20								
9.72 CFS	3.37	3.56	3.77	4.01	4.27	4.55	4.86	
5.18								
10.20 CFS	5.53	5.89	6.28	6.70	7.14	7.61	8.12	
8.67								
10.68 CFS	9.26	9.89	10.58	11.33	12.16	13.10	14.14	
15.35								
11.16 CFS	16.71	18.25	19.99	21.95	24.21	26.73	29.62	
33.56								
11.64 CFS	38	44	51	60	73	90	118	
163								
12.12 CFS	228	279	310	336	361	386	414	
443								
12.60 CFS	469	489	502	506	502	492	476	
456								
13.08 CFS	435	411	388	364	340	317	295	
275								
13.56 CFS	255	237	221	206	193	181	170	
161								
14.04 CFS	152	145	138	132	126	122	117	
113								
14.52 CFS	110	106	103	100	98	95	93	
91								
15.00 CFS	88.99	87.01	85.06	83.18	81.37	79.68	78.10	
76.63								
15.48 CFS	75.25	73.94	72.66	71.41	70.19	69.08	68.12	
67.22								
15.96 CFS	66.36	65.53	64.74	64.03	63.39	62.78	62.17	
61.58								
16.44 CFS	61.02	60.45	59.87	59.33	58.83	58.34	57.83	
57.31								
16.92 CFS	56.82	56.35	55.89	55.41	54.89	54.34	53.84	
53.41								
17.40 CFS	52.96	52.48	51.95	51.43	50.92	50.44	49.96	
49.45								
17.88 CFS	48.94	48.45	47.98	47.51	47.01	46.51	46.03	
45.58								
18.36 CFS	45.14	44.66	44.24	43.89	43.57	43.25	42.89	
42.57								
18.84 CFS	42.32	42.03	41.74	41.47	41.23	41.00	40.80	
40.62								
19.32 CFS	40.45	40.29	40.14	39.99	39.82	39.60	39.42	
39.28								
19.80 CFS	39.12	38.92	38.74	38.60	38.51	38.38	38.21	
38.04								
20.28 CFS	37.88	37.71	37.49	37.27	37.13	37.02	36.90	
36.73								
20.76 CFS	36.55	36.42	36.27	36.08	35.89	35.71	35.54	
35.38								
21.24 CFS	35.23	35.09	34.96	34.82	34.69	34.55	34.36	
34.17								
21.72 CFS	34.03	33.89	33.71	33.59	33.49	33.32	33.13	
32.94								
22.20 CFS	32.76	32.58	32.42	32.26	32.11	31.96	31.79	

31.56

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22.68	CFS	31.37	31.22	31.03	30.82	30.62	30.47	30.36
30.22								
23.16	CFS	30.04	29.85	29.68	29.51	29.35	29.18	28.96
28.78								
23.64	CFS	28.65	28.55	28.42	28.23	28.02	27.85	27.86
27.63								
24.12	CFS	26.61	25.28	23.99	22.77	21.61	20.51	19.43
18.31								
24.60	CFS	17.12	15.87	14.59	13.33	12.12	11.01	10.03
9.16								
25.08	CFS	8.41	7.78	7.24	6.78	6.40	6.09	5.82
5.60								
25.56	CFS	5.41	5.24	5.09	4.95	4.83	4.71	4.60
4.50								
26.04	CFS	4.41	4.31	4.22	4.14	4.05	3.97	3.89
3.82								
26.52	CFS	3.74	3.67	3.60	3.53			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 1.28 WATERSHED INCHES; 1277 CFS-HRS; 105.5 ACRE-FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88 STARTING TIME = .00 RAIN DEPTH = 4.91 RAIN DURATION = 1.00 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS ALTERNATE NO. = 1 STORM NO. =10 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	48.0	(RUNOFF)
23.10	1.1 *	(RUNOFF)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.90 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.41	45.0	390.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.90 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

FEET.

OPERATION RUNOFF XSECTION 3

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.28	82.2	(RUNOFF)
20.68	2.2	(RUNOFF)
23.98	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.77 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.32	122.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.82 WATERSHED INCHES; 166 CFS-HRS; 13.8 ACRE-FEET.

OPERATION RESVOR STRUCTURE 11

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.34	121.3	383.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.81 WATERSHED INCHES; 166 CFS-HRS; 13.7 ACRE-FEET.

OPERATION REACH XSECTION 5

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.41	120.5	368.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.81 WATERSHED INCHES; 166 CFS-HRS; 13.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.29	101.9	(RUNOFF)

23.73

2.3

(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.57 WATERSHED INCHES; 132 CFS-HRS; 10.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 7

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.36 213.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.70 WATERSHED INCHES; 298 CFS-HRS; 24.7 ACRE-  
FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.43 212.2 357.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.70 WATERSHED INCHES; 299 CFS-HRS; 24.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 132.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.88 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE

STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.

\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.68 60.8 376.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.49 WATERSHED INCHES; 165 CFS-HRS; 13.7 ACRE-

FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	16.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.13 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-FEET.

OPERATION RESVOR STRUCTURE 22

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.81	56.5	355.97

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.49 WATERSHED INCHES; 165 CFS-HRS; 13.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	77.9	(RUNOFF)
15.82	3.3	(RUNOFF)
18.86	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.23 WATERSHED INCHES; 78 CFS-HRS; 6.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	249.3	(NULL)
24.00	6.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.59 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------



5.10 CFS	.02	.02	.02	.02	.02	.02	.02	.02
.03								
5.10 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
5.58 CFS	.03	.03	.03	.03	.04	.04	.04	.04
.04								
5.58 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
6.06 CFS	.05	.05	.05	.05	.06	.06	.06	.06
.06								
6.06 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
6.54 CFS	.07	.07	.07	.08	.08	.08	.08	.09
.09								
6.54 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
7.02 CFS	.09	.10	.10	.11	.11	.11	.11	.12
.12								
7.02 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
7.50 CFS	.13	.13	.14	.14	.16	.17	.17	.19
.20								
7.50 ELEV	333.08	333.09	333.09	333.09	333.09	333.09	333.09	333.09
333.09								
7.98 CFS	.22	.24	.26	.28	.30	.33	.33	.36
.41								
7.98 ELEV	333.09	333.09	333.09	333.09	333.09	333.09	333.09	333.09
333.10								
8.46 CFS	.45	.50	.56	.62	.68	.74	.74	.80
.87								
8.46 ELEV	333.10	333.10	333.10	333.10	333.11	333.11	333.11	333.11
333.11								
8.94 CFS	.94	1.01	1.08	1.15	1.23	1.33	1.33	1.43
1.55								
8.94 ELEV	333.12	333.12	333.12	333.12	333.13	333.13	333.13	333.14
333.14								
9.42 CFS	1.68	1.81	1.96	2.11	2.27	2.44	2.44	2.62
2.81								
9.42 ELEV	333.15	333.15	333.16	333.16	333.17	333.17	333.17	333.18
333.19								
9.90 CFS	3.01	3.21	3.42	3.64	3.88	4.12	4.12	4.37
4.63								
9.90 ELEV	333.20	333.20	333.21	333.22	333.23	333.24	333.24	333.25
333.26								
10.38 CFS	4.89	5.17	5.46	5.78	6.13	6.54	6.54	7.01
7.55								
10.38 ELEV	333.27	333.28	333.29	333.30	333.32	333.33	333.33	333.35
333.37								

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10.86 CFS	8.19	8.97	9.84	10.79	11.86	13.08	13.08	14.44
15.94								
10.86 ELEV	333.40	333.43	333.46	333.50	333.54	333.59	333.59	333.64
333.70								
11.34 CFS	17.58	19.38	21.28	24.30	28.79	34.24	34.24	40.12
46.41								

11.34 ELEV	333.76	333.83	333.91	334.03	334.20	334.41	334.64
334.89							
11.82 CFS	54	64	78	98	103	112	126
133							
11.82 ELEV	335.19	335.58	336.10	336.89	337.10	337.50	338.14
338.55							
12.30 CFS	142	151	158	164	170	175	178
180							
12.30 ELEV	339.01	339.49	339.91	340.31	340.65	340.94	341.15
341.29							
12.78 CFS	182	182	181	180	178	176	174
171							
12.78 ELEV	341.37	341.39	341.35	341.27	341.16	341.03	340.87
340.69							
13.26 CFS	167	164	160	157	153	148	142
136							
13.26 ELEV	340.49	340.28	340.05	339.81	339.57	339.31	339.00
338.70							
13.74 CFS	131	125	114	104	47	53	45
48							
13.74 ELEV	338.41	338.13	337.61	337.14	334.92	335.13	334.82
334.94							
14.22 CFS	42.39	43.85	40.26	40.88	38.39	38.46	36.61
36.34							
14.22 ELEV	334.73	334.79	334.65	334.67	334.57	334.58	334.50
334.49							
14.70 CFS	34.98	34.69	33.75	33.42	32.65	32.25	31.59
31.13							
14.70 ELEV	334.44	334.43	334.39	334.38	334.35	334.33	334.31
334.29							
15.18 CFS	30.50	30.03	29.50	29.10	28.69	28.38	28.08
27.82							
15.18 ELEV	334.27	334.25	334.23	334.21	334.20	334.18	334.17
334.16							
15.66 CFS	27.55	27.29	27.05	26.88	26.72	26.54	26.34
26.14							
15.66 ELEV	334.15	334.14	334.13	334.13	334.12	334.11	334.10
334.10							
16.14 CFS	25.96	25.80	25.64	25.47	25.30	25.13	24.96
24.77							
16.14 ELEV	334.09	334.08	334.08	334.07	334.06	334.06	334.05
334.04							
16.62 CFS	24.59	24.43	24.28	24.12	23.95	23.78	23.64
23.50							
16.62 ELEV	334.04	334.03	334.02	334.02	334.01	334.01	334.00
333.99							
17.10 CFS	23.35	23.18	22.98	22.80	22.65	22.51	22.33
22.13							
17.10 ELEV	333.99	333.98	333.97	333.97	333.96	333.96	333.95
333.94							
17.58 CFS	21.93	21.75	21.58	21.41	21.22	21.03	20.86
20.70							
17.58 ELEV	333.93	333.93	333.92	333.91	333.91	333.90	333.89
333.89							
18.06 CFS	20.55	20.38	20.20	20.04	19.89	19.75	19.58
19.43							
18.06 ELEV	333.88	333.87	333.87	333.86	333.85	333.85	333.84
333.84							
18.54 CFS	19.32	19.24	19.16	19.06	18.97	18.91	18.85
18.76							
18.54 ELEV	333.83	333.83	333.83	333.82	333.82	333.82	333.81
333.81							
19.02 CFS	18.67	18.59	18.52	18.45	18.38	18.32	18.26
18.21							



19.02 ELEV	333.81	333.80	333.80	333.80	333.80	333.79	333.79
333.79							
19.50 CFS	18.16	18.11	18.03	17.94	17.89	17.83	17.75
17.65							
19.50 ELEV	333.79	333.78	333.78	333.78	333.78	333.77	333.77
333.77							
19.98 CFS	17.59	17.56	17.52	17.46	17.38	17.32	17.26
17.17							
19.98 ELEV	333.76	333.76	333.76	333.76	333.76	333.75	333.75
333.75							
20.46 CFS	17.07	16.99	16.95	16.91	16.84	16.76	16.71
16.66							
20.46 ELEV	333.74	333.74	333.74	333.74	333.74	333.73	333.73
333.73							
20.94 CFS	16.58	16.48	16.39	16.30	16.21	16.12	16.04
15.96							
20.94 ELEV	333.73	333.72	333.72	333.71	333.71	333.71	333.70
333.70							
21.42 CFS	15.89	15.82	15.76	15.67	15.56	15.48	15.41
15.32							
21.42 ELEV	333.70	333.70	333.69	333.69	333.69	333.68	333.68
333.68							
21.90 CFS	15.24	15.19	15.12	15.02	14.92	14.84	14.76
14.68							
21.90 ELEV	333.67	333.67	333.67	333.66	333.66	333.66	333.65
333.65							
22.38 CFS	14.60	14.53	14.47	14.39	14.30	14.20	14.13
14.06							

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22.38 ELEV	333.65	333.65	333.64	333.64	333.64	333.63	333.63
333.63							
22.86 CFS	13.96	13.85	13.77	13.73	13.68	13.60	13.52
13.44							
22.86 ELEV	333.62	333.62	333.62	333.61	333.61	333.61	333.61
333.60							
23.34 CFS	13.37	13.31	13.23	13.13	13.02	12.96	12.92
12.86							
23.34 ELEV	333.60	333.60	333.59	333.59	333.59	333.58	333.58
333.58							
23.82 CFS	12.78	12.68	12.59	12.59	12.54	12.10	11.36
10.62							
23.82 ELEV	333.58	333.57	333.57	333.57	333.57	333.55	333.52
333.49							
24.30 CFS	9.97	9.41	8.93	8.56	8.28	8.04	7.83
7.64							
24.30 ELEV	333.47	333.45	333.43	333.41	333.40	333.39	333.38
333.38							
24.78 CFS	7.45	7.28	7.11	6.95	6.79	6.64	6.50
6.35							
24.78 ELEV	333.37	333.36	333.36	333.35	333.34	333.34	333.33
333.33							
25.26 CFS	6.22	6.08	5.95	5.82	5.70	5.57	5.45
5.34							
25.26 ELEV	333.32	333.32	333.31	333.31	333.30	333.30	333.29
333.29							

25.74 CFS	5.22	5.11	5.00	4.89	4.79	4.68	4.57
4.45							
25.74 ELEV	333.28	333.28	333.27	333.27	333.27	333.26	333.26
333.25							
26.22 CFS	4.34	4.23	4.12	4.01	3.90	3.80	3.70
3.60							
26.22 ELEV	333.25	333.24	333.24	333.24	333.23	333.23	333.22
333.22							
26.70 CFS	3.51	3.42	3.33	3.24	3.15	3.07	2.99
2.91							
26.70 ELEV	333.22	333.21	333.21	333.21	333.20	333.20	333.20
333.19							
27.18 CFS	2.83	2.76	2.69				
27.18 ELEV	333.19	333.19	333.18				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 573 CFS-HRS; 47.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	73	28	22	18	16	14	7	4

DURATION(HRS) 18  
 FLOW(CFS) 3 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.83	181.9	332.78
14.03	52.8	331.74
14.15	47.8	331.68
14.27	44.0	331.63
14.38	41.0	331.59
14.49	38.7	331.56
23.97	12.6	331.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 573 CFS-HRS; 47.4 ACRE-FEET.

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OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	52.0	(RUNOFF)
17.34	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.57 WATERSHED INCHES; 49 CFS-HRS; 4.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.18	62.5	(RUNOFF)
20.87	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.13 WATERSHED INCHES; 67 CFS-HRS; 5.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.18	62.5	(NULL)
20.87	1.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	.03
SQ.MI.										
2.70 CFS	.00	.01	.02	.03	.04	.05	.06			
.07										
3.18 CFS	.08	.09	.10	.11	.12	.13	.14			
.15										
3.66 CFS	.16	.17	.18	.19	.20	.21	.22			
.23										
4.14 CFS	.24	.26	.26	.27	.28	.29	.30			
.32										
4.62 CFS	.32	.33	.34	.35	.36	.37	.38			
.39										
5.10 CFS	.40	.41	.42	.43	.44	.44	.45			
.46										
5.58 CFS	.48	.49	.50	.51	.51	.51	.52			
.54										
6.06 CFS	.56	.57	.58	.59	.60	.62	.64			
.66										
6.54 CFS	.67	.69	.71	.72	.73	.76	.78			
.79										
7.02 CFS	.80	.83	.85	.88	.89	.91	.92			
.95										
7.50 CFS	.97	.98	1.00	1.01	1.04	1.06	1.08			
1.10										
7.98 CFS	1.13	1.15	1.17	1.20	1.21	1.22	1.25			
1.27										
8.46 CFS	1.29	1.30	1.33	1.36	1.39	1.41	1.43			
1.44										
8.94 CFS	1.45	1.48	1.52	1.56	1.60	1.65	1.71			
1.78										
9.42 CFS	1.84	1.89	1.94	2.00	2.07	2.15	2.22			
2.28										
9.90 CFS	2.34	2.40	2.46	2.54	2.62	2.69	2.76			
2.82										
10.38 CFS	2.88	2.96	3.04	3.14	3.28	3.45	3.66			
3.89										
10.86 CFS	4.14	4.39	4.64	4.89	5.20	5.58	6.01			
6.46										
11.34 CFS	6.91	7.39	7.87	8.38	9.33	10.96	12.62			

14.21								
11.82	CFS	16.37	19.43	23.86	31.02	41.88	55.81	62.53
55.51								
12.30	CFS	43.24	33.49	26.63	21.92	18.82	16.21	13.72
11.81								

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12.78	CFS	10.56	9.69	9.03	8.46	7.93	7.41	6.90
6.47								
13.26	CFS	6.13	5.82	5.53	5.24	4.96	4.69	4.43
4.21								
13.74	CFS	4.04	3.90	3.80	3.71	3.65	3.59	3.52
3.45								
14.22	CFS	3.36	3.28	3.21	3.16	3.10	3.03	2.95
2.87								
14.70	CFS	2.79	2.73	2.67	2.61	2.54	2.47	2.41
2.33								
15.18	CFS	2.26	2.20	2.16	2.14	2.13	2.12	2.11
2.10								
15.66	CFS	2.07	2.03	2.01	2.01	2.00	1.98	1.95
1.92								
16.14	CFS	1.90	1.89	1.88	1.86	1.84	1.82	1.79
1.77								
16.62	CFS	1.75	1.74	1.73	1.71	1.69	1.67	1.66
1.65								
17.10	CFS	1.63	1.60	1.57	1.54	1.54	1.54	1.52
1.48								
17.58	CFS	1.45	1.43	1.42	1.41	1.39	1.37	1.35
1.34								
18.06	CFS	1.33	1.31	1.29	1.27	1.26	1.25	1.23
1.22								
18.54	CFS	1.23	1.24	1.24	1.23	1.22	1.22	1.22
1.21								
19.02	CFS	1.19	1.19	1.18	1.18	1.18	1.18	1.18
1.18								
19.50	CFS	1.18	1.17	1.15	1.14	1.15	1.14	1.13
1.12								
19.98	CFS	1.12	1.13	1.14	1.13	1.11	1.11	1.10
1.09								
20.46	CFS	1.07	1.07	1.08	1.09	1.08	1.06	1.06
1.07								
20.94	CFS	1.06	1.04	1.03	1.03	1.02	1.02	1.02
1.02								
21.42	CFS	1.02	1.02	1.02	1.01	.99	.99	.99
.98								
21.90	CFS	.98	.99	.98	.97	.96	.95	.95
.95								
22.38	CFS	.94	.94	.94	.94	.92	.91	.91
.91								
22.86	CFS	.90	.88	.88	.90	.90	.89	.88
.87								
23.34	CFS	.87	.87	.86	.84	.83	.84	.85
.85								
23.82	CFS	.84	.82	.81	.84	.84	.65	.38
.20								
24.30	CFS	.10	.05	.03	.01	.01	.00	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.13 WATERSHED INCHES; 67 CFS-HRS; 5.6 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	6	3	2	2	1	1	1	1

DURATION(HRS)	18	18
FLOW(CFS)	1	0

OPERATION RUNOFF XSECTION 119

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	15.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.40 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 120

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	75.8	(NULL)
15.82	2.4	(NULL)
23.73	1.0	(NULL)
24.01	1.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.99 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	127.1	(NULL)
15.83	4.1	(NULL)
17.33	3.1	(NULL)
21.45	2.1	(NULL)
21.75	2.0	(NULL)
21.95	2.0	(NULL)
24.01	1.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.82 WATERSHED INCHES; 129 CFS-HRS; 10.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.15	90.5	(RUNOFF)
17.34	2.3	(RUNOFF)
24.00	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.23 WATERSHED INCHES; 84 CFS-HRS; 7.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.16	217.5	(NULL)
15.84	7.0	(NULL)
17.34	5.4	(NULL)
19.43	4.1	(NULL)
19.74	4.0	(NULL)
20.06	4.0	(NULL)
23.06	3.2	(NULL)
23.72	3.0	(NULL)
24.00	3.1	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.56 WATERSHED INCHES; 213 CFS-HRS; 17.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.17	339.6	(NULL)
14.03	65.1	(NULL)
14.15	59.6	(NULL)
14.26	55.2	(NULL)
14.38	51.9	(NULL)
20.04	21.6	(NULL)
20.57	20.8	(NULL)
23.03	16.9	(NULL)
24.00	15.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.96 WATERSHED INCHES; 786 CFS-HRS; 64.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
-----------------	----------------------	------

ELEVATION(FEET)		
12.29	292.1	315.87
24.04	15.6	314.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.95 WATERSHED INCHES; 784 CFS-HRS; 64.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	81.4	(RUNOFF)
20.13	2.0	(RUNOFF)
23.99	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.03 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

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OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	78.5	363.94
20.15	2.0	356.54
23.79	1.5	356.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 99 CFS-HRS; 8.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	115.6	(RUNOFF)
18.66	3.3	(RUNOFF)
23.77	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.97 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	190.6	(NULL)
20.14	5.0	(NULL)
23.14	4.0	(NULL)
23.78	3.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-  
FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.40	174.0	319.15
20.20	5.0	316.65
23.20	4.0	316.59

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 28

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	87.6	(RUNOFF)
21.94	2.0	(RUNOFF)
24.01	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.68 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	377.4	(NULL)
24.03	17.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.92 WATERSHED INCHES; 887 CFS-HRS; 73.3 ACRE-  
FEET.



OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	527.0	(NULL)
24.03	21.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 1129 CFS-HRS; 93.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	527.0	(NULL)
24.03	21.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 1129 CFS-HRS; 93.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	137.5	(RUNOFF)
18.66	3.2	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
 FEET.

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OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	125.9	313.02
18.72	3.2	310.26
24.09	2.2	310.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.16 22.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.33 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS
WITH .38 AC-FT ( .07 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 377.43.
\*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.40 9.1 380.16

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.48 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-
FEET.

OPERATION REACH XSECTION 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.47 9.0 338.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.47 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-
FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.19 66.9 (RUNOFF)
21.97 1.1 (RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.32 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS
WITH .95 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 353.79.
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION (FEET)		
12.32	48.7	357.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.67 WATERSHED INCHES; 65 CFS-HRS; 5.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.35	53.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.62 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.35	53.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.62 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
\*\*\*

OPERATION REACH XSECTION 37

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.35	53.8	330.54

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.62 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 138

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.14	73.1	(RUNOFF)
15.84	2.2	(RUNOFF)
22.41	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

3.77 WATERSHED INCHES;      68 CFS-HRS;      5.6 ACRE-  
FEET.

OPERATION ADDHYD    XSECTION 139

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	101.1	(NULL)
20.82	3.2	(NULL)
24.00	2.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.69 WATERSHED INCHES;      152 CFS-HRS;      12.6 ACRE-  
FEET.

OPERATION RESVOR    STRUCTURE 35

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	101.1	(NULL)
20.82	3.2	(NULL)
24.00	2.6	(NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR    ALTERNATE = 1,    STORM =10							
	MAIN	TIME INCREMENT = .060 hr,	DRAINAGE AREA = .06					
2.82 CFS	.00	.01	.01	.01	.01	.01	.01	.01
.01								
3.30 CFS	.01	.01	.01	.02	.02	.03	.03	.03
.03								
3.78 CFS	.03	.03	.04	.05	.06	.07	.08	.08
.10								
4.26 CFS	.11	.12	.13	.14	.16	.17	.18	.18
.19								
4.74 CFS	.20	.22	.23	.24	.25	.27	.28	.28
.29								
5.22 CFS	.31	.32	.33	.34	.35	.37	.39	.39
.40								
5.70 CFS	.41	.42	.43	.44	.46	.48	.50	.50
.51								
6.18 CFS	.52	.54	.56	.58	.60	.62	.64	.64
.67								
6.66 CFS	.69	.70	.72	.75	.77	.78	.81	.81
.84								
7.14 CFS	.87	.89	.91	.93	.96	.99	1.01	1.01
1.03								
7.62 CFS	1.05	1.08	1.11	1.14	1.16	1.20	1.23	1.23
1.25								
8.10 CFS	1.29	1.32	1.33	1.36	1.41	1.43	1.45	1.45
1.48								
8.58 CFS	1.52	1.56	1.60	1.62	1.64	1.67	1.70	1.70
1.75								
9.06 CFS	1.80	1.84	1.89	1.96	2.04	2.11	2.18	2.18
2.24								
9.54 CFS	2.30	2.38	2.46	2.55	2.63	2.70	2.77	2.77
2.85								
10.02 CFS	2.94	3.04	3.13	3.22	3.30	3.37	3.47	3.47
3.57								
10.50 CFS	3.68	3.81	4.01	4.23	4.49	4.76	5.03	5.03
5.31								
10.98 CFS	5.59	5.88	6.29	6.75	7.26	7.76	8.28	8.28
8.85								

11.46	CFS	9.39	9.98	12.20	15.17	17.65	20.45	24.74
30.51								
11.94	CFS	38.21	51.44	70.01	93.17	101.14	92.25	87.52
81.28								
12.42	CFS	73.06	65.85	59.74	52.57	45.94	40.64	36.17
33.61								

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12.90	CFS	31.69	29.88	28.10	26.39	24.77	23.33	22.03
20.80								
13.38	CFS	19.63	18.53	17.53	16.61	15.74	14.97	14.29
13.67								
13.86	CFS	13.11	12.61	12.15	11.73	11.32	10.93	10.55
10.22								
14.34	CFS	9.91	9.66	9.42	9.16	8.90	8.65	8.43
8.22								
14.82	CFS	8.02	7.81	7.59	7.40	7.20	6.99	6.81
6.67								
15.30	CFS	6.55	6.46	6.37	6.30	6.22	6.13	6.03
5.93								
15.78	CFS	5.87	5.83	5.77	5.69	5.60	5.53	5.48
5.44								
16.26	CFS	5.39	5.32	5.26	5.21	5.15	5.08	5.04
5.00								
16.74	CFS	4.97	4.91	4.85	4.81	4.78	4.75	4.69
4.62								
17.22	CFS	4.56	4.53	4.53	4.49	4.44	4.37	4.32
4.29								
17.70	CFS	4.27	4.23	4.17	4.13	4.10	4.07	4.04
3.98								
18.18	CFS	3.94	3.91	3.88	3.85	3.79	3.77	3.78
3.77								
18.66	CFS	3.75	3.70	3.68	3.69	3.66	3.62	3.59
3.57								
19.14	CFS	3.56	3.55	3.53	3.52	3.51	3.50	3.49
3.46								
19.62	CFS	3.42	3.41	3.42	3.39	3.36	3.34	3.34
3.36								
20.10	CFS	3.34	3.31	3.29	3.28	3.26	3.22	3.19
3.21								
20.58	CFS	3.21	3.21	3.17	3.15	3.16	3.15	3.11
3.09								
21.06	CFS	3.08	3.07	3.06	3.05	3.04	3.03	3.02
3.02								
21.54	CFS	3.00	2.97	2.94	2.96	2.94	2.91	2.92
2.93								
22.02	CFS	2.89	2.87	2.85	2.84	2.83	2.83	2.82
2.81								
22.50	CFS	2.80	2.78	2.74	2.73	2.74	2.72	2.69
2.67								
22.98	CFS	2.68	2.70	2.68	2.65	2.63	2.62	2.61
2.60								
23.46	CFS	2.58	2.54	2.53	2.55	2.56	2.55	2.52
2.49								
23.94	CFS	2.50	2.58	2.49	2.08	1.79	1.67	1.62
1.60								

24.42 CFS	1.58	1.57	1.56	1.56	1.55	1.54	1.53
1.52							
24.90 CFS	1.52	1.51	1.50	1.49	1.48	1.47	1.47
1.46							
25.38 CFS	1.45	1.44	1.44	1.43	1.42	1.41	1.41
1.40							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.69 WATERSHED INCHES; 152 CFS-HRS; 12.6 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	15	7	5	4	3	3	3	2

DURATION(HRS) 16  
 FLOW(CFS) 1 TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET) 12.13 5.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 4 CFS-HRS; .4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 141

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	105.5	(NULL)
21.93	3.0	(NULL)
24.00	2.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.53 WATERSHED INCHES; 157 CFS-HRS; 12.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET) 12.27 57.7 (RUNOFF)  
 23.76 1.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.84 WATERSHED INCHES; 72 CFS-HRS; 6.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	583.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 1201 CFS-HRS; 99.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	709.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.98 WATERSHED INCHES; 1356 CFS-HRS; 112.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	797.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 1510 CFS-HRS; 124.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 44

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	757.3	290.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 1510 CFS-HRS; 124.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	757.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 1510 CFS-HRS; 124.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	66.8	(RUNOFF)
23.09	1.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.88 WATERSHED INCHES;		7.3 ACRE-
FEET.		
		89 CFS-HRS;

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	83.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.81 WATERSHED INCHES;		9.4 ACRE-
FEET.		
		114 CFS-HRS;

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	150.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.84 WATERSHED INCHES;		16.7 ACRE-
FEET.		
		203 CFS-HRS;

OPERATION RUNOFF XSECTION 48

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	81.7	(RUNOFF)
18.65	2.0	(RUNOFF)
24.03	1.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.84 WATERSHED INCHES;		7.1 ACRE-
FEET.		
		86 CFS-HRS;

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.42	798.8	(NULL)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.01 WATERSHED INCHES; 1595 CFS-HRS; 131.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.40 936.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.99 WATERSHED INCHES; 1798 CFS-HRS; 148.6 ACRE-
FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.50 909.6 285.79

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.99 WATERSHED INCHES; 1797 CFS-HRS; 148.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.99 WATERSHED INCHES; 210 CFS-HRS; 148.5 ACRE-
FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,
UNLESS NEW RATING TABLE VALUES ARE INSERTED.
\*\*\*

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OPERATION REACH XSECTION 53

\*\*\* MESSAGE - XSECTION 53, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.99 WATERSHED INCHES; 207 CFS-HRS; 148.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - XSECTION 54, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 189 CFS-HRS; 148.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	51.6	(RUNOFF)
21.97	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.61 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.50	930.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.98 WATERSHED INCHES; 1852 CFS-HRS; 153.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - XSECTION 57, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.98 WATERSHED INCHES; 214 CFS-HRS; 153.0 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.50	931.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.93 WATERSHED INCHES; 1853 CFS-HRS; 153.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)							PEAK
12.21	31.6							(RUNOFF)
	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10							
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03							
HRS SQ.MI.								
10.80 CFS	.45	.52	.59	.67	.75	.85	.97	
1.10								
11.28 CFS	1.25	1.42	1.61	1.81	2.04	2.37	2.91	
3.54								
11.76 CFS	4.26	5.18	6.51	8.52	11.69	17.01	24.70	
30.82								
12.24 CFS	31.12	26.88	21.99	18.16	15.28	13.24	11.56	
10.00								
12.72 CFS	8.68	7.72	7.03	6.51	6.09	5.71	5.36	
5.02								
13.20 CFS	4.71	4.46	4.24	4.03	3.84	3.64	3.45	
3.27								
13.68 CFS	3.11	2.98	2.87	2.79	2.73	2.67	2.63	
2.59								
14.16 CFS	2.54	2.48	2.43	2.38	2.34	2.30	2.25	
2.20								
14.64 CFS	2.14	2.09	2.04	2.00	1.96	1.91	1.86	
1.81								
15.12 CFS	1.76	1.71	1.66	1.63	1.61	1.60	1.59	
1.58								
15.60 CFS	1.58	1.56	1.54	1.52	1.51	1.51	1.50	
1.48								
16.08 CFS	1.46	1.44	1.43	1.42	1.41	1.40	1.38	
1.37								
16.56 CFS	1.35	1.33	1.32	1.32	1.31	1.29	1.28	
1.27								
17.04 CFS	1.26	1.25	1.23	1.21	1.19	1.18	1.18	
1.17								
17.52 CFS	1.14	1.12	1.11	1.10	1.09	1.07	1.06	
1.04								
18.00 CFS	1.04	1.03	1.02	1.00	.99	.98	.97	
.96								
18.48 CFS	.95	.95	.95	.96	.95	.94	.94	
.94								
18.96 CFS	.94	.93	.92	.92	.92	.91	.91	
.91								
19.44 CFS	.91	.91	.91	.90	.89	.89	.89	
.88								
19.92 CFS	.87	.87	.88	.88	.88	.87	.87	
.86								
20.40 CFS	.85	.84	.84	.84	.85	.84	.84	
.83								
20.88 CFS	.83	.83	.82	.81	.81	.80	.80	
.80								
21.36 CFS	.80	.80	.80	.80	.79	.78	.78	
.78								
21.84 CFS	.78	.77	.78	.77	.77	.76	.75	
.75								
22.32 CFS	.75	.75	.75	.75	.74	.73	.72	
.72								
22.80 CFS	.72	.71	.70	.70	.71	.71	.71	
.70								
23.28 CFS	.69	.69	.69	.68	.67	.66	.66	
.67								
23.76 CFS	.67	.67	.65	.65	.66	.66	.56	
.39								

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.01 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-
FEET.

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OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 12.49 946.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.91 WATERSHED INCHES; 1888 CFS-HRS; 156.0 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 12.49 946.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.91 WATERSHED INCHES; 1888 CFS-HRS; 156.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 12.24 18.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.95 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 12.49 956.2 (NULL)

Table with 9 columns: HRS, MAIN, TIME INCREMENT, HYDROGRAPH POINTS FOR, ALTERNATE = 1, DRAINAGE AREA =, STORM =10, SQ.MI., and values ranging from 4.86 CFS to 6.30 CFS.

2.09								
6.78	CFS	2.19	2.28	2.37	2.47	2.57	2.67	2.79
2.90								
7.26	CFS	3.04	3.18	3.34	3.52	3.70	3.89	4.10
4.31								
7.74	CFS	4.53	4.75	4.99	5.23	5.48	5.75	6.04
6.35								
8.22	CFS	6.66	6.99	7.31	7.65	7.98	8.33	8.68
9.04								
8.70	CFS	9.41	9.80	10.21	10.62	11.04	11.46	11.88
12.31								
9.18	CFS	12.76	13.25	13.77	14.34	14.97	15.65	16.40
17.20								
9.66	CFS	18.05	18.93	19.86	20.84	21.88	22.96	24.08
25.24								
10.14	CFS	26.42	27.66	28.93	30.25	31.61	33.00	34.42
35.88								
10.62	CFS	37.42	39.07	40.92	43.01	45.41	48.16	51.29
54.79								
11.10	CFS	59	63	68	73	79	86	93
101								
11.58	CFS	111	121	135	151	172	199	233
279								

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12.06	CFS	342	432	545	663	775	867	930
956								
12.54	CFS	943	900	841	775	709	648	594
547								
13.02	CFS	509	477	450	428	409	391	375
360								
13.50	CFS	346	332	319	306	294	282	271
260								
13.98	CFS	249	239	228	211	194	176	162
151								
14.46	CFS	142	135	129	124	120	117	114
110								
14.94	CFS	108	105	103	100	98	95	93
91								
15.42	CFS	89.22	87.42	85.82	84.42	83.19	82.09	81.10
80.21								
15.90	CFS	79.37	78.58	77.81	77.08	76.38	75.70	75.03
74.35								
16.38	CFS	73.69	73.05	72.41	71.77	71.12	70.48	69.84
69.21								
16.86	CFS	68.59	67.99	67.41	66.85	66.29	65.73	65.14
64.55								
17.34	CFS	63.96	63.36	62.75	62.13	61.51	60.89	60.27
59.64								
17.82	CFS	58.99	58.35	57.72	57.11	56.53	55.94	55.36
54.79								
18.30	CFS	54.24	53.70	53.15	52.62	52.13	51.69	51.30
50.95								
18.78	CFS	50.65	50.40	50.19	49.98	49.75	49.53	49.31
49.08								
19.26	CFS	48.85	48.63	48.43	48.25	48.10	47.96	47.81

47.65							
19.74	CFS	47.49	47.32	47.12	46.90	46.69	46.50
46.16							46.33
20.22	CFS	46.01	45.87	45.74	45.56	45.35	45.13
44.69							44.90
20.70	CFS	44.48	44.29	44.13	43.99	43.85	43.68
43.31							43.50
21.18	CFS	43.10	42.89	42.67	42.46	42.27	42.10
41.79							41.95
21.66	CFS	41.62	41.45	41.27	41.06	40.85	40.67
40.31							40.49
22.14	CFS	40.12	39.94	39.74	39.54	39.32	39.12
38.76							38.93
22.62	CFS	38.57	38.38	38.19	37.99	37.77	37.52
37.09							37.29
23.10	CFS	36.90	36.71	36.54	36.39	36.24	36.08
35.70							35.91
23.58	CFS	35.48	35.26	35.05	34.86	34.66	34.47
34.18							34.30
24.06	CFS	34.03	33.59	32.73	31.44	29.70	27.49
22.18							24.90
24.54	CFS	19.60	17.31	15.37	13.81	12.58	11.62
10.32							10.89
25.02	CFS	9.86	9.50	9.20	8.94	8.71	8.51
8.16							8.33
25.50	CFS	8.00	7.84	7.69	7.55	7.41	7.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.89 WATERSHED INCHES; 1909 CFS-HRS; 157.8 ACRE-FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	916.2	250.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.89 WATERSHED INCHES; 1908 CFS-HRS; 157.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	15.5	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.24 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	8.4	334.33
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.24 WATERSHED INCHES;	23 CFS-HRS;	1.9 ACRE-
FEEET.		

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.85	8.2	300.61
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.23 WATERSHED INCHES;	23 CFS-HRS;	1.9 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	55.9	(RUNOFF)
24.02	1.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.98 WATERSHED INCHES;	59 CFS-HRS;	4.8 ACRE-
FEEET.		

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	18.0	293.76
14.58	3.8	287.79
24.04	1.1	287.45
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.98 WATERSHED INCHES;	59 CFS-HRS;	4.8 ACRE-
FEEET.		

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OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.82	25.9	(NULL)
18.87	2.1	(NULL)
24.04	1.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.23 WATERSHED INCHES; 82 CFS-HRS; 6.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	122.6	(RUNOFF)
18.87	3.1	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.47 WATERSHED INCHES; 124 CFS-HRS; 10.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	141.4	(NULL)
18.87	5.2	(NULL)
21.97	4.3	(NULL)
24.03	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.37 WATERSHED INCHES; 206 CFS-HRS; 17.0 ACRE-  
FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.45	96.0	248.70

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.37 WATERSHED INCHES; 206 CFS-HRS; 17.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	26.5	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.81 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	9.6	265.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.82 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	8.9	247.79

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.81 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	110.8	(RUNOFF)
15.85	5.4	(RUNOFF)
17.34	4.2	(RUNOFF)
20.86	3.0	(RUNOFF)
24.01	2.5	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .11  
SQ.MI.

HRS							
10.98 CFS	.31	.51	.76	1.07	1.44	1.85	2.33
2.88							
11.46 CFS	3.49	4.17	5.33	7.10	9.05	11.28	14.56
19.46							
11.94 CFS	26.93	40.30	62.41	94.61	110.76	98.35	78.24
63.21							
12.42 CFS	52.04	44.53	39.78	34.95	29.90	26.21	24.01
22.44							
12.90 CFS	21.14	20.00	18.86	17.73	16.61	15.68	14.94
14.26							
13.38 CFS	13.60	12.94	12.27	11.63	11.02	10.52	10.14
9.85							
13.86 CFS	9.62	9.44	9.31	9.18	9.03	8.85	8.64
8.46							
14.34 CFS	8.31	8.18	8.04	7.87	7.67	7.46	7.28
7.13							
14.82 CFS	7.00	6.85	6.67	6.49	6.33	6.15	5.96
5.81							
15.30 CFS	5.72	5.68	5.66	5.66	5.65	5.61	5.53
5.43							

15.78 CFS	5.39	5.40	5.39	5.33	5.24	5.17	5.13
5.11							
16.26 CFS	5.08	5.03	4.97	4.92	4.86	4.79	4.75
4.72							
16.74 CFS	4.71	4.66	4.60	4.55	4.53	4.51	4.47
4.38							
17.22 CFS	4.28	4.23	4.24	4.23	4.16	4.07	3.99
3.94							
17.70 CFS	3.92	3.90	3.83	3.77	3.73	3.72	3.69
3.63							
18.18 CFS	3.56	3.53	3.51	3.48	3.43	3.39	3.42
3.46							
18.66 CFS	3.47	3.42	3.40	3.42	3.42	3.37	3.33
3.32							

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19.14 CFS	3.31	3.31	3.31	3.31	3.31	3.31	3.31
3.30							
19.62 CFS	3.24	3.21	3.23	3.22	3.18	3.14	3.16
3.21							
20.10 CFS	3.22	3.18	3.15	3.13	3.11	3.06	3.01
3.03							
20.58 CFS	3.07	3.09	3.06	3.01	3.03	3.04	3.00
2.96							
21.06 CFS	2.93	2.92	2.92	2.92	2.92	2.92	2.92
2.92							
21.54 CFS	2.91	2.87	2.81	2.82	2.84	2.81	2.81
2.84							
22.02 CFS	2.81	2.77	2.74	2.72	2.72	2.72	2.71
2.71							
22.50 CFS	2.71	2.70	2.64	2.61	2.63	2.62	2.57
2.54							
22.98 CFS	2.55	2.60	2.61	2.57	2.53	2.52	2.51
2.51							
23.46 CFS	2.49	2.43	2.39	2.42	2.46	2.47	2.42
2.36							
23.94 CFS	2.35	2.46	2.42	1.76	.95	.46	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.58 WATERSHED INCHES; 112 CFS-HRS; 9.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET) 12.61 950.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.76 WATERSHED INCHES; 2021 CFS-HRS; 167.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	105.0	(NULL)

	HYDROGRAPH POINTS FOR		ALTERNATE = 1,		STORM =10			
HRS	MAIN	TIME	INCREMENT =	.060 hr,	DRAINAGE AREA =	.15		
SQ.MI.								
9.06 CFS	.46	.50	.55	.59	.64	.70	.76	
.82								
9.54 CFS	.89	.96	1.03	1.11	1.20	1.29	1.38	
1.48								
10.02 CFS	1.58	1.69	1.81	1.93	2.07	2.22	2.38	
2.54								
10.50 CFS	2.71	2.88	3.07	3.27	3.50	3.76	4.06	
4.39								
10.98 CFS	4.77	5.19	5.64	6.14	6.70	7.34	8.06	
8.83								
11.46 CFS	9.67	10.59	11.59	12.70	14.06	15.92	18.25	
20.86								
11.94 CFS	24.04	28.05	33.36	40.96	52.02	67.57	85.46	
99.11								
12.42 CFS	104	104	100	95	90	84	79	
74								
12.90 CFS	69.62	65.97	62.75	59.86	57.21	54.72	52.38	
50.22								
13.38 CFS	48.26	46.50	44.91	43.45	42.09	40.82	39.60	
38.40								
13.86 CFS	37.25	36.15	35.11	34.13	33.22	32.36	31.53	
30.64								
14.34 CFS	29.65	28.63	27.36	26.02	24.64	23.15	21.89	
20.76								
14.82 CFS	19.76	18.86	18.09	17.40	16.77	16.19	15.65	
15.12								
15.30 CFS	14.57	14.04	13.55	13.09	12.65	12.24	11.87	
11.54								
15.78 CFS	11.24	10.97	10.73	10.53	10.36	10.20	10.05	
9.89								
16.26 CFS	9.74	9.57	9.37	9.19	9.02	8.88	8.74	
8.61								
16.74 CFS	8.50	8.40	8.31	8.22	8.13	8.05	7.97	
7.90								
17.22 CFS	7.83	7.74	7.65	7.55	7.47	7.40	7.32	
7.24								
17.70 CFS	7.14	7.05	6.96	6.88	6.80	6.71	6.63	
6.55								

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18.18 CFS	6.48	6.41	6.33	6.25	6.18	6.11	6.04	
5.98								
18.66 CFS	5.93	5.89	5.87	5.84	5.81	5.78	5.76	
5.74								
19.14 CFS	5.71	5.67	5.64	5.62	5.60	5.58	5.56	
5.55								
19.62 CFS	5.54	5.53	5.51	5.48	5.45	5.43	5.41	
5.37								
20.10 CFS	5.35	5.34	5.34	5.33	5.31	5.29	5.26	

5.23								
20.58 CFS	5.19	5.16	5.14	5.13	5.12	5.10	5.08	
5.06								
21.06 CFS	5.05	5.02	4.99	4.96	4.93	4.91	4.89	
4.88								
21.54 CFS	4.86	4.86	4.84	4.82	4.80	4.77	4.75	
4.73								
22.02 CFS	4.71	4.70	4.69	4.66	4.64	4.61	4.58	
4.56								
22.50 CFS	4.54	4.53	4.51	4.50	4.47	4.44	4.41	
4.39								
22.98 CFS	4.36	4.33	4.31	4.30	4.29	4.28	4.26	
4.24								
23.46 CFS	4.21	4.19	4.17	4.14	4.10	4.08	4.07	
4.06								
23.94 CFS	4.04	4.01	3.99	3.98	3.96	3.78	3.42	
2.97								
24.42 CFS	2.50	2.08	1.72	1.41	1.16	.94	.77	
.62								
24.90 CFS	.49							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.40 WATERSHED INCHES; 227 CFS-HRS; 18.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.60	1045.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.72 WATERSHED INCHES; 2248 CFS-HRS; 185.8 ACRE-FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.66	1044.2	230.44

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.72 WATERSHED INCHES; 2248 CFS-HRS; 185.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	69.0	(RUNOFF)
17.34	2.3	(RUNOFF)
24.01	1.3	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05 SQ.MI.

10.44 CFS	.48	.54	.61	.69	.79	.90	1.03
1.17							
10.92 CFS	1.32	1.48	1.66	1.88	2.14	2.44	2.77
3.12							
11.40 CFS	3.52	3.94	4.40	5.28	6.65	8.02	9.48

11.75								
11.88	CFS	15.02	19.88	28.51	42.20	61.40	68.99	58.81
45.47								

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12.36	CFS	36.20	29.51	25.09	22.34	19.48	16.56	14.53
13.33								
12.84	CFS	12.45	11.72	11.07	10.42	9.77	9.14	8.62
8.22								
13.32	CFS	7.83	7.46	7.09	6.72	6.36	6.02	5.75
5.55								
13.80	CFS	5.39	5.26	5.16	5.08	5.01	4.93	4.82
4.71								
14.28	CFS	4.60	4.52	4.45	4.37	4.28	4.16	4.05
3.95								
14.76	CFS	3.87	3.79	3.71	3.61	3.51	3.42	3.32
3.22								
15.24	CFS	3.14	3.09	3.07	3.06	3.06	3.05	3.03
2.98								
15.72	CFS	2.93	2.91	2.92	2.91	2.87	2.82	2.78
2.76								
16.20	CFS	2.75	2.74	2.70	2.67	2.65	2.61	2.57
2.55								
16.68	CFS	2.54	2.53	2.50	2.47	2.44	2.43	2.42
2.39								
17.16	CFS	2.35	2.29	2.26	2.27	2.27	2.23	2.18
2.13								
17.64	CFS	2.11	2.10	2.08	2.05	2.01	2.00	1.99
1.97								
18.12	CFS	1.94	1.90	1.88	1.87	1.86	1.83	1.81
1.83								
18.60	CFS	1.85	1.85	1.83	1.81	1.83	1.82	1.80
1.78								
19.08	CFS	1.77	1.77	1.76	1.76	1.76	1.76	1.76
1.77								
19.56	CFS	1.76	1.72	1.71	1.72	1.72	1.69	1.67
1.68								
20.04	CFS	1.71	1.71	1.69	1.67	1.66	1.66	1.63
1.60								
20.52	CFS	1.61	1.63	1.64	1.62	1.60	1.61	1.61
1.59								
21.00	CFS	1.57	1.56	1.55	1.55	1.55	1.55	1.55
1.55								
21.48	CFS	1.55	1.54	1.52	1.49	1.50	1.50	1.49
1.49								
21.96	CFS	1.50	1.49	1.46	1.45	1.44	1.44	1.44
1.44								
22.44	CFS	1.44	1.44	1.43	1.39	1.38	1.39	1.39
1.36								
22.92	CFS	1.34	1.35	1.38	1.38	1.36	1.34	1.33
1.33								
23.40	CFS	1.32	1.31	1.28	1.26	1.28	1.30	1.30
1.27								
23.88	CFS	1.24	1.24	1.31	1.28	.90	.46	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.03 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.66 1060.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.70 WATERSHED INCHES; 2315 CFS-HRS; 191.3 ACRE-  
FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.72 1058.2 215.89

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.69 WATERSHED INCHES; 2314 CFS-HRS; 191.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 81

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.15 83.3 (RUNOFF)  
15.84 3.1 (RUNOFF)  
17.34 2.4 (RUNOFF)  
24.00 1.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.29 WATERSHED INCHES; 76 CFS-HRS; 6.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.72 1073.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.68 WATERSHED INCHES; 2390 CFS-HRS; 197.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION(FEET)  
 12.17 37.3 (RUNOFF)  
 19.47 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.72 1081.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.66 WATERSHED INCHES; 2426 CFS-HRS; 200.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.25 118.2 (RUNOFF)  
 18.67 4.1 (RUNOFF)  
 23.12 3.1 (RUNOFF)  
 24.01 2.8 (RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .12  
 SQ.MI.  
 10.56 CFS .45 .57 .71 .88 1.08 1.30 1.54  
 1.81  
 11.04 CFS 2.12 2.46 2.87 3.34 3.87 4.49 5.17  
 5.92

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11.52 CFS 6.76 7.86 9.55 11.72 14.31 17.58 21.92  
 28.77  
 12.00 CFS 39.41 56.60 81.67 107.06 117.81 113.81 100.60  
 85.32  
 12.48 CFS 72.72 63.03 54.99 47.94 41.88 36.84 33.08  
 30.22  
 12.96 CFS 27.93 25.98 24.20 22.60 21.17 19.94 18.87  
 17.92  
 13.44 CFS 17.03 16.17 15.34 14.55 13.81 13.18 12.66  
 12.24  
 13.92 CFS 11.90 11.62 11.40 11.20 10.99 10.76 10.53  
 10.31  
 14.40 CFS 10.12 9.94 9.75 9.55 9.32 9.09 8.87  
 8.68  
 14.88 CFS 8.50 8.30 8.10 7.90 7.69 7.48 7.27  
 7.10  
 15.36 CFS 6.97 6.89 6.84 6.80 6.77 6.71 6.63  
 6.55

15.84 CFS 6.12	6.50	6.47	6.44	6.38	6.30	6.22	6.17
16.32 CFS 5.66	6.08	6.02	5.96	5.90	5.83	5.76	5.70
16.80 CFS 5.24	5.62	5.57	5.51	5.46	5.42	5.38	5.32
17.28 CFS 4.74	5.15	5.10	5.07	5.03	4.96	4.88	4.80
17.76 CFS 4.33	4.69	4.64	4.58	4.52	4.47	4.44	4.39
18.24 CFS 4.09	4.27	4.23	4.19	4.14	4.10	4.08	4.08
18.72 CFS 3.95	4.09	4.07	4.06	4.05	4.03	4.01	3.97
19.20 CFS 3.89	3.94	3.93	3.93	3.92	3.92	3.92	3.92
19.68 CFS 3.78	3.86	3.84	3.83	3.81	3.78	3.76	3.77
20.16 CFS 3.61	3.78	3.76	3.74	3.71	3.68	3.64	3.61
20.64 CFS 3.52	3.62	3.63	3.61	3.59	3.59	3.57	3.55
21.12 CFS 3.44	3.49	3.47	3.46	3.45	3.45	3.45	3.45
21.60 CFS 3.33	3.42	3.39	3.36	3.35	3.34	3.33	3.33
22.08 CFS 3.21	3.31	3.28	3.25	3.23	3.22	3.21	3.21
22.56 CFS 3.03	3.20	3.17	3.13	3.11	3.10	3.08	3.05
23.04 CFS 2.95	3.04	3.05	3.05	3.03	3.00	2.98	2.97
23.52 CFS 2.81	2.92	2.88	2.87	2.87	2.89	2.88	2.84
24.00 CFS .37	2.83	2.82	2.60	2.07	1.46	.93	.59

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.87 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.71	1123.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.60 WATERSHED INCHES; 2569 CFS-HRS; 212.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	40.2	(RUNOFF)
15.84	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.45 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
 FEET.



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OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.71	1129.3	(NULL)

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10						
	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = 1.55		
HRS							
SQ.MI.							
5.10 CFS	.48	.51	.54	.57	.60	.64	.67
.71							
5.58 CFS	.75	.80	.84	.89	.94	.99	1.04
1.10							
6.06 CFS	1.16	1.22	1.28	1.33	1.39	1.45	1.52
1.59							
6.54 CFS	1.65	1.73	1.81	1.88	1.97	2.06	2.15
2.24							
7.02 CFS	2.34	2.44	2.55	2.66	2.77	2.89	3.01
3.15							
7.50 CFS	3.29	3.45	3.61	3.79	3.99	4.20	4.42
4.65							
7.98 CFS	4.88	5.12	5.38	5.63	5.90	6.19	6.50
6.82							
8.46 CFS	7.14	7.48	7.83	8.19	8.55	8.92	9.30
9.69							
8.94 CFS	10.10	10.55	11.01	11.49	11.98	12.49	13.02
13.56							
9.42 CFS	14.12	14.71	15.35	16.05	16.80	17.63	18.51
19.45							
9.90 CFS	20.45	21.51	22.65	23.85	25.11	26.44	27.82
29.27							
10.38 CFS	30.81	32.44	34.16	35.97	37.91	39.97	42.15
44.48							
10.86 CFS	46.96	49.67	52.67	56.06	60.06	64.65	69.86
75.69							
11.34 CFS	82	89	97	106	118	132	148
166							
11.82 CFS	189	219	260	321	411	537	640
706							
12.30 CFS	758	806	867	944	1021	1083	1120
1129							
12.78 CFS	1109	1067	1010	945	877	812	751
697							
13.26 CFS	650	610	575	545	519	495	474
454							
13.74 CFS	436	419	403	388	373	360	346
334							
14.22 CFS	321	309	294	278	260	243	227
213							
14.70 CFS	201	191	183	176	169	164	159
154							
15.18 CFS	150	146	142	139	135	132	130
127							

15.66 CFS	124	122	120	118	116	114	113
111							
16.14 CFS	110	109	108	107	106	105	104
102							
16.62 CFS	101	100	100	99	98	97	96
95							
17.10 CFS	94.19	93.29	92.33	91.45	90.67	89.88	89.06
88.16							
17.58 CFS	87.22	86.30	85.44	84.59	83.70	82.80	81.92
81.06							
18.06 CFS	80.21	79.32	78.43	77.57	76.76	75.97	75.14
74.39							
18.54 CFS	73.73	73.13	72.55	71.92	71.33	70.84	70.35
69.89							
19.02 CFS	69.47	69.07	68.73	68.44	68.16	67.89	67.63
67.38							
19.50 CFS	67.13	66.86	66.53	66.25	66.04	65.80	65.54
65.28							
19.98 CFS	65.06	64.91	64.72	64.47	64.19	63.91	63.64
63.32							
20.46 CFS	63.02	62.80	62.63	62.46	62.21	61.91	61.67
61.40							
20.94 CFS	61.11	60.83	60.55	60.29	60.06	59.84	59.62
59.40							
21.42 CFS	59.17	58.94	58.69	58.37	58.06	57.83	57.59
57.34							
21.90 CFS	57.17	56.98	56.72	56.45	56.14	55.84	55.59
55.35							
22.38 CFS	55.12	54.90	54.67	54.40	54.06	53.75	53.51
53.23							
22.86 CFS	52.94	52.64	52.38	52.20	51.98	51.70	51.40
51.09							
23.34 CFS	50.82	50.58	50.33	50.01	49.73	49.52	49.34
49.15							
23.82 CFS	48.85	48.50	48.20	48.17	47.80	46.34	44.44
42.34							
24.30 CFS	40.34	38.61	36.86	34.89	32.63	30.06	27.30
24.49							
24.78 CFS	21.80	19.34	17.20	15.39	13.91	12.72	11.77
11.02							

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25.26 CFS	10.42	9.94	9.55	9.22	8.94	8.69	8.48
8.28							
25.74 CFS	8.10	7.93					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.61 WATERSHED INCHES; 2604 CFS-HRS; 215.2 ACRE-  
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
STARTING TIME = .00 RAIN DEPTH = 7.23 RAIN DURATION = 1.00

ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. =50 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.29 81.5 (RUNOFF)  
20.13 2.1 (RUNOFF)  
23.08 1.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-  
FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.35 81.3 390.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.27 142.8 (RUNOFF)  
20.68 3.4 (RUNOFF)  
23.97 2.6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.85 WATERSHED INCHES; 181 CFS-HRS; 15.0 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 220.1 (NULL)  
20.13 5.7 (NULL)  
23.12 4.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.91 WATERSHED INCHES; 290 CFS-HRS; 24.0 ACRE-  
FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,

VALUE EXTRAPOLATED.  
\*\*\*

OPERATION RESVOR    STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	218.8	384.18
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.89 WATERSHED INCHES;	289 CFS-HRS;	23.9 ACRE-
FEET.		

OPERATION REACH    XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	218.2	368.84
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.89 WATERSHED INCHES;	289 CFS-HRS;	23.9 ACRE-
FEET.		

OPERATION RUNOFF    XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	181.7	(RUNOFF)
20.14	4.8	(RUNOFF)
23.74	3.6	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.60 WATERSHED INCHES;	237 CFS-HRS;	19.6 ACRE-
FEET.		

OPERATION ADDHYD    XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	387.5	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.75 WATERSHED INCHES;	526 CFS-HRS;	43.5 ACRE-
FEET.		

OPERATION REACH    XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.41 386.9 358.49

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 526 CFS-HRS; 43.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.30 203.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.15 WATERSHED INCHES; 291 CFS-HRS; 24.1 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.51 139.6 377.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.58 WATERSHED INCHES; 264 CFS-HRS; 21.9 ACRE-
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.13 30.4 (RUNOFF)
15.46 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.03 WATERSHED INCHES; 25 CFS-HRS; 2.1 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 22

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.80 112.3 359.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

5.57 WATERSHED INCHES; 264 CFS-HRS; 21.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	146.1	(RUNOFF)
15.81	5.5	(RUNOFF)
20.09	3.2	(RUNOFF)
20.64	3.0	(RUNOFF)
24.02	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.16 WATERSHED INCHES; 146 CFS-HRS; 12.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.37	458.9	(NULL)
24.00	10.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.61 WATERSHED INCHES; 672 CFS-HRS; 55.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	56.4	(RUNOFF)
21.97	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.80 WATERSHED INCHES; 60 CFS-HRS; 4.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.41	552.8	(NULL)
23.98	17.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.84 WATERSHED INCHES; 934 CFS-HRS; 77.2 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.40	582.5	(NULL)
23.99	18.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.83 WATERSHED INCHES; 994 CFS-HRS; 82.1 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .006 HOURS.  
\*\*\*

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.73	367.8	346.87
14.94	78.5	336.14
15.06	65.2	335.62
15.18	56.1	335.26
15.30	49.7	335.01
15.42	45.3	334.84
15.54	42.2	334.72
15.66	40.1	334.64
15.78	38.6	334.58
15.90	37.8	334.55

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32  
SQ.MI.

HRS	CFS	ELEV	CFS	ELEV	CFS	ELEV	CFS	ELEV
3.36	.00	333.08	.01	333.08	.01	333.08	.01	333.08
.02								
3.84	.02	333.08	.02	333.08	.02	333.08	.03	333.08
.03								
4.32	.04	333.08	.04	333.08	.05	333.08	.05	333.08
.06								
4.80	.06	333.08	.07	333.08	.07	333.08	.08	333.08
.09								
5.28	.10	333.08	.10	333.08	.11	333.08	.11	333.08
.13								
5.76	.14	333.09	.15	333.09	.16	333.09	.18	333.09
.24								
6.24	.26	333.09	.28	333.09	.31	333.09	.35	333.09
.54								
6.72	.60	333.10	.66	333.10	.73	333.10	.80	333.10
							.87	333.10
							.95	333.10
							1.02	333.10

1.10								
6.72 ELEV	333.10	333.11	333.11	333.11	333.11	333.12	333.12	
333.12								
7.20 CFS	1.19	1.27	1.37	1.47	1.59	1.70	1.82	
1.95								
7.20 ELEV	333.13	333.13	333.13	333.14	333.14	333.15	333.15	
333.16								
7.68 CFS	2.07	2.20	2.33	2.47	2.61	2.76	2.91	
3.06								
7.68 ELEV	333.16	333.17	333.17	333.18	333.18	333.19	333.19	
333.20								

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8.16 CFS	3.22	3.37	3.53	3.69	3.86	4.02	4.18	
4.36								
8.16 ELEV	333.21	333.21	333.22	333.22	333.23	333.24	333.24	
333.25								
8.64 CFS	4.54	4.73	4.92	5.11	5.29	5.47	5.66	
5.87								
8.64 ELEV	333.26	333.26	333.27	333.28	333.29	333.29	333.30	
333.31								
9.12 CFS	6.11	6.41	6.77	7.19	7.64	8.12	8.60	
9.10								
9.12 ELEV	333.32	333.33	333.34	333.36	333.38	333.40	333.41	
333.43								
9.60 CFS	9.62	10.17	10.74	11.34	11.94	12.55	13.16	
13.80								
9.60 ELEV	333.45	333.48	333.50	333.52	333.54	333.57	333.59	
333.62								
10.08 CFS	14.46	15.13	16.27	18.01	19.56	20.86	22.06	
23.15								
10.08 ELEV	333.64	333.67	333.71	333.78	333.84	333.89	333.94	
333.98								
10.56 CFS	24.25	25.39	26.65	28.04	29.58	31.25	33.08	
35.05								
10.56 ELEV	334.02	334.07	334.12	334.17	334.23	334.30	334.37	
334.44								
11.04 CFS	37.18	39.55	42.25	45.27	48.58	52.21	56.19	
60.47								
11.04 ELEV	334.53	334.62	334.72	334.84	334.97	335.11	335.27	
335.43								
11.52 CFS	65	71	79	89	100	101	105	
112								
11.52 ELEV	335.61	335.84	336.17	336.54	336.96	337.03	337.21	
337.53								
12.00 CFS	124	132	145	160	176	195	211	
225								
12.00 ELEV	338.05	338.49	339.17	340.03	341.05	342.19	343.26	
344.28								
12.48 CFS	238	250	308	355	367	362	346	
327								
12.48 ELEV	345.23	346.03	346.55	346.80	346.87	346.84	346.75	
346.65								
12.96 CFS	307	291	278	264	250	247	244	
240								
12.96 ELEV	346.54	346.42	346.30	346.17	346.04	345.85	345.63	



345.37							
13.44 CFS	236	232	228	223	219	214	209
205							
13.44 ELEV	345.09	344.79	344.48	344.16	343.84	343.51	343.18
342.85							
13.92 CFS	200	194	188	182	176	170	165
159							
13.92 ELEV	342.51	342.12	341.74	341.37	341.00	340.65	340.31
339.98							
14.40 CFS	154	149	142	135	129	122	110
100							
14.40 ELEV	339.67	339.35	338.99	338.65	338.33	337.96	337.43
336.98							
14.88 CFS	15.77	78.40	27.04	65.12	33.09	56.03	35.91
49.67							
14.88 ELEV	333.69	336.13	334.13	335.61	334.37	335.26	334.48
335.01							
15.36 CFS	37.03	45.26	37.31	42.22	37.19	40.10	36.91
38.64							
15.36 ELEV	334.52	334.84	334.53	334.72	334.53	334.64	334.52
334.58							
15.84 CFS	36.70	37.76	36.46	36.96	36.03	36.25	35.63
35.70							
15.84 ELEV	334.51	334.55	334.50	334.52	334.48	334.49	334.47
334.47							
16.32 CFS	35.20	35.12	34.73	34.58	34.21	34.01	33.71
33.53							
16.32 ELEV	334.45	334.45	334.43	334.43	334.41	334.40	334.39
334.38							
16.80 CFS	33.26	33.02	32.76	32.56	32.35	32.14	31.87
31.57							
16.80 ELEV	334.37	334.36	334.35	334.35	334.34	334.33	334.32
334.31							
17.28 CFS	31.29	31.08	30.88	30.63	30.33	30.03	29.76
29.52							
17.28 ELEV	334.30	334.29	334.28	334.27	334.26	334.25	334.24
334.23							
17.76 CFS	29.28	29.01	28.73	28.48	28.26	28.04	27.80
27.54							
17.76 ELEV	334.22	334.21	334.20	334.19	334.18	334.17	334.16
334.15							
18.24 CFS	27.31	27.10	26.90	26.67	26.45	26.31	26.22
26.13							
18.24 ELEV	334.14	334.13	334.13	334.12	334.11	334.10	334.10
334.10							
18.72 CFS	25.99	25.87	25.81	25.75	25.65	25.53	25.42
25.33							
18.72 ELEV	334.09	334.09	334.08	334.08	334.08	334.07	334.07
334.07							
19.20 CFS	25.23	25.15	25.07	25.00	24.94	24.88	24.82
24.71							
19.20 ELEV	334.06	334.06	334.06	334.05	334.05	334.05	334.05
334.04							
19.68 CFS	24.60	24.54	24.46	24.34	24.22	24.13	24.11
24.06							

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19.68 ELEV	334.04	334.03	334.03	334.03	334.02	334.02	334.02
334.02							
20.16 CFS	23.98	23.89	23.80	23.72	23.60	23.45	23.35
23.30							
20.16 ELEV	334.01	334.01	334.01	334.00	334.00	333.99	333.99
333.99							
20.64 CFS	23.25	23.16	23.05	22.98	22.94	22.85	22.73
22.63							
20.64 ELEV	333.98	333.98	333.98	333.97	333.97	333.97	333.96
333.96							
21.12 CFS	22.53	22.44	22.35	22.27	22.20	22.14	22.08
22.03							
21.12 ELEV	333.96	333.95	333.95	333.95	333.94	333.94	333.94
333.94							
21.60 CFS	21.93	21.81	21.74	21.68	21.58	21.50	21.46
21.39							
21.60 ELEV	333.93	333.93	333.93	333.92	333.92	333.92	333.91
333.91							
22.08 CFS	21.28	21.18	21.08	21.00	20.92	20.84	20.77
20.71							
22.08 ELEV	333.91	333.90	333.90	333.90	333.89	333.89	333.89
333.89							
22.56 CFS	20.63	20.51	20.40	20.33	20.25	20.13	19.99
19.91							
22.56 ELEV	333.88	333.88	333.87	333.87	333.87	333.86	333.86
333.85							
23.04 CFS	19.88	19.84	19.75	19.66	19.58	19.51	19.43
19.33							
23.04 ELEV	333.85	333.85	333.85	333.84	333.84	333.84	333.84
333.83							
23.52 CFS	19.19	19.04	18.95	18.90	18.83	18.70	18.56
18.44							
23.52 ELEV	333.83	333.82	333.82	333.82	333.81	333.81	333.80
333.80							
24.00 CFS	18.47	18.40	17.67	16.45	15.23	14.11	13.01
11.93							
24.00 ELEV	333.80	333.80	333.77	333.72	333.67	333.63	333.59
333.54							
24.48 CFS	10.95	10.29	9.96	9.70	9.49	9.30	9.14
8.98							
24.48 ELEV	333.51	333.48	333.47	333.46	333.45	333.44	333.44
333.43							
24.96 CFS	8.84	8.70	8.57	8.44	8.31	8.19	8.07
7.95							
24.96 ELEV	333.42	333.42	333.41	333.41	333.40	333.40	333.39
333.39							
25.44 CFS	7.84	7.73	7.62	7.51	7.41	7.30	7.20
7.10							
25.44 ELEV	333.39	333.38	333.38	333.37	333.37	333.36	333.36
333.36							
25.92 CFS	7.00	6.90	6.81	6.71	6.60	6.48	
25.92 ELEV	333.35	333.35	333.34	333.34	333.34	333.33	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.85 WATERSHED INCHES; 997 CFS-HRS; 82.4 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	168	42	32	26	23	21	16	8

DURATION(HRS) 17  
 FLOW(CFS) 6 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.73	367.8	333.90
14.94	78.5	332.06
15.06	65.2	331.89
15.18	56.1	331.78
15.30	49.7	331.70
15.42	45.3	331.64
15.54	42.2	331.61
15.66	40.1	331.58
15.78	38.6	331.56
15.90	37.8	331.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.85 WATERSHED INCHES; 997 CFS-HRS; 82.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.14	82.4	(RUNOFF)
15.84	2.4	(RUNOFF)
23.05	1.1	(RUNOFF)
23.71	1.0	(RUNOFF)
24.00	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.80 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	94.7	(RUNOFF)
24.03	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	94.7	(NULL)
24.03	1.3	(NULL)

	HYDROGRAPH POINTS FOR		ALTERNATE = 1,	STORM =50
HRS	MAIN TIME INCREMENT =	.060 hr,	DRAINAGE AREA =	.03
SQ.MI.				
1.86 CFS	.00	.01	.02	.03
.10				
2.34 CFS	.12	.14	.16	.18
.26				
2.82 CFS	.28	.29	.31	.33
.39				

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3.30 CFS	.41	.44	.45	.47	.49	.51	.53
.53							
3.78 CFS	.54	.56	.58	.60	.62	.64	.66
.68							
4.26 CFS	.69	.69	.71	.73	.76	.77	.78
.78							
4.74 CFS	.80	.82	.84	.86	.87	.88	.89
.91							
5.22 CFS	.93	.95	.96	.96	.97	.99	1.02
1.04							
5.70 CFS	1.06	1.06	1.06	1.06	1.08	1.11	1.14
1.16							
6.18 CFS	1.17	1.19	1.21	1.24	1.27	1.30	1.33
1.36							
6.66 CFS	1.39	1.40	1.42	1.46	1.50	1.51	1.53
1.57							
7.14 CFS	1.62	1.66	1.68	1.70	1.73	1.76	1.80
1.82							
7.62 CFS	1.84	1.87	1.90	1.93	1.97	2.00	2.04
2.08							
8.10 CFS	2.11	2.15	2.16	2.18	2.23	2.26	2.28
2.30							
8.58 CFS	2.35	2.40	2.44	2.47	2.49	2.50	2.52
2.57							
9.06 CFS	2.63	2.69	2.75	2.83	2.93	3.04	3.14
3.22							
9.54 CFS	3.30	3.40	3.50	3.62	3.74	3.84	3.92
4.01							
10.02 CFS	4.11	4.23	4.35	4.47	4.56	4.65	4.75
4.86							
10.50 CFS	4.98	5.13	5.35	5.63	5.96	6.32	6.70
7.09							
10.98 CFS	7.48	7.87	8.34	8.93	9.60	10.28	10.98
11.71							
11.46 CFS	12.45	13.22	14.67	17.18	19.73	22.14	25.44
30.09							
11.94 CFS	36.74	47.54	63.94	84.78	94.66	83.99	65.37
50.49							
12.42 CFS	40.07	32.94	28.24	24.31	20.56	17.68	15.80
14.50							

12.90 CFS	13.50	12.65	11.85	11.07	10.32	9.67	9.16
8.69							
13.38 CFS	8.26	7.83	7.40	7.00	6.61	6.28	6.02
5.83							
13.86 CFS	5.67	5.54	5.44	5.35	5.25	5.14	5.01
4.89							
14.34 CFS	4.79	4.71	4.62	4.52	4.40	4.27	4.16
4.07							
14.82 CFS	3.98	3.89	3.79	3.68	3.59	3.48	3.37
3.28							
15.30 CFS	3.22	3.18	3.17	3.16	3.15	3.13	3.08
3.03							
15.78 CFS	2.99	2.99	2.99	2.95	2.91	2.86	2.83
2.82							
16.26 CFS	2.80	2.77	2.73	2.70	2.67	2.63	2.60
2.58							
16.74 CFS	2.57	2.55	2.51	2.48	2.47	2.46	2.43
2.39							
17.22 CFS	2.33	2.30	2.29	2.29	2.26	2.21	2.16
2.13							
17.70 CFS	2.12	2.10	2.07	2.03	2.01	2.00	1.98
1.95							
18.18 CFS	1.92	1.89	1.88	1.87	1.84	1.82	1.82
1.84							
18.66 CFS	1.85	1.83	1.81	1.82	1.82	1.80	1.78
1.76							
19.14 CFS	1.76	1.76	1.75	1.75	1.75	1.75	1.75
1.74							
19.62 CFS	1.72	1.70	1.70	1.70	1.68	1.66	1.66
1.69							
20.10 CFS	1.69	1.68	1.66	1.65	1.64	1.61	1.59
1.59							
20.58 CFS	1.60	1.62	1.60	1.58	1.58	1.59	1.57
1.55							
21.06 CFS	1.53	1.53	1.52	1.52	1.52	1.52	1.52
1.52							
21.54 CFS	1.52	1.49	1.47	1.47	1.47	1.46	1.46
1.47							
22.02 CFS	1.46	1.44	1.42	1.41	1.41	1.41	1.40
1.40							
22.50 CFS	1.40	1.39	1.37	1.35	1.35	1.35	1.33
1.31							
22.98 CFS	1.31	1.34	1.34	1.33	1.31	1.30	1.29
1.29							
23.46 CFS	1.28	1.25	1.23	1.24	1.26	1.27	1.24
1.21							
23.94 CFS	1.20	1.25	1.25	.97	.57	.29	.15
.08							
24.42 CFS	.04	.02	.01	.00			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.42 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-  
FEET.

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DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	9	5	3	2	2	2	2	1
DURATION (HRS)	18	20	21					
FLOW (CFS)	1	1	0					

OPERATION RUNOFF XSECTION 119

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.13	24.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.59 WATERSHED INCHES; 21 CFS-HRS; 1.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 120

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.17	115.9	(NULL)
15.82	3.7	(NULL)
20.07	2.1	(NULL)
24.01	1.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.26 WATERSHED INCHES; 126 CFS-HRS; 10.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.16	197.1	(NULL)
15.83	6.1	(NULL)
17.33	4.7	(NULL)
20.85	3.3	(NULL)
21.75	3.0	(NULL)
21.95	3.0	(NULL)
24.01	2.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.08 WATERSHED INCHES; 205 CFS-HRS; 16.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.15	148.6	(RUNOFF)

15.84	4.6	(RUNOFF)
17.34	3.5	(RUNOFF)
22.75	2.1	(RUNOFF)
23.06	2.1	(RUNOFF)
24.00	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.41 WATERSHED INCHES; 141 CFS-HRS; 11.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	345.1	(NULL)
15.84	10.7	(NULL)
17.34	8.2	(NULL)
19.74	6.1	(NULL)
20.06	6.1	(NULL)
21.95	5.3	(NULL)
24.01	4.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.78 WATERSHED INCHES; 346 CFS-HRS; 28.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	499.6	(NULL)
12.71	424.9	(NULL)
14.94	91.8	(NULL)
15.06	77.7	(NULL)
15.18	67.8	(NULL)
15.30	61.0	(NULL)
15.42	56.5	(NULL)
15.54	53.4	(NULL)
15.66	51.0	(NULL)
15.78	49.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.04 WATERSHED INCHES; 1339 CFS-HRS; 110.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	440.7	316.28
12.83	409.5	316.20

14.98	87.8	315.01
15.11	71.2	314.88
15.23	63.3	314.81
15.35	58.4	314.77
15.47	55.1	314.74
15.58	52.8	314.72
15.70	51.0	314.70
24.06	23.0	314.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 1333 CFS-HRS; 110.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	136.5	(RUNOFF)
20.68	3.0	(RUNOFF)
23.99	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.17 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	131.8	365.04
20.69	3.0	356.63
23.79	2.4	356.57

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.15 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	196.3	(RUNOFF)
18.66	5.1	(RUNOFF)



20.68	4.5	(RUNOFF)
23.98	3.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 246 CFS-HRS; 20.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	325.1	(NULL)
18.67	8.6	(NULL)
20.68	7.5	(NULL)
23.14	6.2	(NULL)
23.78	5.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.12 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.37	312.6	319.62
20.73	7.5	316.81
23.20	6.2	316.73

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.12 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	154.0	(RUNOFF)
21.94	3.2	(RUNOFF)
24.01	2.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.74 WATERSHED INCHES; 183 CFS-HRS; 15.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 29

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	596.5	(NULL)

12.80	447.5	(NULL)
14.98	96.1	(NULL)
15.11	79.0	(NULL)
15.23	70.6	(NULL)
15.35	65.4	(NULL)
15.47	61.9	(NULL)
15.58	59.5	(NULL)
15.69	57.6	(NULL)
24.04	25.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.99 WATERSHED INCHES; 1516 CFS-HRS; 125.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	876.3	(NULL)
14.98	114.8	(NULL)
15.11	96.7	(NULL)
15.23	87.4	(NULL)
15.35	81.3	(NULL)
15.46	77.2	(NULL)
15.58	74.4	(NULL)
24.04	31.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 1931 CFS-HRS; 159.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	876.3	(NULL)
14.98	114.8	(NULL)
15.11	96.7	(NULL)
15.23	87.4	(NULL)
15.35	81.3	(NULL)
15.46	77.2	(NULL)
15.58	74.4	(NULL)
24.04	31.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 1931 CFS-HRS; 159.5 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		
12.21	220.6	(RUNOFF)
20.86	4.2	(RUNOFF)
24.02	3.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	204.5	313.75
20.73	4.3	310.35
24.09	3.3	310.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	33.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.63 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .48 AC-FT ( .09 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 377.99.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	29.2	380.63

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
 \*\*\*

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OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	29.2	338.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	100.5	(RUNOFF)
18.65	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.63 WATERSHED INCHES; 118 CFS-HRS; 9.7 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
 WITH 1.02 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 354.08.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	84.8	357.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.93 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	113.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.84 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	113.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.84 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
 \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	113.8	330.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.84 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	113.8	(RUNOFF)
15.84	3.3	(RUNOFF)
17.34	2.5	(RUNOFF)
18.61	2.0	(RUNOFF)
18.84	2.0	(RUNOFF)
24.00	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.03 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	206.2	(NULL)
18.82	5.1	(NULL)
21.94	4.1	(NULL)
24.00	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.92 WATERSHED INCHES; 244 CFS-HRS; 20.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 35

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.19	206.2	(NULL)
18.82	5.1	(NULL)
21.94	4.1	(NULL)
24.00	3.6	(NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50						
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06						
2.04 CFS	.00	.01	.01	.01	.01	.02	.02
.02							
2.52 CFS	.02	.03	.03	.03	.04	.05	.07
.08							
3.00 CFS	.10	.12	.14	.16	.18	.21	.23
.25							
3.48 CFS	.27	.29	.31	.33	.35	.37	.39
.42							
3.96 CFS	.44	.46	.49	.51	.53	.54	.56
.59							
4.44 CFS	.62	.65	.66	.67	.69	.72	.75
.77							
4.92 CFS	.79	.81	.83	.85	.88	.91	.94
.94							
5.40 CFS	.96	.98	1.02	1.05	1.07	1.10	1.11
1.11							
5.88 CFS	1.13	1.17	1.21	1.25	1.25	1.28	1.31
1.34							
6.36 CFS	1.38	1.42	1.46	1.49	1.54	1.57	1.58
1.63							
6.84 CFS	1.69	1.71	1.73	1.78	1.84	1.89	1.94
1.97							
7.32 CFS	2.00	2.04	2.10	2.14	2.17	2.20	2.24
2.30							
7.80 CFS	2.34	2.39	2.45	2.50	2.54	2.60	2.64
2.65							
8.28 CFS	2.71	2.79	2.82	2.84	2.90	2.97	3.04
3.09							
8.76 CFS	3.13	3.16	3.19	3.23	3.33	3.42	3.48
3.57							
9.24 CFS	3.68	3.82	3.94	4.05	4.15	4.25	4.38
4.53							
9.72 CFS	4.68	4.81	4.92	5.03	5.15	5.30	5.46
5.61							
10.20 CFS	5.75	5.87	5.99	6.20	6.65	7.09	7.57
8.22							
10.68 CFS	8.94	9.69	10.48	11.26	12.07	12.86	13.67
14.76							
11.16 CFS	15.97	17.25	18.56	19.89	21.34	22.74	24.21
27.49							
11.64 CFS	32	36	40	46	54	66	91
126							
12.12 CFS	178	206	189	164	142	112	96
84							
12.60 CFS	71.58	63.18	56.48	50.84	46.06	41.97	38.53
36.33							
13.08 CFS	34.48	32.67	31.07	29.60	28.17	26.78	25.45
24.14							
13.56 CFS	22.89	21.71	20.67	19.77	18.95	18.28	17.68
17.13							
14.04 CFS	16.62	16.11	15.61	15.13	14.69	14.30	13.94
13.58							
14.52 CFS	13.20	12.82	12.46	12.13	11.83	11.54	11.24

10.92								
15.00 CFS	10.64	10.36	10.06	9.80	9.58	9.40	9.25	
9.12								
15.48 CFS	9.00	8.88	8.74	8.59	8.43	8.33	8.28	
8.18								
15.96 CFS	8.05	7.92	7.81	7.73	7.66	7.58	7.47	
7.39								
16.44 CFS	7.32	7.23	7.14	7.08	7.03	6.98	6.90	
6.82								
16.92 CFS	6.76	6.72	6.67	6.59	6.49	6.39	6.35	
6.34								
17.40 CFS	6.28	6.19	6.09	6.02	5.96	5.92	5.87	
5.78								
17.88 CFS	5.71	5.67	5.63	5.57	5.49	5.43	5.38	
5.34								
18.36 CFS	5.29	5.21	5.18	5.19	5.19	5.15	5.09	
5.07								
18.84 CFS	5.08	5.04	4.98	4.95	4.93	4.91	4.89	
4.88								
19.32 CFS	4.86	4.85	4.84	4.82	4.80	4.74	4.73	
4.74								
19.80 CFS	4.71	4.66	4.64	4.66	4.69	4.66	4.62	
4.59								
20.28 CFS	4.58	4.56	4.50	4.46	4.49	4.50	4.50	
4.44								
20.76 CFS	4.41	4.43	4.42	4.37	4.34	4.32	4.31	
4.29								
21.24 CFS	4.28	4.27	4.26	4.25	4.24	4.23	4.17	
4.14								
21.72 CFS	4.16	4.14	4.10	4.12	4.12	4.08	4.04	
4.02								

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22.20 CFS	4.01	3.99	3.98	3.97	3.96	3.96	3.93	
3.87								
22.68 CFS	3.86	3.87	3.84	3.79	3.77	3.79	3.82	
3.78								
23.16 CFS	3.74	3.72	3.70	3.69	3.68	3.65	3.59	
3.58								
23.64 CFS	3.61	3.62	3.60	3.54	3.49	3.50	3.61	
3.48								
24.12 CFS	2.85	2.38	2.16	2.02	1.92	1.82	1.75	
1.70								
24.60 CFS	1.69	1.68	1.67	1.67	1.66	1.65	1.64	
1.63								
25.08 CFS	1.62	1.61	1.60					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.92 WATERSHED INCHES; 244 CFS-HRS; 20.2 ACRE-  
FEET.

DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	24	11	7	5	5	4	4	3

DURATION (HRS) 18 19  
FLOW (CFS) 2 2 TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	11.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.03 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-FEET.		

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	215.5	(NULL)
18.82	5.3	(NULL)
22.73	4.1	(NULL)
23.04	4.0	(NULL)
24.00	3.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.72 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-FEET.		

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	99.5	(RUNOFF)
20.67	2.3	(RUNOFF)
23.97	1.8	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.94 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-FEET.		

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OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	973.2	(NULL)
14.98	120.4	(NULL)
15.11	102.0	(NULL)
15.23	92.4	(NULL)
15.34	86.1	(NULL)
15.46	81.8	(NULL)
15.58	79.0	(NULL)
24.03	33.3	(NULL)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.01 WATERSHED INCHES; 2056 CFS-HRS; 169.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	1177.6	(NULL)
14.98	130.9	(NULL)
15.11	112.0	(NULL)
15.23	101.8	(NULL)
15.34	95.0	(NULL)
15.46	90.4	(NULL)
15.58	87.4	(NULL)
24.04	36.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.08 WATERSHED INCHES; 2310 CFS-HRS; 190.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	1346.9	(NULL)
14.98	142.1	(NULL)
15.10	122.6	(NULL)
15.22	111.9	(NULL)
15.34	104.7	(NULL)
15.46	99.9	(NULL)
15.57	96.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.13 WATERSHED INCHES; 2562 CFS-HRS; 211.7 ACRE-  
FEET.

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OPERATION REACH XSECTION 44

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.39	1296.3	291.65

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.13 WATERSHED INCHES; 2560 CFS-HRS; 211.5 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
12.39 1296.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.13 WATERSHED INCHES; 2560 CFS-HRS; 211.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.29 114.7 (RUNOFF)  
23.09 2.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.00 WATERSHED INCHES; 154 CFS-HRS; 12.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.31 143.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.90 WATERSHED INCHES; 199 CFS-HRS; 16.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 257.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.94 WATERSHED INCHES; 352 CFS-HRS; 29.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 48

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.20 140.0 (RUNOFF)  
18.86 3.1 (RUNOFF)  
24.03 2.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.93 WATERSHED INCHES; 149 CFS-HRS; 12.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	1375.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.12 WATERSHED INCHES; 2709 CFS-HRS; 223.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	1622.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 3061 CFS-HRS; 253.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	1581.9	286.99

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 3061 CFS-HRS; 252.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	4.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.06 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

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OPERATION REACH XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.26 4.3 288.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.06 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,
AT XSECTION 54
\*\*\*

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.54 .6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.47 WATERSHED INCHES; 2 CFS-HRS; .2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.20 91.3 (RUNOFF)
18.86 2.1 (RUNOFF)
24.03 1.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.65 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.45 1623.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.08 WATERSHED INCHES; 3158 CFS-HRS; 260.9 ACRE-
FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.27 4.7 (NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.79 WATERSHED INCHES; 8 CFS-HRS; .7 ACRE-

FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	1626.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.01 WATERSHED INCHES; 3166 CFS-HRS; 261.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	61.6	(RUNOFF)
24.02	1.1	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03 SQ.MI.

HRS	9.48	9.79	9.96	1.23	10.44	2.11	10.92	4.29	11.40	12.37	11.88	51.47	12.36	13.77	12.84	7.83	13.32	5.18	13.80	4.30	14.28	3.60	14.76	2.94	15.24	2.67	15.72	2.46	16.20	2.27	16.68	2.13	17.16	1.91	17.64	1.74	18.12	1.60	18.60	1.57
CFS	.50	.79	.84	1.23	1.29	2.11	2.30	4.29	4.70	15.06	15.06	41.55	41.55	12.52	12.52	7.43	7.43	5.00	5.00	4.30	4.20	3.60	3.51	2.94	2.86	2.67	2.63	2.46	2.45	2.27	2.25	2.13	2.09	1.91	1.88	1.74	1.72	1.60	1.60	1.57
	.53	.79	.89	1.23	1.36	2.11	2.49	4.29	5.14	19.06	19.06	33.96	33.96	11.55	11.55	7.07	7.07	4.85	4.85	4.30	4.11	3.60	3.44	2.86	2.80	2.60	2.60	2.43	2.27	2.24	2.13	2.05	1.91	1.86	1.74	1.69	1.60	1.60	1.57	
	.57	.79	.94	1.23	1.44	2.11	2.93	4.29	5.62	25.51	25.51	28.31	28.31	10.77	10.77	6.37	6.37	4.73	4.73	4.30	4.04	3.60	3.37	2.76	2.74	2.59	2.58	2.41	2.27	2.20	2.01	1.91	1.84	1.82	1.67	1.66	1.60	1.60		
	.61	.79	1.00	1.23	1.53	2.11	2.93	4.29	6.36	35.80	35.80	24.25	24.25	10.09	10.09	6.37	6.37	4.64	4.64	4.30	3.97	3.60	3.28	2.74	2.74	2.58	2.58	2.38	2.20	2.01	1.91	1.82	1.82	1.66	1.66	1.60	1.60			
	.66	.79	1.06	1.23	1.65	2.11	3.21	4.29	7.55	49.74	49.74	21.04	21.04	9.45	9.45	6.02	6.02	4.56	4.56	4.30	3.89	3.60	3.20	2.72	2.72	2.56	2.56	2.36	2.17	2.00	1.91	1.79	1.77	1.64	1.64	1.60	1.60			
	.70	.79	1.12	1.23	1.79	2.11	3.54	4.29	8.94	60.51	60.51	18.07	18.07	8.84	8.84	5.70	5.70	4.49	4.49	4.30	3.79	3.60	3.11	2.72	2.72	2.53	2.53	2.33	2.15	1.98	1.91	1.77	1.77	1.62	1.62	1.60	1.60			
	.75	.79	1.17	1.23	1.94	2.11	3.90	4.29	10.44	59.80	59.80	15.59	15.59	8.29	8.29	5.41	5.41	4.40	4.40	4.30	3.69	3.60	3.03	2.70	2.70	2.49	2.49	2.30	2.14	1.94	1.91	1.76	1.76	1.60	1.60	1.60	1.59			

19.08 CFS	1.56	1.55	1.55	1.54	1.54	1.54	1.54
1.54							
19.56 CFS	1.54	1.52	1.51	1.50	1.50	1.49	1.47
1.47							
20.04 CFS	1.48	1.49	1.48	1.47	1.46	1.45	1.44
1.41							
20.52 CFS	1.41	1.42	1.43	1.42	1.41	1.40	1.40
1.40							
21.00 CFS	1.38	1.37	1.36	1.35	1.35	1.35	1.35
1.35							
21.48 CFS	1.35	1.35	1.33	1.31	1.31	1.31	1.30
1.30							
21.96 CFS	1.30	1.30	1.29	1.27	1.26	1.26	1.25
1.25							
22.44 CFS	1.25	1.25	1.24	1.23	1.21	1.21	1.21
1.19							
22.92 CFS	1.18	1.17	1.19	1.19	1.19	1.17	1.16
1.16							

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23.40 CFS	1.15	1.15	1.13	1.11	1.11	1.12	1.13
1.12							
23.88 CFS	1.09	1.08	1.11	1.10	.94	.65	.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.86 WATERSHED INCHES; 66 CFS-HRS; 5.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	1658.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.98 WATERSHED INCHES; 3232 CFS-HRS; 267.1 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	1658.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.98 WATERSHED INCHES; 3232 CFS-HRS; 267.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	37.1	(RUNOFF)

18.66

1.0

(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.78 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-
FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 12.44 1680.5 (NULL)

Table with columns: HRS, MAIN, TIME INCREMENT, HYDROGRAPH POINTS FOR ALTERNATE = 1, DRAINAGE AREA = 1.02, STORM = 50, SQ.MI., and discharge values (CFS) ranging from 3.36 to 17.05.

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Table with columns: discharge values (CFS) and corresponding elevation values (FEET) ranging from 7.68 CFS/17.65 FEET to 12.00 CFS/1673 FEET.

12.48 CFS	1666	1582	1458	1319	1187	1080	997
931							
12.96 CFS	874	823	774	727	683	643	607
573							
13.44 CFS	544	519	497	478	461	445	429
415							
13.92 CFS	401	389	377	366	356	347	337
328							
14.40 CFS	318	310	301	293	284	276	267
259							
14.88 CFS	250	239	228	204	188	170	160
150							
15.36 CFS	144	138	135	131	129	126	124
122							
15.84 CFS	121	119	118	117	116	114	113
112							
16.32 CFS	111	110	109	108	107	106	105
104							
16.80 CFS	103	102	101	100	99	99	98
97							
17.28 CFS	95.93	94.99	94.04	93.06	92.09	91.13	90.17
89.19							
17.76 CFS	88.19	87.17	86.16	85.20	84.28	83.38	82.48
81.60							
18.24 CFS	80.74	79.90	79.07	78.24	77.42	76.69	76.05
75.50							
18.72 CFS	75.01	74.61	74.31	74.04	73.76	73.45	73.14
72.82							
19.20 CFS	72.48	72.13	71.81	71.53	71.29	71.10	70.92
70.72							
19.68 CFS	70.50	70.27	70.01	69.70	69.36	69.04	68.77
68.53							
20.16 CFS	68.30	68.10	67.92	67.74	67.48	67.15	66.79
66.44							
20.64 CFS	66.12	65.81	65.53	65.32	65.15	64.94	64.69
64.42							
21.12 CFS	64.14	63.83	63.50	63.18	62.90	62.65	62.45
62.27							
21.60 CFS	62.08	61.87	61.64	61.40	61.11	60.82	60.57
60.34							
22.08 CFS	60.12	59.88	59.64	59.38	59.08	58.78	58.50
58.26							
22.56 CFS	58.04	57.80	57.54	57.29	57.01	56.68	56.32
55.99							
23.04 CFS	55.71	55.46	55.22	55.01	54.83	54.65	54.43
54.18							
23.52 CFS	53.87	53.54	53.22	52.93	52.64	52.36	52.09
51.84							
24.00 CFS	51.68	51.46	50.75	49.29	47.06	43.96	39.95
35.32							
24.48 CFS	30.62	26.31	22.60	19.55	17.13	15.31	13.97
13.00							
24.96 CFS	12.29	11.77	11.38	11.06	10.81		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.96 WATERSHED INCHES; 3274 CFS-HRS; 270.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 63

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.55	1624.5	251.10



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.96 WATERSHED INCHES; 3273 CFS-HRS; 270.4 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.36 25.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.41 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.57 19.3 335.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.41 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-  
FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.67 19.0 300.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.41 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.20 109.3 (RUNOFF)  
23.10 2.1 (RUNOFF)  
24.03 2.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.83 WATERSHED INCHES; 113 CFS-HRS; 9.4 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 62

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.44	52.1	296.06
23.12	2.0	287.56
24.04	1.9	287.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.83 WATERSHED INCHES; 113 CFS-HRS; 9.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.55	67.2	(NULL)
20.86	3.1	(NULL)
24.04	2.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.13 WATERSHED INCHES; 151 CFS-HRS; 12.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	220.8	(RUNOFF)
18.64	5.1	(RUNOFF)
21.97	4.1	(RUNOFF)
24.03	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	249.0	(NULL)
18.87	8.5	(NULL)
20.87	7.5	(NULL)
23.10	6.3	(NULL)

24.03 6.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.33 WATERSHED INCHES; 376 CFS-HRS; 31.1 ACRE-
FEET.

OPERATION REACH XSECTION 70

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PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK
ELEVATION (FEET)
12.39 183.4 249.02
24.09 5.9 247.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.33 WATERSHED INCHES; 376 CFS-HRS; 31.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK
ELEVATION (FEET)
12.12 45.5 (RUNOFF)
15.83 1.3 (RUNOFF)
17.33 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.90 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK
ELEVATION (FEET)
12.24 27.4 267.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.90 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-
FEET.

OPERATION REACH XSECTION 72

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK
ELEVATION (FEET)
12.32 25.6 248.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.91 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	237.2	(RUNOFF)
15.84	9.7	(RUNOFF)
17.34	7.6	(RUNOFF)
18.86	6.1	(RUNOFF)
21.45	5.1	(RUNOFF)
24.01	4.3	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 50  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .11  
 SQ.MI.  
 9.60 CFS .49 .61 .73 .86 1.00 1.13 1.27  
 1.43

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10.08 CFS	1.60	1.78	1.96	2.13	2.32	2.51	2.72
2.94							
10.56 CFS	3.20	3.51	3.89	4.33	4.82	5.35	5.93
6.54							
11.04 CFS	7.19	8.00	8.96	10.08	11.28	12.57	14.01
15.50							
11.52 CFS	17.15	20.19	25.09	30.06	35.22	43.00	54.20
70.81							
12.00 CFS	99	145	208	237	207	161	128
104							
12.48 CFS	87.51	77.29	67.40	57.39	50.08	45.64	42.48
39.91							
12.96 CFS	37.67	35.43	33.20	31.06	29.25	27.85	26.52
25.25							
13.44 CFS	24.00	22.74	21.53	20.36	19.41	18.71	18.15
17.71							
13.92 CFS	17.37	17.10	16.86	16.56	16.22	15.83	15.47
15.19							
14.40 CFS	14.94	14.69	14.36	13.99	13.60	13.25	12.98
12.73							
14.88 CFS	12.44	12.11	11.79	11.50	11.15	10.81	10.53
10.36							
15.36 CFS	10.28	10.24	10.23	10.21	10.13	9.99	9.81
9.72							
15.84 CFS	9.74	9.72	9.61	9.45	9.31	9.23	9.19
9.15							
16.32 CFS	9.04	8.93	8.85	8.74	8.60	8.52	8.48
8.45							
16.80 CFS	8.36	8.24	8.15	8.12	8.08	7.99	7.84
7.66							
17.28 CFS	7.56	7.58	7.56	7.44	7.27	7.12	7.04
7.00							
17.76 CFS	6.95	6.84	6.72	6.66	6.62	6.58	6.47
6.35							
18.24 CFS	6.28	6.25	6.20	6.09	6.04	6.09	6.16
6.16							
18.72 CFS	6.08	6.03	6.08	6.07	5.99	5.92	5.89
5.88							

19.20 CFS	5.87	5.87	5.87	5.87	5.87	5.87	5.84
5.74							
19.68 CFS	5.68	5.72	5.71	5.63	5.56	5.59	5.68
5.70							
20.16 CFS	5.63	5.56	5.54	5.51	5.42	5.33	5.35
5.42							
20.64 CFS	5.46	5.40	5.32	5.34	5.37	5.29	5.22
5.17							
21.12 CFS	5.16	5.15	5.14	5.14	5.14	5.14	5.15
5.13							
21.60 CFS	5.05	4.96	4.98	5.00	4.94	4.94	4.99
4.95							
22.08 CFS	4.87	4.81	4.79	4.78	4.77	4.77	4.77
4.77							
22.56 CFS	4.74	4.64	4.58	4.62	4.60	4.52	4.45
4.48							
23.04 CFS	4.57	4.58	4.51	4.45	4.42	4.40	4.40
4.36							
23.52 CFS	4.26	4.19	4.25	4.32	4.33	4.24	4.13
4.11							
24.00 CFS	4.33	4.25	3.08	1.66	.80	.39	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.26 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.54	1700.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.79 WATERSHED INCHES; 3504 CFS-HRS; 289.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 75

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	207.0	(NULL)
20.13	8.7	(NULL)
24.09	6.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .15  
 SQ.MI.

7.08 CFS	.47	.52	.57	.62	.68	.74	.79
.85							
7.56 CFS	.91	.98	1.04	1.10	1.17	1.24	1.30
1.38							
8.04 CFS	1.45	1.53	1.61	1.69	1.78	1.86	1.96

2.06								
8.52	CFS	2.16	2.26	2.37	2.48	2.60	2.72	2.84
2.95								
9.00	CFS	3.07	3.19	3.32	3.46	3.61	3.77	3.95
4.15								
9.48	CFS	4.36	4.58	4.80	5.04	5.29	5.56	5.85
6.14								
9.96	CFS	6.44	6.74	7.05	7.38	7.73	8.09	8.45
8.81								
10.44	CFS	9.18	9.56	9.96	10.39	10.88	11.40	12.01
12.71								
10.92	CFS	13.50	14.37	15.31	16.31	17.42	18.68	20.05
21.56								
11.40	CFS	23.22	25.03	26.98	29.10	31.72	35.04	39.05
43.74								
11.88	CFS	49	56	66	79	101	136	172
199								
12.36	CFS	207	204	196	188	180	171	161
150								
12.84	CFS	139	128	119	111	103	95	88
81								
13.32	CFS	75.11	70.28	66.07	62.36	59.08	56.22	53.72
51.54								
13.80	CFS	49.65	48.01	46.59	45.35	44.28	43.33	42.49
41.70								
14.28	CFS	40.95	40.23	39.55	38.91	38.30	37.65	36.95
36.23								
14.76	CFS	35.49	34.75	33.99	33.20	32.38	31.55	30.72
29.77								
15.24	CFS	28.72	27.64	26.43	25.15	23.93	22.83	21.76
20.87								
15.72	CFS	20.14	19.51	18.97	18.53	18.17	17.85	17.53
17.18								
16.20	CFS	16.84	16.52	16.22	15.92	15.64	15.37	15.10
14.84								
16.68	CFS	14.59	14.36	14.16	13.99	13.82	13.65	13.49
13.35								
17.16	CFS	13.22	13.06	12.89	12.70	12.55	12.42	12.28
12.13								
17.64	CFS	11.90	11.68	11.48	11.31	11.14	10.98	10.82
10.68								
18.12	CFS	10.56	10.44	10.30	10.17	10.05	9.94	9.82
9.71								
18.60	CFS	9.62	9.58	9.55	9.50	9.45	9.41	9.39
9.35								
19.08	CFS	9.29	9.23	9.18	9.14	9.10	9.07	9.05
9.03								
19.56	CFS	9.02	9.00	8.96	8.91	8.87	8.84	8.79
8.73								
20.04	CFS	8.69	8.68	8.68	8.66	8.63	8.59	8.55
8.50								
20.52	CFS	8.43	8.37	8.34	8.33	8.31	8.27	8.24
8.22								
21.00	CFS	8.19	8.15	8.09	8.04	8.00	7.96	7.93
7.91								
21.48	CFS	7.89	7.87	7.86	7.83	7.77	7.72	7.69
7.66								
21.96	CFS	7.63	7.61	7.59	7.56	7.51	7.46	7.42
7.38								
22.44	CFS	7.35	7.33	7.31	7.28	7.24	7.18	7.14
7.11								
22.92	CFS	7.06	7.00	6.95	6.94	6.94	6.92	6.89
6.85								
23.40	CFS	6.81	6.78	6.74	6.69	6.62	6.58	6.56

6.56								
23.88 CFS	6.53	6.48	6.43	6.43	6.44	6.17	5.54	
4.72								
24.36 CFS	3.91	3.18	2.57	2.06	1.65	1.31	1.04	
.82								
24.84 CFS	.65	.51	.39					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.38 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	1888.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.75 WATERSHED INCHES; 3918 CFS-HRS; 323.8 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 77.  
 \*\*\*

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	1888.5	231.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.75 WATERSHED INCHES; 3918 CFS-HRS; 323.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	133.1	(RUNOFF)
15.84	5.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.01	2.2	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05  
 SQ.MI.

8.82 CFS	.48	.51	.55	.59	.64	.69	.73
.79							
9.30 CFS	.86	.93	1.00	1.07	1.13	1.21	1.30
1.39							

9.78 CFS	1.48	1.57	1.66	1.75	1.86	1.97	2.09
2.20							
10.26 CFS	2.31	2.42	2.53	2.67	2.81	2.97	3.19
3.45							
10.74 CFS	3.75	4.09	4.44	4.82	5.21	5.63	6.15
6.77							
11.22 CFS	7.47	8.22	9.01	9.88	10.77	11.74	13.66
16.76							
11.70 CFS	20	23	27	34	44	60	86
120							
12.18 CFS	133	112	85	67	54	45	40
35							
12.66 CFS	29.53	25.82	23.63	22.02	20.68	19.50	18.32
17.15							
13.14 CFS	16.02	15.09	14.36	13.67	13.01	12.36	11.69
11.06							
13.62 CFS	10.46	9.97	9.61	9.33	9.10	8.93	8.79
8.67							
14.10 CFS	8.51	8.32	8.12	7.94	7.79	7.66	7.53
7.36							
14.58 CFS	7.16	6.95	6.78	6.64	6.51	6.36	6.19
6.02							
15.06 CFS	5.87	5.69	5.51	5.37	5.29	5.25	5.23
5.23							
15.54 CFS	5.22	5.17	5.09	5.00	4.96	4.97	4.96
4.90							
16.02 CFS	4.81	4.74	4.70	4.68	4.66	4.60	4.54
4.50							
16.50 CFS	4.44	4.38	4.33	4.31	4.30	4.25	4.19
4.14							
16.98 CFS	4.13	4.11	4.06	3.98	3.88	3.84	3.85
3.84							

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17.46 CFS	3.77	3.68	3.61	3.57	3.55	3.53	3.47
3.41							
17.94 CFS	3.37	3.36	3.33	3.27	3.21	3.18	3.17
3.14							
18.42 CFS	3.09	3.06	3.09	3.12	3.12	3.08	3.06
3.08							
18.90 CFS	3.07	3.03	3.00	2.98	2.97	2.97	2.97
2.97							
19.38 CFS	2.97	2.97	2.97	2.95	2.90	2.87	2.90
2.89							
19.86 CFS	2.84	2.81	2.83	2.88	2.88	2.84	2.81
2.80							
20.34 CFS	2.78	2.73	2.69	2.70	2.74	2.76	2.72
2.68							
20.82 CFS	2.70	2.71	2.67	2.63	2.61	2.60	2.60
2.60							
21.30 CFS	2.59	2.59	2.60	2.60	2.59	2.54	2.50
2.51							
21.78 CFS	2.52	2.49	2.49	2.52	2.49	2.45	2.42
2.41							
22.26 CFS	2.41	2.40	2.40	2.40	2.40	2.39	2.33
2.30							



22.74 CFS	2.33	2.32	2.27	2.24	2.26	2.31	2.31
2.27							
23.22 CFS	2.24	2.22	2.22	2.21	2.19	2.14	2.11
2.14							
23.70 CFS	2.18	2.18	2.13	2.07	2.07	2.18	2.13
1.50							
24.18 CFS	.78	.36					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.89 WATERSHED INCHES; 128 CFS-HRS; 10.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.53	1929.2	(NULL)
23.97	65.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.71 WATERSHED INCHES; 4046 CFS-HRS; 334.4 ACRE-FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	1921.7	217.89

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.71 WATERSHED INCHES; 4046 CFS-HRS; 334.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	154.4	(RUNOFF)
15.84	5.2	(RUNOFF)
17.34	4.0	(RUNOFF)
19.47	3.1	(RUNOFF)
19.74	3.0	(RUNOFF)
20.05	3.0	(RUNOFF)
24.00	2.3	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.24 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.60 1955.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.69 WATERSHED INCHES; 4186 CFS-HRS; 345.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.17 76.0 (RUNOFF)  
 17.34 2.3 (RUNOFF)  
 24.01 1.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.55 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.59 1975.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.67 WATERSHED INCHES; 4257 CFS-HRS; 351.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.25 237.6 (RUNOFF)  
 18.67 7.0 (RUNOFF)  
 20.68 6.2 (RUNOFF)  
 23.12 5.2 (RUNOFF)  
 24.01 4.8 (RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .12  
 SQ.MI.

HRS	8.88	9.36	9.84	10.32	10.80	11.28	11.78	12.25
CFS	1.07	2.22	3.86	6.40	12.98	32.56		
	.45	1.19	2.40	4.09	6.97	14.33		
	.52	1.32	2.58	4.33	7.61	15.83		
	.60	1.45	2.77	4.58	8.30	17.46		
	.68	1.59	2.96	4.85	9.04	19.19		
	.77	1.73	3.17	5.14	9.85	21.09		
	.86	1.88	3.39	5.49	10.74	23.59		
	.96	2.05	3.63	5.90	11.78	27.57		

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11.76 CFS	38	45	55	69	91	125	173
220							
12.24 CFS	237	226	197	165	139	119	103
89							
12.72 CFS	77.46	67.71	60.53	55.03	50.67	46.96	43.60
40.63							
13.20 CFS	37.99	35.71	33.76	32.00	30.37	28.80	27.29
25.85							
13.68 CFS	24.52	23.38	22.43	21.66	21.04	20.54	20.13
19.75							
14.16 CFS	19.37	18.96	18.54	18.15	17.79	17.46	17.13
16.76							
14.64 CFS	16.35	15.93	15.55	15.21	14.87	14.53	14.17
13.80							
15.12 CFS	13.43	13.05	12.69	12.38	12.16	12.01	11.92
11.85							
15.60 CFS	11.79	11.68	11.54	11.40	11.31	11.25	11.19
11.08							
16.08 CFS	10.93	10.80	10.70	10.63	10.54	10.44	10.33
10.21							
16.56 CFS	10.09	9.97	9.88	9.80	9.73	9.63	9.53
9.44							
17.04 CFS	9.37	9.30	9.19	9.04	8.90	8.80	8.74
8.67							
17.52 CFS	8.56	8.41	8.27	8.17	8.09	8.00	7.89
7.79							
18.00 CFS	7.70	7.64	7.56	7.45	7.35	7.27	7.20
7.13							
18.48 CFS	7.05	7.01	7.01	7.03	7.02	6.99	6.96
6.95							
18.96 CFS	6.92	6.87	6.82	6.78	6.75	6.74	6.73
6.73							
19.44 CFS	6.72	6.72	6.71	6.67	6.61	6.57	6.55
6.51							
19.92 CFS	6.46	6.43	6.44	6.47	6.47	6.44	6.39
6.35							
20.40 CFS	6.29	6.22	6.17	6.17	6.19	6.20	6.16
6.13							
20.88 CFS	6.12	6.10	6.06	6.00	5.95	5.92	5.90
5.89							
21.36 CFS	5.88	5.88	5.88	5.87	5.84	5.78	5.73
5.71							
21.84 CFS	5.69	5.67	5.68	5.67	5.63	5.58	5.53
5.50							
22.32 CFS	5.48	5.46	5.46	5.45	5.43	5.39	5.33
5.29							
22.80 CFS	5.27	5.23	5.18	5.15	5.16	5.18	5.18
5.15							
23.28 CFS	5.10	5.06	5.04	5.01	4.96	4.90	4.86
4.87							
23.76 CFS	4.90	4.89	4.82	4.77	4.80	4.78	4.41
3.51							
24.24 CFS	2.48	1.58	1.00	.62	.40		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.67 WATERSHED INCHES; 281 CFS-HRS; 23.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.58	2081.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.59 WATERSHED INCHES;	4538 CFS-HRS;	375.1 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	64.3	(RUNOFF)
20.04	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.67 WATERSHED INCHES;	58 CFS-HRS;	4.8 ACRE-
FEEET.		

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OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.58	2094.2	(NULL)
23.97	74.3	(NULL)

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50								
HRS	MAIN	TIME	INCREMENT =	.060 hr,	DRAINAGE AREA =				1.55
SQ.MI.									
3.54 CFS	.49	.53	.57	.62	.67	.73	.78		
.84									
4.02 CFS	.90	.97	1.04	1.12	1.20	1.29	1.38		
1.48									
4.50 CFS	1.58	1.68	1.77	1.87	1.98	2.09	2.20		
2.31									
4.98 CFS	2.42	2.53	2.65	2.77	2.90	3.02	3.14		
3.27									
5.46 CFS	3.40	3.56	3.72	3.88	4.05	4.22	4.41		
4.63									
5.94 CFS	4.87	5.12	5.37	5.60	5.84	6.09	6.37		
6.66									
6.42 CFS	6.98	7.30	7.64	7.99	8.36	8.74	9.16		
9.62									
6.90 CFS	10.07	10.55	11.05	11.57	12.11	12.66	13.23		
13.81									
7.38 CFS	14.43	15.07	15.74	16.40	17.08	17.78	18.48		
19.19									
7.86 CFS	19.91	20.65	21.40	22.17	22.98	23.80	24.64		
25.54									
8.34 CFS	26.48	27.41	28.36	29.36	30.38	31.43	32.48		

33.55								
8.82 CFS	34.64	35.75	36.89	38.11	39.35	40.57	41.82	
43.14								
9.30 CFS	44.55	46.07	47.70	49.49	51.45	53.62	56.00	
58.58								
9.78 CFS	61.30	64.12	67.06	70.12	73.33	76.69	80.16	
83.70								
10.26 CFS	87	91	95	99	103	107	112	
117								
10.74 CFS	123	130	137	144	153	162	173	
185								
11.22 CFS	198	212	228	246	264	285	311	
344								
11.70 CFS	382	424	476	544	636	771	968	
1240								
12.18 CFS	1487	1638	1731	1816	1915	2012	2080	
2090								
12.66 CFS	2034	1925	1785	1637	1498	1377	1275	
1188								
13.14 CFS	1110	1040	975	916	861	811	765	
724								
13.62 CFS	687	655	627	602	580	560	542	
525								
14.10 CFS	509	494	480	467	455	443	432	
421								
14.58 CFS	410	399	389	378	368	358	347	
336								
15.06 CFS	325	313	294	275	256	240	227	
216								
15.54 CFS	207	201	195	190	185	182	179	
177								
16.02 CFS	174	172	170	168	166	165	163	
161								
16.50 CFS	159	158	156	154	153	151	150	
148								
16.98 CFS	147	146	144	143	141	140	139	
137								
17.46 CFS	136	135	133	131	130	129	127	
126								
17.94 CFS	124	123	121	120	118	117	116	
115								
18.42 CFS	113	112	111	110	110	109	108	
107								
18.90 CFS	107	106	106	105	105	104	104	
103								
19.38 CFS	103	103	102	102	102	101	101	
101								
19.86 CFS	100	100	99	99	99	98	98	
98								
20.34 CFS	97.17	96.70	96.20	95.83	95.57	95.33	94.91	
94.39								
20.82 CFS	93.99	93.66	93.27	92.83	92.40	92.00	91.63	
91.28								
21.30 CFS	90.93	90.57	90.22	89.90	89.57	89.13	88.66	
88.34								
21.78 CFS	88.06	87.71	87.42	87.18	86.83	86.38	85.91	
85.49								
22.26 CFS	85.13	84.80	84.48	84.16	83.84	83.46	82.94	
82.46								
22.74 CFS	82.12	81.77	81.32	80.81	80.41	80.17	79.90	
79.50								

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23.22 CFS	79.04	78.61	78.25	77.95	77.62	77.14	76.65
76.31							
23.70 CFS	76.08	75.82	75.37	74.78	74.28	74.30	73.93
71.51							
24.18 CFS	67.49	63.16	59.12	55.36	51.47	47.16	42.40
37.42							
24.66 CFS	32.56	28.12	24.24	20.99	18.38	16.34	14.79
13.64							
25.14 CFS	12.78	12.14					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.60 WATERSHED INCHES; 4597 CFS-HRS; 379.9 ACRE-  
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
STARTING TIME = .00 RAIN DEPTH = 8.47 RAIN DURATION = 1.00  
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. =99 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	99.6	(RUNOFF)
20.13	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.18 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-  
FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	99.4	390.78
20.19	2.5	389.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.18 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	175.5	(RUNOFF)
20.68	4.1	(RUNOFF)
23.97	3.1	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.00 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	270.3	(NULL)
20.14	6.8	(NULL)
23.12	5.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.07 WATERSHED INCHES; 359 CFS-HRS; 29.6 ACRE-  
FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,  
VALUE EXTRAPOLATED.  
\*\*\*

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	268.8	384.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.04 WATERSHED INCHES; 357 CFS-HRS; 29.5 ACRE-  
FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	268.4	369.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.05 WATERSHED INCHES; 357 CFS-HRS; 29.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.28	226.3	(RUNOFF)
20.13	5.8	(RUNOFF)
23.74	4.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.74 WATERSHED INCHES; 295 CFS-HRS; 24.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 7  
1

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	479.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.90 WATERSHED INCHES; 653 CFS-HRS; 54.0 ACRE-  
FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	479.0	358.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.90 WATERSHED INCHES; 653 CFS-HRS; 53.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	242.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.38 WATERSHED INCHES; 350 CFS-HRS; 28.9 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 21, TRUNCATED AT 400 POINTS  
WITH 2.68 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 370.65.  
\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	153.9	378.71

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.69 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-



FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	38.4	(RUNOFF)
15.83	1.2	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.11 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.91	127.4	360.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.68 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	184.3	(RUNOFF)
18.87	4.1	(RUNOFF)
22.76	3.1	(RUNOFF)
23.09	3.1	(RUNOFF)
24.03	2.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.26 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	571.3	(NULL)
24.01	12.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.75 WATERSHED INCHES; 837 CFS-HRS; 69.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.20	69.3	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.95 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 14  
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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.37	675.4	(NULL)
24.00	20.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.96 WATERSHED INCHES; 1151 CFS-HRS; 95.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.36	717.1	(NULL)
24.00	21.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.3 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .006 HOURS.  
\*\*\*

OPERATION RESVOR STRUCTURE 23

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.59	552.3	347.71
15.18	58.7	335.36
15.30	54.3	335.19
15.41	51.0	335.06
15.53	48.6	334.97
15.65	46.7	334.90
15.76	45.1	334.84
15.87	44.0	334.79
24.01	21.3	333.91

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99

HRS	MAIN TIME	INCREMENT = .060 hr,						DRAINAGE AREA = .32
3.00 CFS	.00	.01	.01	.01	.01	.01	.01	.02
3.00 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
3.48 CFS	.02	.02	.03	.03	.03	.04	.04	.04
3.48 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
3.96 CFS	.05	.05	.05	.06	.06	.07	.07	.07
3.96 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
4.44 CFS	.08	.08	.09	.09	.10	.10	.11	.11
4.44 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
4.92 CFS	.12	.13	.13	.14	.15	.17	.19	.19
4.92 ELEV	333.08	333.08	333.09	333.09	333.09	333.09	333.09	333.09
5.40 CFS	.23	.25	.27	.30	.33	.37	.42	.42
5.40 ELEV	333.09	333.09	333.09	333.09	333.09	333.09	333.10	333.10
5.88 CFS	.52	.58	.65	.72	.79	.86	.93	.93
5.88 ELEV	333.10	333.10	333.11	333.11	333.11	333.11	333.12	333.12

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6.36 CFS	1.08	1.16	1.25	1.34	1.45	1.56	1.67	1.67
6.36 ELEV	333.12	333.13	333.13	333.13	333.14	333.14	333.15	333.15
6.84 CFS	1.92	2.05	2.18	2.32	2.46	2.61	2.76	2.76
6.84 ELEV	333.15	333.16	333.16	333.17	333.18	333.18	333.19	333.19
7.32 CFS	3.08	3.24	3.40	3.57	3.74	3.91	4.08	4.08
7.32 ELEV	333.20	333.21	333.21	333.22	333.23	333.23	333.24	333.24
7.80 CFS	4.45	4.63	4.83	5.04	5.24	5.45	5.67	5.67
7.80 ELEV	333.25	333.26	333.27	333.28	333.28	333.29	333.30	333.30
8.28 CFS	6.07	6.33	6.63	6.96	7.31	7.69	8.08	8.08
8.28 ELEV	333.32	333.33	333.34	333.35	333.36	333.38	333.39	333.39
8.76 CFS	8.88	9.27	9.65	10.03	10.43	10.86	11.30	11.30
8.76 ELEV	333.43	333.44	333.46	333.47	333.49	333.50	333.52	333.52

9.24 CFS	12.25	12.79	13.36	13.94	14.52	16.02	17.51
18.65							
9.24 ELEV	333.56	333.58	333.60	333.62	333.64	333.70	333.76
333.81							
9.72 CFS	19.82	20.82	21.84	22.77	23.74	24.68	25.68
26.68							
9.72 ELEV	333.85	333.89	333.93	333.97	334.00	334.04	334.08
334.12							
10.20 CFS	27.71	28.70	29.69	30.67	31.68	32.73	33.84
35.09							
10.20 ELEV	334.16	334.20	334.23	334.27	334.31	334.35	334.40
334.44							
10.68 CFS	36.52	38.17	40.04	42.12	44.45	46.97	49.69
52.74							
10.68 ELEV	334.50	334.56	334.64	334.72	334.81	334.91	335.01
335.13							
11.16 CFS	56.20	60.10	64.37	69.01	74.06	79.44	85.21
92.63							
11.16 ELEV	335.27	335.42	335.58	335.76	335.96	336.17	336.39
336.68							
11.64 CFS	100	102	106	111	120	128	136
149							
11.64 ELEV	336.98	337.06	337.23	337.49	337.87	338.26	338.67
339.34							
12.12 CFS	163	182	204	223	242	323	467
539							
12.12 ELEV	340.21	341.39	342.78	344.11	345.47	346.63	347.35
347.66							
12.60 CFS	552	532	498	461	424	392	366
342							
12.60 ELEV	347.71	347.63	347.49	347.32	347.16	347.01	346.87
346.73							
13.08 CFS	320	300	288	275	263	252	248
246							
13.08 ELEV	346.61	346.50	346.39	346.28	346.17	346.06	345.94
345.76							
13.56 CFS	243	239	235	230	226	221	216
212							
13.56 ELEV	345.53	345.26	344.96	344.65	344.33	344.00	343.67
343.34							
14.04 CFS	207	203	197	191	185	180	174
169							
14.04 ELEV	343.02	342.69	342.34	341.96	341.60	341.24	340.90
340.57							
14.52 CFS	163	159	154	149	142	136	130
124							
14.52 ELEV	340.25	339.94	339.64	339.34	339.00	338.68	338.37
338.07							
15.00 CFS	113	103	50	59	49	54	48
51							
15.00 ELEV	337.56	337.12	335.03	335.36	335.00	335.19	334.96
335.06							
15.48 CFS	47.05	48.55	45.94	46.64	44.80	45.05	43.85
43.94							
15.48 ELEV	334.91	334.97	334.87	334.89	334.82	334.83	334.79
334.79							
15.96 CFS	43.02	42.83	42.07	41.82	41.24	40.98	40.50
40.21							
15.96 ELEV	334.75	334.75	334.72	334.71	334.68	334.67	334.66
334.64							
16.44 CFS	39.83	39.56	39.18	38.88	38.58	38.34	38.04
37.74							
16.44 ELEV	334.63	334.62	334.60	334.59	334.58	334.57	334.56
334.55							

16.92 CFS	37.44	37.20	36.96	36.71	36.39	36.04	35.71
35.47							
16.92 ELEV	334.54	334.53	334.52	334.51	334.50	334.48	334.47
334.46							
17.40 CFS	35.23	34.94	34.58	34.23	33.91	33.63	33.35
33.03							
17.40 ELEV	334.45	334.44	334.43	334.41	334.40	334.39	334.38
334.36							
17.88 CFS	32.70	32.41	32.15	31.90	31.61	31.31	31.04
30.80							

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17.88 ELEV	334.35	334.34	334.33	334.32	334.31	334.30	334.29
334.28							
18.36 CFS	30.56	30.29	30.03	29.87	29.77	29.67	29.51
29.38							
18.36 ELEV	334.27	334.26	334.25	334.24	334.24	334.23	334.23
334.22							
18.84 CFS	29.31	29.25	29.13	28.99	28.88	28.77	28.67
28.58							
18.84 ELEV	334.22	334.22	334.21	334.21	334.20	334.20	334.20
334.19							
19.32 CFS	28.50	28.43	28.37	28.32	28.25	28.13	28.01
27.95							
19.32 ELEV	334.19	334.19	334.18	334.18	334.18	334.17	334.17
334.17							
19.80 CFS	27.88	27.74	27.60	27.51	27.49	27.45	27.35
27.25							
19.80 ELEV	334.16	334.16	334.15	334.15	334.15	334.15	334.14
334.14							
20.28 CFS	27.16	27.07	26.93	26.76	26.65	26.59	26.54
26.43							
20.28 ELEV	334.14	334.13	334.13	334.12	334.12	334.11	334.11
334.11							
20.76 CFS	26.30	26.24	26.19	26.09	25.96	25.84	25.73
25.63							
20.76 ELEV	334.10	334.10	334.10	334.09	334.09	334.08	334.08
334.08							
21.24 CFS	25.53	25.44	25.36	25.29	25.23	25.17	25.06
24.92							
21.24 ELEV	334.07	334.07	334.07	334.06	334.06	334.06	334.05
334.05							
21.72 CFS	24.84	24.77	24.66	24.57	24.53	24.45	24.33
24.21							
21.72 ELEV	334.05	334.04	334.04	334.04	334.03	334.03	334.03
334.02							
22.20 CFS	24.10	24.01	23.91	23.83	23.75	23.68	23.60
23.46							
22.20 ELEV	334.02	334.01	334.01	334.01	334.00	334.00	334.00
333.99							
22.68 CFS	23.32	23.25	23.16	23.02	22.87	22.77	22.75
22.70							
22.68 ELEV	333.99	333.98	333.98	333.98	333.97	333.97	333.96
333.96							
23.16 CFS	22.60	22.49	22.40	22.32	22.24	22.14	21.99
21.84							

23.16 ELEV	333.96	333.95	333.95	333.95	333.95	333.94	333.94
333.93							
23.64 CFS	21.76	21.72	21.67	21.55	21.40	21.29	21.35
21.31							
23.64 ELEV	333.93	333.92	333.92	333.92	333.91	333.91	333.91
333.91							
24.12 CFS	20.45	19.01	17.55	16.21	14.92	13.65	12.50
11.48							
24.12 ELEV	333.88	333.82	333.76	333.71	333.66	333.61	333.57
333.53							
24.60 CFS	10.94	10.67	10.43	10.25	10.05	9.89	9.73
9.58							
24.60 ELEV	333.51	333.50	333.49	333.48	333.47	333.46	333.46
333.45							
25.08 CFS	9.44	9.30	9.16	9.03	8.90	8.78	8.65
8.53							
25.08 ELEV	333.45	333.44	333.44	333.43	333.43	333.42	333.42
333.41							
25.56 CFS	8.42	8.30	8.18	8.07	7.96	7.85	7.74
25.56 ELEV	333.41	333.40	333.40	333.39	333.39	333.39	333.38

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	189	55	38	30	27	24	21	10

DURATION(HRS) 17  
 FLOW(CFS) 8 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.59	552.3	334.88
15.18	58.7	331.81
15.30	54.3	331.76
15.41	51.0	331.72
15.53	48.6	331.69
15.65	46.7	331.66
15.76	45.1	331.64
15.87	44.0	331.63
24.01	21.3	331.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.14	98.2	(RUNOFF)
17.34	2.2	(RUNOFF)
24.00	1.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
7.01 WATERSHED INCHES;		7.9 ACRE-
FEET.		
95 CFS-HRS;		

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	111.9	(RUNOFF)
18.86	2.1	(RUNOFF)
19.75	2.0	(RUNOFF)
24.02	1.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
7.65 WATERSHED INCHES;		10.3 ACRE-
FEET.		
125 CFS-HRS;		

OPERATION RESVOR STRUCTURE 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	111.9	(NULL)
18.86	2.1	(NULL)
19.75	2.0	(NULL)
24.02	1.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99

HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03 SQ.MI.

1.62 CFS	.00	.01	.02	.04	.06	.09	.11
.14							
2.10 CFS	.16	.19	.21	.24	.26	.29	.31
.33							

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2.58 CFS	.35	.38	.40	.43	.45	.47	.49
.51							
3.06 CFS	.53	.55	.57	.59	.62	.65	.67
.68							
3.54 CFS	.71	.73	.75	.76	.77	.79	.82
.84							
4.02 CFS	.86	.89	.92	.94	.95	.95	.97
1.00							
4.50 CFS	1.03	1.05	1.05	1.06	1.08	1.10	1.12
1.14							

4.98	CFS	1.16	1.17	1.18	1.20	1.23	1.26	1.26
1.26								
5.46	CFS	1.27	1.30	1.33	1.36	1.37	1.38	1.38
1.37								
5.94	CFS	1.39	1.44	1.48	1.49	1.50	1.53	1.56
1.58								
6.42	CFS	1.62	1.66	1.70	1.74	1.77	1.79	1.81
1.86								
6.90	CFS	1.90	1.91	1.94	1.99	2.04	2.09	2.12
2.14								
7.38	CFS	2.17	2.22	2.26	2.28	2.31	2.33	2.38
2.42								
7.86	CFS	2.45	2.50	2.54	2.58	2.62	2.67	2.68
2.70								
8.34	CFS	2.76	2.80	2.82	2.85	2.90	2.96	3.01
3.04								
8.82	CFS	3.06	3.08	3.10	3.15	3.23	3.30	3.37
3.46								
9.30	CFS	3.59	3.72	3.83	3.93	4.03	4.14	4.27
4.41								
9.78	CFS	4.55	4.66	4.77	4.87	4.99	5.13	5.28
5.41								
10.26	CFS	5.53	5.63	5.74	5.87	6.02	6.20	6.45
6.78								
10.74	CFS	7.18	7.61	8.06	8.53	8.98	9.45	10.02
10.70								
11.22	CFS	11.50	12.31	13.15	14.01	14.87	15.75	17.47
20.49								
11.70	CFS	23	26	30	36	44	56	75
100								
12.18	CFS	112	99	77	60	47	39	33
29								
12.66	CFS	24.19	20.77	18.57	17.06	15.88	14.87	13.92
13.02								
13.14	CFS	12.13	11.38	10.76	10.22	9.71	9.20	8.70
8.22								
13.62	CFS	7.77	7.38	7.08	6.85	6.66	6.51	6.40
6.29								
14.10	CFS	6.17	6.04	5.89	5.75	5.63	5.53	5.43
5.31								
14.58	CFS	5.17	5.02	4.89	4.78	4.68	4.57	4.45
4.33								
15.06	CFS	4.22	4.09	3.96	3.85	3.78	3.74	3.72
3.71								
15.54	CFS	3.70	3.67	3.62	3.56	3.52	3.51	3.51
3.47								
16.02	CFS	3.41	3.36	3.33	3.31	3.29	3.25	3.21
3.18								
16.50	CFS	3.14	3.09	3.06	3.04	3.02	2.99	2.95
2.92								
16.98	CFS	2.90	2.88	2.85	2.80	2.74	2.70	2.69
2.69								
17.46	CFS	2.65	2.59	2.54	2.50	2.49	2.47	2.43
2.39								
17.94	CFS	2.36	2.35	2.33	2.29	2.25	2.22	2.21
2.19								
18.42	CFS	2.16	2.13	2.14	2.16	2.17	2.15	2.13
2.13								
18.90	CFS	2.13	2.11	2.08	2.07	2.06	2.06	2.06
2.06								
19.38	CFS	2.06	2.06	2.06	2.05	2.02	2.00	2.00
2.00								
19.86	CFS	1.97	1.95	1.95	1.98	1.99	1.97	1.95
1.93								



20.34 CFS	1.92	1.90	1.86	1.86	1.88	1.90	1.88
1.86							
20.82 CFS	1.86	1.86	1.85	1.82	1.80	1.79	1.79
1.79							
21.30 CFS	1.79	1.78	1.78	1.78	1.78	1.75	1.72
1.72							
21.78 CFS	1.73	1.71	1.71	1.72	1.72	1.69	1.67
1.66							
22.26 CFS	1.65	1.65	1.65	1.65	1.65	1.64	1.61
1.58							
22.74 CFS	1.59	1.59	1.56	1.54	1.54	1.57	1.58
1.56							
23.22 CFS	1.53	1.52	1.52	1.51	1.50	1.47	1.45
1.46							
23.70 CFS	1.48	1.48	1.46	1.42	1.41	1.47	1.46
1.13							
24.18 CFS	.67	.35	.18	.09	.05	.02	.01
.00							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.65 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-  
 FEET.

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DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	11	6	4	3	2	2	2	2
DURATION(HRS)	18	20	21					
FLOW(CFS)	1	1	0					

OPERATION RUNOFF XSECTION 119

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.13 28.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.81 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.17 137.4 (NULL)  
 15.82 4.3 (NULL)  
 17.32 3.3 (NULL)  
 21.96 2.1 (NULL)  
 24.01 1.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.49 WATERSHED INCHES; 151 CFS-HRS; 12.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	234.3	(NULL)
15.83	7.2	(NULL)
17.33	5.5	(NULL)
19.74	4.1	(NULL)
20.06	4.1	(NULL)
23.06	3.2	(NULL)
23.72	3.1	(NULL)
24.00	3.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.30 WATERSHED INCHES; 246 CFS-HRS; 20.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 19

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	179.0	(RUNOFF)
15.84	5.4	(RUNOFF)
17.34	4.2	(RUNOFF)
19.75	3.1	(RUNOFF)
20.05	3.1	(RUNOFF)
24.00	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.60 WATERSHED INCHES; 172 CFS-HRS; 14.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	413.1	(NULL)
15.84	12.6	(NULL)
17.34	9.7	(NULL)
19.74	7.2	(NULL)
20.06	7.2	(NULL)
21.95	6.2	(NULL)
24.00	5.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.99 WATERSHED INCHES; 418 CFS-HRS; 34.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.17	588.3	(NULL)
12.57	652.5	(NULL)
15.18	72.7	(NULL)
15.30	67.7	(NULL)
15.41	64.3	(NULL)
15.53	61.8	(NULL)
15.64	59.7	(NULL)
15.76	57.7	(NULL)
15.87	56.6	(NULL)
18.82	37.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.18 WATERSHED INCHES; 1639 CFS-HRS; 135.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 23  
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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.27	529.4	316.48
12.69	615.1	316.66
24.07	26.7	314.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.18 WATERSHED INCHES; 1639 CFS-HRS; 135.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.25	165.8	(RUNOFF)
18.66	4.1	(RUNOFF)
20.68	3.6	(RUNOFF)
23.12	3.0	(RUNOFF)
24.00	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.34 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	160.7	365.43
18.69	4.1	356.71
20.69	3.6	356.67
23.15	3.0	356.62
24.03	2.8	356.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.35 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	237.1	(RUNOFF)
18.65	6.1	(RUNOFF)
20.67	5.3	(RUNOFF)
23.98	4.1	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.26 WATERSHED INCHES; 302 CFS-HRS; 25.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	395.1	(NULL)
18.66	10.2	(NULL)
20.14	9.4	(NULL)
20.68	8.9	(NULL)
23.14	7.4	(NULL)
23.78	7.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.30 WATERSHED INCHES; 509 CFS-HRS; 42.1 ACRE-  
FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	384.2	319.84
20.20	9.4	316.93
20.74	8.9	316.91
23.20	7.4	316.81

23.83 7.0 316.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.29 WATERSHED INCHES; 509 CFS-HRS; 42.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.24 190.4 (RUNOFF)
20.67 4.2 (RUNOFF)
24.01 3.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.89 WATERSHED INCHES; 228 CFS-HRS; 18.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 29

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.26 718.0 (NULL)
12.67 678.3 (NULL)
20.09 39.0 (NULL)
23.08 31.9 (NULL)
24.05 29.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.14 WATERSHED INCHES; 1866 CFS-HRS; 154.2 ACRE-
FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.30 1064.3 (NULL)
12.58 899.7 (NULL)
24.04 36.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.17 WATERSHED INCHES; 2376 CFS-HRS; 196.3 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.30 1064.3 (NULL)
12.58 899.7 (NULL)

24.04 36.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.17 WATERSHED INCHES; 2376 CFS-HRS; 196.3 ACRE-
FEET.

OPERATION RUNOFF XSECTION 31

Table with 3 columns: PEAK TIME(HRS), PEAK DISCHARGE(CFS), PEAK ELEVATION(FEET). Rows show peak values at 12.21, 20.66, 23.11, and 24.02 hours.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-
FEET.

OPERATION REACH XSECTION 32

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Table with 3 columns: PEAK TIME(HRS), PEAK DISCHARGE(CFS), PEAK ELEVATION(FEET). Rows show peak values at 12.31, 20.73, 23.19, and 24.09 hours.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 33

Table with 3 columns: PEAK TIME(HRS), PEAK DISCHARGE(CFS), PEAK ELEVATION(FEET). Rows show peak values at 12.16 and 15.84 hours.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.86 WATERSHED INCHES; 43 CFS-HRS; 3.5 ACRE-
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS
WITH .53 AC-FT ( .10 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 378.24.
\*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	32.9	380.81

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
 \*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	32.9	338.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 35

1

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	118.2	(RUNOFF)
20.86	2.0	(RUNOFF)
24.02	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.86 WATERSHED INCHES; 139 CFS-HRS; 11.5 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
 WITH 1.05 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 354.18.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	96.1	357.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.15 WATERSHED INCHES; 127 CFS-HRS; 10.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	128.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
7.04 WATERSHED INCHES;	163 CFS-HRS;	13.5 ACRE-
FEEET.		

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	128.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
7.04 WATERSHED INCHES;	163 CFS-HRS;	13.5 ACRE-
FEEET.		

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
 \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	128.6	330.88

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
7.04 WATERSHED INCHES;	163 CFS-HRS;	13.5 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	135.6	(RUNOFF)
15.84	3.9	(RUNOFF)
20.84	2.1	(RUNOFF)
24.00	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
7.24 WATERSHED INCHES;	131 CFS-HRS;	10.8 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		



12.17	245.1	(NULL)
20.83	5.1	(NULL)
24.00	4.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.13 WATERSHED INCHES; 294 CFS-HRS; 24.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	245.1	(NULL)
20.83	5.1	(NULL)
24.00	4.2	(NULL)

		HYDROGRAPH POINTS FOR				ALTERNATE = 1,	STORM =99	
HRS	SQ.MI.	MAIN	TIME INCREMENT = .060 hr,	DRAINAGE AREA = .06				
1.74 CFS	.02	.00	.01	.01	.01	.01	.02	.02
2.22 CFS	.12	.02	.03	.03	.04	.05	.07	.10
2.70 CFS	.33	.15	.17	.20	.23	.25	.28	.30
3.18 CFS	.55	.35	.38	.41	.44	.46	.48	.52
3.66 CFS	.76	.57	.58	.61	.64	.67	.70	.73
4.14 CFS	.98	.80	.82	.83	.85	.89	.93	.96
4.62 CFS	1.19	.99	1.02	1.05	1.09	1.11	1.14	1.16
5.10 CFS	1.41	1.21	1.25	1.29	1.32	1.32	1.34	1.36
5.58 CFS	1.65	1.45	1.48	1.51	1.52	1.52	1.54	1.59
6.06 CFS	1.96	1.69	1.70	1.73	1.78	1.81	1.86	1.91
6.54 CFS	2.29	2.00	2.06	2.10	2.11	2.16	2.24	2.27
7.02 CFS	2.74	2.35	2.42	2.49	2.54	2.58	2.61	2.67
7.50 CFS	3.16	2.79	2.82	2.86	2.91	2.98	3.03	3.09
7.98 CFS	3.60	3.22	3.27	3.34	3.39	3.41	3.47	3.57

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8.46 CFS	4.05	3.63	3.70	3.78	3.87	3.93	3.97	4.01
8.94 CFS	4.96	4.10	4.21	4.32	4.39	4.50	4.64	4.81
9.42 CFS	6.72	5.09	5.21	5.33	5.49	5.66	5.92	6.34

9.90 CFS	7.09	7.50	7.99	8.46	8.92	9.34	9.72
10.09							
10.38 CFS	10.48	10.87	11.28	11.74	12.31	13.02	13.78
14.59							
10.86 CFS	15.42	16.28	17.14	18.03	19.20	20.49	21.89
23.33							
11.34 CFS	24.80	26.48	28.15	29.88	33.84	39.18	43.28
48.53							
11.82 CFS	57	69	86	118	163	228	245
216							
12.30 CFS	192	167	144	117	98	84	72
64							
12.78 CFS	58.40	53.18	48.66	44.75	41.25	38.21	36.40
34.78							
13.26 CFS	33.28	31.80	30.35	28.94	27.52	26.17	24.88
23.75							
13.74 CFS	22.75	21.84	21.03	20.31	19.68	19.14	18.58
18.04							
14.22 CFS	17.51	17.03	16.60	16.20	15.80	15.38	14.95
14.53							
14.70 CFS	14.16	13.82	13.49	13.14	12.78	12.45	12.12
11.77							
15.18 CFS	11.44	11.15	10.92	10.73	10.57	10.44	10.32
10.16							
15.66 CFS	9.99	9.81	9.71	9.66	9.55	9.41	9.25
9.13							
16.14 CFS	9.04	8.96	8.87	8.75	8.65	8.56	8.44
8.33							
16.62 CFS	8.24	8.18	8.11	8.00	7.90	7.82	7.77
7.70							
17.10 CFS	7.60	7.48	7.35	7.30	7.29	7.22	7.12
7.00							
17.58 CFS	6.91	6.86	6.81	6.74	6.64	6.57	6.51
6.47							
18.06 CFS	6.41	6.31	6.23	6.18	6.14	6.08	5.99
5.95							
18.54 CFS	5.96	5.96	5.92	5.85	5.82	5.84	5.79
5.73							
19.02 CFS	5.69	5.66	5.64	5.62	5.60	5.59	5.57
5.56							
19.50 CFS	5.55	5.51	5.44	5.43	5.45	5.40	5.35
5.32							
19.98 CFS	5.34	5.37	5.34	5.29	5.26	5.24	5.22
5.15							
20.46 CFS	5.11	5.13	5.15	5.14	5.08	5.05	5.07
5.06							
20.94 CFS	5.00	4.96	4.94	4.92	4.91	4.90	4.88
4.87							
21.42 CFS	4.86	4.86	4.84	4.77	4.74	4.76	4.75
4.70							
21.90 CFS	4.72	4.73	4.68	4.64	4.62	4.60	4.59
4.58							
22.38 CFS	4.57	4.56	4.55	4.52	4.45	4.44	4.46
4.42							
22.86 CFS	4.36	4.34	4.36	4.39	4.36	4.31	4.28
4.27							
23.34 CFS	4.25	4.24	4.21	4.14	4.12	4.16	4.17
4.14							
23.82 CFS	4.08	4.03	4.03	4.18	4.03	3.27	2.72
2.46							
24.30 CFS	2.30	2.18	2.07	1.98	1.89	1.81	1.75
1.74							
24.78 CFS	1.73	1.72	1.71	1.70	1.69		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.13 WATERSHED INCHES; 294 CFS-HRS; 24.3 ACRE-  
FEET.

DURATION(HRS) 2 4 6 8 10 12 14 16  
FLOW(CFS) 28 14 9 7 5 5 4 3

DURATION(HRS) 18 19  
FLOW(CFS) 2 2 TRUNCATED

OPERATION RUNOFF XSECTION 140

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.13 15.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.98 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.17 258.1 (NULL)  
18.82 6.2 (NULL)  
20.83 5.4 (NULL)  
21.73 5.0 (NULL)  
24.00 4.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.91 WATERSHED INCHES; 306 CFS-HRS; 25.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.26 121.2 (RUNOFF)  
18.64 3.2 (RUNOFF)  
23.76 2.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.10 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)

12.30	1183.1	(NULL)
24.04	38.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.17 WATERSHED INCHES; 2530 CFS-HRS; 209.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	1427.4	(NULL)
20.08	56.6	(NULL)
24.04	42.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.24 WATERSHED INCHES; 2838 CFS-HRS; 234.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	1629.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.29 WATERSHED INCHES; 3140 CFS-HRS; 259.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	1574.8	291.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.29 WATERSHED INCHES; 3139 CFS-HRS; 259.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	1574.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.29 WATERSHED INCHES; 3139 CFS-HRS; 259.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.29	140.0	(RUNOFF)
20.10	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.16 WATERSHED INCHES; 190 CFS-HRS; 15.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	175.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.06 WATERSHED INCHES; 245 CFS-HRS; 20.3 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 47

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.30	315.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.10 WATERSHED INCHES; 435 CFS-HRS; 36.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.20	171.6	(RUNOFF)
21.97	3.0	(RUNOFF)
24.03	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.09 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.37	1674.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

6.28 WATERSHED INCHES; 3324 CFS-HRS; 274.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.36 1978.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.26 WATERSHED INCHES; 3759 CFS-HRS; 310.6 ACRE-  
FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.45 1936.0 287.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.25 WATERSHED INCHES; 3757 CFS-HRS; 310.5 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 52

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.17 8.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.63 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.24 8.0 288.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.63 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	1.7	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.85 WATERSHED INCHES;	4 CFS-HRS;	.3 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	112.9	(RUNOFF)
21.97	2.0	(RUNOFF)
24.03	1.8	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.79 WATERSHED INCHES;	120 CFS-HRS;	9.9 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	1988.2	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.24 WATERSHED INCHES;	3878 CFS-HRS;	320.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	9.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.28 WATERSHED INCHES;	13 CFS-HRS;	1.1 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	1994.2	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.16 WATERSHED INCHES;	3891 CFS-HRS;	321.5 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	78.5	(RUNOFF)
24.02	1.3	(RUNOFF)

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99						
	MAIN TIME INCREMENT = .060 hr,			DRAINAGE AREA = .03			
HRS							
SQ.MI.							
8.76 CFS	.49	.52	.54	.56	.59	.62	.65
.69							
9.24 CFS	.73	.77	.82	.87	.92	.97	1.02
1.08							
9.72 CFS	1.15	1.21	1.28	1.34	1.40	1.47	1.54
1.62							
10.20 CFS	1.70	1.78	1.85	1.93	2.02	2.11	2.21
2.34							
10.68 CFS	2.50	2.69	2.91	3.14	3.39	3.65	3.93
4.24							
11.16 CFS	4.63	5.07	5.55	6.07	6.62	7.19	7.81
8.79							
11.64 CFS	10.36	12.19	14.15	16.65	20.13	25.27	33.50
46.51							
12.12 CFS	64.00	77.27	76.01	65.16	52.39	42.68	35.46
30.29							
12.60 CFS	26.22	22.48	19.36	17.08	15.51	14.30	13.32
12.47							
13.08 CFS	11.67	10.91	10.23	9.66	9.16	8.71	8.27
7.84							
13.56 CFS	7.42	7.02	6.66	6.37	6.15	5.96	5.82
5.71							
14.04 CFS	5.61	5.51	5.40	5.28	5.16	5.05	4.96
4.87							
14.52 CFS	4.77	4.66	4.53	4.41	4.31	4.22	4.13
4.02							
15.00 CFS	3.92	3.82	3.71	3.60	3.50	3.42	3.38
3.35							
15.48 CFS	3.34	3.32	3.31	3.27	3.22	3.18	3.17
3.16							
15.96 CFS	3.14	3.09	3.05	3.01	2.99	2.97	2.95
2.91							
16.44 CFS	2.88	2.85	2.81	2.78	2.75	2.74	2.72
2.68							
16.92 CFS	2.65	2.63	2.62	2.60	2.56	2.51	2.47
2.45							
17.40 CFS	2.44	2.42	2.37	2.33	2.29	2.27	2.25
2.22							
17.88 CFS	2.19	2.16	2.14	2.13	2.10	2.07	2.04
2.02							

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18.36 CFS	2.00	1.98	1.96	1.95	1.97	1.97	1.96
1.95							



18.84 CFS 1.88	1.95	1.95	1.93	1.91	1.90	1.89	1.89
19.32 CFS 1.83	1.88	1.88	1.88	1.88	1.88	1.85	1.83
19.80 CFS 1.79	1.83	1.81	1.80	1.79	1.80	1.82	1.81
20.28 CFS 1.73	1.78	1.77	1.75	1.72	1.71	1.72	1.74
20.76 CFS 1.65	1.71	1.71	1.71	1.70	1.68	1.66	1.65
21.24 CFS 1.60	1.64	1.64	1.64	1.64	1.64	1.64	1.62
21.72 CFS 1.55	1.59	1.59	1.58	1.58	1.58	1.58	1.56
22.20 CFS 1.49	1.53	1.53	1.52	1.52	1.52	1.52	1.51
22.68 CFS 1.45	1.47	1.47	1.47	1.45	1.43	1.43	1.44
23.16 CFS 1.35	1.44	1.43	1.41	1.40	1.40	1.39	1.37
23.64 CFS 1.34	1.35	1.36	1.37	1.36	1.33	1.32	1.34
24.12 CFS	1.15	.80	.47				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.92 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.44	2034.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.12 WATERSHED INCHES; 3975 CFS-HRS; 328.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.44	2034.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.12 WATERSHED INCHES; 3975 CFS-HRS; 328.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	47.3	(RUNOFF)
21.96	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 62

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)								PEAK (NULL)															
12.43	2063.1								(NULL)															
HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02 SQ.MI.																								
HRS	2.88	3.36	3.84	4.32	4.80	5.28	5.76	6.24	6.72	7.20	7.68	8.16	8.64	9.12	9.60	10.08	10.56	11.04	11.52	12.00	12.48	12.96	13.44	
CFS	.49	.92	1.69	2.70	3.89	5.85	8.50	11.58	15.74	20.98	27.47	34.63	42.66	52.39	67.64	94	125	178	298	702	2029	1140	628	
	.54	.99	1.80	2.84	4.08	6.15	8.89	12.03	16.37	21.74	28.30	35.64	43.78	53.72	70.21	98	130	189	321	842	1913	1049	594	
	.59	1.08	1.91	2.97	4.28	6.46	9.27	12.50	16.99	22.53	29.14	36.64	44.96	55.19	73.05	102	134	200	348	1041	1759	965	564	
	.64	1.16	2.02	3.10	4.51	6.80	9.64	12.97	17.62	23.35	29.98	37.64	46.19	56.81	76.19	106	139	213	380	1296	1622	890	538	
	.69	1.26	2.14	3.23	4.76	7.12	9.98	13.47	18.26	24.17	30.84	38.62	47.45	58.62	79.58	110	145	227	420	1569	1511	823	515	
	.75	1.36	2.27	3.39	5.02	7.44	10.33	13.99	18.92	24.99	31.74	39.59	48.70	60.62	83.19	114	152	242	469	1811	1415	764	496	
	.80	1.47	2.41	3.55	5.29	7.77	10.72	14.55	19.59	25.81	32.68	40.58	49.92	62.81	86.90	118	160	259	528	1985	1327	711	479	
	121	168	278	602	2061	1234	666	463																

13.92 CFS	449	435	423	412	401	391	382
372							
14.40 CFS	363	354	345	336	327	318	309
301							
14.88 CFS	293	284	275	266	257	247	236
216							
15.36 CFS	197	181	170	161	156	152	149
146							
15.84 CFS	144	142	140	139	137	136	134
133							
16.32 CFS	131	130	129	127	126	125	124
122							
16.80 CFS	121	120	119	118	117	116	115
114							
17.28 CFS	113	111	110	109	108	107	106
104							
17.76 CFS	103	102	101	100	99	98	96
95							
18.24 CFS	94.41	93.42	92.44	91.45	90.49	89.63	88.87
88.23							
18.72 CFS	87.67	87.23	86.90	86.60	86.26	85.91	85.54
85.16							
19.20 CFS	84.76	84.36	83.98	83.66	83.40	83.18	82.99
82.77							
19.68 CFS	82.51	82.24	81.94	81.56	81.16	80.79	80.49
80.20							
20.16 CFS	79.94	79.72	79.54	79.32	79.02	78.61	78.18
77.76							
20.64 CFS	77.38	77.02	76.70	76.47	76.28	76.04	75.74
75.42							
21.12 CFS	75.09	74.71	74.32	73.94	73.61	73.33	73.10
72.90							
21.60 CFS	72.70	72.45	72.18	71.89	71.54	71.20	70.91
70.66							
22.08 CFS	70.40	70.13	69.85	69.53	69.18	68.82	68.50
68.22							
22.56 CFS	67.96	67.69	67.39	67.09	66.76	66.37	65.94
65.55							
23.04 CFS	65.22	64.93	64.66	64.42	64.23	64.02	63.76
63.46							
23.52 CFS	63.09	62.70	62.33	61.98	61.65	61.34	61.05
60.79							
24.00 CFS	60.62	60.38	59.55	57.82	55.11	51.26	46.27
40.55							

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24.48 CFS	34.83	29.68	25.34	21.81	18.97	16.80	15.22
14.11							
24.96 CFS	13.32	12.76					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.10 WATERSHED INCHES; 4029 CFS-HRS; 333.0 ACRE-FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	2001.5	251.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 4028 CFS-HRS; 332.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	30.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	24.7	335.67

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	24.4	301.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	139.6	(RUNOFF)
20.10	3.1	(RUNOFF)
24.02	2.3	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 145 CFS-HRS; 11.9 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS. \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS. \*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.42	70.1	297.03
20.12	3.1	287.70
24.04	2.3	287.60

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.89 WATERSHED INCHES; 145 CFS-HRS; 11.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.51	90.2	(NULL)
18.87	4.3	(NULL)
23.11	3.2	(NULL)
24.04	3.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.22 WATERSHED INCHES; 191 CFS-HRS; 15.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	273.8	(RUNOFF)
18.64	6.1	(RUNOFF)
18.87	6.0	(RUNOFF)
20.87	5.3	(RUNOFF)
24.02	4.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.60 WATERSHED INCHES; 281 CFS-HRS; 23.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 69

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	323.9	(NULL)
18.87	10.3	(NULL)
20.64	9.2	(NULL)
20.86	9.0	(NULL)
21.97	8.3	(NULL)
23.75	7.2	(NULL)
24.03	7.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.44 WATERSHED INCHES; 473 CFS-HRS; 39.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	243.9	249.18
20.14	9.6	247.80
24.09	7.1	247.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.44 WATERSHED INCHES; 473 CFS-HRS; 39.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	54.7	(RUNOFF)
17.33	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	44.5	267.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.07 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	40.6	248.21

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	312.6	(RUNOFF)
15.84	12.1	(RUNOFF)
17.34	9.4	(RUNOFF)
19.75	7.1	(RUNOFF)
20.08	7.0	(RUNOFF)
21.96	6.2	(RUNOFF)
24.01	5.3	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .11  
 SQ.MI.

HRS	8.82	9.30	9.78	10.26	10.74	11.22	11.70	12.18	12.66	13.14	13.62	14.10	14.58	15.06	15.54	16.02	16.50	16.98	17.46	17.94	18.42
CFS	.43	1.24	2.56	4.40	7.57	15.80	43	313	72.72	39.05	25.51	20.70	17.45	14.32	12.71	11.74	10.85	10.07	9.23	8.25	7.55
	.51	1.38	2.76	4.65	8.30	17.48	50	268	63.35	36.77	24.32	20.26	16.96	13.89	12.61	11.57	10.69	10.03	9.01	8.21	7.48
	.59	1.53	2.95	4.91	9.08	19.28	61	207	57.67	34.96	23.42	19.77	16.53	13.46	12.43	11.47	10.58	9.92	8.83	8.15	7.54
	.68	1.67	3.16	5.20	9.92	21.25	75	164	53.61	33.30	22.72	19.33	16.19	13.12	12.21	11.42	10.53	9.73	8.73	8.01	7.62
	.78	1.82	3.39	5.52	10.78	23.29	98	133	50.33	31.70	22.16	18.96	15.87	12.90	12.09	11.37	10.49	9.50	8.68	7.87	7.63
	.88	1.98	3.63	5.89	11.71	25.46	135	112	47.44	30.10	21.73	18.65	15.52	12.80	12.11	11.23	10.38	9.38	8.62	7.78	7.53
	.98	2.17	3.89	6.35	12.86	29.59	195	98	44.61	28.51	21.39	18.33	15.09	12.75	12.09	11.09	10.22	9.40	8.48	7.74	7.47

7.52								
18.90	CFS	7.51	7.41	7.33	7.29	7.27	7.26	7.26
7.26								
19.38	CFS	7.26	7.26	7.26	7.23	7.10	7.03	7.08
7.06								
19.86	CFS	6.96	6.88	6.91	7.03	7.04	6.95	6.88
6.84								
20.34	CFS	6.81	6.70	6.58	6.60	6.70	6.74	6.67
6.57								
20.82	CFS	6.60	6.62	6.54	6.44	6.39	6.37	6.36
6.35								
21.30	CFS	6.35	6.35	6.35	6.35	6.34	6.23	6.12
6.14								
21.78	CFS	6.16	6.10	6.10	6.16	6.11	6.01	5.94
5.91								
22.26	CFS	5.90	5.89	5.89	5.89	5.89	5.84	5.72
5.65								
22.74	CFS	5.69	5.68	5.57	5.49	5.52	5.63	5.65
5.56								
23.22	CFS	5.48	5.45	5.43	5.42	5.37	5.24	5.17
5.24								
23.70	CFS	5.32	5.33	5.22	5.09	5.06	5.32	5.21
3.80								
24.18	CFS	2.04	.99	.48				

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.26 WATERSHED INCHES; 302 CFS-HRS; 25.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.53	2101.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.92 WATERSHED INCHES; 4330 CFS-HRS; 357.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.35	274.2	(NULL)
20.14	10.4	(NULL)
23.14	8.3	(NULL)
24.09	7.8	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .15  
SQ.MI.  
6.30 CFS .48 .53 .58 .63 .68 .74 .80



.86								
6.78	CFS	.92	.98	1.05	1.12	1.19	1.25	1.33
1.40								
7.26	CFS	1.49	1.57	1.65	1.74	1.83	1.93	2.03
2.14								
7.74	CFS	2.24	2.36	2.47	2.59	2.72	2.85	2.98
3.12								
8.22	CFS	3.25	3.39	3.52	3.66	3.80	3.94	4.08
4.23								
8.70	CFS	4.38	4.55	4.71	4.86	5.01	5.16	5.31
5.49								
9.18	CFS	5.68	5.88	6.10	6.35	6.63	6.93	7.23
7.55								
9.66	CFS	7.87	8.22	8.60	8.99	9.39	9.80	10.20
10.62								
10.14	CFS	11.06	11.51	11.96	12.41	12.86	13.32	13.78
14.27								
10.62	CFS	14.79	15.38	16.07	16.89	17.84	18.91	20.06
21.27								
11.10	CFS	22.56	23.98	25.58	27.40	29.45	31.72	34.08
36.47								
11.58	CFS	38.96	42.04	46.40	51.65	57.55	64.62	73.63
85.84								
12.06	CFS	107	139	186	243	271	274	267
254								
12.54	CFS	240	227	215	201	187	173	160
147								
13.02	CFS	135	124	115	108	100	92	85
78								
13.50	CFS	72.43	67.81	63.82	60.31	57.32	54.81	52.72
50.99								
13.98	CFS	49.54	48.32	47.28	46.36	45.52	44.72	43.97
43.26								
14.46	CFS	42.60	41.97	41.35	40.72	40.08	39.44	38.81
38.18								
14.94	CFS	37.50	36.79	36.06	35.28	34.46	33.60	32.73
31.88								
15.42	CFS	31.08	30.35	29.54	28.70	27.84	26.92	25.86
24.81								
15.90	CFS	23.86	23.05	22.33	21.70	21.15	20.62	20.19
19.83								
16.38	CFS	19.51	19.22	18.95	18.66	18.34	18.04	17.76
17.51								
16.86	CFS	17.25	16.99	16.73	16.48	16.26	16.05	15.82
15.57								
17.34	CFS	15.31	15.11	14.95	14.78	14.59	14.37	14.16
13.97								
17.82	CFS	13.80	13.62	13.44	13.26	13.10	12.95	12.80
12.63								
18.30	CFS	12.42	12.22	12.04	11.87	11.71	11.60	11.53
11.50								
18.78	CFS	11.44	11.38	11.33	11.30	11.25	11.18	11.11
11.05								

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19.26	CFS	11.00	10.95	10.92	10.90	10.88	10.86	10.84
-------	-----	-------	-------	-------	-------	-------	-------	-------

10.79							
19.74 CFS	10.72	10.67	10.63	10.58	10.51	10.45	10.44
10.44							
20.22 CFS	10.43	10.39	10.34	10.29	10.22	10.13	10.05
10.02							
20.70 CFS	10.01	9.99	9.95	9.91	9.89	9.85	9.80
9.73							
21.18 CFS	9.66	9.61	9.57	9.53	9.51	9.49	9.47
9.45							
21.66 CFS	9.41	9.34	9.29	9.25	9.20	9.16	9.15
9.13							
22.14 CFS	9.09	9.02	8.96	8.91	8.87	8.83	8.80
8.78							
22.62 CFS	8.75	8.70	8.62	8.57	8.53	8.47	8.40
8.34							
23.10 CFS	8.33	8.33	8.32	8.27	8.22	8.18	8.14
8.10							
23.58 CFS	8.03	7.95	7.89	7.88	7.87	7.85	7.78
7.71							
24.06 CFS	7.72	7.72	7.37	6.54	5.47	4.44	3.53
2.78							
24.54 CFS	2.18	1.70	1.32	1.02	.79	.61	.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.49 WATERSHED INCHES; 519 CFS-HRS; 42.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	2345.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.87 WATERSHED INCHES; 4849 CFS-HRS; 400.8 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 77.  
 \*\*\*

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	2345.6	231.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.87 WATERSHED INCHES; 4849 CFS-HRS; 400.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	171.1	(RUNOFF)
15.84	6.1	(RUNOFF)
17.34	4.7	(RUNOFF)
21.96	3.1	(RUNOFF)
24.01	2.7	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05  
 HRS SQ.MI.  
 7.98 CFS .47 .51 .55 .59 .62 .66 .71  
 .76  
 8.46 CFS .79 .84 .89 .94 1.00 1.04 1.08  
 1.12

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8.94 CFS	1.17	1.23	1.30	1.36	1.43	1.52	1.62
1.72							
9.42 CFS	1.82	1.91	2.01	2.12	2.24	2.38	2.51
2.63							
9.90 CFS	2.75	2.87	3.01	3.17	3.33	3.49	3.63
3.77							
10.38 CFS	3.92	4.10	4.29	4.51	4.80	5.17	5.59
6.05							
10.86 CFS	6.54	7.05	7.58	8.12	8.82	9.66	10.62
11.62							
11.34 CFS	12.66	13.80	14.95	16.16	18.71	22.84	26.72
30.55							
11.82 CFS	37	45	57	78	111	154	171
141							
12.30 CFS	107	84	67	57	50	43	37
32							
12.78 CFS	29.22	27.20	25.54	24.07	22.61	21.15	19.76
18.60							
13.26 CFS	17.69	16.83	16.01	15.20	14.38	13.60	12.86
12.26							
13.74 CFS	11.82	11.46	11.18	10.96	10.79	10.64	10.44
10.21							
14.22 CFS	9.96	9.73	9.55	9.39	9.23	9.02	8.77
8.52							
14.70 CFS	8.31	8.13	7.97	7.79	7.57	7.37	7.18
6.96							
15.18 CFS	6.75	6.58	6.47	6.42	6.40	6.39	6.38
6.33							
15.66 CFS	6.23	6.11	6.06	6.08	6.06	5.99	5.88
5.79							
16.14 CFS	5.74	5.72	5.69	5.62	5.55	5.50	5.43
5.34							
16.62 CFS	5.29	5.27	5.25	5.19	5.11	5.06	5.04
5.02							
17.10 CFS	4.95	4.85	4.74	4.68	4.70	4.68	4.60
4.49							
17.58 CFS	4.40	4.35	4.33	4.30	4.23	4.15	4.11
4.09							
18.06 CFS	4.06	3.99	3.92	3.88	3.86	3.83	3.76
3.72							
18.54 CFS	3.76	3.80	3.81	3.75	3.72	3.75	3.74
3.69							
19.02 CFS	3.65	3.63	3.62	3.62	3.62	3.62	3.62
3.62							
19.50 CFS	3.62	3.60	3.53	3.50	3.53	3.51	3.46
3.42							
19.98 CFS	3.44	3.50	3.50	3.46	3.42	3.40	3.38

3.33								
20.46 CFS	3.27	3.29	3.34	3.35	3.31	3.26	3.28	
3.29								
20.94 CFS	3.25	3.20	3.17	3.16	3.16	3.16	3.16	
3.16								
21.42 CFS	3.16	3.16	3.15	3.09	3.03	3.05	3.06	
3.02								
21.90 CFS	3.03	3.06	3.03	2.98	2.95	2.93	2.93	
2.92								
22.38 CFS	2.92	2.92	2.92	2.90	2.83	2.80	2.83	
2.81								
22.86 CFS	2.76	2.72	2.74	2.80	2.80	2.75	2.72	
2.70								
23.34 CFS	2.69	2.69	2.66	2.59	2.56	2.60	2.64	
2.64								
23.82 CFS	2.58	2.51	2.51	2.66	2.60	1.82	.92	
.43								

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.96 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.51	2398.5	(NULL)
23.98	76.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.84 WATERSHED INCHES; 5013 CFS-HRS; 414.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 80

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.59	2377.5	219.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.84 WATERSHED INCHES; 5012 CFS-HRS; 414.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	194.0	(RUNOFF)
15.84	6.3	(RUNOFF)
17.34	4.9	(RUNOFF)
22.42	3.0	(RUNOFF)

24.00 2.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.34 WATERSHED INCHES; 177 CFS-HRS; 14.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.59 2420.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.82 WATERSHED INCHES; 5188 CFS-HRS; 428.8 ACRE-
FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.17 97.7 (RUNOFF)
15.84 3.6 (RUNOFF)
20.07 2.1 (RUNOFF)
24.01 1.6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.57 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 84

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.59 2445.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.79 WATERSHED INCHES; 5281 CFS-HRS; 436.4 ACRE-
FEET.

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OPERATION RUNOFF XSECTION 85

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.24 307.5 (RUNOFF)
18.67 8.6 (RUNOFF)
20.68 7.6 (RUNOFF)
23.12 6.3 (RUNOFF)
24.01 5.9 (RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99

HRS SQ.MI.	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	.12
8.10	CFS	.48	.57	.65	.73	.82	.91	1.00		
1.09										
8.58	CFS	1.18	1.28	1.39	1.49	1.59	1.69	1.78		
1.89										
9.06	CFS	2.01	2.13	2.27	2.41	2.58	2.76	2.96		
3.15										
9.54	CFS	3.35	3.55	3.78	4.02	4.28	4.54	4.79		
5.05										
10.02	CFS	5.32	5.61	5.92	6.24	6.57	6.88	7.20		
7.54										
10.50	CFS	7.90	8.31	8.79	9.37	10.05	10.86	11.76		
12.74										
10.98	CFS	13.77	14.85	16.08	17.51	19.16	21.02	23.02		
25.21										
11.46	CFS	27.53	30.09	33.52	38.63	45.35	53.04	62.50		
74.86										
11.94	CFS	93	121	165	226	283	307	290		
252										
12.42	CFS	210	176	151	130	112	97	85		
75										
12.90	CFS	68.67	63.09	58.41	54.22	50.47	47.19	44.31		
41.86										
13.38	CFS	39.68	37.64	35.69	33.79	31.99	30.34	28.92		
27.75										
13.86	CFS	26.78	26.01	25.39	24.87	24.40	23.92	23.41		
22.89										
14.34	CFS	22.40	21.95	21.54	21.12	20.66	20.16	19.65		
19.17										
14.82	CFS	18.74	18.33	17.90	17.45	17.00	16.54	16.07		
15.63										
15.30	CFS	15.25	14.96	14.78	14.67	14.59	14.50	14.37		
14.19										
15.78	CFS	14.02	13.90	13.84	13.75	13.61	13.44	13.28		
13.15										
16.26	CFS	13.06	12.95	12.82	12.69	12.55	12.39	12.25		
12.13										
16.74	CFS	12.03	11.94	11.82	11.70	11.59	11.50	11.41		
11.28										
17.22	CFS	11.10	10.91	10.80	10.73	10.64	10.49	10.31		
10.14										
17.70	CFS	10.02	9.92	9.81	9.68	9.55	9.44	9.36		
9.26										
18.18	CFS	9.13	9.01	8.91	8.82	8.73	8.63	8.58		
8.59										
18.66	CFS	8.62	8.60	8.55	8.53	8.52	8.48	8.42		
8.35										
19.14	CFS	8.30	8.27	8.25	8.24	8.24	8.23	8.23		
8.21										
19.62	CFS	8.15	8.08	8.04	8.02	7.97	7.91	7.87		
7.88										
20.10	CFS	7.92	7.92	7.87	7.82	7.76	7.70	7.61		
7.55										
20.58	CFS	7.54	7.57	7.57	7.53	7.50	7.49	7.46		
7.40										
21.06	CFS	7.33	7.27	7.24	7.21	7.20	7.19	7.19		
7.19										
21.54	CFS	7.17	7.13	7.06	7.00	6.98	6.95	6.93		
6.93										
22.02	CFS	6.92	6.88	6.82	6.76	6.71	6.69	6.67		
6.66										
22.50	CFS	6.66	6.64	6.58	6.50	6.46	6.43	6.39		
6.32										

22.98 CFS	6.28	6.30	6.33	6.32	6.28	6.23	6.18
6.15							
23.46 CFS	6.12	6.05	5.97	5.94	5.95	5.98	5.96
5.89							
23.94 CFS	5.83	5.86	5.84	5.35	4.29	3.03	1.93
1.21							
24.42 CFS	.77	.48					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.71 WATERSHED INCHES; 361 CFS-HRS; 29.8 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	2583.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.71 WATERSHED INCHES; 5641 CFS-HRS; 466.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	76.9	(RUNOFF)
15.84	2.2	(RUNOFF)
22.42	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.87 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	2597.6	(NULL)
23.97	88.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55  
 SQ.MI.

3.06 CFS	.49	.54	.59	.65	.71	.77	.84
.91							
3.54 CFS	.98	1.07	1.15	1.25	1.35	1.47	1.58
1.70							
4.02 CFS	1.82	1.94	2.06	2.19	2.31	2.45	2.60
2.75							
4.50 CFS	2.91	3.06	3.20	3.35	3.51	3.69	3.86

4.04								
4.98 CFS	4.23	4.43	4.66	4.91	5.18	5.46	5.73	
6.02								
5.46 CFS	6.33	6.66	7.00	7.35	7.69	8.03	8.38	
8.75								
5.94 CFS	9.16	9.58	9.99	10.38	10.78	11.21	11.65	
12.13								
6.42 CFS	12.66	13.19	13.74	14.33	14.92	15.53	16.20	
16.91								
6.90 CFS	17.60	18.32	19.06	19.83	20.61	21.40	22.21	
23.04								
7.38 CFS	23.92	24.86	25.81	26.79	27.79	28.83	29.90	
30.98								
7.86 CFS	32.09	33.23	34.39	35.55	36.78	38.02	39.26	
40.58								
8.34 CFS	41.95	43.28	44.62	46.01	47.43	48.89	50.36	
51.85								
8.82 CFS	53.38	54.95	56.59	58.36	60.17	61.97	63.84	
65.79								
9.30 CFS	67.88	70.11	72.48	75.02	77.76	80.76	84.01	
87.50								
9.78 CFS	91	95	99	103	108	113	118	
123								
10.26 CFS	128	134	139	144	150	156	162	
169								
10.74 CFS	176	183	192	201	212	223	237	
252								
11.22 CFS	268	287	307	329	353	379	412	
454								
11.70 CFS	501	555	621	707	820	989	1231	
1564								
12.18 CFS	1863	2058	2188	2298	2411	2519	2590	
2587								
12.66 CFS	2506	2367	2208	2054	1915	1789	1668	
1550								

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13.14 CFS	1435	1328	1228	1138	1055	981	915	
857								
13.62 CFS	806	761	723	689	660	636	614	
595								
14.10 CFS	577	561	546	532	519	506	495	
483								
14.58 CFS	472	460	449	438	427	416	405	
395								
15.06 CFS	384	373	362	351	340	328	313	
295								
15.54 CFS	277	261	248	238	230	224	219	
215								
16.02 CFS	211	208	205	202	200	198	195	
193								
16.50 CFS	191	189	187	185	183	181	179	
177								
16.98 CFS	175	174	172	170	168	166	165	
163								
17.46 CFS	162	160	158	156	154	153	151	



149							
17.94 CFS	147	146	144	142	141	139	138
136							
18.42 CFS	135	133	132	131	130	129	128
127							
18.90 CFS	126	126	125	124	124	123	123
122							
19.38 CFS	122	122	121	121	120	120	119
119							
19.86 CFS	119	118	118	117	117	117	116
116							
20.34 CFS	115	115	114	114	113	113	112
112							
20.82 CFS	111	111	110	110	109	109	109
108							
21.30 CFS	108	107	107	106	106	106	105
105							
21.78 CFS	104	104	104	103	103	102	102
101							
22.26 CFS	101	100	100	100	99	99	98
98							
22.74 CFS	97.27	96.84	96.30	95.71	95.23	94.94	94.60
94.13							
23.22 CFS	93.60	93.09	92.67	92.32	91.92	91.35	90.79
90.38							
23.70 CFS	90.10	89.77	89.24	88.57	88.01	88.04	87.56
84.66							
24.18 CFS	80.11	75.04	70.18	65.58	60.79	55.48	49.65
43.58							
24.66 CFS	37.68	32.32	27.67	23.78	20.62	18.16	16.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.72 WATERSHED INCHES; 5712 CFS-HRS; 472.0 ACRE-FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)

RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.  
 RAINTABLE NUMBER 9, ARC 2  
 MAIN TIME INCREMENT .060 HOURS

ALTERNATE		1	STORM		2			
STRUCTURE	11	RESVOR	.09	1.39	382.15	12.47	51	566.7
XSECTION	8	REACH	.17	1.31	357.10	12.52	84	494.1
STRUCTURE	21	RESVOR	.07	1.91	374.07	13.56F	10F	142.9
STRUCTURE	22	RESVOR	.07	1.91	353.09	13.68F	10F	142.9
XSECTION	15	ADDHYD	.32	1.39	---	12.47	112	350.0
STRUCTURE	23	RESVOR	.32	1.40	337.25	12.61	106	331.3
XSECTION	16	REACH	.32	1.40	332.26	12.61	106	331.3
STRUCTURE	24	RESVOR	.03	2.46	---	12.18	38	1266.7
XSECTION	20	ADDHYD	.05	2.19	---	12.16	75	1500.0
XSECTION	23	REACH	.41	1.52	315.41	12.37	165	402.4
STRUCTURE	31	RESVOR	.05	1.55	362.31	12.46	28	560.0
STRUCTURE	1	RESVOR	.60	1.50	---	12.36	274	456.7
STRUCTURE	32	RESVOR	.01	2.01	379.28	13.56R	1R	100.0
STRUCTURE	33	RESVOR	.03	2.08	355.98	12.47	18	600.0
STRUCTURE	34	RESVOR	.04	2.06	---	12.48	18	450.0
STRUCTURE	35	RESVOR	.06	2.10	---	12.15	45	750.0
XSECTION	141	ADDHYD	.07	1.98	---	12.15	46	657.1
XSECTION	44	REACH	.77	1.57	290.18	12.51	371	481.8
STRUCTURE	2	RESVOR	.77	1.57	---	12.51	371	481.8
XSECTION	49	ADDHYD	.82	1.56	---	12.50	388	473.2
XSECTION	51	REACH	.93	1.54	284.58	12.60	432	464.5
XSECTION	60	ADDHYD	1.01	1.49	---	12.59	446	441.6
STRUCTURE	3	RESVOR	1.01	1.49	---	12.59	446	441.6
XSECTION	63	REACH	1.02	1.48	249.57	12.76	423	414.7
STRUCTURE	61	RESVOR	.01	1.71	332.36	12.74	5	500.0
STRUCTURE	62	RESVOR	.05	.83	290.42	12.43	12	240.0
STRUCTURE	63	RESVOR	.01	1.40	263.40	12.49	3	300.0
XSECTION	76	ADDHYD	1.28	1.36	---	12.73	472	368.8

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)				

ALTERNATE 1 STORM 2  
-----

XSECTION	77	REACH	1.28	1.36	229.24	12.80	471	368.0
XSECTION	88	ADDHYD	1.55	1.28	---	12.78	506	326.5

RAINFALL OF 4.91 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 10

STRUCTURE	11	RESVOR	.09	2.81	383.02	12.34	121	1344.4
XSECTION	8	REACH	.17	2.70	357.82	12.43	212	1247.1
STRUCTURE	21	RESVOR	.07	3.49	376.27	12.68	61	871.4
STRUCTURE	22	RESVOR	.07	3.49	355.97	12.81	57	814.3
XSECTION	15	ADDHYD	.32	2.79	---	12.41	279	871.9
STRUCTURE	23	RESVOR	.32	2.79	341.39	12.83	182	568.8
XSECTION	16	REACH	.32	2.79	332.78	12.83	182	568.8
STRUCTURE	24	RESVOR	.03	4.13	---	12.18	63	2100.0
XSECTION	20	ADDHYD	.05	3.82	---	12.16	127	2540.0
XSECTION	23	REACH	.41	2.95	315.87	12.29	292	712.2
STRUCTURE	31	RESVOR	.05	3.02	363.94	12.32	78	1560.0
STRUCTURE	1	RESVOR	.60	2.93	---	12.33	527	878.3
STRUCTURE	32	RESVOR	.01	3.48	380.16	12.40	9	900.0
STRUCTURE	33	RESVOR	.03	3.67	357.05	12.32	49	1633.3
STRUCTURE	34	RESVOR	.04	3.62	---	12.35	54	1350.0
STRUCTURE	35	RESVOR	.06	3.69	---	12.18	101	1683.3
XSECTION	141	ADDHYD	.07	3.53	---	12.18	106	1514.3
XSECTION	44	REACH	.77	3.02	290.90	12.43	757	983.1
STRUCTURE	2	RESVOR	.77	3.02	---	12.43	757	983.1
XSECTION	49	ADDHYD	.82	3.01	---	12.42	799	974.4
XSECTION	51	REACH	.93	2.99	285.79	12.50	910	978.5
XSECTION	60	ADDHYD	1.01	2.91	---	12.49	946	936.6
STRUCTURE	3	RESVOR	1.01	2.91	---	12.49	946	936.6
XSECTION	63	REACH	1.02	2.89	250.32	12.62	916	898.0

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 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)					
ALTERNATE	1	STORM	10					
STRUCTURE	61	RESVOR	.01	3.24	334.33	12.74	8	800.0

STRUCTURE	62	RESVOR	.05	1.98	293.76	12.62	18	360.0
STRUCTURE	63	RESVOR	.01	2.82	265.90	12.33	10	1000.0
XSECTION	76	ADDHYD	1.28	2.72	---	12.60	1045	816.4
XSECTION	77	REACH	1.28	2.72	230.44	12.66	1044	815.6
XSECTION	88	ADDHYD	1.55	2.61	---	12.71	1129	728.4

RAINFALL OF 7.23 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE		1	STORM	50				
STRUCTURE	11	RESVOR	.09	4.89	384.18	12.32	219	2433.3
XSECTION	8	REACH	.17	4.75	358.49	12.41	387	2276.5
STRUCTURE	21	RESVOR	.07	5.58	377.76	12.51	140	2000.0
STRUCTURE	22	RESVOR	.07	5.57	359.61	12.80	112	1600.0
XSECTION	15	ADDHYD	.32	4.83	---	12.40	583	1821.9
STRUCTURE	23	RESVOR	.32	4.85	346.87	12.73	368	1150.0
XSECTION	16	REACH	.32	4.85	333.90	12.73	368	1150.0
STRUCTURE	24	RESVOR	.03	6.42	---	12.18	95	3166.7
XSECTION	20	ADDHYD	.05	6.08	---	12.16	197	3940.0
XSECTION	23	REACH	.41	5.02	316.28	12.27	441	1075.6
STRUCTURE	31	RESVOR	.05	5.15	365.04	12.30	132	2640.0
STRUCTURE	1	RESVOR	.60	5.02	---	12.31	876	1460.0
STRUCTURE	32	RESVOR	.01	5.55	380.63	12.24	29	2900.0
STRUCTURE	33	RESVOR	.03	5.93	357.61	12.27	85	2833.3
STRUCTURE	34	RESVOR	.04	5.84	---	12.26	114	2850.0
STRUCTURE	35	RESVOR	.06	5.92	---	12.19	206	3433.3
XSECTION	141	ADDHYD	.07	5.72	---	12.18	216	3085.7
XSECTION	44	REACH	.77	5.13	291.65	12.39	1296	1683.1
STRUCTURE	2	RESVOR	.77	5.13	---	12.39	1296	1683.1
XSECTION	49	ADDHYD	.82	5.12	---	12.38	1376	1678.0

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A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:

F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE AREA	RUNOFF AMOUNT	ELEVATION (FT)	PEAK DISCHARGE			
					TIME (HR)	RATE (CFS)	RATE (CSM)	
ALTERNATE	1	STORM	50					
XSECTION	51	REACH	.93	5.09	286.99	12.46	1582	1701.1
XSECTION	60	ADDHYD	1.01	4.98	---	12.45	1659	1642.6

STRUCTURE	3	RESVOR	1.01	4.98	---	12.45	1659	1642.6
XSECTION	63	REACH	1.02	4.96	251.10	12.55	1624	1592.2
STRUCTURE	61	RESVOR	.01	5.41	335.25	12.57	19	1900.0
STRUCTURE	62	RESVOR	.05	3.83	296.06	12.44	52	1040.0
STRUCTURE	63	RESVOR	.01	4.90	267.40	12.24	27	2700.0
XSECTION	76	ADDHYD	1.28	4.75	---	12.54	1888	1475.0
XSECTION	77	REACH	1.28	4.75	231.43	12.54	1888	1475.0
XSECTION	88	ADDHYD	1.55	4.60	---	12.58	2094	1351.0

RAINFALL OF 8.47 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 99

STRUCTURE	11	RESVOR	.09	6.04	384.78	12.32	269	2988.9
XSECTION	8	REACH	.17	5.90	358.76	12.40	479	2817.6
STRUCTURE	21	RESVOR	.07	6.69	378.71	12.54	154	2200.0
STRUCTURE	22	RESVOR	.07	6.68	360.78	12.91	127	1814.3
XSECTION	15	ADDHYD	.32	5.96	---	12.36	717	2240.6
STRUCTURE	23	RESVOR	.32	5.96	347.71	12.59	552	1725.0
XSECTION	16	REACH	.32	5.96	334.88	12.59	552	1725.0
STRUCTURE	24	RESVOR	.03	7.65	---	12.18	112	3733.3
XSECTION	20	ADDHYD	.05	7.30	---	12.16	234	4680.0
XSECTION	23	REACH	.41	6.18	316.66	12.69	615	1500.0
STRUCTURE	31	RESVOR	.05	6.35	365.43	12.30	161	3220.0
STRUCTURE	1	RESVOR	.60	6.17	---	12.30	1064	1773.3
STRUCTURE	32	RESVOR	.01	6.68	380.81	12.23	33	3300.0
STRUCTURE	33	RESVOR	.03	7.15	357.96	12.29	96	3200.0
STRUCTURE	34	RESVOR	.04	7.04	---	12.27	129	3225.0
STRUCTURE	35	RESVOR	.06	7.13	---	12.17	245	4083.3

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A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:

F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE	1	STORM	99				
XSECTION	141	ADDHYD	.07	6.91	---	12.17	3685.7
XSECTION	44	REACH	.77	6.29	291.98	12.38	2045.5
STRUCTURE	2	RESVOR	.77	6.29	---	12.38	2045.5

XSECTION	49	ADDHYD	.82	6.28	---	12.37	1675	2042.7
XSECTION	51	REACH	.93	6.25	287.50	12.45	1936	2081.7
XSECTION	60	ADDHYD	1.01	6.12	---	12.44	2035	2014.9
STRUCTURE	3	RESVOR	1.01	6.12	---	12.44	2035	2014.9
XSECTION	63	REACH	1.02	6.10	251.46	12.54	2001	1961.8
STRUCTURE	61	RESVOR	.01	6.61	335.67	12.55	25	2500.0
STRUCTURE	62	RESVOR	.05	4.89	297.03	12.42	70	1400.0
STRUCTURE	63	RESVOR	.01	6.07	267.78	12.19	44	4400.0
XSECTION	76	ADDHYD	1.28	5.87	---	12.52	2346	1832.8
XSECTION	77	REACH	1.28	5.87	231.82	12.52	2346	1832.8
XSECTION	88	ADDHYD	1.55	5.72	---	12.57	2598	1676.1

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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05/05/\*\* CN MGMT- PROP COND.- 2,10,50,100 yr NOAA Dist

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SUMMARY, JOB NO. 1

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

		HYDROGRAPH INFORMATION				ROUTING PARAMETERS					
XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO (Q*/I)	ATT-KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
BASEFLOW IS .0 CFS											
ALTERNATE		1	STORM		2						
2	1170		24	12.3	23	12.4	1.55	1.37	.029	.952	
	.58										
5	797		51	12.5	50	12.5	2.26	1.19	.019	.989	
	.75?										
8	1221		85	12.4	84	12.5	1.15	1.48	.009	.990	
	.76?										
16	920		106	12.6	106	12.6	3.61	1.49	.001	1.000	
	1.00?										
23	1379		201	12.2	165	12.4	1.09	1.16	.057	.817	
	.34										
27	1021		84	12.3	77	12.4	1.10	1.18	.061	.910	
	.41										
32	1603		76	12.2	68	12.4	1.28	1.33	.055	.899	
	.48										
34	583		1	13.6	1	13.7	1.14	1.62	.001	.998	
	.49										
37	934		18	12.5	18	12.5	2.31	1.55	.002	.999	

.92?									
44	1428	400	12.4	370	12.5	.45	1.34	.034	.924
.41									
51	1275	448	12.5	432	12.6	.59	1.31	.025	.964
.48									
53	652	0	.0	0	.0	.000	.00	.000	.000
.00									
63	1959	449	12.6	423	12.8	.77	1.28	.041	.942
.36									
65	1283	5	12.7	5	12.8	2.47	1.43	.012	.996
.53									
70	2166	68	12.2	60	12.3	1.68	1.37	.040	.883
.47									
72	1081	3	12.5	3	12.7	1.50	1.61	.007	.994
.49									
77	884	471	12.7	470	12.8	1.92	1.22	.008	.998
.87?									
80	1296	476	12.8	476	12.8	1.59	1.44	.003	1.000
1.00?									

ALTERNATE 1 STORM 10

2	1170	48	12.3	45	12.4	1.90	1.19	.047	.937
.52									
5	797	121	12.4	120	12.4	2.00	1.25	.016	.996
.87?									
8	1221	213	12.4	212	12.4	1.26	1.44	.009	.993
.88?									
16	920	182	12.8	182	12.8	3.61	1.49	.001	1.000
1.00?									
23	1379	339	12.2	292	12.3	.77	1.25	.032	.862
.41									
27	1021	191	12.3	174	12.4	.73	1.29	.043	.911
.52									
32	1603	136	12.2	125	12.3	1.35	1.31	.047	.925
.52									
34	583	9	12.4	9	12.5	1.14	1.62	.004	.994
.86?									

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

05/05/\*\* CN MGMT- PROP COND.- 2,10,50,100 yr NOAA Dist

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION

ROUTING PARAMETERS

FLOOD INFLOW OUTFLOW Q-A EQ. PEAK ATT-

XSEC ID	REACH LENGTH (FT)	PLAIN LENGTH (FT)	PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)	LENGTH FACTOR (k*)	RATIO Q/I (Q*)	KIN (C)
ALTERNATE 1			STORM 10								
37 1.00? 44 .51 51 .58 53 .47 63 .46	934 1428 1275 652 1959		54 796 933 0 956	12.4 12.3 12.4 12.5 12.5	54 757 907 0 915	12.4 12.4 12.5 12.7 12.6	2.32 .30 .46 2.05 .46	1.54 1.43 1.36 1.40 1.39	.003 .020 .018 .010 .024	1.000 .951 .973 .932 .957	
65 .59 70 .21 72 .61 77 .94? 80 .87?	1283 2166 1081 884 1296		8 141 9 1045 1061	12.7 12.2 12.4 12.6 12.7	8 96 9 1044 1058	12.8 12.4 12.4 12.7 12.7	2.46 1.92 1.48 1.95 3.27	1.41 1.04 1.55 1.22 1.18	.010 .168 .008 .008 .010	.978 .679 .934 .999 .998	
ALTERNATE 1			STORM 50								
2 .94? 5 .95? 8 .96? 16 1.00? 23 .45	1170 797 1221 920 1379		81 217 387 367 497	12.3 12.3 12.4 12.7 12.2	81 216 386 367 438	12.4 12.4 12.4 12.7 12.3	.29 1.85 1.29 3.85 .66	2.00 1.28 1.44 1.46 1.29	.003 .012 .008 .001 .021	.998 .995 .999 1.000 .882	
27 .65 32 .56 34 1.00? 37 1.00? 44 .59	1021 1603 583 934 1428		323 216 29 113 1346	12.3 12.2 12.2 12.2 12.3	312 204 29 113 1286	12.4 12.3 12.2 12.2 12.4	.40 1.38 1.14 2.43 .26	1.45 1.30 1.61 1.51 1.46	.021 .040 .006 .004 .014	.967 .944 1.000 1.000 .955	
51 .64 53 .75? 63 .54 65 .67? 70 .24	1275 652 1959 1283 2166		1622 5 1673 19 245	12.4 12.2 12.4 12.6 12.2	1576 4 1623 19 183	12.5 12.2 12.5 12.7 12.4	.43 2.05 .37 2.49 1.61	1.38 1.40 1.43 1.38 1.09	.014 .017 .017 .012 .134	.972 .927 .970 .986 .745	



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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.

QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;

ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION					ROUTING PARAMETERS						
XSEC ID	REACH LENGTH COEFF	FLOOD PLAIN	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR	PEAK RATIO Q/I	ATT- KIN (C)
		LENGTH	PEAK	TIME	PEAK	TIME	COEFF	POWER			
(FT)	(FT)	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)	(Q*)	(C)	
ALTERNATE		1	STORM	50							
72	1081		27	12.2	25	12.3	1.66	1.42	.017	.927	
	.70?										
77	884		1888	12.5	1888	12.5	1.80	1.23	.007	1.000	
	1.00?										
80	1296		1929	12.5	1922	12.6	4.35	1.11	.014	.996	
	.85?										
ALTERNATE		1	STORM	99							
2	1170		99	12.3	99	12.4	.27	2.00	.002	.999	
	.97?										
5	797		267	12.3	267	12.4	1.81	1.28	.011	.998	
	.97?										
8	1221		478	12.4	478	12.4	1.30	1.43	.007	1.000	
	.99?										
16	920		552	12.6	552	12.6	4.18	1.43	.001	1.000	
	1.00?										
23	1379		646	12.5	612	12.7	.61	1.31	.019	.947	
	.48										
27	1021		392	12.3	384	12.4	.35	1.48	.017	.980	
	.70?										
32	1603		260	12.2	244	12.3	1.50	1.27	.043	.941	
	.55										
34	583		33	12.2	33	12.2	1.15	1.61	.005	1.000	
	1.00?										
37	934		127	12.3	127	12.3	2.45	1.51	.003	1.000	
	1.00?										
44	1428		1626	12.3	1568	12.4	.26	1.46	.013	.965	
	.62										
51	1275		1978	12.4	1926	12.4	.43	1.38	.013	.973	
	.67?										
53	652		8	12.2	8	12.2	2.05	1.40	.017	.971	
	.83?										

63	1959	2061	12.4	2001	12.5	.36	1.44	.015	.971
.57									
65	1283	25	12.5	24	12.7	2.51	1.37	.012	.982
.70?									
70	2166	320	12.2	243	12.4	1.26	1.16	.113	.761
.27									
72	1081	44	12.2	39	12.2	1.69	1.41	.021	.888
.76?									
77	884	2339	12.5	2339	12.5	1.71	1.24	.006	1.000
1.00?									
80	1296	2389	12.5	2377	12.6	5.89	1.02	.024	.995
.72?									

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....			
		2	10	50	99
STRUCTURE 63	.01				
ALTERNATE 1		3	10	27	44
STRUCTURE 62	.05				
ALTERNATE 1		12	18	52	70
STRUCTURE 61	.01				
ALTERNATE 1		5	8	19	25
STRUCTURE 35	.06				
ALTERNATE 1		45	101	206	245
STRUCTURE 34	.04				
ALTERNATE 1		18	54	114	129
STRUCTURE 33	.03				
ALTERNATE 1		18	49	85	96
STRUCTURE 32	.01				
ALTERNATE 1		1?	9	29	33
STRUCTURE 31	.05				

ALTERNATE	1		28	78	132	161
STRUCTURE	24	.03				
-----						
ALTERNATE	1		38	63	95	112
STRUCTURE	23	.32				
-----						
ALTERNATE	1		106	182	368	552
STRUCTURE	22	.07				
-----						
ALTERNATE	1		10	57	112	127
STRUCTURE	21	.07				
-----						
ALTERNATE	1		10	61	140	154
STRUCTURE	11	.09				
-----						
ALTERNATE	1		51	121	219	269
STRUCTURE	3	1.01				
-----						

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....			
		2	10	50	99
STRUCTURE 3	1.01				
-----					
ALTERNATE 1		446	946	1659	2035
STRUCTURE 2	.77				
-----					
ALTERNATE 1		371	757	1296	1575
STRUCTURE 1	.60				
-----					
ALTERNATE 1		274	527	876	1064
XSECTION 8	.17				
-----					
ALTERNATE 1		84	212	387	479
XSECTION 15	.32				
-----					
ALTERNATE 1		112	279	583	717

XSECTION	16	.32				
ALTERNATE	1		106	182	368	552
XSECTION	20	.05				
ALTERNATE	1		75	127	197	234
XSECTION	23	.41				
ALTERNATE	1		165	292	441	615
XSECTION	44	.77				
ALTERNATE	1		371	757	1296	1575
XSECTION	49	.82				
ALTERNATE	1		388	799	1376	1675
XSECTION	51	.93				
ALTERNATE	1		432	910	1582	1936
XSECTION	60	1.01				
ALTERNATE	1		446	946	1659	2035
XSECTION	63	1.02				
ALTERNATE	1		423	916	1624	2001
XSECTION	76	1.28				
ALTERNATE	1		472	1045	1888	2346

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	10	50	99	
XSECTION	77	1.28				
ALTERNATE	1		471	1044	1888	2346
XSECTION	88	1.55				
ALTERNATE	1		506	1129	2094	2598

```

XSECTION  141          .07
-----
ALTERNATE  1          46          106          216          258
1
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      Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,
      VERSION
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2.04TEST

```

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST  
FILES

```

INPUT  = pondh.dat          , GIVEN DATA FILE
OUTPUT = pondh.OUT         , DATED
05/05/**,09:25:30

```

FILES GENERATED - DATED 05/05/\*\*,09:25:30

NONE!

TOTAL NUMBER OF WARNINGS = 40, MESSAGES = 23

\*\*\* TR-20 RUN COMPLETED \*\*\*

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\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20  
HYDROLOGY\*\*\*\*\*

JOB TR-20		NOPLOTS			
TITLE Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,					
TITLE CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist;H1&H8UG;GHCHUG					
2	XSECTN	002	1.0	389.50	
8			389.00	0.00	0.00
8			389.25	1.65	1.06
8			389.50	6.25	2.75
8			389.75	14.40	5.06
8			390.00	26.75	8.00
8			390.25	45.54	14.33
8			390.50	68.67	15.00
8			390.75	96.11	18.88
8			391.00	127.89	23.00
8			391.25	164.08	27.38
8			391.50	204.77	32.00
8			391.75	250.06	36.88
9	ENDTBL				
2	XSECTN	005	1.0	367.00	
8			366.00	0.00	0.00
8			366.50	3.51	1.5
8			367.00	13.55	4.00
8			367.50	30.53	9.00
8			367.75	47.87	13.00
8			368.00	72.23	18.00
8			368.25	104.79	23.98
8			368.50	146.13	30.94
8			368.75	197.14	38.86
8			369.00	258.63	47.75
8			369.25	331.41	57.61
8			369.50	416.25	68.44
9	ENDTBL				
3	STRUCT	11			
8			380.00	0.00	0.00
8			381.00	2.70	0.53
8			382.20	53.00	1.16
8			383.80	186.80	1.40
9	ENDTBL				
2	XSECTN	008	1.0	330.00	
8			356.00	0.00	0.00
8			356.50	20.21	6.94
8			357.00	68.51	15.75
8			357.50	144.11	26.44
8			358.00	248.93	39.00
8			358.50	389.07	53.25
8			359.00	561.31	69.00
8			359.50	767.14	86.25
8			360.00	1008.16	105.00
8			361.00	1375.68	147.50
8			361.50	1604.19	171.38
9	ENDTBL				

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

2	XSECTN	016	1.0	333.08		
8			331.08	0.00	0.00	
8			332.08	80.21	8.00	
8			333.08	225.50	16.00	
8			333.58	310.09	20.00	
8			334.08	399.94	24.00	
8			334.58	493.86	28.00	
8			335.08	590.97	32.00	
8			335.58	690.67	36.00	
8			336.08	792.47	40.00	
8			336.58	896.02	44.00	
9	ENDTBL					
2	XSECTN	023	1.0	314.40		
8			313.22	0.00	0.00	
8			313.51	1.10	0.89	
8			313.81	3.51	1.84	
8			314.10	16.22	5.61	
8			314.40	34.66	9.74	
8			314.68	48.28	24.71	
8			314.96	79.66	42.09	
8			315.24	126.64	61.87	
8			315.52	189.07	84.06	
8			315.80	267.27	108.64	
8			316.08	361.75	135.63	
8			316.36	473.14	165.02	
8			316.64	602.11	196.81	
8			316.92	749.37	231.00	
8			317.20	878.70	277.25	
8			317.48	1103.89	329.14	
8			317.76	1358.10	382.70	
8			318.04	1640.58	437.94	
8			318.32	1950.87	494.86	
8			318.60	2288.69	553.45	
9	ENDTBL					
3	STRUCT	21				
8			364.00	0.00	0.00	
8			366.00	0.30	0.55	
8			368.00	0.50	1.31	
8			369.00	3.20	1.80	
8			370.00	5.20	2.29	
8			372.00	7.80	3.48	
8			374.00	9.60	5.00	
8			375.00	10.40	5.86	
8			376.00	45.30	6.79	
8			376.50	74.10	7.31	
8			377.00	106.80	7.83	
8			378.00	149.80	8.90	
8			379.00	155.60	10.06	
8			380.00	162.00	11.29	
9	ENDTBL					

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

3	STRUCT	22				
8			352.50	0.00	0.00	
8			358.65	100.00	0.91	
8			361.76	140.00	3.28	
8			363.64	160.00	5.47	
8			366.18	180.00	9.58	
8			368.71	200.00	14.77	

8			370.61	250.00	19.31
9	ENDTBL				
3	STRUCT	23			
9	ENDTBL				
2	XSECTN	027	1.0	317.00	
8			316.00	0.00	0.00
8			316.50	2.68	2.59
8			317.00	10.37	6.88
8			317.50	24.26	12.84
8			318.00	45.55	20.50
8			318.50	70.64	34.75
8			319.00	137.01	60.50
8			319.25	200.57	76.25
8			319.50	273.06	92.00
8			319.75	353.76	107.75
8			320.00	442.13	123.50
8			320.50	640.03	155.00
8			321.00	863.72	186.50
9	ENDTBL				
2	XSECTN	032	1.0	313.00	
8			310.00	0.00	0.00
8			311.00	12.25	5.50
8			312.00	52.16	16.00
8			312.50	83.38	23.13
8			313.00	123.94	31.50
8			313.25	148.02	36.16
8			313.50	174.79	41.13
8			313.75	204.34	46.41
8			314.00	236.81	52.00
8			314.50	278.65	65.75
8			315.00	353.72	84.00
9	ENDTBL				
2	XSECTN	034	1.0	338.50	
8			338.00	0.00	0.00
8			338.10	4.87	2.46
8			338.25	22.73	6.38
8			338.50	73.99	13.53
8			338.75	149.34	21.45
8			339.00	247.95	30.13
8			339.50	515.65	49.78
9	ENDTBL				
2	XSECTN	037	1.0	331.00	
8			330.00	0.00	0.00

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			330.25	14.29	3.25
8			330.50	46.85	7.00
8			330.75	95.34	11.25
8			331.00	159.64	16.00
8			331.25	240.13	21.25
8			331.50	337.44	27.00
8			331.75	452.26	33.25
8			332.00	585.36	40.00
8			332.50	875.33	55.81
8			333.00	1272.05	75.25
9	ENDTBL				
2	XSECTN	044	1.0	288.90	
8			287.68	0.00	0.00
8			287.99	1.15	0.94



8			288.29	3.69	1.95
8			288.60	17.06	5.98
8			288.90	36.44	10.37
8			289.19	63.07	39.25
8			289.47	121.85	69.50
8			289.76	206.05	101.12
8			290.05	313.23	134.09
8			290.33	442.07	168.42
8			290.62	591.78	204.12
8			290.91	761.87	241.18
8			291.19	952.02	279.60
8			291.48	1162.04	319.38
8			291.77	1391.84	360.52
8			292.05	1641.40	403.02
8			292.34	1910.74	446.89
8			292.63	2199.92	492.11
8			292.91	2509.04	538.70
8			293.20	2838.22	586.65
9	ENDTBL				
3	STRUCT	31			
8			356.38	0.0	0.00
8			357.26	10.90	0.02
8			357.50	12.30	0.03
8			358.00	14.70	0.05
8			359.00	18.70	0.10
8			360.00	22.00	0.16
8			361.00	24.90	0.25
8			361.50	26.20	0.30
8			362.00	27.50	0.36
8			362.50	28.70	0.43
8			362.90	29.60	0.49
8			363.50	51.30	0.60
8			363.75	65.70	0.67
8			364.00	82.60	0.72
8			364.20	83.30	0.83
8			364.60	100.00	0.88

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			366.80	260.00	1.47
8			366.92	340.00	1.49
8			366.98	380.00	1.50
9	ENDTBL				
3	STRUCT	32			
8			375.40	0.00	0.00
8			379.36	1.00	0.74
8			380.00	5.00	0.89
8			380.20	10.00	0.94
8			380.33	15.00	0.98
8			380.45	20.00	1.01
8			380.55	25.00	1.04
8			380.65	30.00	1.06
8			381.19	40.00	1.21
8			381.78	44.00	1.39
8			382.59	66.00	1.66
8			382.79	88.00	1.75
8			382.89	110.00	1.79
8			382.97	132.00	1.83
9	ENDTBL				
3	STRUCT	33			

8			350.00	0.00	0.00
8			354.30	1.00	1.08
8			354.47	2.00	1.15
8			354.87	5.00	1.30
8			355.38	10.00	1.50
8			356.18	20.00	1.84
8			356.88	40.00	2.15
8			357.27	60.00	2.33
8			357.46	80.00	2.42
8			358.08	100.00	2.73
8			358.14	120.00	2.76
8			358.19	140.00	2.78
8			358.25	171.00	2.81
8			358.27	180.00	2.82
9	ENDTBL				
3	STRUCT	34			
9	ENDTBL				
3	STRUCT	02			
9	ENDTBL				
2	XSECTN	051	1.0	282.40	
8			281.10	0.00	0.00
8			281.42	1.24	1.09
8			281.75	3.96	2.26
8			282.07	18.30	6.92
8			282.40	39.09	12.00
8			282.88	67.33	37.27
8			283.36	131.17	65.87
8			283.84	225.10	97.78
8			284.32	348.01	133.01

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			284.80	499.91	171.56
8			285.28	681.29	213.43
8			285.76	892.92	258.61
8			286.24	1135.70	307.11
8			286.72	1410.63	358.94
8			287.20	1718.74	414.08
8			287.68	2061.13	472.54
8			288.16	2438.87	534.31
8			288.64	2853.08	599.41
8			289.12	3301.76	667.84
8			289.60	3785.91	739.78
9	ENDTBL				
2	XSECTN	053	1.0	289.00	
8			288.00	0.00	0.00
8			288.50	9.00	2.88
8			289.00	34.26	7.50
8			289.50	79.27	13.88
8			290.00	147.75	22.00
8			290.50	227.49	31.94
8			291.00	332.02	43.75
8			291.50	463.75	57.44
8			291.75	540.56	64.98
8			292.00	625.07	73.00
9	ENDTBL				
2	XSECTN	063	1.0	248.40	
8			247.07	0.00	0.00
8			247.41	1.85	1.14
8			247.74	5.93	2.35

8		248.07	27.43	7.18
8		248.40	58.61	12.46
8		248.67	89.70	40.04
8		248.95	158.39	68.99
8		249.22	256.90	99.30
8		249.49	382.40	130.99
8		249.77	533.43	164.04
8		250.04	709.09	198.46
8		250.31	908.86	234.24
8		250.59	1132.40	271.40
8		250.86	1379.55	309.92
8		251.13	1650.25	349.81
8		251.41	1944.49	391.07
8		251.68	2262.35	433.69
8		251.95	2603.94	477.69
8		252.23	2969.40	523.05
8		252.50	3358.93	569.78
9	ENDTBL			
3	STRUCT	61		
8		329.75	0.00	0.00
8		330.00	1.56	0.01
8		332.00	4.37	0.13

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		334.00	5.96	0.39
8		334.10	6.01	0.40
8		334.50	10.20	0.47
8		335.00	16.10	0.56
8		336.00	28.91	0.75
8		337.00	40.10	0.97
9	ENDTBL			
3	STRUCT	62		
8		287.30	0.00	0.00
8		288.00	5.45	0.01
8		289.00	9.05	0.05
8		290.00	11.60	0.13
8		292.00	15.35	0.50
8		294.00	18.40	1.19
8		294.30	18.92	1.26
8		294.50	20.73	1.40
8		295.00	36.40	1.60
8		295.40	38.00	1.80
8		296.00	51.10	2.15
8		297.00	69.60	2.75
8		298.00	86.80	3.44
8		298.68	98.50	3.91
8		298.80	107.56	4.00
9	ENDTBL			
3	STRUCT	63		
8		259.43	0.00	0.00
8		260.00	1.30	0.026
8		260.50	1.70	0.050
8		261.00	2.10	0.075
8		261.50	2.40	0.095
8		262.00	2.70	0.119
8		262.50	2.90	0.160
8		263.00	3.20	0.205
8		263.50	3.40	0.245
8		264.00	3.60	0.285

8		264.50	3.80	0.360
8		265.00	3.90	0.415
8		265.50	4.10	0.480
8		266.00	11.00	0.537
8		266.50	15.40	0.620
8		267.00	16.00	0.709
8		267.50	30.30	0.798
8		268.00	56.00	0.887
8		268.50	145.68	0.976
9	ENDTBL			
2	XSECTN 065	1.0	300.50	
8		300.00	0.00	0.00
8		300.10	0.29	0.23
8		300.25	1.47	0.69
8		300.40	3.55	1.28

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		300.50	5.48	1.75
8		300.60	7.88	2.28
8		300.75	12.45	3.19
8		300.90	18.28	4.23
8		301.00	22.91	5.00
8		301.10	28.18	5.83
8		301.25	37.36	7.19
8		301.40	48.14	8.68
8		301.50	56.26	9.75
9	ENDTBL			
2	XSECTN 070	1.0	248.40	
8		247.07	0.00	0.00
8		247.41	1.85	1.14
8		247.74	5.93	2.35
8		248.07	27.43	7.18
8		248.40	58.61	12.46
8		248.67	89.70	40.04
8		248.95	158.39	68.99
8		249.22	256.90	99.30
8		249.49	382.40	130.99
8		249.77	533.43	164.04
8		250.04	709.09	198.46
8		250.31	908.86	234.24
8		250.59	1132.40	271.40
8		250.86	1379.55	309.92
8		251.13	1650.25	349.81
8		251.41	1944.49	391.07
8		251.68	2262.35	433.69
8		251.95	2603.94	477.69
8		252.23	2969.40	523.05
8		252.50	3358.93	569.78
9	ENDTBL			
2	XSECTN 072	1.0	248.40	
8		247.07	0.00	0.00
8		247.41	1.85	1.14
8		247.74	5.93	2.35
8		248.07	27.43	7.18
8		248.40	58.61	12.46
8		248.67	89.70	40.04
8		248.95	158.39	68.99
8		249.22	256.90	99.30
8		249.49	382.40	130.99

8	249.77	533.43	164.04
8	250.04	709.09	198.46
8	250.31	908.86	234.24
8	250.59	1132.40	271.40
8	250.86	1379.55	309.92
8	251.13	1650.25	349.81
8	251.41	1944.49	391.07
8	251.68	2262.35	433.69

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8	251.95	2603.94	477.69
8	252.23	2969.40	523.05
8	252.50	3358.93	569.78
9	ENDTBL		
2	XSECTN 077	1.0	229.00
8		226.00	0.00
8		226.50	11.73
8		227.00	42.97
8		227.50	96.50
8		228.00	175.93
8		228.50	258.13
8		229.00	385.22
8		229.50	561.82
8		230.00	793.74
8		230.50	1079.38
8		231.00	1462.49
8		231.50	1953.75
8		232.00	2564.16
8		232.50	3408.70
8		233.00	4351.01
9	ENDTBL		
2	XSECTN 080	1.0	212.00
8		210.50	0.00
8		210.75	4.72
8		211.00	15.68
8		211.25	32.36
8		211.50	54.93
8		211.75	83.70
8		212.00	119.05
8		212.25	163.87
8		212.50	215.35
8		212.75	273.55
8		213.00	338.57
8		214.00	669.42
8		215.00	806.07
8		216.00	1088.03
8		217.00	1451.30
8		218.00	1978.93
8		219.00	2262.06
8		220.00	3115.20
8		221.00	4892.67
9	ENDTBL		
3	STRUCT 03		
9	ENDTBL		
3	STRUCT 24		
9	ENDTBL		
3	STRUCT 35		
9	ENDTBL		
3	STRUCT 71		

9 ENDTBL  
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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

2	XSECTN	081	1.0	180.00	
8			175.00	0.00	0.00
8			176.00	84.89	14.48
8			177.00	278.13	31.90
8			178.00	568.14	52.58
8			179.00	956.14	75.60
8			180.00	1449.15	101.88

9	ENDTBL				
2	XSECTN	082	1.0	180.00	
8			175.00	0.00	0.00
8			176.00	84.89	14.48
8			177.00	278.13	31.90
8			178.00	568.14	52.58
8			179.00	956.14	75.60
8			180.00	1449.15	101.88

9	ENDTBL				
3	STRUCT	01			
9	ENDTBL				
3	STRUCT	72			
9	ENDTBL5				
3	STRUCT	73			
9	ENDTBL				
3	STRUCT	81			
8			190.00	0.00	0.00
8			192.00	0.01	1.19
8			194.00	0.02	3.13
8			196.00	0.03	5.24
8			198.00	0.04	7.18
8			200.00	0.05	8.37
8			201.00	310.00	8.38
8			202.00	876.81	8.39
8			203.00	1610.81	8.40

9	ENDTBL				
3	STRUCT	82			
8			308.00	0.00	0.00
8			310.00	0.01	1.36
8			312.00	0.02	3.56
8			314.00	0.03	5.96
8			316.00	0.04	8.16
8			318.00	0.05	9.52
8			319.00	310.00	9.53
8			320.00	876.81	9.54
8			321.00	1610.81	9.55

9	ENDTBL				
3	STRUCT	83			
8			312.00	0.00	0.00
8			314.00	0.01	1.52
8			316.00	0.02	4.00
8			318.00	0.03	6.71
8			320.00	0.04	9.19

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			322.00	0.05	10.71	
8			323.00	310.00	10.72	
8			324.00	876.81	10.73	
8			325.00	1610.81	10.74	
9	ENDTBL					
3	STRUCT	84				
8			348.00	0.00	0.00	
8			350.00	0.01	1.62	
8			352.00	0.02	4.24	
8			354.00	0.03	7.12	
8			356.00	0.04	9.74	
8			358.00	0.05	11.36	
8			359.00	310.00	11.37	
8			360.00	876.81	11.38	
8			361.00	1610.81	11.39	
9	ENDTBL					
5	RAINFL	9	.1			
8		0.0000	0.0013	0.0023	0.0034	0.0044
8		0.0055	0.0065	0.0076	0.0087	0.0098
8		0.0109	0.0121	0.0132	0.0143	0.0155
8		0.0167	0.0178	0.0190	0.0202	0.0214
8		0.0226	0.0238	0.0251	0.0263	0.0276
8		0.0288	0.0301	0.0314	0.0327	0.0340
8		0.0353	0.0366	0.0379	0.0393	0.0406
8		0.0420	0.0434	0.0447	0.0461	0.0475
8		0.0489	0.0504	0.0518	0.0532	0.0547
8		0.0562	0.0576	0.0591	0.0606	0.0621
8		0.0636	0.0651	0.0667	0.0682	0.0697
8		0.0713	0.0729	0.0745	0.0760	0.0776
8		0.0793	0.0809	0.0826	0.0843	0.0861
8		0.0879	0.0898	0.0916	0.0936	0.0955
8		0.0975	0.0996	0.1017	0.1038	0.1060
8		0.1082	0.1104	0.1127	0.1150	0.1174
8		0.1198	0.1223	0.1247	0.1273	0.1298
8		0.1324	0.1351	0.1378	0.1405	0.1432
8		0.1461	0.1490	0.1521	0.1554	0.1588
8		0.1623	0.1660	0.1699	0.1739	0.1780
8		0.1823	0.1868	0.1914	0.1961	0.2010
8		0.2061	0.2117	0.2179	0.2247	0.2321
8		0.2400	0.2490	0.2591	0.2702	0.2825
8		0.2955	0.3157	0.3370	0.3662	0.4067
8		0.4766	0.5933	0.6338	0.6630	0.6843
8		0.7045	0.7176	0.7298	0.7409	0.7510
8		0.7600	0.7679	0.7753	0.7821	0.7883
8		0.7939	0.7990	0.8039	0.8086	0.8132
8		0.8177	0.8220	0.8261	0.8301	0.8340
8		0.8377	0.8412	0.8446	0.8479	0.8510
8		0.8540	0.8568	0.8595	0.8622	0.8649
8		0.8676	0.8702	0.8727	0.8753	0.8778
8		0.8802	0.8826	0.8850	0.8873	0.8896

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		0.8918	0.8940	0.8962	0.8983	0.9004
8		0.9025	0.9045	0.9064	0.9084	0.9103
8		0.9121	0.9139	0.9157	0.9174	0.9191
8		0.9208	0.9224	0.9240	0.9256	0.9271
8		0.9287	0.9303	0.9318	0.9334	0.9349
8		0.9364	0.9379	0.9394	0.9409	0.9424

8	0.9439	0.9453	0.9468	0.9482	0.9496		
8	0.9511	0.9525	0.9539	0.9553	0.9566		
8	0.9580	0.9594	0.9607	0.9621	0.9634		
8	0.9647	0.9660	0.9673	0.9686	0.9699		
8	0.9712	0.9724	0.9737	0.9749	0.9762		
8	0.9774	0.9786	0.9798	0.9810	0.9822		
8	0.9834	0.9845	0.9857	0.9868	0.9879		
8	0.9891	0.9902	0.9913	0.9924	0.9935		
8	0.9945	0.9956	0.9967	0.9977	0.9987		
8	1.0000	1.0000	1.0000	1.0000	1.0000		
9	ENDTBL						
6	RUNOFF	1 001	1	0.0336	80.992	0.4051	DA1
6	REACH	3 002	1 2	1170.0		1	
6	RUNOFF	1 003	1	0.0580	79.488	0.3751	DA2
6	ADDHYD	4 004	1 2 3			1	DA1+2
6	RESVOR	2 11 3	1			1	1
SWMF10							
6	REACH	3 005	1 2	797.0		1	
6	RUNOFF	1 006	3	0.0798	77.284	0.3921	DA3
6	ADDHYD	4 007	2 3 4			1	1
DA12+3							
6	DIVERT	6 107	4 2 3	213	082	1	1 SA1-
UG4							
6	RESVOR	2 84 3	1			1	1 H8UG4
6	ADDHYD	4 108	1 2 3			1	1
UG4+SA1							
6	REACH	3 008	3 7	1221.0		1	1 SA1-
SA2							
6	RUNOFF	1 009	1	0.0734	90.928	0.4221	DA1
6	RESVOR	2 21 1	2			1	1
SWMF13							
6	RUNOFF	1 010	3	0.0097	72.007	0.1281	DA7
6	RESVOR	2 22 2 3 4				1	1 HWY
STOR							
6	RUNOFF	1 011	2	0.0544	73.278	0.2201	DA2
6	ADDHYD	4 012	7 2 3			1	
SA1+DA2							
6	RUNOFF	1 013	5	0.0193	79.062	0.2481	DA3
6	ADDHYD	4 014	4 3 6			1	
DA17+2							
6	ADDHYD	4 015	6 5 3			1	
DA172+3							
6	RESVOR	2 23 3	1			1 1 1 1	1 CNCPT
1							
6	REACH	3 016	1 2	920.0		1	1
6	RUNOFF	1 017	3	0.0211	87.900	0.1641	DA4
6	RUNOFF	1 118	1	0.0253	93.221	0.2231	DA5A
6	RESVOR	2 24 1	4			1 1 1 1	1 CNCPT
2							
6	RUNOFF	1 119	5	0.0059	86.148	0.1361	DA5B
6	ADDHYD	4 120	4 5 6			1	
DA5a+5b							
6	ADDHYD	4 020	3 6 4			1	1 DA4+5
6	RUNOFF	1 019	5	0.0404	84.467	0.1681	DA6
6	ADDHYD	4 022	4 5 3			1	
DA45+6							
6	ADDHYD	4 021	2 3 1			1	1
DA123+6							
6	DIVERT	6 122	1 2 3	168	082	1	1 SA2-
UG3							



\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

6	RESVOR	2	83	3	1				1		1	H8UG3
6	ADDHYD	4	123	1	2	3			1		1	
UG3+SA2												
6	REACH	3	023	3	7	1379.0			1		1	SA2-
SA3												
6	RUNOFF	1	024		1	0.0505	82.333	0.3401				DA1
6	RESVOR	2	31	1	2				1		1	SWMF3
6	RUNOFF	1	025		3	0.0748	81.676	0.3581				DA2
6	ADDHYD	4	026	2	3	4			1			DA1+2
6	REACH	3	027	4	1	1021.0			1			
6	RUNOFF	1	028		2	0.0599	78.523	0.3231				DA3
6	ADDHYD	4	029	7	2	3			1			
SA2+DA3												
6	ADDHYD	4	030	1	3	2			1			
DA12+3												
6	RESVOR	2	01	2	5				1		1	PROP1
6	RUNOFF	1	031		1	0.0692	86.978	0.2761				DA4
6	REACH	3	032	1	6	1603.0			1			
6	RUNOFF	1	033		2	0.0084	95.000	0.1921				DA5
6	RESVOR	2	32	2	3				1		1	
SWMF11												
6	REACH	3	034	3	7	583.0			1			
6	RUNOFF	1	035		1	0.0275	94.960	0.2481				DA6
6	RESVOR	2	33	1	2				1		1	SWMF8
6	ADDHYD	4	036	7	2	1			1			DA5+6
6	RESVOR	2	34	1	2				1		1	
HWYSTOR3												
6	REACH	3	037	2	4	934.0			1			
6	RUNOFF	1	138		1	0.0280	89.879	0.1551				DA7a
6	ADDHYD	4	139	4	1	3			1			
DA56+7a												
6	RESVOR	2	35	3	2				1	1	1	1
4												1
6	RUNOFF	1	140		3	0.0048	62.603	0.1261				DA7b
6	ADDHYD	4	141	2	3	4			1			1
DA7a+7b												
6	RUNOFF	1	040		2	0.0393	80.311	0.3671				DA8
6	ADDHYD	4	041	5	2	1			1			DA3+8
6	ADDHYD	4	042	6	1	2			1			DA4+8
6	ADDHYD	4	043	4	2	1			1			1
6	DIVERT	6	144	1	2	3	543	082	1			1
UG2												
6	RESVOR	2	82	3	1				1		1	H8UG2
6	ADDHYD	4	145	1	2	3			1			1
UG2+SA3												
6	REACH	3	044	3	2	1428.0			1			1
SA4												
6	RESVOR	2	02	2	7				1			1
6	RUNOFF	1	045		1	0.0477	80.798	0.4121				DA1
6	RUNOFF	1	046		2	0.0628	79.968	0.4401				DA2
6	ADDHYD	4	047	1	2	3			1			DA1+2
6	RUNOFF	1	048		1	0.0469	80.250	0.2491				DA3
6	ADDHYD	4	049	7	1	2			1			1
SA3+DA3												
6	ADDHYD	4	050	2	3	4			1			
DA12+3												
6	REACH	3	051	4	7	1275.0			1			1
SA5												
6	RUNOFF	1	052		1	0.0087	41.639	0.1631				DA1
6	REACH	3	053	1	5	652.0			1			
6	RUNOFF	1	054		1	0.0072	33.729	0.2561				DA2

6 RUNOFF	1 055	2	0.0322	77.752	0.2491	DA3
6 ADDHYD	4 056	7 2 4			1	
SA4+DA3						
6 ADDHYD	4 057	5 1 3			1	DA1+2
6 ADDHYD	4 058	4 3 5			1	
DA12+3						

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)

\*\*\*\*\*

6 RUNOFF	1 059	1	0.0266	70.478	0.2611	1	DA4
6 ADDHYD	4 060	5 1 2			1	1	
DA123+4							
6 RESVOR	2 03	2 1			1	1	PROP3
6 RUNOFF	1 061	3	0.0173	69.728	0.2971		DA5
6 ADDHYD	4 062	1 3 6			1 1	1	
DA1234+5							
6 DIVERT	6 162	6 2 3	621	082	1	1	SA5-
UG3							
6 RESVOR	2 73	3 1			1	1	H1UG3
6 ADDHYD	4 163	1 2 3			1 1	1	
UG1+SA5							
6 REACH	3 063	3 7	1959.0		1	1	SA5-
SA6							
6 RUNOFF	1 064	1	0.0110	84.520	0.5211		DA1
6 RESVOR	2 61	1 2			1	1	
SWMF19							
6 REACH	3 065	2 3	1283.0		1		
6 RUNOFF	1 066	1	0.0458	70.198	0.2391		DA2
6 RESVOR	2 62	1 2			1	1	
SWMF18							
6 ADDHYD	4 067	3 2 4			1		DA1+2
6 RUNOFF	1 068	5	0.0778	73.165	0.2281		DA3
6 ADDHYD	4 069	4 5 1			1		
DA12+3							
6 REACH	3 070	1 2	2166.0		1		
6 RUNOFF	1 071	1	0.0119	80.036	0.1221		DA4
6 RESVOR	2 63	1 3			1	1	SWMF2
6 REACH	3 072	3 4	1081.0		1		
6 RUNOFF	1 073	5	0.1100	64.864	0.2051	1	DA5
6 ADDHYD	4 074	7 5 1			1		
SA5+DA5							
6 ADDHYD	4 075	2 4 6			1 1		
DA123+4							
6 ADDHYD	4 076	1 6 4			1 1	1	
DA12345							
6 DIVERT	6 176	4 2 3	691	082	1	1	SA6-
UG2							
6 RESVOR	2 72	3 1			1	1	H1UG2
6 ADDHYD	4 177	1 2 3			1 1	1	
UG1+SA6							
6 REACH	3 077	3 7	884.0		1	1	SA6-
SA7							
6 RUNOFF	1 078	2	0.0510	70.802	0.1971	1	DA1
6 ADDHYD	4 079	7 2 1			1		
SA6+DA1							
6 REACH	3 080	1 2	1296.0		1		
6 RUNOFF	1 081	3	0.0313	67.555	0.1861		DA2
6 ADDHYD	4 082	2 3 4			1		DA1+2
6 RUNOFF	1 083	3	0.0513	72.309	0.1621		DA3
6 RUNOFF	1 084	7	0.0725	71.389	0.3211	1	DA4a

```

6 DIVERT 6 184 7 6 5 118 082 1 1 DA4a-
UG1
6 RESVOR 2 81 5 1 1 1 H8UG1
6 ADDHYD 4 185 1 6 5 1 1
UG1+DA4a
6 RUNOFF 1 186 2 0.0463 63.182 0.3211 DA4
6 ADDHYD 4 187 2 5 6 1 1
DA4+DA4a
6 ADDHYD 4 085 3 6 1 1 1 1 DA3+4
6 ADDHYD 4 086 1 4 2 1 1
DA123+4
6 RUNOFF 1 087 4 0.0159 86.785 0.1421 DA5
6 ADDHYD 4 088 2 4 7 1 1 1
DA1234+5
6 DIVERT 6 081 7 2 3 730 082 1 1 SA7-
UG1
6 RESVOR 2 71 3 1 1 1 H1UG1
6 ADDHYD 4 089 1 2 4 1 1 1
UG1+SA7
ENDATA
7 INCREM 6 .06
1

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

```

7 COMPUT 7 001 089 0.0 3.19 1.09 2 1 2
ENDCMP 1
7 COMPUT 7 001 089 0.0 4.10 1.09 2 1 5
ENDCMP 1
7 COMPUT 7 001 089 0.0 4.91 1.09 2 1 10
ENDCMP 1
7 COMPUT 7 001 089 0.0 6.14 1.09 2 1 25
ENDCMP 1
7 COMPUT 7 001 089 0.0 7.23 1.09 2 1 50
ENDCMP 1
7 COMPUT 7 001 089 0.0 8.47 1.09 2 1 99
ENDCMP 1
ENDJOB 2

```

\*\*\*\*\*END OF 80-80  
LIST\*\*\*\*\*

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EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .060 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 89  
STARTING TIME = .00 RAIN DEPTH = 3.19 RAIN DURATION = 1.00  
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. = 2 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	23.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.46 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	22.7	389.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.46 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	39.9	(RUNOFF)
23.14	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.36 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	60.4	(NULL)
23.10	1.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 83 CFS-HRS; 6.8 ACRE-FEET.

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OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	50.9	382.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.39 WATERSHED INCHES; 82 CFS-HRS; 6.8 ACRE-  
FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.56 50.4 367.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.39 WATERSHED INCHES; 82 CFS-HRS; 6.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 47.5 (RUNOFF)  
23.75 1.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.22 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.44 85.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
FEET.

OPERATION DIVERT XSECTION 107  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.44 85.2 (DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
145 CFS-HRS; 12.0 ACRE-FEET.

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OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 84, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 358.00.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 84

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

\*\*\* WARNING - XSECTION 108
NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.
\*\*\*

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.44 85.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-
FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.52 84.4 357.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.30 77.8 (RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.24 WATERSHED INCHES; 106 CFS-HRS; 8.8 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE

STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
13.56 9.7 \* 374.07  
\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.91 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.13 6.6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.92 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
13.68 9.6 \* 353.09  
\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.91 WATERSHED INCHES; 90 CFS-HRS; 7.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.19 33.2 (RUNOFF)  
19.76 1.0 (RUNOFF)  
20.09 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.99 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	98.2	(NULL)
24.00	3.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.24 WATERSHED INCHES; 180 CFS-HRS; 14.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	15.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.33 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	105.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 270 CFS-HRS; 22.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	112.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	112.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32  
 SQ.MI.

HRS	6.42	6.90	7.38
CFS	6.42	6.90	7.38
	.01	.02	.03



7.86 CFS	.04	.04	.04	.04	.04	.05	.05
.05							
8.34 CFS	.05	.06	.06	.06	.06	.07	.07
.07							

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8.82 CFS	.08	.08	.08	.09	.09	.09	.10
.10							
9.30 CFS	.10	.11	.11	.12	.12	.13	.13
.14							
9.78 CFS	.15	.16	.17	.18	.21	.23	.25
.27							
10.26 CFS	.31	.34	.39	.44	.51	.58	.67
.76							
10.74 CFS	.87	.99	1.12	1.28	1.46	1.68	1.95
2.26							
11.22 CFS	2.62	3.05	3.53	4.07	4.68	5.37	6.27
7.55							
11.70 CFS	9.10	10.95	13.41	16.79	21.82	30.00	43.07
62.74							
12.18 CFS	81	94	102	108	112	112	111
107							
12.66 CFS	101	94	88	81	74	69	63
58							
13.14 CFS	54.01	50.27	47.04	44.22	41.73	39.53	37.58
35.83							
13.62 CFS	34.24	32.82	31.57	30.46	29.47	28.61	27.85
27.19							
14.10 CFS	26.60	26.07	25.58	25.13	24.73	24.36	24.01
23.68							
14.58 CFS	23.34	23.00	22.67	22.36	22.06	21.76	21.45
21.14							
15.06 CFS	20.84	20.53	20.22	19.92	19.64	19.39	19.16
18.96							
15.54 CFS	18.79	18.62	18.45	18.29	18.14	18.03	17.92
17.80							
16.02 CFS	17.68	17.55	17.44	17.34	17.24	17.12	17.01
16.90							
16.50 CFS	16.79	16.67	16.56	16.46	16.36	16.25	16.14
16.03							
16.98 CFS	15.94	15.85	15.75	15.63	15.51	15.40	15.30
15.21							
17.46 CFS	15.10	14.98	14.85	14.74	14.64	14.53	14.42
14.31							
17.94 CFS	14.21	14.12	14.03	13.93	13.82	13.72	13.63
13.53							
18.42 CFS	13.42	13.33	13.25	13.19	13.12	13.04	12.97
12.91							
18.90 CFS	12.84	12.76	12.68	12.60	12.53	12.46	12.39
12.33							
19.38 CFS	12.26	12.20	12.15	12.08	12.01	11.93	11.87
11.81							
19.86 CFS	11.73	11.65	11.59	11.55	11.50	11.44	11.37
11.31							
20.34 CFS	11.25	11.17	11.09	11.02	10.98	10.93	10.87
10.80							

20.82 CFS	10.75	10.71	10.64	10.57	10.51	10.45	10.39
10.33							
21.30 CFS	10.27	10.20	10.13	10.06	9.98	9.89	9.80
9.72							
21.78 CFS	9.65	9.56	9.49	9.43	9.35	9.27	9.19
9.11							
22.26 CFS	9.04	8.97	8.90	8.84	8.78	8.71	8.64
8.56							
22.74 CFS	8.50	8.43	8.36	8.28	8.22	8.18	8.13
8.07							
23.22 CFS	8.01	7.95	7.89	7.83	7.77	7.70	7.63
7.58							
23.70 CFS	7.54	7.49	7.43	7.35	7.29	7.27	7.21
6.92							
24.18 CFS	6.49	6.07	5.70	5.37	5.07	4.82	4.62
4.45							
24.66 CFS	4.31	4.17	4.05	3.94	3.83	3.72	3.62
3.53							
25.14 CFS	3.43	3.34	3.25	3.17	3.08	3.00	2.92
2.85							
25.62 CFS	2.77	2.70	2.63	2.56	2.49	2.43	2.37
2.30							
26.10 CFS	2.24	2.19	2.13	2.07	2.02	1.97	1.91
1.86							
26.58 CFS	1.82	1.77	1.72	1.68	1.63	1.59	1.55
1.51							
27.06 CFS	1.47	1.43	1.39	1.36	1.32	1.29	1.25
1.22							
27.54 CFS	1.19	1.16	1.13	1.10	1.07	1.04	1.01
.99							
28.02 CFS	.96	.94	.91	.89	.88	.87	.85
.84							
28.50 CFS	.83	.82	.82	.81	.80	.79	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
 FEET.

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DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	28	18	14	12	10	8	3	1

DURATION(HRS)	18	18
FLOW(CFS)	1	1 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	112.5	332.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.15 29.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 27 CFS-HRS; 2.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.18 38.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.46 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.18 38.3 (NULL)

HRS	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2							
	MAIN	TIME INCREMENT = .060 hr,			DRAINAGE AREA = .03			
3.96 CFS	.00	.01	.01	.02	.02	.03	.03	
.04								
4.44 CFS	.04	.05	.06	.06	.07	.07	.08	
.08								
4.92 CFS	.09	.09	.10	.10	.11	.12	.12	
.13								
5.40 CFS	.13	.13	.14	.15	.16	.16	.17	
.17								
5.88 CFS	.17	.18	.19	.20	.20	.21	.21	
.22								
6.36 CFS	.23	.24	.25	.26	.27	.27	.28	
.29								

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6.84 CFS	.30	.31	.32	.33	.34	.35	.36	
.37								
7.32 CFS	.38	.39	.40	.41	.42	.43	.44	
.45								
7.80 CFS	.47	.48	.49	.51	.52	.53	.54	

.55							
8.28 CFS	.56	.58	.59	.60	.61	.63	.64
.66							
8.76 CFS	.67	.68	.69	.70	.72	.74	.76
.78							
9.24 CFS	.81	.85	.88	.92	.95	.98	1.01
1.05							
9.72 CFS	1.09	1.13	1.17	1.20	1.24	1.28	1.32
1.37							
10.20 CFS	1.41	1.45	1.49	1.52	1.57	1.62	1.68
1.76							
10.68 CFS	1.86	1.98	2.11	2.25	2.40	2.54	2.70
2.88							
11.16 CFS	3.10	3.35	3.61	3.89	4.17	4.46	4.76
5.33							
11.64 CFS	6.31	7.30	8.24	9.57	11.45	14.16	18.49
25.13							
12.12 CFS	33.95	38.32	34.22	26.78	20.79	16.56	13.66
11.76							
12.60 CFS	10.15	8.59	7.39	6.62	6.09	5.67	5.32
4.98							
13.08 CFS	4.66	4.35	4.08	3.86	3.67	3.49	3.31
3.13							
13.56 CFS	2.95	2.79	2.65	2.55	2.46	2.40	2.34
2.30							
14.04 CFS	2.27	2.22	2.18	2.12	2.07	2.03	2.00
1.96							
14.52 CFS	1.92	1.87	1.81	1.77	1.73	1.69	1.65
1.61							
15.00 CFS	1.56	1.52	1.48	1.43	1.39	1.37	1.35
1.35							
15.48 CFS	1.34	1.34	1.33	1.31	1.29	1.27	1.27
1.27							
15.96 CFS	1.26	1.24	1.22	1.20	1.20	1.19	1.18
1.16							
16.44 CFS	1.15	1.14	1.12	1.11	1.10	1.10	1.08
1.07							
16.92 CFS	1.06	1.05	1.05	1.04	1.02	.99	.98
.98							
17.40 CFS	.98	.96	.94	.92	.91	.90	.90
.88							
17.88 CFS	.87	.86	.85	.85	.83	.82	.81
.80							
18.36 CFS	.80	.78	.77	.78	.79	.79	.78
.77							
18.84 CFS	.78	.78	.77	.76	.75	.75	.75
.75							
19.32 CFS	.75	.75	.75	.75	.74	.73	.73
.73							
19.80 CFS	.73	.72	.71	.71	.72	.72	.72
.71							
20.28 CFS	.70	.70	.69	.68	.68	.69	.69
.69							
20.76 CFS	.68	.68	.68	.67	.66	.66	.65
.65							
21.24 CFS	.65	.65	.65	.65	.65	.65	.64
.63							
21.72 CFS	.63	.63	.62	.62	.63	.63	.62
.61							
22.20 CFS	.60	.60	.60	.60	.60	.60	.60
.59							
22.68 CFS	.58	.58	.58	.57	.56	.56	.57
.57							
23.16 CFS	.57	.56	.56	.55	.55	.55	.54

.53								
23.64 CFS	.53	.54	.54	.53	.52	.52	.54	
.53								
24.12 CFS	.41	.25	.13	.07	.03	.02	.01	
.00								

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.46 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4	2	1	1	1	1	1	1
DURATION(HRS)	16							
FLOW(CFS)	0							

OPERATION RUNOFF XSECTION 119

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.13	8.3	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.83 WATERSHED INCHES; 7 CFS-HRS; .6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(NULL)
12.17	45.6	(NULL)
17.32	1.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.34 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(NULL)
12.16	74.7	(NULL)
15.84	2.5	(NULL)
24.00	1.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.19 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	48.6	(RUNOFF)
19.47	1.0	(RUNOFF)
19.75	1.0	(RUNOFF)
20.06	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.71 WATERSHED INCHES; 44 CFS-HRS; 3.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	123.2	(NULL)
15.84	4.2	(NULL)
17.34	3.3	(NULL)
21.95	2.1	(NULL)
24.00	1.9	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 119 CFS-HRS; 9.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	202.7	(NULL)
20.01	14.0	(NULL)
23.01	10.1	(NULL)
24.00	9.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 404 CFS-HRS; 33.4 ACRE-FEET.

OPERATION DIVERT XSECTION 122  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	168.0 *	(DIVERT)
20.01	14.0	(DIVERT)
23.01	10.1	(DIVERT)
24.00	9.1	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

400 CFS-HRS; 33.0 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	34.7	175.41

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .02 WATERSHED INCHES; 4 CFS-HRS; .4 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 83, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 322.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 83

\*\*\* MESSAGE - STRUCTURE 83, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .02 WATERSHED INCHES; 398 CFS-HRS; .4 ACRE-FEET.

OPERATION ADDHYD XSECTION 123

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	168.0 *	(NULL)
20.01	14.0	(NULL)
23.01	10.1	(NULL)
24.00	9.1	(NULL)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.51 WATERSHED INCHES; 400 CFS-HRS; 33.0 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.47	156.1	315.37

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.50 WATERSHED INCHES; 399 CFS-HRS; 33.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	41.6	(RUNOFF)
20.68	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 31

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.46	28.2	362.31
20.70	1.1	356.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	58.7	(RUNOFF)
23.97	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.51 WATERSHED INCHES; 73 CFS-HRS; 6.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	84.2	(NULL)
18.68	3.2	(NULL)
23.78	2.2	(NULL)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	76.6	318.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	42.0	(RUNOFF)
23.12	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.30 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	186.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.48 WATERSHED INCHES; 449 CFS-HRS; 37.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	262.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 573 CFS-HRS; 47.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.41 262.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.49 WATERSHED INCHES; 573 CFS-HRS; 47.3 ACRE-
FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.21 76.8 (RUNOFF)
24.03 1.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-
FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.38 68.8 312.27
24.15 1.3 310.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-
FEET.

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OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.16 14.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.63 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS
WITH .28 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 376.89.
\*\*\*

OPERATION RESVOR STRUCTURE 32

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,
AT STRUCTURE 32
\*\*\*

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION(FEET)  
13.56 1.0 379.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.01 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 34, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 34

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
AT XSECTION 34  
\*\*\*

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
13.68 1.0 338.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.00 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.19 41.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.63 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
FEET.

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OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.47 17.5 355.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.08 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)

12.48 18.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.48 18.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-
FEET.

OPERATION REACH XSECTION 37

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.54 18.2 330.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-
FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.14 42.9 (RUNOFF)
17.34 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.15 WATERSHED INCHES; 39 CFS-HRS; 3.2 ACRE-
FEET.

OPERATION ADDHYD XSECTION 139

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.15 44.6 (NULL)
23.69 2.0 (NULL)
24.00 2.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.10 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.15	44.6	(NULL)
23.69	2.0	(NULL)
24.00	2.0	(NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2							
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06							
4.32 CFS	.00	.01	.01	.01	.01	.01	.01	.01
.01								
4.80 CFS	.01	.01	.01	.01	.01	.02	.02	.02
.02								
5.28 CFS	.02	.02	.02	.02	.02	.02	.02	.03
.04								
5.76 CFS	.04	.05	.06	.07	.08	.09	.09	.09
.10								
6.24 CFS	.11	.12	.13	.13	.14	.15	.16	.16
.17								
6.72 CFS	.18	.19	.20	.21	.22	.23	.24	.24
.26								
7.20 CFS	.27	.28	.29	.30	.31	.33	.34	.34
.35								
7.68 CFS	.36	.38	.39	.40	.42	.44	.45	.45
.47								
8.16 CFS	.48	.49	.51	.53	.54	.55	.57	.57
.59								
8.64 CFS	.61	.63	.64	.66	.67	.69	.71	.71
.74								
9.12 CFS	.76	.79	.82	.86	.89	.93	.96	.96
.99								
9.60 CFS	1.03	1.08	1.12	1.16	1.20	1.24	1.28	1.28
1.33								
10.08 CFS	1.38	1.43	1.48	1.52	1.57	1.62	1.67	1.67
1.73								
10.56 CFS	1.81	1.91	2.03	2.16	2.30	2.45	2.60	2.60
2.75								
11.04 CFS	2.90	3.13	3.38	3.65	3.93	4.22	4.54	4.54
4.85								
11.52 CFS	5.17	6.08	7.32	8.20	9.23	10.98	13.42	13.42
16.89								
12.00 CFS	23.15	32.13	43.42	43.83	36.16	32.51	31.33	31.33
30.26								
12.48 CFS	29.47	28.63	26.82	24.94	23.51	22.21	20.95	20.95
19.72								
12.96 CFS	18.54	17.40	16.31	15.30	14.48	13.76	13.06	13.06
12.40								
13.44 CFS	11.77	11.16	10.59	10.06	9.59	9.17	8.79	8.79
8.45								
13.92 CFS	8.19	7.95	7.73	7.50	7.28	7.07	6.88	6.88
6.71								
14.40 CFS	6.55	6.39	6.22	6.05	5.90	5.75	5.63	5.63
5.50								
14.88 CFS	5.37	5.24	5.12	5.00	4.87	4.75	4.65	4.65
4.57								
15.36 CFS	4.49	4.43	4.37	4.32	4.26	4.20	4.14	4.14
4.10								
15.84 CFS	4.08	4.04	3.99	3.93	3.89	3.85	3.82	3.82
3.79								
16.32 CFS	3.74	3.70	3.67	3.63	3.58	3.55	3.53	3.53
3.50								
16.80 CFS	3.46	3.42	3.39	3.37	3.34	3.31	3.26	3.26

3.22								
17.28	CFS	3.19	3.19	3.16	3.11	3.07	3.03	3.01
2.99								
17.76	CFS	2.96	2.92	2.89	2.86	2.85	2.82	2.78
2.75								
18.24	CFS	2.73	2.71	2.68	2.65	2.63	2.63	2.62
2.60								
18.72	CFS	2.57	2.56	2.57	2.56	2.54	2.53	2.52
2.52								
19.20	CFS	2.51	2.51	2.51	2.50	2.50	2.49	2.48
2.46								

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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19.68	CFS	2.46	2.46	2.45	2.43	2.42	2.43	2.44
2.43								
20.16	CFS	2.41	2.40	2.39	2.39	2.36	2.35	2.36
2.37								
20.64	CFS	2.36	2.34	2.33	2.34	2.33	2.31	2.30
2.29								
21.12	CFS	2.29	2.28	2.28	2.28	2.27	2.27	2.27
2.26								
21.60	CFS	2.23	2.22	2.23	2.23	2.21	2.21	2.22
2.20								
22.08	CFS	2.18	2.17	2.17	2.16	2.16	2.16	2.15
2.15								
22.56	CFS	2.14	2.11	2.11	2.12	2.10	2.08	2.08
2.08								
23.04	CFS	2.10	2.08	2.07	2.06	2.05	2.05	2.04
2.03								
23.52	CFS	2.01	2.00	2.01	2.02	2.01	1.98	1.97
1.97								
24.00	CFS	2.02	1.97	1.70	1.52	1.45	1.41	1.40
1.38								
24.48	CFS	1.38	1.37	1.36	1.36	1.35	1.34	1.34
1.33								
24.96	CFS	1.32	1.32	1.31	1.30	1.29	1.29	1.28
1.27								
25.44	CFS	1.27	1.26	1.25	1.25	1.24	1.23	1.23
1.22								
25.92	CFS	1.21	1.21	1.20	1.19	1.19	1.18	1.17
1.17								
26.40	CFS	1.16	1.16	1.15	1.14	1.14	1.13	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.10 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
FEET.

DURATION (HRS)	2	4	6	8	10	12	14	
FLOW (CFS)	9	4	3	3	2	2	1	TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME (HRS)		PEAK DISCHARGE (CFS)		PEAK
ELEVATION (FEET)				(RUNOFF)
12.14		1.4		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .50 WATERSHED INCHES; 2 CFS-HRS; .1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	46.0	(NULL)
24.00	2.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	28.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.41 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	286.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.48 WATERSHED INCHES; 609 CFS-HRS; 50.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	355.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 693 CFS-HRS; 57.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
12.38 387.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.56 WATERSHED INCHES; 780 CFS-HRS; 64.5 ACRE-  
FEET.

OPERATION DIVERT XSECTION 144  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.38 387.2 (DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
780 CFS-HRS; 64.5 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 82, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 318.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

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OPERATION RESVOR STRUCTURE 82

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 145  
NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 145

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.38 387.2 (NULL)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 780 CFS-HRS; 64.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.53	362.1	290.16

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 780 CFS-HRS; 64.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.53	362.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 780 CFS-HRS; 64.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	33.3	(RUNOFF)
20.10	1.1 *	(RUNOFF)
	* FIRST POINT OF FLAT PEAK	

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.45 WATERSHED INCHES; 45 CFS-HRS; 3.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	40.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 56 CFS-HRS; 4.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	74.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.42 WATERSHED INCHES;	101 CFS-HRS;	8.3 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	40.1	(RUNOFF)
20.10	1.1	(RUNOFF)
20.65	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.41 WATERSHED INCHES;	43 CFS-HRS;	3.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	378.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.55 WATERSHED INCHES;	822 CFS-HRS;	68.0 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	436.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.54 WATERSHED INCHES;	923 CFS-HRS;	76.3 ACRE-
FEET.		

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	422.2	284.55
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.54 WATERSHED INCHES;	923 CFS-HRS;	76.3 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.54 WATERSHED INCHES; 145 CFS-HRS; 76.3 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 53

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.21	24.1	

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.25 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(NULL)
12.61	430.6	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.53 WATERSHED INCHES; 949 CFS-HRS; 78.4 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 57  
NO HYDROGRAPH IN INPUT LOCATION 5 OR 1 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	430.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.50 WATERSHED INCHES; 949 CFS-HRS; 78.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	12.3	(RUNOFF)

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2							
	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = .03			
HRS	SQ.MI.							
11.64 CFS	.36	.53	.75	1.07	1.53	2.25	3.44	
5.60								
12.12 CFS	8.86	11.72	12.23	10.90	9.15	7.73	6.64	
5.84								
12.60 CFS	5.17	4.51	3.95	3.54	3.25	3.02	2.84	
2.68								
13.08 CFS	2.52	2.37	2.23	2.11	2.01	1.92	1.83	
1.74								
13.56 CFS	1.65	1.57	1.49	1.43	1.38	1.35	1.32	
1.29								
14.04 CFS	1.27	1.25	1.23	1.21	1.18	1.16	1.14	
1.12								
14.52 CFS	1.10	1.08	1.05	1.02	1.00	.98	.96	
.94								
15.00 CFS	.91	.89	.87	.84	.82	.80	.79	
.79								
15.48 CFS	.79	.78	.78	.77	.76	.75	.75	
.75								
15.96 CFS	.74	.73	.72	.72	.71	.71	.70	
.70								

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16.44 CFS	.69	.68	.67	.67	.66	.66	.65
.65							
16.92 CFS	.64	.63	.63	.63	.62	.61	.60
.59							
17.40 CFS	.59	.59	.57	.56	.56	.55	.55
.54							
17.88 CFS	.53	.53	.52	.52	.51	.50	.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .85 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	435.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.48 WATERSHED INCHES; 963 CFS-HRS; 79.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	435.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.48 WATERSHED INCHES; 963 CFS-HRS; 79.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	7.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .81 WATERSHED INCHES; 9 CFS-HRS; .7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	439.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02  
 SQ.MI.

HRS	.50	.52	.55	.57	.61	.64	.67
7.14 CFS							
.71							
7.62 CFS	.75	.79	.84	.88	.93	.98	1.02
1.07							
8.10 CFS	1.13	1.18	1.24	1.29	1.36	1.42	1.48

1.55								
8.58	CFS	1.61	1.68	1.75	1.83	1.90	1.98	2.05
2.13								
9.06	CFS	2.21	2.29	2.38	2.47	2.57	2.68	2.81
2.95								
9.54	CFS	3.12	3.30	3.51	3.74	3.99	4.26	4.55
4.86								
10.02	CFS	5.19	5.54	5.92	6.32	6.75	7.20	7.68
8.17								
10.50	CFS	8.69	9.23	9.80	10.41	11.07	11.81	12.65
13.59								

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10.98	CFS	14.67	15.87	17.22	18.73	20.42	22.32	24.46
26.88								
11.46	CFS	29.62	32.70	36.23	40.42	45.46	51.62	59.27
69.00								
11.94	CFS	82	99	125	162	209	259	308
352								
12.42	CFS	389	417	434	439	434	421	403
382								
12.90	CFS	359	336	313	291	269	249	230
213								
13.38	CFS	197	182	169	157	147	137	129
122								
13.86	CFS	115	109	104	99	95	91	88
85								
14.34	CFS	82.63	80.36	78.29	76.39	74.62	72.96	71.39
69.89								
14.82	CFS	68.45	67.06	65.70	64.37	63.07	61.79	60.53
59.28								
15.30	CFS	58.06	56.88	55.76	54.70	53.71	52.81	52.00
51.25								
15.78	CFS	50.58	49.97	49.42	48.91	48.41	47.94	47.49
47.07								
16.26	CFS	46.66	46.25	45.85	45.46	45.07	44.69	44.30
43.92								
16.74	CFS	43.55	43.17	42.80	42.44	42.08	41.74	41.40
41.06								
17.22	CFS	40.70	40.34	40.00	39.65	39.30	38.93	38.56
38.18								
17.70	CFS	37.82	37.45	37.08	36.70	36.32	35.96	35.61
35.26								
18.18	CFS	34.91	34.57	34.24	33.92	33.59	33.27	32.97
32.70								
18.66	CFS	32.45	32.21	31.99	31.80	31.64	31.48	31.32
31.16								
19.14	CFS	31.01	30.86	30.71	30.57	30.43	30.29	30.17
30.06								
19.62	CFS	29.93	29.81	29.69	29.57	29.44	29.30	29.16
29.03								
20.10	CFS	28.91	28.78	28.66	28.54	28.43	28.31	28.17
28.03								
20.58	CFS	27.89	27.76	27.62	27.48	27.36	27.24	27.13
27.01								
21.06	CFS	26.89	26.76	26.64	26.51	26.37	26.24	26.12

26.01								
21.54	CFS	25.90	25.79	25.67	25.55	25.42	25.29	25.15
25.02								
22.02	CFS	24.89	24.75	24.61	24.47	24.33	24.19	24.05
23.91								
22.50	CFS	23.77	23.64	23.50	23.36	23.23	23.09	22.95
22.79								
22.98	CFS	22.64	22.51	22.38	22.25	22.12	22.00	21.89
21.78								
23.46	CFS	21.66	21.53	21.39	21.26	21.13	21.01	20.88
20.75								
23.94	CFS	20.62	20.53	20.42	20.17	19.70	19.04	18.21
17.21								
24.42	CFS	16.03	14.73	13.39	12.09	10.90	9.85	8.94
8.18								
24.90	CFS	7.55	7.03	6.60	6.25	5.96	5.72	5.52
5.34								
25.38	CFS	5.19	5.05	4.93	4.81	4.70	4.60	4.50
4.41								
25.86	CFS	4.32	4.23	4.14	4.06	3.98	3.90	3.82
3.75								
26.34	CFS	3.68	3.61	3.54	3.47	3.40	3.34	3.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 972 CFS-HRS; 80.3 ACRE-FEET.

OPERATION DIVERT XSECTION 162  
 OUTPUT #1 HYDROGRAPH

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET)  
 12.60 439.1 (DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 972 CFS-HRS; 80.3 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

1  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 73

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 163

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET)  
 12.60 439.1 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02  
 SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	1.02	SQ.MI.
7.14	CFS	.50	.52	.55	.57	.61	.64	.67			
.71											
7.62	CFS	.75	.79	.84	.88	.93	.98	1.02			
1.07											
8.10	CFS	1.13	1.18	1.24	1.29	1.36	1.42	1.48			
1.55											
8.58	CFS	1.61	1.68	1.75	1.83	1.90	1.98	2.05			
2.13											
9.06	CFS	2.21	2.29	2.38	2.47	2.57	2.68	2.81			
2.95											
9.54	CFS	3.12	3.30	3.51	3.74	3.99	4.26	4.55			
4.86											
10.02	CFS	5.19	5.54	5.92	6.32	6.75	7.20	7.68			
8.17											
10.50	CFS	8.69	9.23	9.80	10.41	11.07	11.81	12.65			
13.59											
10.98	CFS	14.67	15.87	17.22	18.73	20.42	22.32	24.46			
26.88											
11.46	CFS	29.62	32.70	36.23	40.42	45.46	51.62	59.27			
69.00											
11.94	CFS	82	99	125	162	209	259	308			
352											
12.42	CFS	389	417	434	439	434	421	403			
382											
12.90	CFS	359	336	313	291	269	249	230			
213											
13.38	CFS	197	182	169	157	147	137	129			
122											
13.86	CFS	115	109	104	99	95	91	88			
85											
14.34	CFS	82.63	80.36	78.29	76.39	74.62	72.96	71.39			
69.89											
14.82	CFS	68.45	67.06	65.70	64.37	63.07	61.79	60.53			
59.28											
15.30	CFS	58.06	56.88	55.76	54.70	53.71	52.81	52.00			
51.25											
15.78	CFS	50.58	49.97	49.42	48.91	48.41	47.94	47.49			
47.07											
16.26	CFS	46.66	46.25	45.85	45.46	45.07	44.69	44.30			
43.92											
16.74	CFS	43.55	43.17	42.80	42.44	42.08	41.74	41.40			
41.06											
17.22	CFS	40.70	40.34	40.00	39.65	39.30	38.93	38.56			
38.18											
17.70	CFS	37.82	37.45	37.08	36.70	36.32	35.96	35.61			
35.26											
18.18	CFS	34.91	34.57	34.24	33.92	33.59	33.27	32.97			
32.70											
18.66	CFS	32.45	32.21	31.99	31.80	31.64	31.48	31.32			
31.16											



19.14	CFS	31.01	30.86	30.71	30.57	30.43	30.29	30.17
30.06								
19.62	CFS	29.93	29.81	29.69	29.57	29.44	29.30	29.16
29.03								
20.10	CFS	28.91	28.78	28.66	28.54	28.43	28.31	28.17
28.03								
20.58	CFS	27.89	27.76	27.62	27.48	27.36	27.24	27.13
27.01								

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist;H1&H8UG;GHC2.04TEST

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21.06	CFS	26.89	26.76	26.64	26.51	26.37	26.24	26.12
26.01								
21.54	CFS	25.90	25.79	25.67	25.55	25.42	25.29	25.15
25.02								
22.02	CFS	24.89	24.75	24.61	24.47	24.33	24.19	24.05
23.91								
22.50	CFS	23.77	23.64	23.50	23.36	23.23	23.09	22.95
22.79								
22.98	CFS	22.64	22.51	22.38	22.25	22.12	22.00	21.89
21.78								
23.46	CFS	21.66	21.53	21.39	21.26	21.13	21.01	20.88
20.75								
23.94	CFS	20.62	20.53	20.42	20.17	19.70	19.04	18.21
17.21								
24.42	CFS	16.03	14.73	13.39	12.09	10.90	9.85	8.94
8.18								
24.90	CFS	7.55	7.03	6.60	6.25	5.96	5.72	5.52
5.34								
25.38	CFS	5.19	5.05	4.93	4.81	4.70	4.60	4.50
4.41								
25.86	CFS	4.32	4.23	4.14	4.06	3.98	3.90	3.82
3.75								
26.34	CFS	3.68	3.61	3.54	3.47	3.40	3.34	3.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 972 CFS-HRS; 80.3 ACRE-FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.77 415.7 249.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 972 CFS-HRS; 80.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.37 8.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	4.7	332.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.86	4.6	300.46

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	21.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .83 WATERSHED INCHES; 25 CFS-HRS; 2.0 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	12.4	290.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .83 WATERSHED INCHES; 25 CFS-HRS; 2.0 ACRE-

FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.58	16.5	(NULL)
20.11	1.0	(NULL)
20.66	1.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.00 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	46.1	(RUNOFF)
24.02	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.98 WATERSHED INCHES; 49 CFS-HRS; 4.1 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	59.0	(NULL)
21.97	2.2	(NULL)
23.10	2.0	(NULL)
24.03	1.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.99 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	52.5	248.34
22.02	2.2	247.44
23.17	2.0	247.42
24.09	1.9	247.41

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.99 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	13.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	3.4	263.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	3.3	247.53

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	34.3	(RUNOFF)
15.86	2.4	(RUNOFF)
24.02	1.2	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .11  
 SQ.MI.

11.82 CFS	.39	1.24	3.08	6.90	14.15	26.24	33.87
32.06							
12.30 CFS	26.87	22.73	19.37	17.02	15.52	13.85	12.00
10.64							
12.78 CFS	9.83	9.24	8.76	8.33	7.90	7.45	7.01
6.64							
13.26 CFS	6.35	6.08	5.81	5.55	5.28	5.01	4.76
4.55							

13.74	CFS	4.40	4.28	4.19	4.12	4.06	4.02	3.96
3.88								
14.22	CFS	3.80	3.72	3.66	3.61	3.56	3.48	3.40
3.31								
14.70	CFS	3.23	3.17	3.11	3.05	2.97	2.90	2.83
2.75								
15.18	CFS	2.67	2.61	2.57	2.55	2.54	2.54	2.54
2.53								
15.66	CFS	2.49	2.45	2.43	2.44	2.44	2.41	2.37
2.34								
16.14	CFS	2.32	2.32	2.31	2.28	2.26	2.24	2.21
2.18								
16.62	CFS	2.16	2.15	2.15	2.13	2.10	2.08	2.07
2.07								
17.10	CFS	2.05	2.01	1.96	1.94	1.95	1.94	1.91
1.87								
17.58	CFS	1.83	1.81	1.81	1.79	1.77	1.74	1.72
1.71								
18.06	CFS	1.70	1.68	1.65	1.63	1.62	1.61	1.58
1.57								
18.54	CFS	1.58	1.60	1.61	1.59	1.57	1.59	1.59
1.57								
19.02	CFS	1.55	1.54	1.54	1.54	1.54	1.54	1.54
1.54								
19.50	CFS	1.54	1.54	1.51	1.50	1.51	1.51	1.48
1.47								
19.98	CFS	1.48	1.50	1.51	1.49	1.47	1.47	1.46
1.44								
20.46	CFS	1.41	1.42	1.44	1.45	1.43	1.41	1.42
1.43								
20.94	CFS	1.41	1.39	1.38	1.37	1.37	1.37	1.37
1.37								
21.42	CFS	1.37	1.38	1.37	1.35	1.33	1.33	1.34
1.32								
21.90	CFS	1.33	1.34	1.33	1.31	1.29	1.29	1.28
1.28								
22.38	CFS	1.28	1.28	1.29	1.28	1.25	1.23	1.24
1.24								
22.86	CFS	1.22	1.20	1.21	1.24	1.24	1.22	1.20
1.20								
23.34	CFS	1.19	1.19	1.18	1.15	1.14	1.15	1.17
1.17								
23.82	CFS	1.15	1.12	1.12	1.18	1.16	.84	.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .59 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.77	425.6	(NULL)

1  
 TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 1013 CFS-HRS; 83.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	55.6	(NULL)
24.09	2.1	(NULL)

	HYDROGRAPH POINTS FOR		ALTERNATE = 1,	STORM = 2			
HRS	MAIN	TIME INCREMENT = .060 hr,	DRAINAGE AREA = .15				
SQ.MI.							
11.04 CFS	.49	.56	.65	.78	.95	1.16	1.40
1.69							
11.52 CFS	2.03	2.44	3.01	3.84	4.91	6.23	7.89
10.15							
12.00 CFS	13.48	18.88	26.76	38.51	49.56	55.03	54.55
51.34							
12.48 CFS	47.52	44.02	41.15	38.63	36.19	33.98	31.91
30.07							
12.96 CFS	28.46	26.76	24.95	23.27	21.59	19.88	18.73
17.79							
13.44 CFS	16.98	16.22	15.50	14.80	14.08	13.38	12.74
12.18							
13.92 CFS	11.68	11.23	10.83	10.47	10.14	9.83	9.53
9.22							
14.40 CFS	8.87	8.52	8.21	7.93	7.65	7.34	7.04
6.78							
14.88 CFS	6.55	6.35	6.17	5.99	5.82	5.65	5.49
5.34							
15.36 CFS	5.20	5.10	5.03	4.98	4.94	4.90	4.85
4.79							
15.84 CFS	4.74	4.70	4.67	4.64	4.60	4.54	4.49
4.45							
16.32 CFS	4.42	4.39	4.35	4.30	4.26	4.21	4.16
4.13							
16.80 CFS	4.10	4.07	4.03	3.99	3.95	3.92	3.89
3.85							
17.28 CFS	3.79	3.74	3.70	3.68	3.64	3.60	3.54
3.49							
17.76 CFS	3.44	3.41	3.37	3.33	3.29	3.25	3.22
3.19							
18.24 CFS	3.15	3.11	3.07	3.05	3.01	2.98	2.96
2.96							
18.72 CFS	2.96	2.95	2.94	2.93	2.93	2.92	2.89
2.88							
19.20 CFS	2.86	2.85	2.84	2.84	2.84	2.84	2.84
2.83							
19.68 CFS	2.81	2.79	2.78	2.77	2.76	2.74	2.72
2.73							
20.16 CFS	2.74	2.74	2.72	2.71	2.69	2.67	2.64
2.62							
20.64 CFS	2.62	2.63	2.63	2.61	2.60	2.60	2.59
2.57							
21.12 CFS	2.55	2.53	2.52	2.51	2.51	2.50	2.50
2.50							
21.60 CFS	2.50	2.48	2.46	2.44	2.44	2.43	2.42
2.42							
22.08 CFS	2.42	2.40	2.38	2.36	2.35	2.34	2.34
2.33							

22.56 CFS	2.33	2.32	2.30	2.28	2.27	2.26	2.24
2.22							
23.04 CFS	2.21	2.21	2.22	2.22	2.20	2.18	2.17
2.16							
23.52 CFS	2.15	2.13	2.10	2.09	2.10	2.10	2.09
2.07							
24.00 CFS	2.05	2.06	2.07	1.92	1.58	1.19	.86
.62							
24.48 CFS	.44						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.02 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.75	460.3	(NULL)

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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HRS	MAIN	TIME INCREMENT = .060 hr,	ALTERNATE = 1,	STORM = 2	DRAINAGE AREA = 1.28 SQ.MI.			
7.26 CFS	.48	.50	.53	.55	.58	.61	.65	
.68								
7.74 CFS	.72	.76	.80	.85	.89	.94	.99	
1.03								
8.22 CFS	1.09	1.14	1.19	1.25	1.31	1.37	1.43	
1.50								
8.70 CFS	1.56	1.63	1.71	1.78	1.86	1.94	2.02	
2.10								
9.18 CFS	2.18	2.26	2.35	2.44	2.55	2.66	2.78	
2.92								
9.66 CFS	3.08	3.26	3.45	3.68	3.93	4.19	4.48	
4.79								
10.14 CFS	5.11	5.47	5.84	6.24	6.66	7.11	7.58	
8.08								
10.62 CFS	8.60	9.14	9.71	10.33	11.00	11.75	12.58	
13.52								
11.10 CFS	14.59	15.81	17.20	18.78	20.57	22.59	24.89	
27.50								
11.58 CFS	30.46	33.92	38.11	43.20	49.56	57.83	69.09	
85.40								
12.06 CFS	110	147	190	232	270	308	344	
379								
12.54 CFS	410	435	452	459	459	452	440	
423								
13.02 CFS	403	381	359	336	313	292	272	
252								
13.50 CFS	235	218	203	189	177	165	155	
146								
13.98 CFS	138	131	124	119	114	109	105	
101								

14.46	CFS	97.83	94.81	92.07	89.54	87.17	84.97	82.93
81.03								
14.94	CFS	79.21	77.47	75.80	74.17	72.58	71.04	69.55
68.14								
15.42	CFS	66.79	65.52	64.32	63.18	62.08	61.04	60.09
59.23								
15.90	CFS	58.46	57.74	57.05	56.40	55.79	55.23	54.71
54.20								
16.38	CFS	53.70	53.22	52.74	52.26	51.79	51.34	50.91
50.47								
16.86	CFS	50.03	49.60	49.18	48.77	48.36	47.94	47.51
47.08								
17.34	CFS	46.67	46.28	45.88	45.45	45.01	44.57	44.14
43.73								
17.82	CFS	43.30	42.86	42.43	42.01	41.59	41.17	40.75
40.34								
18.30	CFS	39.94	39.55	39.16	38.78	38.43	38.12	37.82
37.52								
18.78	CFS	37.23	36.98	36.74	36.51	36.29	36.08	35.89
35.71								
19.26	CFS	35.54	35.38	35.23	35.08	34.94	34.79	34.63
34.47								
19.74	CFS	34.34	34.20	34.05	33.90	33.75	33.63	33.50
33.37								
20.22	CFS	33.22	33.07	32.93	32.77	32.61	32.46	32.33
32.21								
20.70	CFS	32.07	31.91	31.77	31.63	31.48	31.33	31.18
31.03								
21.18	CFS	30.89	30.76	30.62	30.49	30.36	30.23	30.10
29.96								
21.66	CFS	29.81	29.67	29.54	29.40	29.27	29.15	29.01
28.85								
22.14	CFS	28.69	28.53	28.37	28.22	28.07	27.92	27.78
27.63								
22.62	CFS	27.46	27.29	27.14	26.99	26.82	26.65	26.49
26.35								
23.10	CFS	26.22	26.07	25.91	25.76	25.61	25.48	25.34
25.18								
23.58	CFS	25.02	24.88	24.76	24.64	24.49	24.33	24.17
24.08								
24.06	CFS	23.96	23.53	22.83	21.99	21.08	20.14	19.16
18.09								
24.54	CFS	16.94	15.72	14.45	13.22	12.04	10.95	9.98
9.12								
25.02	CFS	8.39	7.76	7.23	6.78	6.40	6.09	5.82
5.60								
25.50	CFS	5.41	5.24	5.09	4.95	4.83	4.71	4.61
4.50								
25.98	CFS	4.41	4.31	4.22	4.14	4.05	3.97	3.89
3.82								
26.46	CFS	3.74	3.67	3.60	3.53	3.46		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.34 WATERSHED INCHES; 1110 CFS-HRS; 91.8 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 176  
 OUTPUT #1 HYDROGRAPH

1  
 TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION



04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
Dist;H1&H8UG;GHC2.04TEST  
11:01:11 PASS 1 JOB NO. 1  
32

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET) 460.3 (DIVERT)  
12.75

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1110 CFS-HRS; 91.8 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 72

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 177

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET) 460.3 (NULL)  
12.75

		HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2						
		MAIN TIME INCREMENT = .060 hr,					DRAINAGE AREA = 1.28	
HRS	SQ.MI.							
7.26 CFS	.68	.48	.50	.53	.55	.58	.61	.65
7.74 CFS	1.03	.72	.76	.80	.85	.89	.94	.99
8.22 CFS	1.50	1.09	1.14	1.19	1.25	1.31	1.37	1.43
8.70 CFS	2.10	1.56	1.63	1.71	1.78	1.86	1.94	2.02
9.18 CFS	2.92	2.18	2.26	2.35	2.44	2.55	2.66	2.78
9.66 CFS	4.79	3.08	3.26	3.45	3.68	3.93	4.19	4.48
10.14 CFS	8.08	5.11	5.47	5.84	6.24	6.66	7.11	7.58
10.62 CFS	13.52	8.60	9.14	9.71	10.33	11.00	11.75	12.58
11.10 CFS	27.50	14.59	15.81	17.20	18.78	20.57	22.59	24.89
11.58 CFS	85.40	30.46	33.92	38.11	43.20	49.56	57.83	69.09
12.06 CFS		110	147	190	232	270	308	344

379								
12.54	CFS	410	435	452	459	459	452	440
423								
13.02	CFS	403	381	359	336	313	292	272
252								
13.50	CFS	235	218	203	189	177	165	155
146								
13.98	CFS	138	131	124	119	114	109	105
101								
14.46	CFS	97.83	94.81	92.07	89.54	87.17	84.97	82.93
81.03								
14.94	CFS	79.21	77.47	75.80	74.17	72.58	71.04	69.55
68.14								
15.42	CFS	66.79	65.52	64.32	63.18	62.08	61.04	60.09
59.23								
15.90	CFS	58.46	57.74	57.05	56.40	55.79	55.23	54.71
54.20								
16.38	CFS	53.70	53.22	52.74	52.26	51.79	51.34	50.91
50.47								

1

TR20 ----- SCS

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

Dist;H1&H8UG;GHC2.04TEST

11:01:11

PASS 1 JOB NO. 1

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16.86	CFS	50.03	49.60	49.18	48.77	48.36	47.94	47.51
47.08								
17.34	CFS	46.67	46.28	45.88	45.45	45.01	44.57	44.14
43.73								
17.82	CFS	43.30	42.86	42.43	42.01	41.59	41.17	40.75
40.34								
18.30	CFS	39.94	39.55	39.16	38.78	38.43	38.12	37.82
37.52								
18.78	CFS	37.23	36.98	36.74	36.51	36.29	36.08	35.89
35.71								
19.26	CFS	35.54	35.38	35.23	35.08	34.94	34.79	34.63
34.47								
19.74	CFS	34.34	34.20	34.05	33.90	33.75	33.63	33.50
33.37								
20.22	CFS	33.22	33.07	32.93	32.77	32.61	32.46	32.33
32.21								
20.70	CFS	32.07	31.91	31.77	31.63	31.48	31.33	31.18
31.03								
21.18	CFS	30.89	30.76	30.62	30.49	30.36	30.23	30.10
29.96								
21.66	CFS	29.81	29.67	29.54	29.40	29.27	29.15	29.01
28.85								
22.14	CFS	28.69	28.53	28.37	28.22	28.07	27.92	27.78
27.63								
22.62	CFS	27.46	27.29	27.14	26.99	26.82	26.65	26.49
26.35								
23.10	CFS	26.22	26.07	25.91	25.76	25.61	25.48	25.34
25.18								
23.58	CFS	25.02	24.88	24.76	24.64	24.49	24.33	24.17
24.08								
24.06	CFS	23.96	23.53	22.83	21.99	21.08	20.14	19.16
18.09								
24.54	CFS	16.94	15.72	14.45	13.22	12.04	10.95	9.98
9.12								
25.02	CFS	8.39	7.76	7.23	6.78	6.40	6.09	5.82

5.60							
25.50 CFS	5.41	5.24	5.09	4.95	4.83	4.71	4.61
4.50							
25.98 CFS	4.41	4.31	4.22	4.14	4.05	3.97	3.89
3.82							
26.46 CFS	3.74	3.67	3.60	3.53	3.46		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.34 WATERSHED INCHES; 1110 CFS-HRS; 91.8 ACRE-FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.82		459.6		229.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.34 WATERSHED INCHES; 1110 CFS-HRS; 91.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.18		27.4		(RUNOFF)
17.35		1.1		(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05 SQ.MI.

HRS								
11.52 CFS	.41	.66	1.01	1.43	1.94	2.73	3.90	
5.71								
12.00 CFS	9.08	14.77	23.27	27.41	23.98	19.09	15.59	
12.97								
12.48 CFS	11.21	10.12	8.90	7.63	6.74	6.21	5.83	
5.51								
12.96 CFS	5.22	4.93	4.64	4.35	4.11	3.93	3.75	
3.58								
13.44 CFS	3.41	3.23	3.07	2.91	2.78	2.69	2.61	
2.55								
13.92 CFS	2.51	2.47	2.44	2.40	2.35	2.30	2.25	
2.21								
14.40 CFS	2.18	2.15	2.10	2.05	1.99	1.94	1.91	
1.87								
14.88 CFS	1.83	1.78	1.74	1.69	1.64	1.59	1.56	
1.53								

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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15.36 CFS	1.52	1.52	1.52	1.52	1.51	1.48	1.46	
1.45								
15.84 CFS	1.45	1.45	1.43	1.41	1.39	1.38	1.38	
1.37								
16.32 CFS	1.35	1.34	1.33	1.31	1.29	1.28	1.27	

1.27								
16.80 CFS	1.26	1.24	1.23	1.22	1.22	1.21	1.18	
1.15								
17.28 CFS	1.14	1.15	1.14	1.12	1.10	1.08	1.07	
1.06								
17.76 CFS	1.05	1.04	1.02	1.01	1.01	1.00	.98	
.96								
18.24 CFS	.95	.95	.94	.93	.92	.93	.94	
.94								
18.72 CFS	.93	.92	.93	.93	.91	.90	.90	
.90								
19.20 CFS	.90	.90	.90	.90	.90	.90	.90	
.88								
19.68 CFS	.87	.88	.88	.86	.85	.86	.87	
.88								
20.16 CFS	.86	.85	.85	.85	.83	.82	.82	
.84								
20.64 CFS	.84	.83	.82	.82	.83	.82	.80	
.80								
21.12 CFS	.80	.79	.79	.79	.79	.80	.80	
.79								
21.60 CFS	.78	.77	.77	.77	.76	.77	.77	
.77								
22.08 CFS	.75	.75	.74	.74	.74	.74	.74	
.74								
22.56 CFS	.74	.72	.71	.72	.72	.70	.69	
.70								
23.04 CFS	.71	.71	.70	.69	.69	.69	.68	
.68								
23.52 CFS	.66	.65	.66	.67	.68	.66	.64	
.64								
24.00 CFS	.68	.66	.46					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .86 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	465.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.33 WATERSHED INCHES; 1138 CFS-HRS; 94.1 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 80.  
 \*\*\*

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	465.6	213.38

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.33 WATERSHED INCHES; 1138 CFS-HRS; 94.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	13.2	(RUNOFF)

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist;H1&H8UG;GHC2.04TEST

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .71 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	468.7	177.66

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.31 WATERSHED INCHES; 1153 CFS-HRS; 95.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	32.4	(RUNOFF)
17.34	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .94 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	32.5	(RUNOFF)
23.12	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .89 WATERSHED INCHES; 42 CFS-HRS; 3.4 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 184  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	32.5	(DIVERT)
23.12	1.0	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
42 CFS-HRS; 3.4 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

Dist;H1&H8UG;GHC2.04TEST

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PASS 1 JOB NO. 1

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 81, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 200.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 81

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* WARNING - XSECTION 185  
NO HYDROGRAPH IN INPUT LOCATION 1 OR 6 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 185

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.27	32.5	(NULL)
23.12	1.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.89 WATERSHED INCHES; 42 CFS-HRS; 3.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 186

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	9.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.52 WATERSHED INCHES; 16 CFS-HRS; 1.3 ACRE-FEET.

FEET.

OPERATION ADDHYD XSECTION 187

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	42.0	(NULL)
24.02	1.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .75 WATERSHED INCHES; 57 CFS-HRS; 4.7 ACRE-  
 FEET.

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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OPERATION ADDHYD XSECTION 85

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	68.1	(NULL)
24.00	2.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .17  
 HRS SQ.MI.

11.34 CFS	.49	.74	1.04	1.40	2.02	2.88	3.85
5.10							
11.82 CFS	6.91	9.68	14.06	21.82	35.47	55.61	67.12
65.85							
12.30 CFS	60.68	53.25	45.81	40.10	35.81	31.52	27.61
24.55							
12.78 CFS	22.17	20.33	18.90	17.71	16.60	15.55	14.59
13.76							
13.26 CFS	13.06	12.42	11.83	11.27	10.71	10.17	9.65
9.21							
13.74 CFS	8.85	8.54	8.31	8.12	7.97	7.84	7.71
7.56							
14.22 CFS	7.40	7.25	7.12	7.00	6.89	6.75	6.60
6.44							
14.70 CFS	6.29	6.15	6.03	5.90	5.76	5.62	5.49
5.33							
15.18 CFS	5.18	5.06	4.96	4.90	4.86	4.84	4.82
4.79							
15.66 CFS	4.74	4.67	4.63	4.63	4.60	4.57	4.51
4.45							
16.14 CFS	4.41	4.39	4.36	4.32	4.28	4.24	4.19
4.14							
16.62 CFS	4.10	4.07	4.05	4.01	3.97	3.93	3.91
3.89							
17.10 CFS	3.85	3.79	3.72	3.68	3.66	3.64	3.60
3.53							
17.58 CFS	3.47	3.43	3.40	3.37	3.32	3.28	3.24
3.22							
18.06 CFS	3.19	3.15	3.10	3.07	3.04	3.02	2.97

2.95							
18.54 CFS	2.96	2.97	2.98	2.95	2.94	2.95	2.94
2.92							
19.02 CFS	2.89	2.88	2.87	2.86	2.86	2.86	2.86
2.86							
19.50 CFS	2.86	2.85	2.81	2.80	2.80	2.79	2.76
2.74							
19.98 CFS	2.74	2.77	2.77	2.75	2.74	2.72	2.71
2.67							
20.46 CFS	2.64	2.64	2.65	2.66	2.65	2.62	2.63
2.63							
20.94 CFS	2.60	2.58	2.56	2.55	2.54	2.53	2.53
2.53							
21.42 CFS	2.53	2.53	2.53	2.50	2.47	2.47	2.46
2.44							
21.90 CFS	2.45	2.46	2.44	2.42	2.40	2.38	2.37
2.37							
22.38 CFS	2.36	2.36	2.36	2.35	2.31	2.29	2.30
2.28							
22.86 CFS	2.25	2.23	2.23	2.26	2.26	2.24	2.22
2.21							
23.34 CFS	2.20	2.19	2.17	2.13	2.11	2.12	2.14
2.14							
23.82 CFS	2.11	2.08	2.07	2.14	2.08	1.66	1.18
.79							
24.30 CFS	.49						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .80 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.80 490.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.26 WATERSHED INCHES; 1241 CFS-HRS; 102.6 ACRE-  
 FEET.

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.13 22.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.89 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.



OPERATION ADDHYD XSECTION 88

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.80	493.2	(NULL)
23.97	27.7	(NULL)

	HYDROGRAPH POINTS FOR		ALTERNATE = 1,	STORM = 2			
HRS	MAIN TIME INCREMENT = .060 hr,		DRAINAGE AREA = 1.55				
SQ.MI.							
7.32 CFS	.49	.52	.55	.58	.61	.65	.68
.72							
7.80 CFS	.77	.81	.86	.90	.95	1.01	1.06
1.11							
8.28 CFS	1.17	1.23	1.28	1.34	1.41	1.48	1.54
1.61							
8.76 CFS	1.68	1.76	1.84	1.92	2.00	2.09	2.18
2.27							
9.24 CFS	2.36	2.46	2.56	2.66	2.77	2.89	3.03
3.18							
9.72 CFS	3.36	3.55	3.75	3.99	4.25	4.53	4.83
5.16							
10.20 CFS	5.50	5.86	6.25	6.67	7.11	7.58	8.08
8.61							
10.68 CFS	9.17	9.76	10.40	11.07	11.80	12.59	13.48
14.53							
11.16 CFS	15.74	17.16	18.80	20.71	22.94	25.48	28.39
32.31							
11.64 CFS	37	42	49	58	70	86	113
156							
12.12 CFS	219	270	299	325	349	374	401
430							
12.60 CFS	455	474	487	493	491	483	470
452							
13.08 CFS	431	408	384	360	337	314	293
273							
13.56 CFS	254	236	220	205	192	181	170
161							
14.04 CFS	152	145	138	132	126	121	117
113							
14.52 CFS	109	106	103	100	98	95	93
91							
15.00 CFS	88.63	86.65	84.71	82.83	81.03	79.34	77.77
76.30							
15.48 CFS	74.93	73.62	72.35	71.10	69.88	68.77	67.81
66.91							
15.96 CFS	66.04	65.21	64.42	63.71	63.06	62.46	61.84
61.26							
16.44 CFS	60.70	60.13	59.56	59.02	58.52	58.03	57.53
57.01							
16.92 CFS	56.52	56.05	55.59	55.11	54.60	54.05	53.56
53.13							
17.40 CFS	52.68	52.20	51.68	51.16	50.66	50.18	49.71
49.20							
17.88 CFS	48.70	48.21	47.75	47.28	46.78	46.28	45.81
45.36							
18.36 CFS	44.92	44.45	44.02	43.68	43.36	43.04	42.68
42.37							
18.84 CFS	42.11	41.82	41.53	41.26	41.02	40.79	40.59
40.41							
19.32 CFS	40.24	40.08	39.93	39.78	39.61	39.39	39.21
39.07							
19.80 CFS	38.91	38.72	38.53	38.40	38.31	38.18	38.01
37.84							

20.28	CFS	37.68	37.51	37.29	37.08	36.93	36.82	36.71
36.54								
20.76	CFS	36.36	36.23	36.08	35.89	35.70	35.52	35.35
35.20								
21.24	CFS	35.05	34.91	34.78	34.64	34.51	34.37	34.18
33.99								
21.72	CFS	33.86	33.71	33.54	33.42	33.31	33.14	32.96
32.77								
22.20	CFS	32.59	32.41	32.25	32.09	31.94	31.80	31.63
31.40								

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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22.68	CFS	31.21	31.06	30.87	30.66	30.46	30.31	30.21
30.06								
23.16	CFS	29.88	29.70	29.52	29.36	29.20	29.03	28.81
28.63								
23.64	CFS	28.51	28.40	28.27	28.09	27.88	27.71	27.71
27.49								
24.12	CFS	26.48	25.17	23.90	22.69	21.55	20.47	19.42
18.32								
24.60	CFS	17.15	15.93	14.66	13.41	12.22	11.11	10.13
9.26								
25.08	CFS	8.50	7.86	7.31	6.85	6.46	6.14	5.86
5.64								
25.56	CFS	5.44	5.26	5.11	4.97	4.85	4.73	4.62
4.52								
26.04	CFS	4.42	4.33	4.24	4.15	4.07	3.98	3.90
3.83								
26.52	CFS	3.75	3.68	3.61	3.54			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.26 WATERSHED INCHES; 1260 CFS-HRS; 104.2 ACRE-FEET.

OPERATION DIVERT XSECTION 81  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.80	493.2	177.74
23.97	27.7	175.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1260 CFS-HRS; 104.2 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 71

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 89

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	493.2	(NULL)
23.97	27.7	(NULL)

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2							
HRS	MAIN	TIME	INCREMENT =	.060	hr,	DRAINAGE	AREA =	1.55
SQ.MI.								
7.32 CFS	.49	.52	.55	.58	.61	.65	.68	
.72								
7.80 CFS	.77	.81	.86	.90	.95	1.01	1.06	
1.11								

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8.28 CFS	1.17	1.23	1.28	1.34	1.41	1.48	1.54
1.61							
8.76 CFS	1.68	1.76	1.84	1.92	2.00	2.09	2.18
2.27							
9.24 CFS	2.36	2.46	2.56	2.66	2.77	2.89	3.03
3.18							
9.72 CFS	3.36	3.55	3.75	3.99	4.25	4.53	4.83
5.16							
10.20 CFS	5.50	5.86	6.25	6.67	7.11	7.58	8.08
8.61							
10.68 CFS	9.17	9.76	10.40	11.07	11.80	12.59	13.48
14.53							
11.16 CFS	15.74	17.16	18.80	20.71	22.94	25.48	28.39
32.31							
11.64 CFS	37	42	49	58	70	86	113
156							
12.12 CFS	219	270	299	325	349	374	401
430							
12.60 CFS	455	474	487	493	491	483	470
452							
13.08 CFS	431	408	384	360	337	314	293
273							
13.56 CFS	254	236	220	205	192	181	170
161							
14.04 CFS	152	145	138	132	126	121	117
113							
14.52 CFS	109	106	103	100	98	95	93
91							
15.00 CFS	88.63	86.65	84.71	82.83	81.03	79.34	77.77

76.30								
15.48	CFS	74.93	73.62	72.35	71.10	69.88	68.77	67.81
66.91								
15.96	CFS	66.04	65.21	64.42	63.71	63.06	62.46	61.84
61.26								
16.44	CFS	60.70	60.13	59.56	59.02	58.52	58.03	57.53
57.01								
16.92	CFS	56.52	56.05	55.59	55.11	54.60	54.05	53.56
53.13								
17.40	CFS	52.68	52.20	51.68	51.16	50.66	50.18	49.71
49.20								
17.88	CFS	48.70	48.21	47.75	47.28	46.78	46.28	45.81
45.36								
18.36	CFS	44.92	44.45	44.02	43.68	43.36	43.04	42.68
42.37								
18.84	CFS	42.11	41.82	41.53	41.26	41.02	40.79	40.59
40.41								
19.32	CFS	40.24	40.08	39.93	39.78	39.61	39.39	39.21
39.07								
19.80	CFS	38.91	38.72	38.53	38.40	38.31	38.18	38.01
37.84								
20.28	CFS	37.68	37.51	37.29	37.08	36.93	36.82	36.71
36.54								
20.76	CFS	36.36	36.23	36.08	35.89	35.70	35.52	35.35
35.20								
21.24	CFS	35.05	34.91	34.78	34.64	34.51	34.37	34.18
33.99								
21.72	CFS	33.86	33.71	33.54	33.42	33.31	33.14	32.96
32.77								
22.20	CFS	32.59	32.41	32.25	32.09	31.94	31.80	31.63
31.40								
22.68	CFS	31.21	31.06	30.87	30.66	30.46	30.31	30.21
30.06								
23.16	CFS	29.88	29.70	29.52	29.36	29.20	29.03	28.81
28.63								
23.64	CFS	28.51	28.40	28.27	28.09	27.88	27.71	27.71
27.49								
24.12	CFS	26.48	25.17	23.90	22.69	21.55	20.47	19.42
18.32								
24.60	CFS	17.15	15.93	14.66	13.41	12.22	11.11	10.13
9.26								
25.08	CFS	8.50	7.86	7.31	6.85	6.46	6.14	5.86
5.64								
25.56	CFS	5.44	5.26	5.11	4.97	4.85	4.73	4.62
4.52								
26.04	CFS	4.42	4.33	4.24	4.15	4.07	3.98	3.90
3.83								
26.52	CFS	3.75	3.68	3.61	3.54			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.26 WATERSHED INCHES; 1260 CFS-HRS; 104.2 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

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EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 89  
 STARTING TIME = .00 RAIN DEPTH = 4.10 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. = 5 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1  
 PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.30 36.2 (RUNOFF)  
 20.13 1.1 (RUNOFF)  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.20 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 2  
 PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.40 34.3 390.10  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.20 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 3  
 PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.28 61.8 (RUNOFF)  
 23.98 1.3 (RUNOFF)  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.08 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 4  
 PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.32 92.6 (NULL)  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.13 WATERSHED INCHES; 126 CFS-HRS; 10.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 11  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	97.1	382.73
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.13 WATERSHED INCHES;	126 CFS-HRS;	10.4 ACRE-
FEET.		

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	90.5	368.14
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.12 WATERSHED INCHES;	125 CFS-HRS;	10.4 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	75.6	(RUNOFF)
20.13	2.4	(RUNOFF)
23.74	1.8	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.91 WATERSHED INCHES;	98 CFS-HRS;	8.1 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	161.2	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.02 WATERSHED INCHES;	224 CFS-HRS;	18.5 ACRE-
FEET.		

OPERATION DIVERT XSECTION 107  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	161.2	(DIVERT)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
224 CFS-HRS;	18.5 ACRE-FEET.	

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

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\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 84, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 358.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 84

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 108  
 NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	161.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.02 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	155.6	357.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.02 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	106.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.10 WATERSHED INCHES; 147 CFS-HRS; 12.1 ACRE-

FEET.

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\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE

STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00. THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.

\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.90 30.4 375.57 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.74 WATERSHED INCHES; 130 CFS-HRS; 10.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.13 11.4 (RUNOFF) RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 1.53 WATERSHED INCHES; 10 CFS-HRS; .8 ACRE-FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 13.04 29.1 354.29 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.74 WATERSHED INCHES; 130 CFS-HRS; 10.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.19 56.1 (RUNOFF) 15.83 2.5 (RUNOFF) 24.02 1.1 (RUNOFF) RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 1.62 WATERSHED INCHES; 57 CFS-HRS; 4.7 ACRE-FEET.



OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	182.5	(NULL)
24.01	5.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.93 WATERSHED INCHES; 281 CFS-HRS; 23.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	24.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.05 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	191.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.12 WATERSHED INCHES; 409 CFS-HRS; 33.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	203.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.11 WATERSHED INCHES; 435 CFS-HRS; 35.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	203.3	(NULL)

HRS MAIN TIME INCREMENT = .060 hr, HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 DRAINAGE AREA = .32

SQ.MI.								
5.28 CFS	.00	.01	.01	.01	.01	.01	.01	.01
.01								
5.76 CFS	.01	.01	.02	.02	.02	.02	.02	.02
.02								
6.24 CFS	.02	.03	.03	.03	.03	.03	.03	.03
.04								
6.72 CFS	.04	.04	.04	.04	.05	.05	.05	.05
.05								
7.20 CFS	.06	.06	.06	.07	.07	.07	.07	.08
.08								
7.68 CFS	.08	.09	.09	.09	.10	.10	.10	.10
.11								
8.16 CFS	.11	.12	.12	.13	.13	.14	.14	.14
.15								
8.64 CFS	.16	.17	.18	.20	.22	.24	.25	.25
.27								
9.12 CFS	.29	.33	.36	.40	.45	.51	.57	.57
.63								
9.60 CFS	.70	.78	.86	.95	1.04	1.14	1.23	1.23
1.35								
10.08 CFS	1.47	1.61	1.77	1.93	2.10	2.27	2.46	2.46
2.65								
10.56 CFS	2.86	3.09	3.36	3.66	4.00	4.38	4.81	4.81
5.27								

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11.04 CFS	5.77	6.34	6.99	7.74	8.57	9.50	10.58	10.58
11.83								
11.52 CFS	13.29	15.23	17.96	21.16	24.85	29.61	37.04	37.04
48.55								
12.00 CFS	65	89	124	154	171	178	185	185
202								
12.48 CFS	197	184	167	152	139	129	123	123
117								
12.96 CFS	111	105	98	92	86	80	75	75
71								
13.44 CFS	66.26	62.25	58.54	55.12	51.99	49.15	46.58	46.58
44.26								
13.92 CFS	42.18	40.33	38.68	37.21	35.87	34.65	33.59	33.59
32.73								
14.40 CFS	32.05	31.47	30.94	30.44	29.94	29.48	29.03	29.03
28.60								
14.88 CFS	28.18	27.74	27.31	26.89	26.46	26.02	25.60	25.60
25.22								
15.36 CFS	24.88	24.57	24.31	24.08	23.86	23.64	23.42	23.42
23.24								
15.84 CFS	23.09	22.96	22.81	22.65	22.49	22.34	22.21	22.21
22.08								
16.32 CFS	21.94	21.79	21.66	21.51	21.36	21.21	21.08	21.08
20.95								
16.80 CFS	20.81	20.66	20.52	20.40	20.28	20.14	19.99	19.99
19.82								
17.28 CFS	19.67	19.55	19.42	19.28	19.11	18.95	18.79	18.79
18.65								
17.76 CFS	18.51	18.36	18.20	18.05	17.92	17.79	17.65	17.65

17.50								
18.24	CFS	17.37	17.24	17.12	16.98	16.86	16.77	16.70
16.63								
18.72	CFS	16.54	16.45	16.40	16.35	16.27	16.19	16.12
16.06								
19.20	CFS	15.99	15.93	15.88	15.83	15.78	15.73	15.68
15.61								
19.68	CFS	15.54	15.49	15.44	15.36	15.28	15.23	15.20
15.14								
20.16	CFS	15.07	14.98	14.91	14.83	14.73	14.62	14.53
14.47								
20.64	CFS	14.41	14.32	14.23	14.16	14.10	14.02	13.92
13.84								
21.12	CFS	13.76	13.68	13.60	13.54	13.49	13.43	13.38
13.33								
21.60	CFS	13.26	13.17	13.11	13.05	12.98	12.92	12.88
12.82								
22.08	CFS	12.75	12.67	12.60	12.54	12.48	12.42	12.36
12.31								
22.56	CFS	12.26	12.18	12.10	12.04	11.98	11.90	11.82
11.76								
23.04	CFS	11.73	11.69	11.63	11.57	11.50	11.45	11.39
11.32								
23.52	CFS	11.24	11.16	11.10	11.05	10.98	10.89	10.79
10.70								
24.00	CFS	10.68	10.60	10.19	9.57	8.96	8.43	7.95
7.54								
24.48	CFS	7.21	6.94	6.72	6.53	6.36	6.20	6.05
5.91								
24.96	CFS	5.78	5.65	5.52	5.39	5.28	5.16	5.05
4.94								
25.44	CFS	4.82	4.70	4.58	4.46	4.35	4.23	4.12
4.01								
25.92	CFS	3.91	3.81	3.71	3.61	3.51	3.42	3.33
3.24								
26.40	CFS	3.16	3.08	2.99	2.92	2.84	2.76	2.69
2.62								
26.88	CFS	2.55	2.49	2.42	2.36	2.29	2.23	2.18
2.12								
27.36	CFS	2.06	2.01	1.96	1.90	1.86	1.81	1.76
1.71								
27.84	CFS	1.67						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.11 WATERSHED INCHES; 435 CFS-HRS; 35.9 ACRE-  
 FEET.

DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	42	23	19	16	13	11	6	3

DURATION (HRS) 18  
 FLOW (CFS) 2 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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OPERATION REACH XSECTION 16

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.44	203.3	332.93
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.11 WATERSHED INCHES;		435 CFS-HRS;
FEET.		35.9 ACRE-

OPERATION RUNOFF XSECTION 17

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.15	41.3	(RUNOFF)
15.84	1.3	(RUNOFF)
17.34	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.81 WATERSHED INCHES;		38 CFS-HRS;
FEET.		3.2 ACRE-

OPERATION RUNOFF XSECTION 118

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.18	51.3	(RUNOFF)
18.86	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.34 WATERSHED INCHES;		54 CFS-HRS;
FEET.		4.5 ACRE-

OPERATION RESVOR STRUCTURE 24

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.18	51.3	(NULL)
18.86	1.0	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03 SQ.MI.

HRS	.00	.01	.02	.02	.03	.04	.05
3.18 CFS							
.05	.06	.07	.08	.08	.09	.10	.11
3.66 CFS							
.12	.13	.13	.14	.15	.15	.16	.17
4.14 CFS							
.18	.19	.19	.20	.21	.22	.23	.23
4.62 CFS							
.24	.25	.26	.27	.28	.28	.28	.29
5.10 CFS							
.30	.31	.32	.33	.34	.34	.34	.35
5.58 CFS							
.36	.38	.39	.39	.40	.41	.42	.44
6.06 CFS							
.45							

6.54 CFS	.47	.48	.50	.50	.51	.53	.55
.56							
7.02 CFS	.57	.59	.61	.62	.64	.65	.66
.68							
7.50 CFS	.70	.71	.72	.73	.75	.77	.79
.81							
7.98 CFS	.82	.84	.86	.88	.89	.90	.92
.94							

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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8.46 CFS	.95	.97	.99	1.02	1.04	1.05	1.07
1.08							
8.94 CFS	1.09	1.11	1.15	1.18	1.20	1.24	1.30
1.35							
9.42 CFS	1.40	1.44	1.48	1.53	1.58	1.64	1.70
1.75							
9.90 CFS	1.80	1.84	1.90	1.96	2.02	2.08	2.13
2.18							
10.38 CFS	2.24	2.30	2.36	2.44	2.56	2.70	2.86
3.05							
10.86 CFS	3.25	3.45	3.65	3.85	4.10	4.41	4.75
5.11							
11.34 CFS	5.48	5.87	6.27	6.67	7.44	8.77	10.13
11.42							
11.82 CFS	13.16	15.66	19.33	25.20	34.03	45.64	51.30
45.48							
12.30 CFS	35.39	27.49	21.88	18.02	15.49	13.36	11.31
9.73							
12.78 CFS	8.71	8.00	7.45	6.99	6.54	6.12	5.70
5.35							
13.26 CFS	5.07	4.81	4.57	4.33	4.10	3.87	3.66
3.48							
13.74 CFS	3.34	3.23	3.14	3.07	3.02	2.97	2.91
2.85							
14.22 CFS	2.78	2.72	2.66	2.61	2.56	2.51	2.44
2.37							
14.70 CFS	2.31	2.26	2.21	2.16	2.10	2.05	1.99
1.93							
15.18 CFS	1.87	1.82	1.79	1.77	1.76	1.75	1.75
1.74							
15.66 CFS	1.71	1.68	1.66	1.66	1.66	1.64	1.62
1.59							
16.14 CFS	1.57	1.57	1.56	1.54	1.52	1.50	1.49
1.46							
16.62 CFS	1.45	1.44	1.43	1.42	1.40	1.38	1.37
1.37							
17.10 CFS	1.35	1.33	1.30	1.28	1.28	1.27	1.26
1.23							
17.58 CFS	1.20	1.19	1.18	1.17	1.15	1.13	1.12
1.11							
18.06 CFS	1.10	1.09	1.07	1.05	1.05	1.04	1.02
1.01							
18.54 CFS	1.02	1.03	1.03	1.02	1.01	1.01	1.01
1.00							
19.02 CFS	.99	.98	.98	.98	.98	.98	.98
.98							

19.50 CFS	.98	.97	.96	.95	.95	.95	.94
.93							
19.98 CFS	.93	.94	.94	.93	.92	.92	.91
.90							
20.46 CFS	.88	.88	.89	.90	.89	.88	.88
.88							
20.94 CFS	.88	.86	.86	.85	.85	.85	.85
.85							
21.42 CFS	.85	.85	.85	.83	.82	.82	.82
.81							
21.90 CFS	.81	.82	.81	.80	.79	.79	.79
.78							
22.38 CFS	.78	.78	.78	.78	.76	.75	.76
.75							
22.86 CFS	.74	.73	.73	.75	.75	.74	.73
.72							
23.34 CFS	.72	.72	.71	.70	.69	.69	.70
.71							
23.82 CFS	.69	.68	.67	.70	.69	.54	.32
.17							
24.30 CFS	.09	.04	.02	.01	.01	.00	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.34 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	5	2	2	1	1	1	1	1
DURATION(HRS)	17							
FLOW(CFS)	0							

OPERATION RUNOFF XSECTION 119

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	11.8	(RUNOFF)

1

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist;H1&H8UG;GHC2.04TEST

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.64 WATERSHED INCHES; 10 CFS-HRS; .8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	61.7	(NULL)
15.82	2.0	(NULL)
20.85	1.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.21 WATERSHED INCHES; 65 CFS-HRS; 5.3 ACRE-

FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	102.5	(NULL)
15.84	3.3	(NULL)
18.85	2.0	(NULL)
24.00	1.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.05 WATERSHED INCHES; 103 CFS-HRS; 8.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	70.7	(RUNOFF)
15.84	2.4	(RUNOFF)
23.06	1.1	(RUNOFF)
23.71	1.0	(RUNOFF)
24.00	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.50 WATERSHED INCHES; 65 CFS-HRS; 5.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	173.1	(NULL)
15.84	5.7	(NULL)
17.34	4.4	(NULL)
20.85	3.1	(NULL)
24.00	2.5	(NULL)

1

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION  
04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
Dist;H1&H8UG;GHC2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.81 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	324.9	(NULL)
12.40	266.4	(NULL)
20.03	18.5	(NULL)

23.03	14.3	(NULL)
24.00	13.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.26 WATERSHED INCHES; 601 CFS-HRS; 49.7 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 122  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.06	168.0 *	(DIVERT)
20.03	18.5	(DIVERT)
23.03	14.3	(DIVERT)
24.00	13.2	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 543 CFS-HRS; 44.9 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	156.9	176.37
12.40	98.4	176.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .22 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 83, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 322.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 83

1

TR20 ----- SCS

Ellicott City FloodStudy- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
 AT STRUCTURE 83  
 \*\*\*

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.78	.0	316.57

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.



OPERATION ADDHYD XSECTION 123

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.69	169.5	(NULL)
20.03	18.5	(NULL)
23.03	14.4	(NULL)
24.00	13.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.05 WATERSHED INCHES; 543 CFS-HRS; 44.9 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.87	167.9	315.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.05 WATERSHED INCHES; 543 CFS-HRS; 44.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	62.7	(RUNOFF)
23.99	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.31 WATERSHED INCHES; 75 CFS-HRS; 6.2 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 31

1  
TR20 ----- SCS  
-

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VERSION  
04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	54.8	363.56
23.79	1.2	356.48

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.31 WATERSHED INCHES; 75 CFS-HRS; 6.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	87.7	(RUNOFF)
20.68	2.3	(RUNOFF)
23.97	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.26 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	138.3	(NULL)
20.14	4.0	(NULL)
23.78	3.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.28 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	123.7	318.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.28 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	65.5	(RUNOFF)
24.01	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.01 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-  
 FEET.

1  
 TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	203.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.04 WATERSHED INCHES;	621 CFS-HRS;	51.3 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	324.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.09 WATERSHED INCHES;	805 CFS-HRS;	66.5 ACRE-
FEEET.		

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	324.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.09 WATERSHED INCHES;	805 CFS-HRS;	66.5 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	108.7	(RUNOFF)
21.97	2.1	(RUNOFF)
24.03	1.8	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.72 WATERSHED INCHES;	122 CFS-HRS;	10.1 ACRE-
FEEET.		

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	98.7	312.69
20.73	2.3	310.19
24.09	1.8	310.15
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.72 WATERSHED INCHES;	122 CFS-HRS;	10.1 ACRE-
FEEET.		

1  
 TR20 ----- SCS  
 -

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	18.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.53 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
WITH .34 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 377.21.  
\*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	3.9	379.83

\*\*\* WARNING - STRUCTURE 32, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS  
RESVOR ( 12. % OF MAX. HYDROGRAPH COORDINATE)  
MAIN TIME INCREMENT TOO SMALL.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.77 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 34, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.72	3.9	338.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.76 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	55.1	(RUNOFF)
20.10	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.52 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

Dist;H1&H8UG;GHC2.04TEST

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\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS WITH .90 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE REMAINING IN RESERVOIR AT ELEV. 353.60. \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.37 33.5 356.65 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.91 WATERSHED INCHES; 52 CFS-HRS; 4.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.39 35.1 (NULL) RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.87 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.39 35.1 (NULL) RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.87 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0, CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37. \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.39 35.1 330.41 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.87 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 138

1  
TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	58.9	(RUNOFF)
19.74	1.0	(RUNOFF)
20.05	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.00 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.16	74.3	(NULL)
18.81	3.2	(NULL)
24.00	2.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.93 WATERSHED INCHES; 121 CFS-HRS; 10.0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.16	74.3	(NULL)
18.81	3.2	(NULL)
24.00	2.3	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06 SQ.MI.

HRS	3.30 CFS	3.78 CFS	4.26 CFS	4.74 CFS	5.22 CFS	5.70 CFS	6.18 CFS	6.66 CFS	7.14 CFS
.00	.01	.01	.01	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.02	.02	.02	.02	.02
.02	.02	.02	.02	.02	.03	.03	.03	.03	.03
.03	.03	.03	.03	.03	.04	.04	.04	.04	.04
.06	.06	.06	.06	.06	.07	.07	.07	.07	.07
.13	.13	.13	.13	.13	.14	.14	.14	.14	.14
.21	.21	.21	.21	.21	.22	.22	.22	.22	.22
.30	.30	.30	.30	.30	.31	.31	.31	.31	.31
.41	.41	.41	.41	.41	.42	.42	.42	.42	.42
.54	.54	.54	.54	.54	.56	.56	.56	.56	.56

.68								
7.62	CFS	.70	.72	.75	.77	.79	.81	.84
.86								
8.10	CFS	.88	.90	.91	.94	.97	.99	1.01
1.03								
8.58	CFS	1.06	1.10	1.12	1.14	1.16	1.18	1.20
1.24								
9.06	CFS	1.28	1.31	1.35	1.40	1.46	1.52	1.57
1.62								
9.54	CFS	1.66	1.72	1.79	1.86	1.92	1.98	2.03
2.09								
10.02	CFS	2.16	2.24	2.31	2.38	2.44	2.51	2.58
2.66								
10.50	CFS	2.74	2.85	3.00	3.18	3.37	3.58	3.79
4.02								
10.98	CFS	4.23	4.46	4.78	5.15	5.54	5.95	6.35
6.81								
11.46	CFS	7.24	7.70	9.00	10.77	12.01	13.45	15.92
20.31								
11.94	CFS	26.55	37.24	52.37	71.49	73.95	66.36	61.45
57.21								
12.42	CFS	52.70	48.61	44.82	40.06	35.60	32.46	30.59
28.81								
12.90	CFS	27.11	25.49	23.92	22.41	21.00	19.74	18.61
17.54								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

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13.38	CFS	16.62	15.74	14.89	14.09	13.33	12.66	12.07
11.53								
13.86	CFS	11.04	10.60	10.20	9.84	9.48	9.18	8.90
8.63								
14.34	CFS	8.40	8.17	7.95	7.73	7.50	7.28	7.08
6.91								
14.82	CFS	6.76	6.60	6.44	6.29	6.14	5.99	5.84
5.71								
15.30	CFS	5.61	5.53	5.46	5.39	5.33	5.25	5.16
5.07								
15.78	CFS	5.02	4.99	4.93	4.86	4.79	4.73	4.69
4.65								
16.26	CFS	4.60	4.55	4.51	4.47	4.42	4.38	4.34
4.32								
16.74	CFS	4.29	4.24	4.20	4.16	4.14	4.11	4.07
4.01								
17.22	CFS	3.95	3.93	3.92	3.89	3.84	3.78	3.74
3.71								
17.70	CFS	3.68	3.65	3.60	3.56	3.53	3.51	3.48
3.43								
18.18	CFS	3.39	3.36	3.34	3.31	3.26	3.24	3.24
3.24								
18.66	CFS	3.22	3.18	3.16	3.16	3.14	3.11	3.08
3.07								
19.14	CFS	3.05	3.04	3.03	3.02	3.01	3.00	2.99
2.97								
19.62	CFS	2.93	2.92	2.93	2.90	2.87	2.86	2.86
2.88								
20.10	CFS	2.86	2.83	2.81	2.80	2.79	2.76	2.73

2.74								
20.58 CFS	2.75	2.74	2.71	2.69	2.70	2.69	2.66	
2.64								
21.06 CFS	2.63	2.62	2.61	2.61	2.60	2.60	2.59	
2.59								
21.54 CFS	2.58	2.55	2.54	2.55	2.55	2.53	2.54	
2.54								
22.02 CFS	2.52	2.50	2.49	2.49	2.48	2.48	2.48	
2.47								
22.50 CFS	2.47	2.46	2.43	2.42	2.43	2.42	2.39	
2.38								
22.98 CFS	2.40	2.41	2.40	2.38	2.37	2.36	2.36	
2.35								
23.46 CFS	2.34	2.31	2.30	2.32	2.33	2.32	2.29	
2.27								
23.94 CFS	2.27	2.34	2.26	1.92	1.68	1.59	1.54	
1.52								
24.42 CFS	1.51	1.50	1.49	1.48	1.47	1.47	1.46	
1.45								
24.90 CFS	1.44	1.44	1.43	1.42	1.41	1.41	1.40	
1.39								
25.38 CFS	1.38	1.38	1.37	1.36	1.35	1.35	1.34	
1.33								
25.86 CFS	1.32	1.32	1.31	1.30	1.30			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 121 CFS-HRS; 10.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	15
FLOW(CFS)	12	6	4	3	3	2	2	1
TRUNCATED								

OPERATION RUNOFF XSECTION 140

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET) 12.14 3.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .95 WATERSHED INCHES; 3 CFS-HRS; .2 ACRE-FEET.

OPERATION ADDHYD XSECTION 141

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist;H1&H8UG;GHC2.04TEST

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET) 12.16 77.2 (NULL)  
 19.72 3.0 (NULL)  
 24.00 2.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)



2.79 WATERSHED INCHES; 124 CFS-HRS; 10.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	43.4	(RUNOFF)
20.67	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.15 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	359.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.09 WATERSHED INCHES; 859 CFS-HRS; 71.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	454.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.16 WATERSHED INCHES; 981 CFS-HRS; 81.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	513.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.21 WATERSHED INCHES; 1102 CFS-HRS; 91.0 ACRE-  
FEET.

OPERATION DIVERT XSECTION 144  
OUTPUT #1 HYDROGRAPH

1  
TR20 ----- SCS  
-

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.35 513.0 (DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1102 CFS-HRS; 91.0 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 82, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 318.00.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 82

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

\*\*\* WARNING - XSECTION 145
NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.
\*\*\*

OPERATION ADDHYD XSECTION 145

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.35 513.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.21 WATERSHED INCHES; 1102 CFS-HRS; 91.0 ACRE-
FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.49 485.6 290.41

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.20 WATERSHED INCHES; 1101 CFS-HRS; 91.0 ACRE-
FEET.

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,
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OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	485.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.20 WATERSHED INCHES;	1101 CFS-HRS;	91.0 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	50.8	(RUNOFF)
20.13	1.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.19 WATERSHED INCHES;	67 CFS-HRS;	5.6 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	62.6	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.12 WATERSHED INCHES;	86 CFS-HRS;	7.1 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	113.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.15 WATERSHED INCHES;	153 CFS-HRS;	12.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	61.6	(RUNOFF)
24.03	1.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.14 WATERSHED INCHES;	65 CFS-HRS;	5.4 ACRE-
FEET.		

1

TR20 ----- SCS

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
Dist;H1&H8UG;GHC2.04TEST  
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OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET) 512.5 (NULL)  
12.47  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.20 WATERSHED INCHES; 1166 CFS-HRS; 96.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET) 609.1 (NULL)  
12.43  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.20 WATERSHED INCHES; 1319 CFS-HRS; 109.0 ACRE-  
FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET) 591.1 285.04  
12.55  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.19 WATERSHED INCHES; 1318 CFS-HRS; 108.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.19 WATERSHED INCHES; 205 CFS-HRS; 108.9 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 53

\*\*\* MESSAGE - XSECTION 53, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

1  
TR20 ----- SCS  
-

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
Dist;H1&H8UG;GHC2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.19 WATERSHED INCHES; 203 CFS-HRS; 108.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - XSECTION 54, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.19 WATERSHED INCHES; 74 CFS-HRS; 108.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	38.2	(RUNOFF)
18.87	1.0	(RUNOFF)
19.44	1.0 *	(RUNOFF)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.95 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	605.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.19 WATERSHED INCHES; 1359 CFS-HRS; 112.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - XSECTION 57, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.19 WATERSHED INCHES; 209 CFS-HRS; 112.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 58

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	605.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.15 WATERSHED INCHES;	1359 CFS-HRS;	112.3 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.22	22.0	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03 SQ.MI.

HRS								
11.22 CFS	.44	.53	.63	.75	.88	1.03	1.24	
1.58								
11.70 CFS	1.98	2.45	3.07	3.96	5.32	7.49	11.28	
16.76								
12.18 CFS	21.35	21.74	19.02	15.70	13.05	11.07	9.63	
8.45								
12.66 CFS	7.33	6.38	5.69	5.20	4.82	4.51	4.24	
3.98								
13.14 CFS	3.73	3.51	3.32	3.16	3.01	2.87	2.72	
2.58								
13.62 CFS	2.45	2.33	2.23	2.16	2.09	2.05	2.01	
1.98								
14.10 CFS	1.94	1.91	1.87	1.83	1.79	1.76	1.73	
1.70								
14.58 CFS	1.66	1.62	1.58	1.54	1.51	1.48	1.44	
1.41								
15.06 CFS	1.37	1.33	1.29	1.26	1.23	1.22	1.21	
1.20								
15.54 CFS	1.20	1.19	1.18	1.16	1.15	1.15	1.14	
1.14								
16.02 CFS	1.12	1.11	1.09	1.09	1.08	1.07	1.06	
1.05								
16.50 CFS	1.04	1.02	1.01	1.00	1.00	.99	.98	
.97								
16.98 CFS	.96	.96	.95	.94	.92	.90	.90	
.90								
17.46 CFS	.89	.87	.85	.84	.83	.83	.82	
.81								
17.94 CFS	.80	.79	.78	.77	.76	.75	.75	
.74								
18.42 CFS	.73	.72	.72	.73	.73	.73	.72	
.72								
18.90 CFS	.72	.72	.71	.70	.70	.70	.70	
.70								
19.38 CFS	.70	.70	.70	.70	.69	.68	.68	
.68								
19.86 CFS	.68	.67	.67	.67	.68	.67	.67	
.66								
20.34 CFS	.66	.65	.64	.64	.64	.65	.65	
.64								
20.82 CFS	.64	.64	.64	.63	.62	.62	.62	
.62								

21.30 CFS	.62	.61	.61	.62	.61	.61	.60
.60							
21.78 CFS	.60	.59	.59	.59	.59	.59	.58
.58							
22.26 CFS	.57	.57	.57	.57	.57	.57	.56
.55							
22.74 CFS	.55	.55	.55	.54	.54	.54	.55
.54							
23.22 CFS	.54	.53	.53	.53	.53	.52	.51
.51							
23.70 CFS	.51	.52	.51	.50	.50	.51	.51
.43							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	615.1	(NULL)

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.13 WATERSHED INCHES; 1384 CFS-HRS; 114.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	615.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.13 WATERSHED INCHES; 1384 CFS-HRS; 114.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	12.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.38 WATERSHED INCHES; 15 CFS-HRS; 1.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION (FEET)		621.6						(NULL)
12.54								
		HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5						
		MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02						
HRS	SQ.MI.							
5.88	CFS	.49	.51	.54	.56	.59	.62	.65
.69								
6.36	CFS	.73	.77	.81	.85	.90	.95	1.00
1.05								
6.84	CFS	1.10	1.16	1.22	1.27	1.33	1.39	1.46
1.53								
7.32	CFS	1.60	1.67	1.75	1.83	1.91	2.00	2.08
2.17								
7.80	CFS	2.25	2.34	2.44	2.54	2.64	2.75	2.87
3.01								
8.28	CFS	3.15	3.30	3.47	3.65	3.84	4.03	4.23
4.44								
8.76	CFS	4.66	4.89	5.12	5.37	5.62	5.88	6.16
6.44								
9.24	CFS	6.74	7.06	7.40	7.77	8.18	8.62	9.09
9.59								
9.72	CFS	10.13	10.71	11.32	11.96	12.63	13.32	14.05
14.81								
10.20	CFS	15.60	16.41	17.26	18.12	19.02	19.96	20.93
21.95								
10.68	CFS	23.05	24.26	25.62	27.14	28.86	30.80	32.98
35.42								
11.16	CFS	38.14	41.19	44.59	48.38	52.59	57.25	62.40
68.29								
11.64	CFS	75	84	94	106	122	143	171
213								
12.12	CFS	271	343	418	487	545	588	614
622								
12.60	CFS	613	591	561	528	494	461	432
407								
13.08	CFS	384	363	343	325	307	290	273
257								
13.56	CFS	242	227	213	200	188	178	168
159								
14.04	CFS	151	144	137	131	126	121	117
113								
14.52	CFS	109	106	103	100	97	95	92
90								
15.00	CFS	88.08	86.09	84.18	82.32	80.51	78.77	77.10
75.52								
15.48	CFS	74.04	72.66	71.40	70.25	69.19	68.23	67.37
66.59								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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15.96	CFS	65.87	65.16	64.48	63.84	63.23	62.66	62.10
61.54								
16.44	CFS	60.99	60.46	59.93	59.40	58.89	58.39	57.89
57.39								
16.92	CFS	56.89	56.41	55.95	55.50	55.03	54.54	54.05
53.57								



17.40	CFS	53.11	52.64	52.14	51.62	51.10	50.60	50.10
49.60								
17.88	CFS	49.08	48.56	48.06	47.58	47.10	46.62	46.14
45.68								
18.36	CFS	45.23	44.79	44.34	43.93	43.55	43.22	42.89
42.59								
18.84	CFS	42.32	42.10	41.89	41.67	41.46	41.26	41.06
40.88								
19.32	CFS	40.69	40.51	40.35	40.20	40.06	39.92	39.77
39.63								
19.80	CFS	39.49	39.34	39.16	38.99	38.84	38.71	38.57
38.42								
20.28	CFS	38.28	38.14	38.00	37.84	37.66	37.49	37.33
37.15								
20.76	CFS	36.97	36.79	36.63	36.48	36.32	36.14	35.96
35.79								
21.24	CFS	35.61	35.43	35.25	35.08	34.92	34.78	34.63
34.47								
21.72	CFS	34.32	34.18	34.04	33.89	33.75	33.61	33.46
33.30								
22.20	CFS	33.15	33.00	32.85	32.70	32.55	32.41	32.26
32.11								
22.68	CFS	31.95	31.79	31.65	31.49	31.31	31.13	30.97
30.84								
23.16	CFS	30.69	30.54	30.39	30.26	30.14	30.01	29.85
29.68								
23.64	CFS	29.52	29.37	29.24	29.08	28.91	28.74	28.63
28.51								
24.12	CFS	28.17	27.50	26.50	25.33	24.02	22.51	20.81
19.01								
24.60	CFS	17.25	15.60	14.14	12.88	11.81	10.92	10.19
9.60								
25.08	CFS	9.11	8.71	8.38	8.10	7.86	7.65	7.46
7.29								
25.56	CFS	7.14	6.99	6.85	6.72	6.59	6.46	6.33
6.20								
26.04	CFS	6.08	5.95					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.12 WATERSHED INCHES; 1399 CFS-HRS; 115.6 ACRE-FEET.

OPERATION DIVERT XSECTION 162  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	621.0	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1399 CFS-HRS; 115.6 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
 AT XSECTION 82  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	.6	175.01

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

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TR20 ----- SCS
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OPERATION RESVOR STRUCTURE 73

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,
AT STRUCTURE 73
\*\*\*

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.54 .6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 163

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.54 621.6 (NULL)

Table with 9 columns: HRS, MAIN, TIME, INCREMENT, ALTERNATE, STORM, DRAINAGE AREA, and two unlabeled columns. It contains hydrograph data points for various time intervals from 5.88 to 11.64 hours.

213								
12.12	CFS	271	343	418	487	545	588	614
622								
12.60	CFS	613	591	561	528	494	461	432
407								
13.08	CFS	384	363	343	325	307	290	273
257								
13.56	CFS	242	227	213	200	188	178	168
159								
14.04	CFS	151	144	137	131	126	121	117
113								
14.52	CFS	109	106	103	100	97	95	92
90								
15.00	CFS	88.08	86.09	84.18	82.32	80.51	78.77	77.10
75.52								
15.48	CFS	74.04	72.66	71.40	70.25	69.19	68.23	67.37
66.59								
15.96	CFS	65.87	65.16	64.48	63.84	63.23	62.66	62.10
61.54								
16.44	CFS	60.99	60.46	59.93	59.40	58.89	58.39	57.89
57.39								
16.92	CFS	56.89	56.41	55.95	55.50	55.03	54.54	54.05
53.57								
17.40	CFS	53.11	52.64	52.14	51.62	51.10	50.60	50.10
49.60								
17.88	CFS	49.08	48.56	48.06	47.58	47.10	46.62	46.14
45.68								
18.36	CFS	45.23	44.79	44.34	43.93	43.55	43.22	42.89
42.59								
18.84	CFS	42.32	42.10	41.89	41.67	41.46	41.26	41.06
40.88								
19.32	CFS	40.69	40.51	40.35	40.20	40.06	39.92	39.77
39.63								
19.80	CFS	39.49	39.34	39.16	38.99	38.84	38.71	38.57
38.42								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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20.28	CFS	38.28	38.14	38.00	37.84	37.66	37.49	37.33
37.15								
20.76	CFS	36.97	36.79	36.63	36.48	36.32	36.14	35.96
35.79								
21.24	CFS	35.61	35.43	35.25	35.08	34.92	34.78	34.63
34.47								
21.72	CFS	34.32	34.18	34.04	33.89	33.75	33.61	33.46
33.30								
22.20	CFS	33.15	33.00	32.85	32.70	32.55	32.41	32.26
32.11								
22.68	CFS	31.95	31.79	31.65	31.49	31.31	31.13	30.97
30.84								
23.16	CFS	30.69	30.54	30.39	30.26	30.14	30.01	29.85
29.68								
23.64	CFS	29.52	29.37	29.24	29.08	28.91	28.74	28.63
28.51								
24.12	CFS	28.17	27.50	26.50	25.33	24.02	22.51	20.81
19.01								
24.60	CFS	17.25	15.60	14.14	12.88	11.81	10.92	10.19

9.60								
25.08 CFS	9.11	8.71	8.38	8.10	7.86	7.65	7.46	
7.29								
25.56 CFS	7.14	6.99	6.85	6.72	6.59	6.46	6.33	
6.20								
26.04 CFS	6.08	5.95						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.12 WATERSHED INCHES; 1399 CFS-HRS; 115.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.69		594.0		249.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.12 WATERSHED INCHES; 1398 CFS-HRS; 115.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.37		12.0		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.50 WATERSHED INCHES; 18 CFS-HRS; 1.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.82		5.6		333.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.50 WATERSHED INCHES; 18 CFS-HRS; 1.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.94		5.5		300.50

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.50 WATERSHED INCHES; 18 CFS-HRS; 1.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	38.8	(RUNOFF)
21.97	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.41 WATERSHED INCHES; 42 CFS-HRS; 3.4 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.54	15.8	292.31
13.93	3.5	287.75
22.00	1.0	287.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.41 WATERSHED INCHES; 42 CFS-HRS; 3.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.71	21.0	(NULL)
13.90	8.0	(NULL)
24.03	1.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.62 WATERSHED INCHES; 59 CFS-HRS; 4.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 68

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	78.8	(RUNOFF)
20.09	2.1	(RUNOFF)

20.64	2.0	(RUNOFF)
24.02	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.61 WATERSHED INCHES; 81 CFS-HRS; 6.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	94.7	(NULL)
21.97	3.2	(NULL)
24.03	2.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.61 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	74.2	248.54
20.68	3.5	247.54
24.09	2.7	247.48

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.61 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	20.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.13 WATERSHED INCHES; 16 CFS-HRS; 1.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.59	3.9	265.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.13 WATERSHED INCHES; 16 CFS-HRS; 1.3 ACRE-  
 FEET.

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OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.71	3.9	247.58
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.12 WATERSHED INCHES;	16 CFS-HRS;	1.3 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	72.3	(RUNOFF)
17.34	3.1	(RUNOFF)
22.47	2.0	(RUNOFF)
24.01	1.8	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .11 SQ.MI.

HRS								
11.46 CFS	.45	.81	1.39	2.30	3.37	4.71	6.70	
9.67								
11.94 CFS	14.42	23.06	37.77	59.83	72.15	65.02	52.35	
42.97								
12.42 CFS	35.80	30.87	27.76	24.51	21.08	18.56	17.03	
15.94								
12.90 CFS	15.05	14.26	13.48	12.68	11.89	11.24	10.73	
10.25								
13.38 CFS	9.78	9.32	8.85	8.39	7.95	7.60	7.33	
7.13								
13.86 CFS	6.96	6.84	6.74	6.66	6.55	6.42	6.28	
6.14								
14.34 CFS	6.04	5.95	5.85	5.73	5.59	5.44	5.31	
5.20								
14.82 CFS	5.10	5.00	4.87	4.74	4.63	4.49	4.36	
4.25								
15.30 CFS	4.18	4.15	4.14	4.14	4.14	4.11	4.05	
3.98								
15.78 CFS	3.95	3.96	3.96	3.91	3.85	3.79	3.76	
3.75								
16.26 CFS	3.74	3.69	3.65	3.62	3.58	3.52	3.49	
3.48								
16.74 CFS	3.46	3.43	3.38	3.35	3.34	3.32	3.29	
3.23								
17.22 CFS	3.15	3.12	3.12	3.12	3.07	3.00	2.94	
2.91								
17.70 CFS	2.89	2.88	2.83	2.78	2.76	2.74	2.73	
2.68								
18.18 CFS	2.63	2.61	2.59	2.58	2.53	2.51	2.53	
2.56								
18.66 CFS	2.56	2.53	2.51	2.53	2.53	2.49	2.47	
2.46								
19.14 CFS	2.45	2.45	2.45	2.45	2.45	2.45	2.45	
2.44								
19.62 CFS	2.40	2.38	2.40	2.39	2.36	2.33	2.34	
2.38								
20.10 CFS	2.39	2.36	2.33	2.32	2.31	2.28	2.24	
2.25								
20.58 CFS	2.28	2.29	2.27	2.24	2.25	2.26	2.23	

2.20								
21.06 CFS	2.18	2.17	2.17	2.17	2.17	2.17	2.17	2.17
2.17								
21.54 CFS	2.17	2.13	2.10	2.10	2.11	2.09	2.09	2.09
2.11								
22.02 CFS	2.10	2.06	2.04	2.03	2.02	2.02	2.02	2.02
2.02								
22.50 CFS	2.02	2.01	1.97	1.94	1.96	1.95	1.92	1.92
1.89								
22.98 CFS	1.90	1.94	1.95	1.92	1.89	1.88	1.87	1.87
1.87								
23.46 CFS	1.86	1.81	1.79	1.81	1.84	1.84	1.81	1.81
1.76								
23.94 CFS	1.75	1.84	1.80	1.31	.71	.34		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.08 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-  
 FEET.

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 TR20 ----- SCS  
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OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	614.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.02 WATERSHED INCHES; 1475 CFS-HRS; 121.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	77.9	(NULL)
20.16	4.0	(NULL)
23.80	3.1	(NULL)
24.09	3.0	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .15  
 SQ.MI.

HRS								
10.20 CFS	.48	.53	.59	.66	.73	.81	.90	.99
10.68 CFS	1.10	1.22	1.37	1.54	1.74	1.97	2.23	2.53
11.16 CFS	2.86	3.25	3.70	4.22	4.80	5.45	6.18	6.98
11.64 CFS	7.97	9.30	10.97	12.98	15.49	18.70	22.97	29.41
12.12 CFS	38.90	52.87	67.14	75.80	77.89	75.90	71.96	67.42
12.60 CFS	63.09	59.05	55.17	51.62	48.58	46.05	43.90	



42.04								
13.08	CFS	40.39	38.87	37.45	36.12	34.90	33.76	32.69
31.67								
13.56	CFS	30.58	29.34	28.06	26.51	24.87	23.25	21.51
20.27								
14.04	CFS	19.27	18.45	17.73	17.07	16.46	15.89	15.37
14.91								
14.52	CFS	14.49	14.09	13.70	13.31	12.88	12.46	12.06
11.68								
15.00	CFS	11.28	10.83	10.39	9.96	9.57	9.22	8.91
8.66								
15.48	CFS	8.45	8.29	8.15	8.02	7.83	7.63	7.44
7.29								
15.96	CFS	7.17	7.07	6.97	6.87	6.77	6.70	6.63
6.57								
16.44	CFS	6.50	6.44	6.37	6.30	6.23	6.16	6.11
6.06								
16.92	CFS	6.00	5.94	5.89	5.84	5.79	5.73	5.66
5.58								
17.40	CFS	5.52	5.47	5.42	5.36	5.28	5.20	5.14
5.08								
17.88	CFS	5.02	4.96	4.90	4.84	4.79	4.74	4.68
4.62								
18.36	CFS	4.57	4.52	4.47	4.42	4.39	4.38	4.37
4.36								
18.84	CFS	4.33	4.32	4.31	4.30	4.27	4.24	4.22
4.20								
19.32	CFS	4.19	4.18	4.17	4.16	4.16	4.15	4.13
4.11								
19.80	CFS	4.09	4.07	4.05	4.03	4.01	4.01	4.01
4.01								
20.28	CFS	3.99	3.97	3.95	3.93	3.89	3.86	3.85
3.85								
20.76	CFS	3.85	3.83	3.82	3.81	3.80	3.77	3.75
3.72								
21.24	CFS	3.70	3.69	3.68	3.67	3.66	3.66	3.65
3.63								
21.72	CFS	3.61	3.59	3.57	3.56	3.54	3.54	3.53
3.51								
22.20	CFS	3.49	3.47	3.45	3.43	3.42	3.41	3.40
3.39								
22.68	CFS	3.37	3.34	3.32	3.31	3.28	3.26	3.23
3.23								
23.16	CFS	3.24	3.23	3.21	3.19	3.17	3.16	3.14
3.12								
23.64	CFS	3.09	3.06	3.06	3.06	3.05	3.03	3.00
3.00								
24.12	CFS	3.01	2.86	2.50	2.05	1.62	1.26	.97
.74								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

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24.60 CFS .57 .43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.66 WATERSHED INCHES; 157 CFS-HRS; 12.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.66 672.6 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28

HRS	MAIN	TIME	INCREMENT	DISCHARGE	DISCHARGE	DISCHARGE	DISCHARGE	DISCHARGE	DISCHARGE
6.00	CFS	.48	.50	.53	.55	.58	.61	.64	
6.48	CFS	.71	.75	.79	.83	.88	.93	.98	
6.96	CFS	1.08	1.13	1.19	1.25	1.30	1.37	1.43	
7.44	CFS	1.57	1.64	1.72	1.80	1.89	1.97	2.06	
7.92	CFS	2.24	2.33	2.43	2.53	2.64	2.75	2.88	
8.40	CFS	3.15	3.31	3.48	3.66	3.85	4.05	4.25	
8.88	CFS	4.69	4.92	5.16	5.41	5.67	5.94	6.22	
9.36	CFS	6.82	7.15	7.50	7.88	8.28	8.72	9.20	
9.84	CFS	10.25	10.83	11.44	12.09	12.76	13.48	14.23	
10.32	CFS	15.85	16.72	17.62	18.56	19.53	20.55	21.62	
10.80	CFS	24.00	25.37	26.90	28.62	30.55	32.72	35.16	
11.28	CFS	40.99	44.50	48.51	53.06	58.20	64.09	71.04	
11.76	CFS	89	101	117	137	166	208	268	
12.24	CFS	396	454	511	564	610	645	667	
12.72	CFS	666	648	623	594	562	531	501	
13.20	CFS	447	423	401	380	360	340	322	
13.68	CFS	286	269	253	238	224	212	200	
14.16	CFS	180	172	164	157	151	145	140	
14.64	CFS	131	127	123	119	116	113	110	
15.12	CFS	104	102	99	97	95	93	91	
15.60	CFS	87.17	85.58	84.01	82.56	81.27	80.11	79.03	
16.08	CFS	77.09	76.21	75.40	74.65	73.92	73.21	72.53	
16.56	CFS	71.17	70.52	69.90	69.30	68.69	68.09	67.49	
17.04	CFS	66.35	65.79	65.21	64.61	64.02	63.47	62.92	
17.52	CFS	61.76	61.15	60.54	59.95	59.36	58.76	58.15	
18.00	CFS	56.96	56.38	55.79	55.20	54.63	54.07	53.53	
18.48	CFS	52.45	51.96	51.52	51.10	50.68	50.29	49.95	

49.63								
18.96	CFS	49.31	49.02	48.74	48.49	48.25	48.02	47.81
47.61								
19.44	CFS	47.41	47.23	47.05	46.85	46.65	46.49	46.32
46.13								
19.92	CFS	45.94	45.77	45.62	45.47	45.30	45.12	44.95
44.78								
20.40	CFS	44.58	44.38	44.20	44.04	43.88	43.69	43.49
43.30								
20.88	CFS	43.12	42.92	42.71	42.51	42.31	42.11	41.92
41.72								
21.36	CFS	41.54	41.35	41.17	40.99	40.79	40.59	40.41
40.25								
21.84	CFS	40.06	39.90	39.76	39.60	39.41	39.23	39.05
38.86								
22.32	CFS	38.69	38.53	38.37	38.21	38.04	37.84	37.64
37.47								
22.80	CFS	37.30	37.09	36.89	36.71	36.56	36.40	36.22
36.03								
23.28	CFS	35.86	35.68	35.52	35.35	35.16	34.96	34.80
34.65								
23.76	CFS	34.50	34.32	34.11	33.92	33.82	33.65	33.03
32.06								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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24.24	CFS	30.93	29.67	28.30	26.86	25.32	23.66	21.91
20.13								
24.72	CFS	18.38	16.72	15.21	13.86	12.70	11.71	10.87
10.17								
25.20	CFS	9.59	9.10	8.70	8.36	8.07	7.82	7.61
7.42								
25.68	CFS	7.25	7.09	6.94	6.80	6.66	6.53	6.40
6.27								

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 1.98 WATERSHED INCHES; 1631 CFS-HRS; 134.8 ACRE-FEET.

OPERATION DIVERT XSECTION 176 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) 12.66 PEAK DISCHARGE(CFS) 672.6 PEAK (DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 1631 CFS-HRS; 134.8 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW. \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE- FEET.

OPERATION RESVOR STRUCTURE 72

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW. \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE- FEET.

OPERATION ADDHYD XSECTION 177

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.66 672.6 (NULL)

Table with 9 columns: HRS, SQ.MI., CFS, and 7 numerical values. Includes header 'HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5' and 'MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28'.

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist;H1&H8UG;GHC2.04TEST

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Table with 9 columns: CFS, and 8 numerical values. Continuation of the hydrograph data from the previous table.

303								
13.68	CFS	286	269	253	238	224	212	200
190								
14.16	CFS	180	172	164	157	151	145	140
135								
14.64	CFS	131	127	123	119	116	113	110
107								
15.12	CFS	104	102	99	97	95	93	91
89								
15.60	CFS	87.17	85.58	84.01	82.56	81.27	80.11	79.03
78.03								
16.08	CFS	77.09	76.21	75.40	74.65	73.92	73.21	72.53
71.85								
16.56	CFS	71.17	70.52	69.90	69.30	68.69	68.09	67.49
66.91								
17.04	CFS	66.35	65.79	65.21	64.61	64.02	63.47	62.92
62.36								
17.52	CFS	61.76	61.15	60.54	59.95	59.36	58.76	58.15
57.55								
18.00	CFS	56.96	56.38	55.79	55.20	54.63	54.07	53.53
52.98								
18.48	CFS	52.45	51.96	51.52	51.10	50.68	50.29	49.95
49.63								
18.96	CFS	49.31	49.02	48.74	48.49	48.25	48.02	47.81
47.61								
19.44	CFS	47.41	47.23	47.05	46.85	46.65	46.49	46.32
46.13								
19.92	CFS	45.94	45.77	45.62	45.47	45.30	45.12	44.95
44.78								
20.40	CFS	44.58	44.38	44.20	44.04	43.88	43.69	43.49
43.30								
20.88	CFS	43.12	42.92	42.71	42.51	42.31	42.11	41.92
41.72								
21.36	CFS	41.54	41.35	41.17	40.99	40.79	40.59	40.41
40.25								
21.84	CFS	40.06	39.90	39.76	39.60	39.41	39.23	39.05
38.86								
22.32	CFS	38.69	38.53	38.37	38.21	38.04	37.84	37.64
37.47								
22.80	CFS	37.30	37.09	36.89	36.71	36.56	36.40	36.22
36.03								
23.28	CFS	35.86	35.68	35.52	35.35	35.16	34.96	34.80
34.65								
23.76	CFS	34.50	34.32	34.11	33.92	33.82	33.65	33.03
32.06								
24.24	CFS	30.93	29.67	28.30	26.86	25.32	23.66	21.91
20.13								
24.72	CFS	18.38	16.72	15.21	13.86	12.70	11.71	10.87
10.17								
25.20	CFS	9.59	9.10	8.70	8.36	8.07	7.82	7.61
7.42								
25.68	CFS	7.25	7.09	6.94	6.80	6.66	6.53	6.40
6.27								

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 1631 CFS-HRS; 134.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 77

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.72	671.8	229.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.97 WATERSHED INCHES; 1631 CFS-HRS; 134.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 78

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.18	48.4	(RUNOFF)
15.85	2.2	(RUNOFF)
23.07	1.1	(RUNOFF)
23.73	1.0	(RUNOFF)
24.02	1.0	(RUNOFF)

HRS	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5							
	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = .05			
SQ.MI.								
10.98 CFS	.48	.59	.72	.87	1.05	1.26	1.48	
1.74								
11.46 CFS	2.01	2.32	2.87	3.73	4.63	5.62	7.12	
9.35								
11.94 CFS	12.68	18.63	28.32	42.26	48.42	41.74	32.58	
26.16								
12.42 CFS	21.43	18.33	16.41	14.35	12.20	10.74	9.87	
9.24								
12.90 CFS	8.71	8.24	7.77	7.29	6.83	6.44	6.14	
5.86								
13.38 CFS	5.59	5.32	5.04	4.77	4.52	4.31	4.17	
4.05								
13.86 CFS	3.95	3.88	3.83	3.78	3.71	3.63	3.55	
3.47								
14.34 CFS	3.41	3.36	3.30	3.23	3.15	3.06	2.98	
2.92								
14.82 CFS	2.87	2.81	2.73	2.66	2.59	2.52	2.44	
2.38								
15.30 CFS	2.34	2.33	2.32	2.32	2.32	2.30	2.26	
2.22								
15.78 CFS	2.21	2.21	2.21	2.18	2.14	2.11	2.10	
2.09								
16.26 CFS	2.08	2.06	2.03	2.01	1.99	1.96	1.94	
1.93								
16.74 CFS	1.93	1.90	1.88	1.86	1.85	1.85	1.82	
1.79								
17.22 CFS	1.75	1.73	1.73	1.73	1.70	1.66	1.63	
1.61								
17.70 CFS	1.60	1.59	1.56	1.54	1.52	1.52	1.51	
1.48								
18.18 CFS	1.45	1.44	1.43	1.42	1.40	1.38	1.40	
1.41								
18.66 CFS	1.41	1.39	1.38	1.40	1.39	1.37	1.36	
1.35								
19.14 CFS	1.35	1.35	1.35	1.35	1.35	1.35	1.35	

1.34								
19.62	CFS	1.32	1.31	1.32	1.31	1.29	1.28	1.29
1.31								
20.10	CFS	1.31	1.29	1.28	1.28	1.27	1.25	1.23
1.23								
20.58	CFS	1.25	1.26	1.24	1.23	1.23	1.24	1.22
1.20								
21.06	CFS	1.19	1.19	1.19	1.19	1.19	1.19	1.19
1.19								
21.54	CFS	1.19	1.17	1.14	1.15	1.15	1.14	1.14
1.16								
22.02	CFS	1.14	1.12	1.11	1.11	1.11	1.10	1.10
1.10								
22.50	CFS	1.10	1.10	1.07	1.06	1.07	1.07	1.04
1.03								
22.98	CFS	1.04	1.06	1.06	1.04	1.03	1.02	1.02
1.02								
23.46	CFS	1.01	.98	.97	.99	1.00	1.00	.98
.96								
23.94	CFS	.95	1.01	.99	.69	.36		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.45 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.72	682.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.95 WATERSHED INCHES; 1678 CFS-HRS; 138.7 ACRE-  
 FEET.

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 TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 80.  
 \*\*\*

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.72	682.5	214.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.95 WATERSHED INCHES; 1678 CFS-HRS; 138.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	25.2	(RUNOFF)
15.85	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.24 WATERSHED INCHES; 25 CFS-HRS; 2.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.72	688.3	178.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.94 WATERSHED INCHES; 1704 CFS-HRS; 140.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	55.6	(RUNOFF)
15.84	2.3	(RUNOFF)
23.71	1.1	(RUNOFF)
24.00	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 84

1  
 TR20 ----- SCS  
 -  
 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	57.2	(RUNOFF)
18.67	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 184  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	57.2	(DIVERT)



18.67	2.0	(DIVERT)
24.02	1.4	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 70 CFS-HRS; 5.8 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 81, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 200.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 81

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* WARNING - XSECTION 185  
 NO HYDROGRAPH IN INPUT LOCATION 1 OR 6 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 185

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	57.2	(NULL)
18.67	2.0	(NULL)
24.02	1.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 186

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
----------------	---------------------	----------------------

12.28 21.8 (RUNOFF)
18.68 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.98 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-
FEET.

OPERATION ADDHYD XSECTION 187

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK
ELEVATION (FEET)
12.26 79.0 (NULL)
18.68 3.0 (NULL)
24.02 2.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.29 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-
FEET.

OPERATION ADDHYD XSECTION 85

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK
ELEVATION (FEET)
12.20 124.9 (NULL)
20.07 4.2 (NULL)
20.63 4.0 (NULL)
24.00 3.2 (NULL)

Table with 9 columns: HRS, MAIN, TIME, INCREMENT, ALTERNATE, STORM, DRAINAGE AREA, and two unlabeled columns. It contains hydrograph data points for various times and discharge rates.

1 TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,
VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

Dist;H1&H8UG;GHC2.04TEST

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15.42 CFS 7.51 7.47 7.45 7.39 7.31 7.21 7.14

7.13								
15.90 CFS	7.09	7.03	6.94	6.86	6.79	6.75	6.71	
6.64								
16.38 CFS	6.57	6.51	6.43	6.35	6.29	6.25	6.21	
6.15								
16.86 CFS	6.08	6.02	5.98	5.95	5.89	5.80	5.69	
5.62								
17.34 CFS	5.60	5.56	5.50	5.40	5.31	5.24	5.19	
5.15								
17.82 CFS	5.07	5.00	4.95	4.91	4.87	4.80	4.73	
4.68								
18.30 CFS	4.64	4.60	4.53	4.49	4.50	4.52	4.53	
4.49								
18.78 CFS	4.48	4.49	4.47	4.43	4.40	4.37	4.35	
4.35								
19.26 CFS	4.34	4.34	4.34	4.34	4.34	4.32	4.27	
4.24								
19.74 CFS	4.25	4.22	4.18	4.15	4.16	4.19	4.19	
4.17								
20.22 CFS	4.14	4.12	4.10	4.04	3.99	3.99	4.01	
4.03								
20.70 CFS	4.00	3.97	3.98	3.97	3.94	3.90	3.87	
3.85								
21.18 CFS	3.84	3.83	3.82	3.82	3.82	3.82	3.81	
3.77								
21.66 CFS	3.72	3.72	3.71	3.68	3.69	3.71	3.68	
3.64								
22.14 CFS	3.61	3.59	3.57	3.56	3.56	3.56	3.56	
3.54								
22.62 CFS	3.48	3.45	3.46	3.43	3.39	3.36	3.36	
3.39								
23.10 CFS	3.40	3.37	3.34	3.32	3.30	3.29	3.27	
3.21								
23.58 CFS	3.17	3.19	3.21	3.21	3.17	3.12	3.10	
3.20								
24.06 CFS	3.12	2.51	1.78	1.19	.75	.46		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.37 WATERSHED INCHES; 150 CFS-HRS; 12.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	730.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.88 WATERSHED INCHES; 1854 CFS-HRS; 153.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	31.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.71 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.69	735.0	(NULL)
23.98	39.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55  
 HRS SQ.MI.  
 6.06 CFS .49 .52 .55 .57 .61 .64 .68  
 .71

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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6.54 CFS	.75	.80	.84	.89	.94	.99	1.05
1.10							
7.02 CFS	1.16	1.22	1.28	1.35	1.41	1.48	1.55
1.62							
7.50 CFS	1.70	1.78	1.86	1.95	2.04	2.14	2.23
2.33							
7.98 CFS	2.42	2.53	2.63	2.74	2.85	2.97	3.11
3.25							
8.46 CFS	3.39	3.56	3.73	3.93	4.12	4.33	4.54
4.76							
8.94 CFS	4.99	5.23	5.49	5.75	6.02	6.31	6.61
6.92							
9.42 CFS	7.25	7.59	7.96	8.36	8.79	9.25	9.75
10.27							
9.90 CFS	10.83	11.43	12.07	12.74	13.44	14.19	14.99
15.83							
10.38 CFS	16.72	17.67	18.68	19.76	20.93	22.19	23.54
25.00							
10.86 CFS	26.59	28.35	30.30	32.49	35.04	37.94	41.22
44.90							
11.34 CFS	49	54	59	65	73	83	94
107							
11.82 CFS	124	147	178	226	300	404	487
531							
12.30 CFS	562	592	626	663	698	722	734
733							
12.78 CFS	722	701	674	642	608	573	541
511							
13.26 CFS	483	457	433	410	389	368	348
328							
13.74 CFS	310	292	276	260	246	233	221
210							
14.22 CFS	200	191	183	176	169	163	157
152							
14.70 CFS	147	142	138	134	131	127	124
121							
15.18 CFS	117	114	112	109	107	105	103
101							
15.66 CFS	99.16	97.38	95.71	94.26	92.90	91.60	90.35
89.19							
16.14 CFS	88.15	87.22	86.34	85.45	84.60	83.80	82.99
82.16							

16.62	CFS	81.39	80.68	80.01	79.30	78.57	77.87	77.22
76.59								
17.10	CFS	75.92	75.19	74.42	73.73	73.14	72.52	71.84
71.10								
17.58	CFS	70.36	69.65	68.98	68.32	67.59	66.87	66.19
65.54								
18.06	CFS	64.88	64.17	63.46	62.80	62.17	61.55	60.88
60.28								
18.54	CFS	59.79	59.36	58.91	58.40	57.95	57.60	57.22
56.82								
19.02	CFS	56.44	56.11	55.81	55.54	55.29	55.06	54.85
54.65								
19.50	CFS	54.45	54.23	53.95	53.70	53.54	53.34	53.09
52.84								
19.98	CFS	52.68	52.59	52.43	52.22	52.00	51.79	51.58
51.30								
20.46	CFS	51.02	50.84	50.72	50.58	50.36	50.11	49.94
49.75								
20.94	CFS	49.49	49.22	48.97	48.74	48.52	48.31	48.12
47.92								
21.42	CFS	47.74	47.55	47.35	47.08	46.80	46.62	46.43
46.20								
21.90	CFS	46.04	45.92	45.72	45.48	45.25	45.03	44.83
44.64								
22.38	CFS	44.46	44.29	44.13	43.93	43.65	43.40	43.24
43.03								
22.86	CFS	42.76	42.51	42.33	42.23	42.07	41.84	41.61
41.40								
23.34	CFS	41.20	41.01	40.80	40.52	40.28	40.13	40.02
39.87								
23.82	CFS	39.62	39.34	39.12	39.17	38.88	37.41	35.47
33.61								
24.30	CFS	31.92	30.31	28.75	27.19	25.59	23.90	22.13
20.34								
24.78	CFS	18.58	16.91	15.37	14.01	12.83	11.81	10.96
10.24								
25.26	CFS	9.65	9.15	8.74	8.40	8.10	7.85	7.63
7.44								
25.74	CFS	7.26	7.10	6.95	6.81	6.67	6.54	6.41

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.88 WATERSHED INCHES; 1882 CFS-HRS; 155.5 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 81  
 OUTPUT #1 HYDROGRAPH

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.69	731.0	178.42
23.98	39.2	175.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1881 CFS-HRS; 155.5 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	4.1	175.05

\*\*\* WARNING - XSECTION 82, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK  
 ( 4.07) EXCEEDS ADJACENT COORDINATE ( 3.71) BY 9 %.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	4.1	(NULL)

\*\*\* WARNING - STRUCTURE 71, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK  
 ( 4.07) EXCEEDS ADJACENT COORDINATE ( 3.71) BY 9 %.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 89

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	735.0	(NULL)
23.98	39.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55 SQ.MI.

HRS								
6.06 CFS	.49	.52	.55	.57	.61	.64	.68	
.71								
6.54 CFS	.75	.80	.84	.89	.94	.99	1.05	
1.10								
7.02 CFS	1.16	1.22	1.28	1.35	1.41	1.48	1.55	
1.62								
7.50 CFS	1.70	1.78	1.86	1.95	2.04	2.14	2.23	
2.33								
7.98 CFS	2.42	2.53	2.63	2.74	2.85	2.97	3.11	
3.25								
8.46 CFS	3.39	3.56	3.73	3.93	4.12	4.33	4.54	
4.76								
8.94 CFS	4.99	5.23	5.49	5.75	6.02	6.31	6.61	
6.92								
9.42 CFS	7.25	7.59	7.96	8.36	8.79	9.25	9.75	
10.27								
9.90 CFS	10.83	11.43	12.07	12.74	13.44	14.19	14.99	
15.83								
10.38 CFS	16.72	17.67	18.68	19.76	20.93	22.19	23.54	
25.00								

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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10.86	CFS	26.59	28.35	30.30	32.49	35.04	37.94	41.22
44.90								
11.34	CFS	49	54	59	65	73	83	94
107								
11.82	CFS	124	147	178	226	300	404	487
531								
12.30	CFS	562	592	626	663	698	722	734
733								
12.78	CFS	722	701	674	642	608	573	541
511								
13.26	CFS	483	457	433	410	389	368	348
328								
13.74	CFS	310	292	276	260	246	233	221
210								
14.22	CFS	200	191	183	176	169	163	157
152								
14.70	CFS	147	142	138	134	131	127	124
121								
15.18	CFS	117	114	112	109	107	105	103
101								
15.66	CFS	99.16	97.38	95.71	94.26	92.90	91.60	90.35
89.19								
16.14	CFS	88.15	87.22	86.34	85.45	84.60	83.80	82.99
82.16								
16.62	CFS	81.39	80.68	80.01	79.30	78.57	77.87	77.22
76.59								
17.10	CFS	75.92	75.19	74.42	73.73	73.14	72.52	71.84
71.10								
17.58	CFS	70.36	69.65	68.98	68.32	67.59	66.87	66.19
65.54								
18.06	CFS	64.88	64.17	63.46	62.80	62.17	61.55	60.88
60.28								
18.54	CFS	59.79	59.36	58.91	58.40	57.95	57.60	57.22
56.82								
19.02	CFS	56.44	56.11	55.81	55.54	55.29	55.06	54.85
54.65								
19.50	CFS	54.45	54.23	53.95	53.70	53.54	53.34	53.09
52.84								
19.98	CFS	52.68	52.59	52.43	52.22	52.00	51.79	51.58
51.30								
20.46	CFS	51.02	50.84	50.72	50.58	50.36	50.11	49.94
49.75								
20.94	CFS	49.49	49.22	48.97	48.74	48.52	48.31	48.12
47.92								
21.42	CFS	47.74	47.55	47.35	47.08	46.80	46.62	46.43
46.20								
21.90	CFS	46.04	45.92	45.72	45.48	45.25	45.03	44.83
44.64								
22.38	CFS	44.46	44.29	44.13	43.93	43.65	43.40	43.24
43.03								
22.86	CFS	42.76	42.51	42.33	42.23	42.07	41.84	41.61
41.40								
23.34	CFS	41.20	41.01	40.80	40.52	40.28	40.13	40.02
39.87								
23.82	CFS	39.62	39.34	39.12	39.17	38.88	37.41	35.47

33.61								
24.30	CFS	31.92	30.31	28.75	27.19	25.59	23.90	22.13
20.34								
24.78	CFS	18.58	16.91	15.37	14.01	12.83	11.81	10.96
10.24								
25.26	CFS	9.65	9.15	8.74	8.40	8.10	7.85	7.63
7.44								
25.74	CFS	7.26	7.10	6.95	6.81	6.67	6.54	6.41

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.88 WATERSHED INCHES; 1882 CFS-HRS; 155.5 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 89  
 STARTING TIME = .00 RAIN DEPTH = 4.91 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =10 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

1  
 TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	48.0	(RUNOFF)
23.10	1.1 *	(RUNOFF)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.90 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	45.0	390.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.90 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	82.2	(RUNOFF)
20.68	2.2	(RUNOFF)
23.98	1.7	(RUNOFF)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.77 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	122.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.82 WATERSHED INCHES; 166 CFS-HRS; 13.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	121.3	383.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 166 CFS-HRS; 13.7 ACRE-  
 FEET.

1  
 TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	120.5	368.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 166 CFS-HRS; 13.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	101.9	(RUNOFF)
23.73	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.57 WATERSHED INCHES; 132 CFS-HRS; 10.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)
12.36 213.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 298 CFS-HRS; 24.7 ACRE-
FEET.

OPERATION DIVERT XSECTION 107
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.36 213.0 (DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
298 CFS-HRS; 24.7 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - XSECTION 82, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 399 CFS-HRS; 24.7 ACRE-
FEET.

1

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,
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\*\*\* MESSAGE - STRUCTURE 84, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 358.00.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 84

\*\*\* MESSAGE - STRUCTURE 84, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 398 CFS-HRS; 24.7 ACRE-
FEET.

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.36 213.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 298 CFS-HRS; 24.7 ACRE-
FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	211.8	357.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.70 WATERSHED INCHES; 299 CFS-HRS; 24.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	132.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.88 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21

1  
 TR20 ----- SCS  
 -

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	60.8	376.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.49 WATERSHED INCHES; 165 CFS-HRS; 13.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	16.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.13 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.81	56.5	355.97
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.49 WATERSHED INCHES;	165 CFS-HRS;	13.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	77.9	(RUNOFF)
15.82	3.3	(RUNOFF)
18.86	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.23 WATERSHED INCHES;	78 CFS-HRS;	6.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	249.0	(NULL)
24.00	6.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.59 WATERSHED INCHES;	377 CFS-HRS;	31.1 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 13

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	32.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.73 WATERSHED INCHES;	34 CFS-HRS;	2.8 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	261.9	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.80 WATERSHED INCHES;	540 CFS-HRS;	44.7 ACRE-

FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.41	278.4	(NULL)
23.98	12.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.41	278.4	(NULL)
23.98	12.6	(NULL)

	HYDROGRAPH POINTS FOR		ALTERNATE = 1,		STORM = 10	
HRS	MAIN	TIME INCREMENT = .060 hr,	DRAINAGE AREA =		.32	
SQ.MI.						
4.56 CFS	.00	.01	.01	.01	.01	.01
.01						
5.04 CFS	.01	.02	.02	.02	.02	.02
.02						
5.52 CFS	.03	.03	.03	.03	.03	.04
.04						
6.00 CFS	.04	.05	.05	.05	.05	.06
.06						
6.48 CFS	.06	.07	.07	.07	.08	.08
.09						
6.96 CFS	.09	.09	.10	.10	.11	.11
.12						
7.44 CFS	.12	.13	.13	.14	.14	.16
.19						
7.92 CFS	.20	.22	.24	.26	.28	.30
.37						
8.40 CFS	.41	.45	.50	.56	.62	.68
.81						
8.88 CFS	.87	.94	1.01	1.08	1.16	1.24
1.44						
9.36 CFS	1.56	1.68	1.82	1.97	2.12	2.28
2.63						
9.84 CFS	2.82	3.02	3.22	3.43	3.66	3.89
4.39						
10.32 CFS	4.65	4.91	5.19	5.48	5.80	6.16
7.04						
10.80 CFS	7.58	8.23	9.02	9.89	10.85	11.93
14.53						
11.28 CFS	16.03	17.69	19.49	21.40	24.54	29.09
40.47						
11.76 CFS	47	55	65	79	99	131
216						

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12.24	CFS	236	255	276	278	274	263	248
230								
12.72	CFS	212	195	178	163	152	143	133
124								
13.20	CFS	115	107	100	93	87	81	76
71								
13.68	CFS	67.02	63.18	59.72	56.61	53.84	51.39	49.22
47.27								
14.16	CFS	45.52	43.92	42.49	41.19	40.02	38.94	37.92
36.93								
14.64	CFS	35.99	35.17	34.47	33.86	33.28	32.70	32.15
31.61								
15.12	CFS	31.06	30.50	29.97	29.49	29.06	28.68	28.35
28.07								
15.60	CFS	27.80	27.54	27.27	27.04	26.87	26.71	26.53
26.32								
16.08	CFS	26.13	25.95	25.79	25.63	25.46	25.29	25.12
24.94								
16.56	CFS	24.76	24.58	24.42	24.27	24.11	23.93	23.77
23.63								
17.04	CFS	23.49	23.34	23.17	22.97	22.79	22.64	22.50
22.32								
17.52	CFS	22.12	21.92	21.74	21.57	21.40	21.21	21.02
20.85								
18.00	CFS	20.69	20.54	20.37	20.19	20.03	19.88	19.74
19.57								
18.48	CFS	19.42	19.32	19.24	19.16	19.06	18.96	18.91
18.85								
18.96	CFS	18.76	18.67	18.59	18.52	18.44	18.38	18.32
18.26								
19.44	CFS	18.21	18.16	18.10	18.02	17.94	17.89	17.83
17.74								
19.92	CFS	17.65	17.59	17.56	17.52	17.45	17.38	17.32
17.25								
20.40	CFS	17.17	17.06	16.99	16.95	16.91	16.83	16.75
16.70								
20.88	CFS	16.66	16.58	16.48	16.38	16.29	16.21	16.12
16.04								
21.36	CFS	15.96	15.89	15.82	15.75	15.66	15.55	15.48
15.41								
21.84	CFS	15.32	15.24	15.18	15.11	15.01	14.92	14.84
14.75								
22.32	CFS	14.68	14.60	14.53	14.46	14.39	14.29	14.19
14.13								
22.80	CFS	14.05	13.95	13.84	13.77	13.73	13.67	13.59
13.51								
23.28	CFS	13.44	13.37	13.30	13.23	13.12	13.02	12.96
12.91								
23.76	CFS	12.86	12.77	12.67	12.59	12.60	12.53	12.06
11.31								
24.24	CFS	10.58	9.94	9.38	8.91	8.54	8.27	8.03
7.82								
24.72	CFS	7.62	7.44	7.27	7.10	6.94	6.78	6.63
6.49								
25.20	CFS	6.34	6.21	6.07	5.94	5.81	5.69	5.57
5.45								
25.68	CFS	5.33	5.21	5.10	4.99	4.88	4.78	4.67
4.56								
26.16	CFS	4.45	4.33	4.22	4.11	4.00	3.90	3.80
3.70								
26.64	CFS	3.60	3.50	3.41	3.32	3.23	3.15	3.07

2.98  
27.12 CFS      2.91      2.83      2.75      2.68

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.79 WATERSHED INCHES;      574 CFS-HRS;      47.5 ACRE-  
FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	56	28	22	18	16	14	7	4

DURATION(HRS) 18  
FLOW(CFS) 3 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
\*\*\*

OPERATION REACH XSECTION 16

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	278.4	333.39
23.98	12.6	331.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.57 WATERSHED INCHES;      49 CFS-HRS;      4.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	52.0	(RUNOFF)
17.34	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.57 WATERSHED INCHES;      49 CFS-HRS;      4.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	62.5	(RUNOFF)
20.87	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.13 WATERSHED INCHES;      67 CFS-HRS;      5.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	62.5	(NULL)
20.87	1.1	(NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10							
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03							
2.70 CFS	.00	.01	.02	.03	.04	.05	.06	.07
3.18 CFS	.08	.09	.10	.11	.12	.13	.14	.15
3.66 CFS	.16	.17	.18	.19	.20	.21	.22	.23
4.14 CFS	.24	.26	.26	.27	.28	.29	.30	.32
4.62 CFS	.32	.33	.34	.35	.36	.37	.38	.39
5.10 CFS	.40	.41	.42	.43	.44	.44	.45	.46
5.58 CFS	.48	.49	.50	.51	.51	.51	.52	.54
6.06 CFS	.56	.57	.58	.59	.60	.62	.64	.66
6.54 CFS	.67	.69	.71	.72	.73	.76	.78	.79
7.02 CFS	.80	.83	.85	.88	.89	.91	.92	.95
7.50 CFS	.97	.98	1.00	1.01	1.04	1.06	1.08	1.10
7.98 CFS	1.13	1.15	1.17	1.20	1.21	1.22	1.25	1.27
8.46 CFS	1.29	1.30	1.33	1.36	1.39	1.41	1.43	1.44
8.94 CFS	1.45	1.48	1.52	1.56	1.60	1.65	1.71	1.78

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9.42 CFS	1.84	1.89	1.94	2.00	2.07	2.15	2.22	2.28
9.90 CFS	2.34	2.40	2.46	2.54	2.62	2.69	2.76	2.82
10.38 CFS	2.88	2.96	3.04	3.14	3.28	3.45	3.66	3.89
10.86 CFS	4.14	4.39	4.64	4.89	5.20	5.58	6.01	6.46
11.34 CFS	6.91	7.39	7.87	8.38	9.33	10.96	12.62	14.21
11.82 CFS	16.37	19.43	23.86	31.02	41.88	55.81	62.53	55.51
12.30 CFS	43.24	33.49	26.63	21.92	18.82	16.21	13.72	11.81
12.78 CFS	10.56	9.69	9.03	8.46	7.93	7.41	6.90	6.47



13.26 CFS	6.13	5.82	5.53	5.24	4.96	4.69	4.43
4.21							
13.74 CFS	4.04	3.90	3.80	3.71	3.65	3.59	3.52
3.45							
14.22 CFS	3.36	3.28	3.21	3.16	3.10	3.03	2.95
2.87							
14.70 CFS	2.79	2.73	2.67	2.61	2.54	2.47	2.41
2.33							
15.18 CFS	2.26	2.20	2.16	2.14	2.13	2.12	2.11
2.10							
15.66 CFS	2.07	2.03	2.01	2.01	2.00	1.98	1.95
1.92							
16.14 CFS	1.90	1.89	1.88	1.86	1.84	1.82	1.79
1.77							
16.62 CFS	1.75	1.74	1.73	1.71	1.69	1.67	1.66
1.65							
17.10 CFS	1.63	1.60	1.57	1.54	1.54	1.54	1.52
1.48							
17.58 CFS	1.45	1.43	1.42	1.41	1.39	1.37	1.35
1.34							
18.06 CFS	1.33	1.31	1.29	1.27	1.26	1.25	1.23
1.22							
18.54 CFS	1.23	1.24	1.24	1.23	1.22	1.22	1.22
1.21							
19.02 CFS	1.19	1.19	1.18	1.18	1.18	1.18	1.18
1.18							
19.50 CFS	1.18	1.17	1.15	1.14	1.15	1.14	1.13
1.12							
19.98 CFS	1.12	1.13	1.14	1.13	1.11	1.11	1.10
1.09							
20.46 CFS	1.07	1.07	1.08	1.09	1.08	1.06	1.06
1.07							
20.94 CFS	1.06	1.04	1.03	1.03	1.02	1.02	1.02
1.02							
21.42 CFS	1.02	1.02	1.02	1.01	.99	.99	.99
.98							
21.90 CFS	.98	.99	.98	.97	.96	.95	.95
.95							
22.38 CFS	.94	.94	.94	.94	.92	.91	.91
.91							
22.86 CFS	.90	.88	.88	.90	.90	.89	.88
.87							
23.34 CFS	.87	.87	.86	.84	.83	.84	.85
.85							
23.82 CFS	.84	.82	.81	.84	.84	.65	.38
.20							
24.30 CFS	.10	.05	.03	.01	.01	.00	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.13 WATERSHED INCHES; 67 CFS-HRS; 5.6 ACRE-  
 FEET.

DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	6	3	2	2	1	1	1	1
DURATION (HRS)	18	18						
FLOW (CFS)	1	0						

OPERATION RUNOFF XSECTION 119

PEAK TIME (HRS)		PEAK DISCHARGE (CFS)		PEAK
ELEVATION (FEET)				(RUNOFF)
12.13		15.0		

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.40 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	75.8	(NULL)
15.82	2.4	(NULL)
23.73	1.0	(NULL)
24.01	1.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.99 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.16	127.1	(NULL)
15.83	4.1	(NULL)
17.33	3.1	(NULL)
21.45	2.1	(NULL)
21.75	2.0	(NULL)
21.95	2.0	(NULL)
24.01	1.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.82 WATERSHED INCHES; 129 CFS-HRS; 10.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	90.5	(RUNOFF)
17.34	2.3	(RUNOFF)
24.00	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.23 WATERSHED INCHES; 84 CFS-HRS; 7.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 22

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.16	217.5	(NULL)
15.84	7.0	(NULL)
17.34	5.4	(NULL)
19.43	4.1	(NULL)
19.74	4.0	(NULL)
20.06	4.0	(NULL)
23.06	3.2	(NULL)
23.72	3.0	(NULL)
24.00	3.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.56 WATERSHED INCHES; 213 CFS-HRS; 17.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	429.3	(NULL)
20.04	21.6	(NULL)
20.57	20.8	(NULL)
23.03	16.9	(NULL)
24.00	15.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.96 WATERSHED INCHES; 785 CFS-HRS; 64.9 ACRE-FEET.

OPERATION DIVERT XSECTION 122  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.00	168.0 *	(DIVERT)
20.04	21.6	(DIVERT)
20.57	20.8	(DIVERT)
23.03	16.9	(DIVERT)
24.00	15.7	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 649 CFS-HRS; 53.6 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	261.3	176.91

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .51 WATERSHED INCHES; 136 CFS-HRS; 11.2 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 83, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 322.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 83

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.84	76.1	322.25
12.96	28.5	322.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .03 WATERSHED INCHES; 9 CFS-HRS; .7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 123

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.84	244.1	(NULL)
12.96	196.5	(NULL)
20.04	21.6	(NULL)
20.57	20.8	(NULL)
23.03	17.0	(NULL)
24.00	15.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.48 WATERSHED INCHES; 658 CFS-HRS; 54.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.97	196.6	315.55
13.07	189.7	315.52
24.10	15.7	314.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.47 WATERSHED INCHES; 655 CFS-HRS; 54.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	81.4	(RUNOFF)
20.13	2.0	(RUNOFF)
23.99	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.03 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	78.5	363.94
20.15	2.0	356.54
23.79	1.5	356.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 99 CFS-HRS; 8.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	115.6	(RUNOFF)
18.66	3.3	(RUNOFF)
23.77	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.97 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	190.6	(NULL)
20.14	5.0	(NULL)
23.14	4.0	(NULL)
23.78	3.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-

FEET.

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OPERATION REACH XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.40	174.0	319.15
20.20	5.0	316.65
23.20	4.0	316.59

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.25	87.6	(RUNOFF)
21.94	2.0	(RUNOFF)
24.01	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.68 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.27	245.2	(NULL)
12.97	214.6	(NULL)
13.06	205.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.49 WATERSHED INCHES; 759 CFS-HRS; 62.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	406.4	(NULL)
12.96	275.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.60 WATERSHED INCHES; 1000 CFS-HRS; 82.7 ACRE-FEET.

OPERATION RESVOR STRUCTURE 1

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	406.4	(NULL)
12.96	275.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.60 WATERSHED INCHES; 1000 CFS-HRS; 82.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	137.5	(RUNOFF)
18.66	3.2	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	125.9	313.02
18.72	3.2	310.26
24.09	2.2	310.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	22.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.33 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
WITH .38 AC-FT ( .07 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 377.43.  
\*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	9.1	380.16

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	9.0	338.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.47 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	66.9	(RUNOFF)
21.97	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.32 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
 WITH .95 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 353.79.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	48.7	357.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.67 WATERSHED INCHES; 65 CFS-HRS; 5.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		



12.35 53.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.62 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 34

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.35 53.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.62 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.
\*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.35 53.8 330.54

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.62 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-
FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.14 73.1 (RUNOFF)
15.84 2.2 (RUNOFF)
22.41 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.77 WATERSHED INCHES; 68 CFS-HRS; 5.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.18 101.1 (NULL)
20.82 3.2 (NULL)
24.00 2.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.69 WATERSHED INCHES; 152 CFS-HRS; 12.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	101.1	(NULL)
20.82	3.2	(NULL)
24.00	2.6	(NULL)

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HRS	MAIN	TIME	INCREMENT =	ALTERNATE = 1,	STORM =10	DRAINAGE AREA =		
SQ.MI.	.060 hr,			.06				
2.82 CFS	.00	.01	.01	.01	.01	.01	.01	.01
.01								
3.30 CFS	.01	.01	.01	.02	.02	.03	.03	.03
.03								
3.78 CFS	.03	.03	.04	.05	.06	.07	.08	.08
.10								
4.26 CFS	.11	.12	.13	.14	.16	.17	.18	.18
.19								
4.74 CFS	.20	.22	.23	.24	.25	.27	.28	.28
.29								
5.22 CFS	.31	.32	.33	.34	.35	.37	.39	.39
.40								
5.70 CFS	.41	.42	.43	.44	.46	.48	.50	.50
.51								
6.18 CFS	.52	.54	.56	.58	.60	.62	.64	.64
.67								
6.66 CFS	.69	.70	.72	.75	.77	.78	.81	.81
.84								
7.14 CFS	.87	.89	.91	.93	.96	.99	1.01	1.01
1.03								
7.62 CFS	1.05	1.08	1.11	1.14	1.16	1.20	1.23	1.23
1.25								
8.10 CFS	1.29	1.32	1.33	1.36	1.41	1.43	1.45	1.45
1.48								
8.58 CFS	1.52	1.56	1.60	1.62	1.64	1.67	1.70	1.70
1.75								
9.06 CFS	1.80	1.84	1.89	1.96	2.04	2.11	2.18	2.18
2.24								
9.54 CFS	2.30	2.38	2.46	2.55	2.63	2.70	2.77	2.77
2.85								
10.02 CFS	2.94	3.04	3.13	3.22	3.30	3.37	3.47	3.47
3.57								
10.50 CFS	3.68	3.81	4.01	4.23	4.49	4.76	5.03	5.03
5.31								
10.98 CFS	5.59	5.88	6.29	6.75	7.26	7.76	8.28	8.28
8.85								
11.46 CFS	9.39	9.98	12.20	15.17	17.65	20.45	24.74	24.74
30.51								

11.94	CFS	38.21	51.44	70.01	93.17	101.14	92.25	87.52
81.28								
12.42	CFS	73.06	65.85	59.74	52.57	45.94	40.64	36.17
33.61								
12.90	CFS	31.69	29.88	28.10	26.39	24.77	23.33	22.03
20.80								
13.38	CFS	19.63	18.53	17.53	16.61	15.74	14.97	14.29
13.67								
13.86	CFS	13.11	12.61	12.15	11.73	11.32	10.93	10.55
10.22								
14.34	CFS	9.91	9.66	9.42	9.16	8.90	8.65	8.43
8.22								
14.82	CFS	8.02	7.81	7.59	7.40	7.20	6.99	6.81
6.67								
15.30	CFS	6.55	6.46	6.37	6.30	6.22	6.13	6.03
5.93								
15.78	CFS	5.87	5.83	5.77	5.69	5.60	5.53	5.48
5.44								
16.26	CFS	5.39	5.32	5.26	5.21	5.15	5.08	5.04
5.00								
16.74	CFS	4.97	4.91	4.85	4.81	4.78	4.75	4.69
4.62								
17.22	CFS	4.56	4.53	4.53	4.49	4.44	4.37	4.32
4.29								
17.70	CFS	4.27	4.23	4.17	4.13	4.10	4.07	4.04
3.98								
18.18	CFS	3.94	3.91	3.88	3.85	3.79	3.77	3.78
3.77								
18.66	CFS	3.75	3.70	3.68	3.69	3.66	3.62	3.59
3.57								
19.14	CFS	3.56	3.55	3.53	3.52	3.51	3.50	3.49
3.46								
19.62	CFS	3.42	3.41	3.42	3.39	3.36	3.34	3.34
3.36								
20.10	CFS	3.34	3.31	3.29	3.28	3.26	3.22	3.19
3.21								
20.58	CFS	3.21	3.21	3.17	3.15	3.16	3.15	3.11
3.09								
21.06	CFS	3.08	3.07	3.06	3.05	3.04	3.03	3.02
3.02								
21.54	CFS	3.00	2.97	2.94	2.96	2.94	2.91	2.92
2.93								
22.02	CFS	2.89	2.87	2.85	2.84	2.83	2.83	2.82
2.81								
22.50	CFS	2.80	2.78	2.74	2.73	2.74	2.72	2.69
2.67								
22.98	CFS	2.68	2.70	2.68	2.65	2.63	2.62	2.61
2.60								
23.46	CFS	2.58	2.54	2.53	2.55	2.56	2.55	2.52
2.49								
23.94	CFS	2.50	2.58	2.49	2.08	1.79	1.67	1.62
1.60								
24.42	CFS	1.58	1.57	1.56	1.56	1.55	1.54	1.53
1.52								
24.90	CFS	1.52	1.51	1.50	1.49	1.48	1.47	1.47
1.46								
25.38	CFS	1.45	1.44	1.44	1.43	1.42	1.41	1.41
1.40								

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.69 WATERSHED INCHES; 152 CFS-HRS; 12.6 ACRE-  
FEET.

DURATION(HRS) 2 4 6 8 10 12 14 16  
FLOW(CFS) 15 7 5 4 3 3 3 2

DURATION(HRS) 16  
FLOW(CFS) 1 TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.13 5.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.43 WATERSHED INCHES; 4 CFS-HRS; .4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.18 105.5 (NULL)  
21.93 3.0 (NULL)  
24.00 2.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.53 WATERSHED INCHES; 157 CFS-HRS; 12.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.27 57.7 (RUNOFF)  
23.76 1.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.84 WATERSHED INCHES; 72 CFS-HRS; 6.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.35 458.2 (NULL)  
12.96 289.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.61 WATERSHED INCHES; 1072 CFS-HRS; 88.6 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	581.6	(NULL)
12.96	316.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.70 WATERSHED INCHES; 1228 CFS-HRS; 101.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	668.6	(NULL)
12.95	347.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.77 WATERSHED INCHES; 1382 CFS-HRS; 114.2 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 144  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	543.0 *	(DIVERT)
12.95	347.4	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1353 CFS-HRS; 111.9 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	125.6	176.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .06 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 82, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 318.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 82

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\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
AT STRUCTURE 82  
\*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	.0	310.88
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	.00 WATERSHED INCHES;	0 CFS-HRS; .0 ACRE-
	FEET.	

OPERATION ADDHYD XSECTION 145

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	544.8	(NULL)
12.95	347.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	2.71 WATERSHED INCHES;	1354 CFS-HRS; 111.9 ACRE-
	FEET.	

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.59	539.1	290.52
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	2.71 WATERSHED INCHES;	1352 CFS-HRS; 111.8 ACRE-
	FEET.	

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.59	539.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	2.71 WATERSHED INCHES;	1352 CFS-HRS; 111.8 ACRE-
	FEET.	

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	66.8	(RUNOFF)

23.09 1.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.88 WATERSHED INCHES; 89 CFS-HRS; 7.3 ACRE-
FEET.

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OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 83.3 (RUNOFF)
12.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 114 CFS-HRS; 9.4 ACRE-
FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 150.0 (NULL)
12.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.84 WATERSHED INCHES; 203 CFS-HRS; 16.7 ACRE-
FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 81.7 (RUNOFF)
12.20 2.0 (RUNOFF)
18.65 1.4 (RUNOFF)
24.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.84 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 565.6 (NULL)
12.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.72 WATERSHED INCHES; 1438 CFS-HRS; 118.9 ACRE-
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	697.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 1641 CFS-HRS; 135.6 ACRE-FEET.

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TR20 ----- SCS

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OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.53	679.3	285.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 1640 CFS-HRS; 135.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 210 CFS-HRS; 135.5 ACRE-FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT, UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 53

\*\*\* MESSAGE - XSECTION 53, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 207 CFS-HRS; 135.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - XSECTION 54, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 189 CFS-HRS; 135.5 ACRE-FEET.



OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	51.6	(RUNOFF)
21.97	1.1	(RUNOFF)

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.61 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	699.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 1694 CFS-HRS; 140.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - XSECTION 57, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 214 CFS-HRS; 140.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	699.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.68 WATERSHED INCHES; 1696 CFS-HRS; 140.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	31.6	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03

SQ.MI.								
10.80 CFS	.45	.52	.59	.67	.75	.85	.97	
1.10								
11.28 CFS	1.25	1.42	1.61	1.81	2.04	2.37	2.91	
3.54								
11.76 CFS	4.26	5.18	6.51	8.52	11.69	17.01	24.70	
30.82								
12.24 CFS	31.12	26.88	21.99	18.16	15.28	13.24	11.56	
10.00								
12.72 CFS	8.68	7.72	7.03	6.51	6.09	5.71	5.36	
5.02								
13.20 CFS	4.71	4.46	4.24	4.03	3.84	3.64	3.45	
3.27								
13.68 CFS	3.11	2.98	2.87	2.79	2.73	2.67	2.63	
2.59								
14.16 CFS	2.54	2.48	2.43	2.38	2.34	2.30	2.25	
2.20								
14.64 CFS	2.14	2.09	2.04	2.00	1.96	1.91	1.86	
1.81								
15.12 CFS	1.76	1.71	1.66	1.63	1.61	1.60	1.59	
1.58								
15.60 CFS	1.58	1.56	1.54	1.52	1.51	1.51	1.50	
1.48								

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16.08 CFS	1.46	1.44	1.43	1.42	1.41	1.40	1.38	
1.37								
16.56 CFS	1.35	1.33	1.32	1.32	1.31	1.29	1.28	
1.27								
17.04 CFS	1.26	1.25	1.23	1.21	1.19	1.18	1.18	
1.17								
17.52 CFS	1.14	1.12	1.11	1.10	1.09	1.07	1.06	
1.04								
18.00 CFS	1.04	1.03	1.02	1.00	.99	.98	.97	
.96								
18.48 CFS	.95	.95	.95	.96	.95	.94	.94	
.94								
18.96 CFS	.94	.93	.92	.92	.92	.91	.91	
.91								
19.44 CFS	.91	.91	.91	.90	.89	.89	.89	
.88								
19.92 CFS	.87	.87	.88	.88	.88	.87	.87	
.86								
20.40 CFS	.85	.84	.84	.84	.85	.84	.84	
.83								
20.88 CFS	.83	.83	.82	.81	.81	.80	.80	
.80								
21.36 CFS	.80	.80	.80	.80	.79	.78	.78	
.78								
21.84 CFS	.78	.77	.78	.77	.77	.76	.75	
.75								
22.32 CFS	.75	.75	.75	.75	.74	.73	.72	
.72								
22.80 CFS	.72	.71	.70	.70	.71	.71	.71	
.70								
23.28 CFS	.69	.69	.69	.68	.67	.66	.66	

.67								
23.76 CFS	.67	.67	.65	.65	.66	.66	.56	
.39								

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.01 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	715.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.67 WATERSHED INCHES; 1731 CFS-HRS; 143.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	715.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.67 WATERSHED INCHES; 1731 CFS-HRS; 143.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	18.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.95 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	724.9	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02  
 SQ.MI.

4.98 CFS	.48	.51	.53	.56	.59	.62	.65
.69							
5.46 CFS	.73	.77	.81	.86	.90	.95	1.00

1.06								
5.94 CFS	1.11	1.16	1.21	1.26	1.32	1.37	1.43	
1.49								
6.42 CFS	1.55	1.62	1.69	1.77	1.84	1.92	2.01	
2.10								
6.90 CFS	2.19	2.28	2.38	2.47	2.58	2.68	2.81	
2.93								
7.38 CFS	3.08	3.24	3.41	3.60	3.80	4.00	4.22	
4.44								
7.86 CFS	4.66	4.90	5.14	5.39	5.66	5.95	6.25	
6.55								
8.34 CFS	6.87	7.20	7.53	7.87	8.21	8.55	8.91	
9.28								
8.82 CFS	9.66	10.05	10.45	10.86	11.28	11.70	12.14	
12.59								
9.30 CFS	13.07	13.59	14.15	14.75	15.41	16.12	16.89	
17.71								
9.78 CFS	18.57	19.48	20.45	21.45	22.50	23.61	24.76	
25.94								
10.26 CFS	27.16	28.42	29.71	31.04	32.42	33.85	35.34	
36.91								
10.74 CFS	38.62	40.50	42.59	44.94	47.59	50.57	53.93	
57.71								
11.22 CFS	62	67	72	78	84	91	99	
109								
11.70 CFS	121	134	151	172	200	238	292	
366								
12.18 CFS	453	538	615	677	712	724	721	
710								
12.66 CFS	694	675	645	607	566	526	488	
456								
13.14 CFS	435	416	399	383	366	349	330	
312								
13.62 CFS	294	276	260	244	229	215	203	
192								
14.10 CFS	182	174	166	159	152	147	142	
137								
14.58 CFS	133	129	125	122	119	116	113	
110								
15.06 CFS	107	104	102	99	97	95	93	
91								
15.54 CFS	88.95	87.28	85.75	84.35	83.12	82.04	81.08	
80.18								
16.02 CFS	79.30	78.45	77.66	76.93	76.24	75.55	74.85	
74.17								
16.50 CFS	73.49	72.83	72.18	71.55	70.92	70.30	69.66	
69.02								
16.98 CFS	68.42	67.84	67.28	66.69	66.08	65.48	64.91	
64.35								
17.46 CFS	63.78	63.16	62.51	61.88	61.27	60.68	60.06	
59.42								
17.94 CFS	58.78	58.16	57.57	56.97	56.37	55.78	55.21	
54.66								
18.42 CFS	54.11	53.56	53.05	52.59	52.17	51.75	51.36	
51.02								
18.90 CFS	50.74	50.49	50.23	49.99	49.75	49.53	49.32	
49.10								
19.38 CFS	48.88	48.68	48.50	48.32	48.14	47.96	47.81	
47.66								
19.86 CFS	47.48	47.28	47.08	46.91	46.75	46.57	46.38	
46.19								
20.34 CFS	46.03	45.87	45.68	45.49	45.31	45.14	44.94	
44.71								
20.82 CFS	44.51	44.34	44.18	44.01	43.83	43.65	43.47	

43.29								
21.30	CFS	43.10	42.90	42.71	42.52	42.35	42.16	41.97
41.80								
21.78	CFS	41.63	41.46	41.28	41.09	40.90	40.71	40.50
40.30								
22.26	CFS	40.12	39.94	39.75	39.56	39.36	39.17	38.96
38.75								
22.74	CFS	38.57	38.39	38.19	37.96	37.73	37.54	37.36
37.16								
23.22	CFS	36.95	36.75	36.58	36.43	36.27	36.07	35.86
35.66								
23.70	CFS	35.48	35.31	35.11	34.87	34.66	34.53	34.40
33.95								
24.18	CFS	33.10	31.99	30.73	29.37	27.71	25.69	23.44
21.14								
24.66	CFS	18.94	16.97	15.29	13.89	12.76	11.86	11.14
10.56								

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25.14	CFS	10.10	9.72	9.41	9.14	8.90	8.70	8.51
8.33								
25.62	CFS	8.16	8.00	7.85	7.70	7.56		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.65 WATERSHED INCHES; 1752 CFS-HRS; 144.8 ACRE-  
FEET.

OPERATION DIVERT XSECTION 162  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	621.0 *	(DIVERT)
	* FIRST POINT OF FLAT	PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1717 CFS-HRS; 141.9 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	103.9	176.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.05 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	103.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .05 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 163

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.50 724.9 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02  
 SQ.MI.

HRS	MAIN	TIME	INCREMENT	ALTERNATE	STORM	DRAINAGE	AREA	
4.98 CFS	.48	.51	.53	.56	.59	.62	.65	
5.46 CFS	.73	.77	.81	.86	.90	.95	1.00	
5.94 CFS	1.11	1.16	1.21	1.26	1.32	1.37	1.43	
6.42 CFS	1.55	1.62	1.69	1.77	1.84	1.92	2.01	
6.90 CFS	2.19	2.28	2.38	2.47	2.58	2.68	2.81	
7.38 CFS	3.08	3.24	3.41	3.60	3.80	4.00	4.22	
7.86 CFS	4.66	4.90	5.14	5.39	5.66	5.95	6.25	

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8.34 CFS	6.87	7.20	7.53	7.87	8.21	8.55	8.91	
9.28								
8.82 CFS	9.66	10.05	10.45	10.86	11.28	11.70	12.14	
12.59								
9.30 CFS	13.07	13.59	14.15	14.75	15.41	16.12	16.89	
17.71								
9.78 CFS	18.57	19.48	20.45	21.45	22.50	23.61	24.76	
25.94								
10.26 CFS	27.16	28.42	29.71	31.04	32.42	33.85	35.34	
36.91								
10.74 CFS	38.62	40.50	42.59	44.94	47.59	50.57	53.93	
57.71								
11.22 CFS	62	67	72	78	84	91	99	
109								
11.70 CFS	121	134	151	172	200	238	292	
366								
12.18 CFS	453	538	615	677	712	724	721	
710								
12.66 CFS	694	675	645	607	566	526	488	
456								
13.14 CFS	435	416	399	383	366	349	330	
312								
13.62 CFS	294	276	260	244	229	215	203	
192								
14.10 CFS	182	174	166	159	152	147	142	

137							
14.58 CFS	133	129	125	122	119	116	113
110							
15.06 CFS	107	104	102	99	97	95	93
91							
15.54 CFS	88.95	87.28	85.75	84.35	83.12	82.04	81.08
80.18							
16.02 CFS	79.30	78.45	77.66	76.93	76.24	75.55	74.85
74.17							
16.50 CFS	73.49	72.83	72.18	71.55	70.92	70.30	69.66
69.02							
16.98 CFS	68.42	67.84	67.28	66.69	66.08	65.48	64.91
64.35							
17.46 CFS	63.78	63.16	62.51	61.88	61.27	60.68	60.06
59.42							
17.94 CFS	58.78	58.16	57.57	56.97	56.37	55.78	55.21
54.66							
18.42 CFS	54.11	53.56	53.05	52.59	52.17	51.75	51.36
51.02							
18.90 CFS	50.74	50.49	50.23	49.99	49.75	49.53	49.32
49.10							
19.38 CFS	48.88	48.68	48.50	48.32	48.14	47.96	47.81
47.66							
19.86 CFS	47.48	47.28	47.08	46.91	46.75	46.57	46.38
46.19							
20.34 CFS	46.03	45.87	45.68	45.49	45.31	45.14	44.94
44.71							
20.82 CFS	44.51	44.34	44.18	44.01	43.83	43.65	43.47
43.29							
21.30 CFS	43.10	42.90	42.71	42.52	42.35	42.16	41.97
41.80							
21.78 CFS	41.63	41.46	41.28	41.09	40.90	40.71	40.50
40.30							
22.26 CFS	40.12	39.94	39.75	39.56	39.36	39.17	38.96
38.75							
22.74 CFS	38.57	38.39	38.19	37.96	37.73	37.54	37.36
37.16							
23.22 CFS	36.95	36.75	36.58	36.43	36.27	36.07	35.86
35.66							
23.70 CFS	35.48	35.31	35.11	34.87	34.66	34.53	34.40
33.95							
24.18 CFS	33.10	31.99	30.73	29.37	27.71	25.69	23.44
21.14							
24.66 CFS	18.94	16.97	15.29	13.89	12.76	11.86	11.14
10.56							
25.14 CFS	10.10	9.72	9.41	9.14	8.90	8.70	8.51
8.33							
25.62 CFS	8.16	8.00	7.85	7.70	7.56		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.65 WATERSHED INCHES; 1752 CFS-HRS; 144.8 ACRE-FEET.

OPERATION REACH XSECTION 63

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.67	701.0	250.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.65 WATERSHED INCHES; 1751 CFS-HRS; 144.7 ACRE-FEET.

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OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	15.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.24 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	8.4	334.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.24 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.85	8.2	300.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.23 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	55.9	(RUNOFF)
24.02	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.98 WATERSHED INCHES; 59 CFS-HRS; 4.8 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*



OPERATION RESVOR STRUCTURE 62

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.62	18.0	293.76
14.58	3.8	287.79
24.04	1.1	287.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.98 WATERSHED INCHES; 59 CFS-HRS; 4.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.82	25.9	(NULL)
18.87	2.1	(NULL)
24.04	1.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.23 WATERSHED INCHES; 82 CFS-HRS; 6.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.19	109.3	(RUNOFF)
23.74	2.1	(RUNOFF)
24.03	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.22 WATERSHED INCHES; 112 CFS-HRS; 9.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.20	128.2	(NULL)
18.87	5.0	(NULL)
21.97	4.1	(NULL)
24.03	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.22 WATERSHED INCHES; 193 CFS-HRS; 16.0 ACRE-  
FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	88.5	248.66
24.15	3.5	247.55

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.22 WATERSHED INCHES; 193 CFS-HRS; 16.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	26.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.81 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	9.6	265.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.82 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	8.9	247.79

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.81 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	110.8	(RUNOFF)
15.85	5.4	(RUNOFF)
17.34	4.2	(RUNOFF)
20.86	3.0	(RUNOFF)
24.01	2.5	(RUNOFF)

		HYDROGRAPH POINTS FOR				ALTERNATE = 1,		STORM =10	
HRS		MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = .11			
SQ.MI.									
10.98	CFS	.31	.51	.76	1.07	1.44	1.85	2.33	
2.88									
11.46	CFS	3.49	4.17	5.33	7.10	9.05	11.28	14.56	
19.46									
11.94	CFS	26.93	40.30	62.41	94.61	110.76	98.35	78.24	
63.21									
12.42	CFS	52.04	44.53	39.78	34.95	29.90	26.21	24.01	
22.44									
12.90	CFS	21.14	20.00	18.86	17.73	16.61	15.68	14.94	
14.26									
13.38	CFS	13.60	12.94	12.27	11.63	11.02	10.52	10.14	
9.85									
13.86	CFS	9.62	9.44	9.31	9.18	9.03	8.85	8.64	
8.46									
14.34	CFS	8.31	8.18	8.04	7.87	7.67	7.46	7.28	
7.13									

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14.82	CFS	7.00	6.85	6.67	6.49	6.33	6.15	5.96	
5.81									
15.30	CFS	5.72	5.68	5.66	5.66	5.65	5.61	5.53	
5.43									
15.78	CFS	5.39	5.40	5.39	5.33	5.24	5.17	5.13	
5.11									
16.26	CFS	5.08	5.03	4.97	4.92	4.86	4.79	4.75	
4.72									
16.74	CFS	4.71	4.66	4.60	4.55	4.53	4.51	4.47	
4.38									
17.22	CFS	4.28	4.23	4.24	4.23	4.16	4.07	3.99	
3.94									
17.70	CFS	3.92	3.90	3.83	3.77	3.73	3.72	3.69	
3.63									
18.18	CFS	3.56	3.53	3.51	3.48	3.43	3.39	3.42	
3.46									
18.66	CFS	3.47	3.42	3.40	3.42	3.42	3.37	3.33	
3.32									
19.14	CFS	3.31	3.31	3.31	3.31	3.31	3.31	3.31	
3.30									
19.62	CFS	3.24	3.21	3.23	3.22	3.18	3.14	3.16	
3.21									
20.10	CFS	3.22	3.18	3.15	3.13	3.11	3.06	3.01	
3.03									
20.58	CFS	3.07	3.09	3.06	3.01	3.03	3.04	3.00	
2.96									
21.06	CFS	2.93	2.92	2.92	2.92	2.92	2.92	2.92	
2.92									
21.54	CFS	2.91	2.87	2.81	2.82	2.84	2.81	2.81	
2.84									
22.02	CFS	2.81	2.77	2.74	2.72	2.72	2.72	2.71	
2.71									
22.50	CFS	2.71	2.70	2.64	2.61	2.63	2.62	2.57	
2.54									
22.98	CFS	2.55	2.60	2.61	2.57	2.53	2.52	2.51	

2.51								
23.46 CFS	2.49	2.43	2.39	2.42	2.46	2.47	2.42	
2.36								
23.94 CFS	2.35	2.46	2.42	1.76	.95	.46		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.58 WATERSHED INCHES; 112 CFS-HRS; 9.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	731.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.55 WATERSHED INCHES; 1864 CFS-HRS; 154.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	97.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .15  
 SQ.MI.

HRS								
9.54 CFS	.48	.52	.57	.63	.69	.76	.83	
.91								
10.02 CFS	.99	1.08	1.18	1.29	1.42	1.54	1.68	
1.83								
10.50 CFS	1.98	2.14	2.31	2.49	2.70	2.93	3.19	
3.49								
10.98 CFS	3.83	4.20	4.61	5.06	5.56	6.13	6.79	
7.49								
11.46 CFS	8.24	9.07	9.99	11.00	12.24	13.95	16.08	
18.47								
11.94 CFS	21.39	25.07	29.93	36.93	47.23	61.67	78.48	
91.58								
12.42 CFS	96.90	96.63	93.34	88.79	83.89	78.83	73.90	
69.37								
12.90 CFS	65.57	62.32	59.46	56.88	54.50	52.26	50.13	
48.15								
13.38 CFS	46.37	44.76	43.30	41.96	40.71	39.54	38.40	
37.28								
13.86 CFS	36.20	35.16	34.17	33.24	32.36	31.54	30.75	
29.89								

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14.34 CFS	28.92	27.91	26.66	25.31	23.94	22.46	21.21	
20.10								
14.82 CFS	19.12	18.25	17.49	16.83	16.22	15.66	15.15	
14.63								

15.30 CFS	14.10	13.59	13.11	12.67	12.24	11.84	11.48
11.16							
15.78 CFS	10.87	10.61	10.38	10.19	10.03	9.88	9.73
9.58							
16.26 CFS	9.44	9.26	9.07	8.90	8.73	8.59	8.46
8.34							
16.74 CFS	8.22	8.13	8.04	7.96	7.87	7.79	7.71
7.65							
17.22 CFS	7.58	7.50	7.40	7.31	7.23	7.16	7.09
7.01							
17.70 CFS	6.91	6.82	6.74	6.66	6.58	6.50	6.42
6.35							
18.18 CFS	6.28	6.21	6.13	6.05	5.98	5.92	5.85
5.79							
18.66 CFS	5.74	5.71	5.69	5.66	5.63	5.61	5.59
5.57							
19.14 CFS	5.54	5.50	5.47	5.45	5.43	5.41	5.40
5.39							
19.62 CFS	5.38	5.37	5.34	5.32	5.29	5.27	5.25
5.22							
20.10 CFS	5.19	5.18	5.18	5.17	5.15	5.13	5.11
5.08							
20.58 CFS	5.04	5.01	4.99	4.98	4.97	4.95	4.93
4.92							
21.06 CFS	4.90	4.88	4.85	4.82	4.79	4.77	4.75
4.74							
21.54 CFS	4.73	4.72	4.71	4.69	4.66	4.63	4.61
4.59							
22.02 CFS	4.58	4.57	4.56	4.53	4.51	4.48	4.45
4.43							
22.50 CFS	4.41	4.40	4.39	4.37	4.35	4.32	4.29
4.27							
22.98 CFS	4.24	4.21	4.18	4.18	4.17	4.16	4.14
4.12							
23.46 CFS	4.10	4.08	4.05	4.02	3.99	3.96	3.95
3.95							
23.94 CFS	3.93	3.90	3.88	3.87	3.85	3.68	3.32
2.86							
24.42 CFS	2.40	1.99	1.63	1.34	1.09	.88	.71
.57							
24.90 CFS	.45						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.27 WATERSHED INCHES; 215 CFS-HRS; 17.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.62 818.4 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28  
 SQ.MI.  
 5.16 CFS .50 .52 .55 .58 .61 .64 .68  
 .71  
 5.64 CFS .76 .80 .84 .89 .94 .99 1.04  
 1.09  
 6.12 CFS 1.14 1.19 1.24 1.30 1.35 1.41 1.47  
 1.53  
 6.60 CFS 1.60 1.67 1.74 1.82 1.90 1.98 2.08  
 2.17

7.08 CFS	2.27	2.37	2.47	2.57	2.69	2.81	2.94
3.09							
7.56 CFS	3.25	3.42	3.62	3.82	4.03	4.24	4.47
4.71							
8.04 CFS	4.95	5.20	5.46	5.74	6.03	6.33	6.64
6.97							
8.52 CFS	7.30	7.64	7.99	8.34	8.69	9.06	9.44
9.83							
9.00 CFS	10.23	10.63	11.06	11.49	11.92	12.38	12.85
13.35							
9.48 CFS	13.89	14.49	15.12	15.82	16.57	17.38	18.25
19.17							
9.96 CFS	20.14	21.17	22.25	23.39	24.58	25.83	27.13
28.47							
10.44 CFS	29.85	31.28	32.77	34.30	35.91	37.60	39.42
41.44							
10.92 CFS	43.71	46.27	49.16	52.42	56.10	60.26	64.94
70.20							
11.40 CFS	76	83	90	98	108	119	133
150							
11.88 CFS	171	198	236	292	370	451	521
593							
12.36 CFS	667	731	779	807	818	815	803
786							

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12.84 CFS	762	730	693	653	613	574	542
514							
13.32 CFS	490	469	449	429	408	388	369
349							
13.80 CFS	330	312	295	279	264	251	238
227							
14.28 CFS	217	207	199	191	183	176	170
164							
14.76 CFS	158	153	149	144	140	136	133
129							
15.24 CFS	126	123	120	117	114	112	109
107							
15.72 CFS	105	103	101	100	98	97	96
95							
16.20 CFS	93.51	92.54	91.55	90.57	89.64	88.71	87.81
86.95							
16.68 CFS	86.14	85.36	84.57	83.79	83.03	82.29	81.56
80.84							
17.16 CFS	80.10	79.34	78.62	77.93	77.24	76.53	75.79
75.04							
17.64 CFS	74.29	73.56	72.82	72.07	71.32	70.58	69.85
69.12							
18.12 CFS	68.37	67.63	66.92	66.23	65.54	64.84	64.18
63.59							
18.60 CFS	63.03	62.48	61.94	61.44	61.02	60.60	60.19
59.83							
19.08 CFS	59.50	59.19	58.90	58.64	58.38	58.14	57.90
57.68							
19.56 CFS	57.45	57.20	56.97	56.78	56.58	56.35	56.13
55.94							

20.04	CFS	55.76	55.57	55.34	55.13	54.92	54.71	54.46
54.22								
20.52	CFS	54.02	53.85	53.65	53.42	53.18	52.98	52.77
52.53								
21.00	CFS	52.29	52.08	51.87	51.66	51.45	51.24	51.04
50.83								
21.48	CFS	50.63	50.42	50.18	49.93	49.74	49.54	49.31
49.12								
21.96	CFS	48.95	48.73	48.49	48.26	48.03	47.79	47.57
47.36								
22.44	CFS	47.15	46.94	46.72	46.46	46.21	46.00	45.77
45.51								
22.92	CFS	45.25	45.03	44.84	44.61	44.37	44.13	43.90
43.67								
23.40	CFS	43.46	43.24	43.00	42.76	42.57	42.38	42.17
41.92								
23.88	CFS	41.67	41.43	41.31	41.06	40.25	39.14	37.95
36.58								
24.36	CFS	35.03	33.37	31.57	29.56	27.35	25.03	22.70
20.47								
24.84	CFS	18.43	16.63	15.09	13.80	12.73	11.86	11.16
10.58								
25.32	CFS	10.11	9.71	9.38	9.10	8.86	8.64	8.44
8.26								
25.80	CFS	8.08	7.92					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.52 WATERSHED INCHES; 2078 CFS-HRS; 171.7 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 176  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	691.0 *	(DIVERT)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2029 CFS-HRS; 167.7 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	127.4	176.22

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .06 WATERSHED INCHES; 49 CFS-HRS; 4.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 72

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.62 127.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .06 WATERSHED INCHES; 49 CFS-HRS; 4.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 177

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.62 818.4 (NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10							
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28							
5.16 CFS	.50	.52	.55	.58	.61	.64	.68	
.71								
5.64 CFS	.76	.80	.84	.89	.94	.99	1.04	
1.09								
6.12 CFS	1.14	1.19	1.24	1.30	1.35	1.41	1.47	
1.53								
6.60 CFS	1.60	1.67	1.74	1.82	1.90	1.98	2.08	
2.17								
7.08 CFS	2.27	2.37	2.47	2.57	2.69	2.81	2.94	
3.09								
7.56 CFS	3.25	3.42	3.62	3.82	4.03	4.24	4.47	
4.71								
8.04 CFS	4.95	5.20	5.46	5.74	6.03	6.33	6.64	
6.97								
8.52 CFS	7.30	7.64	7.99	8.34	8.69	9.06	9.44	
9.83								
9.00 CFS	10.23	10.63	11.06	11.49	11.92	12.38	12.85	
13.35								
9.48 CFS	13.89	14.49	15.12	15.82	16.57	17.38	18.25	
19.17								
9.96 CFS	20.14	21.17	22.25	23.39	24.58	25.83	27.13	
28.47								
10.44 CFS	29.85	31.28	32.77	34.30	35.91	37.60	39.42	
41.44								
10.92 CFS	43.71	46.27	49.16	52.42	56.10	60.26	64.94	
70.20								
11.40 CFS	76	83	90	98	108	119	133	
150								
11.88 CFS	171	198	236	292	370	451	521	
593								
12.36 CFS	667	731	779	807	818	815	803	
786								
12.84 CFS	762	730	693	653	613	574	542	
514								
13.32 CFS	490	469	449	429	408	388	369	
349								
13.80 CFS	330	312	295	279	264	251	238	
227								
14.28 CFS	217	207	199	191	183	176	170	
164								
14.76 CFS	158	153	149	144	140	136	133	
129								
15.24 CFS	126	123	120	117	114	112	109	
107								



15.72	CFS	105	103	101	100	98	97	96
95								
16.20	CFS	93.51	92.54	91.55	90.57	89.64	88.71	87.81
86.95								
16.68	CFS	86.14	85.36	84.57	83.79	83.03	82.29	81.56
80.84								
17.16	CFS	80.10	79.34	78.62	77.93	77.24	76.53	75.79
75.04								
17.64	CFS	74.29	73.56	72.82	72.07	71.32	70.58	69.85
69.12								
18.12	CFS	68.37	67.63	66.92	66.23	65.54	64.84	64.18
63.59								
18.60	CFS	63.03	62.48	61.94	61.44	61.02	60.60	60.19
59.83								
19.08	CFS	59.50	59.19	58.90	58.64	58.38	58.14	57.90
57.68								

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19.56	CFS	57.45	57.20	56.97	56.78	56.58	56.35	56.13
55.94								
20.04	CFS	55.76	55.57	55.34	55.13	54.92	54.71	54.46
54.22								
20.52	CFS	54.02	53.85	53.65	53.42	53.18	52.98	52.77
52.53								
21.00	CFS	52.29	52.08	51.87	51.66	51.45	51.24	51.04
50.83								
21.48	CFS	50.63	50.42	50.18	49.93	49.74	49.54	49.31
49.12								
21.96	CFS	48.95	48.73	48.49	48.26	48.03	47.79	47.57
47.36								
22.44	CFS	47.15	46.94	46.72	46.46	46.21	46.00	45.77
45.51								
22.92	CFS	45.25	45.03	44.84	44.61	44.37	44.13	43.90
43.67								
23.40	CFS	43.46	43.24	43.00	42.76	42.57	42.38	42.17
41.92								
23.88	CFS	41.67	41.43	41.31	41.06	40.25	39.14	37.95
36.58								
24.36	CFS	35.03	33.37	31.57	29.56	27.35	25.03	22.70
20.47								
24.84	CFS	18.43	16.63	15.09	13.80	12.73	11.86	11.16
10.58								
25.32	CFS	10.11	9.71	9.38	9.10	8.86	8.64	8.44
8.26								
25.80	CFS	8.08	7.92					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.52 WATERSHED INCHES; 2078 CFS-HRS; 171.7 ACRE-FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	817.8	230.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.52 WATERSHED INCHES; 2078 CFS-HRS; 171.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	69.0	(RUNOFF)
17.34	2.3	(RUNOFF)
24.01	1.3	(RUNOFF)

HRS	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10							
	MAIN	TIME	INCREMENT = .060 hr,	DRAINAGE AREA = .05				
SQ.MI.								
10.44 CFS	.48	.54	.61	.69	.79	.90	1.03	
1.17								
10.92 CFS	1.32	1.48	1.66	1.88	2.14	2.44	2.77	
3.12								
11.40 CFS	3.52	3.94	4.40	5.28	6.65	8.02	9.48	
11.75								
11.88 CFS	15.02	19.88	28.51	42.20	61.40	68.99	58.81	
45.47								
12.36 CFS	36.20	29.51	25.09	22.34	19.48	16.56	14.53	
13.33								
12.84 CFS	12.45	11.72	11.07	10.42	9.77	9.14	8.62	
8.22								
13.32 CFS	7.83	7.46	7.09	6.72	6.36	6.02	5.75	
5.55								
13.80 CFS	5.39	5.26	5.16	5.08	5.01	4.93	4.82	
4.71								
14.28 CFS	4.60	4.52	4.45	4.37	4.28	4.16	4.05	
3.95								
14.76 CFS	3.87	3.79	3.71	3.61	3.51	3.42	3.32	
3.22								
15.24 CFS	3.14	3.09	3.07	3.06	3.06	3.05	3.03	
2.98								
15.72 CFS	2.93	2.91	2.92	2.91	2.87	2.82	2.78	
2.76								
16.20 CFS	2.75	2.74	2.70	2.67	2.65	2.61	2.57	
2.55								
16.68 CFS	2.54	2.53	2.50	2.47	2.44	2.43	2.42	
2.39								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

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17.16 CFS	2.35	2.29	2.26	2.27	2.27	2.23	2.18
2.13							
17.64 CFS	2.11	2.10	2.08	2.05	2.01	2.00	1.99
1.97							
18.12 CFS	1.94	1.90	1.88	1.87	1.86	1.83	1.81
1.83							
18.60 CFS	1.85	1.85	1.83	1.81	1.83	1.82	1.80
1.78							
19.08 CFS	1.77	1.77	1.76	1.76	1.76	1.76	1.76

1.77								
19.56	CFS	1.76	1.72	1.71	1.72	1.72	1.69	1.67
1.68								
20.04	CFS	1.71	1.71	1.69	1.67	1.66	1.66	1.63
1.60								
20.52	CFS	1.61	1.63	1.64	1.62	1.60	1.61	1.61
1.59								
21.00	CFS	1.57	1.56	1.55	1.55	1.55	1.55	1.55
1.55								
21.48	CFS	1.55	1.54	1.52	1.49	1.50	1.50	1.49
1.49								
21.96	CFS	1.50	1.49	1.46	1.45	1.44	1.44	1.44
1.44								
22.44	CFS	1.44	1.44	1.43	1.39	1.38	1.39	1.39
1.36								
22.92	CFS	1.34	1.35	1.38	1.38	1.36	1.34	1.33
1.33								
23.40	CFS	1.32	1.31	1.28	1.26	1.28	1.30	1.30
1.27								
23.88	CFS	1.24	1.24	1.31	1.28	.90	.46	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.03 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.67	833.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.50 WATERSHED INCHES; 2145 CFS-HRS; 177.2 ACRE-FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	833.1	215.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.50 WATERSHED INCHES; 2144 CFS-HRS; 177.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	37.3	(RUNOFF)
19.47	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 82

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.73	840.8	178.70
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.48 WATERSHED INCHES;		180.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	78.1	(RUNOFF)
15.84	3.0	(RUNOFF)
17.34	2.4	(RUNOFF)
24.00	1.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.15 WATERSHED INCHES;		5.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	81.9	(RUNOFF)
21.93	2.2	(RUNOFF)
24.01	1.8	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.08 WATERSHED INCHES;		8.0 ACRE-
FEET.		

OPERATION DIVERT XSECTION 184  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	81.9	(DIVERT)
21.93	2.2	(DIVERT)
24.01	1.8	(DIVERT)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
97 CFS-HRS;		8.0 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.00 WATERSHED INCHES;		.0 ACRE-

FEET.

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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\*\*\* MESSAGE - STRUCTURE 81, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE

STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 200.00. THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.

\*\*\*

OPERATION RESVOR STRUCTURE 81

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.

\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* WARNING - XSECTION 185

NO HYDROGRAPH IN INPUT LOCATION 1 OR 6 FOR ADDHYD OPERATION.

\*\*\*

OPERATION ADDHYD XSECTION 185

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.25	81.9	(NULL)
21.93	2.2	(NULL)
24.01	1.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.08 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 186

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	34.6	(RUNOFF)
23.12	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 1.46 WATERSHED INCHES; 44 CFS-HRS; 3.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 187

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.25	116.5	(NULL)
18.67	4.0	(NULL)

21.94	3.3	(NULL)
23.12	3.0	(NULL)
24.01	2.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.84 WATERSHED INCHES; 141 CFS-HRS; 11.6 ACRE-  
 FEET.

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

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OPERATION ADDHYD XSECTION 85

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	181.6	(NULL)
20.83	5.2	(NULL)
24.00	4.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .17  
 SQ.MI.

9.96 CFS	.48	.59	.69	.81	.93	1.05	1.18
1.31							
10.44 CFS	1.45	1.60	1.78	1.98	2.22	2.49	2.81
3.15							
10.92 CFS	3.53	3.93	4.36	4.92	5.57	6.35	7.23
8.21							
11.40 CFS	9.32	10.51	11.85	14.18	17.53	21.09	25.31
31.36							
11.88 CFS	40	52	74	108	155	180	174
155							
12.36 CFS	133	112	96	84	73	63	56
50							
12.84 CFS	45.11	41.66	38.75	36.16	33.73	31.52	29.64
28.02							
13.32 CFS	26.59	25.27	24.01	22.77	21.58	20.45	19.48
18.68							
13.80 CFS	18.02	17.48	17.06	16.72	16.43	16.13	15.81
15.46							
14.28 CFS	15.13	14.84	14.58	14.32	14.02	13.69	13.35
13.03							
14.76 CFS	12.74	12.47	12.20	11.90	11.60	11.31	10.99
10.67							
15.24 CFS	10.40	10.20	10.06	9.97	9.92	9.89	9.81
9.70							
15.72 CFS	9.56	9.48	9.45	9.40	9.32	9.20	9.08
9.00							
16.20 CFS	8.94	8.88	8.79	8.70	8.62	8.52	8.40
8.32							
16.68 CFS	8.26	8.21	8.13	8.04	7.96	7.91	7.86
7.78							
17.16 CFS	7.66	7.52	7.43	7.40	7.34	7.26	7.13
7.01							
17.64 CFS	6.91	6.85	6.79	6.69	6.60	6.53	6.47
6.42							

18.12 CFS	6.33	6.23	6.16	6.11	6.06	5.97	5.92
5.93							
18.60 CFS	5.96	5.96	5.91	5.89	5.91	5.88	5.83
5.79							
19.08 CFS	5.75	5.73	5.72	5.71	5.71	5.70	5.70
5.70							
19.56 CFS	5.68	5.61	5.57	5.58	5.55	5.50	5.46
5.46							
20.04 CFS	5.51	5.51	5.48	5.44	5.41	5.38	5.31
5.24							
20.52 CFS	5.24	5.27	5.28	5.25	5.21	5.22	5.21
5.16							
21.00 CFS	5.12	5.08	5.05	5.03	5.02	5.01	5.01
5.01							
21.48 CFS	5.01	5.00	4.94	4.88	4.88	4.87	4.83
4.84							
21.96 CFS	4.86	4.82	4.77	4.73	4.70	4.68	4.67
4.66							
22.44 CFS	4.66	4.65	4.63	4.56	4.52	4.52	4.49
4.43							
22.92 CFS	4.39	4.39	4.44	4.44	4.41	4.37	4.34
4.32							
23.40 CFS	4.30	4.27	4.19	4.15	4.17	4.20	4.20
4.15							
23.88 CFS	4.08	4.06	4.19	4.08	3.29	2.34	1.57
.97							
24.36 CFS	.60	.37					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.93 WATERSHED INCHES; 212 CFS-HRS; 17.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.70	896.6	(NULL)

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.42 WATERSHED INCHES; 2392 CFS-HRS; 197.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.13	40.2	(RUNOFF)
15.84	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.45 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)							PEAK
12.70	902.6							(NULL)
HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10								
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55								
HRS	SQ.MI.							
5.22 CFS	.49	.51	.54	.57	.60	.64	.68	.72
5.70 CFS	.76	.80	.85	.90	.95	1.00	1.06	1.11
6.18 CFS	1.17	1.23	1.28	1.34	1.40	1.46	1.53	1.60
6.66 CFS	1.67	1.74	1.81	1.90	1.98	2.06	2.15	2.25
7.14 CFS	2.36	2.46	2.57	2.67	2.79	2.92	3.04	3.18
7.62 CFS	3.33	3.50	3.68	3.88	4.09	4.31	4.54	4.77
8.10 CFS	5.02	5.27	5.52	5.80	6.09	6.38	6.69	7.01
8.58 CFS	7.35	7.70	8.05	8.40	8.76	9.12	9.50	9.90
9.06 CFS	10.30	10.71	11.14	11.59	12.05	12.51	13.00	13.51
9.54 CFS	14.06	14.66	15.32	16.04	16.81	17.67	18.60	19.61
10.02 CFS	20.69	21.85	23.06	24.33	25.66	27.05	28.52	30.06
10.50 CFS	31.67	33.37	35.18	37.13	39.18	41.38	43.71	46.23
10.98 CFS	48.96	52.00	55.55	59.59	64.21	69.40	75.19	81.74
11.46 CFS	89	97	107	121	135	152	174	201
11.94 CFS	239	297	381	499	596	655	693	721
12.42 CFS	756	804	851	884	900	902	892	875
12.90 CFS	854	827	793	753	710	667	625	590
13.38 CFS	559	533	509	487	465	443	422	401
13.86 CFS	380	361	342	324	308	292	278	265
14.34 CFS	253	242	232	223	214	206	198	191
14.82 CFS	185	179	173	168	163	159	154	150
15.30 CFS	146	143	139	136	133	130	128	125
15.78 CFS	122	120	118	116	115	113	112	110
16.26 CFS	109	108	107	106	104	103	102	101
16.74 CFS	100	99	98	98	97	96	95	94
17.22 CFS	93.04	92.14	91.35	90.55	89.72	88.82	87.89	87.01
17.70 CFS	86.17	85.33	84.44	83.54	82.67	81.84	81.02	



80.14								
18.18	CFS	79.25	78.39	77.57	76.77	75.93	75.16	74.48
73.88								
18.66	CFS	73.30	72.65	72.05	71.53	71.00	70.48	69.97
69.50								

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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19.14	CFS	69.10	68.75	68.43	68.13	67.86	67.61	67.36
67.09								
19.62	CFS	66.74	66.44	66.20	65.94	65.66	65.38	65.15
65.02								
20.10	CFS	64.84	64.61	64.35	64.07	63.81	63.48	63.15
62.91								
20.58	CFS	62.72	62.56	62.33	62.06	61.85	61.61	61.33
61.03								
21.06	CFS	60.72	60.44	60.20	59.97	59.75	59.54	59.33
59.13								
21.54	CFS	58.90	58.60	58.28	58.05	57.79	57.53	57.34
57.15								
22.02	CFS	56.90	56.65	56.36	56.07	55.81	55.56	55.32
55.09								
22.50	CFS	54.88	54.63	54.29	54.00	53.75	53.46	53.16
52.85								
22.98	CFS	52.59	52.43	52.22	51.96	51.67	51.37	51.10
50.85								
23.46	CFS	50.57	50.22	49.93	49.71	49.54	49.36	49.08
48.75								
23.94	CFS	48.46	48.44	48.06	46.60	44.69	42.57	40.58
38.88								
24.42	CFS	37.24	35.54	33.80	31.96	29.95	27.76	25.44
23.10								
24.90	CFS	20.85	18.78	16.94	15.36	14.02	12.92	12.02
11.28								
25.38	CFS	10.68	10.19	9.78	9.44	9.15	8.90	8.67
8.47								
25.86	CFS	8.29						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.43 WATERSHED INCHES; 2428 CFS-HRS; 200.6 ACRE-FEET.

OPERATION DIVERT XSECTION 81 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) 12.42 PEAK DISCHARGE(CFS) 730.0 \* PEAK ELEVATION(FEET) 178.42 \* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2348 CFS-HRS; 194.0 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.70	172.6	176.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .08 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.70	172.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .08 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 89

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.70	902.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55  
 SQ.MI.

HRS	5.22	5.70	6.18	6.66	7.14	7.62	8.10	8.58	9.06	9.54	10.02	10.50	10.98
CFS	.49	.76	1.17	1.67	2.36	3.33	5.02	7.35	10.30	14.06	20.69	31.67	48.96
	.51	.80	1.23	1.74	2.46	3.50	5.27	7.70	10.71	14.66	21.85	33.37	52.00
	.54	.85	1.28	1.81	2.57	3.68	5.52	8.05	11.14	15.32	23.06	35.18	55.55
	.57	.90	1.34	1.90	2.67	3.88	5.80	8.40	11.59	16.04	24.33	37.13	59.59
	.60	.95	1.40	1.98	2.79	4.09	6.09	8.76	12.05	16.81	25.66	39.18	64.21
	.64	1.00	1.46	2.06	2.92	4.31	6.38	9.12	12.51	17.67	27.05	41.38	69.40
	.68	1.06	1.53	2.15	3.04	4.54	6.69	9.50	13.00	18.60	28.52	43.71	75.19

81.74							
11.46 CFS	89	97	107	121	135	152	174
201							
11.94 CFS	239	297	381	499	596	655	693
721							
12.42 CFS	756	804	851	884	900	902	892
875							
12.90 CFS	854	827	793	753	710	667	625
590							
13.38 CFS	559	533	509	487	465	443	422
401							
13.86 CFS	380	361	342	324	308	292	278
265							
14.34 CFS	253	242	232	223	214	206	198
191							
14.82 CFS	185	179	173	168	163	159	154
150							
15.30 CFS	146	143	139	136	133	130	128
125							
15.78 CFS	122	120	118	116	115	113	112
110							
16.26 CFS	109	108	107	106	104	103	102
101							
16.74 CFS	100	99	98	98	97	96	95
94							
17.22 CFS	93.04	92.14	91.35	90.55	89.72	88.82	87.89
87.01							
17.70 CFS	86.17	85.33	84.44	83.54	82.67	81.84	81.02
80.14							
18.18 CFS	79.25	78.39	77.57	76.77	75.93	75.16	74.48
73.88							
18.66 CFS	73.30	72.65	72.05	71.53	71.00	70.48	69.97
69.50							
19.14 CFS	69.10	68.75	68.43	68.13	67.86	67.61	67.36
67.09							
19.62 CFS	66.74	66.44	66.20	65.94	65.66	65.38	65.15
65.02							
20.10 CFS	64.84	64.61	64.35	64.07	63.81	63.48	63.15
62.91							
20.58 CFS	62.72	62.56	62.33	62.06	61.85	61.61	61.33
61.03							
21.06 CFS	60.72	60.44	60.20	59.97	59.75	59.54	59.33
59.13							
21.54 CFS	58.90	58.60	58.28	58.05	57.79	57.53	57.34
57.15							
22.02 CFS	56.90	56.65	56.36	56.07	55.81	55.56	55.32
55.09							
22.50 CFS	54.88	54.63	54.29	54.00	53.75	53.46	53.16
52.85							
22.98 CFS	52.59	52.43	52.22	51.96	51.67	51.37	51.10
50.85							
23.46 CFS	50.57	50.22	49.93	49.71	49.54	49.36	49.08
48.75							
23.94 CFS	48.46	48.44	48.06	46.60	44.69	42.57	40.58
38.88							
24.42 CFS	37.24	35.54	33.80	31.96	29.95	27.76	25.44
23.10							
24.90 CFS	20.85	18.78	16.94	15.36	14.02	12.92	12.02
11.28							

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25.38 CFS	10.68	10.19	9.78	9.44	9.15	8.90	8.67
8.47							
25.86 CFS	8.29						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.43 WATERSHED INCHES; 2428 CFS-HRS; 200.6 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 89  
 STARTING TIME = .00 RAIN DEPTH = 6.14 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =25 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	65.5	(RUNOFF)
20.13	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.01 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	65.1	390.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.01 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	114.1	(RUNOFF)
18.64	3.2	(RUNOFF)
23.97	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.85 WATERSHED INCHES; 144 CFS-HRS; 11.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 4

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	175.6	(NULL)
20.13	4.7	(NULL)
23.11	3.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.91 WATERSHED INCHES; 231 CFS-HRS; 19.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	174.6	383.65

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.89 WATERSHED INCHES; 230 CFS-HRS; 19.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	173.4	368.63

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.90 WATERSHED INCHES; 231 CFS-HRS; 19.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	143.4	(RUNOFF)
23.13	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.63 WATERSHED INCHES; 187 CFS-HRS; 15.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	306.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.77 WATERSHED INCHES; 417 CFS-HRS; 34.5 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 107

OUTPUT #1 HYDROGRAPH

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	213.0 *	(DIVERT)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 394 CFS-HRS; 32.6 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	93.7	176.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .21 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 84, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 358.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 84

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
 AT STRUCTURE 84  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	.0	350.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	214.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.57 WATERSHED INCHES; 394 CFS-HRS; 32.6 ACRE-FEET.

OPERATION REACH XSECTION 8

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.57	214.5	357.84

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.56 WATERSHED INCHES; 394 CFS-HRS; 32.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.30	169.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.08 WATERSHED INCHES; 241 CFS-HRS; 19.9 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.54	108.8	377.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.61 WATERSHED INCHES; 218 CFS-HRS; 18.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.13	23.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.10 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		

12.69 100.4 358.68

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.60 WATERSHED INCHES; 218 CFS-HRS; 18.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 11

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	113.8	(RUNOFF)
23.09	2.1	(RUNOFF)
24.02	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.23 WATERSHED INCHES; 113 CFS-HRS; 9.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	309.3	(NULL)
24.01	8.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 507 CFS-HRS; 41.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	44.8	(RUNOFF)
18.87	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.81 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	323.4	(NULL)
12.58	344.6	(NULL)
23.97	15.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.75 WATERSHED INCHES; 723 CFS-HRS; 59.8 ACRE-



FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.26	364.1	(NULL)
12.57	359.4	(NULL)
23.99	15.7	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.75 WATERSHED INCHES; 771 CFS-HRS; 63.7 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.26	364.1	(NULL)
12.57	359.4	(NULL)
23.99	15.7	(NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25						
	MAIN	TIME INCREMENT = .060 hr,	DRAINAGE AREA = .32				
3.84 CFS .01	.00	.01	.01	.01	.01	.01	.01
4.32 CFS .03	.02	.02	.02	.02	.02	.03	.03
4.80 CFS .05	.03	.04	.04	.04	.04	.05	.05
5.28 CFS .08	.06	.06	.06	.06	.07	.07	.08
5.76 CFS .11	.08	.09	.09	.09	.10	.10	.11
6.24 CFS .16	.12	.12	.12	.13	.13	.14	.14
6.72 CFS .31	.17	.19	.21	.22	.24	.26	.28
7.20 CFS .72	.34	.38	.43	.48	.53	.59	.65
7.68 CFS 1.33	.79	.86	.93	1.00	1.08	1.16	1.24
8.16 CFS 2.24	1.43	1.53	1.64	1.76	1.87	1.99	2.11
8.64 CFS 3.34	2.37	2.50	2.64	2.77	2.91	3.04	3.18
9.12 CFS 5.00	3.50	3.67	3.85	4.06	4.28	4.51	4.75
9.60 CFS 7.66	5.26	5.54	5.83	6.14	6.46	6.80	7.19
10.08 CFS	8.16	8.70	9.27	9.84	10.42	11.01	11.63

12.27								
10.56	CFS	12.95	13.70	14.55	15.50	16.53	18.65	20.99
23.21								
11.04	CFS	25.35	27.55	29.89	32.42	35.13	38.02	41.13
44.46								
11.52	CFS	48	53	59	67	75	86	100
120								
12.00	CFS	150	194	257	314	361	349	343
346								
12.48	CFS	352	357	358	341	310	280	251
226								
12.96	CFS	204	185	171	159	147	137	128
119								
13.44	CFS	111	104	98	92	87	82	77
73								
13.92	CFS	69.94	66.82	64.06	61.59	59.36	57.33	55.50
53.84								
14.40	CFS	52.34	50.95	49.62	48.34	47.10	45.91	44.79
43.71								
14.88	CFS	42.66	41.60	40.57	39.57	38.56	37.58	36.71
35.97								
15.36	CFS	35.35	34.83	34.38	34.01	33.66	33.32	32.99
32.71								
15.84	CFS	32.49	32.30	32.07	31.81	31.56	31.34	31.14
30.95								
16.32	CFS	30.73	30.50	30.29	30.07	29.83	29.61	29.40
29.22								
16.80	CFS	29.01	28.79	28.58	28.40	28.23	28.04	27.82
27.57								
17.28	CFS	27.34	27.17	26.99	26.78	26.52	26.28	26.05
25.84								
17.76	CFS	25.64	25.41	25.18	24.97	24.78	24.60	24.39
24.17								
18.24	CFS	23.97	23.79	23.61	23.41	23.22	23.10	23.01
22.92								
18.72	CFS	22.79	22.68	22.63	22.56	22.46	22.35	22.26
22.17								
19.20	CFS	22.09	22.01	21.94	21.88	21.82	21.77	21.71
21.61								
19.68	CFS	21.52	21.46	21.39	21.29	21.17	21.10	21.08
21.03								
20.16	CFS	20.95	20.87	20.80	20.73	20.62	20.49	20.41
20.36								
20.64	CFS	20.31	20.23	20.13	20.07	20.03	19.95	19.85
19.76								
21.12	CFS	19.67	19.59	19.52	19.45	19.38	19.32	19.27
19.22								

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21.60	CFS	19.13	19.03	18.97	18.91	18.82	18.75	18.71
18.65								
22.08	CFS	18.56	18.46	18.38	18.29	18.20	18.12	18.04
17.96								
22.56	CFS	17.87	17.75	17.63	17.56	17.47	17.34	17.21
17.12								
23.04	CFS	17.08	17.02	16.92	16.82	16.73	16.65	16.57

16.48								
23.52 CFS	16.35	16.22	16.15	16.10	16.03	15.92	15.80	
15.70								
24.00 CFS	15.73	15.66	15.01	14.00	13.01	12.11	11.22	
10.33								
24.48 CFS	9.73	9.36	9.08	8.85	8.66	8.49	8.34	
8.20								
24.96 CFS	8.06	7.94	7.81	7.70	7.58	7.46	7.36	
7.25								
25.44 CFS	7.14	7.01	6.88	6.74	6.61	6.47	6.33	
6.20								
25.92 CFS	6.07	5.94	5.81	5.69	5.57	5.45	5.34	
5.22								
26.40 CFS	5.11	5.00	4.90	4.79	4.69			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.75 WATERSHED INCHES; 771 CFS-HRS; 63.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	77	36	28	22	20	17	11	6

DURATION(HRS) 17  
 FLOW(CFS) 5 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	364.1	333.88
12.57	359.4	333.85
23.99	15.7	331.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.75 WATERSHED INCHES; 771 CFS-HRS; 63.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	68.1	(RUNOFF)
15.84	2.0	(RUNOFF)
21.45	1.0	(RUNOFF)
21.75	1.0	(RUNOFF)
21.95	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.75 WATERSHED INCHES; 65 CFS-HRS; 5.3 ACRE-FEET.

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OPERATION RUNOFF XSECTION 118

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.18	79.6	(RUNOFF)
24.03	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.34 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.18	79.6	(NULL)
24.03	1.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 25  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03 SQ.MI.

HRS	.00	.01	.01	.02	.04	.05	.06
2.16 CFS	.08	.09	.11	.13	.14	.15	.17
.20	.21	.22	.24	.25	.27	.28	.29
3.12 CFS	.31	.33	.34	.35	.36	.37	.39
.42	.43	.45	.47	.48	.48	.49	.51
4.08 CFS	.53	.55	.55	.56	.57	.59	.60
.63	.64	.65	.66	.68	.70	.71	.71
5.04 CFS	.71	.73	.75	.77	.79	.79	.79
.81	.83	.86	.87	.88	.90	.92	.94
6.00 CFS	.96	.99	1.01	1.04	1.06	1.08	1.09
.96	1.15	1.16	1.18	1.21	1.25	1.28	1.31
6.48 CFS	1.34	1.37	1.40	1.42	1.44	1.46	1.49
1.15	1.54	1.58	1.61	1.64	1.67	1.69	1.71
6.96 CFS	1.76	1.79	1.81	1.83	1.86	1.91	1.94
1.34	1.99	2.00	2.02	2.05	2.11	2.16	2.20
7.44 CFS	2.35	2.44	2.52	2.59	2.66	2.74	2.83
1.54	3.02	3.10	3.18	3.25	3.34	3.43	3.54
7.92 CFS	3.71	3.79	3.87	3.96	4.07	4.20	4.38
1.76	4.88	5.18	5.50	5.83	6.15	6.48	6.87
8.40 CFS	7.92						
1.99							
8.88 CFS							
2.35							
9.36 CFS							
3.02							
9.84 CFS							
3.71							
10.32 CFS							
4.88							
10.80 CFS							
7.92							

11.28	CFS	8.49	9.08	9.69	10.30	10.95	12.17	14.27
16.40								
11.76	CFS	18.41	21.19	25.12	30.70	39.75	53.56	71.18
79.58								
12.24	CFS	70.72	55.11	42.57	33.78	27.78	23.84	20.52
17.36								
12.72	CFS	14.92	13.34	12.25	11.40	10.68	10.01	9.36
8.72								
13.20	CFS	8.17	7.74	7.35	6.98	6.62	6.26	5.91
5.58								
13.68	CFS	5.31	5.09	4.93	4.79	4.68	4.60	4.52
4.44								
14.16	CFS	4.35	4.24	4.14	4.05	3.98	3.91	3.82
3.72								
14.64	CFS	3.61	3.52	3.44	3.37	3.29	3.20	3.12
3.03								
15.12	CFS	2.94	2.85	2.77	2.72	2.69	2.68	2.67
2.66								
15.60	CFS	2.64	2.61	2.56	2.53	2.53	2.53	2.50
2.46								
16.08	CFS	2.42	2.39	2.38	2.37	2.34	2.31	2.29
2.26								
16.56	CFS	2.23	2.20	2.19	2.18	2.15	2.12	2.10
2.09								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist;H1&H8UG;GHC2.04TEST

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17.04	CFS	2.08	2.06	2.02	1.97	1.94	1.94	1.94
1.91								
17.52	CFS	1.87	1.83	1.80	1.79	1.78	1.75	1.72
1.70								
18.00	CFS	1.69	1.68	1.65	1.62	1.60	1.59	1.58
1.55								
18.48	CFS	1.54	1.54	1.56	1.56	1.55	1.53	1.54
1.54								
18.96	CFS	1.52	1.50	1.49	1.49	1.49	1.48	1.48
1.48								
19.44	CFS	1.48	1.48	1.48	1.45	1.44	1.44	1.44
1.42								
19.92	CFS	1.41	1.41	1.43	1.43	1.42	1.40	1.39
1.39								
20.40	CFS	1.37	1.34	1.34	1.36	1.37	1.36	1.34
1.34								
20.88	CFS	1.34	1.33	1.31	1.30	1.29	1.29	1.29
1.29								
21.36	CFS	1.29	1.29	1.29	1.28	1.27	1.24	1.24
1.25								
21.84	CFS	1.24	1.23	1.24	1.24	1.22	1.20	1.20
1.19								
22.32	CFS	1.19	1.19	1.19	1.19	1.18	1.16	1.14
1.15								
22.80	CFS	1.14	1.13	1.11	1.11	1.13	1.14	1.12
1.11								
23.28	CFS	1.10	1.09	1.09	1.08	1.06	1.04	1.05
1.07								
23.76	CFS	1.07	1.05	1.03	1.02	1.06	1.06	.82
.48								

24.24 CFS	.25	.13	.06	.03	.02	.01	.00
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)							
	5.34 WATERSHED INCHES;		87 CFS-HRS;			7.2 ACRE-	
	FEET.						
DURATION (HRS)	2	4	6	8	10	12	14
FLOW (CFS)	8	4	3	2	2	1	1
DURATION (HRS)	18	20					
FLOW (CFS)	1	0					

OPERATION RUNOFF XSECTION 119

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)		PEAK
ELEVATION (FEET)			
12.13	19.8		(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)			
	4.55 WATERSHED INCHES;		17 CFS-HRS;
	FEET.		1.4 ACRE-

OPERATION ADDHYD XSECTION 120

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)		PEAK
ELEVATION (FEET)			
12.17	97.1		(NULL)
15.82	3.1		(NULL)
17.32	2.4		(NULL)
24.01	1.3		(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)			
	5.19 WATERSHED INCHES;		105 CFS-HRS;
	FEET.		8.6 ACRE-

OPERATION ADDHYD XSECTION 20

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)		PEAK
ELEVATION (FEET)			
12.16	164.2		(NULL)
15.83	5.1		(NULL)
18.85	3.1		(NULL)
24.01	2.2		(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)			
	5.01 WATERSHED INCHES;		169 CFS-HRS;
	FEET.		14.0 ACRE-

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	121.1	(RUNOFF)
15.84	3.8	(RUNOFF)
20.85	2.0	(RUNOFF)
24.00	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.37 WATERSHED INCHES; 114 CFS-HRS; 9.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	285.3	(NULL)
15.84	9.0	(NULL)
17.34	6.9	(NULL)
19.74	5.1	(NULL)
20.06	5.1	(NULL)
22.74	4.1	(NULL)
23.06	4.1	(NULL)
24.00	3.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.74 WATERSHED INCHES; 283 CFS-HRS; 23.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	597.0	(NULL)
20.04	26.2	(NULL)
20.58	25.2	(NULL)
21.93	23.2	(NULL)
23.03	21.1	(NULL)
24.00	19.6	(NULL)

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.96 WATERSHED INCHES; 1050 CFS-HRS; 86.8 ACRE-  
FEET.

OPERATION DIVERT XSECTION 122  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
11.88	168.0 *	(DIVERT)
20.04	26.2	(DIVERT)
20.58	25.2	(DIVERT)

21.93	23.2	(DIVERT)
23.03	21.1	(DIVERT)
24.00	19.6	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
790 CFS-HRS; 65.3 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	429.0	177.52

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.98 WATERSHED INCHES; 260 CFS-HRS; 21.5 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 83, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 322.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	530.6	323.39
12.54	505.9	323.35
12.66	458.9	323.26
12.78	305.2	322.98
12.90	195.7	322.63
13.02	95.7	322.31
13.14	45.8	322.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.34 WATERSHED INCHES; 89 CFS-HRS; 7.4 ACRE-FEET.

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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Dist;H1&H8UG;GHC2.04TEST

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OPERATION ADDHYD XSECTION 123

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	698.6	(NULL)
12.54	673.9	(NULL)
12.66	626.9	(NULL)
12.78	473.2	(NULL)
12.90	363.7	(NULL)
13.02	263.7	(NULL)
13.14	213.8	(NULL)



20.04	26.2	(NULL)
20.58	25.3	(NULL)
21.93	23.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.31 WATERSHED INCHES; 879 CFS-HRS; 72.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.49	432.9	316.26
12.60	488.0	316.39
12.72	479.9	316.37
12.83	399.9	316.18
12.95	325.7	315.97
13.06	258.8	315.77
13.17	216.1	315.62
24.06	19.6	314.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.52 WATERSHED INCHES; 934 CFS-HRS; 77.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	110.9	(RUNOFF)
23.13	2.1	(RUNOFF)
23.99	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.15 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

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Ellicott City FloodStudy- All Combined SAs- MGMT STRUCTURES,  
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\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	106.9	364.70
23.15	2.1	356.55

23.79 2.0 356.54

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.16 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 25

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.26, 18.66, 23.13, 23.97 and discharge values like 158.3, 4.2, 3.1, 2.9.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.08 WATERSHED INCHES; 197 CFS-HRS; 16.3 ACRE-
FEET.

OPERATION ADDHYD XSECTION 26

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.30, 18.67, 20.68, 23.14, 23.78 and discharge values like 259.5, 7.1, 6.3, 5.2, 4.9.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.11 WATERSHED INCHES; 332 CFS-HRS; 27.5 ACRE-
FEET.

OPERATION REACH XSECTION 27

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.39, 20.21, 23.20 and discharge values like 246.0, 6.5, 5.2.

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.10 WATERSHED INCHES; 332 CFS-HRS; 27.4 ACRE-
FEET.

OPERATION RUNOFF XSECTION 28

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Row includes values like 12.24 and discharge value like 122.5.

18.67	3.3	(RUNOFF)
20.13	3.0	(RUNOFF)
24.01	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.75 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	290.1	(NULL)
12.49	500.6	(NULL)
12.60	538.9	(NULL)
12.72	518.2	(NULL)
12.83	429.8	(NULL)
12.95	350.6	(NULL)
13.06	280.4	(NULL)
20.07	29.3	(NULL)
24.04	21.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.55 WATERSHED INCHES; 1079 CFS-HRS; 89.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	512.3	(NULL)
12.49	718.2	(NULL)
12.60	713.6	(NULL)
12.71	645.8	(NULL)
12.83	525.8	(NULL)
12.94	425.1	(NULL)
13.05	345.0	(NULL)
24.04	26.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.67 WATERSHED INCHES; 1411 CFS-HRS; 116.6 ACRE-  
 FEET.

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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 Dist;H1&H8UG;GHC2.04TEST  
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OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	512.3	(NULL)
12.49	718.2	(NULL)
12.60	713.6	(NULL)
12.71	645.8	(NULL)

12.83	525.8	(NULL)
12.94	425.1	(NULL)
13.05	345.0	(NULL)
24.04	26.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.67 WATERSHED INCHES; 1411 CFS-HRS; 116.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	183.4	(RUNOFF)
18.66	4.1	(RUNOFF)
21.96	3.3	(RUNOFF)
23.11	3.0	(RUNOFF)
24.03	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.64 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	167.8	313.44
18.72	4.1	310.34
20.73	3.6	310.29
24.09	2.8	310.23

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.65 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	28.4	(RUNOFF)

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .44 AC-FT ( .08 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 377.74.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	20.6	380.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 25 CFS-HRS; 2.0 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
 \*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	20.6	338.23

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 25 CFS-HRS; 2.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	84.9	(RUNOFF)
24.02	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.54 WATERSHED INCHES; 98 CFS-HRS; 8.1 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
 WITH .99 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 353.96.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	71.4	357.38

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.86 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	91.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.79 WATERSHED INCHES; 111 CFS-HRS; 9.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	91.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.79 WATERSHED INCHES; 111 CFS-HRS; 9.2 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
 \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	91.4	330.73

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.79 WATERSHED INCHES; 111 CFS-HRS; 9.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	94.7	(RUNOFF)
17.34	2.1	(RUNOFF)
24.00	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.97 WATERSHED INCHES; 90 CFS-HRS; 7.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 139

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION (FEET)		
12.20	155.3	(NULL)
20.04	4.1	(NULL)
24.00	3.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.87 WATERSHED INCHES; 201 CFS-HRS; 16.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.20	155.3	(NULL)
20.04	4.1	(NULL)
24.00	3.1	(NULL)

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25						
	MAIN	TIME	INCREMENT = .060 hr,		DRAINAGE	AREA = .06	
HRS							
SQ.MI.							
2.34 CFS	.00	.01	.01	.01	.01	.01	.02
.02							
2.82 CFS	.02	.02	.03	.03	.03	.03	.04
.05							
3.30 CFS	.06	.07	.09	.10	.12	.14	.15
.17							
3.78 CFS	.18	.20	.22	.24	.25	.27	.29
.31							
4.26 CFS	.32	.33	.35	.38	.40	.41	.42
.44							
4.74 CFS	.46	.48	.50	.51	.53	.55	.56
.58							
5.22 CFS	.61	.63	.64	.65	.67	.69	.72
.74							
5.70 CFS	.76	.77	.77	.79	.82	.85	.88
.89							
6.18 CFS	.91	.93	.96	.98	1.02	1.05	1.08
1.11							
6.66 CFS	1.14	1.15	1.18	1.23	1.25	1.27	1.30
1.35							
7.14 CFS	1.39	1.43	1.45	1.48	1.51	1.56	1.59
1.62							
7.62 CFS	1.64	1.68	1.72	1.76	1.80	1.84	1.88
1.92							
8.10 CFS	1.97	2.00	2.02	2.06	2.12	2.15	2.17
2.22							
8.58 CFS	2.27	2.33	2.37	2.40	2.43	2.46	2.50
2.57							
9.06 CFS	2.64	2.69	2.77	2.86	2.97	3.07	3.16
3.24							
9.54 CFS	3.32	3.43	3.54	3.67	3.77	3.87	3.96
4.06							
10.02 CFS	4.18	4.31	4.44	4.55	4.65	4.75	4.87
5.00							
10.50 CFS	5.15	5.33	5.59	5.90	6.23	6.59	6.96
7.34							
10.98 CFS	7.85	8.61	9.54	10.68	11.88	13.09	14.31
15.60							
11.46 CFS	16.95	18.39	21.26	25.04	28.01	31.43	36.85
44.08							
11.94 CFS	54	71	97	134	154	151	136
114							
12.42 CFS	96.26	82.67	71.70	63.24	55.36	49.12	43.95

39.62								
12.90	CFS	36.32	34.49	32.65	30.82	29.07	27.52	26.11
24.76								
13.38	CFS	23.46	22.22	21.02	19.89	18.82	17.93	17.18
16.48								
13.86	CFS	15.86	15.30	14.80	14.33	13.87	13.42	12.98
12.59								
14.34	CFS	12.24	11.91	11.60	11.26	10.93	10.61	10.32
10.07								
14.82	CFS	9.85	9.60	9.35	9.12	8.89	8.64	8.41
8.21								
15.30	CFS	8.04	7.91	7.79	7.68	7.58	7.45	7.31
7.19								
15.78	CFS	7.12	7.09	7.01	6.91	6.81	6.72	6.66
6.61								
16.26	CFS	6.55	6.47	6.40	6.34	6.26	6.18	6.13
6.09								
16.74	CFS	6.04	5.97	5.90	5.85	5.82	5.77	5.71
5.62								
17.22	CFS	5.54	5.50	5.49	5.44	5.36	5.27	5.21
5.17								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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17.70	CFS	5.13	5.08	5.01	4.95	4.91	4.88	4.83
4.76								
18.18	CFS	4.70	4.66	4.63	4.60	4.53	4.51	4.52
4.52								
18.66	CFS	4.50	4.44	4.43	4.44	4.40	4.36	4.33
4.31								
19.14	CFS	4.29	4.28	4.27	4.25	4.24	4.23	4.22
4.19								
19.62	CFS	4.14	4.13	4.14	4.11	4.07	4.04	4.05
4.08								
20.10	CFS	4.05	4.01	3.99	3.98	3.96	3.91	3.88
3.89								
20.58	CFS	3.91	3.90	3.85	3.83	3.84	3.83	3.79
3.76								
21.06	CFS	3.74	3.73	3.72	3.71	3.70	3.69	3.68
3.67								
21.54	CFS	3.66	3.61	3.58	3.60	3.58	3.55	3.56
3.57								
22.02	CFS	3.53	3.49	3.48	3.46	3.45	3.44	3.43
3.43								
22.50	CFS	3.42	3.39	3.34	3.33	3.35	3.32	3.28
3.26								
22.98	CFS	3.27	3.29	3.27	3.23	3.21	3.20	3.19
3.18								
23.46	CFS	3.15	3.10	3.09	3.11	3.12	3.10	3.05
3.02								
23.94	CFS	3.02	3.12	3.00	2.47	2.08	1.89	1.77
1.68								
24.42	CFS	1.66	1.65	1.64	1.63	1.62	1.61	1.60
1.60								
24.90	CFS	1.59	1.58	1.57	1.56	1.55	1.54	1.54
1.53								
25.38	CFS	1.52	1.51					



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.87 WATERSHED INCHES; 201 CFS-HRS; 16.6 ACRE-  
 FEET.

DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	20	9	6	5	4	4	3	2

DURATION (HRS)	18	18
FLOW (CFS)	2	2 TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.13	8.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.23 WATERSHED INCHES; 7 CFS-HRS; .6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.20	161.7	(NULL)
20.82	4.0	(NULL)
24.00	3.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.69 WATERSHED INCHES; 208 CFS-HRS; 17.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

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 -

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
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 Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.27	78.9	(RUNOFF)
20.13	2.0	(RUNOFF)
23.76	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.94 WATERSHED INCHES; 100 CFS-HRS; 8.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.33	586.1	(NULL)

12.48	769.5	(NULL)
12.60	752.3	(NULL)
12.71	674.9	(NULL)
12.83	548.3	(NULL)
12.94	443.4	(NULL)
13.05	360.7	(NULL)
24.04	28.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.68 WATERSHED INCHES; 1511 CFS-HRS; 124.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	751.9	(NULL)
12.48	887.8	(NULL)
12.59	837.4	(NULL)
12.71	736.8	(NULL)
12.82	594.5	(NULL)
12.94	479.8	(NULL)
24.04	30.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.78 WATERSHED INCHES; 1719 CFS-HRS; 142.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 43

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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 Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	888.6	(NULL)
12.48	972.7	(NULL)
12.59	903.6	(NULL)
12.71	788.3	(NULL)
12.82	636.5	(NULL)
12.94	516.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.85 WATERSHED INCHES; 1923 CFS-HRS; 158.9 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 144  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	543.0 *	(DIVERT)
12.94	516.0	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1723 CFS-HRS; 142.4 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.30	345.6	177.23
12.48	429.7	177.52
12.59	360.6	177.28
12.71	245.3	176.83
12.83	88.7	176.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.40 WATERSHED INCHES; 200 CFS-HRS; 16.5 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 82, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 318.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 82

1

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.55	411.8	319.18
12.65	311.7	319.00
12.77	203.8	318.66
12.90	22.8	318.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.12 WATERSHED INCHES; 61 CFS-HRS; 5.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 145

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.55	954.8	(NULL)
12.65	854.7	(NULL)
12.77	746.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.57 WATERSHED INCHES; 1784 CFS-HRS; 147.5 ACRE-FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.63	784.8	290.94
12.71	805.9	290.97
12.82	735.4	290.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.60 WATERSHED INCHES; 1798 CFS-HRS; 148.6 ACRE-FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.63	784.8	(NULL)
12.71	805.9	(NULL)
12.82	735.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.60 WATERSHED INCHES; 1798 CFS-HRS; 148.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	91.8	(RUNOFF)
23.08	2.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.99 WATERSHED INCHES; 123 CFS-HRS; 10.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	114.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.90 WATERSHED INCHES; 158 CFS-HRS; 13.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	206.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.94 WATERSHED INCHES; 281 CFS-HRS; 23.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	112.4	(RUNOFF)
21.97	2.1	(RUNOFF)
24.03	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.93 WATERSHED INCHES; 119 CFS-HRS; 9.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.25	634.1	(NULL)
12.63	817.3	(NULL)
12.71	831.9	(NULL)
12.82	756.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.62 WATERSHED INCHES; 1917 CFS-HRS; 158.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.27	832.7	(NULL)
12.62	931.4	(NULL)
12.70	926.0	(NULL)
12.81	830.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.66 WATERSHED INCHES; 2198 CFS-HRS; 181.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.39	811.6	285.58
12.77	898.7	285.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

3.65 WATERSHED INCHES; 2191 CFS-HRS; 181.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.64 WATERSHED INCHES; 4 CFS-HRS; .3 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	1.7	288.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.64 WATERSHED INCHES; 4 CFS-HRS; .3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - XSECTION 54, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.64 WATERSHED INCHES; 212 CFS-HRS; .3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	72.5	(RUNOFF)
24.03	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.67 WATERSHED INCHES; 76 CFS-HRS; 6.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.37 855.4 (NULL)  
 12.77 913.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.65 WATERSHED INCHES; 2268 CFS-HRS; 187.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.33 1.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .45 WATERSHED INCHES; 5 CFS-HRS; .4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.37 857.2 (NULL)  
 12.77 914.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.60 WATERSHED INCHES; 2272 CFS-HRS; 187.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.21 47.1 (RUNOFF)  
 21.97 1.1 (RUNOFF)

1

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HRS	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25							
	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = .03			
SQ.MI.								
10.08 CFS	.48	.52	.56	.60	.64	.69	.73	
.78								
10.56 CFS	.84	.90	.98	1.08	1.18	1.30	1.43	
1.57								
11.04 CFS	1.71	1.88	2.08	2.31	2.57	2.85	3.15	
3.48								
11.52 CFS	3.83	4.38	5.24	6.26	7.38	8.82	10.85	
13.87								
12.00 CFS	18.80	26.74	37.61	46.18	45.89	39.69	32.20	
26.43								

12.48 CFS	22.12	19.01	16.54	14.23	12.30	10.89	9.91
9.16							
12.96 CFS	8.55	8.01	7.51	7.03	6.60	6.23	5.92
5.63							
13.44 CFS	5.35	5.08	4.81	4.55	4.32	4.14	3.99
3.88							
13.92 CFS	3.78	3.71	3.65	3.59	3.52	3.44	3.36
3.29							
14.40 CFS	3.23	3.18	3.11	3.04	2.96	2.89	2.82
2.76							
14.88 CFS	2.70	2.63	2.57	2.50	2.43	2.36	2.29
2.24							
15.36 CFS	2.21	2.20	2.19	2.18	2.17	2.15	2.11
2.09							
15.84 CFS	2.08	2.08	2.06	2.03	2.00	1.98	1.97
1.96							
16.32 CFS	1.94	1.92	1.90	1.88	1.85	1.83	1.81
1.80							
16.80 CFS	1.79	1.77	1.75	1.74	1.73	1.71	1.69
1.65							
17.28 CFS	1.63	1.62	1.61	1.60	1.57	1.54	1.51
1.50							
17.76 CFS	1.49	1.47	1.45	1.43	1.42	1.41	1.39
1.37							
18.24 CFS	1.35	1.34	1.33	1.31	1.29	1.29	1.30
1.31							
18.72 CFS	1.30	1.29	1.29	1.29	1.28	1.27	1.26
1.25							
19.20 CFS	1.25	1.25	1.25	1.25	1.25	1.25	1.24
1.23							
19.68 CFS	1.22	1.21	1.21	1.20	1.19	1.19	1.20
1.20							
20.16 CFS	1.20	1.19	1.18	1.17	1.16	1.14	1.14
1.14							
20.64 CFS	1.15	1.15	1.14	1.13	1.14	1.13	1.12
1.10							
21.12 CFS	1.10	1.09	1.09	1.09	1.09	1.09	1.09
1.09							
21.60 CFS	1.08	1.06	1.06	1.06	1.05	1.05	1.05
1.05							
22.08 CFS	1.04	1.03	1.02	1.02	1.01	1.01	1.01
1.01							
22.56 CFS	1.01	.99	.98	.98	.98	.97	.95
.95							
23.04 CFS	.96	.97	.96	.95	.94	.94	.93
.93							
23.52 CFS	.91	.90	.90	.91	.91	.91	.89
.88							
24.00 CFS	.90	.89	.77	.53	.32		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.96 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.35	889.1	(NULL)
12.77	926.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.58 WATERSHED INCHES; 2323 CFS-HRS; 192.0 ACRE-



FEET.

OPERATION RESVOR STRUCTURE 3

1

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.35	889.1	(NULL)
12.77	926.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.58 WATERSHED INCHES; 2323 CFS-HRS; 192.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.24	28.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.89 WATERSHED INCHES; 32 CFS-HRS; 2.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.34	911.8	(NULL)
12.77	933.7	(NULL)

HRS	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25							
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02 SQ.MI.							
3.90 CFS	.47	.50	.53	.56	.60	.63	.68	
.72								
4.38 CFS	.76	.81	.86	.91	.98	1.04	1.11	
1.17								
4.86 CFS	1.24	1.31	1.38	1.45	1.52	1.60	1.67	
1.75								
5.34 CFS	1.84	1.92	2.01	2.10	2.18	2.26	2.35	
2.44								
5.82 CFS	2.53	2.63	2.72	2.81	2.90	3.01	3.13	
3.26								
6.30 CFS	3.41	3.56	3.73	3.92	4.12	4.34	4.57	
4.82								
6.78 CFS	5.08	5.34	5.61	5.90	6.21	6.52	6.85	
7.18								
7.26 CFS	7.54	7.92	8.31	8.71	9.12	9.53	9.95	
10.38								
7.74 CFS	10.82	11.26	11.71	12.17	12.65	13.14	13.66	
14.18								

8.22 CFS	14.72	15.27	15.82	16.37	16.92	17.48	18.05
18.64							
8.70 CFS	19.24	19.86	20.51	21.17	21.84	22.49	23.16
23.83							
9.18 CFS	24.54	25.31	26.16	27.09	28.13	29.27	30.50
31.81							
9.66 CFS	33.18	34.62	36.11	37.68	39.31	41.00	42.73
44.49							
10.14 CFS	46.31	48.20	50.17	52.23	54.36	56.54	58.77
61.06							
10.62 CFS	63.48	66.10	69.01	72.33	76.14	80.51	85.43
91.06							
11.10 CFS	98	105	113	122	132	143	155
168							
11.58 CFS	183	199	219	243	273	311	358
423							
12.06 CFS	510	625	760	859	906	911	893
863							
12.54 CFS	828	794	887	906	933	880	861
789							
13.02 CFS	717	665	603	555	508	471	437
406							
13.50 CFS	379	355	332	312	293	275	259
245							
13.98 CFS	232	221	211	202	194	188	182
176							
14.46 CFS	171	166	162	158	154	150	146
143							
14.94 CFS	139	136	132	129	126	123	120
117							
15.42 CFS	114	111	109	107	105	104	103
102							

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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15.90 CFS	100	99	98	98	97	96	95
94							
16.38 CFS	93.20	92.37	91.56	90.73	89.89	89.06	88.24
87.42							
16.86 CFS	86.61	85.83	85.09	84.37	83.65	82.92	82.17
81.40							
17.34 CFS	80.63	79.85	79.04	78.23	77.42	76.62	75.82
74.99							
17.82 CFS	74.14	73.30	72.50	71.72	70.97	70.21	69.47
68.75							
18.30 CFS	68.05	67.36	66.66	65.98	65.36	64.82	64.34
63.90							
18.78 CFS	63.55	63.27	63.02	62.77	62.50	62.24	61.96
61.68							
19.26 CFS	61.39	61.11	60.87	60.66	60.48	60.31	60.13
59.94							
19.74 CFS	59.75	59.54	59.28	58.99	58.73	58.50	58.28
58.08							
20.22 CFS	57.89	57.74	57.57	57.36	57.08	56.79	56.51
56.23							
20.70 CFS	55.97	55.73	55.54	55.38	55.19	54.98	54.76
54.52							

21.18	CFS	54.27	53.99	53.73	53.48	53.27	53.08	52.92
52.76								
21.66	CFS	52.57	52.38	52.18	51.94	51.70	51.49	51.30
51.10								
22.14	CFS	50.89	50.69	50.47	50.22	49.98	49.74	49.52
49.31								
22.62	CFS	49.10	48.87	48.64	48.39	48.09	47.78	47.48
47.23								
23.10	CFS	47.00	46.77	46.56	46.38	46.20	46.00	45.78
45.51								
23.58	CFS	45.22	44.94	44.69	44.43	44.18	43.94	43.73
43.58								
24.06	CFS	43.39	42.80	41.64	39.92	37.55	34.46	30.83
27.07								
24.54	CFS	23.53	20.42	17.83	15.77	14.19	13.02	12.14
11.50								
25.02	CFS	11.01	10.64	10.35	10.10	9.90	9.73	9.57
9.43								

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.57 WATERSHED INCHES; 2356 CFS-HRS; 194.7 ACRE-FEET.

OPERATION DIVERT XSECTION 162  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	621.0 *	(DIVERT)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2147 CFS-HRS; 177.4 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.34	290.8	177.04
12.77	312.7	177.12

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .32 WATERSHED INCHES; 209 CFS-HRS; 17.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 73

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.34	290.8	(NULL)
12.77	312.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .32 WATERSHED INCHES; 209 CFS-HRS; 17.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 163

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	911.8	(NULL)
12.77	933.7	(NULL)

	HYDROGRAPH POINTS FOR		ALTERNATE = 1,	STORM =25
HRS	MAIN	TIME INCREMENT = .060 hr,	DRAINAGE AREA =	1.02
SQ.MI.				
3.90 CFS	.47	.50	.53	.56
.72				.60
4.38 CFS	.76	.81	.86	.91
1.17				.98
4.86 CFS	1.24	1.31	1.38	1.45
1.75				1.52
5.34 CFS	1.84	1.92	2.01	2.10
2.44				2.18
5.82 CFS	2.53	2.63	2.72	2.81
3.26				2.90
6.30 CFS	3.41	3.56	3.73	3.92
4.82				4.12
6.78 CFS	5.08	5.34	5.61	5.90
7.18				6.21
7.26 CFS	7.54	7.92	8.31	8.71
10.38				9.12
7.74 CFS	10.82	11.26	11.71	12.17
14.18				12.65
8.22 CFS	14.72	15.27	15.82	16.37
18.64				16.92
8.70 CFS	19.24	19.86	20.51	21.17
23.83				21.84
9.18 CFS	24.54	25.31	26.16	27.09
31.81				28.13
9.66 CFS	33.18	34.62	36.11	37.68
44.49				39.31
10.14 CFS	46.31	48.20	50.17	52.23
61.06				54.36
10.62 CFS	63.48	66.10	69.01	72.33
91.06				76.14
11.10 CFS	98	105	113	122
168				132
11.58 CFS	183	199	219	243
423				273
12.06 CFS	510	625	760	859
863				906
12.54 CFS	828	794	887	906
789				933
13.02 CFS	717	665	603	555
406				508
13.50 CFS	379	355	332	312
245				293
13.98 CFS	232	221	211	202
176				194
14.46 CFS	171	166	162	158
143				154
14.94 CFS	139	136	132	129
117				126
				123
				120

15.42 CFS	114	111	109	107	105	104	103
102							
15.90 CFS	100	99	98	98	97	96	95
94							
16.38 CFS	93.20	92.37	91.56	90.73	89.89	89.06	88.24
87.42							
16.86 CFS	86.61	85.83	85.09	84.37	83.65	82.92	82.17
81.40							
17.34 CFS	80.63	79.85	79.04	78.23	77.42	76.62	75.82
74.99							
17.82 CFS	74.14	73.30	72.50	71.72	70.97	70.21	69.47
68.75							
18.30 CFS	68.05	67.36	66.66	65.98	65.36	64.82	64.34
63.90							
18.78 CFS	63.55	63.27	63.02	62.77	62.50	62.24	61.96
61.68							
19.26 CFS	61.39	61.11	60.87	60.66	60.48	60.31	60.13
59.94							
19.74 CFS	59.75	59.54	59.28	58.99	58.73	58.50	58.28
58.08							

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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20.22 CFS	57.89	57.74	57.57	57.36	57.08	56.79	56.51
56.23							
20.70 CFS	55.97	55.73	55.54	55.38	55.19	54.98	54.76
54.52							
21.18 CFS	54.27	53.99	53.73	53.48	53.27	53.08	52.92
52.76							
21.66 CFS	52.57	52.38	52.18	51.94	51.70	51.49	51.30
51.10							
22.14 CFS	50.89	50.69	50.47	50.22	49.98	49.74	49.52
49.31							
22.62 CFS	49.10	48.87	48.64	48.39	48.09	47.78	47.48
47.23							
23.10 CFS	47.00	46.77	46.56	46.38	46.20	46.00	45.78
45.51							
23.58 CFS	45.22	44.94	44.69	44.43	44.18	43.94	43.73
43.58							
24.06 CFS	43.39	42.80	41.64	39.92	37.55	34.46	30.83
27.07							
24.54 CFS	23.53	20.42	17.83	15.77	14.19	13.02	12.14
11.50							
25.02 CFS	11.01	10.64	10.35	10.10	9.90	9.73	9.57
9.43							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 3.57 WATERSHED INCHES; 2356 CFS-HRS; 194.7 ACRE-FEET.

OPERATION REACH XSECTION 63

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.55	875.4	250.26
12.91	903.8	250.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.57 WATERSHED INCHES; 2356 CFS-HRS; 194.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.36	20.7	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.38 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	14.5	334.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.38 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.72	14.1	300.79

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.38 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.20	83.6	(RUNOFF)
20.10	2.1	(RUNOFF)
24.03	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	36.9	295.13
20.12	2.1	287.57
24.04	1.6	287.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.94 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	49.3	(NULL)
23.11	2.1	(NULL)
23.76	2.0	(NULL)
24.04	2.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.21 WATERSHED INCHES; 118 CFS-HRS; 9.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 68

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	159.6	(RUNOFF)
21.97	3.2	(RUNOFF)
24.02	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.22 WATERSHED INCHES; 162 CFS-HRS; 13.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	181.3	(NULL)
20.10	6.3	(NULL)
20.65	6.1	(NULL)
21.97	5.5	(NULL)

23.10	5.1	(NULL)
24.03	4.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.21 WATERSHED INCHES; 279 CFS-HRS; 23.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	128.1	248.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.22 WATERSHED INCHES; 279 CFS-HRS; 23.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	36.6	(RUNOFF)
15.83	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.92 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	15.7	266.77

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.90 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	15.5	247.89

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.91 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 73



PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	176.2	(RUNOFF)
15.85	7.7	(RUNOFF)
17.34	6.0	(RUNOFF)
21.46	4.1	(RUNOFF)
24.01	3.4	(RUNOFF)

HRS SQ. MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25							
	MAIN	TIME	INCREMENT = .060 hr,	DRAINAGE AREA = .11				
10.26 CFS	.46	.59	.72	.86	1.01	1.18	1.37	
1.61								
10.74 CFS	1.87	2.18	2.52	2.89	3.28	3.72	4.25	
4.89								
11.22 CFS	5.63	6.43	7.32	8.32	9.38	10.53	12.63	
15.99								
11.70 CFS	19	23	29	37	49	70	105	
153								
12.18 CFS	176	154	121	96	79	67	59	
52								
12.66 CFS	44.19	38.62	35.27	32.88	30.92	29.20	27.50	
25.81								
13.14 CFS	24.15	22.77	21.67	20.66	19.69	18.72	17.74	
16.80								
13.62 CFS	15.90	15.17	14.62	14.19	13.85	13.59	13.38	
13.20								
14.10 CFS	12.97	12.70	12.40	12.13	11.91	11.72	11.52	
11.27								
14.58 CFS	10.98	10.67	10.41	10.19	10.00	9.78	9.52	
9.27								
15.06 CFS	9.04	8.77	8.50	8.29	8.15	8.09	8.06	
8.05								
15.54 CFS	8.04	7.98	7.87	7.73	7.66	7.68	7.66	
7.58								
16.02 CFS	7.45	7.34	7.28	7.25	7.22	7.13	7.04	
6.98								
16.50 CFS	6.90	6.79	6.73	6.69	6.67	6.60	6.51	
6.44								
16.98 CFS	6.41	6.39	6.32	6.20	6.05	5.98	5.99	
5.98								
17.46 CFS	5.89	5.75	5.63	5.57	5.54	5.50	5.41	
5.32								
17.94 CFS	5.27	5.24	5.21	5.12	5.03	4.97	4.95	
4.91								
18.42 CFS	4.83	4.78	4.82	4.88	4.88	4.82	4.78	
4.82								
18.90 CFS	4.81	4.74	4.69	4.67	4.66	4.65	4.65	
4.65								
19.38 CFS	4.66	4.66	4.66	4.64	4.56	4.51	4.54	
4.53								
19.86 CFS	4.47	4.42	4.44	4.51	4.52	4.46	4.42	
4.40								
20.34 CFS	4.37	4.30	4.23	4.25	4.31	4.33	4.29	
4.22								
20.82 CFS	4.24	4.26	4.21	4.15	4.11	4.10	4.09	
4.09								
21.30 CFS	4.09	4.09	4.09	4.09	4.08	4.01	3.94	
3.96								
21.78 CFS	3.97	3.93	3.93	3.97	3.94	3.87	3.83	
3.81								
22.26 CFS	3.80	3.80	3.80	3.80	3.80	3.77	3.69	
3.64								

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22.74 CFS	3.67	3.66	3.59	3.54	3.57	3.64	3.65
3.59							
23.22 CFS	3.54	3.52	3.51	3.50	3.47	3.39	3.34
3.38							
23.70 CFS	3.44	3.44	3.37	3.29	3.27	3.44	3.37
2.46							
24.18 CFS	1.33	.64	.31				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.44 WATERSHED INCHES; 173 CFS-HRS; 14.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.53	934.2	(NULL)
12.91	934.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 3.46 WATERSHED INCHES; 2530 CFS-HRS; 209.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.42	143.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .15 SQ.MI.

8.40 CFS	.50	.54	.58	.63	.67	.73	.78
.84							
8.88 CFS	.90	.95	1.02	1.09	1.16	1.24	1.33
1.42							
9.36 CFS	1.53	1.64	1.77	1.90	2.04	2.18	2.34
2.50							
9.84 CFS	2.68	2.87	3.05	3.25	3.45	3.67	3.89
4.13							
10.32 CFS	4.37	4.62	4.87	5.13	5.41	5.70	6.03
6.40							
10.80 CFS	6.84	7.33	7.88	8.50	9.14	9.80	10.54
11.38							
11.28 CFS	12.34	13.40	14.58	15.87	17.25	18.71	20.47
22.82							
11.76 CFS	25.79	29.20	33.18	38.24	44.97	54.51	68.57
91.09							
12.24 CFS	118	134	141	144	141	137	131
125							
12.72 CFS	118	110	102	94	87	82	76
72							

13.20	CFS	67.51	63.78	60.43	57.42	54.75	52.38	50.28
48.38								
13.68	CFS	46.66	45.10	43.70	42.46	41.34	40.35	39.46
38.65								
14.16	CFS	37.91	37.21	36.48	35.74	34.99	34.26	33.54
32.82								
14.64	CFS	32.07	31.29	30.49	29.60	28.60	27.55	26.34
25.01								
15.12	CFS	23.68	22.31	20.99	19.87	18.93	18.14	17.49
16.94								
15.60	CFS	16.49	16.10	15.70	15.30	14.92	14.56	14.23
13.92								
16.08	CFS	13.62	13.32	13.04	12.80	12.58	12.40	12.22
12.05								
16.56	CFS	11.89	11.73	11.57	11.42	11.29	11.17	11.04
10.90								
17.04	CFS	10.72	10.56	10.40	10.25	10.09	9.93	9.81
9.70								
17.52	CFS	9.60	9.47	9.34	9.21	9.09	8.99	8.88
8.76								
18.00	CFS	8.65	8.55	8.46	8.36	8.26	8.16	8.06
7.98								
18.48	CFS	7.89	7.79	7.73	7.68	7.66	7.62	7.58
7.55								
18.96	CFS	7.52	7.49	7.45	7.40	7.36	7.33	7.30
7.28								
19.44	CFS	7.26	7.24	7.23	7.21	7.18	7.14	7.11
7.09								
19.92	CFS	7.05	7.01	6.97	6.96	6.96	6.95	6.92
6.89								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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20.40	CFS	6.86	6.82	6.77	6.72	6.69	6.68	6.67
6.64								
20.88	CFS	6.62	6.60	6.58	6.54	6.50	6.46	6.43
6.40								
21.36	CFS	6.37	6.35	6.34	6.32	6.31	6.29	6.25
6.21								
21.84	CFS	6.18	6.16	6.13	6.12	6.10	6.08	6.04
6.00								
22.32	CFS	5.97	5.94	5.91	5.89	5.88	5.86	5.82
5.78								
22.80	CFS	5.75	5.72	5.68	5.64	5.60	5.59	5.58
5.57								
23.28	CFS	5.54	5.51	5.48	5.46	5.43	5.39	5.34
5.30								
23.76	CFS	5.29	5.28	5.26	5.22	5.18	5.18	5.18
4.98								
24.24	CFS	4.51	3.89	3.26	2.69	2.21	1.80	1.46
1.18								
24.72	CFS	.95	.76	.61	.48			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.27 WATERSHED INCHES; 309 CFS-HRS; 25.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.52	1072.0	(NULL)
12.90	1028.2	(NULL)

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25						
	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = 1.28		
HRS							
SQ.MI.							
4.14 CFS	.50	.52	.56	.59	.63	.67	.71
.76							
4.62 CFS	.80	.85	.91	.97	1.03	1.10	1.16
1.23							
5.10 CFS	1.30	1.37	1.44	1.51	1.59	1.66	1.74
1.83							
5.58 CFS	1.91	2.00	2.08	2.16	2.25	2.35	2.44
2.54							
6.06 CFS	2.64	2.73	2.83	2.93	3.04	3.16	3.30
3.45							
6.54 CFS	3.61	3.79	3.99	4.20	4.42	4.66	4.91
5.18							
7.02 CFS	5.45	5.73	6.03	6.34	6.66	7.00	7.35
7.72							
7.50 CFS	8.11	8.51	8.91	9.33	9.75	10.19	10.63
11.07							
7.98 CFS	11.53	12.00	12.48	12.97	13.49	14.02	14.57
15.14							
8.46 CFS	15.72	16.31	16.90	17.51	18.12	18.75	19.39
20.05							
8.94 CFS	20.73	21.44	22.16	22.89	23.63	24.38	25.16
25.99							
9.42 CFS	26.89	27.87	28.93	30.10	31.37	32.73	34.18
35.72							
9.90 CFS	37.32	39.01	40.81	42.70	44.68	46.73	48.85
51.03							
10.38 CFS	53.30	55.66	58.12	60.66	63.32	66.10	69.06
72.25							
10.86 CFS	76	80	84	89	94	101	108
116							
11.34 CFS	125	136	147	159	174	191	210
231							
11.82 CFS	257	289	331	390	473	585	698
792							
12.30 CFS	886	974	1037	1067	1071	1052	1020
981							
12.78 CFS	998	1012	1028	1009	987	939	878
818							
13.26 CFS	756	698	644	596	553	515	480
450							
13.74 CFS	422	397	374	353	334	317	301
287							
14.22 CFS	274	263	253	244	236	228	222
215							
14.70 CFS	209	204	198	193	188	183	177
172							
15.18 CFS	167	162	158	154	150	146	142
139							
15.66 CFS	136	133	131	129	127	125	123
122							
16.14 CFS	120	119	118	117	115	114	113
112							
16.62 CFS	111	110	109	108	107	106	105

104								
17.10 CFS	103	102	101	100	99	98	97	
96								

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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17.58 CFS	95.07	94.07	93.11	92.15	91.15	90.14	89.14
88.17							
18.06 CFS	87.21	86.23	85.27	84.34	83.46	82.59	81.70
80.85							
18.54 CFS	80.09	79.39	78.70	78.00	77.38	76.87	76.41
75.96							
19.02 CFS	75.56	75.21	74.88	74.57	74.26	73.95	73.65
73.35							
19.50 CFS	73.08	72.80	72.49	72.23	72.03	71.80	71.52
71.24							
19.98 CFS	70.99	70.77	70.51	70.20	69.91	69.65	69.39
69.11							
20.46 CFS	68.82	68.59	68.37	68.12	67.79	67.44	67.16
66.90							
20.94 CFS	66.60	66.33	66.07	65.81	65.55	65.29	65.03
64.75							
21.42 CFS	64.47	64.20	63.95	63.66	63.37	63.17	62.96
62.71							
21.90 CFS	62.49	62.29	62.02	61.72	61.45	61.19	60.93
60.69							
22.38 CFS	60.45	60.20	59.94	59.66	59.33	59.04	58.80
58.53							
22.86 CFS	58.21	57.89	57.60	57.35	57.06	56.72	56.40
56.11							
23.34 CFS	55.84	55.60	55.35	55.05	54.75	54.50	54.26
53.99							
23.82 CFS	53.65	53.28	52.97	52.85	52.55	51.44	49.92
48.39							
24.30 CFS	46.70	44.72	42.34	39.45	36.08	32.41	28.71
25.20							
24.78 CFS	22.05	19.35	17.12	15.35	13.97	12.91	12.10
11.47							
25.26 CFS	10.99	10.61	10.31	10.06	9.85		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.44 WATERSHED INCHES; 2839 CFS-HRS; 234.6 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 176  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	691.0 *	(DIVERT)
	* FIRST POINT OF FLAT	PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2546 CFS-HRS; 210.4 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.52	381.0	177.35
12.90	337.2	177.20

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.36 WATERSHED INCHES; 293 CFS-HRS; 24.2 ACRE-FEET.

OPERATION RESVOR STRUCTURE 72

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.52	381.0	(NULL)
12.90	337.2	(NULL)

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.36 WATERSHED INCHES; 293 CFS-HRS; 24.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 177

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.52	1072.0	(NULL)
12.90	1028.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28  
SQ.MI.

4.14 CFS	.50	.52	.56	.59	.63	.67	.71
.76							
4.62 CFS	.80	.85	.91	.97	1.03	1.10	1.16
1.23							
5.10 CFS	1.30	1.37	1.44	1.51	1.59	1.66	1.74
1.83							
5.58 CFS	1.91	2.00	2.08	2.16	2.25	2.35	2.44
2.54							
6.06 CFS	2.64	2.73	2.83	2.93	3.04	3.16	3.30
3.45							
6.54 CFS	3.61	3.79	3.99	4.20	4.42	4.66	4.91
5.18							
7.02 CFS	5.45	5.73	6.03	6.34	6.66	7.00	7.35
7.72							
7.50 CFS	8.11	8.51	8.91	9.33	9.75	10.19	10.63
11.07							
7.98 CFS	11.53	12.00	12.48	12.97	13.49	14.02	14.57
15.14							
8.46 CFS	15.72	16.31	16.90	17.51	18.12	18.75	19.39
20.05							

8.94 CFS	20.73	21.44	22.16	22.89	23.63	24.38	25.16
25.99							
9.42 CFS	26.89	27.87	28.93	30.10	31.37	32.73	34.18
35.72							
9.90 CFS	37.32	39.01	40.81	42.70	44.68	46.73	48.85
51.03							
10.38 CFS	53.30	55.66	58.12	60.66	63.32	66.10	69.06
72.25							
10.86 CFS	76	80	84	89	94	101	108
116							
11.34 CFS	125	136	147	159	174	191	210
231							
11.82 CFS	257	289	331	390	473	585	698
792							
12.30 CFS	886	974	1037	1067	1071	1052	1020
981							
12.78 CFS	998	1012	1028	1009	987	939	878
818							
13.26 CFS	756	698	644	596	553	515	480
450							
13.74 CFS	422	397	374	353	334	317	301
287							
14.22 CFS	274	263	253	244	236	228	222
215							
14.70 CFS	209	204	198	193	188	183	177
172							
15.18 CFS	167	162	158	154	150	146	142
139							
15.66 CFS	136	133	131	129	127	125	123
122							
16.14 CFS	120	119	118	117	115	114	113
112							
16.62 CFS	111	110	109	108	107	106	105
104							
17.10 CFS	103	102	101	100	99	98	97
96							
17.58 CFS	95.07	94.07	93.11	92.15	91.15	90.14	89.14
88.17							
18.06 CFS	87.21	86.23	85.27	84.34	83.46	82.59	81.70
80.85							
18.54 CFS	80.09	79.39	78.70	78.00	77.38	76.87	76.41
75.96							
19.02 CFS	75.56	75.21	74.88	74.57	74.26	73.95	73.65
73.35							
19.50 CFS	73.08	72.80	72.49	72.23	72.03	71.80	71.52
71.24							
19.98 CFS	70.99	70.77	70.51	70.20	69.91	69.65	69.39
69.11							
20.46 CFS	68.82	68.59	68.37	68.12	67.79	67.44	67.16
66.90							
20.94 CFS	66.60	66.33	66.07	65.81	65.55	65.29	65.03
64.75							
21.42 CFS	64.47	64.20	63.95	63.66	63.37	63.17	62.96
62.71							
21.90 CFS	62.49	62.29	62.02	61.72	61.45	61.19	60.93
60.69							

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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22.38 CFS	60.45	60.20	59.94	59.66	59.33	59.04	58.80
58.53							
22.86 CFS	58.21	57.89	57.60	57.35	57.06	56.72	56.40
56.11							
23.34 CFS	55.84	55.60	55.35	55.05	54.75	54.50	54.26
53.99							
23.82 CFS	53.65	53.28	52.97	52.85	52.55	51.44	49.92
48.39							
24.30 CFS	46.70	44.72	42.34	39.45	36.08	32.41	28.71
25.20							
24.78 CFS	22.05	19.35	17.12	15.35	13.97	12.91	12.10
11.47							
25.26 CFS	10.99	10.61	10.31	10.06	9.85		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.44 WATERSHED INCHES; 2839 CFS-HRS; 234.6 ACRE-FEET.

OPERATION REACH XSECTION 77

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.58	1071.2	230.49
12.96	1027.2	230.41

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.44 WATERSHED INCHES; 2837 CFS-HRS; 234.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.17	103.0	(RUNOFF)
15.85	4.0	(RUNOFF)
17.34	3.1	(RUNOFF)
21.96	2.0	(RUNOFF)
24.01	1.8	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 25  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05 SQ.MI.

HRS	DISCHARGE (CFS)	DISCHARGE (CFS)	DISCHARGE (CFS)	DISCHARGE (CFS)	DISCHARGE (CFS)	DISCHARGE (CFS)	DISCHARGE (CFS)
9.54 CFS	.47	.52	.58	.64	.70	.77	.83
.89							
10.02 CFS	.96	1.04	1.13	1.21	1.29	1.37	1.45
1.55							
10.50 CFS	1.65	1.76	1.91	2.09	2.30	2.54	2.78
3.05							
10.98 CFS	3.33	3.62	3.99	4.43	4.94	5.49	6.07
6.71							
11.46 CFS	7.36	8.07	9.49	11.74	13.93	16.18	19.66
24.66							
11.94 CFS	31.93	44.76	64.75	92.26	102.86	86.40	66.13
52.24							
12.42 CFS	42.31	35.81	31.74	27.58	23.38	20.48	18.73
17.47							
12.90 CFS	16.43	15.50	14.58	13.66	12.77	12.03	11.45
10.91							
13.38 CFS	10.38	9.86	9.34	8.83	8.36	7.97	7.69
7.47							



13.86 CFS	7.28	7.15	7.04	6.94	6.82	6.67	6.51
6.36							
14.34 CFS	6.24	6.14	6.04	5.90	5.74	5.58	5.44
5.33							
14.82 CFS	5.23	5.11	4.97	4.84	4.71	4.57	4.43
4.32							
15.30 CFS	4.25	4.22	4.21	4.20	4.20	4.16	4.10
4.02							
15.78 CFS	3.99	4.00	3.99	3.94	3.87	3.82	3.79
3.77							
16.26 CFS	3.75	3.71	3.66	3.63	3.58	3.53	3.49
3.48							
16.74 CFS	3.46	3.43	3.37	3.34	3.33	3.31	3.27
3.21							
17.22 CFS	3.13	3.10	3.11	3.10	3.05	2.97	2.91
2.88							
17.70 CFS	2.87	2.85	2.80	2.75	2.72	2.71	2.69
2.64							

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18.18 CFS	2.60	2.57	2.56	2.54	2.49	2.47	2.49
2.52							
18.66 CFS	2.52	2.49	2.47	2.49	2.48	2.45	2.42
2.41							
19.14 CFS	2.40	2.40	2.40	2.40	2.40	2.40	2.40
2.39							
19.62 CFS	2.35	2.32	2.34	2.34	2.30	2.27	2.29
2.33							
20.10 CFS	2.33	2.30	2.27	2.26	2.25	2.21	2.17
2.19							
20.58 CFS	2.22	2.23	2.21	2.17	2.19	2.19	2.16
2.13							
21.06 CFS	2.11	2.11	2.10	2.10	2.10	2.10	2.10
2.10							
21.54 CFS	2.10	2.06	2.02	2.03	2.04	2.02	2.02
2.04							
22.02 CFS	2.02	1.99	1.96	1.96	1.95	1.95	1.95
1.95							
22.50 CFS	1.95	1.94	1.89	1.87	1.89	1.88	1.84
1.82							
22.98 CFS	1.83	1.87	1.87	1.84	1.81	1.80	1.80
1.79							
23.46 CFS	1.78	1.73	1.71	1.74	1.77	1.77	1.73
1.68							
23.94 CFS	1.68	1.77	1.73	1.21	.62	.29	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.99 WATERSHED INCHES; 98 CFS-HRS; 8.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS) 12.57 PEAK DISCHARGE(CFS) 1100.3 PEAK ELEVATION(FEET) (NULL)

12.96 1042.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.42 WATERSHED INCHES; 2936 CFS-HRS; 242.6 ACRE-
FEET.

OPERATION REACH XSECTION 80

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows: 12.64, 13.02 with corresponding discharge and peak values.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.42 WATERSHED INCHES; 2936 CFS-HRS; 242.6 ACRE-
FEET.

OPERATION RUNOFF XSECTION 81

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows: 12.17, 15.85, 23.07, 23.73, 24.01 with corresponding discharge and peak values, some marked as (RUNOFF).

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.69 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-
FEET.

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OPERATION ADDHYD XSECTION 82

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows: 12.64, 13.02 with corresponding discharge and peak values.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.40 WATERSHED INCHES; 2990 CFS-HRS; 247.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 83

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows: 12.15, 15.84, 17.34, 22.47 with corresponding discharge and peak values, some marked as (RUNOFF).

24.00 1.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.13 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-
FEET.

OPERATION RUNOFF XSECTION 84

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.25 120.6 (RUNOFF)
20.68 3.2 (RUNOFF)
24.02 2.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.05 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-
FEET.

OPERATION DIVERT XSECTION 184
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.25 118.3 (DIVERT)
20.68 3.2 (DIVERT)
24.02 2.5 (DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
142 CFS-HRS; 11.8 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.24 2.3 175.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 81, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 200.00.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 81

\*\*\* MESSAGE - STRUCTURE 81, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 277 CFS-HRS; .0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 185

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.25	118.3	(NULL)
20.68	3.2	(NULL)
24.02	2.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.04 WATERSHED INCHES; 142 CFS-HRS; 11.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 186

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.25	56.8	(RUNOFF)
24.01	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.29 WATERSHED INCHES; 68 CFS-HRS; 5.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 187

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 TR20 ----- SCS  
 -  
 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.25	175.1	(NULL)
20.13	5.1	(NULL)
23.13	4.1	(NULL)
24.01	3.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.75 WATERSHED INCHES; 211 CFS-HRS; 17.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 85

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	272.7	(NULL)
18.83	8.1	(NULL)
20.82	7.1	(NULL)
22.72	6.2	(NULL)
23.07	6.1	(NULL)

24.00

5.7

(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .17

HRS	SQ.MI.	8.94	9.42	9.90	10.38	10.86	11.34	11.82	12.30	12.78	13.26	13.74	14.22	14.70	15.18	15.66	16.14	16.62	17.10	17.58	18.06	18.54	19.02	19.50	19.98	20.46	20.94	21.42	21.90
CFS		.44	1.17	2.30	3.89	7.58	16.91	54	231	70.91	39.44	26.13	21.54	18.10	14.80	13.42	12.43	11.48	10.72	9.64	8.82	8.14	7.94	7.82	7.47	7.17	7.06	6.85	6.60
		.51	1.28	2.46	4.15	8.34	18.76	67	197	64.25	37.38	25.19	21.07	17.69	14.41	13.23	12.34	11.39	10.56	9.51	8.69	8.18	7.89	7.78	7.54	7.17	7.00	6.85	6.63
		.59	1.40	2.64	4.44	9.15	20.69	86	164	59.16	35.49	24.43	20.66	17.32	14.13	13.11	12.26	11.32	10.36	9.42	8.57	8.18	7.86	7.69	7.54	7.20	6.94	6.58	6.52
		.66	1.53	2.84	4.77	10.02	22.83	118	140	54.94	33.70	23.83	20.29	16.93	13.93	13.07	12.13	11.21	10.23	9.33	8.47	8.12	7.84	7.64	7.50	7.23	6.90	6.75	6.52
		.75	1.67	3.04	5.18	11.06	26.66	168	122	51.15	31.94	23.34	19.92	16.51	13.81	13.00	12.01	11.08	10.18	9.20	8.40	8.09	7.83	7.64	7.45	7.18	6.88	6.75	6.46
		.84	1.83	3.24	5.67	12.29	32.17	236	105	47.63	30.25	22.92	19.50	16.10	13.74	12.88	11.90	10.97	10.11	9.07	8.32	8.11	7.82	7.60	7.41	7.13	6.86	6.75	6.42
		.94	1.98	3.44	6.24	13.69	37.85	272	91	44.44	28.65	22.49	19.04	15.69	13.68	12.71	11.75	10.90	9.98	8.97	8.20	8.07	7.82	7.53	7.36	7.14	6.85	6.65	6.39

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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22.38 CFS	6.36	6.35	6.35	6.31	6.22	6.16	6.17
6.12							
22.86 CFS	6.05	5.99	5.99	6.05	6.05	6.01	5.96
5.92							
23.34 CFS	5.88	5.87	5.82	5.72	5.66	5.68	5.72
5.72							
23.82 CFS	5.65	5.56	5.53	5.70	5.56	4.47	3.20
2.15							
24.30 CFS	1.34	.82	.51	.32			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.87 WATERSHED INCHES; 315 CFS-HRS; 26.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.60	1212.7	(NULL)
13.01	1100.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.34 WATERSHED INCHES; 3305 CFS-HRS; 273.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.13	53.1	(RUNOFF)
17.34	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.62 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.60	1222.6	(NULL)
13.01	1105.7	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55  
 SQ.MI.

4.26 CFS	.50	.53	.57	.61	.66	.70	.75
.80							
4.74 CFS	.85	.91	.97	1.03	1.10	1.17	1.24
1.32							
5.22 CFS	1.39	1.47	1.54	1.62	1.70	1.79	1.88
1.96							
5.70 CFS	2.06	2.14	2.23	2.32	2.42	2.52	2.63
2.73							

6.18 CFS	2.83	2.94	3.04	3.15	3.27	3.40	3.55
3.71							
6.66 CFS	3.87	4.05	4.26	4.48	4.71	4.95	5.22
5.50							
7.14 CFS	5.78	6.07	6.38	6.69	7.03	7.38	7.74
8.11							
7.62 CFS	8.50	8.92	9.34	9.76	10.20	10.65	11.10
11.56							
8.10 CFS	12.04	12.51	12.99	13.51	14.06	14.61	15.19
15.80							
8.58 CFS	16.44	17.08	17.74	18.41	19.10	19.82	20.56
21.34							
9.06 CFS	22.15	22.98	23.84	24.73	25.66	26.60	27.56
28.59							
9.54 CFS	29.69	30.89	32.21	33.64	35.18	36.81	38.53
40.35							
10.02 CFS	42.27	44.31	46.46	48.70	51.03	53.44	55.95
58.57							

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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10.50 CFS	61.32	64.24	67.39	70.80	74.42	78.31	82.45
86.92							
10.98 CFS	92	97	103	110	118	127	136
148							
11.46 CFS	160	173	191	213	237	265	299
342							
11.94 CFS	399	485	609	781	920	1000	1053
1085							
12.42 CFS	1123	1172	1211	1223	1209	1178	1136
1089							
12.90 CFS	1089	1096	1105	1087	1062	1014	953
890							
13.38 CFS	825	764	706	654	608	566	529
496							
13.86 CFS	467	440	416	394	374	356	339
323							
14.34 CFS	310	297	287	277	268	260	252
245							
14.82 CFS	238	232	226	220	214	208	202
196							
15.30 CFS	191	186	181	176	172	168	165
161							
15.78 CFS	158	155	152	150	147	145	143
142							
16.26 CFS	140	139	137	136	134	133	132
130							
16.74 CFS	129	128	127	126	125	123	122
121							
17.22 CFS	120	118	117	116	115	114	113
111							
17.70 CFS	110	109	108	107	106	105	103
102							
18.18 CFS	101	100	99	98	97	96	95
94							
18.66 CFS	93.37	92.55	91.78	91.11	90.44	89.80	89.21
88.67							

19.14	CFS	88.21	87.83	87.48	87.15	86.84	86.53	86.23
85.88								
19.62	CFS	85.44	85.06	84.77	84.45	84.12	83.79	83.53
83.36								
20.10	CFS	83.12	82.83	82.48	82.11	81.75	81.31	80.90
80.61								
20.58	CFS	80.40	80.22	79.92	79.57	79.27	78.92	78.53
78.14								
21.06	CFS	77.75	77.41	77.11	76.83	76.57	76.30	76.03
75.76								
21.54	CFS	75.46	75.05	74.65	74.36	74.05	73.75	73.56
73.36								
22.02	CFS	73.07	72.76	72.40	72.03	71.71	71.42	71.15
70.90								
22.50	CFS	70.66	70.35	69.93	69.55	69.24	68.89	68.52
68.15								
22.98	CFS	67.84	67.63	67.36	67.02	66.64	66.24	65.87
65.54								
23.46	CFS	65.20	64.78	64.43	64.16	63.95	63.72	63.36
62.92								
23.94	CFS	62.53	62.47	61.97	60.04	57.51	54.68	51.99
49.73								
24.42	CFS	47.66	45.49	43.05	40.18	36.86	33.23	29.52
25.97								
24.90	CFS	22.74	19.94	17.61	15.75	14.28	13.15	12.28
11.61								
25.38	CFS	11.10	10.70	10.37				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.36 WATERSHED INCHES; 3352 CFS-HRS; 277.0 ACRE-FEET.

OPERATION DIVERT XSECTION 81  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	730.0 *	178.42
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2915 CFS-HRS; 240.9 ACRE-FEET.

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.60	492.6	177.74
13.01	375.7	177.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .44 WATERSHED INCHES; 437 CFS-HRS; 36.1 ACRE-FEET.



FEET.

OPERATION RESVOR STRUCTURE 71

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.60	492.6	(NULL)
13.01	375.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.44 WATERSHED INCHES; 437 CFS-HRS; 36.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 89

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.60	1222.6	(NULL)
13.01	1105.7	(NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25							
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55							
4.26 CFS .80	.50	.53	.57	.61	.66	.70	.75	
4.74 CFS 1.32	.85	.91	.97	1.03	1.10	1.17	1.24	
5.22 CFS 1.96	1.39	1.47	1.54	1.62	1.70	1.79	1.88	
5.70 CFS 2.73	2.06	2.14	2.23	2.32	2.42	2.52	2.63	
6.18 CFS 3.71	2.83	2.94	3.04	3.15	3.27	3.40	3.55	
6.66 CFS 5.50	3.87	4.05	4.26	4.48	4.71	4.95	5.22	
7.14 CFS 8.11	5.78	6.07	6.38	6.69	7.03	7.38	7.74	
7.62 CFS 11.56	8.50	8.92	9.34	9.76	10.20	10.65	11.10	
8.10 CFS 15.80	12.04	12.51	12.99	13.51	14.06	14.61	15.19	
8.58 CFS 21.34	16.44	17.08	17.74	18.41	19.10	19.82	20.56	
9.06 CFS 28.59	22.15	22.98	23.84	24.73	25.66	26.60	27.56	
9.54 CFS 40.35	29.69	30.89	32.21	33.64	35.18	36.81	38.53	
10.02 CFS 58.57	42.27	44.31	46.46	48.70	51.03	53.44	55.95	
10.50 CFS 86.92	61.32	64.24	67.39	70.80	74.42	78.31	82.45	
10.98 CFS 148	92	97	103	110	118	127	136	
11.46 CFS 342	160	173	191	213	237	265	299	
11.94 CFS 1085	399	485	609	781	920	1000	1053	
12.42 CFS 1089	1123	1172	1211	1223	1209	1178	1136	
12.90 CFS 890	1089	1096	1105	1087	1062	1014	953	
13.38 CFS	825	764	706	654	608	566	529	

496								
13.86 CFS	467	440	416	394	374	356	339	
323								

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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14.34 CFS	310	297	287	277	268	260	252	
245								
14.82 CFS	238	232	226	220	214	208	202	
196								
15.30 CFS	191	186	181	176	172	168	165	
161								
15.78 CFS	158	155	152	150	147	145	143	
142								
16.26 CFS	140	139	137	136	134	133	132	
130								
16.74 CFS	129	128	127	126	125	123	122	
121								
17.22 CFS	120	118	117	116	115	114	113	
111								
17.70 CFS	110	109	108	107	106	105	103	
102								
18.18 CFS	101	100	99	98	97	96	95	
94								
18.66 CFS	93.37	92.55	91.78	91.11	90.44	89.80	89.21	
88.67								
19.14 CFS	88.21	87.83	87.48	87.15	86.84	86.53	86.23	
85.88								
19.62 CFS	85.44	85.06	84.77	84.45	84.12	83.79	83.53	
83.36								
20.10 CFS	83.12	82.83	82.48	82.11	81.75	81.31	80.90	
80.61								
20.58 CFS	80.40	80.22	79.92	79.57	79.27	78.92	78.53	
78.14								
21.06 CFS	77.75	77.41	77.11	76.83	76.57	76.30	76.03	
75.76								
21.54 CFS	75.46	75.05	74.65	74.36	74.05	73.75	73.56	
73.36								
22.02 CFS	73.07	72.76	72.40	72.03	71.71	71.42	71.15	
70.90								
22.50 CFS	70.66	70.35	69.93	69.55	69.24	68.89	68.52	
68.15								
22.98 CFS	67.84	67.63	67.36	67.02	66.64	66.24	65.87	
65.54								
23.46 CFS	65.20	64.78	64.43	64.16	63.95	63.72	63.36	
62.92								
23.94 CFS	62.53	62.47	61.97	60.04	57.51	54.68	51.99	
49.73								
24.42 CFS	47.66	45.49	43.05	40.18	36.86	33.23	29.52	
25.97								
24.90 CFS	22.74	19.94	17.61	15.75	14.28	13.15	12.28	
11.61								
25.38 CFS	11.10	10.70	10.37					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.36 WATERSHED INCHES; 3352 CFS-HRS; 277.0 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 89
STARTING TIME = .00 RAIN DEPTH = 7.23 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS
ALTERNATE NO. = 1 STORM NO. =50 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.29 81.5 (RUNOFF)
20.13 2.1 (RUNOFF)
23.08 1.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-
FEET.

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OPERATION REACH XSECTION 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.35 81.3 390.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.27 142.8 (RUNOFF)
20.68 3.4 (RUNOFF)
23.97 2.6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.85 WATERSHED INCHES; 181 CFS-HRS; 15.0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.30 220.1 (NULL)
20.13 5.7 (NULL)

23.12 4.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.91 WATERSHED INCHES; 290 CFS-HRS; 24.0 ACRE-
FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,
VALUE EXTRAPOLATED.
\*\*\*

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.32 218.8 384.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.89 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-
FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.39 218.2 368.84

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.89 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-
FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.29 181.7 (RUNOFF)
20.14 4.8 (RUNOFF)
23.74 3.6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.60 WATERSHED INCHES; 237 CFS-HRS; 19.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.35 387.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 526 CFS-HRS; 43.5 ACRE-

FEET.

OPERATION DIVERT XSECTION 107  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	213.0 *	(DIVERT)
	* FIRST POINT OF FLAT	PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 471 CFS-HRS; 38.9 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	174.5	176.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .50 WATERSHED INCHES; 55 CFS-HRS; 4.5 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 84, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 358.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
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 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
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OPERATION RESVOR STRUCTURE 84

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
 AT STRUCTURE 84  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.66	.0	352.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	213.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

4.26 WATERSHED INCHES; 471 CFS-HRS; 39.0 ACRE-  
FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.63 213.1 357.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.26 WATERSHED INCHES; 471 CFS-HRS; 38.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 203.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.15 WATERSHED INCHES; 291 CFS-HRS; 24.1 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.51 139.6 377.76

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.58 WATERSHED INCHES; 264 CFS-HRS; 21.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.13 30.4 (RUNOFF)  
15.46 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.03 WATERSHED INCHES; 25 CFS-HRS; 2.1 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	112.3	359.61
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.57 WATERSHED INCHES;	264 CFS-HRS;	21.8 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	146.1	(RUNOFF)
15.81	5.5	(RUNOFF)
20.09	3.2	(RUNOFF)
20.64	3.0	(RUNOFF)
24.02	2.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.16 WATERSHED INCHES;	146 CFS-HRS;	12.1 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	357.8	(NULL)
24.00	10.2	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.24 WATERSHED INCHES;	617 CFS-HRS;	51.0 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 13

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	56.4	(RUNOFF)
21.97	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.80 WATERSHED INCHES;	60 CFS-HRS;	4.9 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK

ELEVATION(FEET)  
 12.25 376.1 (NULL)  
 12.41 378.9 (NULL)  
 23.98 17.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.55 WATERSHED INCHES; 879 CFS-HRS; 72.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.23 429.6 (NULL)  
 23.99 18.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 939 CFS-HRS; 77.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.23 429.6 (NULL)  
 23.99 18.5 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32  
 SQ.MI.

HRS	3.36 CFS	4.32 CFS	4.80 CFS	5.28 CFS	5.76 CFS	6.24 CFS	6.72 CFS	7.20 CFS	7.68 CFS	8.16 CFS	8.64 CFS	9.12 CFS
.00	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
.02	.02	.02	.02	.02	.02	.03	.03	.03	.03	.03	.03	.03
.03	.04	.04	.04	.04	.05	.05	.05	.05	.05	.06	.06	.06
.06	.06	.07	.07	.08	.08	.08	.08	.08	.08	.09	.09	.09
.09	.10	.10	.11	.11	.12	.12	.12	.12	.12	.13	.13	.13
.13	.14	.15	.16	.18	.19	.21	.21	.21	.21	.23	.23	.23
.24	.26	.29	.31	.35	.39	.43	.43	.43	.43	.48	.48	.48
.54	.60	.66	.73	.80	.87	.95	.95	.95	.95	1.02	1.02	1.02
1.10	1.19	1.27	1.37	1.47	1.59	1.70	1.70	1.70	1.70	1.82	1.82	1.82
1.94	2.07	2.20	2.33	2.47	2.61	2.76	2.76	2.76	2.76	2.91	2.91	2.91
3.06	3.22	3.37	3.52	3.69	3.86	4.02	4.02	4.02	4.02	4.18	4.18	4.18
4.36	4.54	4.73	4.92	5.11	5.28	5.46	5.46	5.46	5.46	5.66	5.66	5.66
5.88	6.12	6.41	6.78	7.20	7.65	8.13	8.13	8.13	8.13	8.61	8.61	8.61
9.11												

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9.60 CFS	9.63	10.18	10.75	11.35	11.95	12.56	13.17
13.81							
10.08 CFS	14.47	15.14	16.28	17.99	19.51	20.84	22.03
23.15							
10.56 CFS	24.24	25.40	26.66	28.05	29.59	31.26	33.09
35.06							
11.04 CFS	37.18	39.56	42.27	45.29	48.59	52.22	56.20
60.47							
11.52 CFS	65	71	80	89	100	114	132
157							
12.00 CFS	195	251	338	424	429	417	410
407							
12.48 CFS	394	386	380	373	367	338	310
286							
12.96 CFS	265	246	231	217	194	174	159
146							
13.44 CFS	135	126	118	111	104	98	93
88							
13.92 CFS	84.23	80.53	77.25	74.31	71.66	69.24	67.05
65.08							
14.40 CFS	63.28	61.61	60.01	58.47	56.96	55.53	54.18
52.88							
14.88 CFS	51.60	50.32	49.07	47.86	46.64	45.42	44.25
43.16							
15.36 CFS	42.17	41.28	40.48	39.77	39.15	38.60	38.12
37.74							
15.84 CFS	37.46	37.21	36.93	36.62	36.33	36.06	35.82
35.59							
16.32 CFS	35.33	35.06	34.82	34.55	34.27	34.00	33.76
33.54							
16.80 CFS	33.30	33.03	32.79	32.58	32.38	32.15	31.89
31.59							
17.28 CFS	31.31	31.11	30.90	30.65	30.35	30.05	29.79
29.54							
17.76 CFS	29.30	29.03	28.76	28.51	28.29	28.07	27.82
27.56							
18.24 CFS	27.33	27.13	26.93	26.69	26.48	26.34	26.25
26.15							
18.72 CFS	26.01	25.89	25.84	25.77	25.66	25.54	25.44
25.35							
19.20 CFS	25.25	25.17	25.09	25.02	24.96	24.90	24.84
24.72							
19.68 CFS	24.62	24.56	24.48	24.36	24.23	24.16	24.13
24.09							
20.16 CFS	24.00	23.90	23.82	23.74	23.62	23.47	23.38
23.33							
20.64 CFS	23.27	23.18	23.06	23.01	22.96	22.87	22.75
22.65							
21.12 CFS	22.55	22.46	22.38	22.30	22.22	22.16	22.11
22.05							
21.60 CFS	21.95	21.83	21.76	21.70	21.60	21.52	21.48
21.41							
22.08 CFS	21.30	21.19	21.10	21.02	20.94	20.86	20.79
20.73							
22.56 CFS	20.65	20.53	20.41	20.35	20.27	20.14	20.01
19.94							
23.04 CFS	19.91	19.86	19.77	19.68	19.60	19.53	19.45
19.35							
23.52 CFS	19.20	19.06	18.97	18.92	18.85	18.72	18.57
18.46							

24.00 CFS	18.50	18.41	17.62	16.41	15.22	14.13	13.05
11.98							
24.48 CFS	11.00	10.35	9.99	9.72	9.51	9.33	9.16
9.00							
24.96 CFS	8.86	8.72	8.59	8.46	8.33	8.21	8.09
7.98							
25.44 CFS	7.86	7.75	7.64	7.53	7.43	7.32	7.22
7.12							
25.92 CFS	7.02	6.92	6.83	6.73	6.62	6.50	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 939 CFS-HRS; 77.6 ACRE-  
 FEET.

DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	97	45	33	26	23	21	16	8

DURATION (HRS) 17  
 FLOW (CFS) 6 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

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OPERATION REACH XSECTION 16

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.23	429.6	334.24
23.99	18.5	331.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 939 CFS-HRS; 77.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.14	82.4	(RUNOFF)
15.84	2.4	(RUNOFF)
23.05	1.1	(RUNOFF)
23.71	1.0	(RUNOFF)
24.00	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.80 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	94.7	(RUNOFF)
24.03	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	94.7	(NULL)
24.03	1.3	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
 SQ.MI.

HRS	.00	.01	.02	.03	.05	.06	.08
1.86 CFS							
.10							
2.34 CFS	.12	.14	.16	.18	.20	.22	.24
.26							
2.82 CFS	.28	.29	.31	.33	.34	.36	.38
.39							
3.30 CFS	.41	.44	.45	.47	.49	.51	.53
.53							
3.78 CFS	.54	.56	.58	.60	.62	.64	.66
.68							
4.26 CFS	.69	.69	.71	.73	.76	.77	.78
.78							
4.74 CFS	.80	.82	.84	.86	.87	.88	.89
.91							
5.22 CFS	.93	.95	.96	.96	.97	.99	1.02
1.04							

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5.70 CFS	1.06	1.06	1.06	1.06	1.08	1.11	1.14
1.16							
6.18 CFS	1.17	1.19	1.21	1.24	1.27	1.30	1.33
1.36							
6.66 CFS	1.39	1.40	1.42	1.46	1.50	1.51	1.53
1.57							
7.14 CFS	1.62	1.66	1.68	1.70	1.73	1.76	1.80
1.82							
7.62 CFS	1.84	1.87	1.90	1.93	1.97	2.00	2.04
2.08							
8.10 CFS	2.11	2.15	2.16	2.18	2.23	2.26	2.28
2.30							
8.58 CFS	2.35	2.40	2.44	2.47	2.49	2.50	2.52
2.57							
9.06 CFS	2.63	2.69	2.75	2.83	2.93	3.04	3.14
3.22							
9.54 CFS	3.30	3.40	3.50	3.62	3.74	3.84	3.92
4.01							

10.02 CFS	4.11	4.23	4.35	4.47	4.56	4.65	4.75
4.86							
10.50 CFS	4.98	5.13	5.35	5.63	5.96	6.32	6.70
7.09							
10.98 CFS	7.48	7.87	8.34	8.93	9.60	10.28	10.98
11.71							
11.46 CFS	12.45	13.22	14.67	17.18	19.73	22.14	25.44
30.09							
11.94 CFS	36.74	47.54	63.94	84.78	94.66	83.99	65.37
50.49							
12.42 CFS	40.07	32.94	28.24	24.31	20.56	17.68	15.80
14.50							
12.90 CFS	13.50	12.65	11.85	11.07	10.32	9.67	9.16
8.69							
13.38 CFS	8.26	7.83	7.40	7.00	6.61	6.28	6.02
5.83							
13.86 CFS	5.67	5.54	5.44	5.35	5.25	5.14	5.01
4.89							
14.34 CFS	4.79	4.71	4.62	4.52	4.40	4.27	4.16
4.07							
14.82 CFS	3.98	3.89	3.79	3.68	3.59	3.48	3.37
3.28							
15.30 CFS	3.22	3.18	3.17	3.16	3.15	3.13	3.08
3.03							
15.78 CFS	2.99	2.99	2.99	2.95	2.91	2.86	2.83
2.82							
16.26 CFS	2.80	2.77	2.73	2.70	2.67	2.63	2.60
2.58							
16.74 CFS	2.57	2.55	2.51	2.48	2.47	2.46	2.43
2.39							
17.22 CFS	2.33	2.30	2.29	2.29	2.26	2.21	2.16
2.13							
17.70 CFS	2.12	2.10	2.07	2.03	2.01	2.00	1.98
1.95							
18.18 CFS	1.92	1.89	1.88	1.87	1.84	1.82	1.82
1.84							
18.66 CFS	1.85	1.83	1.81	1.82	1.82	1.80	1.78
1.76							
19.14 CFS	1.76	1.76	1.75	1.75	1.75	1.75	1.75
1.74							
19.62 CFS	1.72	1.70	1.70	1.70	1.68	1.66	1.66
1.69							
20.10 CFS	1.69	1.68	1.66	1.65	1.64	1.61	1.59
1.59							
20.58 CFS	1.60	1.62	1.60	1.58	1.58	1.59	1.57
1.55							
21.06 CFS	1.53	1.53	1.52	1.52	1.52	1.52	1.52
1.52							
21.54 CFS	1.52	1.49	1.47	1.47	1.47	1.46	1.46
1.47							
22.02 CFS	1.46	1.44	1.42	1.41	1.41	1.41	1.40
1.40							
22.50 CFS	1.40	1.39	1.37	1.35	1.35	1.35	1.33
1.31							
22.98 CFS	1.31	1.34	1.34	1.33	1.31	1.30	1.29
1.29							
23.46 CFS	1.28	1.25	1.23	1.24	1.26	1.27	1.24
1.21							
23.94 CFS	1.20	1.25	1.25	.97	.57	.29	.15
.08							
24.42 CFS	.04	.02	.01	.00			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-

	FEET.							
DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	9	5	3	2	2	2	2	1
DURATION (HRS)	18	20	21					
FLOW (CFS)	1	1	0					

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OPERATION RUNOFF XSECTION 119

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.13	24.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.59 WATERSHED INCHES;		21 CFS-HRS;
FEET.		1.8 ACRE-

OPERATION ADDHYD XSECTION 120

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.17	115.9	(NULL)
15.82	3.7	(NULL)
20.07	2.1	(NULL)
24.01	1.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.26 WATERSHED INCHES;		126 CFS-HRS;
FEET.		10.4 ACRE-

OPERATION ADDHYD XSECTION 20

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.16	197.1	(NULL)
15.83	6.1	(NULL)
17.33	4.7	(NULL)
20.85	3.3	(NULL)
21.75	3.0	(NULL)
21.95	3.0	(NULL)
24.01	2.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.08 WATERSHED INCHES;		205 CFS-HRS;
FEET.		16.9 ACRE-

OPERATION RUNOFF XSECTION 19

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
-----------------	----------------------	------

ELEVATION (FEET)		
12.15	148.6	(RUNOFF)
15.84	4.6	(RUNOFF)
17.34	3.5	(RUNOFF)
22.75	2.1	(RUNOFF)
23.06	2.1	(RUNOFF)
24.00	2.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.41 WATERSHED INCHES; 141 CFS-HRS; 11.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.15	345.1	(NULL)
15.84	10.7	(NULL)
17.34	8.2	(NULL)
19.74	6.1	(NULL)
20.06	6.1	(NULL)
21.95	5.3	(NULL)
24.01	4.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.78 WATERSHED INCHES; 346 CFS-HRS; 28.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.18	761.8	(NULL)
18.82	32.4	(NULL)
20.04	30.2	(NULL)
20.58	29.1	(NULL)
20.80	28.7	(NULL)
21.93	26.8	(NULL)
22.71	25.2	(NULL)
23.04	24.7	(NULL)
23.68	23.5	(NULL)
24.00	23.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 1281 CFS-HRS; 105.8 ACRE-FEET.

OPERATION DIVERT XSECTION 122 OUTPUT #1 HYDROGRAPH

1

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-  
 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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 Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
11.76	168.0 *	(DIVERT)
18.82	32.4	(DIVERT)
20.04	30.2	(DIVERT)
20.58	29.1	(DIVERT)
20.80	28.7	(DIVERT)
21.93	26.8	(DIVERT)
22.71	25.2	(DIVERT)
23.04	24.7	(DIVERT)
23.68	23.5	(DIVERT)
24.00	23.1	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 909 CFS-HRS; 75.1 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	593.8	178.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 372 CFS-HRS; 30.7 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 83, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 322.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 83

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	916.3	324.05
12.42	675.6	323.65
12.54	612.1	323.53
12.66	544.3	323.41
12.78	460.3	323.27
12.90	307.2	322.99
13.02	254.5	322.82
13.14	150.5	322.49
13.26	91.0	322.29

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.21 WATERSHED INCHES; 322 CFS-HRS; 26.6 ACRE-FEET.

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OPERATION ADDHYD XSECTION 123

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.30	1084.3	(NULL)
12.42	843.6	(NULL)
12.54	780.1	(NULL)
12.66	712.3	(NULL)
12.78	628.3	(NULL)
12.90	475.2	(NULL)
13.02	422.5	(NULL)
13.14	318.5	(NULL)
13.26	259.0	(NULL)
13.35	168.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.64 WATERSHED INCHES; 1231 CFS-HRS; 101.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.37	654.2	316.74
12.48	629.5	316.69
12.60	597.5	316.63
12.72	550.2	316.53
12.84	495.7	316.41
12.95	404.4	316.19
13.08	355.0	316.06
13.19	290.5	315.87
13.31	244.3	315.72
20.07	30.3	314.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.23 WATERSHED INCHES; 1123 CFS-HRS; 92.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.25	136.5	(RUNOFF)
20.68	3.0	(RUNOFF)
23.99	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.17 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-  
 FEET.



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\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	131.8	365.04
20.69	3.0	356.63
23.79	2.4	356.57

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.15 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	196.3	(RUNOFF)
18.66	5.1	(RUNOFF)
20.68	4.5	(RUNOFF)
23.98	3.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 246 CFS-HRS; 20.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	325.1	(NULL)
18.67	8.6	(NULL)
20.68	7.5	(NULL)
23.14	6.2	(NULL)
23.78	5.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.12 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.37	312.6	319.62
20.73	7.5	316.81
23.20	6.2	316.73

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.12 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.24	154.0	(RUNOFF)
21.94	3.2	(RUNOFF)
24.01	2.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.74 WATERSHED INCHES; 183 CFS-HRS; 15.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.24	322.0	(NULL)
12.37	776.7	(NULL)
12.48	716.7	(NULL)
12.60	661.3	(NULL)
12.72	597.4	(NULL)
12.84	532.2	(NULL)
12.95	434.9	(NULL)
13.08	380.9	(NULL)
13.19	313.2	(NULL)
13.31	264.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.29 WATERSHED INCHES; 1306 CFS-HRS; 107.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 30

1 TR20 ----- SCS  
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Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
-------------------------------------	----------------------	------

12.37	1089.3	(NULL)
12.47	990.9	(NULL)
12.59	867.3	(NULL)
12.71	751.2	(NULL)
12.83	645.0	(NULL)
12.95	522.2	(NULL)
13.07	452.3	(NULL)
13.19	376.9	(NULL)
13.30	322.0	(NULL)
24.04	31.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.47 WATERSHED INCHES; 1720 CFS-HRS; 142.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.37	1089.3	(NULL)
12.47	990.9	(NULL)
12.59	867.3	(NULL)
12.71	751.2	(NULL)
12.83	645.0	(NULL)
12.95	522.2	(NULL)
13.07	452.3	(NULL)
13.19	376.9	(NULL)
13.30	322.0	(NULL)
24.04	31.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.47 WATERSHED INCHES; 1720 CFS-HRS; 142.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	220.6	(RUNOFF)
20.86	4.2	(RUNOFF)
24.02	3.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 32

1  
 TR20 ----- SCS  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	204.5	313.75

20.73	4.3	310.35
24.09	3.3	310.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.16	33.8	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.63 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .48 AC-FT ( .09 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 377.99.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	29.2	380.63

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
 \*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	29.2	338.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 35

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.19	100.5	(RUNOFF)
18.65	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.63 WATERSHED INCHES; 118 CFS-HRS; 9.7 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
 WITH 1.02 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 354.08.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	84.8	357.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.93 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	113.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.84 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	113.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.84 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
 \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	113.8	330.82

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.84 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.14	113.8	(RUNOFF)
15.84	3.3	(RUNOFF)
17.34	2.5	(RUNOFF)
18.61	2.0	(RUNOFF)
18.84	2.0	(RUNOFF)
24.00	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.03 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.19	206.2	(NULL)
18.82	5.1	(NULL)
21.94	4.1	(NULL)
24.00	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.92 WATERSHED INCHES; 244 CFS-HRS; 20.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.19	206.2	(NULL)
18.82	5.1	(NULL)
21.94	4.1	(NULL)
24.00	3.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06  
 SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	.06
2.04 CFS	.00	.01	.01	.01	.01	.01	.02	.02		
.02										
2.52 CFS	.02	.03	.03	.03	.03	.04	.05	.07		
.08										
3.00 CFS	.10	.12	.14	.16	.18	.21	.23			
.25										
3.48 CFS	.27	.29	.31	.33	.35	.37	.39			
.42										
3.96 CFS	.44	.46	.49	.51	.53	.54	.56			
.59										
4.44 CFS	.62	.65	.66	.67	.69	.72	.75			
.77										
4.92 CFS	.79	.81	.83	.85	.88	.91	.94			
.94										

5.40	CFS	.96	.98	1.02	1.05	1.07	1.10	1.11
1.11								
5.88	CFS	1.13	1.17	1.21	1.25	1.25	1.28	1.31
1.34								
6.36	CFS	1.38	1.42	1.46	1.49	1.54	1.57	1.58
1.63								

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TR20 ----- SCS

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6.84	CFS	1.69	1.71	1.73	1.78	1.84	1.89	1.94
1.97								
7.32	CFS	2.00	2.04	2.10	2.14	2.17	2.20	2.24
2.30								
7.80	CFS	2.34	2.39	2.45	2.50	2.54	2.60	2.64
2.65								
8.28	CFS	2.71	2.79	2.82	2.84	2.90	2.97	3.04
3.09								
8.76	CFS	3.13	3.16	3.19	3.23	3.33	3.42	3.48
3.57								
9.24	CFS	3.68	3.82	3.94	4.05	4.15	4.25	4.38
4.53								
9.72	CFS	4.68	4.81	4.92	5.03	5.15	5.30	5.46
5.61								
10.20	CFS	5.75	5.87	5.99	6.20	6.65	7.09	7.57
8.22								
10.68	CFS	8.94	9.69	10.48	11.26	12.07	12.86	13.67
14.76								
11.16	CFS	15.97	17.25	18.56	19.89	21.34	22.74	24.21
27.49								
11.64	CFS	32	36	40	46	54	66	91
126								
12.12	CFS	178	206	189	164	142	112	96
84								
12.60	CFS	71.58	63.18	56.48	50.84	46.06	41.97	38.53
36.33								
13.08	CFS	34.48	32.67	31.07	29.60	28.17	26.78	25.45
24.14								
13.56	CFS	22.89	21.71	20.67	19.77	18.95	18.28	17.68
17.13								
14.04	CFS	16.62	16.11	15.61	15.13	14.69	14.30	13.94
13.58								
14.52	CFS	13.20	12.82	12.46	12.13	11.83	11.54	11.24
10.92								
15.00	CFS	10.64	10.36	10.06	9.80	9.58	9.40	9.25
9.12								
15.48	CFS	9.00	8.88	8.74	8.59	8.43	8.33	8.28
8.18								
15.96	CFS	8.05	7.92	7.81	7.73	7.66	7.58	7.47
7.39								
16.44	CFS	7.32	7.23	7.14	7.08	7.03	6.98	6.90
6.82								
16.92	CFS	6.76	6.72	6.67	6.59	6.49	6.39	6.35
6.34								
17.40	CFS	6.28	6.19	6.09	6.02	5.96	5.92	5.87
5.78								
17.88	CFS	5.71	5.67	5.63	5.57	5.49	5.43	5.38
5.34								

18.36 CFS	5.29	5.21	5.18	5.19	5.19	5.15	5.09
5.07							
18.84 CFS	5.08	5.04	4.98	4.95	4.93	4.91	4.89
4.88							
19.32 CFS	4.86	4.85	4.84	4.82	4.80	4.74	4.73
4.74							
19.80 CFS	4.71	4.66	4.64	4.66	4.69	4.66	4.62
4.59							
20.28 CFS	4.58	4.56	4.50	4.46	4.49	4.50	4.50
4.44							
20.76 CFS	4.41	4.43	4.42	4.37	4.34	4.32	4.31
4.29							
21.24 CFS	4.28	4.27	4.26	4.25	4.24	4.23	4.17
4.14							
21.72 CFS	4.16	4.14	4.10	4.12	4.12	4.08	4.04
4.02							
22.20 CFS	4.01	3.99	3.98	3.97	3.96	3.96	3.93
3.87							
22.68 CFS	3.86	3.87	3.84	3.79	3.77	3.79	3.82
3.78							
23.16 CFS	3.74	3.72	3.70	3.69	3.68	3.65	3.59
3.58							
23.64 CFS	3.61	3.62	3.60	3.54	3.49	3.50	3.61
3.48							
24.12 CFS	2.85	2.38	2.16	2.02	1.92	1.82	1.75
1.70							
24.60 CFS	1.69	1.68	1.67	1.67	1.66	1.65	1.64
1.63							
25.08 CFS	1.62	1.61	1.60				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.92 WATERSHED INCHES; 244 CFS-HRS; 20.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	24	11	7	5	5	4	4	3
DURATION(HRS)	18	19						
FLOW(CFS)	2	2 TRUNCATED						

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TR20 ----- SCS

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 Dist;H1&H8UG;GHC2.04TEST  
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OPERATION RUNOFF XSECTION 140

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.13	11.4	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.03 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-FEET.

OPERATION ADDHYD XSECTION 141



PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	215.5	(NULL)
18.82	5.3	(NULL)
22.73	4.1	(NULL)
23.04	4.0	(NULL)
24.00	3.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.72 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	99.5	(RUNOFF)
20.67	2.3	(RUNOFF)
23.97	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.94 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.37	1176.5	(NULL)
12.47	1056.2	(NULL)
12.59	915.3	(NULL)
12.71	786.8	(NULL)
12.83	672.2	(NULL)
12.95	544.4	(NULL)
13.07	470.9	(NULL)
13.19	393.0	(NULL)
13.30	336.1	(NULL)
24.04	33.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.50 WATERSHED INCHES; 1845 CFS-HRS; 152.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.37	1369.7	(NULL)
12.47	1203.6	(NULL)
12.59	1018.0	(NULL)
12.71	860.5	(NULL)

12.83	726.2	(NULL)
12.95	587.3	(NULL)
13.07	506.5	(NULL)
13.18	424.0	(NULL)
13.30	363.2	(NULL)
20.08	48.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.62 WATERSHED INCHES; 2099 CFS-HRS; 173.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	1514.1	(NULL)
12.47	1305.2	(NULL)
12.59	1094.0	(NULL)
12.71	919.9	(NULL)
12.83	774.5	(NULL)
12.95	627.9	(NULL)
13.07	542.6	(NULL)
13.18	456.6	(NULL)
13.30	392.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.82 WATERSHED INCHES; 2406 CFS-HRS; 198.8 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 144  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.06	543.0 *	(DIVERT)
13.07	542.6	(DIVERT)
13.18	456.6	(DIVERT)
13.30	392.9	(DIVERT)

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\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2011 CFS-HRS; 166.2 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	971.1	179.03
12.47	762.2	178.50
12.59	551.0	177.94
12.71	376.9	177.34

12.83	231.5	176.76
12.95	80.6	175.95

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .79 WATERSHED INCHES; 395 CFS-HRS; 32.6 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 82, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 318.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 82

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.41	899.6	320.03
12.53	697.2	319.68
12.65	520.9	319.37
12.77	377.7	319.12
12.90	230.7	318.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .47 WATERSHED INCHES; 235 CFS-HRS; 19.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 145

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.41	1442.6	(NULL)
12.53	1240.2	(NULL)
12.65	1063.9	(NULL)
12.77	920.7	(NULL)
12.90	773.7	(NULL)
13.07	542.6	(NULL)
13.18	456.7	(NULL)
13.30	393.0	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.50 WATERSHED INCHES; 2246 CFS-HRS; 185.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.49	1252.9	291.59
12.58	1194.7	291.52
12.70	1034.8	291.30

12.83	880.2	291.08
12.95	736.3	290.87
13.11	546.2	290.53

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.55 WATERSHED INCHES; 2271 CFS-HRS; 187.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.49	1252.9	(NULL)
12.58	1194.7	(NULL)
12.70	1034.8	(NULL)
12.83	880.2	(NULL)
12.95	736.3	(NULL)
13.11	546.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.55 WATERSHED INCHES; 2271 CFS-HRS; 187.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.29	114.7	(RUNOFF)
23.09	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.00 WATERSHED INCHES; 154 CFS-HRS; 12.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	143.4	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.90 WATERSHED INCHES; 199 CFS-HRS; 16.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.30	257.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.94 WATERSHED INCHES; 352 CFS-HRS; 29.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	140.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.03	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.93 WATERSHED INCHES; 149 CFS-HRS; 12.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	676.8	(NULL)
12.49	1308.8	(NULL)
12.58	1239.0	(NULL)
12.70	1067.5	(NULL)
12.82	905.9	(NULL)
12.95	758.2	(NULL)
13.11	564.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 2420 CFS-HRS; 200.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	920.0	(NULL)
12.49	1504.0	(NULL)
12.58	1394.6	(NULL)
12.70	1185.4	(NULL)
12.82	995.1	(NULL)
12.95	828.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.61 WATERSHED INCHES; 2773 CFS-HRS; 229.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION (FEET)		
12.36	901.4	285.78
12.57	1388.4	286.68
12.64	1377.9	286.66

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.59 WATERSHED INCHES; 2760 CFS-HRS; 228.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 52

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.18	4.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.06 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 53

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.26	4.3	288.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.06 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
 AT XSECTION 54  
 \*\*\*

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.54	.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .47 WATERSHED INCHES; 2 CFS-HRS; .2 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	91.3	(RUNOFF)
18.86	2.1	(RUNOFF)
24.03	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.65 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	964.1	(NULL)
12.56	1418.9	(NULL)
12.64	1403.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.60 WATERSHED INCHES; 2857 CFS-HRS; 236.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	4.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .79 WATERSHED INCHES; 8 CFS-HRS; .7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	968.5	(NULL)
12.56	1421.8	(NULL)
12.64	1406.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.53 WATERSHED INCHES; 2865 CFS-HRS; 236.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	61.6	(RUNOFF)
24.02	1.1	(RUNOFF)

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		HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50						
		MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = .03		
HRS	SQ.MI.							
9.48	CFS	.50	.53	.57	.61	.66	.70	.75
.79								
9.96	CFS	.84	.89	.94	1.00	1.06	1.12	1.17
1.23								
10.44	CFS	1.29	1.36	1.44	1.53	1.65	1.79	1.94
2.11								
10.92	CFS	2.30	2.49	2.69	2.93	3.21	3.54	3.90
4.29								
11.40	CFS	4.70	5.14	5.62	6.36	7.55	8.94	10.44
12.37								
11.88	CFS	15.06	19.06	25.51	35.80	49.74	60.51	59.80
51.47								
12.36	CFS	41.55	33.96	28.31	24.25	21.04	18.07	15.59
13.77								
12.84	CFS	12.52	11.55	10.77	10.09	9.45	8.84	8.29
7.83								
13.32	CFS	7.43	7.07	6.71	6.37	6.02	5.70	5.41
5.18								
13.80	CFS	5.00	4.85	4.73	4.64	4.56	4.49	4.40
4.30								
14.28	CFS	4.20	4.11	4.04	3.97	3.89	3.79	3.69
3.60								
14.76	CFS	3.51	3.44	3.37	3.28	3.20	3.11	3.03
2.94								
15.24	CFS	2.86	2.80	2.76	2.74	2.72	2.72	2.70
2.67								
15.72	CFS	2.63	2.60	2.59	2.58	2.56	2.53	2.49
2.46								
16.20	CFS	2.45	2.43	2.41	2.38	2.36	2.33	2.30
2.27								
16.68	CFS	2.25	2.24	2.22	2.20	2.17	2.15	2.14
2.13								
17.16	CFS	2.09	2.05	2.02	2.01	2.00	1.98	1.94
1.91								
17.64	CFS	1.88	1.86	1.84	1.82	1.79	1.77	1.76
1.74								
18.12	CFS	1.72	1.69	1.67	1.66	1.64	1.62	1.60
1.60								
18.60	CFS	1.61	1.62	1.61	1.60	1.60	1.60	1.59
1.57								
19.08	CFS	1.56	1.55	1.55	1.54	1.54	1.54	1.54
1.54								
19.56	CFS	1.54	1.52	1.51	1.50	1.50	1.49	1.47
1.47								
20.04	CFS	1.48	1.49	1.48	1.47	1.46	1.45	1.44
1.41								
20.52	CFS	1.41	1.42	1.43	1.42	1.41	1.40	1.40
1.40								
21.00	CFS	1.38	1.37	1.36	1.35	1.35	1.35	1.35
1.35								
21.48	CFS	1.35	1.35	1.33	1.31	1.31	1.31	1.30
1.30								
21.96	CFS	1.30	1.30	1.29	1.27	1.26	1.26	1.25
1.25								
22.44	CFS	1.25	1.25	1.24	1.23	1.21	1.21	1.21
1.19								
22.92	CFS	1.18	1.17	1.19	1.19	1.19	1.17	1.16
1.16								
23.40	CFS	1.15	1.15	1.13	1.11	1.11	1.12	1.13
1.12								



23.88 CFS 1.09 1.08 1.11 1.10 .94 .65 .39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.86 WATERSHED INCHES; 66 CFS-HRS; 5.5 ACRE-
FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.31 1016.8 (NULL)
12.56 1444.7 (NULL)
12.63 1425.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.52 WATERSHED INCHES; 2931 CFS-HRS; 242.2 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 3

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.31 1016.8 (NULL)
12.56 1444.7 (NULL)
12.63 1425.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.52 WATERSHED INCHES; 2931 CFS-HRS; 242.2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.23 37.1 (RUNOFF)
18.66 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.78 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-
FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.31 1050.0 (NULL)
12.56 1460.6 (NULL)
12.63 1438.8 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50

HRS SQ.MI.	MAIN	TIME	INCREMENT =	.060 hr,	DRAINAGE AREA =	1.02		
3.36 CFS	.50	.53	.57	.62	.66	.70	.75	
.81								
3.84 CFS	.86	.92	.98	1.05	1.12	1.20	1.29	
1.38								
4.32 CFS	1.48	1.57	1.66	1.75	1.84	1.94	2.05	
2.16								
4.80 CFS	2.26	2.36	2.47	2.58	2.69	2.80	2.91	
3.02								
5.28 CFS	3.14	3.27	3.42	3.57	3.73	3.89	4.07	
4.26								
5.76 CFS	4.48	4.72	4.95	5.18	5.39	5.61	5.85	
6.13								
6.24 CFS	6.42	6.73	7.04	7.37	7.71	8.07	8.45	
8.86								
6.72 CFS	9.29	9.73	10.17	10.62	11.08	11.56	12.04	
12.54								
7.20 CFS	13.05	13.59	14.16	14.74	15.32	15.91	16.50	
17.10								
7.68 CFS	17.71	18.32	18.93	19.56	20.21	20.87	21.58	
22.31								
8.16 CFS	23.06	23.83	24.60	25.37	26.14	26.90	27.68	
28.46								
8.64 CFS	29.25	30.07	30.92	31.80	32.69	33.57	34.43	
35.28								
9.12 CFS	36.16	37.09	38.12	39.27	40.56	42.02	43.66	
45.45								
9.60 CFS	47.35	49.35	51.42	53.57	55.83	58.18	60.60	
63.06								
10.08 CFS	65.56	68.10	70.70	73.38	76.12	79.01	82.15	
85.53								
10.56 CFS	89	93	97	102	107	112	119	
126								
11.04 CFS	134	143	152	162	173	186	199	
214								
11.52 CFS	231	249	271	296	328	367	417	
478								
12.00 CFS	555	658	800	937	1023	1050	1033	
994								
12.48 CFS	1214	1441	1413	1423	1268	1229	1062	
1035								
12.96 CFS	890	868	781	691	655	597	564	
518								
13.44 CFS	490	455	422	393	367	345	324	
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13.92 CFS	289	274	261	250	240	231	223	
216								
14.40 CFS	210	204	198	193	188	184	179	
175								
14.88 CFS	170	166	162	158	154	150	147	
143								
15.36 CFS	139	136	133	130	128	126	124	
122								

15.84 CFS	121	119	118	117	115	114	113
112							
16.32 CFS	111	110	109	108	107	106	105
104							
16.80 CFS	103	102	101	100	100	99	98
97							
17.28 CFS	95.96	95.03	94.06	93.08	92.11	91.15	90.20
89.22							
17.76 CFS	88.21	87.18	86.18	85.22	84.30	83.40	82.50
81.62							
18.24 CFS	80.77	79.93	79.10	78.27	77.46	76.73	76.09
75.53							
18.72 CFS	75.05	74.67	74.38	74.12	73.83	73.53	73.22
72.90							
19.20 CFS	72.56	72.21	71.89	71.61	71.38	71.18	71.01
70.81							
19.68 CFS	70.60	70.37	70.10	69.78	69.44	69.13	68.86
68.61							
20.16 CFS	68.38	68.19	68.02	67.84	67.58	67.24	66.88
66.53							
20.64 CFS	66.19	65.88	65.62	65.42	65.24	65.03	64.78
64.52							
21.12 CFS	64.23	63.92	63.58	63.26	62.98	62.73	62.53
62.36							
21.60 CFS	62.18	61.97	61.74	61.49	61.20	60.90	60.65
60.43							
22.08 CFS	60.21	59.98	59.74	59.47	59.17	58.86	58.59
58.34							
22.56 CFS	58.12	57.89	57.64	57.38	57.10	56.76	56.40
56.07							
23.04 CFS	55.79	55.54	55.30	55.10	54.93	54.74	54.53
54.27							
23.52 CFS	53.96	53.63	53.31	53.01	52.72	52.43	52.17
51.94							
24.00 CFS	51.77	51.54	50.82	49.38	47.16	44.00	39.87
35.12							
24.48 CFS	30.34	26.00	22.30	19.28	16.90	15.13	13.84
12.92							
24.96 CFS	12.25	11.77	11.40	11.10	10.87		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.50 WATERSHED INCHES; 2973 CFS-HRS; 245.7 ACRE-FEET.

OPERATION DIVERT XSECTION 162  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.06	621.0 *	(DIVERT)
	* FIRST POINT OF FLAT	PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2494 CFS-HRS; 206.1 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	429.0	177.52
12.56	839.6	178.70
12.63	817.8	178.64

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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Dist;H1&H8UG;GHC2.04TEST

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.73 WATERSHED INCHES; 479 CFS-HRS; 39.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 73

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	429.0	(NULL)
12.56	839.6	(NULL)
12.63	817.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.73 WATERSHED INCHES; 479 CFS-HRS; 39.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 163

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	1050.0	(NULL)
12.56	1460.6	(NULL)
12.63	1438.8	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02  
SQ.MI.

HRS	3.36	3.84	4.32	4.80	5.28	5.76	6.24	6.72	7.20	7.68	8.16	8.64
CFS	.50	.86	1.48	2.26	3.14	4.48	6.42	9.29	13.05	17.71	23.06	29.25
	.53	.92	1.57	2.36	3.27	4.72	6.73	9.73	13.59	18.32	23.83	30.07
	.57	.98	1.66	2.47	3.42	4.95	7.04	10.17	14.16	18.93	24.60	30.92
	.62	1.05	1.75	2.58	3.57	5.18	7.37	10.62	14.74	19.56	25.37	31.80
	.66	1.12	1.84	2.69	3.73	5.39	7.71	11.08	15.32	20.21	26.14	32.69
	.70	1.20	1.94	2.80	3.89	5.61	8.07	11.56	15.91	20.87	26.90	33.57
	.75	1.29	2.05	2.91	4.07	5.85	8.45	12.04	16.50	21.58	27.68	34.43
	.81	1.38	2.16	3.02	4.26	6.13	8.86	12.54	17.10	22.31	28.46	35.28

9.12 CFS	36.16	37.09	38.12	39.27	40.56	42.02	43.66
45.45							
9.60 CFS	47.35	49.35	51.42	53.57	55.83	58.18	60.60
63.06							
10.08 CFS	65.56	68.10	70.70	73.38	76.12	79.01	82.15
85.53							
10.56 CFS	89	93	97	102	107	112	119
126							
11.04 CFS	134	143	152	162	173	186	199
214							
11.52 CFS	231	249	271	296	328	367	417
478							
12.00 CFS	555	658	800	937	1023	1050	1033
994							
12.48 CFS	1214	1441	1413	1423	1268	1229	1062
1035							
12.96 CFS	890	868	781	691	655	597	564
518							
13.44 CFS	490	455	422	393	367	345	324
306							
13.92 CFS	289	274	261	250	240	231	223
216							
14.40 CFS	210	204	198	193	188	184	179
175							
14.88 CFS	170	166	162	158	154	150	147
143							
15.36 CFS	139	136	133	130	128	126	124
122							

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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15.84 CFS	121	119	118	117	115	114	113
112							
16.32 CFS	111	110	109	108	107	106	105
104							
16.80 CFS	103	102	101	100	100	99	98
97							
17.28 CFS	95.96	95.03	94.06	93.08	92.11	91.15	90.20
89.22							
17.76 CFS	88.21	87.18	86.18	85.22	84.30	83.40	82.50
81.62							
18.24 CFS	80.77	79.93	79.10	78.27	77.46	76.73	76.09
75.53							
18.72 CFS	75.05	74.67	74.38	74.12	73.83	73.53	73.22
72.90							
19.20 CFS	72.56	72.21	71.89	71.61	71.38	71.18	71.01
70.81							
19.68 CFS	70.60	70.37	70.10	69.78	69.44	69.13	68.86
68.61							
20.16 CFS	68.38	68.19	68.02	67.84	67.58	67.24	66.88
66.53							
20.64 CFS	66.19	65.88	65.62	65.42	65.24	65.03	64.78
64.52							
21.12 CFS	64.23	63.92	63.58	63.26	62.98	62.73	62.53
62.36							
21.60 CFS	62.18	61.97	61.74	61.49	61.20	60.90	60.65
60.43							

22.08	CFS	60.21	59.98	59.74	59.47	59.17	58.86	58.59
58.34								
22.56	CFS	58.12	57.89	57.64	57.38	57.10	56.76	56.40
56.07								
23.04	CFS	55.79	55.54	55.30	55.10	54.93	54.74	54.53
54.27								
23.52	CFS	53.96	53.63	53.31	53.01	52.72	52.43	52.17
51.94								
24.00	CFS	51.77	51.54	50.82	49.38	47.16	44.00	39.87
35.12								
24.48	CFS	30.34	26.00	22.30	19.28	16.90	15.13	13.84
12.92								
24.96	CFS	12.25	11.77	11.40	11.10	10.87		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.50 WATERSHED INCHES; 2973 CFS-HRS; 245.7 ACRE-FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.43	1013.6	250.44
12.71	1390.0	250.87

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.51 WATERSHED INCHES; 2977 CFS-HRS; 246.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	25.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.41 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.57	19.3	335.25

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.41 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.67	19.0	300.92
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.41 WATERSHED INCHES;	38 CFS-HRS;	3.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	109.3	(RUNOFF)
23.10	2.1	(RUNOFF)
24.03	2.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.83 WATERSHED INCHES;	113 CFS-HRS;	9.4 ACRE-
FEET.		

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	52.1	296.06
23.12	2.0	287.56
24.04	1.9	287.55
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.83 WATERSHED INCHES;	113 CFS-HRS;	9.4 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	67.2	(NULL)
20.86	3.1	(NULL)
24.04	2.5	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.13 WATERSHED INCHES;	151 CFS-HRS;	12.5 ACRE-

FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	205.6	(RUNOFF)
21.45	4.1	(RUNOFF)
24.03	3.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.15 WATERSHED INCHES; 208 CFS-HRS; 17.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	234.2	(NULL)
18.87	8.4	(NULL)
20.87	7.3	(NULL)
23.10	6.2	(NULL)
24.03	5.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.14 WATERSHED INCHES; 360 CFS-HRS; 29.7 ACRE-  
FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.47	171.3	248.99
24.15	5.8	247.73

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.14 WATERSHED INCHES; 360 CFS-HRS; 29.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	45.5	(RUNOFF)
15.83	1.3	(RUNOFF)
17.33	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.90 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
FEET.

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OPERATION RESVOR      STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	27.4	267.40
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.90 WATERSHED INCHES;	38 CFS-HRS;	3.1 ACRE-
FEET.		

OPERATION REACH      XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	25.6	248.04
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.91 WATERSHED INCHES;	38 CFS-HRS;	3.1 ACRE-
FEET.		

OPERATION RUNOFF      XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	237.2	(RUNOFF)
15.84	9.7	(RUNOFF)
17.34	7.6	(RUNOFF)
18.86	6.1	(RUNOFF)
21.45	5.1	(RUNOFF)
24.01	4.3	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .11 SQ.MI.

HRS								
9.60 CFS	.49	.61	.73	.86	1.00	1.13	1.27	
1.43								
10.08 CFS	1.60	1.78	1.96	2.13	2.32	2.51	2.72	
2.94								
10.56 CFS	3.20	3.51	3.89	4.33	4.82	5.35	5.93	
6.54								
11.04 CFS	7.19	8.00	8.96	10.08	11.28	12.57	14.01	
15.50								
11.52 CFS	17.15	20.19	25.09	30.06	35.22	43.00	54.20	
70.81								
12.00 CFS	99	145	208	237	207	161	128	
104								
12.48 CFS	87.51	77.29	67.40	57.39	50.08	45.64	42.48	
39.91								
12.96 CFS	37.67	35.43	33.20	31.06	29.25	27.85	26.52	
25.25								
13.44 CFS	24.00	22.74	21.53	20.36	19.41	18.71	18.15	
17.71								
13.92 CFS	17.37	17.10	16.86	16.56	16.22	15.83	15.47	
15.19								
14.40 CFS	14.94	14.69	14.36	13.99	13.60	13.25	12.98	
12.73								
14.88 CFS	12.44	12.11	11.79	11.50	11.15	10.81	10.53	
10.36								
15.36 CFS	10.28	10.24	10.23	10.21	10.13	9.99	9.81	
9.72								

15.84 CFS	9.74	9.72	9.61	9.45	9.31	9.23	9.19
9.15							
16.32 CFS	9.04	8.93	8.85	8.74	8.60	8.52	8.48
8.45							
16.80 CFS	8.36	8.24	8.15	8.12	8.08	7.99	7.84
7.66							
17.28 CFS	7.56	7.58	7.56	7.44	7.27	7.12	7.04
7.00							
17.76 CFS	6.95	6.84	6.72	6.66	6.62	6.58	6.47
6.35							
18.24 CFS	6.28	6.25	6.20	6.09	6.04	6.09	6.16
6.16							

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18.72 CFS	6.08	6.03	6.08	6.07	5.99	5.92	5.89
5.88							
19.20 CFS	5.87	5.87	5.87	5.87	5.87	5.87	5.84
5.74							
19.68 CFS	5.68	5.72	5.71	5.63	5.56	5.59	5.68
5.70							
20.16 CFS	5.63	5.56	5.54	5.51	5.42	5.33	5.35
5.42							
20.64 CFS	5.46	5.40	5.32	5.34	5.37	5.29	5.22
5.17							
21.12 CFS	5.16	5.15	5.14	5.14	5.14	5.14	5.15
5.13							
21.60 CFS	5.05	4.96	4.98	5.00	4.94	4.94	4.99
4.95							
22.08 CFS	4.87	4.81	4.79	4.78	4.77	4.77	4.77
4.77							
22.56 CFS	4.74	4.64	4.58	4.62	4.60	4.52	4.45
4.48							
23.04 CFS	4.57	4.58	4.51	4.45	4.42	4.40	4.40
4.36							
23.52 CFS	4.26	4.19	4.25	4.32	4.33	4.24	4.13
4.11							
24.00 CFS	4.33	4.25	3.08	1.66	.80	.39	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.26 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	1122.3	(NULL)
12.71	1441.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.39 WATERSHED INCHES; 3209 CFS-HRS; 265.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 75



18.66 CFS	9.46	9.41	9.38	9.34	9.29	9.25	9.22
9.18							
19.14 CFS	9.13	9.07	9.02	8.98	8.95	8.92	8.90
8.88							
19.62 CFS	8.86	8.84	8.80	8.75	8.71	8.68	8.64
8.58							
20.10 CFS	8.54	8.53	8.53	8.51	8.48	8.44	8.40
8.35							
20.58 CFS	8.28	8.23	8.20	8.19	8.17	8.13	8.10
8.08							
21.06 CFS	8.05	8.01	7.95	7.91	7.86	7.83	7.80
7.78							
21.54 CFS	7.76	7.74	7.72	7.69	7.64	7.60	7.56
7.53							
22.02 CFS	7.50	7.49	7.47	7.43	7.38	7.34	7.30
7.26							
22.50 CFS	7.23	7.21	7.19	7.16	7.12	7.07	7.02
6.99							
22.98 CFS	6.94	6.89	6.85	6.83	6.82	6.81	6.77
6.73							
23.46 CFS	6.70	6.67	6.63	6.58	6.52	6.48	6.46
6.45							
23.94 CFS	6.43	6.38	6.33	6.33	6.29	5.99	5.38
4.60							
24.42 CFS	3.83	3.14	2.56	2.07	1.66	1.33	1.06
.85							
24.90 CFS	.67	.52	.42				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.20 WATERSHED INCHES; 397 CFS-HRS; 32.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.40	1309.5	(NULL)
12.70	1606.8	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28  
 SQ.MI.

HRS	3.42 CFS	.46	.50	.54	.58	.62	.66	.71
	.76							
	3.90 CFS	.81	.87	.92	.99	1.06	1.13	1.22
	1.30							
	4.38 CFS	1.39	1.49	1.57	1.66	1.75	1.85	1.96
	2.06							
	4.86 CFS	2.17	2.27	2.37	2.48	2.59	2.70	2.82
	2.94							
	5.34 CFS	3.06	3.19	3.33	3.48	3.63	3.80	3.97
	4.16							
	5.82 CFS	4.37	4.60	4.83	5.07	5.30	5.53	5.77
	6.03							
	6.30 CFS	6.32	6.62	6.94	7.26	7.60	7.96	8.34
	8.74							
	6.78 CFS	9.16	9.60	10.05	10.50	10.97	11.45	11.94
	12.44							
	7.26 CFS	12.95	13.49	14.05	14.64	15.23	15.84	16.46
	17.09							
	7.74 CFS	17.74	18.39	19.05	19.72	20.41	21.13	21.87
	22.64							
	8.22 CFS	23.43	24.26	25.10	25.95	26.80	27.65	28.52

29.39								
8.70 CFS	30.28	31.19	32.12	33.08	34.07	35.05	36.03	
37.00								
9.18 CFS	38.00	39.05	40.19	41.47	42.90	44.49	46.26	
48.21								
9.66 CFS	50.31	52.55	54.89	57.35	59.92	62.59	65.36	
68.21								
10.14 CFS	71.14	74.12	77.17	80.30	83.51	86.85	90.40	
94.20								
10.62 CFS	98	103	108	113	118	125	132	
140								
11.10 CFS	149	159	170	181	194	209	224	
242								
11.58 CFS	262	285	312	343	381	431	494	
582								

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist;H1&H8UG;GHC2.04TEST

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12.06 CFS	701	864	1032	1161	1253	1304	1307	
1279								
12.54 CFS	1375	1531	1582	1603	1525	1461	1337	
1258								
13.02 CFS	1140	1067	982	889	822	756	705	
653								
13.50 CFS	611	571	532	497	465	437	412	
389								
13.98 CFS	369	351	335	321	308	297	287	
278								
14.46 CFS	270	262	256	249	243	237	231	
226								
14.94 CFS	220	215	210	204	199	194	189	
184								
15.42 CFS	179	174	170	166	162	158	155	
153								
15.90 CFS	151	149	147	145	143	141	140	
138								
16.38 CFS	137	136	134	133	131	130	129	
127								
16.86 CFS	126	125	124	123	122	120	119	
118								
17.34 CFS	117	116	115	113	112	111	110	
108								
17.82 CFS	107	106	105	104	102	101	100	
99								
18.30 CFS	97.93	96.90	95.83	94.83	93.94	93.13	92.35	
91.60								
18.78 CFS	90.97	90.50	90.07	89.64	89.25	88.87	88.50	
88.13								
19.26 CFS	87.75	87.37	87.01	86.68	86.39	86.11	85.80	
85.52								
19.74 CFS	85.31	85.03	84.66	84.28	83.95	83.68	83.36	
83.01								
20.22 CFS	82.70	82.43	82.18	81.87	81.51	81.19	80.87	
80.51								
20.70 CFS	80.09	79.68	79.39	79.14	78.83	78.52	78.22	
77.90								
21.18 CFS	77.58	77.23	76.88	76.52	76.19	75.90	75.63	

75.33								
21.66	CFS	75.04	74.82	74.57	74.24	73.94	73.68	73.35
73.00								
22.14	CFS	72.70	72.41	72.11	71.81	71.49	71.16	70.85
70.53								
22.62	CFS	70.16	69.84	69.59	69.28	68.88	68.48	68.12
67.83								
23.10	CFS	67.50	67.13	66.80	66.53	66.28	66.05	65.77
65.40								
23.58	CFS	65.03	64.73	64.43	64.09	63.68	63.28	62.95
62.87								
24.06	CFS	62.54	61.15	59.21	57.06	54.41	51.00	46.81
42.00								
24.54	CFS	36.95	32.06	27.63	23.79	20.61	18.08	16.13
14.65								
25.02	CFS	13.56	12.75	12.15	11.68			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.37 WATERSHED INCHES; 3606 CFS-HRS; 298.0 ACRE-FEET.

OPERATION DIVERT XSECTION 176  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.06	691.0 *	(DIVERT)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2942 CFS-HRS; 243.1 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

1 TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist;H1&H8UG;GHC2.04TEST

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.40	618.5	178.13
12.70	915.8	178.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .80 WATERSHED INCHES; 665 CFS-HRS; 54.9 ACRE-FEET.

OPERATION RESVOR STRUCTURE 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.40	618.5	(NULL)
12.70	915.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

.80 WATERSHED INCHES; 665 CFS-HRS; 54.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 177

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.40	1309.5	(NULL)
12.70	1606.8	(NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28							
	3.42	3.90	4.38	4.86	5.34	5.82	6.30	6.78
3.42 CFS	.46	.50	.54	.58	.62	.66	.71	.76
3.90 CFS	.81	.87	.92	.99	1.06	1.13	1.22	1.30
4.38 CFS	1.39	1.49	1.57	1.66	1.75	1.85	1.96	2.06
4.86 CFS	2.17	2.27	2.37	2.48	2.59	2.70	2.82	2.94
5.34 CFS	3.06	3.19	3.33	3.48	3.63	3.80	3.97	4.16
5.82 CFS	4.37	4.60	4.83	5.07	5.30	5.53	5.77	6.03
6.30 CFS	6.32	6.62	6.94	7.26	7.60	7.96	8.34	8.74
6.78 CFS	9.16	9.60	10.05	10.50	10.97	11.45	11.94	12.44
7.26 CFS	12.95	13.49	14.05	14.64	15.23	15.84	16.46	17.09
7.74 CFS	17.74	18.39	19.05	19.72	20.41	21.13	21.87	22.64
8.22 CFS	23.43	24.26	25.10	25.95	26.80	27.65	28.52	29.39
8.70 CFS	30.28	31.19	32.12	33.08	34.07	35.05	36.03	37.00
9.18 CFS	38.00	39.05	40.19	41.47	42.90	44.49	46.26	48.21
9.66 CFS	50.31	52.55	54.89	57.35	59.92	62.59	65.36	68.21
10.14 CFS	71.14	74.12	77.17	80.30	83.51	86.85	90.40	94.20
10.62 CFS	98	103	108	113	118	125	132	140
11.10 CFS	149	159	170	181	194	209	224	242
11.58 CFS	262	285	312	343	381	431	494	582
12.06 CFS	701	864	1032	1161	1253	1304	1307	1279
12.54 CFS	1375	1531	1582	1603	1525	1461	1337	1258
13.02 CFS	1140	1067	982	889	822	756	705	653
13.50 CFS	611	571	532	497	465	437	412	389
13.98 CFS	369	351	335	321	308	297	287	278
14.46 CFS	270	262	256	249	243	237	231	226

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14.94 CFS	220	215	210	204	199	194	189
184							
15.42 CFS	179	174	170	166	162	158	155
153							
15.90 CFS	151	149	147	145	143	141	140
138							
16.38 CFS	137	136	134	133	131	130	129
127							
16.86 CFS	126	125	124	123	122	120	119
118							
17.34 CFS	117	116	115	113	112	111	110
108							
17.82 CFS	107	106	105	104	102	101	100
99							
18.30 CFS	97.93	96.90	95.83	94.83	93.94	93.13	92.35
91.60							
18.78 CFS	90.97	90.50	90.07	89.64	89.25	88.87	88.50
88.13							
19.26 CFS	87.75	87.37	87.01	86.68	86.39	86.11	85.80
85.52							
19.74 CFS	85.31	85.03	84.66	84.28	83.95	83.68	83.36
83.01							
20.22 CFS	82.70	82.43	82.18	81.87	81.51	81.19	80.87
80.51							
20.70 CFS	80.09	79.68	79.39	79.14	78.83	78.52	78.22
77.90							
21.18 CFS	77.58	77.23	76.88	76.52	76.19	75.90	75.63
75.33							
21.66 CFS	75.04	74.82	74.57	74.24	73.94	73.68	73.35
73.00							
22.14 CFS	72.70	72.41	72.11	71.81	71.49	71.16	70.85
70.53							
22.62 CFS	70.16	69.84	69.59	69.28	68.88	68.48	68.12
67.83							
23.10 CFS	67.50	67.13	66.80	66.53	66.28	66.05	65.77
65.40							
23.58 CFS	65.03	64.73	64.43	64.09	63.68	63.28	62.95
62.87							
24.06 CFS	62.54	61.15	59.21	57.06	54.41	51.00	46.81
42.00							
24.54 CFS	36.95	32.06	27.63	23.79	20.61	18.08	16.13
14.65							
25.02 CFS	13.56	12.75	12.15	11.68			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.37 WATERSHED INCHES; 3606 CFS-HRS; 298.0 ACRE-  
FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.46	1309.3	230.80
12.76	1606.3	231.15



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.36 WATERSHED INCHES; 3603 CFS-HRS; 297.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK (RUNOFF)
12.17	133.1	(RUNOFF)
15.84	5.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.01	2.2	(RUNOFF)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50							
	MAIN	TIME	INCREMENT = .060 hr,	DRAINAGE AREA = .05				
8.82 CFS .79	.48	.51	.55	.59	.64	.69	.73	
9.30 CFS 1.39	.86	.93	1.00	1.07	1.13	1.21	1.30	
9.78 CFS 2.20	1.48	1.57	1.66	1.75	1.86	1.97	2.09	
10.26 CFS 3.45	2.31	2.42	2.53	2.67	2.81	2.97	3.19	

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10.74 CFS 6.77	3.75	4.09	4.44	4.82	5.21	5.63	6.15	
11.22 CFS 16.76	7.47	8.22	9.01	9.88	10.77	11.74	13.66	
11.70 CFS 120	20	23	27	34	44	60	86	
12.18 CFS 35	133	112	85	67	54	45	40	
12.66 CFS 17.15	29.53	25.82	23.63	22.02	20.68	19.50	18.32	
13.14 CFS 11.06	16.02	15.09	14.36	13.67	13.01	12.36	11.69	
13.62 CFS 8.67	10.46	9.97	9.61	9.33	9.10	8.93	8.79	
14.10 CFS 7.36	8.51	8.32	8.12	7.94	7.79	7.66	7.53	
14.58 CFS 6.02	7.16	6.95	6.78	6.64	6.51	6.36	6.19	
15.06 CFS 5.23	5.87	5.69	5.51	5.37	5.29	5.25	5.23	
15.54 CFS 4.90	5.22	5.17	5.09	5.00	4.96	4.97	4.96	
16.02 CFS 4.50	4.81	4.74	4.70	4.68	4.66	4.60	4.54	
16.50 CFS 4.14	4.44	4.38	4.33	4.31	4.30	4.25	4.19	
16.98 CFS 3.84	4.13	4.11	4.06	3.98	3.88	3.84	3.85	
17.46 CFS	3.77	3.68	3.61	3.57	3.55	3.53	3.47	

3.41								
17.94	CFS	3.37	3.36	3.33	3.27	3.21	3.18	3.17
3.14								
18.42	CFS	3.09	3.06	3.09	3.12	3.12	3.08	3.06
3.08								
18.90	CFS	3.07	3.03	3.00	2.98	2.97	2.97	2.97
2.97								
19.38	CFS	2.97	2.97	2.97	2.95	2.90	2.87	2.90
2.89								
19.86	CFS	2.84	2.81	2.83	2.88	2.88	2.84	2.81
2.80								
20.34	CFS	2.78	2.73	2.69	2.70	2.74	2.76	2.72
2.68								
20.82	CFS	2.70	2.71	2.67	2.63	2.61	2.60	2.60
2.60								
21.30	CFS	2.59	2.59	2.60	2.60	2.59	2.54	2.50
2.51								
21.78	CFS	2.52	2.49	2.49	2.52	2.49	2.45	2.42
2.41								
22.26	CFS	2.41	2.40	2.40	2.40	2.40	2.39	2.33
2.30								
22.74	CFS	2.33	2.32	2.27	2.24	2.26	2.31	2.31
2.27								
23.22	CFS	2.24	2.22	2.22	2.21	2.19	2.14	2.11
2.14								
23.70	CFS	2.18	2.18	2.13	2.07	2.07	2.18	2.13
1.50								
24.18	CFS	.78	.36					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.89 WATERSHED INCHES; 128 CFS-HRS; 10.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.44	1360.4	(NULL)
12.76	1630.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.34 WATERSHED INCHES; 3731 CFS-HRS; 308.3 ACRE-FEET.

OPERATION REACH XSECTION 80

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.52	1354.2	216.73
12.83	1622.9	217.33

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

4.35 WATERSHED INCHES; 3732 CFS-HRS; 308.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.17	76.0	(RUNOFF)
17.34	2.3	(RUNOFF)
24.01	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.55 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.51	1378.0	179.86
12.83	1635.6	180.38

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.33 WATERSHED INCHES; 3804 CFS-HRS; 314.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.15	148.3	(RUNOFF)
15.84	5.1	(RUNOFF)
19.47	3.1	(RUNOFF)
24.00	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.06 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 84

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.24	156.7	(RUNOFF)
20.12	4.1	(RUNOFF)
24.01	3.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.96 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-  
FEET.

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OPERATION DIVERT XSECTION 184  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	118.0 *	(DIVERT)
20.12	4.1	(DIVERT)
24.01	3.0	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
178 CFS-HRS; 14.7 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	38.7	175.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.14 WATERSHED INCHES; 7 CFS-HRS; .6 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 81, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 200.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 81

\*\*\* MESSAGE - STRUCTURE 81, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.14 WATERSHED INCHES; 291 CFS-HRS; .6 ACRE-FEET.

OPERATION ADDHYD XSECTION 185

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	118.0 *	(NULL)
20.12	4.1	(NULL)
24.01	3.0	(NULL)

\* FIRST POINT OF FLAT PEAK

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.81 WATERSHED INCHES; 178 CFS-HRS; 14.7 ACRE-

FEET.

OPERATION RUNOFF XSECTION 186

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.25	77.3	(RUNOFF)
21.94	2.0	(RUNOFF)
24.01	1.7	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.09 WATERSHED INCHES; FEET.		92 CFS-HRS; 7.6 ACRE-

OPERATION ADDHYD XSECTION 187

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.25	195.3	(NULL)
20.68	6.1	(NULL)
23.12	5.1	(NULL)
24.01	4.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.53 WATERSHED INCHES; FEET.		271 CFS-HRS; 22.4 ACRE-

OPERATION ADDHYD XSECTION 85

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.17	331.9	(NULL)
18.83	10.1	(NULL)
20.07	9.4	(NULL)
21.95	8.2	(NULL)
23.74	7.1	(NULL)
24.00	7.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .17 SQ.MI.

HRS	8.10	8.58	9.06	9.54	10.02	10.50	10.98	11.46	11.94	12.42
8.10 CFS	.44	.51	.58	.65	.74	.82	.89			
.97										
8.58 CFS	1.06	1.16	1.25	1.34	1.42	1.50	1.59			
1.70										
9.06 CFS	1.81	1.92	2.05	2.19	2.36	2.53	2.70			
2.87										
9.54 CFS	3.04	3.25	3.47	3.72	3.98	4.24	4.51			
4.79										
10.02 CFS	5.09	5.42	5.77	6.12	6.46	6.80	7.16			
7.55										
10.50 CFS	7.98	8.46	9.06	9.77	10.60	11.55	12.57			
13.67										
10.98 CFS	14.82	16.05	17.55	19.28	21.26	23.41	25.73			
28.30										
11.46 CFS	30.95	33.84	38.93	46.63	54.46	63.54	76.10			
93.20										
11.94 CFS	119	161	226	314	331	301	271			
245										
12.42 CFS	213	180	157	135	116	102	90			
82										

12.90	CFS	75.05	69.60	64.75	60.23	56.16	52.69	49.75
47.14								

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13.38	CFS	44.73	42.45	40.21	38.08	36.05	34.29	32.85
31.65								
13.86	CFS	30.69	29.92	29.30	28.77	28.22	27.64	27.02
26.42								
14.34	CFS	25.90	25.42	24.95	24.43	23.85	23.23	22.66
22.15								
14.82	CFS	21.68	21.19	20.65	20.13	19.62	19.05	18.50
18.02								
15.30	CFS	17.65	17.41	17.25	17.16	17.09	16.96	16.76
16.52								
15.78	CFS	16.36	16.31	16.22	16.07	15.86	15.66	15.50
15.40								
16.26	CFS	15.29	15.13	14.97	14.83	14.65	14.45	14.30
14.20								
16.74	CFS	14.11	13.97	13.80	13.67	13.57	13.49	13.35
13.15								
17.22	CFS	12.90	12.73	12.68	12.58	12.43	12.21	12.00
11.84								
17.70	CFS	11.72	11.61	11.45	11.29	11.16	11.07	10.97
10.81								
18.18	CFS	10.65	10.53	10.44	10.34	10.19	10.11	10.12
10.16								
18.66	CFS	10.17	10.09	10.05	10.07	10.03	9.94	9.87
9.80								
19.14	CFS	9.76	9.74	9.72	9.71	9.71	9.71	9.71
9.67								
19.62	CFS	9.55	9.48	9.49	9.44	9.34	9.27	9.28
9.36								
20.10	CFS	9.36	9.30	9.24	9.19	9.13	9.01	8.90
8.89								
20.58	CFS	8.94	8.96	8.91	8.84	8.85	8.84	8.76
8.68								
21.06	CFS	8.61	8.56	8.52	8.51	8.50	8.49	8.49
8.49								
21.54	CFS	8.46	8.36	8.26	8.26	8.23	8.17	8.19
8.21								
22.02	CFS	8.16	8.07	8.00	7.95	7.91	7.89	7.88
7.87								
22.50	CFS	7.86	7.82	7.70	7.63	7.64	7.58	7.49
7.41								
22.98	CFS	7.42	7.49	7.50	7.44	7.38	7.32	7.28
7.26								
23.46	CFS	7.20	7.07	7.00	7.03	7.07	7.08	7.00
6.88								
23.94	CFS	6.84	7.06	6.89	5.57	3.97	2.65	1.65
1.02								
24.42	CFS	.63	.39					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.69 WATERSHED INCHES; 405 CFS-HRS; 33.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.47	1554.9	(NULL)
12.82	1719.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.26 WATERSHED INCHES; 4209 CFS-HRS; 347.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	64.3	(RUNOFF)
20.04	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.67 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.46	1571.0	(NULL)
12.82	1727.4	(NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50							
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55							
3.60 CFS	.49	.54	.58	.63	.68	.74	.79	
.85								
4.08 CFS	.91	.98	1.05	1.13	1.21	1.30	1.39	
1.49								
4.56 CFS	1.59	1.68	1.78	1.88	1.99	2.10	2.21	
2.33								
5.04 CFS	2.44	2.55	2.66	2.78	2.90	3.02	3.14	
3.27								
5.52 CFS	3.42	3.57	3.72	3.88	4.05	4.21	4.41	
4.63								
6.00 CFS	4.87	5.12	5.36	5.60	5.84	6.09	6.36	
6.66								
6.48 CFS	6.97	7.30	7.64	7.99	8.34	8.73	9.15	
9.58								
6.96 CFS	10.02	10.48	10.96	11.45	11.94	12.44	12.95	
13.48								
7.44 CFS	14.03	14.61	15.21	15.84	16.49	17.16	17.85	
18.55								
7.92 CFS	19.29	20.04	20.81	21.61	22.43	23.27	24.16	

25.10							
8.40 CFS	26.03	26.98	27.97	28.97	29.99	31.01	32.03
33.07							
8.88 CFS	34.11	35.20	36.36	37.56	38.74	39.95	41.20
42.51							
9.36 CFS	43.87	45.31	46.88	48.59	50.53	52.67	55.03
57.55							
9.84 CFS	60.20	62.97	65.88	68.94	72.15	75.49	78.91
82.38							
10.32 CFS	86	90	93	97	101	106	111
116							
10.80 CFS	122	129	136	143	152	161	172
184							
11.28 CFS	197	212	228	245	264	288	318
351							
11.76 CFS	389	436	495	574	692	862	1094
1256							
12.24 CFS	1364	1458	1527	1564	1570	1545	1491
1538							
12.72 CFS	1658	1707	1723	1654	1583	1462	1370
1251							
13.20 CFS	1166	1077	982	907	837	779	724
677							
13.68 CFS	633	592	554	520	490	464	440
418							
14.16 CFS	399	381	366	352	340	329	319
310							
14.64 CFS	301	293	286	279	272	265	259
253							
15.12 CFS	246	240	234	228	223	217	212
207							
15.60 CFS	202	197	193	189	185	182	179
176							
16.08 CFS	174	172	170	168	166	164	162
161							
16.56 CFS	159	157	156	154	153	151	150
148							
17.04 CFS	147	145	144	142	141	140	138
137							
17.52 CFS	136	134	132	131	130	128	127
125							
18.00 CFS	124	122	121	120	118	117	116
114							
18.48 CFS	113	112	111	110	109	109	108
107							
18.96 CFS	106	106	105	105	104	104	104
103							
19.44 CFS	103	103	102	102	101	101	101
100							
19.92 CFS	99.86	99.52	99.28	98.97	98.59	98.17	97.73
97.32							
20.40 CFS	96.85	96.40	96.08	95.82	95.57	95.16	94.68
94.28							
20.88 CFS	93.86	93.43	93.02	92.60	92.21	91.86	91.52
91.19							
21.36 CFS	90.84	90.48	90.13	89.76	89.30	88.85	88.54
88.22							
21.84 CFS	87.89	87.66	87.40	87.02	86.61	86.16	85.72
85.36							
22.32 CFS	85.04	84.73	84.42	84.09	83.70	83.18	82.73
82.39							
22.80 CFS	81.99	81.58	81.14	80.77	80.50	80.16	79.76
79.32							



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23.28 CFS	78.86	78.47	78.15	77.81	77.36	76.96	76.65
76.38							
23.76 CFS	76.10	75.65	75.11	74.64	74.60	74.04	71.76
68.68							
24.24 CFS	65.18	61.77	58.76	55.68	52.12	47.90	43.12
38.06							
24.72 CFS	33.11	28.58	24.62	21.29	18.62	16.55	14.97
13.80							
25.20 CFS	12.93						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.27 WATERSHED INCHES; 4267 CFS-HRS; 352.7 ACRE-  
FEET.

OPERATION DIVERT XSECTION 81  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.06	730.0 *	178.42
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3356 CFS-HRS; 277.4 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.46	841.0	178.70
12.82	997.4	179.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.91 WATERSHED INCHES; 911 CFS-HRS; 75.3 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.46	841.0	(NULL)
12.82	997.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.91 WATERSHED INCHES; 911 CFS-HRS; 75.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 89

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)

12.46	1571.0	(NULL)
12.82	1727.4	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55  
 SQ.MI.  
 3.60 CFS .49 .54 .58 .63 .68 .74 .79  
 .85

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4.08 CFS	.91	.98	1.05	1.13	1.21	1.30	1.39
1.49							
4.56 CFS	1.59	1.68	1.78	1.88	1.99	2.10	2.21
2.33							
5.04 CFS	2.44	2.55	2.66	2.78	2.90	3.02	3.14
3.27							
5.52 CFS	3.42	3.57	3.72	3.88	4.05	4.21	4.41
4.63							
6.00 CFS	4.87	5.12	5.36	5.60	5.84	6.09	6.36
6.66							
6.48 CFS	6.97	7.30	7.64	7.99	8.34	8.73	9.15
9.58							
6.96 CFS	10.02	10.48	10.96	11.45	11.94	12.44	12.95
13.48							
7.44 CFS	14.03	14.61	15.21	15.84	16.49	17.16	17.85
18.55							
7.92 CFS	19.29	20.04	20.81	21.61	22.43	23.27	24.16
25.10							
8.40 CFS	26.03	26.98	27.97	28.97	29.99	31.01	32.03
33.07							
8.88 CFS	34.11	35.20	36.36	37.56	38.74	39.95	41.20
42.51							
9.36 CFS	43.87	45.31	46.88	48.59	50.53	52.67	55.03
57.55							
9.84 CFS	60.20	62.97	65.88	68.94	72.15	75.49	78.91
82.38							
10.32 CFS	86	90	93	97	101	106	111
116							
10.80 CFS	122	129	136	143	152	161	172
184							
11.28 CFS	197	212	228	245	264	288	318
351							
11.76 CFS	389	436	495	574	692	862	1094
1256							
12.24 CFS	1364	1458	1527	1564	1570	1545	1491
1538							
12.72 CFS	1658	1707	1723	1654	1583	1462	1370
1251							
13.20 CFS	1166	1077	982	907	837	779	724
677							
13.68 CFS	633	592	554	520	490	464	440
418							
14.16 CFS	399	381	366	352	340	329	319
310							
14.64 CFS	301	293	286	279	272	265	259
253							

15.12 CFS	246	240	234	228	223	217	212
207							
15.60 CFS	202	197	193	189	185	182	179
176							
16.08 CFS	174	172	170	168	166	164	162
161							
16.56 CFS	159	157	156	154	153	151	150
148							
17.04 CFS	147	145	144	142	141	140	138
137							
17.52 CFS	136	134	132	131	130	128	127
125							
18.00 CFS	124	122	121	120	118	117	116
114							
18.48 CFS	113	112	111	110	109	109	108
107							
18.96 CFS	106	106	105	105	104	104	104
103							
19.44 CFS	103	103	102	102	101	101	101
100							
19.92 CFS	99.86	99.52	99.28	98.97	98.59	98.17	97.73
97.32							
20.40 CFS	96.85	96.40	96.08	95.82	95.57	95.16	94.68
94.28							
20.88 CFS	93.86	93.43	93.02	92.60	92.21	91.86	91.52
91.19							
21.36 CFS	90.84	90.48	90.13	89.76	89.30	88.85	88.54
88.22							
21.84 CFS	87.89	87.66	87.40	87.02	86.61	86.16	85.72
85.36							
22.32 CFS	85.04	84.73	84.42	84.09	83.70	83.18	82.73
82.39							
22.80 CFS	81.99	81.58	81.14	80.77	80.50	80.16	79.76
79.32							
23.28 CFS	78.86	78.47	78.15	77.81	77.36	76.96	76.65
76.38							
23.76 CFS	76.10	75.65	75.11	74.64	74.60	74.04	71.76
68.68							
24.24 CFS	65.18	61.77	58.76	55.68	52.12	47.90	43.12
38.06							
24.72 CFS	33.11	28.58	24.62	21.29	18.62	16.55	14.97
13.80							
25.20 CFS	12.93						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.27 WATERSHED INCHES; 4267 CFS-HRS; 352.7 ACRE-  
 FEET.

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EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 5

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 89  
 STARTING TIME = .00 RAIN DEPTH = 8.47 RAIN DURATION = 1.00

ANT. RUNOFF COND. = 2                      MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1                         STORM NO. =99                      RAIN TABLE NO. = 9

OPERATION RUNOFF    XSECTION    1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	99.6	(RUNOFF)
20.13	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.18 WATERSHED INCHES;    134 CFS-HRS;    11.1 ACRE-FEET.

OPERATION REACH    XSECTION    2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	99.4	390.78
20.19	2.5	389.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.18 WATERSHED INCHES;    134 CFS-HRS;    11.1 ACRE-FEET.

OPERATION RUNOFF    XSECTION    3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	175.5	(RUNOFF)
20.68	4.1	(RUNOFF)
23.97	3.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.00 WATERSHED INCHES;    225 CFS-HRS;    18.6 ACRE-FEET.

OPERATION ADDHYD    XSECTION    4

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	270.3	(NULL)
20.14	6.8	(NULL)
23.12	5.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.07 WATERSHED INCHES;    359 CFS-HRS;    29.6 ACRE-FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,

VALUE EXTRAPOLATED.  
\*\*\*

OPERATION RESVOR      STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	268.8	384.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.04 WATERSHED INCHES; 357 CFS-HRS; 29.5 ACRE-  
FEET.

OPERATION REACH      XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	268.4	369.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.05 WATERSHED INCHES; 357 CFS-HRS; 29.5 ACRE-  
FEET.

OPERATION RUNOFF      XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	226.3	(RUNOFF)
20.13	5.8	(RUNOFF)
23.74	4.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.74 WATERSHED INCHES; 295 CFS-HRS; 24.4 ACRE-  
FEET.

OPERATION ADDHYD      XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	479.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.90 WATERSHED INCHES; 653 CFS-HRS; 54.0 ACRE-  
FEET.

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OPERATION DIVERT      XSECTION 107  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		213.0 *	(DIVERT)
12.06			* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 555 CFS-HRS; 45.8 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	266.2	176.94

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .89 WATERSHED INCHES; 98 CFS-HRS; 8.1 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 84, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 358.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 84, TRUNCATED AT 400 POINTS  
 WITH 7.91 AC-FT ( .07 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 354.73.  
 \*\*\*

OPERATION RESVOR STRUCTURE 84

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
 AT STRUCTURE 84  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.78	.0	354.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 1 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	215.6	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 555 CFS-HRS; 45.9 ACRE-FEET.

OPERATION REACH      XSECTION      8

PEAK TIME(HRS)                      PEAK DISCHARGE(CFS)                      PEAK  
ELEVATION(FEET)  
12.75                                      215.3                                      357.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.02 WATERSHED INCHES;              555 CFS-HRS;              45.9 ACRE-  
FEET.

OPERATION RUNOFF      XSECTION      9

PEAK TIME(HRS)                      PEAK DISCHARGE(CFS)                      PEAK  
ELEVATION(FEET)  
12.29                                      242.9                                      (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.38 WATERSHED INCHES;              350 CFS-HRS;              28.9 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 21, TRUNCATED AT 400 POINTS  
WITH 2.68 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 370.65.  
\*\*\*

OPERATION RESVOR      STRUCTURE 21

PEAK TIME(HRS)                      PEAK DISCHARGE(CFS)                      PEAK  
ELEVATION(FEET)  
12.54                                      153.9                                      378.71

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.69 WATERSHED INCHES;              317 CFS-HRS;              26.2 ACRE-  
FEET.

OPERATION RUNOFF      XSECTION      10

PEAK TIME(HRS)                      PEAK DISCHARGE(CFS)                      PEAK  
ELEVATION(FEET)  
12.13                                      38.4                                      (RUNOFF)  
15.83                                      1.2                                      (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.11 WATERSHED INCHES;              32 CFS-HRS;              2.6 ACRE-  
FEET.

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OPERATION RESVOR STRUCTURE 22

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.91	127.4	360.78
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.68 WATERSHED INCHES;	317 CFS-HRS;	26.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 11

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.18	184.3	(RUNOFF)
18.87	4.1	(RUNOFF)
22.76	3.1	(RUNOFF)
23.09	3.1	(RUNOFF)
24.03	2.9	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.26 WATERSHED INCHES;	185 CFS-HRS;	15.3 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 12

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.19	396.8	(NULL)
24.01	12.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.08 WATERSHED INCHES;	740 CFS-HRS;	61.1 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 13

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.20	69.3	(RUNOFF)
24.02	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.95 WATERSHED INCHES;	74 CFS-HRS;	6.1 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 14

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.23	448.4	(NULL)
24.00	20.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.46 WATERSHED INCHES; 1054 CFS-HRS; 87.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.21	515.9	(NULL)
24.00	21.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.49 WATERSHED INCHES; 1128 CFS-HRS; 93.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 23

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.21	515.9	(NULL)
24.00	21.4	(NULL)

		HYDROGRAPH POINTS FOR				ALTERNATE = 1,	STORM =99	
HRS	MAIN	TIME	INCREMENT =	.060 hr,	DRAINAGE	AREA =	.32	
SQ.MI.								
2.94 CFS	.00	.01	.01	.01	.01	.01	.01	.01
.02								
3.42 CFS	.02	.02	.02	.02	.03	.03	.03	.04
.04								
3.90 CFS	.04	.05	.05	.05	.06	.06	.06	.07
.07								
4.38 CFS	.07	.08	.08	.08	.09	.09	.10	.10
.11								
4.86 CFS	.12	.12	.13	.13	.14	.14	.16	.17
.19								
5.34 CFS	.21	.23	.25	.27	.30	.30	.33	.37
.42								
5.82 CFS	.47	.52	.58	.65	.71	.71	.78	.85
.93								
6.30 CFS	1.00	1.08	1.16	1.24	1.34	1.34	1.44	1.56
1.67								
6.78 CFS	1.79	1.92	2.05	2.18	2.31	2.31	2.46	2.61
2.76								
7.26 CFS	2.92	3.07	3.23	3.40	3.57	3.57	3.74	3.91
4.08								
7.74 CFS	4.26	4.44	4.63	4.83	5.03	5.03	5.24	5.45
5.66								
8.22 CFS	5.86	6.07	6.33	6.63	6.96	6.96	7.31	7.69
8.09								
8.70 CFS	8.49	8.88	9.27	9.66	10.04	10.04	10.44	10.87
11.31								
9.18 CFS	11.76	12.26	12.80	13.36	13.94	13.94	14.52	16.01
17.40								
9.66 CFS	18.63	19.76	20.81	21.80	22.76	22.76	23.71	24.67
25.66								

10.14	CFS	26.67	27.69	28.68	29.66	30.64	31.66	32.71
33.82								
10.62	CFS	35.08	36.52	38.16	40.03	42.10	44.42	46.93
49.65								
11.10	CFS	52.70	56.16	60.05	64.31	68.94	73.97	79.33
85.09								
11.58	CFS	93	103	115	129	147	170	201
250								
12.06	CFS	341	455	512	514	492	460	436
420								
12.54	CFS	410	402	394	388	385	365	339
315								
13.02	CFS	295	277	261	246	233	223	213
200								
13.50	CFS	172	153	139	128	119	112	106
101								
13.98	CFS	96.34	92.37	88.84	85.66	82.78	80.18	77.83
75.69								
14.46	CFS	73.71	71.81	69.96	68.16	66.45	64.83	63.27
61.74								
14.94	CFS	60.20	58.71	57.25	55.79	54.33	52.92	51.62
50.44								
15.42	CFS	49.37	48.42	47.58	46.79	46.05	45.33	44.70
44.20								
15.90	CFS	43.73	43.24	42.72	42.22	41.76	41.35	40.96
40.58								

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16.38	CFS	40.22	39.90	39.58	39.24	38.92	38.64	38.38
38.09								
16.86	CFS	37.78	37.49	37.24	37.01	36.75	36.43	36.08
35.76								
17.34	CFS	35.52	35.28	34.98	34.62	34.27	33.96	33.67
33.39								
17.82	CFS	33.07	32.75	32.45	32.19	31.94	31.65	31.35
31.08								
18.30	CFS	30.84	30.60	30.33	30.08	29.92	29.82	29.71
29.55								
18.78	CFS	29.41	29.35	29.28	29.16	29.02	28.91	28.81
28.71								
19.26	CFS	28.62	28.54	28.47	28.41	28.36	28.29	28.16
28.05								
19.74	CFS	27.99	27.91	27.78	27.63	27.55	27.53	27.49
27.38								
20.22	CFS	27.28	27.19	27.10	26.96	26.79	26.69	26.63
26.58								
20.70	CFS	26.46	26.34	26.28	26.23	26.12	25.99	25.87
25.76								
21.18	CFS	25.66	25.56	25.47	25.40	25.33	25.26	25.20
25.09								
21.66	CFS	24.95	24.88	24.81	24.69	24.61	24.57	24.48
24.36								
22.14	CFS	24.24	24.14	24.04	23.95	23.86	23.78	23.71
23.63								
22.62	CFS	23.49	23.36	23.29	23.20	23.05	22.90	22.81
22.79								

23.10 CFS	22.74	22.63	22.52	22.44	22.36	22.28	22.17
22.02							
23.58 CFS	21.87	21.80	21.76	21.70	21.58	21.43	21.32
21.40							
24.06 CFS	21.33	20.41	18.98	17.56	16.28	15.01	13.76
12.60							
24.54 CFS	11.58	11.03	10.72	10.48	10.28	10.09	9.93
9.77							
25.02 CFS	9.62	9.47	9.33	9.20	9.06	8.94	8.81
8.69							
25.50 CFS	8.57	8.45	8.33	8.22	8.10	7.99	7.88
7.78							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.49 WATERSHED INCHES; 1128 CFS-HRS; 93.2 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	118	55	38	31	27	24	22	10

DURATION(HRS) 17  
 FLOW(CFS) 8 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	515.9	334.69
24.00	21.4	331.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.49 WATERSHED INCHES; 1128 CFS-HRS; 93.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	98.2	(RUNOFF)
17.34	2.2	(RUNOFF)
24.00	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.01 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	111.9	(RUNOFF)
18.86	2.1	(RUNOFF)
19.75	2.0	(RUNOFF)
24.02	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.65 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	111.9	(NULL)
18.86	2.1	(NULL)
19.75	2.0	(NULL)
24.02	1.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
 SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	.03
1.62 CFS	.00	.01	.02	.04	.06	.09	.11			
.14										
2.10 CFS	.16	.19	.21	.24	.26	.29	.31			
.33										
2.58 CFS	.35	.38	.40	.43	.45	.47	.49			
.51										
3.06 CFS	.53	.55	.57	.59	.62	.65	.67			
.68										
3.54 CFS	.71	.73	.75	.76	.77	.79	.82			
.84										
4.02 CFS	.86	.89	.92	.94	.95	.95	.97			
1.00										
4.50 CFS	1.03	1.05	1.05	1.06	1.08	1.10	1.12			
1.14										
4.98 CFS	1.16	1.17	1.18	1.20	1.23	1.26	1.26			
1.26										
5.46 CFS	1.27	1.30	1.33	1.36	1.37	1.38	1.38			
1.37										
5.94 CFS	1.39	1.44	1.48	1.49	1.50	1.53	1.56			
1.58										
6.42 CFS	1.62	1.66	1.70	1.74	1.77	1.79	1.81			
1.86										
6.90 CFS	1.90	1.91	1.94	1.99	2.04	2.09	2.12			
2.14										
7.38 CFS	2.17	2.22	2.26	2.28	2.31	2.33	2.38			
2.42										
7.86 CFS	2.45	2.50	2.54	2.58	2.62	2.67	2.68			
2.70										
8.34 CFS	2.76	2.80	2.82	2.85	2.90	2.96	3.01			
3.04										
8.82 CFS	3.06	3.08	3.10	3.15	3.23	3.30	3.37			
3.46										
9.30 CFS	3.59	3.72	3.83	3.93	4.03	4.14	4.27			
4.41										
9.78 CFS	4.55	4.66	4.77	4.87	4.99	5.13	5.28			
5.41										
10.26 CFS	5.53	5.63	5.74	5.87	6.02	6.20	6.45			
6.78										

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10.74	CFS	7.18	7.61	8.06	8.53	8.98	9.45	10.02
10.70								
11.22	CFS	11.50	12.31	13.15	14.01	14.87	15.75	17.47
20.49								
11.70	CFS	23	26	30	36	44	56	75
100								
12.18	CFS	112	99	77	60	47	39	33
29								
12.66	CFS	24.19	20.77	18.57	17.06	15.88	14.87	13.92
13.02								
13.14	CFS	12.13	11.38	10.76	10.22	9.71	9.20	8.70
8.22								
13.62	CFS	7.77	7.38	7.08	6.85	6.66	6.51	6.40
6.29								
14.10	CFS	6.17	6.04	5.89	5.75	5.63	5.53	5.43
5.31								
14.58	CFS	5.17	5.02	4.89	4.78	4.68	4.57	4.45
4.33								
15.06	CFS	4.22	4.09	3.96	3.85	3.78	3.74	3.72
3.71								
15.54	CFS	3.70	3.67	3.62	3.56	3.52	3.51	3.51
3.47								
16.02	CFS	3.41	3.36	3.33	3.31	3.29	3.25	3.21
3.18								
16.50	CFS	3.14	3.09	3.06	3.04	3.02	2.99	2.95
2.92								
16.98	CFS	2.90	2.88	2.85	2.80	2.74	2.70	2.69
2.69								
17.46	CFS	2.65	2.59	2.54	2.50	2.49	2.47	2.43
2.39								
17.94	CFS	2.36	2.35	2.33	2.29	2.25	2.22	2.21
2.19								
18.42	CFS	2.16	2.13	2.14	2.16	2.17	2.15	2.13
2.13								
18.90	CFS	2.13	2.11	2.08	2.07	2.06	2.06	2.06
2.06								
19.38	CFS	2.06	2.06	2.06	2.05	2.02	2.00	2.00
2.00								
19.86	CFS	1.97	1.95	1.95	1.98	1.99	1.97	1.95
1.93								
20.34	CFS	1.92	1.90	1.86	1.86	1.88	1.90	1.88
1.86								
20.82	CFS	1.86	1.86	1.85	1.82	1.80	1.79	1.79
1.79								
21.30	CFS	1.79	1.78	1.78	1.78	1.78	1.75	1.72
1.72								
21.78	CFS	1.73	1.71	1.71	1.72	1.72	1.69	1.67
1.66								
22.26	CFS	1.65	1.65	1.65	1.65	1.65	1.64	1.61
1.58								
22.74	CFS	1.59	1.59	1.56	1.54	1.54	1.57	1.58
1.56								
23.22	CFS	1.53	1.52	1.52	1.51	1.50	1.47	1.45
1.46								
23.70	CFS	1.48	1.48	1.46	1.42	1.41	1.47	1.46

1.13  
 24.18 CFS .67 .35 .18 .09 .05 .02 .01  
 .00

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.65 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	11	6	4	3	2	2	2	2
DURATION(HRS)	18	20	21					
FLOW(CFS)	1	1	0					

OPERATION RUNOFF XSECTION 119

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.13	28.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.81 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	137.4	(NULL)
15.82	4.3	(NULL)
17.32	3.3	(NULL)
21.96	2.1	(NULL)
24.01	1.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.49 WATERSHED INCHES; 151 CFS-HRS; 12.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.16	234.3	(NULL)
15.83	7.2	(NULL)
17.33	5.5	(NULL)
19.74	4.1	(NULL)
20.06	4.1	(NULL)
23.06	3.2	(NULL)
23.72	3.1	(NULL)
24.00	3.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.30 WATERSHED INCHES; 246 CFS-HRS; 20.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	179.0	(RUNOFF)
15.84	5.4	(RUNOFF)
17.34	4.2	(RUNOFF)
19.75	3.1	(RUNOFF)
20.05	3.1	(RUNOFF)
24.00	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.60 WATERSHED INCHES; 172 CFS-HRS; 14.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	413.1	(NULL)
15.84	12.6	(NULL)
17.34	9.7	(NULL)
19.74	7.2	(NULL)
20.06	7.2	(NULL)
21.95	6.2	(NULL)
24.00	5.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.99 WATERSHED INCHES; 418 CFS-HRS; 34.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	916.2	(NULL)
18.82	37.1	(NULL)
19.72	35.2	(NULL)
20.04	34.7	(NULL)
20.59	33.5	(NULL)
20.80	33.0	(NULL)
21.94	30.8	(NULL)
22.71	29.1	(NULL)
23.04	28.5	(NULL)
23.69	27.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

5.81 WATERSHED INCHES; 1542 CFS-HRS; 127.5 ACRE-FEET.

OPERATION DIVERT XSECTION 122
OUTPUT #1 HYDROGRAPH

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows show peak data for various times and elevations, all marked as (DIVERT).

\* FIRST POINT OF FLAT PEAK

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 1040 CFS-HRS; 85.9 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Row shows peak data for 12.18 hours at 178.46 feet elevation with a discharge of 748.2 CFS.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 1.89 WATERSHED INCHES; 502 CFS-HRS; 41.5 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 83, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE

STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 322.00. THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.

\*\*\*

OPERATION RESVOR STRUCTURE 83

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows show peak data for various times and elevations, with discharges ranging from 313.8 to 1053.1 CFS.



13.20	226.2	322.73
13.32	185.8	322.60

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.79 WATERSHED INCHES; 474 CFS-HRS; 39.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 123

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.24	1221.1	(NULL)
12.36	1020.0	(NULL)
12.48	905.2	(NULL)
12.60	827.5	(NULL)
12.72	728.6	(NULL)
12.84	684.0	(NULL)
12.96	554.7	(NULL)
13.08	481.8	(NULL)
13.20	394.2	(NULL)
13.32	353.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.71 WATERSHED INCHES; 1514 CFS-HRS; 125.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	802.5	317.04
12.42	796.9	317.02
12.54	706.1	316.84
12.66	633.9	316.70
12.78	566.2	316.56
12.90	530.3	316.48
13.02	453.0	316.31
13.14	396.8	316.17
13.25	338.9	316.01
13.38	304.0	315.91

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.19 WATERSHED INCHES; 1377 CFS-HRS; 113.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.25	165.8	(RUNOFF)
18.66	4.1	(RUNOFF)

20.68	3.6	(RUNOFF)
23.12	3.0	(RUNOFF)
24.00	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.34 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	160.7	365.43
18.69	4.1	356.71
20.69	3.6	356.67
23.15	3.0	356.62
24.03	2.8	356.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.35 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	237.1	(RUNOFF)
18.65	6.1	(RUNOFF)
20.67	5.3	(RUNOFF)
23.98	4.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.26 WATERSHED INCHES; 302 CFS-HRS; 25.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	395.1	(NULL)
18.66	10.2	(NULL)
20.14	9.4	(NULL)
20.68	8.9	(NULL)

23.14 7.4 (NULL)  
 23.78 7.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.30 WATERSHED INCHES; 509 CFS-HRS; 42.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.36	384.2	319.84
20.20	9.4	316.93
20.74	8.9	316.91
23.20	7.4	316.81
23.83	7.0	316.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.29 WATERSHED INCHES; 509 CFS-HRS; 42.0 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 28

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.24	190.4	(RUNOFF)
20.67	4.2	(RUNOFF)
24.01	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.89 WATERSHED INCHES; 228 CFS-HRS; 18.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	977.8	(NULL)
12.41	926.1	(NULL)
12.53	797.2	(NULL)
12.66	700.6	(NULL)
12.78	616.1	(NULL)
12.90	570.2	(NULL)
13.01	486.8	(NULL)
13.14	425.9	(NULL)
13.25	364.4	(NULL)
13.38	326.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.28 WATERSHED INCHES; 1605 CFS-HRS; 132.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	1348.6	(NULL)
12.41	1297.4	(NULL)
12.53	1085.7	(NULL)
12.65	909.3	(NULL)
12.77	772.8	(NULL)
12.89	686.1	(NULL)
13.01	579.0	(NULL)
13.13	502.4	(NULL)
13.25	431.9	(NULL)
13.37	388.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.49 WATERSHED INCHES; 2114 CFS-HRS; 174.7 ACRE-  
FEET.

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OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	1348.6	(NULL)
12.41	1297.4	(NULL)
12.53	1085.7	(NULL)
12.65	909.3	(NULL)
12.77	772.8	(NULL)
12.89	686.1	(NULL)
13.01	579.0	(NULL)
13.13	502.4	(NULL)
13.25	431.9	(NULL)
13.37	388.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.49 WATERSHED INCHES; 2114 CFS-HRS; 174.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	264.7	(RUNOFF)
20.66	5.1	(RUNOFF)
23.11	4.2	(RUNOFF)
24.02	3.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-  
FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	244.6	314.09
20.73	5.1	310.41
23.19	4.2	310.34
24.09	3.9	310.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	39.4	(RUNOFF)
15.84	1.2	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.86 WATERSHED INCHES; 43 CFS-HRS; 3.5 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
WITH .53 AC-FT ( .10 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 378.24.  
\*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	32.9	380.81

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.68 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
\*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	32.9	338.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.68 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.19 118.2 (RUNOFF)
20.86 2.0 (RUNOFF)
24.02 1.6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.86 WATERSHED INCHES; 139 CFS-HRS; 11.5 ACRE-
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS
WITH 1.05 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 354.18.
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.29 96.1 357.96

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.15 WATERSHED INCHES; 127 CFS-HRS; 10.5 ACRE-
FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.27 128.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.27 128.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
 \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	128.6	330.88

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	135.6	(RUNOFF)
15.84	3.9	(RUNOFF)
20.84	2.1	(RUNOFF)
24.00	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.24 WATERSHED INCHES; 131 CFS-HRS; 10.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 139

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	245.1	(NULL)
20.83	5.1	(NULL)
24.00	4.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.13 WATERSHED INCHES; 294 CFS-HRS; 24.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	245.1	(NULL)
20.83	5.1	(NULL)
24.00	4.2	(NULL)

HRS HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06

SQ.MI.							
1.74 CFS	.00	.01	.01	.01	.01	.02	.02
.02							
2.22 CFS	.02	.03	.03	.04	.05	.07	.10
.12							
2.70 CFS	.15	.17	.20	.23	.25	.28	.30
.33							
3.18 CFS	.35	.38	.41	.44	.46	.48	.52
.55							
3.66 CFS	.57	.58	.61	.64	.67	.70	.73
.76							
4.14 CFS	.80	.82	.83	.85	.89	.93	.96
.98							
4.62 CFS	.99	1.02	1.05	1.09	1.11	1.14	1.16
1.19							
5.10 CFS	1.21	1.25	1.29	1.32	1.32	1.34	1.36
1.41							
5.58 CFS	1.45	1.48	1.51	1.52	1.52	1.54	1.59
1.65							
6.06 CFS	1.69	1.70	1.73	1.78	1.81	1.86	1.91
1.96							
6.54 CFS	2.00	2.06	2.10	2.11	2.16	2.24	2.27
2.29							
7.02 CFS	2.35	2.42	2.49	2.54	2.58	2.61	2.67
2.74							
7.50 CFS	2.79	2.82	2.86	2.91	2.98	3.03	3.09
3.16							
7.98 CFS	3.22	3.27	3.34	3.39	3.41	3.47	3.57
3.60							
8.46 CFS	3.63	3.70	3.78	3.87	3.93	3.97	4.01
4.05							
8.94 CFS	4.10	4.21	4.32	4.39	4.50	4.64	4.81
4.96							
9.42 CFS	5.09	5.21	5.33	5.49	5.66	5.92	6.34
6.72							
9.90 CFS	7.09	7.50	7.99	8.46	8.92	9.34	9.72
10.09							
10.38 CFS	10.48	10.87	11.28	11.74	12.31	13.02	13.78
14.59							
10.86 CFS	15.42	16.28	17.14	18.03	19.20	20.49	21.89
23.33							
11.34 CFS	24.80	26.48	28.15	29.88	33.84	39.18	43.28
48.53							
11.82 CFS	57	69	86	118	163	228	245
216							
12.30 CFS	192	167	144	117	98	84	72
64							
12.78 CFS	58.40	53.18	48.66	44.75	41.25	38.21	36.40
34.78							
13.26 CFS	33.28	31.80	30.35	28.94	27.52	26.17	24.88
23.75							
13.74 CFS	22.75	21.84	21.03	20.31	19.68	19.14	18.58
18.04							
14.22 CFS	17.51	17.03	16.60	16.20	15.80	15.38	14.95
14.53							
14.70 CFS	14.16	13.82	13.49	13.14	12.78	12.45	12.12
11.77							
15.18 CFS	11.44	11.15	10.92	10.73	10.57	10.44	10.32
10.16							
15.66 CFS	9.99	9.81	9.71	9.66	9.55	9.41	9.25
9.13							
16.14 CFS	9.04	8.96	8.87	8.75	8.65	8.56	8.44
8.33							
16.62 CFS	8.24	8.18	8.11	8.00	7.90	7.82	7.77



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17.10 CFS	7.60	7.48	7.35	7.30	7.29	7.22	7.12
7.00							
17.58 CFS	6.91	6.86	6.81	6.74	6.64	6.57	6.51
6.47							
18.06 CFS	6.41	6.31	6.23	6.18	6.14	6.08	5.99
5.95							
18.54 CFS	5.96	5.96	5.92	5.85	5.82	5.84	5.79
5.73							
19.02 CFS	5.69	5.66	5.64	5.62	5.60	5.59	5.57
5.56							
19.50 CFS	5.55	5.51	5.44	5.43	5.45	5.40	5.35
5.32							
19.98 CFS	5.34	5.37	5.34	5.29	5.26	5.24	5.22
5.15							
20.46 CFS	5.11	5.13	5.15	5.14	5.08	5.05	5.07
5.06							
20.94 CFS	5.00	4.96	4.94	4.92	4.91	4.90	4.88
4.87							
21.42 CFS	4.86	4.86	4.84	4.77	4.74	4.76	4.75
4.70							
21.90 CFS	4.72	4.73	4.68	4.64	4.62	4.60	4.59
4.58							
22.38 CFS	4.57	4.56	4.55	4.52	4.45	4.44	4.46
4.42							
22.86 CFS	4.36	4.34	4.36	4.39	4.36	4.31	4.28
4.27							
23.34 CFS	4.25	4.24	4.21	4.14	4.12	4.16	4.17
4.14							
23.82 CFS	4.08	4.03	4.03	4.18	4.03	3.27	2.72
2.46							
24.30 CFS	2.30	2.18	2.07	1.98	1.89	1.81	1.75
1.74							
24.78 CFS	1.73	1.72	1.71	1.70	1.69		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.13 WATERSHED INCHES; 294 CFS-HRS; 24.3 ACRE-  
FEET.

DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	28	14	9	7	5	5	4	3

DURATION (HRS)	18	19
FLOW (CFS)	2	2 TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.13	15.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.98 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-

FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	258.1	(NULL)
18.82	6.2	(NULL)
20.83	5.4	(NULL)
21.73	5.0	(NULL)
24.00	4.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.91 WATERSHED INCHES; 306 CFS-HRS; 25.3 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	121.2	(RUNOFF)
18.64	3.2	(RUNOFF)
23.76	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.10 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	1466.1	(NULL)
12.41	1392.7	(NULL)
12.53	1154.5	(NULL)
12.65	959.5	(NULL)
12.77	810.4	(NULL)
12.89	715.5	(NULL)
13.01	603.4	(NULL)
13.13	523.1	(NULL)
13.25	449.8	(NULL)
13.37	403.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.53 WATERSHED INCHES; 2269 CFS-HRS; 187.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION (FEET)		
12.31	1710.7	(NULL)
12.41	1603.4	(NULL)
12.52	1304.1	(NULL)
12.65	1063.8	(NULL)
12.77	885.7	(NULL)
12.89	772.0	(NULL)
13.01	649.6	(NULL)
13.13	562.4	(NULL)
13.25	483.9	(NULL)
13.37	433.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.66 WATERSHED INCHES; 2577 CFS-HRS; 213.0 ACRE-FEET.

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OPERATION ADDHYD XSECTION 43

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	1905.2	(NULL)
12.40	1757.8	(NULL)
12.52	1410.7	(NULL)
12.65	1140.0	(NULL)
12.77	947.4	(NULL)
12.89	823.2	(NULL)
13.01	693.1	(NULL)
13.13	600.6	(NULL)
13.25	518.8	(NULL)
13.37	465.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.91 WATERSHED INCHES; 2948 CFS-HRS; 243.7 ACRE-FEET.

OPERATION DIVERT XSECTION 144  
 OUTPUT #1 HYDROGRAPH

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.00	543.0 *	(DIVERT)
13.12	547.2	(DIVERT)
13.25	518.8	(DIVERT)
13.37	465.7	(DIVERT)
13.49	412.3	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2328 CFS-HRS; 192.4 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	1362.2	179.82
12.40	1214.8	179.52
12.52	867.7	178.77
12.65	597.0	178.07
12.77	404.4	177.44
12.89	280.2	177.01
13.01	149.0	176.33
13.14	55.7	175.66

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.24 WATERSHED INCHES; 621 CFS-HRS; 51.3 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 82, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 318.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 82,  
VALUE EXTRAPOLATED.  
\*\*\*

OPERATION RESVOR STRUCTURE 82

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	1888.4	321.38
12.42	1702.7	321.13
12.54	1337.8	320.63
12.66	1034.4	320.21
12.78	533.1	319.39
12.90	402.9	319.16
13.02	149.4	318.48
13.14	54.3	318.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.20 WATERSHED INCHES; 601 CFS-HRS; 49.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 145

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	2431.4	(NULL)
12.42	2245.7	(NULL)
12.54	1880.8	(NULL)
12.66	1577.4	(NULL)
12.78	1076.1	(NULL)

12.90	945.9	(NULL)
13.02	692.5	(NULL)
13.13	599.1	(NULL)
13.25	519.1	(NULL)
13.37	465.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.87 WATERSHED INCHES; 2929 CFS-HRS; 242.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 44

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.37	1853.5	292.28
12.48	1947.5	292.38
12.59	1656.4	292.07
12.72	1359.0	291.73
12.83	991.8	291.24
12.96	867.9	291.07
13.06	683.2	290.78
13.18	595.5	290.63
13.29	520.8	290.48
13.42	463.6	290.37

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.47 WATERSHED INCHES; 2732 CFS-HRS; 225.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.37	1853.5	(NULL)
12.48	1947.5	(NULL)
12.59	1656.4	(NULL)
12.72	1359.0	(NULL)
12.83	991.8	(NULL)
12.96	867.9	(NULL)
13.06	683.2	(NULL)
13.18	595.5	(NULL)
13.29	520.8	(NULL)
13.42	463.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.47 WATERSHED INCHES; 2732 CFS-HRS; 225.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
-----------------	----------------------	------

ELEVATION(FEET)			
12.29	140.0		(RUNOFF)
20.10	3.5		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.16 WATERSHED INCHES; 190 CFS-HRS; 15.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	175.7	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.06 WATERSHED INCHES; 245 CFS-HRS; 20.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	315.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 435 CFS-HRS; 36.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	171.6	(RUNOFF)
21.97	3.0	(RUNOFF)
24.03	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.09 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	713.7	(NULL)
12.37	1953.9	(NULL)
12.48	2018.2	(NULL)
12.59	1708.8	(NULL)
12.72	1396.9	(NULL)
12.83	1022.4	(NULL)

12.96	894.1	(NULL)
13.06	706.5	(NULL)
13.18	615.9	(NULL)
13.29	539.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.51 WATERSHED INCHES; 2917 CFS-HRS; 241.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	1007.6	(NULL)
12.37	2254.1	(NULL)
12.47	2262.5	(NULL)
12.59	1892.6	(NULL)
12.72	1534.3	(NULL)
12.83	1128.4	(NULL)
12.95	977.9	(NULL)
13.06	777.4	(NULL)
13.18	676.2	(NULL)
13.29	591.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.58 WATERSHED INCHES; 3352 CFS-HRS; 277.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.44	1906.0	287.46
12.54	2094.1	287.72
12.64	1827.6	287.35
12.77	1477.4	286.82
12.87	1146.9	286.26
13.00	965.0	285.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.74 WATERSHED INCHES; 3451 CFS-HRS; 285.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 52

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	8.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.63 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-

FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	8.0	288.45

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.63 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .85 WATERSHED INCHES; 4 CFS-HRS; .3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	112.9	(RUNOFF)
21.97	2.0	(RUNOFF)
24.03	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.79 WATERSHED INCHES; 120 CFS-HRS; 9.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	1073.8	(NULL)
12.44	1958.1	(NULL)
12.54	2134.1	(NULL)
12.64	1858.0	(NULL)
12.77	1500.2	(NULL)
12.87	1166.3	(NULL)
13.00	981.7	(NULL)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.75 WATERSHED INCHES; 3571 CFS-HRS; 295.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	9.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.28 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	1082.2	(NULL)
12.44	1964.1	(NULL)
12.54	2139.1	(NULL)
12.64	1862.2	(NULL)
12.77	1503.5	(NULL)
12.87	1169.2	(NULL)
13.00	984.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.67 WATERSHED INCHES; 3584 CFS-HRS; 296.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	78.5	(RUNOFF)
24.02	1.3	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
 SQ.MI.

HRS	8.76	9.24	9.72	10.20	10.68	4.24
CFS	.69	1.08	1.62	2.34	10.68	4.24
	.49	.73	1.15	1.70	2.50	
	.52	.77	1.21	1.78	2.69	
	.54	.82	1.28	1.85	2.91	
	.56	.87	1.34	1.93	3.14	
	.59	.92	1.40	2.02	3.39	
	.62	.97	1.47	2.11	3.65	
	.65	1.02	1.54	2.21	3.93	

11.16 CFS	4.63	5.07	5.55	6.07	6.62	7.19	7.81
8.79							
11.64 CFS	10.36	12.19	14.15	16.65	20.13	25.27	33.50
46.51							
12.12 CFS	64.00	77.27	76.01	65.16	52.39	42.68	35.46
30.29							
12.60 CFS	26.22	22.48	19.36	17.08	15.51	14.30	13.32
12.47							
13.08 CFS	11.67	10.91	10.23	9.66	9.16	8.71	8.27
7.84							
13.56 CFS	7.42	7.02	6.66	6.37	6.15	5.96	5.82
5.71							
14.04 CFS	5.61	5.51	5.40	5.28	5.16	5.05	4.96
4.87							
14.52 CFS	4.77	4.66	4.53	4.41	4.31	4.22	4.13
4.02							
15.00 CFS	3.92	3.82	3.71	3.60	3.50	3.42	3.38
3.35							
15.48 CFS	3.34	3.32	3.31	3.27	3.22	3.18	3.17
3.16							
15.96 CFS	3.14	3.09	3.05	3.01	2.99	2.97	2.95
2.91							
16.44 CFS	2.88	2.85	2.81	2.78	2.75	2.74	2.72
2.68							
16.92 CFS	2.65	2.63	2.62	2.60	2.56	2.51	2.47
2.45							
17.40 CFS	2.44	2.42	2.37	2.33	2.29	2.27	2.25
2.22							
17.88 CFS	2.19	2.16	2.14	2.13	2.10	2.07	2.04
2.02							
18.36 CFS	2.00	1.98	1.96	1.95	1.97	1.97	1.96
1.95							
18.84 CFS	1.95	1.95	1.93	1.91	1.90	1.89	1.89
1.88							
19.32 CFS	1.88	1.88	1.88	1.88	1.88	1.85	1.83
1.83							
19.80 CFS	1.83	1.81	1.80	1.79	1.80	1.82	1.81
1.79							
20.28 CFS	1.78	1.77	1.75	1.72	1.71	1.72	1.74
1.73							
20.76 CFS	1.71	1.71	1.71	1.70	1.68	1.66	1.65
1.65							

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21.24 CFS	1.64	1.64	1.64	1.64	1.64	1.64	1.62
1.60							
21.72 CFS	1.59	1.59	1.58	1.58	1.58	1.58	1.56
1.55							
22.20 CFS	1.53	1.53	1.52	1.52	1.52	1.52	1.51
1.49							
22.68 CFS	1.47	1.47	1.47	1.45	1.43	1.43	1.44
1.45							
23.16 CFS	1.44	1.43	1.41	1.40	1.40	1.39	1.37
1.35							
23.64 CFS	1.35	1.36	1.37	1.36	1.33	1.32	1.34
1.34							

24.12 CFS 1.15 .80 .47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.92 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 60

Table with 3 columns: PEAK TIME(HRS) ELEVATION(FEET), PEAK DISCHARGE(CFS), PEAK. Rows include times 12.29, 12.44, 12.54, 12.64, 12.77, 13.00 and peak values 1147.1, 2003.7, 2169.7, 1885.6, 1521.0, 997.0.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.65 WATERSHED INCHES; 3669 CFS-HRS; 303.2 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 3

Table with 3 columns: PEAK TIME(HRS) ELEVATION(FEET), PEAK DISCHARGE(CFS), PEAK. Rows include times 12.29, 12.44, 12.54, 12.64, 12.77, 13.00 and peak values 1147.1, 2003.7, 2169.7, 1885.6, 1521.0, 997.0.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.65 WATERSHED INCHES; 3669 CFS-HRS; 303.2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 61

Table with 3 columns: PEAK TIME(HRS) ELEVATION(FEET), PEAK DISCHARGE(CFS), PEAK. Rows include times 12.23, 21.96 and peak values 47.3, 1.0.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.83 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-
FEET.

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OPERATION ADDHYD XSECTION 62

Table with 3 columns: PEAK TIME(HRS), PEAK DISCHARGE(CFS), PEAK

ELEVATION (FEET)

12.29	1191.0	(NULL)
12.44	2031.5	(NULL)
12.54	2191.2	(NULL)
12.64	1902.0	(NULL)
12.77	1533.3	(NULL)
13.00	1005.6	(NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99						
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02						
2.82 CFS .81	.46	.50	.56	.61	.65	.70	.76
3.30 CFS 1.50	.87	.94	1.01	1.09	1.18	1.28	1.39
3.78 CFS 2.44	1.61	1.72	1.82	1.93	2.04	2.17	2.30
4.26 CFS 3.59	2.58	2.73	2.87	3.00	3.13	3.26	3.42
4.74 CFS 5.34	3.76	3.93	4.11	4.32	4.55	4.80	5.07
5.22 CFS 7.82	5.61	5.89	6.20	6.51	6.85	7.17	7.49
5.70 CFS 10.77	8.18	8.56	8.95	9.33	9.70	10.04	10.39
6.18 CFS 14.64	11.20	11.65	12.11	12.57	13.05	13.55	14.08
6.66 CFS 19.70	15.23	15.84	16.47	17.10	17.72	18.37	19.03
7.14 CFS 25.95	20.38	21.10	21.86	22.66	23.48	24.31	25.13
7.62 CFS 32.83	26.78	27.61	28.44	29.27	30.11	30.98	31.89
8.10 CFS 40.75	33.80	34.79	35.80	36.81	37.80	38.78	39.75
8.58 CFS 50.15	41.77	42.84	43.96	45.16	46.41	47.68	48.93
9.06 CFS 63.16	51.36	52.61	53.95	55.44	57.08	58.91	60.94
9.54 CFS 87.54	65.55	68.06	70.65	73.52	76.70	80.14	83.80
10.02 CFS 118	91	95	99	103	106	110	114
10.50 CFS 161	122	126	130	135	140	146	153
10.98 CFS 262	170	180	190	202	215	229	244
11.46 CFS 530	281	302	325	352	384	425	474
11.94 CFS 1156	598	687	812	958	1094	1176	1190
12.42 CFS 1169	1967	1849	2189	1731	1879	1387	1521
12.90 CFS 642	1168	960	997	851	819	731	709
13.38 CFS 400	620	566	552	510	494	460	429
13.86 CFS 265	373	350	330	313	298	286	275
14.34 CFS 213	257	249	242	236	230	224	218
14.82 CFS 174	208	202	197	193	188	183	179
15.30 CFS	170	165	161	158	154	152	149

147								
15.78	CFS	145	144	142	140	139	137	136
134								
16.26	CFS	133	131	130	129	127	126	125
124								
16.74	CFS	122	121	120	119	118	117	116
115								
17.22	CFS	114	112	111	110	109	108	107
106								
17.70	CFS	104	103	102	101	100	99	97
96								
18.18	CFS	95.39	94.38	93.39	92.40	91.41	90.46	89.60
88.85								
18.66	CFS	88.22	87.69	87.27	86.96	86.67	86.34	85.98
85.62								
19.14	CFS	85.24	84.83	84.42	84.05	83.73	83.47	83.27
83.08								
19.62	CFS	82.87	82.61	82.34	82.02	81.64	81.24	80.87
80.55								
20.10	CFS	80.27	80.02	79.82	79.64	79.43	79.11	78.70
78.25								

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20.58	CFS	77.82	77.42	77.07	76.78	76.56	76.37	76.13
75.83								
21.06	CFS	75.51	75.17	74.79	74.39	74.01	73.68	73.40
73.18								
21.54	CFS	72.99	72.79	72.55	72.27	71.97	71.61	71.27
70.99								
22.02	CFS	70.74	70.48	70.22	69.94	69.62	69.25	68.89
68.57								
22.50	CFS	68.29	68.05	67.78	67.49	67.18	66.84	66.43
66.01								
22.98	CFS	65.62	65.29	64.99	64.73	64.51	64.33	64.12
63.85								
23.46	CFS	63.54	63.17	62.78	62.40	62.04	61.71	61.41
61.14								
23.94	CFS	60.89	60.71	60.46	59.63	57.91	55.13	51.05
45.76								
24.42	CFS	39.80	33.98	28.85	24.61	21.21	18.50	16.45
14.99								
24.90	CFS	13.97	13.25	12.74				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.64 WATERSHED INCHES; 3723 CFS-HRS; 307.7 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 162  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.00 621.0 \* (DIVERT)  
 \* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2888 CFS-HRS; 238.7 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.29	570.0	178.00
12.44	1410.5	179.92
12.54	1570.2	180.25
12.64	1281.0	179.66
12.77	912.3	178.89
13.00	384.6	177.37

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.26 WATERSHED INCHES; 835 CFS-HRS; 69.0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 73

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.29	570.0	(NULL)
12.44	1410.5	(NULL)
12.54	1570.2	(NULL)
12.64	1281.0	(NULL)
12.77	912.3	(NULL)
13.00	384.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.26 WATERSHED INCHES; 835 CFS-HRS; 69.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 163

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.29	1191.0	(NULL)
12.44	2031.5	(NULL)
12.54	2191.2	(NULL)
12.64	1902.0	(NULL)
12.77	1533.3	(NULL)
13.00	1005.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02  
 SQ.MI.  
 2.82 CFS .46 .50 .56 .61 .65 .70 .76  
 .81  
 3.30 CFS .87 .94 1.01 1.09 1.18 1.28 1.39  
 1.50

3.78 CFS	1.61	1.72	1.82	1.93	2.04	2.17	2.30
2.44							
4.26 CFS	2.58	2.73	2.87	3.00	3.13	3.26	3.42
3.59							
4.74 CFS	3.76	3.93	4.11	4.32	4.55	4.80	5.07
5.34							
5.22 CFS	5.61	5.89	6.20	6.51	6.85	7.17	7.49
7.82							
5.70 CFS	8.18	8.56	8.95	9.33	9.70	10.04	10.39
10.77							
6.18 CFS	11.20	11.65	12.11	12.57	13.05	13.55	14.08
14.64							
6.66 CFS	15.23	15.84	16.47	17.10	17.72	18.37	19.03
19.70							
7.14 CFS	20.38	21.10	21.86	22.66	23.48	24.31	25.13
25.95							
7.62 CFS	26.78	27.61	28.44	29.27	30.11	30.98	31.89
32.83							
8.10 CFS	33.80	34.79	35.80	36.81	37.80	38.78	39.75
40.75							
8.58 CFS	41.77	42.84	43.96	45.16	46.41	47.68	48.93
50.15							
9.06 CFS	51.36	52.61	53.95	55.44	57.08	58.91	60.94
63.16							
9.54 CFS	65.55	68.06	70.65	73.52	76.70	80.14	83.80
87.54							
10.02 CFS	91	95	99	103	106	110	114
118							
10.50 CFS	122	126	130	135	140	146	153
161							
10.98 CFS	170	180	190	202	215	229	244
262							
11.46 CFS	281	302	325	352	384	425	474
530							
11.94 CFS	598	687	812	958	1094	1176	1190
1156							
12.42 CFS	1967	1849	2189	1731	1879	1387	1521
1169							
12.90 CFS	1168	960	997	851	819	731	709
642							
13.38 CFS	620	566	552	510	494	460	429
400							
13.86 CFS	373	350	330	313	298	286	275
265							
14.34 CFS	257	249	242	236	230	224	218
213							
14.82 CFS	208	202	197	193	188	183	179
174							

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist;H1&H8UG;GHC2.04TEST

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15.30 CFS	170	165	161	158	154	152	149
147							
15.78 CFS	145	144	142	140	139	137	136
134							
16.26 CFS	133	131	130	129	127	126	125
124							

16.74 CFS	122	121	120	119	118	117	116
115							
17.22 CFS	114	112	111	110	109	108	107
106							
17.70 CFS	104	103	102	101	100	99	97
96							
18.18 CFS	95.39	94.38	93.39	92.40	91.41	90.46	89.60
88.85							
18.66 CFS	88.22	87.69	87.27	86.96	86.67	86.34	85.98
85.62							
19.14 CFS	85.24	84.83	84.42	84.05	83.73	83.47	83.27
83.08							
19.62 CFS	82.87	82.61	82.34	82.02	81.64	81.24	80.87
80.55							
20.10 CFS	80.27	80.02	79.82	79.64	79.43	79.11	78.70
78.25							
20.58 CFS	77.82	77.42	77.07	76.78	76.56	76.37	76.13
75.83							
21.06 CFS	75.51	75.17	74.79	74.39	74.01	73.68	73.40
73.18							
21.54 CFS	72.99	72.79	72.55	72.27	71.97	71.61	71.27
70.99							
22.02 CFS	70.74	70.48	70.22	69.94	69.62	69.25	68.89
68.57							
22.50 CFS	68.29	68.05	67.78	67.49	67.18	66.84	66.43
66.01							
22.98 CFS	65.62	65.29	64.99	64.73	64.51	64.33	64.12
63.85							
23.46 CFS	63.54	63.17	62.78	62.40	62.04	61.71	61.41
61.14							
23.94 CFS	60.89	60.71	60.46	59.63	57.91	55.13	51.05
45.76							
24.42 CFS	39.80	33.98	28.85	24.61	21.21	18.50	16.45
14.99							
24.90 CFS	13.97	13.25	12.74				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.64 WATERSHED INCHES; 3723 CFS-HRS; 307.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.61	2010.4	251.47
12.69	1893.9	251.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.56 WATERSHED INCHES; 3673 CFS-HRS; 303.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	30.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.



OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	24.7	335.67

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	24.4	301.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	139.6	(RUNOFF)
20.10	3.1	(RUNOFF)
24.02	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 145 CFS-HRS; 11.9 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS. \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS. \*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	70.1	297.03
20.12	3.1	287.70
24.04	2.3	287.60

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 145 CFS-HRS; 11.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.51	90.2	(NULL)
18.87	4.3	(NULL)
23.11	3.2	(NULL)
24.04	3.0	(NULL)

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.22 WATERSHED INCHES; 191 CFS-HRS; 15.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	258.6	(RUNOFF)
20.87	5.1	(RUNOFF)
23.74	4.1	(RUNOFF)
24.03	4.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.24 WATERSHED INCHES; 263 CFS-HRS; 21.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	309.1	(NULL)
18.87	10.1	(NULL)
20.10	9.4	(NULL)
20.65	9.0	(NULL)
21.97	8.2	(NULL)
23.10	7.5	(NULL)
23.75	7.1	(NULL)
24.03	7.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.24 WATERSHED INCHES; 455 CFS-HRS; 37.6 ACRE-  
FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.39	230.4	249.15
20.14	9.4	247.79

24.09 7.0 247.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.23 WATERSHED INCHES; 455 CFS-HRS; 37.6 ACRE-
FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.12 54.7 (RUNOFF)
17.33 1.2 (RUNOFF)

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,
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04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.19 44.5 267.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.07 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-
FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.27 40.6 248.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-
FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.18 312.6 (RUNOFF)
15.84 12.1 (RUNOFF)
17.34 9.4 (RUNOFF)
19.75 7.1 (RUNOFF)
20.08 7.0 (RUNOFF)
21.96 6.2 (RUNOFF)
24.01 5.3 (RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	.11
SQ.MI.										
8.82	CFS	.43	.51	.59	.68	.78	.88	.98		
1.10										
9.30	CFS	1.24	1.38	1.53	1.67	1.82	1.98	2.17		
2.36										
9.78	CFS	2.56	2.76	2.95	3.16	3.39	3.63	3.89		
4.15										
10.26	CFS	4.40	4.65	4.91	5.20	5.52	5.89	6.35		
6.91										
10.74	CFS	7.57	8.30	9.08	9.92	10.78	11.71	12.86		
14.23										
11.22	CFS	15.80	17.48	19.28	21.25	23.29	25.46	29.59		
36.52										
11.70	CFS	43	50	61	75	98	135	195		
276										
12.18	CFS	313	268	207	164	133	112	98		
86										
12.66	CFS	72.72	63.35	57.67	53.61	50.33	47.44	44.61		
41.80										
13.14	CFS	39.05	36.77	34.96	33.30	31.70	30.10	28.51		
26.97										
13.62	CFS	25.51	24.32	23.42	22.72	22.16	21.73	21.39		
21.08										
14.10	CFS	20.70	20.26	19.77	19.33	18.96	18.65	18.33		
17.93										
14.58	CFS	17.45	16.96	16.53	16.19	15.87	15.52	15.09		
14.69										
15.06	CFS	14.32	13.89	13.46	13.12	12.90	12.80	12.75		
12.73										
15.54	CFS	12.71	12.61	12.43	12.21	12.09	12.11	12.09		
11.95										

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TR20 ----- SCS

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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16.02	CFS	11.74	11.57	11.47	11.42	11.37	11.23	11.09		
10.99										
16.50	CFS	10.85	10.69	10.58	10.53	10.49	10.38	10.22		
10.12										
16.98	CFS	10.07	10.03	9.92	9.73	9.50	9.38	9.40		
9.37										
17.46	CFS	9.23	9.01	8.83	8.73	8.68	8.62	8.48		
8.33										
17.94	CFS	8.25	8.21	8.15	8.01	7.87	7.78	7.74		
7.68										
18.42	CFS	7.55	7.48	7.54	7.62	7.63	7.53	7.47		
7.52										
18.90	CFS	7.51	7.41	7.33	7.29	7.27	7.26	7.26		
7.26										
19.38	CFS	7.26	7.26	7.26	7.23	7.10	7.03	7.08		
7.06										
19.86	CFS	6.96	6.88	6.91	7.03	7.04	6.95	6.88		
6.84										
20.34	CFS	6.81	6.70	6.58	6.60	6.70	6.74	6.67		
6.57										
20.82	CFS	6.60	6.62	6.54	6.44	6.39	6.37	6.36		
6.35										

21.30 CFS	6.35	6.35	6.35	6.35	6.34	6.23	6.12
6.14							
21.78 CFS	6.16	6.10	6.10	6.16	6.11	6.01	5.94
5.91							
22.26 CFS	5.90	5.89	5.89	5.89	5.89	5.84	5.72
5.65							
22.74 CFS	5.69	5.68	5.57	5.49	5.52	5.63	5.65
5.56							
23.22 CFS	5.48	5.45	5.43	5.42	5.37	5.24	5.17
5.24							
23.70 CFS	5.32	5.33	5.22	5.09	5.06	5.32	5.21
3.80							
24.18 CFS	2.04	.99	.48				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.26 WATERSHED INCHES; 302 CFS-HRS; 25.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.34	1318.7	(NULL)
12.60	2094.7	(NULL)
12.69	1961.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.44 WATERSHED INCHES; 3975 CFS-HRS; 328.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	260.5	(NULL)
20.14	10.3	(NULL)
23.13	8.2	(NULL)
24.09	7.7	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .15 SQ.MI.

HRS	6.78 CFS	.85	7.26 CFS	1.50	7.74 CFS	2.40	8.22 CFS	3.44	8.70 CFS	4.64	9.18 CFS	6.53	9.66 CFS	9.38
	.49	.52	.57	.62	.67	.73	.79							
	.92	.99	1.06	1.14	1.22	1.31	1.40							
	1.60	1.70	1.81	1.92	2.04	2.16	2.28							
	2.53	2.65	2.78	2.91	3.04	3.17	3.31							
	3.59	3.74	3.89	4.04	4.18	4.32	4.47							
	4.81	5.00	5.20	5.43	5.69	5.96	6.24							
	6.83	7.15	7.49	7.86	8.23	8.61	8.99							

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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10.14	CFS	9.79	10.21	10.63	11.05	11.48	11.90	12.35
12.81								
10.62	CFS	13.30	13.85	14.49	15.25	16.13	17.12	18.18
19.30								
11.10	CFS	20.50	21.82	23.30	24.99	26.90	29.01	31.22
33.45								
11.58	CFS	35.80	38.67	42.69	47.52	52.98	59.58	67.97
79.25								
12.06	CFS	99	129	174	229	257	260	255
244								
12.54	CFS	231	220	209	197	183	170	157
145								
13.02	CFS	133	123	114	107	99	91	84
77								
13.50	CFS	71.93	67.34	63.36	59.86	56.88	54.37	52.29
50.55								
13.98	CFS	49.09	47.87	46.82	45.90	45.06	44.27	43.52
42.82								
14.46	CFS	42.16	41.53	40.92	40.30	39.67	39.04	38.43
37.80								
14.94	CFS	37.14	36.44	35.72	34.96	34.15	33.31	32.44
31.61								
15.42	CFS	30.82	30.09	29.29	28.45	27.60	26.68	25.63
24.58								
15.90	CFS	23.64	22.83	22.11	21.48	20.92	20.40	19.96
19.60								
16.38	CFS	19.28	18.99	18.72	18.43	18.11	17.81	17.53
17.28								
16.86	CFS	17.03	16.77	16.51	16.26	16.04	15.83	15.61
15.36								
17.34	CFS	15.11	14.91	14.75	14.58	14.39	14.18	13.97
13.78								
17.82	CFS	13.62	13.44	13.26	13.08	12.93	12.78	12.63
12.46								
18.30	CFS	12.25	12.06	11.88	11.72	11.56	11.44	11.38
11.34								
18.78	CFS	11.29	11.22	11.18	11.15	11.10	11.03	10.96
10.90								
19.26	CFS	10.85	10.80	10.77	10.75	10.73	10.71	10.69
10.64								
19.74	CFS	10.57	10.52	10.49	10.43	10.36	10.31	10.30
10.30								
20.22	CFS	10.28	10.24	10.20	10.15	10.08	9.99	9.92
9.89								
20.70	CFS	9.88	9.86	9.82	9.78	9.76	9.72	9.66
9.60								
21.18	CFS	9.54	9.48	9.44	9.41	9.38	9.36	9.34
9.32								
21.66	CFS	9.28	9.22	9.16	9.12	9.08	9.04	9.03
9.01								
22.14	CFS	8.97	8.91	8.85	8.80	8.75	8.72	8.69
8.67								
22.62	CFS	8.64	8.58	8.51	8.46	8.42	8.36	8.29
8.24								
23.10	CFS	8.22	8.23	8.21	8.17	8.12	8.07	8.03
7.99								
23.58	CFS	7.93	7.85	7.79	7.78	7.77	7.75	7.68
7.62								
24.06	CFS	7.62	7.63	7.29	6.48	5.44	4.43	3.54
2.81								

24.54 CFS      2.21      1.73      1.36      1.05      .82      .63      .49

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.30 WATERSHED INCHES;      501 CFS-HRS;      41.4 ACRE-  
FEET.

OPERATION ADDHYD      XSECTION      76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	1579.0	(NULL)
12.60	2314.2	(NULL)

	HYDROGRAPH POINTS FOR      ALTERNATE = 1,      STORM =99						
HRS	MAIN	TIME	INCREMENT = .060 hr,		DRAINAGE	AREA =	1.28
SQ.MI.							
2.94 CFS	.47	.52	.57	.62	.67	.72	.77
.83							
3.42 CFS	.89	.96	1.04	1.12	1.22	1.31	1.42
1.53							
3.90 CFS	1.64	1.74	1.85	1.96	2.08	2.21	2.34
2.48							
4.38 CFS	2.63	2.77	2.91	3.05	3.19	3.34	3.51
3.68							
4.86 CFS	3.85	4.04	4.24	4.46	4.71	4.97	5.25
5.53							
5.34 CFS	5.82	6.12	6.44	6.78	7.11	7.45	7.78
8.14							
5.82 CFS	8.52	8.91	9.31	9.69	10.06	10.42	10.81
11.22							

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6.30 CFS	11.67	12.13	12.60	13.08	13.58	14.11	14.67
15.27							
6.78 CFS	15.90	16.55	17.22	17.89	18.58	19.29	20.01
20.75							
7.26 CFS	21.51	22.32	23.16	24.05	24.94	25.85	26.76
27.68							
7.74 CFS	28.61	29.55	30.49	31.43	32.40	33.41	34.44
35.52							
8.22 CFS	36.62	37.74	38.87	40.00	41.14	42.29	43.47
44.69							
8.70 CFS	45.96	47.28	48.66	50.09	51.56	53.04	54.52
56.00							
9.18 CFS	57.52	59.12	60.86	62.78	64.89	67.20	69.72
72.43							
9.66 CFS	75	78	82	85	89	93	97
102							
10.14 CFS	106	110	115	119	124	129	133
138							
10.62 CFS	143	148	154	160	167	175	184
195							
11.10 CFS	206	219	233	249	265	284	305
327							
11.58 CFS	353	384	420	461	513	577	659

769								
12.06 CFS	925	1142	1352	1496	1566	1578	1542	
1982								
12.54 CFS	2086	2314	2129	2126	1828	1772	1536	
1427								
13.02 CFS	1253	1195	1080	1007	921	866	799	
754								
13.50 CFS	700	666	625	596	562	528	496	
465								
13.98 CFS	438	415	394	376	361	347	336	
325								
14.46 CFS	316	307	299	292	284	278	271	
265								
14.94 CFS	258	252	246	240	234	228	223	
217								
15.42 CFS	212	207	202	198	194	190	187	
184								
15.90 CFS	181	178	175	173	171	169	167	
165								
16.38 CFS	163	161	159	157	156	154	152	
151								
16.86 CFS	149	148	146	145	143	142	141	
139								
17.34 CFS	138	136	135	133	132	130	129	
128								
17.82 CFS	126	125	123	122	120	119	118	
116								
18.30 CFS	115	114	113	111	110	109	108	
108								
18.78 CFS	107	106	106	105	105	105	104	
104								
19.26 CFS	103	103	102	102	102	101	101	
101								
19.74 CFS	100	100	100	99	99	98	98	
98								
20.22 CFS	97.38	97.07	96.79	96.42	95.97	95.55	95.16	
94.75								
20.70 CFS	94.26	93.77	93.43	93.15	92.83	92.46	92.08	
91.69								
21.18 CFS	91.29	90.88	90.45	90.04	89.66	89.33	89.04	
88.71								
21.66 CFS	88.35	88.07	87.78	87.39	87.03	86.71	86.35	
85.95								
22.14 CFS	85.58	85.23	84.88	84.52	84.13	83.75	83.38	
83.02								
22.62 CFS	82.60	82.20	81.89	81.53	81.06	80.55	80.11	
79.77								
23.10 CFS	79.42	79.01	78.63	78.30	78.02	77.76	77.43	
76.98								
23.58 CFS	76.51	76.13	75.79	75.41	74.95	74.47	74.09	
74.02								
24.06 CFS	73.70	72.06	69.38	66.28	62.60	58.06	52.61	
46.49								
24.54 CFS	40.25	34.42	29.34	25.10	21.64	18.91	16.85	
15.34								
25.02 CFS	14.25							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.42 WATERSHED INCHES; 4476 CFS-HRS; 369.9 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 176  
 OUTPUT #1 HYDROGRAPH



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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.00	691.0 *	(DIVERT)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3400 CFS-HRS; 281.0 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	888.0	178.82
12.60	1623.2	180.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.30 WATERSHED INCHES; 1076 CFS-HRS; 88.9 ACRE-FEET.

OPERATION RESVOR STRUCTURE 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	888.0	(NULL)
12.60	1623.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.30 WATERSHED INCHES; 1076 CFS-HRS; 88.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 177

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	1579.0	(NULL)
12.60	2314.2	(NULL)

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99							
HRS	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = 1.28			
SQ.MI.								
2.94 CFS	.47	.52	.57	.62	.67	.72	.77	
.83								
3.42 CFS	.89	.96	1.04	1.12	1.22	1.31	1.42	
1.53								
3.90 CFS	1.64	1.74	1.85	1.96	2.08	2.21	2.34	
2.48								
4.38 CFS	2.63	2.77	2.91	3.05	3.19	3.34	3.51	
3.68								
4.86 CFS	3.85	4.04	4.24	4.46	4.71	4.97	5.25	
5.53								

5.34 CFS	5.82	6.12	6.44	6.78	7.11	7.45	7.78
8.14							
5.82 CFS	8.52	8.91	9.31	9.69	10.06	10.42	10.81
11.22							
6.30 CFS	11.67	12.13	12.60	13.08	13.58	14.11	14.67
15.27							
6.78 CFS	15.90	16.55	17.22	17.89	18.58	19.29	20.01
20.75							
7.26 CFS	21.51	22.32	23.16	24.05	24.94	25.85	26.76
27.68							
7.74 CFS	28.61	29.55	30.49	31.43	32.40	33.41	34.44
35.52							
8.22 CFS	36.62	37.74	38.87	40.00	41.14	42.29	43.47
44.69							
8.70 CFS	45.96	47.28	48.66	50.09	51.56	53.04	54.52
56.00							

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9.18 CFS	57.52	59.12	60.86	62.78	64.89	67.20	69.72
72.43							
9.66 CFS	75	78	82	85	89	93	97
102							
10.14 CFS	106	110	115	119	124	129	133
138							
10.62 CFS	143	148	154	160	167	175	184
195							
11.10 CFS	206	219	233	249	265	284	305
327							
11.58 CFS	353	384	420	461	513	577	659
769							
12.06 CFS	925	1142	1352	1496	1566	1578	1542
1982							
12.54 CFS	2086	2314	2129	2126	1828	1772	1536
1427							
13.02 CFS	1253	1195	1080	1007	921	866	799
754							
13.50 CFS	700	666	625	596	562	528	496
465							
13.98 CFS	438	415	394	376	361	347	336
325							
14.46 CFS	316	307	299	292	284	278	271
265							
14.94 CFS	258	252	246	240	234	228	223
217							
15.42 CFS	212	207	202	198	194	190	187
184							
15.90 CFS	181	178	175	173	171	169	167
165							
16.38 CFS	163	161	159	157	156	154	152
151							
16.86 CFS	149	148	146	145	143	142	141
139							
17.34 CFS	138	136	135	133	132	130	129
128							
17.82 CFS	126	125	123	122	120	119	118
116							

18.30 CFS	115	114	113	111	110	109	108
108							
18.78 CFS	107	106	106	105	105	105	104
104							
19.26 CFS	103	103	102	102	102	101	101
101							
19.74 CFS	100	100	100	99	99	98	98
98							
20.22 CFS	97.38	97.07	96.79	96.42	95.97	95.55	95.16
94.75							
20.70 CFS	94.26	93.77	93.43	93.15	92.83	92.46	92.08
91.69							
21.18 CFS	91.29	90.88	90.45	90.04	89.66	89.33	89.04
88.71							
21.66 CFS	88.35	88.07	87.78	87.39	87.03	86.71	86.35
85.95							
22.14 CFS	85.58	85.23	84.88	84.52	84.13	83.75	83.38
83.02							
22.62 CFS	82.60	82.20	81.89	81.53	81.06	80.55	80.11
79.77							
23.10 CFS	79.42	79.01	78.63	78.30	78.02	77.76	77.43
76.98							
23.58 CFS	76.51	76.13	75.79	75.41	74.95	74.47	74.09
74.02							
24.06 CFS	73.70	72.06	69.38	66.28	62.60	58.06	52.61
46.49							
24.54 CFS	40.25	34.42	29.34	25.10	21.64	18.91	16.85
15.34							
25.02 CFS	14.25						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.42 WATERSHED INCHES; 4476 CFS-HRS; 369.9 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 77.  
 \*\*\*

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.34	1579.0	231.12
12.60	2314.2	231.80

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.42 WATERSHED INCHES; 4476 CFS-HRS; 369.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION (FEET)

12.17	171.1	(RUNOFF)
15.84	6.1	(RUNOFF)
17.34	4.7	(RUNOFF)
21.96	3.1	(RUNOFF)
24.01	2.7	(RUNOFF)

		HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99						
		MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05						
HRS	SQ.MI.							
7.98 CFS	.76	.47	.51	.55	.59	.62	.66	.71
8.46 CFS	1.12	.79	.84	.89	.94	1.00	1.04	1.08
8.94 CFS	1.72	1.17	1.23	1.30	1.36	1.43	1.52	1.62
9.42 CFS	2.63	1.82	1.91	2.01	2.12	2.24	2.38	2.51
9.90 CFS	3.77	2.75	2.87	3.01	3.17	3.33	3.49	3.63
10.38 CFS	6.05	3.92	4.10	4.29	4.51	4.80	5.17	5.59
10.86 CFS	11.62	6.54	7.05	7.58	8.12	8.82	9.66	10.62
11.34 CFS	30.55	12.66	13.80	14.95	16.16	18.71	22.84	26.72
11.82 CFS	141	37	45	57	78	111	154	171
12.30 CFS	32	107	84	67	57	50	43	37
12.78 CFS	18.60	29.22	27.20	25.54	24.07	22.61	21.15	19.76
13.26 CFS	12.26	17.69	16.83	16.01	15.20	14.38	13.60	12.86
13.74 CFS	10.21	11.82	11.46	11.18	10.96	10.79	10.64	10.44
14.22 CFS	8.52	9.96	9.73	9.55	9.39	9.23	9.02	8.77
14.70 CFS	6.96	8.31	8.13	7.97	7.79	7.57	7.37	7.18
15.18 CFS	6.33	6.75	6.58	6.47	6.42	6.40	6.39	6.38
15.66 CFS	5.79	6.23	6.11	6.06	6.08	6.06	5.99	5.88
16.14 CFS	5.34	5.74	5.72	5.69	5.62	5.55	5.50	5.43
16.62 CFS	5.02	5.29	5.27	5.25	5.19	5.11	5.06	5.04
17.10 CFS	4.49	4.95	4.85	4.74	4.68	4.70	4.68	4.60
17.58 CFS	4.09	4.40	4.35	4.33	4.30	4.23	4.15	4.11
18.06 CFS	3.72	4.06	3.99	3.92	3.88	3.86	3.83	3.76
18.54 CFS	3.69	3.76	3.80	3.81	3.75	3.72	3.75	3.74
19.02 CFS	3.62	3.65	3.63	3.62	3.62	3.62	3.62	3.62
19.50 CFS	3.42	3.62	3.60	3.53	3.50	3.53	3.51	3.46
19.98 CFS	3.33	3.44	3.50	3.50	3.46	3.42	3.40	3.38
20.46 CFS	3.29	3.27	3.29	3.34	3.35	3.31	3.26	3.28

20.94 CFS	3.25	3.20	3.17	3.16	3.16	3.16	3.16
3.16							
21.42 CFS	3.16	3.16	3.15	3.09	3.03	3.05	3.06
3.02							
21.90 CFS	3.03	3.06	3.03	2.98	2.95	2.93	2.93
2.92							
22.38 CFS	2.92	2.92	2.92	2.90	2.83	2.80	2.83
2.81							
22.86 CFS	2.76	2.72	2.74	2.80	2.80	2.75	2.72
2.70							
23.34 CFS	2.69	2.69	2.66	2.59	2.56	2.60	2.64
2.64							
23.82 CFS	2.58	2.51	2.51	2.66	2.60	1.82	.92
.43							

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.96 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	1674.5	(NULL)
12.60	2357.3	(NULL)
23.98	76.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.40 WATERSHED INCHES; 4640 CFS-HRS; 383.4 ACRE-  
FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.40	1659.3	217.39
12.67	2285.4	219.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.43 WATERSHED INCHES; 4661 CFS-HRS; 385.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	97.7	(RUNOFF)
15.84	3.6	(RUNOFF)
20.07	2.1	(RUNOFF)
24.01	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.39	1699.9	180.51
12.67	2305.5	181.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.41 WATERSHED INCHES; 4753 CFS-HRS; 392.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 83

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	187.0	(RUNOFF)
15.84	6.2	(RUNOFF)
17.34	4.8	(RUNOFF)
21.95	3.1	(RUNOFF)
24.00	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.14 WATERSHED INCHES; 170 CFS-HRS; 14.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.24	200.3	(RUNOFF)
18.67	5.4	(RUNOFF)
20.68	4.8	(RUNOFF)
24.01	3.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.03 WATERSHED INCHES; 235 CFS-HRS; 19.5 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 184  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.12	118.0 *	(DIVERT)
18.67	5.4	(DIVERT)
20.68	4.8	(DIVERT)

24.01 3.7 (DIVERT)  
\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
217 CFS-HRS; 17.9 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.24 82.3 175.97

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.40 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
FEET.

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\*\*\* MESSAGE - STRUCTURE 81, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE

STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 200.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.

\*\*\*

OPERATION RESVOR STRUCTURE 81

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
AT STRUCTURE 81

\*\*\*

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.48 .0 192.37

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 185

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.39 118.6 (NULL)  
18.67 5.4 (NULL)  
20.68 4.8 (NULL)  
24.01 3.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.64 WATERSHED INCHES; 217 CFS-HRS; 17.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 186

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.25	103.1	(RUNOFF)
18.67	3.1	(RUNOFF)
24.01	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.06 WATERSHED INCHES; 121 CFS-HRS; 10.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 187

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.25	221.1	(NULL)
18.67	8.6	(NULL)
20.68	7.5	(NULL)
23.12	6.3	(NULL)
24.01	5.8	(NULL)

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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 04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.41 WATERSHED INCHES; 338 CFS-HRS; 27.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 85

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.17	392.3	(NULL)
18.83	12.3	(NULL)
20.07	11.4	(NULL)
20.82	10.8	(NULL)
21.95	10.0	(NULL)
23.07	9.2	(NULL)
24.00	8.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .17  
 SQ.MI.

HRS	7.32 CFS	1.00	7.80 CFS	1.78	8.28 CFS	2.70	8.76 CFS	3.92	9.24 CFS	6.31	9.72 CFS	9.59
	.43	.51	.59	.67	.75	.83	.91					
	1.09	1.19	1.29	1.39	1.48	1.59	1.70					
	1.89	2.01	2.11	2.21	2.32	2.44	2.57					
	2.82	2.93	3.04	3.17	3.34	3.53	3.71					
	4.16	4.44	4.74	5.03	5.32	5.62	5.95					
	6.69	7.08	7.46	7.84	8.23	8.65	9.11					



10.20	CFS	10.07	10.53	10.99	11.47	11.99	12.56	13.21
14.03								
10.68	CFS	15.03	16.17	17.49	18.91	20.43	22.00	23.66
25.69								
11.16	CFS	28.04	30.72	33.63	36.73	40.12	43.62	47.42
54.29								
11.64	CFS	64	75	86	103	125	157	212
293								
12.12	CFS	373	391	354	314	280	252	228
197								
12.60	CFS	169	145	127	113	102	93	86
80								
13.08	CFS	74.70	69.60	65.30	61.59	58.32	55.33	52.50
49.72								
13.56	CFS	47.04	44.53	42.35	40.56	39.08	37.86	36.92
36.14								
14.04	CFS	35.48	34.79	34.06	33.29	32.56	31.90	31.31
30.73								
14.52	CFS	30.08	29.36	28.60	27.89	27.25	26.67	26.06
25.40								
15.00	CFS	24.76	24.12	23.42	22.75	22.15	21.70	21.39
21.20								
15.48	CFS	21.09	20.99	20.83	20.59	20.29	20.09	20.03
19.92								
15.96	CFS	19.73	19.47	19.22	19.03	18.90	18.76	18.56
18.37								
16.44	CFS	18.20	17.97	17.73	17.54	17.41	17.30	17.12
16.92								
16.92	CFS	16.76	16.64	16.53	16.36	16.11	15.80	15.60
15.53								
17.40	CFS	15.42	15.23	14.96	14.70	14.50	14.36	14.23
14.02								
17.88	CFS	13.82	13.67	13.55	13.43	13.24	13.04	12.89
12.78								
18.36	CFS	12.66	12.48	12.37	12.39	12.44	12.44	12.35
12.29								
18.84	CFS	12.32	12.27	12.17	12.08	12.00	11.94	11.91
11.89								
19.32	CFS	11.88	11.88	11.87	11.87	11.82	11.67	11.59
11.60								
19.80	CFS	11.54	11.43	11.34	11.34	11.44	11.44	11.37
11.30								
20.28	CFS	11.23	11.16	11.01	10.87	10.87	10.92	10.96
10.89								
20.76	CFS	10.80	10.82	10.80	10.70	10.60	10.52	10.45
10.41								
21.24	CFS	10.39	10.38	10.37	10.37	10.36	10.34	10.21
10.09								
21.72	CFS	10.09	10.06	9.97	9.99	10.03	9.95	9.86
9.77								
22.20	CFS	9.70	9.66	9.63	9.62	9.61	9.60	9.54
9.40								
22.68	CFS	9.31	9.32	9.25	9.14	9.05	9.05	9.14
9.15								

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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23.16 CFS	9.08	9.00	8.94	8.89	8.86	8.79	8.63
8.54							
23.64 CFS	8.57	8.63	8.64	8.53	8.39	8.35	8.61
8.38							
24.12 CFS	6.78	4.86	3.26	2.02	1.25	.79	.49

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.63 WATERSHED INCHES; 508 CFS-HRS; 42.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	1974.3	(NULL)
12.67	2447.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.32 WATERSHED INCHES; 5261 CFS-HRS; 434.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	76.9	(RUNOFF)
15.84	2.2	(RUNOFF)
22.42	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.87 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	2001.5	(NULL)
12.67	2459.0	(NULL)
23.97	88.0	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55  
 SQ.MI.

3.06 CFS	.50	.55	.60	.66	.72	.79	.85
.92							
3.54 CFS	1.00	1.08	1.18	1.27	1.38	1.49	1.61
1.73							
4.02 CFS	1.84	1.96	2.09	2.21	2.34	2.48	2.63
2.79							
4.50 CFS	2.95	3.10	3.24	3.39	3.55	3.72	3.90
4.08							
4.98 CFS	4.27	4.47	4.70	4.95	5.23	5.51	5.78
6.08							
5.46 CFS	6.38	6.72	7.06	7.41	7.75	8.09	8.44
8.82							
5.94 CFS	9.22	9.64	10.04	10.41	10.79	11.19	11.61
12.06							
6.42 CFS	12.53	13.02	13.51	14.03	14.56	15.12	15.74
16.41							
6.90 CFS	17.08	17.78	18.51	19.27	20.06	20.86	21.69

22.55							
7.38 CFS	23.47	24.44	25.43	26.45	27.47	28.52	29.59
30.66							
7.86 CFS	31.75	32.87	33.99	35.13	36.32	37.53	38.73
40.02							
8.34 CFS	41.36	42.66	43.96	45.30	46.68	48.09	49.52
50.98							
8.82 CFS	52.47	54.03	55.65	57.40	59.20	60.99	62.83
64.76							

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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9.30 CFS	66.82	69.02	71.38	73.91	76.64	79.63	82.88
86.35							
9.78 CFS	90	94	98	102	107	112	117
122							
10.26 CFS	127	132	138	143	149	154	160
167							
10.74 CFS	174	182	190	200	210	222	235
250							
11.22 CFS	267	285	305	327	351	377	410
451							
11.70 CFS	498	552	618	703	816	981	1217
1511							
12.18 CFS	1762	1914	1988	2000	1968	1901	2166
2285							
12.66 CFS	2457	2353	2308	2071	1957	1747	1605
1433							
13.14 CFS	1338	1224	1136	1046	978	908	852
795							
13.62 CFS	752	707	672	636	601	567	535
506							
14.10 CFS	480	457	437	419	404	390	378
367							
14.58 CFS	357	348	339	331	323	315	308
300							
15.06 CFS	293	286	279	272	265	259	253
248							
15.54 CFS	242	237	232	228	224	220	217
213							
16.02 CFS	210	207	204	202	199	197	195
192							
16.50 CFS	190	188	186	184	182	180	178
176							
16.98 CFS	175	173	171	170	168	166	164
163							
17.46 CFS	161	159	157	156	154	152	150
149							
17.94 CFS	147	145	144	142	140	139	137
136							
18.42 CFS	134	133	131	130	130	128	127
127							
18.90 CFS	126	125	125	124	124	123	123
122							
19.38 CFS	122	121	121	121	120	120	119
119							
19.86 CFS	118	118	117	117	117	116	116

115							
20.34 CFS	115	114	114	113	113	113	112
112							
20.82 CFS	111	111	110	110	109	109	108
108							
21.30 CFS	108	107	107	106	106	105	105
105							
21.78 CFS	104	104	103	103	103	102	102
101							
22.26 CFS	101	100	100	100	99	99	98
98							
22.74 CFS	97.15	96.73	96.20	95.60	95.11	94.82	94.47
94.00							
23.22 CFS	93.47	92.97	92.55	92.21	91.83	91.27	90.69
90.28							
23.70 CFS	89.99	89.67	89.13	88.45	87.89	87.93	87.46
84.60							
24.18 CFS	80.07	75.02	70.18	65.56	60.66	55.15	49.09
42.82							
24.66 CFS	36.83	31.47	26.90	23.12	20.09	17.76	16.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.34 WATERSHED INCHES; 5332 CFS-HRS; 440.6 ACRE-FEET.

OPERATION DIVERT XSECTION 81  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
11.94	730.0 *	178.42
23.97	88.0	176.02

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3866 CFS-HRS; 319.5 ACRE-FEET.

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.35	1271.5	179.64
12.67	1729.0	180.57

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 1466 CFS-HRS; 121.1 ACRE-FEET.

OPERATION RESVOR STRUCTURE 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
 12.35 1271.5 (NULL)  
 12.67 1729.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 1466 CFS-HRS; 121.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 89

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.35 2001.5 (NULL)  
 12.67 2459.0 (NULL)  
 23.97 88.0 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55  
 SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	1.55
3.06 CFS	.50	.55	.60	.66	.72	.79	.85			
.92										
3.54 CFS	1.00	1.08	1.18	1.27	1.38	1.49	1.61			
1.73										
4.02 CFS	1.84	1.96	2.09	2.21	2.34	2.48	2.63			
2.79										
4.50 CFS	2.95	3.10	3.24	3.39	3.55	3.72	3.90			
4.08										
4.98 CFS	4.27	4.47	4.70	4.95	5.23	5.51	5.78			
6.08										
5.46 CFS	6.38	6.72	7.06	7.41	7.75	8.09	8.44			
8.82										
5.94 CFS	9.22	9.64	10.04	10.41	10.79	11.19	11.61			
12.06										
6.42 CFS	12.53	13.02	13.51	14.03	14.56	15.12	15.74			
16.41										
6.90 CFS	17.08	17.78	18.51	19.27	20.06	20.86	21.69			
22.55										
7.38 CFS	23.47	24.44	25.43	26.45	27.47	28.52	29.59			
30.66										
7.86 CFS	31.75	32.87	33.99	35.13	36.32	37.53	38.73			
40.02										
8.34 CFS	41.36	42.66	43.96	45.30	46.68	48.09	49.52			
50.98										
8.82 CFS	52.47	54.03	55.65	57.40	59.20	60.99	62.83			
64.76										
9.30 CFS	66.82	69.02	71.38	73.91	76.64	79.63	82.88			
86.35										
9.78 CFS	90	94	98	102	107	112	117			
122										
10.26 CFS	127	132	138	143	149	154	160			
167										
10.74 CFS	174	182	190	200	210	222	235			
250										
11.22 CFS	267	285	305	327	351	377	410			
451										
11.70 CFS	498	552	618	703	816	981	1217			
1511										
12.18 CFS	1762	1914	1988	2000	1968	1901	2166			
2285										

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,

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12.66	CFS	2457	2353	2308	2071	1957	1747	1605
1433								
13.14	CFS	1338	1224	1136	1046	978	908	852
795								
13.62	CFS	752	707	672	636	601	567	535
506								
14.10	CFS	480	457	437	419	404	390	378
367								
14.58	CFS	357	348	339	331	323	315	308
300								
15.06	CFS	293	286	279	272	265	259	253
248								
15.54	CFS	242	237	232	228	224	220	217
213								
16.02	CFS	210	207	204	202	199	197	195
192								
16.50	CFS	190	188	186	184	182	180	178
176								
16.98	CFS	175	173	171	170	168	166	164
163								
17.46	CFS	161	159	157	156	154	152	150
149								
17.94	CFS	147	145	144	142	140	139	137
136								
18.42	CFS	134	133	131	130	130	128	127
127								
18.90	CFS	126	125	125	124	124	123	123
122								
19.38	CFS	122	121	121	121	120	120	119
119								
19.86	CFS	118	118	117	117	117	116	116
115								
20.34	CFS	115	114	114	113	113	113	112
112								
20.82	CFS	111	111	110	110	109	109	108
108								
21.30	CFS	108	107	107	106	106	105	105
105								
21.78	CFS	104	104	103	103	103	102	102
101								
22.26	CFS	101	100	100	100	99	99	98
98								
22.74	CFS	97.15	96.73	96.20	95.60	95.11	94.82	94.47
94.00								
23.22	CFS	93.47	92.97	92.55	92.21	91.83	91.27	90.69
90.28								
23.70	CFS	89.99	89.67	89.13	88.45	87.89	87.93	87.46
84.60								
24.18	CFS	80.07	75.02	70.18	65.56	60.66	55.15	49.09
42.82								
24.66	CFS	36.83	31.47	26.90	23.12	20.09	17.76	16.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.34 WATERSHED INCHES; 5332 CFS-HRS; 440.6 ACRE-  
 FEET.

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:

F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.  
RAINTABLE NUMBER 9, ARC 2  
MAIN TIME INCREMENT .060 HOURS

ALTERNATE	1	STORM	2				
STRUCTURE 11	RESVOR	.09	1.39	382.15	12.47	51	566.7
XSECTION 7	ADDHYD	.17	1.31	---	12.44	85	500.0
XSECTION 107	DIVERT	.00	1.31	---	12.44	85	*****
XSECTION 82	DIVERT	.17	.00	---	.00	0	.0
STRUCTURE 84	RESVOR	.17	.00	---	.00	0	.0
XSECTION 108	ADDHYD	.17	1.31	---	12.44	85	500.0
XSECTION 8	REACH	.17	1.31	357.10	12.52	84	494.1
STRUCTURE 21	RESVOR	.07	1.91	374.07	13.56F	10F	142.9
STRUCTURE 22	RESVOR	.07	1.91	353.09	13.68F	10F	142.9
STRUCTURE 23	RESVOR	.32	1.39	---	12.47	112	350.0
XSECTION 16	REACH	.32	1.39	332.30	12.47	112	350.0
STRUCTURE 24	RESVOR	.03	2.46	---	12.18	38	1266.7
XSECTION 20	ADDHYD	.05	2.19	---	12.16	75	1500.0
XSECTION 21	ADDHYD	.41	1.52	---	12.19	203	495.1
XSECTION 122	DIVERT	.00	1.52	---	12.12F	168F	*****
XSECTION 82	DIVERT	.41	.02	175.41	12.19	35	85.4
STRUCTURE 83	RESVOR	.41	.02	---	.00	0	.0
XSECTION 123	ADDHYD	.41	1.51	---	12.12F	168F	409.8
XSECTION 23	REACH	.41	1.50	315.37	12.47	156	380.5
STRUCTURE 31	RESVOR	.05	1.55	362.31	12.46	28	560.0
STRUCTURE 1	RESVOR	.60	1.49	---	12.41	262	436.7
STRUCTURE 32	RESVOR	.01	2.01	379.28	13.56R	1R	100.0
STRUCTURE 33	RESVOR	.03	2.08	355.98	12.47	18	600.0
STRUCTURE 34	RESVOR	.04	2.06	---	12.48	18	450.0
STRUCTURE 35	RESVOR	.06	2.10	---	12.15	45	750.0
XSECTION 141	ADDHYD	.07	1.98	---	12.15	46	657.1
XSECTION 43	ADDHYD	.77	1.56	---	12.38	387	502.6
XSECTION 144	DIVERT	.00	1.56	---	12.38	387	*****

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE		RUNOFF	PEAK DISCHARGE			
		AREA (SQ MI)	AMOUNT (IN)		ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ID	OPERATION							
	ALTERNATE	1	STORM	2				
XSECTION	82	DIVERT	.77	.00	---	.00	0	.0
STRUCTURE	82	RESVOR	.77	.00	---	.00	0	.0
XSECTION	145	ADDHYD	.77	1.56	---	12.38	387	502.6
XSECTION	44	REACH	.77	1.56	290.16	12.53	362	470.1
STRUCTURE	2	RESVOR	.77	1.56	---	12.53	362	470.1
XSECTION	49	ADDHYD	.82	1.55	---	12.52	378	461.0
XSECTION	51	REACH	.93	1.54	284.55	12.61	422	453.8
XSECTION	60	ADDHYD	1.01	1.48	---	12.60	436	431.7
STRUCTURE	3	RESVOR	1.01	1.48	---	12.60	436	431.7
XSECTION	62	ADDHYD	1.02	1.47	---	12.60	439	430.4
XSECTION	162	DIVERT	.00	1.47	---	12.60	439	*****
XSECTION	82	DIVERT	1.02	.00	---	.00	0	.0
STRUCTURE	73	RESVOR	1.02	.00	---	.00	0	.0
XSECTION	163	ADDHYD	1.02	1.47	---	12.60	439	430.4
XSECTION	63	REACH	1.02	1.47	249.55	12.77	416	407.8
STRUCTURE	61	RESVOR	.01	1.71	332.36	12.74	5	500.0
STRUCTURE	62	RESVOR	.05	.83	290.42	12.43	12	240.0
STRUCTURE	63	RESVOR	.01	1.40	263.40	12.49	3	300.0
XSECTION	76	ADDHYD	1.28	1.34	---	12.75	460	359.4
XSECTION	176	DIVERT	.00	1.34	---	12.75	460	*****
XSECTION	82	DIVERT	1.28	.00	---	.00	0	.0
STRUCTURE	72	RESVOR	1.28	.00	---	.00	0	.0
XSECTION	177	ADDHYD	1.28	1.34	---	12.75	460	359.4
XSECTION	77	REACH	1.28	1.34	229.21	12.82	460	359.4
XSECTION	84	RUNOFF	.07	.89	---	12.27	33	471.4
XSECTION	184	DIVERT	.00	.89	---	12.27	33	*****
XSECTION	82	DIVERT	.07	.00	---	.00	0	.0
STRUCTURE	81	RESVOR	.07	.00	---	.00	0	.0
XSECTION	185	ADDHYD	.07	.89	---	12.27	33	471.4
XSECTION	187	ADDHYD	.12	.75	---	12.28	42	350.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE		RUNOFF	PEAK DISCHARGE			
		AREA (SQ MI)	AMOUNT (IN)		ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE		1	STORM	2				
XSECTION	85	ADDHYD	.17	.80	---	12.20	68	400.0
XSECTION	88	ADDHYD	1.55	1.26	---	12.80	493	318.1
XSECTION	81	DIVERT	.00	1.26	177.74	12.80	493	*****
XSECTION	82	DIVERT	1.55	.00	---	.00	0	.0
STRUCTURE	71	RESVOR	1.55	.00	---	.00	0	.0
XSECTION	89	ADDHYD	1.55	1.26	---	12.80	493	318.1
RAINFALL OF		4.10 inches AND		24.00 hr	DURATION, BEGINS AT		.0 hrs.	
ALTERNATE		1	STORM	5				
STRUCTURE	11	RESVOR	.09	2.13	382.73	12.33	97	1077.8
XSECTION	7	ADDHYD	.17	2.02	---	12.38	161	947.1
XSECTION	107	DIVERT	.00	2.02	---	12.38	161	*****
XSECTION	82	DIVERT	.17	.00	---	.00	0	.0
STRUCTURE	84	RESVOR	.17	.00	---	.00	0	.0
XSECTION	108	ADDHYD	.17	2.02	---	12.38	161	947.1
XSECTION	8	REACH	.17	2.02	357.55	12.45	156	917.6
STRUCTURE	21	RESVOR	.07	2.74	375.57	12.90	30	428.6
STRUCTURE	22	RESVOR	.07	2.74	354.29	13.04	29	414.3
STRUCTURE	23	RESVOR	.32	2.11	---	12.44	203	634.4
XSECTION	16	REACH	.32	2.11	332.93	12.44	203	634.4
STRUCTURE	24	RESVOR	.03	3.34	---	12.18	51	1700.0
XSECTION	20	ADDHYD	.05	3.05	---	12.16	103	2060.0
XSECTION	21	ADDHYD	.41	2.26	---	12.19	325	792.7
XSECTION	122	DIVERT	.00	2.26	---	12.06F	168F	*****
XSECTION	82	DIVERT	.41	.22	176.37	12.19	157	382.9
STRUCTURE	83	RESVOR	.41	.00	---	24.00	0	.0
XSECTION	123	ADDHYD	.41	2.05	---	12.69	169	412.2
XSECTION	23	REACH	.41	2.05	315.42	12.87	168	409.8
STRUCTURE	31	RESVOR	.05	2.31	363.56	12.36	55	1100.0

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL		DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE		
	OPERATION					TIME (HR)	RATE (CFS)	RATE (CSM)
	ALTERNATE	1	STORM	5				
STRUCTURE 1	RESVOR	.60	2.09	---	12.42	324	540.0	
STRUCTURE 32	RESVOR	.01	2.77	379.83	12.63T	4T	400.0	
STRUCTURE 33	RESVOR	.03	2.91	356.65	12.37	33	1100.0	
STRUCTURE 34	RESVOR	.04	2.87	---	12.39	35	875.0	
STRUCTURE 35	RESVOR	.06	2.93	---	12.16	74	1233.3	
XSECTION 141	ADDHYD	.07	2.79	---	12.16	77	1100.0	
XSECTION 43	ADDHYD	.77	2.21	---	12.35	513	666.2	
XSECTION 144	DIVERT	.00	2.21	---	12.35	513	*****	
XSECTION 82	DIVERT	.77	.00	---	.00	0	.0	
STRUCTURE 82	RESVOR	.77	.00	---	.00	0	.0	
XSECTION 145	ADDHYD	.77	2.21	---	12.35	513	666.2	
XSECTION 44	REACH	.77	2.20	290.41	12.49	486	631.2	
STRUCTURE 2	RESVOR	.77	2.20	---	12.49	486	631.2	
XSECTION 49	ADDHYD	.82	2.20	---	12.47	512	624.4	
XSECTION 51	REACH	.93	2.19	285.04	12.55	591	635.5	
XSECTION 60	ADDHYD	1.01	2.13	---	12.54	615	608.9	
STRUCTURE 3	RESVOR	1.01	2.13	---	12.54	615	608.9	
XSECTION 62	ADDHYD	1.02	2.12	---	12.54	622	609.8	
XSECTION 162	DIVERT	.00	2.12	---	12.54	621	*****	
XSECTION 82	DIVERT	1.02	.00	175.01	12.54R	1R	1.0	
STRUCTURE 73	RESVOR	1.02	.00	---	12.54R	1R	1.0	
XSECTION 163	ADDHYD	1.02	2.12	---	12.54	622	609.8	
XSECTION 63	REACH	1.02	2.12	249.86	12.69	594	582.4	
STRUCTURE 61	RESVOR	.01	2.50	333.50	12.82	6	600.0	
STRUCTURE 62	RESVOR	.05	1.41	292.31	12.54	16	320.0	
STRUCTURE 63	RESVOR	.01	2.13	265.07	12.59	4	400.0	
XSECTION 76	ADDHYD	1.28	1.98	---	12.66	673	525.8	
XSECTION 176	DIVERT	.00	1.98	---	12.66	673	*****	
XSECTION 82	DIVERT	1.28	.00	---	.00	0	.0	
STRUCTURE 72	RESVOR	1.28	.00	---	.00	0	.0	

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 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE	1	STORM	5				
XSECTION 177	ADDHYD	1.28	1.98	---	12.66	673	525.8
XSECTION 77	REACH	1.28	1.97	229.74	12.72	672	525.0
XSECTION 84	RUNOFF	.07	1.49	---	12.26	57	814.3
XSECTION 184	DIVERT	.00	1.49	---	12.26	57	*****
XSECTION 82	DIVERT	.07	.00	---	.00	0	.0
STRUCTURE 81	RESVOR	.07	.00	---	.00	0	.0
XSECTION 185	ADDHYD	.07	1.49	---	12.26	57	814.3
XSECTION 187	ADDHYD	.12	1.29	---	12.26	79	658.3
XSECTION 85	ADDHYD	.17	1.37	---	12.20	125	735.3
XSECTION 88	ADDHYD	1.55	1.88	---	12.69	735	474.2
XSECTION 81	DIVERT	.00	1.88	178.42	12.69	731	*****
XSECTION 82	DIVERT	1.55	.00	175.05	12.69	4	2.6
STRUCTURE 71	RESVOR	1.55	.00	---	12.69	4	2.6
XSECTION 89	ADDHYD	1.55	1.88	---	12.69	735	474.2

RAINFALL OF 4.91 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE	1	STORM	10				
STRUCTURE 11	RESVOR	.09	2.81	383.02	12.34	121	1344.4
XSECTION 7	ADDHYD	.17	2.70	---	12.36	213	1252.9
XSECTION 107	DIVERT	.00	2.70	---	12.36	213	*****
XSECTION 82	DIVERT	.17	2.70	---	.00	0	.0
STRUCTURE 84	RESVOR	.17	2.70	---	.00	0	.0
XSECTION 108	ADDHYD	.17	2.70	---	12.36	213	1252.9
XSECTION 8	REACH	.17	2.70	357.82	12.43	212	1247.1
STRUCTURE 21	RESVOR	.07	3.49	376.27	12.68	61	871.4
STRUCTURE 22	RESVOR	.07	3.49	355.97	12.81	57	814.3
STRUCTURE 23	RESVOR	.32	2.79	---	12.41	278	868.8
XSECTION 16	REACH	.32	2.79	333.39	12.41	278	868.8
STRUCTURE 24	RESVOR	.03	4.13	---	12.18	63	2100.0

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 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL		DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE		
	ID	OPERATION				TIME (HR)	RATE (CFS)	RATE (CSM)
	ALTERNATE	1	STORM	10				
XSECTION 20	ADDHYD	.05	3.82	---	12.16	127	2540.0	
XSECTION 21	ADDHYD	.41	2.96	---	12.19	429	1046.3	
XSECTION 122	DIVERT	.00	2.96	---	12.00F	168F	*****	
XSECTION 82	DIVERT	.41	.51	176.91	12.19	261	636.6	
STRUCTURE 83	RESVOR	.41	.03	322.25	12.84	76	185.4	
XSECTION 123	ADDHYD	.41	2.48	---	12.84	244	595.1	
XSECTION 23	REACH	.41	2.47	315.55	12.97	197	480.5	
STRUCTURE 31	RESVOR	.05	3.02	363.94	12.32	78	1560.0	
STRUCTURE 1	RESVOR	.60	2.60	---	12.37	406	676.7	
STRUCTURE 32	RESVOR	.01	3.48	380.16	12.40	9	900.0	
STRUCTURE 33	RESVOR	.03	3.67	357.05	12.32	49	1633.3	
STRUCTURE 34	RESVOR	.04	3.62	---	12.35	54	1350.0	
STRUCTURE 35	RESVOR	.06	3.69	---	12.18	101	1683.3	
XSECTION 141	ADDHYD	.07	3.53	---	12.18	106	1514.3	
XSECTION 43	ADDHYD	.77	2.77	---	12.33	669	868.8	
XSECTION 144	DIVERT	.00	2.77	---	12.18F	543F	*****	
XSECTION 82	DIVERT	.77	.06	176.21	12.33	126	163.6	
STRUCTURE 82	RESVOR	.77	.00	---	24.00	0	.0	
XSECTION 145	ADDHYD	.77	2.71	---	12.45	545	707.8	
XSECTION 44	REACH	.77	2.71	290.52	12.59	539	700.0	
STRUCTURE 2	RESVOR	.77	2.71	---	12.59	539	700.0	
XSECTION 49	ADDHYD	.82	2.72	---	12.55	566	690.2	
XSECTION 51	REACH	.93	2.73	285.27	12.53	679	730.1	
XSECTION 60	ADDHYD	1.01	2.67	---	12.50	715	707.9	
STRUCTURE 3	RESVOR	1.01	2.67	---	12.50	715	707.9	
XSECTION 62	ADDHYD	1.02	2.65	---	12.50	725	710.8	
XSECTION 162	DIVERT	.00	2.65	---	12.36F	621F	*****	
XSECTION 82	DIVERT	1.02	.05	176.10	12.50	104	102.0	
STRUCTURE 73	RESVOR	1.02	.05	---	12.50	104	102.0	
XSECTION 163	ADDHYD	1.02	2.65	---	12.50	725	710.8	

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 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL		DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE		
	ID	OPERATION				TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE		1	STORM	10				
XSECTION	63	REACH	1.02	2.65	250.03	12.67	701	687.3
STRUCTURE	61	RESVOR	.01	3.24	334.33	12.74	8	800.0
STRUCTURE	62	RESVOR	.05	1.98	293.76	12.62	18	360.0
STRUCTURE	63	RESVOR	.01	2.82	265.90	12.33	10	1000.0
XSECTION	76	ADDHYD	1.28	2.52	---	12.62	818	639.1
XSECTION	176	DIVERT	.00	2.52	---	12.42F	691F*****	
XSECTION	82	DIVERT	1.28	.06	176.22	12.62	127	99.2
STRUCTURE	72	RESVOR	1.28	.06	---	12.62	127	99.2
XSECTION	177	ADDHYD	1.28	2.52	---	12.62	818	639.1
XSECTION	77	REACH	1.28	2.52	230.04	12.68	818	639.1
XSECTION	84	RUNOFF	.07	2.08	---	12.25	82	1171.4
XSECTION	184	DIVERT	.00	2.08	---	12.25	82	*****
XSECTION	82	DIVERT	.07	.00	---	.00	0	.0
STRUCTURE	81	RESVOR	.07	.00	---	.00	0	.0
XSECTION	185	ADDHYD	.07	2.08	---	12.25	82	1171.4
XSECTION	187	ADDHYD	.12	1.84	---	12.25	116	966.7
XSECTION	85	ADDHYD	.17	1.93	---	12.20	182	1070.6
XSECTION	88	ADDHYD	1.55	2.43	---	12.70	903	582.6
XSECTION	81	DIVERT	.00	2.43	178.42	12.42F	730F*****	
XSECTION	82	DIVERT	1.55	.08	176.45	12.70	173	111.6
STRUCTURE	71	RESVOR	1.55	.08	---	12.70	173	111.6
XSECTION	89	ADDHYD	1.55	2.43	---	12.70	903	582.6

RAINFALL OF 6.14 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE		1	STORM	25				
STRUCTURE	11	RESVOR	.09	3.89	383.65	12.33	175	1944.4
XSECTION	7	ADDHYD	.17	3.77	---	12.35	307	1805.9
XSECTION	107	DIVERT	.00	3.77	---	12.18F	213F*****	
XSECTION	82	DIVERT	.17	.21	176.05	12.35	94	552.9

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XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)				
	ALTERNATE 1	STORM 25					
STRUCTURE 84	RESVOR	.17	.00	---	23.11	0	.0
XSECTION 108	ADDHYD	.17	3.57	---	12.51	215	1264.7
XSECTION 8	REACH	.17	3.56	357.84	12.57	214	1258.8
STRUCTURE 21	RESVOR	.07	4.61	377.05	12.54	109	1557.1
STRUCTURE 22	RESVOR	.07	4.60	358.68	12.69	100	1428.6
STRUCTURE 23	RESVOR	.32	3.75	---	12.26	364	1137.5
XSECTION 16	REACH	.32	3.75	333.88	12.26	364	1137.5
STRUCTURE 24	RESVOR	.03	5.34	---	12.18	80	2666.7
XSECTION 20	ADDHYD	.05	5.01	---	12.16	164	3280.0
XSECTION 21	ADDHYD	.41	3.96	---	12.20	597	1456.1
XSECTION 122	DIVERT	.00	3.96	---	11.88F	168F*****	
XSECTION 82	DIVERT	.41	.98	177.52	12.20	429	1046.3
STRUCTURE 83	RESVOR	.41	.34	323.39	12.42	531	1295.1
XSECTION 123	ADDHYD	.41	3.31	---	12.42	699	1704.9
XSECTION 23	REACH	.41	3.52	316.39	12.60	488	1190.2
STRUCTURE 31	RESVOR	.05	4.16	364.70	12.32	107	2140.0
STRUCTURE 1	RESVOR	.60	3.67	---	12.49	718	1196.7
STRUCTURE 32	RESVOR	.01	4.57	380.46	12.27	21	2100.0
STRUCTURE 33	RESVOR	.03	4.86	357.38	12.28	71	2366.7
STRUCTURE 34	RESVOR	.04	4.79	---	12.28	91	2275.0
STRUCTURE 35	RESVOR	.06	4.87	---	12.20	155	2583.3
XSECTION 141	ADDHYD	.07	4.69	---	12.20	162	2314.3
XSECTION 43	ADDHYD	.77	3.85	---	12.48	973	1263.6
XSECTION 144	DIVERT	.00	3.85	---	12.12F	543F*****	
XSECTION 82	DIVERT	.77	.40	177.52	12.48	430	558.4
STRUCTURE 82	RESVOR	.77	.12	319.18	12.55	412	535.1
XSECTION 145	ADDHYD	.77	3.57	---	12.55	955	1240.3
XSECTION 44	REACH	.77	3.60	290.97	12.71	806	1046.8
STRUCTURE 2	RESVOR	.77	3.60	---	12.71	806	1046.8
XSECTION 49	ADDHYD	.82	3.62	---	12.71	832	1014.6

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 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE		RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE		
		AREA (SQ MI)	STORM			TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE	1	STORM	25					
XSECTION 51	REACH	.93		3.65	285.77	12.77	899	966.7
XSECTION 60	ADDHYD	1.01		3.58	---	12.77	926	916.8
STRUCTURE 3	RESVOR	1.01		3.58	---	12.77	926	916.8
XSECTION 62	ADDHYD	1.02		3.57	---	12.77	934	915.7
XSECTION 162	DIVERT	.00		3.57	---	12.12F	621F*****	
XSECTION 82	DIVERT	1.02		.32	177.12	12.77	313	306.9
STRUCTURE 73	RESVOR	1.02		.32	---	12.77	313	306.9
XSECTION 163	ADDHYD	1.02		3.57	---	12.77	934	915.7
XSECTION 63	REACH	1.02		3.57	250.30	12.91	904	886.3
STRUCTURE 61	RESVOR	.01		4.38	334.86	12.62	14	1400.0
STRUCTURE 62	RESVOR	.05		2.94	295.13	12.47	37	740.0
STRUCTURE 63	RESVOR	.01		3.90	266.77	12.29	16	1600.0
XSECTION 76	ADDHYD	1.28		3.44	---	12.52	1072	837.5
XSECTION 176	DIVERT	.00		3.44	---	12.18F	691F*****	
XSECTION 82	DIVERT	1.28		.36	177.35	12.52	381	297.7
STRUCTURE 72	RESVOR	1.28		.36	---	12.52	381	297.7
XSECTION 177	ADDHYD	1.28		3.44	---	12.52	1072	837.5
XSECTION 77	REACH	1.28		3.44	230.49	12.58	1071	836.7
XSECTION 84	RUNOFF	.07		3.05	---	12.25	121	1728.6
XSECTION 184	DIVERT	.00		3.05	---	12.25	118	*****
XSECTION 82	DIVERT	.07		.00	175.03	12.24	2	28.6
STRUCTURE 81	RESVOR	.07		.00	---	.00	0	.0
XSECTION 185	ADDHYD	.07		3.04	---	12.25	118	1685.7
XSECTION 187	ADDHYD	.12		2.75	---	12.25	175	1458.3
XSECTION 85	ADDHYD	.17		2.87	---	12.19	273	1605.9
XSECTION 88	ADDHYD	1.55		3.36	---	12.60	1223	789.0
XSECTION 81	DIVERT	.00		3.36	178.42	12.12F	730F*****	
XSECTION 82	DIVERT	1.55		.44	177.74	12.60	493	318.1
STRUCTURE 71	RESVOR	1.55		.44	---	12.60	493	318.1
XSECTION 89	ADDHYD	1.55		3.36	---	12.60	1223	789.0

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 1

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 SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF		7.23 inches AND	24.00 hr DURATION,	BEGINS AT	.0 hrs.		
ALTERNATE	1	STORM	50				
STRUCTURE 11	RESVOR	.09	4.89	384.18	12.32	219	2433.3
XSECTION 7	ADDHYD	.17	4.75	---	12.35	387	2276.5
XSECTION 107	DIVERT	.00	4.75	---	12.12F	213F*****	
XSECTION 82	DIVERT	.17	.50	176.46	12.35	174	1023.5
STRUCTURE 84	RESVOR	.17	.00	---	22.72	0	.0
XSECTION 108	ADDHYD	.17	4.26	---	12.57	213	1252.9
XSECTION 8	REACH	.17	4.26	357.83	12.63	213	1252.9
STRUCTURE 21	RESVOR	.07	5.58	377.76	12.51	140	2000.0
STRUCTURE 22	RESVOR	.07	5.57	359.61	12.80	112	1600.0
STRUCTURE 23	RESVOR	.32	4.57	---	12.23	430	1343.8
XSECTION 16	REACH	.32	4.57	334.24	12.23	430	1343.8
STRUCTURE 24	RESVOR	.03	6.42	---	12.18	95	3166.7
XSECTION 20	ADDHYD	.05	6.08	---	12.16	197	3940.0
XSECTION 21	ADDHYD	.41	4.83	---	12.18	762	1858.5
XSECTION 122	DIVERT	.00	4.83	---	11.76F	168F*****	
XSECTION 82	DIVERT	.41	1.40	178.07	12.18	594	1448.8
STRUCTURE 83	RESVOR	.41	1.21	324.05	12.30	916	2234.1
XSECTION 123	ADDHYD	.41	4.64	---	12.30	1084	2643.9
XSECTION 23	REACH	.41	4.23	316.74	12.37	654	1595.1
STRUCTURE 31	RESVOR	.05	5.15	365.04	12.30	132	2640.0
STRUCTURE 1	RESVOR	.60	4.47	---	12.37	1089	1815.0
STRUCTURE 32	RESVOR	.01	5.55	380.63	12.24	29	2900.0
STRUCTURE 33	RESVOR	.03	5.93	357.61	12.27	85	2833.3
STRUCTURE 34	RESVOR	.04	5.84	---	12.26	114	2850.0

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 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED



HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)				
ALTERNATE	1	STORM	50				
STRUCTURE 35	RESVOR	.06	5.92	---	12.19	206	3433.3
XSECTION 141	ADDHYD	.07	5.72	---	12.18	216	3085.7
XSECTION 43	ADDHYD	.77	4.82	---	12.36	1514	1966.2
XSECTION 144	DIVERT	.00	4.82	---	12.06F	543F*****	
XSECTION 82	DIVERT	.77	.79	179.03	12.36	971	1261.0
STRUCTURE 82	RESVOR	.77	.47	320.03	12.41	900	1168.8
XSECTION 145	ADDHYD	.77	4.50	---	12.41	1443	1874.0
XSECTION 44	REACH	.77	4.55	291.59	12.49	1253	1627.3
STRUCTURE 2	RESVOR	.77	4.55	---	12.49	1253	1627.3
XSECTION 49	ADDHYD	.82	4.57	---	12.49	1309	1596.3
XSECTION 51	REACH	.93	4.59	286.68	12.57	1388	1492.5
XSECTION 60	ADDHYD	1.01	4.52	---	12.56	1445	1430.7
STRUCTURE 3	RESVOR	1.01	4.52	---	12.56	1445	1430.7
XSECTION 62	ADDHYD	1.02	4.50	---	12.56	1461	1432.4
XSECTION 162	DIVERT	.00	4.50	---	12.06F	621F*****	
XSECTION 82	DIVERT	1.02	.73	178.70	12.56	840	823.5
STRUCTURE 73	RESVOR	1.02	.73	---	12.56	840	823.5
XSECTION 163	ADDHYD	1.02	4.50	---	12.56	1461	1432.4
XSECTION 63	REACH	1.02	4.51	250.87	12.71	1390	1362.7
STRUCTURE 61	RESVOR	.01	5.41	335.25	12.57	19	1900.0
STRUCTURE 62	RESVOR	.05	3.83	296.06	12.44	52	1040.0
STRUCTURE 63	RESVOR	.01	4.90	267.40	12.24	27	2700.0
XSECTION 76	ADDHYD	1.28	4.37	---	12.70	1607	1255.5
XSECTION 176	DIVERT	.00	4.37	---	12.06F	691F*****	
XSECTION 82	DIVERT	1.28	.80	178.90	12.70	916	715.6
STRUCTURE 72	RESVOR	1.28	.80	---	12.70	916	715.6
XSECTION 177	ADDHYD	1.28	4.37	---	12.70	1607	1255.5
XSECTION 77	REACH	1.28	4.36	231.15	12.76	1606	1254.7
XSECTION 84	RUNOFF	.07	3.96	---	12.24	157	2242.9
XSECTION 184	DIVERT	.00	3.96	---	12.18F	118F*****	

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ALTERNATE 1		STORM	50					
XSECTION	82	DIVERT	.07	.14	175.46	12.24	39	557.1
STRUCTURE	81	RESVOR	.07	.14	---	.00	0	.0
XSECTION	185	ADDHYD	.07	3.81	---	12.18F	118F	1685.7
XSECTION	187	ADDHYD	.12	3.53	---	12.25	195	1625.0
XSECTION	85	ADDHYD	.17	3.69	---	12.17	332	1952.9
XSECTION	88	ADDHYD	1.55	4.27	---	12.82	1727	1114.2
XSECTION	81	DIVERT	.00	4.27	178.42	12.06F	730F*****	
XSECTION	82	DIVERT	1.55	.91	179.08	12.82	997	643.2
STRUCTURE	71	RESVOR	1.55	.91	---	12.82	997	643.2
XSECTION	89	ADDHYD	1.55	4.27	---	12.82	1727	1114.2

RAINFALL OF 8.47 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1		STORM	99					
STRUCTURE	11	RESVOR	.09	6.04	384.78	12.32	269	2988.9
XSECTION	7	ADDHYD	.17	5.90	---	12.34	479	2817.6
XSECTION	107	DIVERT	.00	5.90	---	12.06F	213F*****	
XSECTION	82	DIVERT	.17	.89	176.94	12.34	266	1564.7
STRUCTURE	84	RESVOR	.17	.00	---	23.74	0	.0
XSECTION	108	ADDHYD	.17	5.02	---	12.69	216	1270.6
XSECTION	8	REACH	.17	5.02	357.84	12.75	215	1264.7
STRUCTURE	21	RESVOR	.07	6.69	378.71	12.54	154	2200.0
STRUCTURE	22	RESVOR	.07	6.68	360.78	12.91	127	1814.3
STRUCTURE	23	RESVOR	.32	5.49	---	12.21	516	1612.5
XSECTION	16	REACH	.32	5.49	334.69	12.21	516	1612.5
STRUCTURE	24	RESVOR	.03	7.65	---	12.18	112	3733.3
XSECTION	20	ADDHYD	.05	7.30	---	12.16	234	4680.0
XSECTION	21	ADDHYD	.41	5.81	---	12.18	916	2234.1
XSECTION	122	DIVERT	.00	5.81	---	11.64F	168F*****	
XSECTION	82	DIVERT	.41	1.89	178.46	12.18	748	1824.4

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED. A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES: F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF		PEAK DISCHARGE			
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ALTERNATE	1	STORM	99					
STRUCTURE 83	RESVOR	.41	1.79	324.24	12.24	1053	2568.3	
XSECTION 123	ADDHYD	.41	5.71	---	12.24	1221	2978.0	
XSECTION 23	REACH	.41	5.19	317.04	12.31	803	1958.5	
STRUCTURE 31	RESVOR	.05	6.35	365.43	12.30	161	3220.0	
STRUCTURE 1	RESVOR	.60	5.49	---	12.31	1349	2248.3	
STRUCTURE 32	RESVOR	.01	6.68	380.81	12.23	33	3300.0	
STRUCTURE 33	RESVOR	.03	7.15	357.96	12.29	96	3200.0	
STRUCTURE 34	RESVOR	.04	7.04	---	12.27	129	3225.0	
STRUCTURE 35	RESVOR	.06	7.13	---	12.17	245	4083.3	
XSECTION 141	ADDHYD	.07	6.91	---	12.17	258	3685.7	
XSECTION 43	ADDHYD	.77	5.91	---	12.31	1905	2474.0	
XSECTION 144	DIVERT	.00	5.91	---	13.12	547	*****	
XSECTION 82	DIVERT	.77	1.24	179.82	12.31	1362	1768.8	
STRUCTURE 82	RESVOR	.77	1.20	321.38	12.31	1888	2451.9	
XSECTION 145	ADDHYD	.77	5.87	---	12.31	2431	3157.1	
XSECTION 44	REACH	.77	5.47	292.38	12.48	1948	2529.9	
STRUCTURE 2	RESVOR	.77	5.47	---	12.48	1948	2529.9	
XSECTION 49	ADDHYD	.82	5.51	---	12.48	2018	2461.0	
XSECTION 51	REACH	.93	5.74	287.72	12.54	2094	2251.6	
XSECTION 60	ADDHYD	1.01	5.65	---	12.54	2170	2148.5	
STRUCTURE 3	RESVOR	1.01	5.65	---	12.54	2170	2148.5	
XSECTION 62	ADDHYD	1.02	5.64	---	12.54	2191	2148.0	
XSECTION 162	DIVERT	.00	5.64	---	12.00F	621F	*****	
XSECTION 82	DIVERT	1.02	1.26	180.25	12.54	1570	1539.2	
STRUCTURE 73	RESVOR	1.02	1.26	---	12.54	1570	1539.2	
XSECTION 163	ADDHYD	1.02	5.64	---	12.54	2191	2148.0	
XSECTION 63	REACH	1.02	5.56	251.47	12.61	2010	1970.6	
STRUCTURE 61	RESVOR	.01	6.61	335.67	12.55	25	2500.0	
STRUCTURE 62	RESVOR	.05	4.89	297.03	12.42	70	1400.0	
STRUCTURE 63	RESVOR	.01	6.07	267.78	12.19	44	4400.0	

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STANDARD

PEAK DISCHARGE

STRUCTURE	CONTROL	DRAINAGE	RUNOFF				
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1		STORM	99				
XSECTION 76	ADDHYD	1.28	5.42	---	12.60	2314	1807.8
XSECTION 176	DIVERT	.00	5.42	---	12.00F	691F*****	
XSECTION 82	DIVERT	1.28	1.30	180.35	12.60	1623	1268.0
STRUCTURE 72	RESVOR	1.28	1.30	---	12.60	1623	1268.0
XSECTION 177	ADDHYD	1.28	5.42	---	12.60	2314	1807.8
XSECTION 77	REACH	1.28	5.42	231.80	12.60	2314	1807.8
XSECTION 84	RUNOFF	.07	5.03	---	12.24	200	2857.1
XSECTION 184	DIVERT	.00	5.03	---	12.12F	118F*****	
XSECTION 82	DIVERT	.07	.40	175.97	12.24	82	1171.4
STRUCTURE 81	RESVOR	.07	.00	---	20.68	0	.0
XSECTION 185	ADDHYD	.07	4.64	---	12.39	119	1700.0
XSECTION 187	ADDHYD	.12	4.41	---	12.25	221	1841.7
XSECTION 85	ADDHYD	.17	4.63	---	12.17	392	2305.9
XSECTION 88	ADDHYD	1.55	5.34	---	12.67	2459	1586.5
XSECTION 81	DIVERT	.00	5.34	178.42	11.94F	730F*****	
XSECTION 82	DIVERT	1.55	1.47	180.57	12.67	1729	1115.5
STRUCTURE 71	RESVOR	1.55	1.47	---	12.67	1729	1115.5
XSECTION 89	ADDHYD	1.55	5.34	---	12.67	2459	1586.5

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION						ROUTING PARAMETERS				
XSEC	REACH	FLOOD		OUTFLOW		Q-A EQ.		LENGTH FACTOR	PEAK RATIO Q*/I	ATT- KIN (C)
		PLAIN	INFLOW	PEAK	TIME	PEAK	TIME			
ID	LENGTH	LENGTH	PEAK	TIME	PEAK	TIME	(X)	(M)	(k*)	(Q*)
COEFF	(FT)	(FT)	(CFS)	(HR)	(CFS)	(HR)				

BASEFLOW IS .0 CFS

ALTERNATE	1	STORM	2							
2	1170	24	12.3	23	12.4	1.55	1.37	.029	.952	

.58									
5	797	51	12.5	50	12.5	2.26	1.19	.019	.989
.75?									
8	1221	85	12.4	84	12.5	1.15	1.48	.009	.990
.76?									
16	920	112	12.5	112	12.5	3.61	1.49	.001	1.000
1.00?									
23	1379	168	12.1	156	12.5	1.15	1.15	.050	.929
.33									
27	1021	84	12.3	77	12.4	1.10	1.18	.061	.910
.41									
32	1603	76	12.2	68	12.4	1.28	1.33	.055	.899
.48									
34	583	1	13.6	1	13.7	1.14	1.62	.001	.998
.49									
37	934	18	12.5	18	12.5	2.31	1.55	.002	.999
.92?									
44	1428	386	12.4	362	12.5	.46	1.34	.033	.937
.40									
51	1275	436	12.5	422	12.6	.60	1.31	.025	.967
.47									
53	652	0	.0	0	.0	.000	.00	.000	.000
.00									
63	1959	439	12.6	416	12.8	.79	1.27	.041	.946
.35									
65	1283	5	12.7	5	12.8	2.47	1.43	.012	.996
.53									
70	2166	58	12.2	52	12.3	1.72	1.40	.032	.899
.49									
72	1081	3	12.5	3	12.7	1.50	1.61	.007	.994
.49									
77	884	459	12.8	459	12.8	1.92	1.22	.008	1.000
.87?									
80	1296	465	12.8	465	12.8	1.59	1.44	.003	1.000
1.00?									

ALTERNATE 1 STORM 5

2	1170	36	12.3	34	12.4	1.72	1.27	.038	.945
.55									
5	797	94	12.3	90	12.4	2.08	1.23	.018	.965
.83?									
8	1221	159	12.4	155	12.5	1.22	1.46	.010	.971
.84?									
16	920	202	12.4	202	12.4	3.61	1.49	.001	1.000
1.00?									
23	1379	168	12.7	167	12.9	1.15	1.15	.035	.997
.33									
27	1021	137	12.3	123	12.4	1.07	1.18	.060	.901
.44									
32	1603	107	12.2	98	12.3	1.33	1.32	.050	.915
.51									
34	583	4	12.6	4	12.7	1.14	1.62	.002	.994
.71?									

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

		HYDROGRAPH INFORMATION				ROUTING PARAMETERS					
XSEC ID	REACH LENGTH	FLOOD PLAIN LENGTH	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR	PEAK RATIO Q/I	ATT- KIN
			PEAK	TIME	PEAK	TIME	COEFF	POWER			
COEFF	(FT)	(FT)	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)	(Q*)	(C)
	ALTERNATE	1	STORM	5							
37	934		35	12.4	35	12.4	2.31	1.55	.003	1.000	
1.00?											
44	1428		513	12.4	485	12.5	.38	1.38	.024	.947	
.45											
51	1275		609	12.4	591	12.5	.51	1.34	.020	.970	
.52											
53	652		0	13.3	0	13.4	2.05	1.40	.007	.956	
.32											
63	1959		622	12.5	592	12.7	.60	1.34	.029	.953	
.40											
65	1283		6	12.8	6	13.0	2.47	1.43	.009	.997	
.55											
70	2166		94	12.2	74	12.4	1.68	1.19	.086	.790	
.32											
72	1081		4	12.6	4	12.7	1.50	1.61	.004	.998	
.52											
77	884		673	12.7	672	12.7	1.91	1.22	.008	.999	
.90?											
80	1296		683	12.7	683	12.7	1.70	1.41	.003	1.000	
1.00?											
	ALTERNATE	1	STORM	10							
2	1170		48	12.3	45	12.4	1.90	1.19	.047	.937	
.52											
5	797		121	12.4	120	12.4	2.00	1.25	.016	.996	
.87?											
8	1221		213	12.4	212	12.4	1.26	1.44	.009	.993	
.88?											
16	920		278	12.4	278	12.4	3.70	1.48	.001	1.000	
1.00?											
23	1379		244	12.8	196	13.0	.98	1.19	.035	.801	
.36											
27	1021		191	12.3	174	12.4	.73	1.29	.043	.911	
.52											
32	1603		136	12.2	125	12.3	1.35	1.31	.047	.925	
.52											
34	583		9	12.4	9	12.5	1.14	1.62	.004	.994	

.86?									
37	934	54	12.4	54	12.4	2.32	1.54	.003	1.000
1.00?									
44	1428	543	12.5	539	12.6	.37	1.39	.019	.993
.46									
51	1275	695	12.4	679	12.5	.49	1.35	.016	.977
.54									
53	652	0	12.5	0	12.7	2.05	1.40	.010	.932
.47									
63	1959	724	12.5	701	12.7	.54	1.36	.023	.968
.42									
65	1283	8	12.7	8	12.8	2.46	1.41	.010	.978
.59									
70	2166	127	12.2	88	12.4	1.90	1.05	.154	.692
.22									

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MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;  
 LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION				ROUTING PARAMETERS							
XSEC ID	REACH LENGTH COEFF	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT- KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
ALTERNATE		1	STORM	10							
72	1081		9	12.4	9	12.4	1.48	1.55	.008	.934	
.61											
77	884		818	12.6	817	12.7	1.89	1.22	.007	.999	
.92?											
80	1296		834	12.7	833	12.7	2.47	1.26	.006	.999	
.92?											
ALTERNATE		1	STORM	25							
2	1170		65	12.3	65	12.4	.29	2.00	.003	.995	
.89?											
5	797		173	12.3	172	12.4	1.91	1.27	.014	.995	
.92?											
8	1221		213	12.5	213	12.6	1.26	1.44	.006	1.000	
.88?											
16	920		361	12.2	361	12.2	3.84	1.46	.001	1.000	
1.00?											
23	1379		699	12.4	488	12.6	.63	1.30	.048	.698	

.49									
27	1021	260	12.3	244	12.4	.48	1.40	.027	.939
.60									
32	1603	180	12.2	168	12.3	1.37	1.30	.043	.930
.55									
34	583	20	12.2	20	12.2	1.14	1.62	.005	1.000
1.00?									
37	934	91	12.3	91	12.3	2.39	1.52	.004	1.000
1.00?									
44	1428	947	12.5	804	12.7	.28	1.44	.018	.850
.54									
51	1275	921	12.7	898	12.8	.46	1.36	.014	.975
.57									
53	652	2	12.2	2	12.3	2.05	1.40	.014	.917
.63									
63	1959	933	12.8	903	12.9	.46	1.39	.018	.968
.46									
65	1283	14	12.6	14	12.7	2.48	1.39	.012	.979
.64									
70	2166	181	12.2	128	12.4	1.83	1.06	.150	.709
.22									
72	1081	16	12.3	15	12.4	1.53	1.49	.011	.986
.66									
77	884	1071	12.5	1070	12.6	1.96	1.22	.006	1.000
.94?									
80	1296	1098	12.6	1097	12.7	3.39	1.17	.009	.999
.87?									
ALTERNATE	1	STORM	50						
-----									
2	1170	81	12.3	81	12.4	.29	2.00	.003	.998
.94?									
5	797	217	12.3	216	12.4	1.85	1.28	.012	.995
.95?									

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MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION				ROUTING PARAMETERS							
XSEC	REACH	FLOOD PLAIN	INFLOW		OUTFLOW		Q-A EQ. COEFF	LENGTH FACTOR	PEAK RATIO Q/I	ATT- KIN	
			PEAK	TIME	PEAK	TIME					
COEFF	(FT)	(FT)	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)	(Q*)	(C)



ALTERNATE	1	STORM	50						
8	1221	213	12.6	213	12.7	1.26	1.44	.005	1.000
.88?									
16	920	429	12.2	429	12.2	3.96	1.45	.001	1.000
1.00?									
23	1379	1084	12.3	645	12.4	.64	1.30	.049	.595
.52									
27	1021	323	12.3	312	12.4	.40	1.45	.021	.967
.65									
32	1603	216	12.2	204	12.3	1.38	1.30	.040	.944
.56									
34	583	29	12.2	29	12.2	1.14	1.61	.006	1.000
1.00?									
37	934	113	12.2	113	12.2	2.43	1.51	.004	1.000
1.00?									
44	1428	1433	12.4	1246	12.5	.26	1.46	.019	.869
.60									
51	1275	1502	12.5	1366	12.7	.43	1.37	.015	.909
.64									
53	652	5	12.2	4	12.2	2.05	1.40	.017	.927
.75?									
63	1959	1441	12.5	1389	12.7	.39	1.42	.017	.964
.52									
65	1283	19	12.6	19	12.7	2.49	1.38	.012	.986
.67?									
70	2166	231	12.2	171	12.5	1.69	1.08	.138	.742
.23									
72	1081	27	12.2	25	12.3	1.66	1.42	.017	.927
.70?									
77	884	1603	12.7	1603	12.8	1.86	1.23	.007	1.000
.99?									
80	1296	1626	12.8	1621	12.8	4.28	1.11	.013	.997
.84?									

ALTERNATE	1	STORM	99						
2	1170	99	12.3	99	12.4	.27	2.00	.002	.999
.97?									
5	797	267	12.3	267	12.4	1.81	1.28	.011	.998
.97?									
8	1221	213	12.7	213	12.8	1.26	1.44	.004	1.000
.88?									
16	920	514	12.2	514	12.2	4.11	1.44	.001	1.000
1.00?									
23	1379	1219	12.2	796	12.4	.68	1.28	.046	.653
.51									
27	1021	392	12.3	384	12.4	.35	1.48	.017	.980
.70?									
32	1603	260	12.2	244	12.3	1.50	1.27	.043	.941
.55									
34	583	33	12.2	33	12.2	1.15	1.61	.005	1.000
1.00?									

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MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION				ROUTING PARAMETERS				
			INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	Q-A COEFF (X)	EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN (C)
	ALTERNATE	1	STORM	99							
37	934		127	12.3	127	12.3	2.45	1.51	.003	1.000	
44	1428		2419	12.3	1945	12.5	.25	1.46	.021	.804	
51	1275		2257	12.5	2093	12.5	.43	1.38	.018	.927	
53	652		8	12.2	8	12.2	2.05	1.40	.017	.971	
63	1959		2189	12.5	2008	12.6	.36	1.44	.018	.917	
65	1283		25	12.5	24	12.7	2.51	1.37	.012	.982	
70	2166		304	12.2	230	12.4	1.33	1.14	.117	.755	
72	1081		44	12.2	39	12.2	1.69	1.41	.021	.888	
77	884		2314	12.6	2314	12.6	1.71	1.24	.007	1.000	
80	1296		2357	12.6	2279	12.7	5.87	1.02	.026	.967	

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STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50

STRUCTURE	84		.17					
-----								
ALTERNATE	1			0	0	0	0	0
0								
STRUCTURE	83		.41					
-----								
ALTERNATE	1			0	0	76	531	
916								
STRUCTURE	82		.77					
-----								
ALTERNATE	1			0	0	0	412	
900								
STRUCTURE	81		.07					
-----								
ALTERNATE	1			0	0	0	0	
0								
STRUCTURE	73		1.02					
-----								
ALTERNATE	1			0	1?	104	313	
840								
STRUCTURE	72		1.28					
-----								
ALTERNATE	1			0	0	127	381	
916								
STRUCTURE	71		1.55					
-----								
ALTERNATE	1			0	4	173	493	
997								
STRUCTURE	63		.01					
-----								
ALTERNATE	1			3	4	10	16	
27								
STRUCTURE	62		.05					
-----								
ALTERNATE	1			12	16	18	37	
52								
STRUCTURE	61		.01					
-----								
ALTERNATE	1			5	6	8	14	
19								
STRUCTURE	35		.06					
-----								
ALTERNATE	1			45	74	101	155	
206								
STRUCTURE	34		.04					
-----								
ALTERNATE	1			18	35	54	91	
114								
STRUCTURE	33		.03					
-----								

ALTERNATE 1 18 33 49 71  
85

STRUCTURE 32 .01  
-----

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STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
STRUCTURE 32	.01					
----- ALTERNATE 1 29		1?	4	9	21	
STRUCTURE 31	.05					
----- ALTERNATE 1 132		28	55	78	107	
STRUCTURE 24	.03					
----- ALTERNATE 1 95		38	51	63	80	
STRUCTURE 23	.32					
----- ALTERNATE 1 430		112	203	278	364	
STRUCTURE 22	.07					
----- ALTERNATE 1 112		10	29	57	100	
STRUCTURE 21	.07					
----- ALTERNATE 1 140		10	30	61	109	
STRUCTURE 11	.09					
----- ALTERNATE 1 219		51	97	121	175	
STRUCTURE 3	1.01					
----- ALTERNATE 1		436	615	715	926	

1445						
STRUCTURE	2		.77			
-----						
ALTERNATE	1			362	486	539 806
1253						
STRUCTURE	1		.60			
-----						
ALTERNATE	1			262	324	406 718
1089						
XSECTION	7		.17			
-----						
ALTERNATE	1			85	161	213 307
387						
XSECTION	8		.17			
-----						
ALTERNATE	1			84	156	212 214
213						
XSECTION	16		.32			
-----						
ALTERNATE	1			112	203	278 364
430						
XSECTION	20		.05			
-----						
ALTERNATE	1			75	103	127 164
197						

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STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
XSECTION 21	.41					
-----						
ALTERNATE 1		203	325	429	597	
762						
XSECTION 23	.41					
-----						
ALTERNATE 1		156	168	197	488	
654						
XSECTION 43	.77					
-----						

ALTERNATE 1514	1		387	513	669	973
XSECTION	44	.77				
ALTERNATE 1253	1		362	486	539	806
XSECTION	49	.82				
ALTERNATE 1309	1		378	512	566	832
XSECTION	51	.93				
ALTERNATE 1388	1		422	591	679	899
XSECTION	60	1.01				
ALTERNATE 1445	1		436	615	715	926
XSECTION	62	1.02				
ALTERNATE 1461	1		439	622	725	934
XSECTION	63	1.02				
ALTERNATE 1390	1		416	594	701	904
XSECTION	76	1.28				
ALTERNATE 1607	1		460	673	818	1072
XSECTION	77	1.28				
ALTERNATE 1606	1		460	672	818	1071
XSECTION	81	.00				
ALTERNATE 730	1		493	731	730	730
XSECTION	82	1.55				
ALTERNATE 997	1		0	4	173	493

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STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
XSECTION 84	.07					
----- ALTERNATE 157	1	33	57	82	121	
XSECTION 85	.17					
----- ALTERNATE 332	1	68	125	182	273	
XSECTION 88	1.55					
----- ALTERNATE 1727	1	493	735	903	1223	
XSECTION 89	1.55					
----- ALTERNATE 1727	1	493	735	903	1223	
XSECTION 107	.00					
----- ALTERNATE 213	1	85	161	213	213	
XSECTION 108	.17					
----- ALTERNATE 213	1	85	161	213	215	
XSECTION 122	.00					
----- ALTERNATE 168	1	168	168	168	168	
XSECTION 123	.41					
----- ALTERNATE 1084	1	168	169	244	699	
XSECTION 141	.07					
----- ALTERNATE 216	1	46	77	106	162	
XSECTION 144	.00					
----- ALTERNATE 543	1	387	513	543	543	
XSECTION 145	.77					
----- ALTERNATE 1443	1	387	513	545	955	

XSECTION 162 .00

-----  
 ALTERNATE 1 439 621 621 621  
 621

XSECTION 163 1.02

-----  
 ALTERNATE 1 439 622 725 934  
 1461

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 STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50

XSECTION 176 .00

-----  
 ALTERNATE 1 460 673 691 691  
 691

XSECTION 177 1.28

-----  
 ALTERNATE 1 460 673 818 1072  
 1607

XSECTION 184 .00

-----  
 ALTERNATE 1 33 57 82 118  
 118

XSECTION 185 .07

-----  
 ALTERNATE 1 33 57 82 118  
 118

XSECTION 187 .12

-----  
 ALTERNATE 1 42 79 116 175  
 195

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 STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		99				



STRUCTURE	84	.17	
-----			
ALTERNATE	1		0
STRUCTURE	83	.41	
-----			
ALTERNATE	1		1053
STRUCTURE	82	.77	
-----			
ALTERNATE	1		1888
STRUCTURE	81	.07	
-----			
ALTERNATE	1		0
STRUCTURE	73	1.02	
-----			
ALTERNATE	1		1570
STRUCTURE	72	1.28	
-----			
ALTERNATE	1		1623
STRUCTURE	71	1.55	
-----			
ALTERNATE	1		1729
STRUCTURE	63	.01	
-----			
ALTERNATE	1		44

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STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
STRUCTURE 62	.05	
-----		
ALTERNATE 1		70
STRUCTURE 61	.01	
-----		
ALTERNATE 1		25
STRUCTURE 35	.06	
-----		
ALTERNATE 1		245

STRUCTURE	34	.04	
ALTERNATE	1		129
STRUCTURE	33	.03	
ALTERNATE	1		96
STRUCTURE	32	.01	
ALTERNATE	1		33
STRUCTURE	31	.05	
ALTERNATE	1		161
STRUCTURE	24	.03	
ALTERNATE	1		112
STRUCTURE	23	.32	
ALTERNATE	1		516
STRUCTURE	22	.07	
ALTERNATE	1		127
STRUCTURE	21	.07	
ALTERNATE	1		154
STRUCTURE	11	.09	
ALTERNATE	1		269
STRUCTURE	3	1.01	
ALTERNATE	1		2170

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STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
------------------------------	-----------------------------	--------------------------

STRUCTURE	2	.77	
ALTERNATE	1		1948

STRUCTURE	1	.60	
ALTERNATE	1		1349
XSECTION	7	.17	
ALTERNATE	1		479
XSECTION	8	.17	
ALTERNATE	1		215
XSECTION	16	.32	
ALTERNATE	1		516
XSECTION	20	.05	
ALTERNATE	1		234
XSECTION	21	.41	
ALTERNATE	1		916
XSECTION	23	.41	
ALTERNATE	1		803
XSECTION	43	.77	
ALTERNATE	1		1905
XSECTION	44	.77	
ALTERNATE	1		1948
XSECTION	49	.82	
ALTERNATE	1		2018
XSECTION	51	.93	
ALTERNATE	1		2094
XSECTION	60	1.01	
ALTERNATE	1		2170

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION

04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

Dist;H1&H8UG;GHC2.04TEST

11:01:11

SUMMARY, JOB NO. 1

PAGE

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
XSECTION 62	1.02	
-----		
ALTERNATE 1		2191
XSECTION 63	1.02	
-----		
ALTERNATE 1		2010
XSECTION 76	1.28	
-----		
ALTERNATE 1		2314
XSECTION 77	1.28	
-----		
ALTERNATE 1		2314
XSECTION 81	.00	
-----		
ALTERNATE 1		730
XSECTION 82	1.55	
-----		
ALTERNATE 1		1729
XSECTION 84	.07	
-----		
ALTERNATE 1		200
XSECTION 85	.17	
-----		
ALTERNATE 1		392
XSECTION 88	1.55	
-----		
ALTERNATE 1		2459
XSECTION 89	1.55	
-----		
ALTERNATE 1		2459
XSECTION 107	.00	
-----		
ALTERNATE 1		213
XSECTION 108	.17	
-----		
ALTERNATE 1		216
XSECTION 122	.00	
-----		
ALTERNATE 1		168

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
 11:01:11 SUMMARY, JOB NO. 1 PAGE

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
XSECTION 123	.41	
ALTERNATE 1		1221
XSECTION 141	.07	
ALTERNATE 1		258
XSECTION 144	.00	
ALTERNATE 1		547
XSECTION 145	.77	
ALTERNATE 1		2431
XSECTION 162	.00	
ALTERNATE 1		621
XSECTION 163	1.02	
ALTERNATE 1		2191
XSECTION 176	.00	
ALTERNATE 1		691
XSECTION 177	1.28	
ALTERNATE 1		2314
XSECTION 184	.00	
ALTERNATE 1		118
XSECTION 185	.07	
ALTERNATE 1		119
XSECTION 187	.12	
ALTERNATE 1		221

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/28/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST  
FILES

INPUT = h8ug.dat , GIVEN DATA FILE  
OUTPUT = h8ug.OUT , DATED  
04/28/\*\*,11:01:11

FILES GENERATED - DATED 04/28/\*\*,11:01:11

NONE!

TOTAL NUMBER OF WARNINGS = 63, MESSAGES = 94

\*\*\* TR-20 RUN COMPLETED \*\*\*

1

\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20  
HYDROLOGY\*\*\*\*\*

JOB TR-20		NOPLOTS			
TITLE Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,					
TITLE CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist; GHCHUG					
2	XSECTN	002	1.0	389.50	
8			389.00	0.00	0.00
8			389.25	1.65	1.06
8			389.50	6.25	2.75
8			389.75	14.40	5.06
8			390.00	26.75	8.00
8			390.25	45.54	14.33
8			390.50	68.67	15.00
8			390.75	96.11	18.88
8			391.00	127.89	23.00
8			391.25	164.08	27.38
8			391.50	204.77	32.00
8			391.75	250.06	36.88
9	ENDTBL				
2	XSECTN	005	1.0	367.00	
8			366.00	0.00	0.00
8			366.50	3.51	1.5
8			367.00	13.55	4.00
8			367.50	30.53	9.00
8			367.75	47.87	13.00
8			368.00	72.23	18.00
8			368.25	104.79	23.98
8			368.50	146.13	30.94
8			368.75	197.14	38.86
8			369.00	258.63	47.75
8			369.25	331.41	57.61
8			369.50	416.25	68.44
9	ENDTBL				
3	STRUCT	11			
8			380.00	0.00	0.00
8			381.00	2.70	0.53
8			382.20	53.00	1.16
8			383.80	186.80	1.40
9	ENDTBL				
2	XSECTN	008	1.0	330.00	
8			356.00	0.00	0.00
8			356.50	20.21	6.94
8			357.00	68.51	15.75
8			357.50	144.11	26.44
8			358.00	248.93	39.00
8			358.50	389.07	53.25
8			359.00	561.31	69.00
8			359.50	767.14	86.25
8			360.00	1008.16	105.00
8			361.00	1375.68	147.50
8			361.50	1604.19	171.38
9	ENDTBL				

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

2	XSECTN	016	1.0	333.08		
8			331.08	0.00	0.00	
8			332.08	80.21	8.00	
8			333.08	225.50	16.00	
8			333.58	310.09	20.00	
8			334.08	399.94	24.00	
8			334.58	493.86	28.00	
8			335.08	590.97	32.00	
8			335.58	690.67	36.00	
8			336.08	792.47	40.00	
8			336.58	896.02	44.00	
9	ENDTBL					
2	XSECTN	023	1.0	314.40		
8			313.22	0.00	0.00	
8			313.51	1.10	0.89	
8			313.81	3.51	1.84	
8			314.10	16.22	5.61	
8			314.40	34.66	9.74	
8			314.68	48.28	24.71	
8			314.96	79.66	42.09	
8			315.24	126.64	61.87	
8			315.52	189.07	84.06	
8			315.80	267.27	108.64	
8			316.08	361.75	135.63	
8			316.36	473.14	165.02	
8			316.64	602.11	196.81	
8			316.92	749.37	231.00	
8			317.20	878.70	277.25	
8			317.48	1103.89	329.14	
8			317.76	1358.10	382.70	
8			318.04	1640.58	437.94	
8			318.32	1950.87	494.86	
8			318.60	2288.69	553.45	
9	ENDTBL					
3	STRUCT	21				
8			364.00	0.00	0.00	
8			366.00	0.30	0.55	
8			368.00	0.50	1.31	
8			369.00	3.20	1.80	
8			370.00	5.20	2.29	
8			372.00	7.80	3.48	
8			374.00	9.60	5.00	
8			375.00	10.40	5.86	
8			376.00	45.30	6.79	
8			376.50	74.10	7.31	
8			377.00	106.80	7.83	
8			378.00	149.80	8.90	
8			379.00	155.60	10.06	
8			380.00	162.00	11.29	
9	ENDTBL					

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

3	STRUCT	22				
8			352.50	0.00	0.00	
8			358.65	100.00	0.91	
8			361.76	140.00	3.28	
8			363.64	160.00	5.47	
8			366.18	180.00	9.58	
8			368.71	200.00	14.77	



8			370.61	250.00	19.31
9	ENDTBL				
3	STRUCT	23			
8			333.08	0.00	0.00
8			336.97	100.00	0.03
8			338.11	125.00	0.68
8			339.41	150.00	2.19
8			342.51	200.00	6.68
8			346.05	250.00	12.84
8			346.50	300.00	13.70
8			347.05	400.00	14.76
8			347.50	500.00	15.64
8			347.91	600.00	16.47
8			348.31	700.00	17.30
8			349.01	850.00	18.76
8			350.42	900.00	21.84
8			352.03	1112.97	25.53
9	ENDTBL				
2	XSECTN	027	1.0	317.00	
8			316.00	0.00	0.00
8			316.50	2.68	2.59
8			317.00	10.37	6.88
8			317.50	24.26	12.84
8			318.00	45.55	20.50
8			318.50	70.64	34.75
8			319.00	137.01	60.50
8			319.25	200.57	76.25
8			319.50	273.06	92.00
8			319.75	353.76	107.75
8			320.00	442.13	123.50
8			320.50	640.03	155.00
8			321.00	863.72	186.50
9	ENDTBL				
2	XSECTN	032	1.0	313.00	
8			310.00	0.00	0.00
8			311.00	12.25	5.50
8			312.00	52.16	16.00
8			312.50	83.38	23.13
8			313.00	123.94	31.50
8			313.25	148.02	36.16
8			313.50	174.79	41.13
8			313.75	204.34	46.41
8			314.00	236.81	52.00

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			314.50	278.65	65.75
8			315.00	353.72	84.00
9	ENDTBL				
2	XSECTN	034	1.0	338.50	
8			338.00	0.00	0.00
8			338.10	4.87	2.46
8			338.25	22.73	6.38
8			338.50	73.99	13.53
8			338.75	149.34	21.45
8			339.00	247.95	30.13
8			339.50	515.65	49.78
9	ENDTBL				
2	XSECTN	037	1.0	331.00	
8			330.00	0.00	0.00

8			330.25	14.29	3.25
8			330.50	46.85	7.00
8			330.75	95.34	11.25
8			331.00	159.64	16.00
8			331.25	240.13	21.25
8			331.50	337.44	27.00
8			331.75	452.26	33.25
8			332.00	585.36	40.00
8			332.50	875.33	55.81
8			333.00	1272.05	75.25
9	ENDTBL				
2	XSECTN	044	1.0	288.90	
8			287.68	0.00	0.00
8			287.99	1.15	0.94
8			288.29	3.69	1.95
8			288.60	17.06	5.98
8			288.90	36.44	10.37
8			289.19	63.07	39.25
8			289.47	121.85	69.50
8			289.76	206.05	101.12
8			290.05	313.23	134.09
8			290.33	442.07	168.42
8			290.62	591.78	204.12
8			290.91	761.87	241.18
8			291.19	952.02	279.60
8			291.48	1162.04	319.38
8			291.77	1391.84	360.52
8			292.05	1641.40	403.02
8			292.34	1910.74	446.89
8			292.63	2199.92	492.11
8			292.91	2509.04	538.70
8			293.20	2838.22	586.65
9	ENDTBL				
3	STRUCT	31			
8			356.38	0.0	0.00
8			357.26	10.90	0.02

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			357.50	12.30	0.03
8			358.00	14.70	0.05
8			359.00	18.70	0.10
8			360.00	22.00	0.16
8			361.00	24.90	0.25
8			361.50	26.20	0.30
8			362.00	27.50	0.36
8			362.50	28.70	0.43
8			362.90	29.60	0.49
8			363.50	51.30	0.60
8			363.75	65.70	0.67
8			364.00	82.60	0.72
8			364.20	83.30	0.83
8			364.60	100.00	0.88
8			366.80	260.00	1.47
8			366.92	340.00	1.49
8			366.98	380.00	1.50
9	ENDTBL				
3	STRUCT	32			
8			375.40	0.00	0.00
8			379.36	1.00	0.74

8			380.00	5.00	0.89
8			380.20	10.00	0.94
8			380.33	15.00	0.98
8			380.45	20.00	1.01
8			380.55	25.00	1.04
8			380.65	30.00	1.06
8			381.19	40.00	1.21
8			381.78	44.00	1.39
8			382.59	66.00	1.66
8			382.79	88.00	1.75
8			382.89	110.00	1.79
8			382.97	132.00	1.83
9	ENDTBL				
3	STRUCT	33			
8			350.00	0.00	0.00
8			354.30	1.00	1.08
8			354.47	2.00	1.15
8			354.87	5.00	1.30
8			355.38	10.00	1.50
8			356.18	20.00	1.84
8			356.88	40.00	2.15
8			357.27	60.00	2.33
8			357.46	80.00	2.42
8			358.08	100.00	2.73
8			358.14	120.00	2.76
8			358.19	140.00	2.78
8			358.25	171.00	2.81
8			358.27	180.00	2.82
9	ENDTBL				

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

3	STRUCT	34			
9	ENDTBL				
3	STRUCT	02			
8			295.00	0.00	0.00
8			297.06	100.00	0.942
8			298.88	200.00	1.948
8			299.50	250.00	2.334
8			300.13	300.00	2.741
8			301.47	400.00	3.690
8			302.00	437.50	4.089
8			303.31	853.50	5.156
8			303.75	1069.10	5.534
8			304.20	1317.66	5.934
8			305.27	2019.83	6.939
9	ENDTBL				
2	XSECTN	051	1.0	282.40	
8			281.10	0.00	0.00
8			281.42	1.24	1.09
8			281.75	3.96	2.26
8			282.07	18.30	6.92
8			282.40	39.09	12.00
8			282.88	67.33	37.27
8			283.36	131.17	65.87
8			283.84	225.10	97.78
8			284.32	348.01	133.01
8			284.80	499.91	171.56
8			285.28	681.29	213.43
8			285.76	892.92	258.61

8			286.24	1135.70	307.11
8			286.72	1410.63	358.94
8			287.20	1718.74	414.08
8			287.68	2061.13	472.54
8			288.16	2438.87	534.31
8			288.64	2853.08	599.41
8			289.12	3301.76	667.84
8			289.60	3785.91	739.78
9	ENDTBL				
2	XSECTN	053	1.0	289.00	
8			288.00	0.00	0.00
8			288.50	9.00	2.88
8			289.00	34.26	7.50
8			289.50	79.27	13.88
8			290.00	147.75	22.00
8			290.50	227.49	31.94
8			291.00	332.02	43.75
8			291.50	463.75	57.44
8			291.75	540.56	64.98
8			292.00	625.07	73.00
9	ENDTBL				
2	XSECTN	063	1.0	248.40	

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			247.07	0.00	0.00
8			247.41	1.85	1.14
8			247.74	5.93	2.35
8			248.07	27.43	7.18
8			248.40	58.61	12.46
8			248.67	89.70	40.04
8			248.95	158.39	68.99
8			249.22	256.90	99.30
8			249.49	382.40	130.99
8			249.77	533.43	164.04
8			250.04	709.09	198.46
8			250.31	908.86	234.24
8			250.59	1132.40	271.40
8			250.86	1379.55	309.92
8			251.13	1650.25	349.81
8			251.41	1944.49	391.07
8			251.68	2262.35	433.69
8			251.95	2603.94	477.69
8			252.23	2969.40	523.05
8			252.50	3358.93	569.78
9	ENDTBL				
3	STRUCT	61			
8			329.75	0.00	0.00
8			330.00	1.56	0.01
8			332.00	4.37	0.13
8			334.00	5.96	0.39
8			334.10	6.01	0.40
8			334.50	10.20	0.47
8			335.00	16.10	0.56
8			336.00	28.91	0.75
8			337.00	40.10	0.97
9	ENDTBL				
3	STRUCT	62			
8			287.30	0.00	0.00
8			288.00	5.45	0.01

8		289.00	9.05	0.05
8		290.00	11.60	0.13
8		292.00	15.35	0.50
8		294.00	18.40	1.19
8		294.30	18.92	1.26
8		294.50	20.73	1.40
8		295.00	36.40	1.60
8		295.40	38.00	1.80
8		296.00	51.10	2.15
8		297.00	69.60	2.75
8		298.00	86.80	3.44
8		298.68	98.50	3.91
8		298.80	107.56	4.00
9	ENDTBL			
3	STRUCT	63		

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8		259.43	0.00	0.00
8		260.00	1.30	0.026
8		260.50	1.70	0.050
8		261.00	2.10	0.075
8		261.50	2.40	0.095
8		262.00	2.70	0.119
8		262.50	2.90	0.160
8		263.00	3.20	0.205
8		263.50	3.40	0.245
8		264.00	3.60	0.285
8		264.50	3.80	0.360
8		265.00	3.90	0.415
8		265.50	4.10	0.480
8		266.00	11.00	0.537
8		266.50	15.40	0.620
8		267.00	16.00	0.709
8		267.50	30.30	0.798
8		268.00	56.00	0.887
8		268.50	145.68	0.976
9	ENDTBL			
2	XSECTN	065	1.0	300.50
8		300.00	0.00	0.00
8		300.10	0.29	0.23
8		300.25	1.47	0.69
8		300.40	3.55	1.28
8		300.50	5.48	1.75
8		300.60	7.88	2.28
8		300.75	12.45	3.19
8		300.90	18.28	4.23
8		301.00	22.91	5.00
8		301.10	28.18	5.83
8		301.25	37.36	7.19
8		301.40	48.14	8.68
8		301.50	56.26	9.75
9	ENDTBL			
2	XSECTN	070	1.0	248.40
8		247.07	0.00	0.00
8		247.41	1.85	1.14
8		247.74	5.93	2.35
8		248.07	27.43	7.18
8		248.40	58.61	12.46
8		248.67	89.70	40.04

8	248.95	158.39	68.99
8	249.22	256.90	99.30
8	249.49	382.40	130.99
8	249.77	533.43	164.04
8	250.04	709.09	198.46
8	250.31	908.86	234.24
8	250.59	1132.40	271.40
8	250.86	1379.55	309.92

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8	251.13	1650.25	349.81
8	251.41	1944.49	391.07
8	251.68	2262.35	433.69
8	251.95	2603.94	477.69
8	252.23	2969.40	523.05
8	252.50	3358.93	569.78
9	ENDTBL		
2	XSECTN 072	1.0	248.40
8		247.07	0.00
8		247.41	1.85
8		247.74	5.93
8		248.07	27.43
8		248.40	58.61
8		248.67	89.70
8		248.95	158.39
8		249.22	256.90
8		249.49	382.40
8		249.77	533.43
8		250.04	709.09
8		250.31	908.86
8		250.59	1132.40
8		250.86	1379.55
8		251.13	1650.25
8		251.41	1944.49
8		251.68	2262.35
8		251.95	2603.94
8		252.23	2969.40
8		252.50	3358.93
9	ENDTBL		
2	XSECTN 077	1.0	229.00
8		226.00	0.00
8		226.50	11.73
8		227.00	42.97
8		227.50	96.50
8		228.00	175.93
8		228.50	258.13
8		229.00	385.22
8		229.50	561.82
8		230.00	793.74
8		230.50	1079.38
8		231.00	1462.49
8		231.50	1953.75
8		232.00	2564.16
8		232.50	3408.70
8		233.00	4351.01
9	ENDTBL		
2	XSECTN 080	1.0	212.00
8		210.50	0.00
8		210.75	4.72

8		211.00	15.68	4.92
1				

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		211.25	32.36	8.06
8		211.50	54.93	11.67
8		211.75	83.70	15.73
8		212.00	119.05	20.25
8		212.25	163.87	25.14
8		212.50	215.35	30.31
8		212.75	273.55	35.77
8		213.00	338.57	41.50
8		214.00	669.42	67.25
8		215.00	806.07	99.00
8		216.00	1088.03	138.25
8		217.00	1451.30	187.50
8		218.00	1978.93	249.25
8		219.00	2262.06	340.00
8		220.00	3115.20	476.25
8		221.00	4892.67	639.25

9 ENDTBL  
 3 STRUCT        03

8		265.00	0.00	0.00
8		266.81	100.00	0.933
8		268.63	200.00	2.082
8		269.76	300.00	2.912
8		270.81	400.00	3.767
8		271.72	500.00	4.571
8		272.59	600.00	5.401
8		273.41	700.00	6.236
8		274.21	800.00	7.101
8		275.01	900.00	8.013
8		276.00	1025.00	9.223
8		276.61	1143.95	10.007
8		277.45	1373.75	11.134
8		278.33	1678.37	12.382
8		279.24	2056.25	13.758

9 ENDTBL  
 3 STRUCT        24

8		345.00	0.00	0.00
8		346.82	10.00	1.08
8		353.59	25.00	5.89
8		357.97	50.00	10.61
8		358.32	75.00	11.05
8		358.61	100.00	11.43
8		358.87	125.00	11.77
8		359.11	150.00	12.09
8		359.35	175.00	12.41
8		360.02	205.00	13.34
8		360.74	209.00	14.40
8		361.38	352.23	15.42

9 ENDTBL  
 3 STRUCT        35

8		326.00	0.00	0.00
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1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			330.20	10.00	3.69
8			330.31	15.00	3.81
8			330.40	20.00	3.91
8			330.57	30.00	4.09
8			330.71	40.00	4.24
8			330.83	50.00	4.39
8			331.09	80.00	4.68
8			332.62	100.00	6.56
8			334.97	125.00	9.87
8			335.52	135.00	10.75
8			336.10	157.48	11.70
8			336.22	166.53	11.89
8			336.45	252.42	12.28
9	ENDTBL				
3	STRUCT	65			
8			99.00	0.00	0.00
8			109.00	0.01	10.00
8			119.00	0.02	20.00
8			129.00	0.03	30.00
8			139.00	0.04	40.00
8			149.00	0.05	50.00
8			159.00	0.06	60.00
8			169.00	0.07	70.00
8			179.00	1000.00	80.00
9	ENDTBL				
2	XSECTN	081	1.0	180.00	
8			175.00	0.00	0.00
8			176.00	84.89	14.48
8			177.00	278.13	31.90
8			178.00	568.14	52.58
8			179.00	956.14	75.60
8			180.00	1449.15	101.88
9	ENDTBL				
2	XSECTN	082	1.0	180.00	
8			175.00	0.00	0.00
8			176.00	84.89	14.48
8			177.00	278.13	31.90
8			178.00	568.14	52.58
8			179.00	956.14	75.60
8			180.00	1449.15	101.88
9	ENDTBL				
3	STRUCT	01			
8			308.00	0.00	0.00
8			310.42	100.00	3.248
8			312.15	200.00	5.766
8			312.86	250.00	6.857
8			313.58	300.00	7.993
8			315.06	400.00	10.420
8			316.00	454.00	12.045
8			316.85	597.18	13.542

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			317.89	897.54	15.453
8			318.81	1251.79	17.190
9	ENDTBL				
5	RAINFL	9	.1		
8		0.0000	0.0013	0.0023	0.0034
8		0.0055	0.0065	0.0076	0.0087
					0.0098



8	0.0109	0.0121	0.0132	0.0143	0.0155
8	0.0167	0.0178	0.0190	0.0202	0.0214
8	0.0226	0.0238	0.0251	0.0263	0.0276
8	0.0288	0.0301	0.0314	0.0327	0.0340
8	0.0353	0.0366	0.0379	0.0393	0.0406
8	0.0420	0.0434	0.0447	0.0461	0.0475
8	0.0489	0.0504	0.0518	0.0532	0.0547
8	0.0562	0.0576	0.0591	0.0606	0.0621
8	0.0636	0.0651	0.0667	0.0682	0.0697
8	0.0713	0.0729	0.0745	0.0760	0.0776
8	0.0793	0.0809	0.0826	0.0843	0.0861
8	0.0879	0.0898	0.0916	0.0936	0.0955
8	0.0975	0.0996	0.1017	0.1038	0.1060
8	0.1082	0.1104	0.1127	0.1150	0.1174
8	0.1198	0.1223	0.1247	0.1273	0.1298
8	0.1324	0.1351	0.1378	0.1405	0.1432
8	0.1461	0.1490	0.1521	0.1554	0.1588
8	0.1623	0.1660	0.1699	0.1739	0.1780
8	0.1823	0.1868	0.1914	0.1961	0.2010
8	0.2061	0.2117	0.2179	0.2247	0.2321
8	0.2400	0.2490	0.2591	0.2702	0.2825
8	0.2955	0.3157	0.3370	0.3662	0.4067
8	0.4766	0.5933	0.6338	0.6630	0.6843
8	0.7045	0.7176	0.7298	0.7409	0.7510
8	0.7600	0.7679	0.7753	0.7821	0.7883
8	0.7939	0.7990	0.8039	0.8086	0.8132
8	0.8177	0.8220	0.8261	0.8301	0.8340
8	0.8377	0.8412	0.8446	0.8479	0.8510
8	0.8540	0.8568	0.8595	0.8622	0.8649
8	0.8676	0.8702	0.8727	0.8753	0.8778
8	0.8802	0.8826	0.8850	0.8873	0.8896
8	0.8918	0.8940	0.8962	0.8983	0.9004
8	0.9025	0.9045	0.9064	0.9084	0.9103
8	0.9121	0.9139	0.9157	0.9174	0.9191
8	0.9208	0.9224	0.9240	0.9256	0.9271
8	0.9287	0.9303	0.9318	0.9334	0.9349
8	0.9364	0.9379	0.9394	0.9409	0.9424
8	0.9439	0.9453	0.9468	0.9482	0.9496
8	0.9511	0.9525	0.9539	0.9553	0.9566
8	0.9580	0.9594	0.9607	0.9621	0.9634
8	0.9647	0.9660	0.9673	0.9686	0.9699
8	0.9712	0.9724	0.9737	0.9749	0.9762
8	0.9774	0.9786	0.9798	0.9810	0.9822
8	0.9834	0.9845	0.9857	0.9868	0.9879

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8	0.9891	0.9902	0.9913	0.9924	0.9935		
8	0.9945	0.9956	0.9967	0.9977	0.9987		
8	1.0000	1.0000	1.0000	1.0000	1.0000		
9	ENDTBL						
6	RUNOFF	1 001	1	0.0336	80.992	0.4051	DA1
6	REACH	3 002	1 2	1170.0		1	
6	RUNOFF	1 003	1	0.0580	79.488	0.3751	DA2
6	ADDHYD	4 004	1 2 3			1	DA1+2
6	RESVOR	2 11 3	1			1	1
SWMF10							
6	REACH	3 005	1 2	797.0		1	
6	RUNOFF	1 006	3	0.0798	77.284	0.3921	DA3
6	ADDHYD	4 007	2 3 4			1	1

DA12+3										
6	REACH	3	008	4	7	1221.0		1	1	SA1-
SA2										
6	RUNOFF	1	009		1	0.0734	90.928	0.4221		DA1
6	RESVOR	2	21	1	2			1	1	
SWMF13										
6	RUNOFF	1	010		3	0.0097	72.007	0.1281		DA7
6	RESVOR	2	22	2	3	4		1	1	HWY
STOR										
6	RUNOFF	1	011		2	0.0544	73.278	0.2201		DA2
6	ADDHYD	4	012	7	2	3		1		
SA1+DA2										
6	RUNOFF	1	013		5	0.0193	79.062	0.2481		DA3
6	ADDHYD	4	014	4	3	6		1		
DA17+2										
6	ADDHYD	4	015	6	5	3		1		
DA172+3										
6	RESVOR	2	23	3	1			1	1	1
1										1
6	REACH	3	016	1	2	920.0		1		1
6	RUNOFF	1	017		3	0.0211	87.900	0.1641		DA4
6	RUNOFF	1	118		1	0.0253	93.221	0.2231		DA5A
6	RESVOR	2	24	1	4			1	1	1
2										1
6	RUNOFF	1	119		5	0.0059	86.148	0.1361		DA5B
6	ADDHYD	4	120	4	5	6		1		
DA5a+5b										
6	ADDHYD	4	020	3	6	4		1		1
6	RUNOFF	1	019		5	0.0404	84.467	0.1681		DA4+5
6	ADDHYD	4	022	4	5	3		1		DA6
DA45+6										
6	ADDHYD	4	021	2	3	1		1		1
DA123+6										
6	REACH	3	023	1	7	1379.0		1		1
SA3										
6	RUNOFF	1	024		1	0.0505	82.333	0.3401		DA1
6	RESVOR	2	31	1	2			1	1	SWMF3
6	RUNOFF	1	025		3	0.0748	81.676	0.3581		DA2
6	ADDHYD	4	026	2	3	4		1		DA1+2
6	REACH	3	027	4	1	1021.0		1		
6	RUNOFF	1	028		2	0.0599	78.523	0.3231		DA3
6	ADDHYD	4	029	7	2	3		1		
SA2+DA3										
6	ADDHYD	4	030	1	3	2		1		
DA12+3										
6	RESVOR	2	01	2	5			1		1
6	RUNOFF	1	031		1	0.0692	86.978	0.2761		PROP1
6	REACH	3	032	1	6	1603.0		1		DA4
6	RUNOFF	1	033		2	0.0084	95.000	0.1921		DA5
6	RESVOR	2	32	2	3			1	1	
SWMF11										
6	REACH	3	034	3	7	583.0		1		
6	RUNOFF	1	035		1	0.0275	94.960	0.2481		DA6
6	RESVOR	2	33	1	2			1	1	SWMF8

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

6	ADDHYD	4	036	7	2	1		1		DA5+6
6	RESVOR	2	34	1	2			1	1	
HWYSTOR3										

6 REACH	3	037	2	4	934.0			1	
6 RUNOFF	1	138		1	0.0280	89.879	0.1551		DA7a
6 ADDHYD	4	139	4	1 3				1	
DA56+7a									
6 RESVOR	2		35	3 2				1 1 1 1	1 CNCPT
4									
6 RUNOFF	1	140		3	0.0048	62.603	0.1261		DA7b
6 ADDHYD	4	141	2	3 4				1	1
DA7a+7b									
6 RUNOFF	1	040		2	0.0393	80.311	0.3671		DA8
6 ADDHYD	4	041	5	2 1				1	DA3+8
6 ADDHYD	4	042	6	1 2				1	DA4+8
6 ADDHYD	4	043	4	2 1				1	1 DA7+8
6 REACH	3	044	1	2	1428.0			1	1 SA3-
SA4									
6 RESVOR	2		02	2 7				1	1 PROP2
6 RUNOFF	1	045		1	0.0477	80.798	0.4121		DA1
6 RUNOFF	1	046		2	0.0628	79.968	0.4401		DA2
6 ADDHYD	4	047	1	2 3				1	DA1+2
6 RUNOFF	1	048		1	0.0469	80.250	0.2491		DA3
6 ADDHYD	4	049	7	1 2				1	1
SA3+DA3									
6 ADDHYD	4	050	2	3 4				1	
DA12+3									
6 REACH	3	051	4	7	1275.0			1	1 SA4-
SA5									
6 RUNOFF	1	052		1	0.0087	41.639	0.1631		DA1
6 REACH	3	053	1	5	652.0			1	
6 RUNOFF	1	054		1	0.0072	33.729	0.2561		DA2
6 RUNOFF	1	055		2	0.0322	77.752	0.2491		DA3
6 ADDHYD	4	056	7	2 4				1	
SA4+DA3									
6 ADDHYD	4	057	5	1 3				1	DA1+2
6 ADDHYD	4	058	4	3 5				1	
DA12+3									
6 RUNOFF	1	059		1	0.0266	70.478	0.2611	1	DA4
6 ADDHYD	4	060	5	1 2				1	1
DA123+4									
6 RESVOR	2		03	2 1				1	1 PROP3
6 RUNOFF	1	061		3	0.0173	69.728	0.2971		DA5
6 ADDHYD	4	062	1	3 6				1 1	1
DA1234+5									
6 REACH	3	063	6	7	1959.0			1	1 SA5-
SA6									
6 RUNOFF	1	064		1	0.0110	84.520	0.5211		DA1
6 RESVOR	2		61	1 2				1	1
SWMF19									
6 REACH	3	065	2	3	1283.0			1	
6 RUNOFF	1	066		1	0.0458	70.198	0.2391		DA2
6 RESVOR	2		62	1 2				1	1
SWMF18									
6 ADDHYD	4	067	3	2 4				1	DA1+2
6 RUNOFF	1	068		5	0.0778	73.165	0.2281		DA3
6 ADDHYD	4	069	4	5 1				1	
DA12+3									
6 REACH	3	070	1	2	2166.0			1	
6 RUNOFF	1	071		1	0.0119	80.036	0.1221		DA4
6 RESVOR	2		63	1 3				1	1 SWMF2
6 REACH	3	072	3	4	1081.0			1	
6 RUNOFF	1	073		5	0.1100	64.864	0.2051	1	DA5
6 ADDHYD	4	074	7	5 1				1	
SA5+DA5									
6 ADDHYD	4	075	2	4 6				1 1	
DA123+4									

6 ADDHYD 4 076 1 6 2 1 1  
 DA12345  
 1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

6 REACH 3 077 2 7 884.0 1 1 SA6-  
 SA7  
 6 RUNOFF 1 078 2 0.0510 70.802 0.1971 1 DA1  
 6 ADDHYD 4 079 7 2 1 1  
 SA6+DA1  
 6 REACH 3 080 1 2 1296.0 1  
 6 RUNOFF 1 081 3 0.0313 67.555 0.1861 DA2  
 6 ADDHYD 4 082 2 3 4 1 DA1+2  
 6 RUNOFF 1 083 3 0.0513 72.309 0.1621 DA3  
 6 RUNOFF 1 084 2 0.1187 68.169 0.3211 1 DA4  
 6 ADDHYD 4 085 3 2 1 1 1 DA3+4  
 6 ADDHYD 4 086 1 4 2 1  
 DA123+4  
 6 RUNOFF 1 087 4 0.0159 86.785 0.1421 DA5  
 6 ADDHYD 4 088 2 4 7 1 1 1  
 DA1234+5  
 ENDDATA  
 7 INCREM 6 .06  
 7 COMPUT 7 001 088 0.0 3.19 1.09 2 1 2  
 ENDCMP 1  
 7 COMPUT 7 001 088 0.0 4.10 1.09 2 1 5  
 ENDCMP 1  
 7 COMPUT 7 001 088 0.0 4.91 1.09 2 1 10  
 ENDCMP 1  
 7 COMPUT 7 001 088 0.0 6.14 1.09 2 1 25  
 ENDCMP 1  
 7 COMPUT 7 001 088 0.0 7.23 1.09 2 1 50  
 ENDCMP 1  
 7 COMPUT 7 001 088 0.0 8.47 1.09 2 1 99  
 ENDCMP 1  
 ENDJOB 2

\*\*\*\*\*END OF 80-80  
 LIST\*\*\*\*\*

1  
 TR20 ----- SCS  
 -  
 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/22/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist; GHCHUG  
 2.04TEST  
 12:22:51 PASS 1 JOB NO. 1 PAGE  
 1

EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .060 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
 STARTING TIME = .00 RAIN DEPTH = 3.19 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. = 2 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	23.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.46 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	22.7	389.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.46 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	39.9	(RUNOFF)
23.14	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.36 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	60.4	(NULL)
23.10	1.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 83 CFS-HRS; 6.8 ACRE-FEET.

1  
 TR20 ----- SCS  
 -  
 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/22/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist; GHCHUG  
 2.04TEST  
 12:22:51 PASS 1 JOB NO. 1 PAGE  
 2

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	50.9	382.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 82 CFS-HRS; 6.8 ACRE-

FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.56 50.4 367.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 82 CFS-HRS; 6.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.30 47.5 (RUNOFF)  
 23.75 1.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.22 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.44 85.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.52 84.4 357.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

1  
 TR20 ----- SCS  
 -  
 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/22/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist; GHCHUG  
 2.04TEST  
 12:22:51 PASS 1 JOB NO. 1 PAGE  
 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.30 77.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.24 WATERSHED INCHES; 106 CFS-HRS; 8.8 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.56	9.7 *	374.07
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.91 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	6.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .92 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.68	9.6 *	353.09
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.91 WATERSHED INCHES; 90 CFS-HRS; 7.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	33.2	(RUNOFF)
19.76	1.0	(RUNOFF)
20.09	1.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .99 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	98.2	(NULL)
24.00	3.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.24 WATERSHED INCHES; 180 CFS-HRS; 14.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	15.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.33 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	105.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 270 CFS-HRS; 22.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	112.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .006 HOURS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 23

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.61	106.1	337.25
12.95	74.1	335.96
13.06	62.1	335.50
13.17	53.0	335.14

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2							
HRS	MAIN TIME INCREMENT = .060 hr,			DRAINAGE AREA = .32			
SQ.MI.							
6.42 CFS	.00	.01	.01	.01	.01	.01	.01
.01							
6.42 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
6.90 CFS	.01	.01	.01	.02	.02	.02	.02
.02							
6.90 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
7.38 CFS	.02	.02	.03	.03	.03	.03	.03
.03							
7.38 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
7.86 CFS	.04	.04	.04	.04	.04	.05	.05
.05							
7.86 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
8.34 CFS	.05	.06	.06	.06	.06	.07	.07
.07							
8.34 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
8.82 CFS	.08	.08	.08	.09	.09	.09	.10
.10							
8.82 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
9.30 CFS	.10	.11	.11	.12	.12	.13	.13
.14							
9.30 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.09
333.09							
9.78 CFS	.15	.16	.17	.18	.20	.23	.25
.27							
9.78 ELEV	333.09	333.09	333.09	333.09	333.09	333.09	333.09
333.09							
10.26 CFS	.30	.34	.38	.44	.50	.58	.66
.75							
10.26 ELEV	333.09	333.09	333.09	333.10	333.10	333.10	333.11
333.11							
10.74 CFS	.86	.98	1.12	1.27	1.45	1.67	1.93
2.24							
10.74 ELEV	333.11	333.12	333.12	333.13	333.14	333.14	333.16
333.17							
11.22 CFS	2.60	3.02	3.50	4.04	4.64	5.32	6.21
7.46							
11.22 ELEV	333.18	333.20	333.22	333.24	333.26	333.29	333.32
333.37							
11.70 CFS	9.00	10.83	13.24	16.56	21.46	29.40	42.13
61.35							
11.70 ELEV	333.43	333.50	333.60	333.72	333.91	334.22	334.72
335.47							
12.18 CFS	80	93	100	101	102	104	105
106							
12.18 ELEV	336.20	336.70	336.98	337.01	337.08	337.16	337.22
337.25							

12.66 CFS	106	104	102	89	69	73	60
61							
12.66 ELEV	337.23	337.17	337.06	336.53	335.76	335.94	335.41
335.47							
13.14 CFS	52.02	52.24	45.85	45.46	41.03	40.32	37.17
36.34							
13.14 ELEV	335.10	335.11	334.86	334.85	334.68	334.65	334.53
334.49							
13.62 CFS	34.01	33.15	31.44	30.67	29.41	28.75	27.82
27.29							
13.62 ELEV	334.40	334.37	334.30	334.27	334.22	334.20	334.16
334.14							
14.10 CFS	26.59	26.14	25.58	25.18	24.73	24.39	24.02
23.70							
14.10 ELEV	334.11	334.10	334.07	334.06	334.04	334.03	334.01
334.00							
14.58 CFS	23.35	23.03	22.69	22.39	22.08	21.78	21.47
21.16							
14.58 ELEV	333.99	333.98	333.96	333.95	333.94	333.93	333.92
333.90							
15.06 CFS	20.86	20.55	20.24	19.94	19.65	19.40	19.18
18.98							
15.06 ELEV	333.89	333.88	333.87	333.86	333.84	333.83	333.83
333.82							
15.54 CFS	18.80	18.63	18.46	18.30	18.15	18.03	17.93
17.81							
15.54 ELEV	333.81	333.80	333.80	333.79	333.79	333.78	333.78
333.77							
16.02 CFS	17.69	17.56	17.45	17.34	17.24	17.13	17.02
16.91							
16.02 ELEV	333.77	333.76	333.76	333.75	333.75	333.75	333.74
333.74							

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16.50 CFS	16.80	16.68	16.57	16.46	16.36	16.26	16.15
16.04							
16.50 ELEV	333.73	333.73	333.72	333.72	333.72	333.71	333.71
333.70							
16.98 CFS	15.94	15.85	15.75	15.64	15.52	15.40	15.31
15.22							
16.98 ELEV	333.70	333.70	333.69	333.69	333.68	333.68	333.68
333.67							
17.46 CFS	15.11	14.98	14.86	14.75	14.64	14.54	14.42
14.31							
17.46 ELEV	333.67	333.66	333.66	333.65	333.65	333.65	333.64
333.64							
17.94 CFS	14.22	14.13	14.04	13.94	13.83	13.73	13.63
13.54							
17.94 ELEV	333.63	333.63	333.63	333.62	333.62	333.61	333.61
333.61							
18.42 CFS	13.43	13.33	13.26	13.19	13.13	13.05	12.97
12.91							
18.42 ELEV	333.60	333.60	333.60	333.59	333.59	333.59	333.58
333.58							
18.90 CFS	12.85	12.77	12.68	12.61	12.53	12.46	12.39
12.33							

18.90 ELEV 333.56	333.58	333.58	333.57	333.57	333.57	333.56	333.56
19.38 CFS 11.81	12.27	12.21	12.15	12.09	12.01	11.93	11.87
19.38 ELEV 333.54	333.56	333.55	333.55	333.55	333.55	333.54	333.54
19.86 CFS 11.31	11.73	11.66	11.60	11.55	11.50	11.44	11.38
19.86 ELEV 333.52	333.54	333.53	333.53	333.53	333.53	333.53	333.52
20.34 CFS 10.81	11.25	11.18	11.09	11.03	10.98	10.93	10.87
20.34 ELEV 333.50	333.52	333.51	333.51	333.51	333.51	333.51	333.50
20.82 CFS 10.33	10.76	10.71	10.65	10.58	10.51	10.45	10.39
20.82 ELEV 333.48	333.50	333.50	333.49	333.49	333.49	333.49	333.48
21.30 CFS 9.72	10.27	10.20	10.13	10.06	9.99	9.90	9.80
21.30 ELEV 333.46	333.48	333.48	333.47	333.47	333.47	333.47	333.46
21.78 CFS 9.12	9.65	9.57	9.49	9.43	9.36	9.28	9.20
21.78 ELEV 333.43	333.46	333.45	333.45	333.45	333.44	333.44	333.44
22.26 CFS 8.56	9.04	8.97	8.91	8.84	8.78	8.72	8.64
22.26 ELEV 333.41	333.43	333.43	333.43	333.42	333.42	333.42	333.42
22.74 CFS 8.07	8.50	8.44	8.36	8.28	8.22	8.18	8.13
22.74 ELEV 333.39	333.41	333.41	333.41	333.40	333.40	333.40	333.40
23.22 CFS 7.58	8.01	7.95	7.89	7.84	7.77	7.70	7.63
23.22 ELEV 333.37	333.39	333.39	333.39	333.38	333.38	333.38	333.38
23.70 CFS 6.95	7.54	7.50	7.43	7.36	7.29	7.27	7.22
23.70 ELEV 333.35	333.37	333.37	333.37	333.37	333.36	333.36	333.36
24.18 CFS 4.46	6.52	6.10	5.72	5.39	5.09	4.84	4.63
24.18 ELEV 333.25	333.33	333.32	333.30	333.29	333.28	333.27	333.26
24.66 CFS 3.53	4.31	4.18	4.06	3.94	3.83	3.73	3.63
24.66 ELEV 333.22	333.25	333.24	333.24	333.23	333.23	333.23	333.22
25.14 CFS 2.85	3.43	3.34	3.26	3.17	3.09	3.01	2.93
25.14 ELEV 333.19	333.21	333.21	333.21	333.20	333.20	333.20	333.19
25.62 CFS 2.31	2.78	2.71	2.64	2.57	2.50	2.43	2.37
25.62 ELEV 333.17	333.19	333.19	333.18	333.18	333.18	333.17	333.17
26.10 CFS 1.87	2.25	2.19	2.13	2.08	2.02	1.97	1.92
26.10 ELEV 333.15	333.17	333.17	333.16	333.16	333.16	333.16	333.15
26.58 CFS 1.51	1.82	1.77	1.72	1.68	1.64	1.59	1.55

26.58 ELEV	333.15	333.15	333.15	333.15	333.14	333.14	333.14
333.14							
27.06 CFS	1.47	1.43	1.40	1.36	1.32	1.29	1.26
1.22							
27.06 ELEV	333.14	333.14	333.13	333.13	333.13	333.13	333.13
333.13							
27.54 CFS	1.19	1.16	1.13	1.10	1.07	1.04	1.02
.99							
27.54 ELEV	333.13	333.13	333.12	333.12	333.12	333.12	333.12
333.12							
28.02 CFS	.96	.94	.92	.90	.88	.87	.86
.84							

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28.02 ELEV	333.12	333.12	333.12	333.11	333.11	333.11	333.11
333.11							
28.50 CFS	.84	.83	.82	.81	.80	.79	
28.50 ELEV	333.11	333.11	333.11	333.11	333.11	333.11	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	28	18	14	12	10	8	3	1

DURATION(HRS)	18	18
FLOW(CFS)	1	1 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.61	106.1	332.26
12.95	74.1	332.00
13.06	62.1	331.85
13.17	53.0	331.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	29.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 27 CFS-HRS; 2.2 ACRE-

FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET) 12.18 38.3 (RUNOFF)  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.46 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 24

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET) 12.59 10.4 347.01

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
 SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	.03
4.32 CFS	.00	.01	.01	.01	.01	.01	.01	.01	.02	
.02										
4.32 ELEV	345.00	345.00	345.00	345.00	345.00	345.00	345.00	345.00	345.00	
345.00										
4.80 CFS	.02	.02	.03	.03	.03	.03	.04	.04		
.04										
4.80 ELEV	345.00	345.00	345.00	345.01	345.01	345.01	345.01	345.01	345.01	
345.01										
5.28 CFS	.05	.05	.05	.06	.06	.06	.06	.07		
.07										
5.28 ELEV	345.01	345.01	345.01	345.01	345.01	345.01	345.01	345.01	345.01	
345.01										
5.76 CFS	.08	.08	.08	.09	.09	.09	.10	.10		
.11										
5.76 ELEV	345.01	345.01	345.02	345.02	345.02	345.02	345.02	345.02	345.02	
345.02										
6.24 CFS	.11	.12	.12	.12	.13	.13	.14	.14		
.15										
6.24 ELEV	345.02	345.02	345.02	345.02	345.02	345.02	345.02	345.02	345.03	
345.03										
6.72 CFS	.15	.16	.16	.17	.18	.18	.18	.19		
.20										
6.72 ELEV	345.03	345.03	345.03	345.03	345.03	345.03	345.03	345.03	345.03	
345.04										
7.20 CFS	.20	.21	.22	.23	.23	.23	.24	.25		
.26										
7.20 ELEV	345.04	345.04	345.04	345.04	345.04	345.04	345.04	345.04	345.05	
345.05										
7.68 CFS	.27	.27	.28	.29	.30	.30	.31	.32		
.33										
7.68 ELEV	345.05	345.05	345.05	345.05	345.05	345.05	345.06	345.06		

345.06								
8.16 CFS	.34	.35	.36	.37	.38	.39	.40	
.41								
8.16 ELEV	345.06	345.06	345.06	345.07	345.07	345.07	345.07	
345.07								
8.64 CFS	.42	.43	.44	.45	.46	.47	.48	
.49								
8.64 ELEV	345.08	345.08	345.08	345.08	345.08	345.09	345.09	
345.09								
9.12 CFS	.50	.52	.53	.54	.56	.57	.59	
.60								
9.12 ELEV	345.09	345.09	345.10	345.10	345.10	345.10	345.11	
345.11								
9.60 CFS	.62	.64	.66	.68	.70	.72	.74	
.77								
9.60 ELEV	345.11	345.12	345.12	345.12	345.13	345.13	345.14	
345.14								
10.08 CFS	.79	.82	.84	.87	.90	.92	.95	
.98								
10.08 ELEV	345.14	345.15	345.15	345.16	345.16	345.17	345.17	
345.18								
10.56 CFS	1.01	1.04	1.08	1.11	1.16	1.20	1.25	
1.31								
10.56 ELEV	345.18	345.19	345.20	345.20	345.21	345.22	345.23	
345.24								
11.04 CFS	1.37	1.43	1.50	1.58	1.66	1.76	1.86	
1.97								
11.04 ELEV	345.25	345.26	345.27	345.29	345.30	345.32	345.34	
345.36								
11.52 CFS	2.09	2.22	2.38	2.58	2.81	3.09	3.42	
3.84								
11.52 ELEV	345.38	345.40	345.43	345.47	345.51	345.56	345.62	
345.70								
12.00 CFS	4.40	5.18	6.28	7.62	8.90	9.87	10.17	
10.30								
12.00 ELEV	345.80	345.94	346.14	346.39	346.62	346.80	346.90	
346.96								
12.48 CFS	10.37	10.41	10.42	10.40	10.36	10.31	10.25	
10.19								
12.48 ELEV	346.99	347.00	347.01	347.00	346.98	346.96	346.93	
346.90								
12.96 CFS	10.11	10.04	9.87	9.63	9.39	9.15	8.91	
8.67								
12.96 ELEV	346.87	346.84	346.80	346.75	346.71	346.66	346.62	
346.58								
13.44 CFS	8.43	8.20	7.96	7.74	7.51	7.29	7.08	
6.87								
13.44 ELEV	346.53	346.49	346.45	346.41	346.37	346.33	346.29	
346.25								
13.92 CFS	6.67	6.47	6.28	6.10	5.93	5.76	5.59	
5.43								
13.92 ELEV	346.21	346.18	346.14	346.11	346.08	346.05	346.02	
345.99								
14.40 CFS	5.28	5.13	4.99	4.85	4.71	4.58	4.46	
4.33								
14.40 ELEV	345.96	345.93	345.91	345.88	345.86	345.83	345.81	
345.79								
14.88 CFS	4.21	4.10	3.98	3.87	3.77	3.66	3.56	
3.47								

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14.88 ELEV	345.77	345.75	345.73	345.71	345.69	345.67	345.65
345.63							
15.36 CFS	3.37	3.28	3.19	3.11	3.03	2.95	2.88
2.81							
15.36 ELEV	345.61	345.60	345.58	345.57	345.55	345.54	345.52
345.51							
15.84 CFS	2.74	2.67	2.61	2.55	2.49	2.43	2.38
2.32							
15.84 ELEV	345.50	345.49	345.47	345.46	345.45	345.44	345.43
345.42							
16.32 CFS	2.27	2.22	2.18	2.13	2.08	2.04	2.00
1.96							
16.32 ELEV	345.41	345.40	345.40	345.39	345.38	345.37	345.36
345.36							
16.80 CFS	1.92	1.88	1.84	1.81	1.77	1.74	1.71
1.68							
16.80 ELEV	345.35	345.34	345.34	345.33	345.32	345.32	345.31
345.31							
17.28 CFS	1.65	1.62	1.59	1.56	1.53	1.51	1.48
1.45							
17.28 ELEV	345.30	345.29	345.29	345.28	345.28	345.27	345.27
345.26							
17.76 CFS	1.43	1.40	1.38	1.36	1.34	1.31	1.29
1.27							
17.76 ELEV	345.26	345.26	345.25	345.25	345.24	345.24	345.24
345.23							
18.24 CFS	1.25	1.23	1.21	1.19	1.17	1.16	1.14
1.12							
18.24 ELEV	345.23	345.22	345.22	345.22	345.21	345.21	345.21
345.20							
18.72 CFS	1.11	1.09	1.08	1.07	1.05	1.04	1.03
1.01							
18.72 ELEV	345.20	345.20	345.20	345.19	345.19	345.19	345.19
345.18							
19.20 CFS	1.00	.99	.98	.97	.96	.95	.94
.93							
19.20 ELEV	345.18	345.18	345.18	345.18	345.17	345.17	345.17
345.17							
19.68 CFS	.92	.91	.91	.90	.89	.88	.87
.87							
19.68 ELEV	345.17	345.17	345.16	345.16	345.16	345.16	345.16
345.16							
20.16 CFS	.86	.85	.85	.84	.83	.83	.82
.81							
20.16 ELEV	345.16	345.16	345.15	345.15	345.15	345.15	345.15
345.15							
20.64 CFS	.81	.80	.80	.79	.79	.78	.78
.77							
20.64 ELEV	345.15	345.15	345.15	345.14	345.14	345.14	345.14
345.14							
21.12 CFS	.77	.76	.76	.75	.75	.74	.74
.73							
21.12 ELEV	345.14	345.14	345.14	345.14	345.14	345.14	345.13
345.13							
21.60 CFS	.73	.73	.72	.72	.71	.71	.71
.70							
21.60 ELEV	345.13	345.13	345.13	345.13	345.13	345.13	345.13
345.13							
22.08 CFS	.70	.69	.69	.69	.68	.68	.68

.67								
22.08 ELEV	345.13	345.13	345.13	345.13	345.12	345.12	345.12	
345.12								
22.56 CFS	.67	.67	.66	.66	.65	.65	.65	
.64								
22.56 ELEV	345.12	345.12	345.12	345.12	345.12	345.12	345.12	
345.12								
23.04 CFS	.64	.64	.63	.63	.63	.62	.62	
.62								
23.04 ELEV	345.12	345.12	345.12	345.11	345.11	345.11	345.11	
345.11								
23.52 CFS	.61	.61	.61	.60	.60	.60	.60	
.59								
23.52 ELEV	345.11	345.11	345.11	345.11	345.11	345.11	345.11	
345.11								
24.00 CFS	.59	.59	.58	.57	.55	.53	.51	
.49								
24.00 ELEV	345.11	345.11	345.11	345.10	345.10	345.10	345.09	
345.09								
24.48 CFS	.47	.45	.43	.41	.39	.37	.35	
.34								
24.48 ELEV	345.09	345.08	345.08	345.07	345.07	345.07	345.06	
345.06								
24.96 CFS	.32	.31	.30	.28	.27	.26	.25	
.23								
24.96 ELEV	345.06	345.06	345.05	345.05	345.05	345.05	345.04	
345.04								
25.44 CFS	.22	.21	.20	.20	.19	.18	.17	
.16								
25.44 ELEV	345.04	345.04	345.04	345.04	345.03	345.03	345.03	
345.03								
25.92 CFS	.16	.15	.14	.14	.13	.12	.12	
.11								
25.92 ELEV	345.03	345.03	345.03	345.02	345.02	345.02	345.02	
345.02								
26.40 CFS	.11	.10	.10	.09	.09	.09	.08	
.08								
26.40 ELEV	345.02	345.02	345.02	345.02	345.02	345.02	345.01	
345.01								

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26.88 CFS	.07	.07	.07	.06	.06	.06	.06	
.05								
26.88 ELEV	345.01	345.01	345.01	345.01	345.01	345.01	345.01	
345.01								
27.36 CFS	.05	.05	.05	.04	.04			
27.36 ELEV	345.01	345.01	345.01	345.01	345.01			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.45 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
FEET.

DURATION (HRS)	2	4	6	8	10	12	14	15
FLOW (CFS)	6	3	2	1	1	1	1	0



OPERATION RUNOFF XSECTION 119

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	8.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.83 WATERSHED INCHES; 7 CFS-HRS; .6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	14.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.34 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	44.1	(NULL)
24.00	1.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.19 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	48.6	(RUNOFF)
19.47	1.0	(RUNOFF)
19.75	1.0	(RUNOFF)
20.06	1.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.71 WATERSHED INCHES; 44 CFS-HRS; 3.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	92.7	(NULL)
18.58	3.0	(NULL)

22.74	2.0	(NULL)
23.05	2.0	(NULL)
24.00	1.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 118 CFS-HRS; 9.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	171.5	(NULL)
12.94	95.8	(NULL)
13.05	82.3	(NULL)
23.99	9.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 404 CFS-HRS; 33.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	143.3	315.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 404 CFS-HRS; 33.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	41.6	(RUNOFF)
20.68	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-  
 FEET.

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\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	28.2	362.31
20.70	1.1	356.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	58.7	(RUNOFF)
23.97	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.51 WATERSHED INCHES; 73 CFS-HRS; 6.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	84.2	(NULL)
18.68	3.2	(NULL)
23.78	2.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	76.6	318.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 28

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	42.0	(RUNOFF)
23.12	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.30 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	176.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 454 CFS-HRS; 37.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	251.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.50 WATERSHED INCHES; 577 CFS-HRS; 47.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.78	201.3	312.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.50 WATERSHED INCHES; 576 CFS-HRS; 47.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	76.8	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 32

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)			
12.38	68.8		312.27
24.15	1.3		310.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.16	14.0	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.63 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .28 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 376.89.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
 AT STRUCTURE 32  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.56	1.0	379.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.01 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 34, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 34

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
 AT XSECTION 34  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.68	1.0	338.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.00 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	41.8	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.63 WATERSHED INCHES;	47 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	17.5	355.98
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.08 WATERSHED INCHES;	37 CFS-HRS;	3.1 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	18.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.06 WATERSHED INCHES;	48 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	18.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.06 WATERSHED INCHES;	48 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	18.2	330.28
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.06 WATERSHED INCHES;	48 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 138

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	42.9	(RUNOFF)
17.34	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.15 WATERSHED INCHES;		39 CFS-HRS;
FEET.		3.2 ACRE-

OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	44.6	(NULL)
23.69	2.0	(NULL)
24.00	2.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.10 WATERSHED INCHES;		86 CFS-HRS;
FEET.		7.1 ACRE-

OPERATION RESVOR STRUCTURE 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.93	8.1	329.42

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06 SQ.MI.

5.76 CFS	.00	.01	.01	.01	.01	.01	.01	.01
.01								
5.76 ELEV	326.00	326.00	326.00	326.00	326.00	326.00	326.00	326.00
326.00								
6.24 CFS	.01	.01	.02	.02	.02	.02	.02	.02
.02								
6.24 ELEV	326.01	326.01	326.01	326.01	326.01	326.01	326.01	326.01
326.01								
6.72 CFS	.03	.03	.03	.03	.03	.04	.04	.04
.04								
6.72 ELEV	326.01	326.01	326.01	326.01	326.01	326.02	326.02	326.02
326.02								
7.20 CFS	.05	.05	.05	.06	.06	.06	.07	.07
.07								
7.20 ELEV	326.02	326.02	326.02	326.02	326.02	326.03	326.03	326.03
326.03								
7.68 CFS	.07	.08	.08	.09	.09	.09	.10	.10
.10								
7.68 ELEV	326.03	326.03	326.03	326.04	326.04	326.04	326.04	326.04
326.04								
8.16 CFS	.11	.11	.12	.12	.13	.14	.14	.14
.15								
8.16 ELEV	326.05	326.05	326.05	326.05	326.05	326.06	326.06	326.06

326.06							
8.64 CFS	.15	.16	.17	.17	.18	.19	.19
.20							
8.64 ELEV	326.06	326.07	326.07	326.07	326.07	326.08	326.08
326.08							
9.12 CFS	.21	.21	.22	.23	.24	.25	.26
.27							
9.12 ELEV	326.09	326.09	326.09	326.10	326.10	326.10	326.11
326.11							
9.60 CFS	.28	.29	.30	.31	.32	.33	.35
.36							
9.60 ELEV	326.12	326.12	326.13	326.13	326.13	326.14	326.14
326.15							
10.08 CFS	.37	.39	.40	.41	.43	.44	.46
.48							
10.08 ELEV	326.16	326.16	326.17	326.17	326.18	326.19	326.19
326.20							
10.56 CFS	.49	.51	.53	.55	.58	.60	.63
.65							
10.56 ELEV	326.21	326.22	326.22	326.23	326.24	326.25	326.26
326.27							
11.04 CFS	.68	.71	.75	.78	.82	.87	.91
.96							
11.04 ELEV	326.29	326.30	326.31	326.33	326.35	326.36	326.38
326.41							

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11.52 CFS	1.02	1.08	1.15	1.24	1.34	1.46	1.60
1.78							
11.52 ELEV	326.43	326.45	326.49	326.52	326.56	326.61	326.67
326.75							
12.00 CFS	2.03	2.37	2.84	3.39	3.88	4.28	4.65
5.00							
12.00 ELEV	326.85	327.00	327.19	327.42	327.63	327.80	327.95
328.10							
12.48 CFS	5.33	5.65	5.94	6.21	6.45	6.67	6.87
7.05							
12.48 ELEV	328.24	328.37	328.50	328.61	328.71	328.80	328.88
328.96							
12.96 CFS	7.21	7.35	7.48	7.59	7.69	7.77	7.85
7.91							
12.96 ELEV	329.03	329.09	329.14	329.19	329.23	329.26	329.30
329.32							
13.44 CFS	7.97	8.02	8.05	8.08	8.11	8.12	8.14
8.14							
13.44 ELEV	329.35	329.37	329.38	329.40	329.41	329.41	329.42
329.42							
13.92 CFS	8.15	8.14	8.14	8.13	8.12	8.11	8.10
8.08							
13.92 ELEV	329.42	329.42	329.42	329.42	329.41	329.41	329.40
329.39							
14.40 CFS	8.06	8.04	8.01	7.99	7.96	7.93	7.90
7.87							
14.40 ELEV	329.38	329.38	329.37	329.36	329.34	329.33	329.32
329.31							
14.88 CFS	7.84	7.81	7.77	7.73	7.70	7.66	7.62



7.58								
14.88 ELEV	329.29	329.28	329.26	329.25	329.23	329.22	329.20	
329.18								
15.36 CFS	7.54	7.50	7.46	7.41	7.37	7.33	7.29	
7.25								
15.36 ELEV	329.17	329.15	329.13	329.11	329.10	329.08	329.06	
329.04								
15.84 CFS	7.20	7.16	7.12	7.08	7.04	6.99	6.95	
6.91								
15.84 ELEV	329.03	329.01	328.99	328.97	328.96	328.94	328.92	
328.90								
16.32 CFS	6.87	6.83	6.78	6.74	6.70	6.66	6.62	
6.58								
16.32 ELEV	328.88	328.87	328.85	328.83	328.81	328.80	328.78	
328.76								
16.80 CFS	6.53	6.49	6.45	6.41	6.37	6.33	6.29	
6.25								
16.80 ELEV	328.74	328.73	328.71	328.69	328.68	328.66	328.64	
328.62								
17.28 CFS	6.21	6.17	6.13	6.09	6.05	6.01	5.97	
5.93								
17.28 ELEV	328.61	328.59	328.57	328.56	328.54	328.52	328.51	
328.49								
17.76 CFS	5.89	5.85	5.81	5.77	5.73	5.69	5.65	
5.62								
17.76 ELEV	328.47	328.46	328.44	328.42	328.41	328.39	328.37	
328.36								
18.24 CFS	5.58	5.54	5.50	5.46	5.43	5.39	5.35	
5.31								
18.24 ELEV	328.34	328.33	328.31	328.29	328.28	328.26	328.25	
328.23								
18.72 CFS	5.28	5.24	5.21	5.17	5.14	5.10	5.07	
5.03								
18.72 ELEV	328.22	328.20	328.19	328.17	328.16	328.14	328.13	
328.11								
19.20 CFS	5.00	4.97	4.93	4.90	4.87	4.84	4.81	
4.77								
19.20 ELEV	328.10	328.09	328.07	328.06	328.04	328.03	328.02	
328.01								
19.68 CFS	4.74	4.71	4.68	4.65	4.62	4.59	4.57	
4.54								
19.68 ELEV	327.99	327.98	327.97	327.95	327.94	327.93	327.92	
327.91								
20.16 CFS	4.51	4.48	4.45	4.43	4.40	4.37	4.34	
4.32								
20.16 ELEV	327.89	327.88	327.87	327.86	327.85	327.84	327.82	
327.81								
20.64 CFS	4.29	4.27	4.24	4.21	4.19	4.16	4.14	
4.11								
20.64 ELEV	327.80	327.79	327.78	327.77	327.76	327.75	327.74	
327.73								
21.12 CFS	4.09	4.07	4.04	4.02	4.00	3.97	3.95	
3.93								
21.12 ELEV	327.72	327.71	327.70	327.69	327.68	327.67	327.66	
327.65								
21.60 CFS	3.90	3.88	3.86	3.84	3.82	3.80	3.77	
3.75								
21.60 ELEV	327.64	327.63	327.62	327.61	327.60	327.59	327.59	
327.58								
22.08 CFS	3.73	3.71	3.69	3.67	3.65	3.63	3.61	
3.59								
22.08 ELEV	327.57	327.56	327.55	327.54	327.53	327.52	327.52	
327.51								
22.56 CFS	3.57	3.55	3.53	3.51	3.50	3.48	3.46	

3.44  
 22.56 ELEV 327.50 327.49 327.48 327.48 327.47 327.46 327.45  
 327.44  
 23.04 CFS 3.42 3.40 3.39 3.37 3.35 3.33 3.32  
 3.30

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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23.04 ELEV 327.44 327.43 327.42 327.42 327.41 327.40 327.39  
 327.39  
 23.52 CFS 3.28 3.27 3.25 3.23 3.22 3.20 3.18  
 3.17  
 23.52 ELEV 327.38 327.37 327.36 327.36 327.35 327.34 327.34  
 327.33  
 24.00 CFS 3.15 3.14 3.12 3.10 3.08 3.05 3.03  
 3.01  
 24.00 ELEV 327.32 327.32 327.31 327.30 327.29 327.28 327.27  
 327.26  
 24.48 CFS 2.99 2.97 2.95 2.93 2.90 2.88 2.86  
 2.84  
 24.48 ELEV 327.26 327.25 327.24 327.23 327.22 327.21 327.20  
 327.19  
 24.96 CFS 2.82 2.80 2.78 2.76 2.74 2.72 2.70  
 2.69  
 24.96 ELEV 327.19 327.18 327.17 327.16 327.15 327.14 327.14  
 327.13  
 25.44 CFS 2.67 2.65 2.63 2.61 2.59 2.57 2.56  
 2.54  
 25.44 ELEV 327.12 327.11 327.10 327.10 327.09 327.08 327.07  
 327.07  
 25.92 CFS 2.52 2.50 2.49 2.47 2.45 2.43 2.42  
 2.40  
 25.92 ELEV 327.06 327.05 327.04 327.04 327.03 327.02 327.02  
 327.01  
 26.40 CFS 2.38 2.37 2.35 2.34 2.32 2.30  
 26.40 ELEV 327.00 326.99 326.99 326.98 326.97 326.97

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.85 WATERSHED INCHES; 76 CFS-HRS; 6.3 ACRE-  
 FEET.

DURATION (HRS)	2	4	6	8	10	12	14
FLOW (CFS)	8	7	5	4	4	3	2 TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME (HRS)	12.14	PEAK DISCHARGE (CFS)	1.4	PEAK	(RUNOFF)
ELEVATION (FEET)					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .50 WATERSHED INCHES; 2 CFS-HRS; .1 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 141  
 VOLUME TRUNCATED AT 28.% IN LOCATION 2 ADDING HYDROGRAPHS.

\*\*\*

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.90	8.3	(NULL)

\*\*\* WARNING - XSECTION 141, HYDROGRAPH VOLUME TRUNCATED AT 2 CFS  
 ADDHYD ( 28. % OF MAX. HYDROGRAPH COORDINATE)  
 MAIN TIME INCREMENT TOO SMALL.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.75 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	28.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.41 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	211.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 612 CFS-HRS; 50.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	252.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.53 WATERSHED INCHES; 697 CFS-HRS; 57.6 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 43  
 VOLUME TRUNCATED AT 28.% AND 1.% WHEN ADDING HYDROGRAPHS  
 IN LOCATIONS 4 AND 2.

\*\*\*

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	258.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.55 WATERSHED INCHES; 773 CFS-HRS; 63.9 ACRE-FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	248.0	289.87

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.55 WATERSHED INCHES; 772 CFS-HRS; 63.8 ACRE-FEET.

OPERATION RESVOR STRUCTURE 2

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.92	244.4	299.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.55 WATERSHED INCHES; 772 CFS-HRS; 63.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	33.3	(RUNOFF)
20.10	1.1 *	(RUNOFF)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.45 WATERSHED INCHES; 45 CFS-HRS; 3.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	40.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 56 CFS-HRS; 4.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	74.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.42 WATERSHED INCHES; 101 CFS-HRS; 8.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	40.1	(RUNOFF)
20.10	1.1	(RUNOFF)
20.65	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.41 WATERSHED INCHES; 43 CFS-HRS; 3.5 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.90	252.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.54 WATERSHED INCHES; 814 CFS-HRS; 67.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	278.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 915 CFS-HRS; 75.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.99	274.2	284.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 914 CFS-HRS; 75.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 145 CFS-HRS; 75.6 ACRE-FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT, UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 53

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

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OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	24.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.25 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.98 278.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.51 WATERSHED INCHES; 940 CFS-HRS; 77.7 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 57  
 NO HYDROGRAPH IN INPUT LOCATION 5 OR 1 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.98 278.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 940 CFS-HRS; 77.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 59

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.23 12.3 (RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
 SQ.MI.  
 11.64 CFS .36 .53 .75 1.07 1.53 2.25 3.44  
 5.60  
 12.12 CFS 8.86 11.72 12.23 10.90 9.15 7.73 6.64  
 5.84  
 12.60 CFS 5.17 4.51 3.95 3.54 3.25 3.02 2.84  
 2.68  
 13.08 CFS 2.52 2.37 2.23 2.11 2.01 1.92 1.83  
 1.74

13.56 CFS	1.65	1.57	1.49	1.43	1.38	1.35	1.32
1.29							
14.04 CFS	1.27	1.25	1.23	1.21	1.18	1.16	1.14
1.12							
14.52 CFS	1.10	1.08	1.05	1.02	1.00	.98	.96
.94							
15.00 CFS	.91	.89	.87	.84	.82	.80	.79
.79							
15.48 CFS	.79	.78	.78	.77	.76	.75	.75
.75							
15.96 CFS	.74	.73	.72	.72	.71	.71	.70
.70							
16.44 CFS	.69	.68	.67	.67	.66	.66	.65
.65							
16.92 CFS	.64	.63	.63	.63	.62	.61	.60
.59							
17.40 CFS	.59	.59	.57	.56	.56	.55	.55
.54							
17.88 CFS	.53	.53	.52	.52	.51	.50	.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .85 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.97	281.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 955 CFS-HRS; 78.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.08	278.2	269.51

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 954 CFS-HRS; 78.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	7.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .81 WATERSHED INCHES; 9 CFS-HRS; .7 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 62

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)								PEAK
ELEVATION (FEET)									(NULL)
13.08	279.9								(NULL)
HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02									
HRS	SQ.MI.								
8.28 CFS	.76	.49	.52	.56	.60	.64	.68	.72	
8.76 CFS	1.17	.81	.86	.90	.95	1.00	1.06	1.11	
9.24 CFS	1.73	1.22	1.28	1.34	1.41	1.48	1.55	1.63	
9.72 CFS	3.00	1.83	1.95	2.09	2.24	2.40	2.59	2.79	
10.20 CFS	5.42	3.24	3.50	3.77	4.06	4.37	4.70	5.05	
10.68 CFS	9.61	5.81	6.23	6.68	7.17	7.70	8.28	8.91	
11.16 CFS	19.14	10.38	11.23	12.19	13.27	14.47	15.84	17.38	
11.64 CFS	58.93	21.22	23.71	26.69	30.29	34.74	40.41	48.05	
12.12 CFS	195	75	95	116	134	152	167	182	
12.60 CFS	279	210	226	239	251	262	270	276	
13.08 CFS	243	280	279	276	272	266	259	252	
13.56 CFS	176	235	226	217	207	199	191	184	
14.04 CFS	123	168	160	153	146	140	134	129	
14.52 CFS	92	119	114	110	106	102	99	95	
15.00 CFS	74.52	89.32	86.76	84.39	82.17	80.09	78.12	76.26	
15.48 CFS	63.52	72.87	71.32	69.85	68.46	67.13	65.86	64.65	
15.96 CFS	56.24	62.44	61.42	60.44	59.51	58.63	57.79	57.00	
16.44 CFS	51.22	55.52	54.83	54.17	53.53	52.92	52.33	51.76	
16.92 CFS	47.34	50.69	50.17	49.68	49.20	48.72	48.25	47.79	
17.40 CFS	43.93	46.89	46.46	46.04	45.61	45.18	44.76	44.34	
17.88 CFS	40.73	43.52	43.11	42.71	42.31	41.91	41.52	41.12	
18.36 CFS	37.88	40.35	39.97	39.59	39.23	38.87	38.53	38.21	
18.84 CFS	35.61	37.57	37.27	36.97	36.68	36.40	36.13	35.86	
19.32 CFS	33.88	35.37	35.14	34.91	34.70	34.49	34.29	34.08	
19.80 CFS	32.44	33.69	33.50	33.30	33.12	32.94	32.77	32.60	
20.28 CFS		32.27	32.10	31.93	31.76	31.59	31.42	31.26	

31.11								
20.76	CFS	30.95	30.79	30.64	30.49	30.33	30.18	30.02
29.86								
21.24	CFS	29.70	29.55	29.40	29.26	29.12	28.98	28.84
28.69								
21.72	CFS	28.54	28.40	28.25	28.11	27.97	27.84	27.70
27.55								
22.20	CFS	27.41	27.26	27.11	26.96	26.81	26.67	26.52
26.37								
22.68	CFS	26.22	26.07	25.91	25.76	25.60	25.44	25.29
25.15								
23.16	CFS	25.00	24.86	24.71	24.56	24.41	24.27	24.12
23.97								
23.64	CFS	23.82	23.67	23.54	23.40	23.26	23.12	22.98
22.85								
24.12	CFS	22.67	22.39	22.00	21.53	21.02	20.49	19.95
19.39								
24.60	CFS	18.81	18.22	17.61	16.99	16.34	15.69	15.04
14.40								
25.08	CFS	13.77	13.16	12.57	12.02	11.49	11.00	10.54
10.11								
25.56	CFS	9.72	9.35	9.01	8.69	8.39	8.12	7.87
7.63								
26.04	CFS	7.41	7.20	7.01	6.83	6.66	6.50	6.34
6.20								
26.52	CFS	6.06	5.92	5.80	5.68			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.46 WATERSHED INCHES; 963 CFS-HRS; 79.6 ACRE-  
 FEET.

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OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.29	271.7	249.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.46 WATERSHED INCHES; 962 CFS-HRS; 79.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	8.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	4.7	332.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.86	4.6	300.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	21.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .83 WATERSHED INCHES; 25 CFS-HRS; 2.0 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

1  
 TR20 ----- SCS  
 -

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/22/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist; GHCHUG  
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\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	12.4	290.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .83 WATERSHED INCHES; 25 CFS-HRS; 2.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.58	16.5	(NULL)
20.11	1.0	(NULL)
20.66	1.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.00 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	46.1	(RUNOFF)
24.02	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .98 WATERSHED INCHES; 49 CFS-HRS; 4.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	59.0	(NULL)
21.97	2.2	(NULL)
23.10	2.0	(NULL)
24.03	1.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .99 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 70

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 TR20 ----- SCS  
 -

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	52.5	248.34
22.02	2.2	247.44
23.17	2.0	247.42
24.09	1.9	247.41

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .99 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
 12.13 13.2 (RUNOFF)  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.49 3.4 263.40  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.64 3.3 247.53  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.20 34.3 (RUNOFF)  
 15.86 2.4 (RUNOFF)  
 24.02 1.2 (RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .11  
 SQ.MI.  
 11.82 CFS .39 1.24 3.08 6.90 14.15 26.24 33.87  
 32.06  
 12.30 CFS 26.87 22.73 19.37 17.02 15.52 13.85 12.00  
 10.64  
 12.78 CFS 9.83 9.24 8.76 8.33 7.90 7.45 7.01  
 6.64  
 13.26 CFS 6.35 6.08 5.81 5.55 5.28 5.01 4.76  
 4.55

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 TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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13.74 CFS 4.40 4.28 4.19 4.12 4.06 4.02 3.96  
 3.88  
 14.22 CFS 3.80 3.72 3.66 3.61 3.56 3.48 3.40  
 3.31  
 14.70 CFS 3.23 3.17 3.11 3.05 2.97 2.90 2.83

2.75								
15.18	CFS	2.67	2.61	2.57	2.55	2.54	2.54	2.54
2.53								
15.66	CFS	2.49	2.45	2.43	2.44	2.44	2.41	2.37
2.34								
16.14	CFS	2.32	2.32	2.31	2.28	2.26	2.24	2.21
2.18								
16.62	CFS	2.16	2.15	2.15	2.13	2.10	2.08	2.07
2.07								
17.10	CFS	2.05	2.01	1.96	1.94	1.95	1.94	1.91
1.87								
17.58	CFS	1.83	1.81	1.81	1.79	1.77	1.74	1.72
1.71								
18.06	CFS	1.70	1.68	1.65	1.63	1.62	1.61	1.58
1.57								
18.54	CFS	1.58	1.60	1.61	1.59	1.57	1.59	1.59
1.57								
19.02	CFS	1.55	1.54	1.54	1.54	1.54	1.54	1.54
1.54								
19.50	CFS	1.54	1.54	1.51	1.50	1.51	1.51	1.48
1.47								
19.98	CFS	1.48	1.50	1.51	1.49	1.47	1.47	1.46
1.44								
20.46	CFS	1.41	1.42	1.44	1.45	1.43	1.41	1.42
1.43								
20.94	CFS	1.41	1.39	1.38	1.37	1.37	1.37	1.37
1.37								
21.42	CFS	1.37	1.38	1.37	1.35	1.33	1.33	1.34
1.32								
21.90	CFS	1.33	1.34	1.33	1.31	1.29	1.29	1.28
1.28								
22.38	CFS	1.28	1.28	1.29	1.28	1.25	1.23	1.24
1.24								
22.86	CFS	1.22	1.20	1.21	1.24	1.24	1.22	1.20
1.20								
23.34	CFS	1.19	1.19	1.18	1.15	1.14	1.15	1.17
1.17								
23.82	CFS	1.15	1.12	1.12	1.18	1.16	.84	.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .59 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.28	278.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.37 WATERSHED INCHES; 1004 CFS-HRS; 83.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	55.6	(NULL)
24.09	2.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .15

SQ.MI.								
11.04	CFS	.49	.56	.65	.78	.95	1.16	1.40
1.69								
11.52	CFS	2.03	2.44	3.01	3.84	4.91	6.23	7.89
10.15								
12.00	CFS	13.48	18.88	26.76	38.51	49.56	55.03	54.55
51.34								
12.48	CFS	47.52	44.02	41.15	38.63	36.19	33.98	31.91
30.07								
12.96	CFS	28.46	26.76	24.95	23.27	21.59	19.88	18.73
17.79								
13.44	CFS	16.98	16.22	15.50	14.80	14.08	13.38	12.74
12.18								
13.92	CFS	11.68	11.23	10.83	10.47	10.14	9.83	9.53
9.22								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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14.40	CFS	8.87	8.52	8.21	7.93	7.65	7.34	7.04
6.78								
14.88	CFS	6.55	6.35	6.17	5.99	5.82	5.65	5.49
5.34								
15.36	CFS	5.20	5.10	5.03	4.98	4.94	4.90	4.85
4.79								
15.84	CFS	4.74	4.70	4.67	4.64	4.60	4.54	4.49
4.45								
16.32	CFS	4.42	4.39	4.35	4.30	4.26	4.21	4.16
4.13								
16.80	CFS	4.10	4.07	4.03	3.99	3.95	3.92	3.89
3.85								
17.28	CFS	3.79	3.74	3.70	3.68	3.64	3.60	3.54
3.49								
17.76	CFS	3.44	3.41	3.37	3.33	3.29	3.25	3.22
3.19								
18.24	CFS	3.15	3.11	3.07	3.05	3.01	2.98	2.96
2.96								
18.72	CFS	2.96	2.95	2.94	2.93	2.93	2.92	2.89
2.88								
19.20	CFS	2.86	2.85	2.84	2.84	2.84	2.84	2.84
2.83								
19.68	CFS	2.81	2.79	2.78	2.77	2.76	2.74	2.72
2.73								
20.16	CFS	2.74	2.74	2.72	2.71	2.69	2.67	2.64
2.62								
20.64	CFS	2.62	2.63	2.63	2.61	2.60	2.60	2.59
2.57								
21.12	CFS	2.55	2.53	2.52	2.51	2.51	2.50	2.50
2.50								
21.60	CFS	2.50	2.48	2.46	2.44	2.44	2.43	2.42
2.42								
22.08	CFS	2.42	2.40	2.38	2.36	2.35	2.34	2.34
2.33								
22.56	CFS	2.33	2.32	2.30	2.28	2.27	2.26	2.24
2.22								
23.04	CFS	2.21	2.21	2.22	2.22	2.20	2.18	2.17
2.16								
23.52	CFS	2.15	2.13	2.10	2.09	2.10	2.10	2.09

2.07  
 24.00 CFS      2.05      2.06      2.07      1.92      1.58      1.19      .86  
 .62  
 24.48 CFS      .44

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.02 WATERSHED INCHES;      97 CFS-HRS;      8.0 ACRE-  
 FEET.

OPERATION ADDHYD      XSECTION      76

PEAK TIME(HRS)      PEAK DISCHARGE(CFS)      PEAK  
 ELEVATION(FEET)  
 13.23      298.0      (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.33 WATERSHED INCHES;      1101 CFS-HRS;      91.0 ACRE-  
 FEET.

OPERATION REACH      XSECTION      77

PEAK TIME(HRS)      PEAK DISCHARGE(CFS)      PEAK  
 ELEVATION(FEET)  
 13.30      297.7      228.66

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.33 WATERSHED INCHES;      1100 CFS-HRS;      90.9 ACRE-  
 FEET.

OPERATION RUNOFF      XSECTION      78

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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 05/22/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist; GHCHUG  
 2.04TEST  
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PEAK TIME(HRS)      PEAK DISCHARGE(CFS)      PEAK  
 ELEVATION(FEET)  
 12.18      27.4      (RUNOFF)  
 17.35      1.1      (RUNOFF)

HYDROGRAPH POINTS FOR      ALTERNATE = 1,      STORM = 2  
 MAIN TIME INCREMENT = .060 hr,      DRAINAGE AREA = .05  
 SQ.MI.  
 HRS  
 11.52 CFS      .41      .66      1.01      1.43      1.94      2.73      3.90  
 5.71  
 12.00 CFS      9.08      14.77      23.27      27.41      23.98      19.09      15.59  
 12.97  
 12.48 CFS      11.21      10.12      8.90      7.63      6.74      6.21      5.83  
 5.51  
 12.96 CFS      5.22      4.93      4.64      4.35      4.11      3.93      3.75  
 3.58  
 13.44 CFS      3.41      3.23      3.07      2.91      2.78      2.69      2.61  
 2.55  
 13.92 CFS      2.51      2.47      2.44      2.40      2.35      2.30      2.25  
 2.21



14.40 CFS	2.18	2.15	2.10	2.05	1.99	1.94	1.91
1.87							
14.88 CFS	1.83	1.78	1.74	1.69	1.64	1.59	1.56
1.53							
15.36 CFS	1.52	1.52	1.52	1.52	1.51	1.48	1.46
1.45							
15.84 CFS	1.45	1.45	1.43	1.41	1.39	1.38	1.38
1.37							
16.32 CFS	1.35	1.34	1.33	1.31	1.29	1.28	1.27
1.27							
16.80 CFS	1.26	1.24	1.23	1.22	1.22	1.21	1.18
1.15							
17.28 CFS	1.14	1.15	1.14	1.12	1.10	1.08	1.07
1.06							
17.76 CFS	1.05	1.04	1.02	1.01	1.01	1.00	.98
.96							
18.24 CFS	.95	.95	.94	.93	.92	.93	.94
.94							
18.72 CFS	.93	.92	.93	.93	.91	.90	.90
.90							
19.20 CFS	.90	.90	.90	.90	.90	.90	.90
.88							
19.68 CFS	.87	.88	.88	.86	.85	.86	.87
.88							
20.16 CFS	.86	.85	.85	.85	.83	.82	.82
.84							
20.64 CFS	.84	.83	.82	.82	.83	.82	.80
.80							
21.12 CFS	.80	.79	.79	.79	.79	.80	.80
.79							
21.60 CFS	.78	.77	.77	.77	.76	.77	.77
.77							
22.08 CFS	.75	.75	.74	.74	.74	.74	.74
.74							
22.56 CFS	.74	.72	.71	.72	.72	.70	.69
.70							
23.04 CFS	.71	.71	.70	.69	.69	.69	.68
.68							
23.52 CFS	.66	.65	.66	.67	.68	.66	.64
.64							
24.00 CFS	.68	.66	.46				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .86 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.29	301.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.31 WATERSHED INCHES; 1129 CFS-HRS; 93.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 80

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 13.36 301.5 212.86  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.31 WATERSHED INCHES; 1128 CFS-HRS; 93.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.18 13.2 (RUNOFF)  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .71 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 13.35 303.4 177.09  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.30 WATERSHED INCHES; 1142 CFS-HRS; 94.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.16 32.4 (RUNOFF)  
 17.34 1.2 (RUNOFF)  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .94 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 84

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.28 41.2 (RUNOFF)  
 24.02 1.4 (RUNOFF)  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .73 WATERSHED INCHES; 56 CFS-HRS; 4.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 85

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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2.04TEST

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	67.3	(NULL)
24.00	2.1	(NULL)

HRS	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2							
	MAIN	TIME	INCREMENT =	DRAINAGE AREA =				
11.34 CFS	.39	.54	.70	.90	1.32	1.98	2.77	
3.94								
11.82 CFS	5.77	8.63	13.13	20.99	34.68	54.80	66.29	
65.05								
12.30 CFS	59.99	52.70	45.38	39.77	35.55	31.31	27.44	
24.41								
12.78 CFS	22.05	20.23	18.81	17.63	16.53	15.49	14.53	
13.70								
13.26 CFS	13.01	12.38	11.79	11.23	10.67	10.13	9.62	
9.18								
13.74 CFS	8.82	8.52	8.28	8.10	7.95	7.82	7.69	
7.54								
14.22 CFS	7.38	7.23	7.10	6.98	6.87	6.73	6.58	
6.42								
14.70 CFS	6.27	6.14	6.02	5.89	5.75	5.61	5.47	
5.32								
15.18 CFS	5.17	5.04	4.95	4.89	4.85	4.83	4.81	
4.78								
15.66 CFS	4.73	4.66	4.62	4.62	4.60	4.56	4.50	
4.45								
16.14 CFS	4.41	4.38	4.35	4.31	4.27	4.23	4.18	
4.13								
16.62 CFS	4.09	4.06	4.04	4.00	3.96	3.92	3.90	
3.88								
17.10 CFS	3.84	3.78	3.71	3.67	3.66	3.63	3.59	
3.53								
17.58 CFS	3.47	3.42	3.40	3.37	3.32	3.27	3.24	
3.21								
18.06 CFS	3.19	3.14	3.10	3.06	3.04	3.01	2.97	
2.95								
18.54 CFS	2.95	2.97	2.97	2.95	2.94	2.95	2.94	
2.91								
19.02 CFS	2.89	2.87	2.86	2.86	2.85	2.85	2.85	
2.85								
19.50 CFS	2.85	2.84	2.81	2.79	2.80	2.78	2.75	
2.73								
19.98 CFS	2.74	2.76	2.76	2.75	2.73	2.72	2.70	
2.67								
20.46 CFS	2.63	2.63	2.65	2.66	2.64	2.62	2.63	
2.62								
20.94 CFS	2.60	2.58	2.56	2.54	2.54	2.53	2.53	
2.53								
21.42 CFS	2.53	2.53	2.52	2.49	2.46	2.47	2.46	
2.44								
21.90 CFS	2.45	2.46	2.44	2.41	2.40	2.38	2.37	
2.36								
22.38 CFS	2.36	2.36	2.36	2.34	2.31	2.29	2.29	

2.28								
22.86 CFS	2.25	2.23	2.23	2.25	2.26	2.24	2.22	
2.20								
23.34 CFS	2.19	2.19	2.17	2.13	2.11	2.12	2.13	
2.14								
23.82 CFS	2.11	2.08	2.06	2.13	2.08	1.66	1.18	
.79								
24.30 CFS	.49							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .80 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.33	315.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.24 WATERSHED INCHES; 1230 CFS-HRS; 101.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 87

1

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	22.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.89 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.33	317.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55  
 SQ.MI.

HRS								
8.40 CFS	.48	.51	.55	.59	.63	.67	.71	
.76								
8.88 CFS	.81	.86	.91	.97	1.02	1.08	1.15	
1.21								
9.36 CFS	1.28	1.35	1.42	1.49	1.57	1.65	1.73	
1.83								
9.84 CFS	1.92	2.02	2.14	2.28	2.43	2.59	2.77	
2.96								
10.32 CFS	3.16	3.39	3.64	3.90	4.20	4.52	4.87	

5.24								
10.80	CFS	5.64	6.06	6.51	6.98	7.49	8.10	8.79
9.58								
11.28	CFS	10.47	11.48	12.68	14.02	15.56	17.84	20.76
24.00								
11.76	CFS	28	34	42	54	74	106	152
188								
12.24	CFS	208	222	229	232	235	238	241
245								
12.72	CFS	251	258	266	276	285	294	302
309								
13.20	CFS	313	316	318	317	315	312	307
301								
13.68	CFS	294	286	277	268	259	250	241
233								
14.16	CFS	224	215	207	199	191	183	175
168								
14.64	CFS	161	155	149	143	138	133	128
124								
15.12	CFS	120	116	112	109	105	103	100
98								
15.60	CFS	95.42	93.29	91.26	89.37	87.62	85.95	84.36
82.81								
16.08	CFS	81.33	79.94	78.64	77.39	76.19	75.04	73.96
72.89								
16.56	CFS	71.87	70.91	70.00	69.14	68.30	67.48	66.71
65.97								
17.04	CFS	65.27	64.57	63.87	63.15	62.48	61.86	61.25
60.64								
17.52	CFS	60.00	59.38	58.78	58.20	57.63	57.05	56.49
55.94								
18.00	CFS	55.41	54.89	54.35	53.81	53.29	52.78	52.28
51.76								
18.48	CFS	51.27	50.84	50.44	50.04	49.61	49.22	48.86
48.47								
18.96	CFS	48.07	47.69	47.31	46.95	46.60	46.27	45.96
45.67								
19.44	CFS	45.38	45.12	44.84	44.53	44.25	44.00	43.73
43.45								
19.92	CFS	43.18	42.96	42.77	42.56	42.35	42.13	41.91
41.69								
20.40	CFS	41.44	41.18	40.98	40.80	40.62	40.42	40.21
40.05								
20.88	CFS	39.87	39.66	39.45	39.24	39.03	38.83	38.64
38.47								
21.36	CFS	38.30	38.13	37.97	37.81	37.60	37.40	37.23
37.04								
21.84	CFS	36.84	36.69	36.55	36.37	36.18	36.00	35.81
35.63								
22.32	CFS	35.45	35.28	35.12	34.96	34.79	34.58	34.38
34.22								
22.80	CFS	34.02	33.80	33.59	33.42	33.28	33.12	32.94
32.76								
23.28	CFS	32.57	32.39	32.21	32.01	31.78	31.58	31.41
31.26								
23.76	CFS	31.11	30.91	30.70	30.52	30.47	30.23	29.41
28.38								
24.24	CFS	27.27	26.16	25.15	24.25	23.46	22.76	22.12
21.52								
24.72	CFS	20.93	20.35	19.76	19.17	18.57	17.95	17.33
16.70								
25.20	CFS	16.07	15.43	14.80	14.18	13.57	12.99	12.44
11.91								

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25.68 CFS	11.41	10.94	10.49	10.08	9.69	9.33	8.99
8.68							
26.16 CFS	8.38	8.11	7.86	7.62	7.40	7.19	7.00
6.81							
26.64 CFS	6.64	6.48					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.25 WATERSHED INCHES; 1249 CFS-HRS; 103.2 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
 STARTING TIME = .00 RAIN DEPTH = 4.10 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. = 5 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.30	36.2	(RUNOFF)
20.13	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.20 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 2

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.40	34.3	390.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.20 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.28	61.8	(RUNOFF)
23.98	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.08 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 4

1

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	92.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.13 WATERSHED INCHES; 126 CFS-HRS; 10.4 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	97.1	382.73

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.13 WATERSHED INCHES; 126 CFS-HRS; 10.4 ACRE-  
FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	90.5	368.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.12 WATERSHED INCHES; 125 CFS-HRS; 10.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	75.6	(RUNOFF)
20.13	2.4	(RUNOFF)
23.74	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.91 WATERSHED INCHES; 98 CFS-HRS; 8.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	161.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.02 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-

FEET.

OPERATION REACH XSECTION 8  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	155.6	357.55
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	2.02 WATERSHED INCHES;	224 CFS-HRS;
	FEET.	18.5 ACRE-

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	106.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	3.10 WATERSHED INCHES;	147 CFS-HRS;
	FEET.	12.1 ACRE-

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.90	30.4	375.57
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	2.74 WATERSHED INCHES;	130 CFS-HRS;
	FEET.	10.7 ACRE-

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	11.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	1.53 WATERSHED INCHES;	10 CFS-HRS;
	FEET.	.8 ACRE-

OPERATION RESVOR STRUCTURE 22



PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.04	29.1	354.29
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.74 WATERSHED INCHES;	130 CFS-HRS;	10.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 11

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	56.1	(RUNOFF)
15.83	2.5	(RUNOFF)
24.02	1.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.62 WATERSHED INCHES;	57 CFS-HRS;	4.7 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	182.5	(NULL)
24.01	5.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.93 WATERSHED INCHES;	281 CFS-HRS;	23.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	24.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.05 WATERSHED INCHES;	26 CFS-HRS;	2.1 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	191.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.12 WATERSHED INCHES;	409 CFS-HRS;	33.8 ACRE-
FEET.		

FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	203.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.11 WATERSHED INCHES;	435 CFS-HRS;	35.9 ACRE-
FEET.		

\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .006 HOURS.  
\*\*\*

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OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	148.0	339.31
13.55	64.5	335.59
13.67	55.8	335.25
13.79	49.1	334.99
13.90	43.9	334.79
14.01	39.9	334.63

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32 SQ.MI.

HRS	5.28	5.28	5.76	5.76	6.24	6.24	6.72	6.72	7.20	7.20	7.68
CFS	.01	.01	.02	.02	.04	.04	.05	.05	.08	.08	.10
ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08

7.68 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
8.16 CFS	.11	.12	.12	.13	.13	.13	.14	.15
8.16 ELEV	333.08	333.08	333.08	333.08	333.09	333.09	333.09	333.09
333.09								
8.64 CFS	.16	.17	.18	.20	.22	.23	.25	.27
8.64 ELEV	333.09	333.09	333.09	333.09	333.09	333.09	333.09	333.09
333.09								
9.12 CFS	.29	.32	.36	.40	.45	.50	.56	.63
9.12 ELEV	333.09	333.09	333.09	333.10	333.10	333.10	333.10	333.10
333.10								
9.60 CFS	.70	.77	.85	.94	1.03	1.13	1.23	1.34
9.60 ELEV	333.11	333.11	333.11	333.12	333.12	333.12	333.13	333.13
333.13								
10.08 CFS	1.46	1.60	1.76	1.92	2.09	2.26	2.45	2.64
10.08 ELEV	333.14	333.14	333.15	333.15	333.16	333.17	333.18	333.18
333.18								
10.56 CFS	2.85	3.08	3.34	3.64	3.98	4.36	4.78	5.24
10.56 ELEV	333.19	333.20	333.21	333.22	333.23	333.25	333.27	333.28
333.28								
11.04 CFS	5.74	6.30	6.95	7.69	8.52	9.44	10.51	11.75
11.04 ELEV	333.30	333.33	333.35	333.38	333.41	333.45	333.49	333.54
333.54								
11.52 CFS	13.19	15.09	17.77	20.96	24.61	29.28	36.49	47.74
11.52 ELEV	333.59	333.67	333.77	333.90	334.04	334.22	334.50	334.94
334.94								
12.00 CFS	64	87	102	108	118	126	131	136
12.00 ELEV	335.57	336.48	337.06	337.36	337.79	338.17	338.40	338.66
338.66								
12.48 CFS	141	145	147	148	148	147	145	143
12.48 ELEV	338.92	339.13	339.25	339.30	339.30	339.24	339.15	339.05
339.05								
12.96 CFS	141	138	135	132	129	125	117	109
12.96 ELEV	338.93	338.80	338.64	338.48	338.30	338.12	337.75	337.40
337.40								
13.44 CFS	102	55	64	51	56	47	49	43
13.44 ELEV	337.07	335.23	335.58	335.06	335.24	334.89	334.98	334.74
334.74								
13.92 CFS	43.60	39.41	39.58	36.66	36.44	34.33	33.95	32.54

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13.92 ELEV	334.78	334.61	334.62	334.51	334.50	334.42	334.40	334.35
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14.40 CFS	32.27	31.36	31.09	30.38	30.04	29.45	29.10
28.59							
14.40 ELEV	334.34	334.30	334.29	334.26	334.25	334.23	334.21
334.19							
14.88 CFS	28.23	27.75	27.36	26.90	26.50	26.04	25.63
25.24							
14.88 ELEV	334.18	334.16	334.14	334.13	334.11	334.09	334.08
334.06							
15.36 CFS	24.90	24.59	24.33	24.09	23.87	23.65	23.44
23.25							
15.36 ELEV	334.05	334.04	334.03	334.02	334.01	334.00	333.99
333.98							
15.84 CFS	23.10	22.97	22.82	22.66	22.50	22.35	22.22
22.09							
15.84 ELEV	333.98	333.97	333.97	333.96	333.96	333.95	333.94
333.94							
16.32 CFS	21.95	21.80	21.66	21.52	21.37	21.22	21.09
20.96							
16.32 ELEV	333.93	333.93	333.92	333.92	333.91	333.91	333.90
333.90							
16.80 CFS	20.82	20.67	20.53	20.40	20.28	20.15	20.00
19.84							
16.80 ELEV	333.89	333.88	333.88	333.87	333.87	333.86	333.86
333.85							
17.28 CFS	19.68	19.55	19.43	19.29	19.12	18.96	18.80
18.66							
17.28 ELEV	333.85	333.84	333.84	333.83	333.82	333.82	333.81
333.81							
17.76 CFS	18.52	18.37	18.21	18.06	17.93	17.80	17.66
17.51							
17.76 ELEV	333.80	333.79	333.79	333.78	333.78	333.77	333.77
333.76							
18.24 CFS	17.37	17.25	17.13	16.99	16.86	16.77	16.70
16.63							
18.24 ELEV	333.76	333.75	333.75	333.74	333.74	333.73	333.73
333.73							
18.72 CFS	16.54	16.46	16.41	16.35	16.28	16.20	16.13
16.06							
18.72 ELEV	333.72	333.72	333.72	333.72	333.71	333.71	333.71
333.70							
19.20 CFS	16.00	15.94	15.88	15.83	15.78	15.73	15.68
15.61							
19.20 ELEV	333.70	333.70	333.70	333.70	333.69	333.69	333.69
333.69							
19.68 CFS	15.54	15.49	15.44	15.37	15.29	15.23	15.20
15.15							
19.68 ELEV	333.68	333.68	333.68	333.68	333.67	333.67	333.67
333.67							
20.16 CFS	15.07	14.99	14.91	14.83	14.74	14.63	14.54
14.47							
20.16 ELEV	333.67	333.66	333.66	333.66	333.65	333.65	333.65
333.64							
20.64 CFS	14.41	14.33	14.23	14.17	14.11	14.02	13.93
13.84							
20.64 ELEV	333.64	333.64	333.63	333.63	333.63	333.63	333.62
333.62							
21.12 CFS	13.76	13.68	13.61	13.54	13.49	13.44	13.39
13.33							
21.12 ELEV	333.62	333.61	333.61	333.61	333.60	333.60	333.60
333.60							
21.60 CFS	13.26	13.18	13.11	13.05	12.98	12.92	12.88
12.83							
21.60 ELEV	333.60	333.59	333.59	333.59	333.59	333.58	333.58
333.58							

22.08	CFS	12.75	12.68	12.61	12.54	12.48	12.42	12.37
12.32								
22.08	ELEV	333.58	333.57	333.57	333.57	333.57	333.56	333.56
333.56								
22.56	CFS	12.26	12.18	12.10	12.04	11.99	11.91	11.83
11.77								
22.56	ELEV	333.56	333.55	333.55	333.55	333.55	333.54	333.54
333.54								
23.04	CFS	11.74	11.70	11.63	11.57	11.51	11.45	11.39
11.33								
23.04	ELEV	333.54	333.53	333.53	333.53	333.53	333.53	333.52
333.52								
23.52	CFS	11.24	11.16	11.10	11.05	10.99	10.90	10.79
10.70								
23.52	ELEV	333.52	333.51	333.51	333.51	333.51	333.50	333.50
333.50								
24.00	CFS	10.67	10.61	10.23	9.61	9.00	8.46	7.98
7.56								
24.00	ELEV	333.50	333.49	333.48	333.45	333.43	333.41	333.39
333.37								
24.48	CFS	7.22	6.96	6.73	6.54	6.37	6.21	6.06
5.92								
24.48	ELEV	333.36	333.35	333.34	333.33	333.33	333.32	333.32
333.31								
24.96	CFS	5.78	5.65	5.53	5.40	5.28	5.17	5.06
4.94								
24.96	ELEV	333.30	333.30	333.30	333.29	333.29	333.28	333.28
333.27								
25.44	CFS	4.83	4.71	4.59	4.47	4.35	4.24	4.13
4.02								
25.44	ELEV	333.27	333.26	333.26	333.25	333.25	333.24	333.24
333.24								

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25.92	CFS	3.92	3.81	3.71	3.61	3.52	3.43	3.34
3.25								
25.92	ELEV	333.23	333.23	333.22	333.22	333.22	333.21	333.21
333.21								
26.40	CFS	3.16	3.08	3.00	2.92	2.84	2.77	2.70
2.63								
26.40	ELEV	333.20	333.20	333.20	333.19	333.19	333.19	333.18
333.18								
26.88	CFS	2.56	2.49	2.42	2.36	2.30	2.24	2.18
2.12								
26.88	ELEV	333.18	333.18	333.17	333.17	333.17	333.17	333.16
333.16								
27.36	CFS	2.07	2.01	1.96	1.91	1.86	1.81	1.76
1.71								
27.36	ELEV	333.16	333.16	333.16	333.15	333.15	333.15	333.15
333.15								
27.84	CFS	1.67						
27.84	ELEV	333.14						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.12 WATERSHED INCHES; 436 CFS-HRS; 36.0 ACRE-  
FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	42	23	19	16	13	11	6	3

DURATION(HRS) 18  
 FLOW(CFS) 2 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.68	148.0	332.55
13.55	64.5	331.88
13.67	55.8	331.78
13.79	49.1	331.69
13.90	43.9	331.63
14.01	39.9	331.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.12 WATERSHED INCHES; 436 CFS-HRS; 36.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	41.3	(RUNOFF)
15.84	1.3	(RUNOFF)
17.34	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	51.3	(RUNOFF)
18.86	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.34 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)						PEAK	
12.64	12.0						347.70	
HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5								
HRS	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = .03			
SQ.MI.								
3.48 CFS	.00	.01	.01	.01	.01	.01	.02	.02
.02								
3.48 ELEV	345.00	345.00	345.00	345.00	345.00	345.00	345.00	345.00
345.00								
3.96 CFS	.02	.03	.03	.04	.04	.04	.04	.05
.05								
3.96 ELEV	345.00	345.01	345.01	345.01	345.01	345.01	345.01	345.01
345.01								
4.44 CFS	.06	.06	.07	.07	.08	.08	.08	.09
.10								
4.44 ELEV	345.01	345.01	345.01	345.01	345.01	345.01	345.02	345.02
345.02								
4.92 CFS	.10	.11	.11	.12	.12	.13	.13	.14
.14								
4.92 ELEV	345.02	345.02	345.02	345.02	345.02	345.02	345.02	345.02
345.03								
5.40 CFS	.15	.16	.16	.17	.17	.18	.18	.19
.20								
5.40 ELEV	345.03	345.03	345.03	345.03	345.03	345.03	345.03	345.03
345.04								
5.88 CFS	.20	.21	.21	.22	.23	.24	.24	.24
.25								
5.88 ELEV	345.04	345.04	345.04	345.04	345.04	345.04	345.04	345.04
345.05								
6.36 CFS	.26	.27	.27	.28	.29	.30	.30	.31
.32								
6.36 ELEV	345.05	345.05	345.05	345.05	345.05	345.05	345.05	345.06
345.06								
6.84 CFS	.33	.34	.35	.36	.37	.38	.38	.39
.40								
6.84 ELEV	345.06	345.06	345.06	345.06	345.07	345.07	345.07	345.07
345.07								
7.32 CFS	.41	.42	.43	.44	.45	.47	.47	.48
.49								
7.32 ELEV	345.07	345.08	345.08	345.08	345.08	345.08	345.08	345.09
345.09								
7.80 CFS	.50	.51	.53	.54	.55	.57	.57	.58
.59								
7.80 ELEV	345.09	345.09	345.10	345.10	345.10	345.10	345.10	345.11
345.11								
8.28 CFS	.61	.62	.64	.65	.66	.68	.68	.69
.71								
8.28 ELEV	345.11	345.11	345.12	345.12	345.12	345.12	345.12	345.13
345.13								
8.76 CFS	.72	.74	.75	.77	.78	.80	.80	.81
.83								
8.76 ELEV	345.13	345.13	345.14	345.14	345.14	345.15	345.15	345.15
345.15								
9.24 CFS	.85	.87	.89	.91	.93	.96	.96	.98
1.01								
9.24 ELEV	345.15	345.16	345.16	345.17	345.17	345.17	345.17	345.18
345.18								
9.72 CFS	1.03	1.06	1.09	1.12	1.15	1.19	1.19	1.22
1.25								
9.72 ELEV	345.19	345.19	345.20	345.20	345.21	345.22	345.22	345.22
345.23								

10.20 CFS	1.29	1.33	1.36	1.40	1.44	1.48	1.52
1.57							
10.20 ELEV	345.23	345.24	345.25	345.26	345.26	345.27	345.28
345.28							
10.68 CFS	1.61	1.67	1.72	1.79	1.86	1.93	2.01
2.10							
10.68 ELEV	345.29	345.30	345.31	345.33	345.34	345.35	345.37
345.38							

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11.16 CFS	2.20	2.31	2.42	2.55	2.69	2.84	3.01
3.19							
11.16 ELEV	345.40	345.42	345.44	345.46	345.49	345.52	345.55
345.58							
11.64 CFS	3.41	3.68	4.00	4.37	4.82	5.39	6.15
7.20							
11.64 ELEV	345.62	345.67	345.73	345.80	345.88	345.98	346.12
346.31							
12.12 CFS	8.67	10.15	10.74	11.20	11.51	11.71	11.84
11.91							
12.12 ELEV	346.58	346.89	347.15	347.36	347.50	347.59	347.65
347.68							
12.60 CFS	11.95	11.96	11.93	11.89	11.84	11.78	11.71
11.63							
12.60 ELEV	347.70	347.70	347.69	347.67	347.65	347.62	347.59
347.56							
13.08 CFS	11.55	11.46	11.37	11.28	11.18	11.08	10.98
10.87							
13.08 ELEV	347.52	347.48	347.44	347.40	347.35	347.31	347.26
347.21							
13.56 CFS	10.77	10.66	10.55	10.44	10.33	10.22	10.11
10.01							
13.56 ELEV	347.17	347.12	347.07	347.02	346.97	346.92	346.87
346.82							
14.04 CFS	9.70	9.40	9.10	8.82	8.55	8.29	8.03
7.79							
14.04 ELEV	346.77	346.71	346.66	346.61	346.56	346.51	346.46
346.42							
14.52 CFS	7.55	7.32	7.10	6.89	6.68	6.48	6.29
6.10							
14.52 ELEV	346.37	346.33	346.29	346.25	346.22	346.18	346.14
346.11							
15.00 CFS	5.92	5.75	5.58	5.41	5.25	5.10	4.95
4.81							
15.00 ELEV	346.08	346.05	346.02	345.99	345.96	345.93	345.90
345.87							
15.48 CFS	4.67	4.54	4.41	4.29	4.18	4.06	3.96
3.85							
15.48 ELEV	345.85	345.83	345.80	345.78	345.76	345.74	345.72
345.70							
15.96 CFS	3.75	3.66	3.57	3.48	3.39	3.31	3.23
3.15							
15.96 ELEV	345.68	345.67	345.65	345.63	345.62	345.60	345.59
345.57							
16.44 CFS	3.08	3.01	2.94	2.87	2.81	2.75	2.69
2.63							



16.44 ELEV	345.56	345.55	345.54	345.52	345.51	345.50	345.49
345.48							
16.92 CFS	2.58	2.52	2.47	2.42	2.37	2.32	2.28
2.23							
16.92 ELEV	345.47	345.46	345.45	345.44	345.43	345.42	345.41
345.41							
17.40 CFS	2.19	2.15	2.11	2.07	2.03	1.99	1.95
1.92							
17.40 ELEV	345.40	345.39	345.38	345.38	345.37	345.36	345.36
345.35							
17.88 CFS	1.88	1.85	1.82	1.78	1.75	1.72	1.69
1.66							
17.88 ELEV	345.34	345.34	345.33	345.32	345.32	345.31	345.31
345.30							
18.36 CFS	1.64	1.61	1.58	1.56	1.53	1.51	1.49
1.47							
18.36 ELEV	345.30	345.29	345.29	345.28	345.28	345.27	345.27
345.27							
18.84 CFS	1.45	1.43	1.41	1.39	1.37	1.35	1.34
1.32							
18.84 ELEV	345.26	345.26	345.26	345.25	345.25	345.25	345.24
345.24							
19.32 CFS	1.31	1.29	1.28	1.26	1.25	1.24	1.22
1.21							
19.32 ELEV	345.24	345.23	345.23	345.23	345.23	345.23	345.22
345.22							
19.80 CFS	1.20	1.19	1.18	1.17	1.16	1.15	1.14
1.13							
19.80 ELEV	345.22	345.22	345.21	345.21	345.21	345.21	345.21
345.21							
20.28 CFS	1.12	1.11	1.10	1.09	1.08	1.07	1.06
1.06							
20.28 ELEV	345.20	345.20	345.20	345.20	345.20	345.20	345.19
345.19							
20.76 CFS	1.05	1.04	1.04	1.03	1.02	1.01	1.01
1.00							
20.76 ELEV	345.19	345.19	345.19	345.19	345.19	345.18	345.18
345.18							
21.24 CFS	.99	.99	.98	.97	.97	.96	.96
.95							
21.24 ELEV	345.18	345.18	345.18	345.18	345.18	345.18	345.17
345.17							
21.72 CFS	.95	.94	.93	.93	.92	.92	.91
.91							
21.72 ELEV	345.17	345.17	345.17	345.17	345.17	345.17	345.17
345.17							
22.20 CFS	.90	.90	.89	.89	.88	.88	.87
.87							
22.20 ELEV	345.16	345.16	345.16	345.16	345.16	345.16	345.16
345.16							
22.68 CFS	.86	.86	.86	.85	.85	.84	.84
.83							

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22.68 ELEV	345.16	345.16	345.16	345.15	345.15	345.15	345.15
345.15							

23.16 CFS	.83	.82	.82	.82	.81	.81	.80
.80							
23.16 ELEV	345.15	345.15	345.15	345.15	345.15	345.15	345.15
345.15							
23.64 CFS	.79	.79	.78	.78	.78	.77	.77
.76							
23.64 ELEV	345.14	345.14	345.14	345.14	345.14	345.14	345.14
345.14							
24.12 CFS	.76	.74	.72	.69	.67	.64	.61
.58							
24.12 ELEV	345.14	345.14	345.13	345.13	345.12	345.12	345.11
345.11							
24.60 CFS	.56	.53	.51	.48	.46	.44	.42
.40							
24.60 ELEV	345.10	345.10	345.09	345.09	345.08	345.08	345.08
345.07							
25.08 CFS	.39	.37	.35	.34	.32	.31	.29
.28							
25.08 ELEV	345.07	345.07	345.06	345.06	345.06	345.06	345.05
345.05							
25.56 CFS	.27	.25	.24	.23	.22	.21	.20
.19							
25.56 ELEV	345.05	345.05	345.04	345.04	345.04	345.04	345.04
345.04							
26.04 CFS	.18	.18	.17	.16	.15	.15	.14
.13							
26.04 ELEV	345.03	345.03	345.03	345.03	345.03	345.03	345.03
345.02							
26.52 CFS	.13	.12	.12	.11	.11	.10	.10
.09							
26.52 ELEV	345.02	345.02	345.02	345.02	345.02	345.02	345.02
345.02							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.33 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	9	4	2	2	1	1	1	1
DURATION(HRS)	17							
FLOW(CFS)	0							

OPERATION RUNOFF XSECTION 119

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET) 11.8 (RUNOFF)  
 12.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.64 WATERSHED INCHES; 10 CFS-HRS; .8 ACRE-FEET.

OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET) 21.0 (NULL)  
 12.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.20 WATERSHED INCHES; 64 CFS-HRS; 5.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 20  
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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.15	62.2	(NULL)
20.03	2.1	(NULL)
24.00	1.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.04 WATERSHED INCHES; 103 CFS-HRS; 8.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.15	70.7	(RUNOFF)
15.84	2.4	(RUNOFF)
23.06	1.1	(RUNOFF)
23.71	1.0	(RUNOFF)
24.00	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.50 WATERSHED INCHES; 65 CFS-HRS; 5.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.15	132.5	(NULL)
18.57	4.1	(NULL)
20.83	3.2	(NULL)
24.00	2.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.80 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.16	238.2	(NULL)
12.52	188.2	(NULL)
13.55	84.1	(NULL)
13.67	74.4	(NULL)
13.78	67.0	(NULL)
13.90	61.3	(NULL)

20.01	18.7	(NULL)
23.02	14.4	(NULL)
23.99	13.2	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.26 WATERSHED INCHES; 600 CFS-HRS; 49.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	200.9	315.56

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.26 WATERSHED INCHES; 601 CFS-HRS; 49.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	62.7	(RUNOFF)
23.99	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.31 WATERSHED INCHES; 75 CFS-HRS; 6.2 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	54.8	363.56
23.79	1.2	356.48

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.31 WATERSHED INCHES; 75 CFS-HRS; 6.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	87.7	(RUNOFF)
20.68	2.3	(RUNOFF)
23.97	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.26 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-FEET.

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OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	138.3	(NULL)
20.14	4.0	(NULL)
23.78	3.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.28 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	123.7	318.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.28 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	65.5	(RUNOFF)
24.01	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.01 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	262.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.23 WATERSHED INCHES; 678 CFS-HRS; 56.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.37 371.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.24 WATERSHED INCHES; 863 CFS-HRS; 71.3 ACRE-  
FEET.

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OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.68 300.4 313.59

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.24 WATERSHED INCHES; 861 CFS-HRS; 71.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.21 108.7 (RUNOFF)  
21.97 2.1 (RUNOFF)  
24.03 1.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.72 WATERSHED INCHES; 122 CFS-HRS; 10.1 ACRE-  
FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.32 98.7 312.69  
20.73 2.3 310.19  
24.09 1.8 310.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.72 WATERSHED INCHES; 122 CFS-HRS; 10.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	18.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.53 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .34 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 377.21.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	3.9	379.83

\*\*\* WARNING - STRUCTURE 32, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS  
 RESVOR ( 12. % OF MAX. HYDROGRAPH COORDINATE)  
 MAIN TIME INCREMENT TOO SMALL.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.77 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 34, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.72	3.9	338.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.76 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	55.1	(RUNOFF)
20.10	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

3.52 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
WITH .90 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 353.60.  
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.37 33.5 356.65  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.91 WATERSHED INCHES; 52 CFS-HRS; 4.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 36

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.39 35.1 (NULL)  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.87 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.39 35.1 (NULL)  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.87 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-  
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
\*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.39 35.1 330.41  
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.87 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-



FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.14	58.9	(RUNOFF)
19.74	1.0	(RUNOFF)
20.05	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.00 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	74.3	(NULL)
18.81	3.2	(NULL)
24.00	2.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.93 WATERSHED INCHES; 121 CFS-HRS; 10.0 ACRE-FEET.

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OPERATION RESVOR STRUCTURE 35

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.99	24.8	330.48

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06 SQ.MI.

HRS	CFS	ELEV	HRS	CFS	ELEV	HRS	CFS	ELEV
4.62	.01	326.00	5.10	.02	326.01	5.58	.03	326.01
5.10	.02	326.01	5.58	.03	326.01	6.06	.04	326.02
5.58	.03	326.01	6.06	.04	326.02	6.06	.07	326.03
6.06	.04	326.02						

6.54 CFS	.08	.08	.09	.09	.10	.10	.11
.11							
6.54 ELEV	326.03	326.04	326.04	326.04	326.04	326.04	326.05
326.05							
7.02 CFS	.12	.12	.13	.13	.14	.15	.15
.16							
7.02 ELEV	326.05	326.05	326.05	326.06	326.06	326.06	326.06
326.07							
7.50 CFS	.17	.17	.18	.19	.19	.20	.21
.22							
7.50 ELEV	326.07	326.07	326.08	326.08	326.08	326.08	326.09
326.09							
7.98 CFS	.23	.23	.24	.25	.26	.27	.28
.29							
7.98 ELEV	326.09	326.10	326.10	326.11	326.11	326.11	326.12
326.12							
8.46 CFS	.30	.31	.32	.33	.34	.35	.36
.37							
8.46 ELEV	326.12	326.13	326.13	326.14	326.14	326.15	326.15
326.16							
8.94 CFS	.38	.39	.40	.41	.43	.44	.45
.47							
8.94 ELEV	326.16	326.16	326.17	326.17	326.18	326.18	326.19
326.20							
9.42 CFS	.48	.50	.51	.53	.54	.56	.58
.60							
9.42 ELEV	326.20	326.21	326.21	326.22	326.23	326.24	326.24
326.25							
9.90 CFS	.62	.63	.65	.68	.70	.72	.74
.76							
9.90 ELEV	326.26	326.27	326.27	326.28	326.29	326.30	326.31
326.32							
10.38 CFS	.79	.81	.84	.86	.89	.92	.95
.99							
10.38 ELEV	326.33	326.34	326.35	326.36	326.37	326.39	326.40
326.41							
10.86 CFS	1.02	1.06	1.10	1.14	1.19	1.24	1.30
1.36							
10.86 ELEV	326.43	326.45	326.46	326.48	326.50	326.52	326.54
326.57							
11.34 CFS	1.42	1.49	1.56	1.64	1.73	1.84	1.97
2.11							
11.34 ELEV	326.60	326.63	326.66	326.69	326.73	326.77	326.83
326.89							
11.82 CFS	2.28	2.49	2.77	3.16	3.71	4.49	5.40
6.27							
11.82 ELEV	326.96	327.05	327.16	327.33	327.56	327.89	328.27
328.63							
12.30 CFS	7.04	7.73	8.36	8.93	9.43	9.87	13.46
17.73							
12.30 ELEV	328.96	329.25	329.51	329.75	329.96	330.15	330.28
330.36							
12.78 CFS	20.85	22.99	24.19	24.70	24.71	24.33	23.70
22.89							
12.78 ELEV	330.41	330.45	330.47	330.48	330.48	330.47	330.46
330.45							
13.26 CFS	21.99	21.04	20.08	19.22	18.36	17.50	16.67
15.86							
13.26 ELEV	330.43	330.42	330.40	330.39	330.37	330.36	330.34
330.33							
13.74 CFS	15.09	14.46	13.86	13.29	12.75	12.24	11.76
11.30							
13.74 ELEV	330.31	330.30	330.28	330.27	330.26	330.25	330.24
330.23							

14.22 CFS	10.88	10.48	10.11	9.98	9.96	9.93	9.90
9.87							
14.22 ELEV	330.22	330.21	330.20	330.19	330.18	330.17	330.16
330.14							

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14.70 CFS	9.83	9.79	9.75	9.71	9.67	9.62	9.58
9.53							
14.70 ELEV	330.13	330.11	330.10	330.08	330.06	330.04	330.02
330.00							
15.18 CFS	9.48	9.43	9.38	9.33	9.28	9.23	9.18
9.13							
15.18 ELEV	329.98	329.96	329.94	329.92	329.90	329.88	329.86
329.83							
15.66 CFS	9.07	9.02	8.97	8.92	8.86	8.81	8.76
8.70							
15.66 ELEV	329.81	329.79	329.77	329.74	329.72	329.70	329.68
329.66							
16.14 CFS	8.65	8.60	8.54	8.49	8.44	8.39	8.33
8.28							
16.14 ELEV	329.63	329.61	329.59	329.57	329.54	329.52	329.50
329.48							
16.62 CFS	8.23	8.18	8.12	8.07	8.02	7.97	7.92
7.87							
16.62 ELEV	329.46	329.43	329.41	329.39	329.37	329.35	329.33
329.30							
17.10 CFS	7.82	7.77	7.72	7.67	7.62	7.57	7.52
7.47							
17.10 ELEV	329.28	329.26	329.24	329.22	329.20	329.18	329.16
329.14							
17.58 CFS	7.42	7.37	7.32	7.27	7.22	7.17	7.13
7.08							
17.58 ELEV	329.12	329.10	329.07	329.05	329.03	329.01	328.99
328.97							
18.06 CFS	7.03	6.98	6.93	6.89	6.84	6.79	6.75
6.70							
18.06 ELEV	328.95	328.93	328.91	328.89	328.87	328.85	328.83
328.81							
18.54 CFS	6.65	6.61	6.56	6.52	6.47	6.43	6.38
6.34							
18.54 ELEV	328.79	328.78	328.76	328.74	328.72	328.70	328.68
328.66							
19.02 CFS	6.30	6.25	6.21	6.17	6.13	6.09	6.05
6.00							
19.02 ELEV	328.65	328.63	328.61	328.59	328.57	328.56	328.54
328.52							
19.50 CFS	5.96	5.92	5.89	5.85	5.81	5.77	5.73
5.69							
19.50 ELEV	328.51	328.49	328.47	328.46	328.44	328.42	328.41
328.39							
19.98 CFS	5.65	5.62	5.58	5.54	5.51	5.47	5.44
5.40							
19.98 ELEV	328.37	328.36	328.34	328.33	328.31	328.30	328.28
328.27							
20.46 CFS	5.36	5.33	5.29	5.26	5.23	5.19	5.16
5.13							

20.46 ELEV	328.25	328.24	328.22	328.21	328.20	328.18	328.17
328.15							
20.94 CFS	5.09	5.06	5.03	5.00	4.97	4.93	4.90
4.87							
20.94 ELEV	328.14	328.13	328.11	328.10	328.09	328.07	328.06
328.05							
21.42 CFS	4.84	4.81	4.78	4.75	4.72	4.69	4.67
4.64							
21.42 ELEV	328.03	328.02	328.01	328.00	327.98	327.97	327.96
327.95							
21.90 CFS	4.61	4.58	4.55	4.53	4.50	4.47	4.45
4.42							
21.90 ELEV	327.94	327.92	327.91	327.90	327.89	327.88	327.87
327.86							
22.38 CFS	4.39	4.37	4.34	4.32	4.29	4.27	4.24
4.22							
22.38 ELEV	327.85	327.83	327.82	327.81	327.80	327.79	327.78
327.77							
22.86 CFS	4.19	4.17	4.15	4.12	4.10	4.08	4.05
4.03							
22.86 ELEV	327.76	327.75	327.74	327.73	327.72	327.71	327.70
327.69							
23.34 CFS	4.01	3.99	3.97	3.94	3.92	3.90	3.88
3.86							
23.34 ELEV	327.68	327.67	327.67	327.66	327.65	327.64	327.63
327.62							
23.82 CFS	3.84	3.82	3.80	3.78	3.76	3.73	3.71
3.68							
23.82 ELEV	327.61	327.60	327.59	327.59	327.58	327.57	327.56
327.55							
24.30 CFS	3.65	3.62	3.60	3.57	3.54	3.51	3.49
3.46							
24.30 ELEV	327.53	327.52	327.51	327.50	327.49	327.48	327.46
327.45							
24.78 CFS	3.43	3.41	3.38	3.35	3.33	3.30	3.28
3.25							
24.78 ELEV	327.44	327.43	327.42	327.41	327.40	327.39	327.38
327.37							
25.26 CFS	3.23	3.20	3.18	3.16	3.13	3.11	3.08
3.06							
25.26 ELEV	327.36	327.35	327.34	327.33	327.32	327.31	327.30
327.29							
25.74 CFS	3.04	3.02	2.99	2.97	2.95	2.93	2.91
25.74 ELEV	327.28	327.27	327.26	327.25	327.24	327.23	327.22

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.61 WATERSHED INCHES; 108 CFS-HRS; 8.9 ACRE-  
FEET.

DURATION(HRS)	2	4	6	8	10	12	14	14
FLOW(CFS)	10	8	7	5	4	4	3	3
TRUNCATED								

OPERATION RUNOFF XSECTION 140

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .95 WATERSHED INCHES; 3 CFS-HRS; .2 ACRE-FEET.

\*\*\* WARNING - XSECTION 141  
 VOLUME TRUNCATED AT 12.% IN LOCATION 2 ADDING HYDROGRAPHS.  
 \*\*\*

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.99	25.3	(NULL)

\*\*\* WARNING - XSECTION 141, HYDROGRAPH VOLUME TRUNCATED AT 3 CFS  
 ADDHYD ( 12. % OF MAX. HYDROGRAPH COORDINATE)  
 MAIN TIME INCREMENT TOO SMALL.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.50 WATERSHED INCHES; 111 CFS-HRS; 9.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	43.4	(RUNOFF)
20.67	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.15 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	319.6	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.23 WATERSHED INCHES; 915 CFS-HRS; 75.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	378.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.28 WATERSHED INCHES; 1037 CFS-HRS; 85.7 ACRE-FEET.

\*\*\* WARNING - XSECTION 43  
 VOLUME TRUNCATED AT 12.% AND 1.% WHEN ADDING HYDROGRAPHS  
 IN LOCATIONS 4 AND 2.  
 \*\*\*

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	388.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.29 WATERSHED INCHES; 1144 CFS-HRS; 94.6 ACRE-FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.71	377.0	290.19

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.29 WATERSHED INCHES; 1143 CFS-HRS; 94.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.85	369.9	301.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.29 WATERSHED INCHES; 1142 CFS-HRS; 94.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	50.8	(RUNOFF)
20.13	1.5	(RUNOFF)

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 TR20 ----- SCS  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.19 WATERSHED INCHES; 67 CFS-HRS; 5.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	62.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.12 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	113.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.15 WATERSHED INCHES; 153 CFS-HRS; 12.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	61.6	(RUNOFF)
24.03	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.14 WATERSHED INCHES; 65 CFS-HRS; 5.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.83	382.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.28 WATERSHED INCHES; 1207 CFS-HRS; 99.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.71	428.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.26 WATERSHED INCHES; 1360 CFS-HRS; 112.4 ACRE-  
 FEET.

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.86	424.3	284.56

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.26 WATERSHED INCHES; 1359 CFS-HRS; 112.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.26 WATERSHED INCHES; 205 CFS-HRS; 112.3 ACRE-FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 53

\*\*\* MESSAGE - XSECTION 53, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.26 WATERSHED INCHES; 203 CFS-HRS; 112.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - XSECTION 54, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.26 WATERSHED INCHES; 74 CFS-HRS; 112.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 55

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	38.2	(RUNOFF)
18.87	1.0	(RUNOFF)
19.44	1.0 *	(RUNOFF)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.95 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.84	432.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.25 WATERSHED INCHES; 1399 CFS-HRS; 115.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - XSECTION 57, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.25 WATERSHED INCHES; 209 CFS-HRS; 115.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.84	432.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.22 WATERSHED INCHES; 1400 CFS-HRS; 115.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.22	22.0	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
 SQ.MI.

11.22 CFS	.44	.53	.63	.75	.88	1.03	1.24
1.58							
11.70 CFS	1.98	2.45	3.07	3.96	5.32	7.49	11.28
16.76							
12.18 CFS	21.35	21.74	19.02	15.70	13.05	11.07	9.63
8.45							
12.66 CFS	7.33	6.38	5.69	5.20	4.82	4.51	4.24
3.98							

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13.14	CFS	3.73	3.51	3.32	3.16	3.01	2.87	2.72
2.58								
13.62	CFS	2.45	2.33	2.23	2.16	2.09	2.05	2.01
1.98								
14.10	CFS	1.94	1.91	1.87	1.83	1.79	1.76	1.73
1.70								
14.58	CFS	1.66	1.62	1.58	1.54	1.51	1.48	1.44
1.41								
15.06	CFS	1.37	1.33	1.29	1.26	1.23	1.22	1.21
1.20								
15.54	CFS	1.20	1.19	1.18	1.16	1.15	1.15	1.14
1.14								
16.02	CFS	1.12	1.11	1.09	1.09	1.08	1.07	1.06
1.05								
16.50	CFS	1.04	1.02	1.01	1.00	1.00	.99	.98
.97								
16.98	CFS	.96	.96	.95	.94	.92	.90	.90
.90								
17.46	CFS	.89	.87	.85	.84	.83	.83	.82
.81								
17.94	CFS	.80	.79	.78	.77	.76	.75	.75
.74								
18.42	CFS	.73	.72	.72	.73	.73	.73	.72
.72								
18.90	CFS	.72	.72	.71	.70	.70	.70	.70
.70								
19.38	CFS	.70	.70	.70	.70	.69	.68	.68
.68								
19.86	CFS	.68	.67	.67	.67	.68	.67	.67
.66								
20.34	CFS	.66	.65	.64	.64	.64	.65	.65
.64								
20.82	CFS	.64	.64	.64	.63	.62	.62	.62
.62								
21.30	CFS	.62	.61	.61	.62	.61	.61	.60
.60								
21.78	CFS	.60	.59	.59	.59	.59	.59	.58
.58								
22.26	CFS	.57	.57	.57	.57	.57	.57	.56
.55								
22.74	CFS	.55	.55	.55	.54	.54	.54	.55
.54								
23.22	CFS	.54	.53	.53	.53	.53	.52	.51
.51								
23.70	CFS	.51	.52	.51	.50	.50	.51	.51
.43								

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.43 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.83	437.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.19 WATERSHED INCHES;	1425 CFS-HRS;	117.7 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.94	432.9	271.11
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.19 WATERSHED INCHES;	1423 CFS-HRS;	117.6 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 61

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	12.9	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.38 WATERSHED INCHES;	15 CFS-HRS;	1.3 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.94	435.9	(NULL)

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5								
HRS	MAIN	TIME	INCREMENT =	.060 hr,	DRAINAGE	AREA =	1.02		
SQ.MI.									
6.96 CFS	.48	.52	.56	.59	.63	.67	.72		
.76									
7.44 CFS	.81	.86	.91	.96	1.01	1.07	1.13		
1.19									
7.92 CFS	1.25	1.31	1.37	1.44	1.51	1.59	1.67		
1.76									
8.40 CFS	1.86	1.96	2.08	2.21	2.34	2.49	2.64		
2.81									
8.88 CFS	2.98	3.16	3.35	3.54	3.75	3.96	4.18		
4.42									
9.36 CFS	4.66	4.92	5.19	5.48	5.78	6.11	6.45		
6.82									
9.84 CFS	7.21	7.62	8.06	8.53	9.01	9.53	10.07		
10.64									

10.32	CFS	11.23	11.86	12.50	13.18	13.88	14.62	15.40
16.24								
10.80	CFS	17.16	18.15	19.24	20.44	21.75	23.19	24.77
26.54								
11.28	CFS	28.50	30.69	33.13	35.83	38.81	42.17	46.09
50.74								
11.76	CFS	56	63	71	81	95	112	136
167								
12.24	CFS	202	241	277	307	332	357	379
398								
12.72	CFS	413	425	432	435	436	434	429
423								
13.20	CFS	415	406	396	386	375	364	352
340								
13.68	CFS	328	315	303	290	277	264	252
240								
14.16	CFS	228	217	206	197	190	181	174
166								
14.64	CFS	159	152	146	140	135	130	126
122								
15.12	CFS	118	114	111	108	105	102	99
97								
15.60	CFS	94.34	92.16	90.15	88.28	86.54	84.92	83.39
81.96								
16.08	CFS	80.59	79.30	78.08	76.93	75.84	74.80	73.82
72.87								
16.56	CFS	71.97	71.10	70.26	69.46	68.70	67.95	67.23
66.53								
17.04	CFS	65.86	65.21	64.56	63.93	63.29	62.67	62.08
61.49								
17.52	CFS	60.90	60.32	59.73	59.15	58.58	58.01	57.45
56.89								
18.00	CFS	56.33	55.78	55.24	54.70	54.16	53.62	53.09
52.57								
18.48	CFS	52.06	51.56	51.07	50.61	50.17	49.73	49.31
48.91								
18.96	CFS	48.51	48.13	47.76	47.40	47.06	46.73	46.42
46.12								
19.44	CFS	45.83	45.56	45.30	45.04	44.79	44.54	44.31
44.07								
19.92	CFS	43.84	43.61	43.40	43.20	43.00	42.81	42.61
42.41								
20.40	CFS	42.21	42.01	41.80	41.60	41.41	41.23	41.04
40.85								
20.88	CFS	40.66	40.48	40.28	40.09	39.88	39.68	39.49
39.29								
21.36	CFS	39.10	38.91	38.72	38.54	38.35	38.16	37.96
37.77								
21.84	CFS	37.58	37.40	37.22	37.05	36.87	36.69	36.51
36.32								
22.32	CFS	36.14	35.97	35.79	35.63	35.46	35.29	35.11
34.93								
22.80	CFS	34.75	34.58	34.39	34.21	34.04	33.87	33.71
33.55								
23.28	CFS	33.38	33.21	33.04	32.87	32.70	32.53	32.35
32.18								
23.76	CFS	32.03	31.87	31.70	31.53	31.37	31.22	31.00
30.62								

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24.24	CFS	30.07	29.41	28.67	27.90	27.08	26.24	25.36
24.46								
24.72	CFS	23.54	22.61	21.68	20.75	19.84	18.95	18.09
17.28								
25.20	CFS	16.51	15.78	15.10	14.47	13.89	13.35	12.85
12.39								
25.68	CFS	11.96	11.57	11.21	10.87	10.56	10.26	9.99
9.73								

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.18 WATERSHED INCHES; 1439 CFS-HRS; 118.9 ACRE-  
FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.13	427.8	249.57

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.18 WATERSHED INCHES; 1437 CFS-HRS; 118.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	12.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.50 WATERSHED INCHES; 18 CFS-HRS; 1.5 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.82	5.6	333.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.50 WATERSHED INCHES; 18 CFS-HRS; 1.5 ACRE-  
FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.94	5.5	300.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.50 WATERSHED INCHES; 18 CFS-HRS; 1.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 66

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	38.8	(RUNOFF)
21.97	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.41 WATERSHED INCHES; 42 CFS-HRS; 3.4 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	15.8	292.31
13.93	3.5	287.75
22.00	1.0	287.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.41 WATERSHED INCHES; 42 CFS-HRS; 3.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.71	21.0	(NULL)
13.90	8.0	(NULL)
24.03	1.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.62 WATERSHED INCHES; 59 CFS-HRS; 4.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	78.8	(RUNOFF)
20.09	2.1	(RUNOFF)
20.64	2.0	(RUNOFF)
24.02	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.61 WATERSHED INCHES; 81 CFS-HRS; 6.7 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	94.7	(NULL)
21.97	3.2	(NULL)
24.03	2.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.61 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-  
FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	74.2	248.54
20.68	3.5	247.54
24.09	2.7	247.48

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.61 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.13	20.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.13 WATERSHED INCHES; 16 CFS-HRS; 1.4 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.59	3.9	265.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.13 WATERSHED INCHES; 16 CFS-HRS; 1.3 ACRE-  
FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.71	3.9	247.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.12 WATERSHED INCHES; 16 CFS-HRS; 1.3 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	72.3	(RUNOFF)
17.34	3.1	(RUNOFF)
22.47	2.0	(RUNOFF)
24.01	1.8	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .11  
 SQ.MI.

HRS	CFS	.45	.81	1.39	2.30	3.37	4.71	6.70
11.46	9.67							
11.94	11.94	14.42	23.06	37.77	59.83	72.15	65.02	52.35
12.42	42.97							
12.90	12.90	35.80	30.87	27.76	24.51	21.08	18.56	17.03
13.38	10.25							
13.86	13.86	9.78	9.32	8.85	8.39	7.95	7.60	7.33
14.34	7.13							
14.82	14.82	6.96	6.84	6.74	6.66	6.55	6.42	6.28
15.30	6.14							
15.78	15.78	6.04	5.95	5.85	5.73	5.59	5.44	5.31
16.26	5.20							
16.74	16.74	5.10	5.00	4.87	4.74	4.63	4.49	4.36
17.22	4.25							
17.70	17.70	4.18	4.15	4.14	4.14	4.14	4.11	4.05
18.18	3.98							
18.66	18.66	3.95	3.96	3.96	3.91	3.85	3.79	3.76
19.14	3.75							
	16.26	3.74	3.69	3.65	3.62	3.58	3.52	3.49
	3.48							
	16.74	3.46	3.43	3.38	3.35	3.34	3.32	3.29
	3.23							
	17.22	3.15	3.12	3.12	3.12	3.07	3.00	2.94
	2.91							
	17.70	2.89	2.88	2.83	2.78	2.76	2.74	2.73
	2.68							
	18.18	2.63	2.61	2.59	2.58	2.53	2.51	2.53
	2.56							
	18.66	2.56	2.53	2.51	2.53	2.53	2.49	2.47
	2.46							
	19.14	2.45	2.45	2.45	2.45	2.45	2.45	2.45



2.44								
19.62 CFS	2.40	2.38	2.40	2.39	2.36	2.33	2.34	
2.38								
20.10 CFS	2.39	2.36	2.33	2.32	2.31	2.28	2.24	
2.25								
20.58 CFS	2.28	2.29	2.27	2.24	2.25	2.26	2.23	
2.20								
21.06 CFS	2.18	2.17	2.17	2.17	2.17	2.17	2.17	
2.17								
21.54 CFS	2.17	2.13	2.10	2.10	2.11	2.09	2.09	
2.11								
22.02 CFS	2.10	2.06	2.04	2.03	2.02	2.02	2.02	
2.02								
22.50 CFS	2.02	2.01	1.97	1.94	1.96	1.95	1.92	
1.89								
22.98 CFS	1.90	1.94	1.95	1.92	1.89	1.88	1.87	
1.87								
23.46 CFS	1.86	1.81	1.79	1.81	1.84	1.84	1.81	
1.76								
23.94 CFS	1.75	1.84	1.80	1.31	.71	.34		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.08 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.11	440.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.07 WATERSHED INCHES; 1514 CFS-HRS; 125.1 ACRE-  
 FEET.

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2.04TEST

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PASS 2 JOB NO. 1

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OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	77.9	(NULL)
20.16	4.0	(NULL)
23.80	3.1	(NULL)
24.09	3.0	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .15  
 SQ.MI.

10.20 CFS	.48	.53	.59	.66	.73	.81	.90	
.99								
10.68 CFS	1.10	1.22	1.37	1.54	1.74	1.97	2.23	
2.53								
11.16 CFS	2.86	3.25	3.70	4.22	4.80	5.45	6.18	

6.98								
11.64	CFS	7.97	9.30	10.97	12.98	15.49	18.70	22.97
29.41								
12.12	CFS	38.90	52.87	67.14	75.80	77.89	75.90	71.96
67.42								
12.60	CFS	63.09	59.05	55.17	51.62	48.58	46.05	43.90
42.04								
13.08	CFS	40.39	38.87	37.45	36.12	34.90	33.76	32.69
31.67								
13.56	CFS	30.58	29.34	28.06	26.51	24.87	23.25	21.51
20.27								
14.04	CFS	19.27	18.45	17.73	17.07	16.46	15.89	15.37
14.91								
14.52	CFS	14.49	14.09	13.70	13.31	12.88	12.46	12.06
11.68								
15.00	CFS	11.28	10.83	10.39	9.96	9.57	9.22	8.91
8.66								
15.48	CFS	8.45	8.29	8.15	8.02	7.83	7.63	7.44
7.29								
15.96	CFS	7.17	7.07	6.97	6.87	6.77	6.70	6.63
6.57								
16.44	CFS	6.50	6.44	6.37	6.30	6.23	6.16	6.11
6.06								
16.92	CFS	6.00	5.94	5.89	5.84	5.79	5.73	5.66
5.58								
17.40	CFS	5.52	5.47	5.42	5.36	5.28	5.20	5.14
5.08								
17.88	CFS	5.02	4.96	4.90	4.84	4.79	4.74	4.68
4.62								
18.36	CFS	4.57	4.52	4.47	4.42	4.39	4.38	4.37
4.36								
18.84	CFS	4.33	4.32	4.31	4.30	4.27	4.24	4.22
4.20								
19.32	CFS	4.19	4.18	4.17	4.16	4.16	4.15	4.13
4.11								
19.80	CFS	4.09	4.07	4.05	4.03	4.01	4.01	4.01
4.01								
20.28	CFS	3.99	3.97	3.95	3.93	3.89	3.86	3.85
3.85								
20.76	CFS	3.85	3.83	3.82	3.81	3.80	3.77	3.75
3.72								
21.24	CFS	3.70	3.69	3.68	3.67	3.66	3.66	3.65
3.63								
21.72	CFS	3.61	3.59	3.57	3.56	3.54	3.54	3.53
3.51								
22.20	CFS	3.49	3.47	3.45	3.43	3.42	3.41	3.40
3.39								
22.68	CFS	3.37	3.34	3.32	3.31	3.28	3.26	3.23
3.23								
23.16	CFS	3.24	3.23	3.21	3.19	3.17	3.16	3.14
3.12								
23.64	CFS	3.09	3.06	3.06	3.06	3.05	3.03	3.00
3.00								
24.12	CFS	3.01	2.86	2.50	2.05	1.62	1.26	.97
.74								
24.60	CFS	.57	.43					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.66 WATERSHED INCHES; 157 CFS-HRS; 12.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION

05/22/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist; GHCHUG  
2.04TEST

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.08	480.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.02 WATERSHED INCHES; 1670 CFS-HRS; 138.0 ACRE-  
FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.14	479.8	229.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.02 WATERSHED INCHES; 1669 CFS-HRS; 138.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	48.4	(RUNOFF)
15.85	2.2	(RUNOFF)
23.07	1.1	(RUNOFF)
23.73	1.0	(RUNOFF)
24.02	1.0	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05  
SQ.MI.

10.98 CFS	.48	.59	.72	.87	1.05	1.26	1.48
1.74							
11.46 CFS	2.01	2.32	2.87	3.73	4.63	5.62	7.12
9.35							
11.94 CFS	12.68	18.63	28.32	42.26	48.42	41.74	32.58
26.16							
12.42 CFS	21.43	18.33	16.41	14.35	12.20	10.74	9.87
9.24							
12.90 CFS	8.71	8.24	7.77	7.29	6.83	6.44	6.14
5.86							
13.38 CFS	5.59	5.32	5.04	4.77	4.52	4.31	4.17
4.05							
13.86 CFS	3.95	3.88	3.83	3.78	3.71	3.63	3.55
3.47							
14.34 CFS	3.41	3.36	3.30	3.23	3.15	3.06	2.98
2.92							
14.82 CFS	2.87	2.81	2.73	2.66	2.59	2.52	2.44
2.38							
15.30 CFS	2.34	2.33	2.32	2.32	2.32	2.30	2.26
2.22							
15.78 CFS	2.21	2.21	2.21	2.18	2.14	2.11	2.10

2.09								
16.26	CFS	2.08	2.06	2.03	2.01	1.99	1.96	1.94
1.93								
16.74	CFS	1.93	1.90	1.88	1.86	1.85	1.85	1.82
1.79								
17.22	CFS	1.75	1.73	1.73	1.73	1.70	1.66	1.63
1.61								
17.70	CFS	1.60	1.59	1.56	1.54	1.52	1.52	1.51
1.48								
18.18	CFS	1.45	1.44	1.43	1.42	1.40	1.38	1.40
1.41								
18.66	CFS	1.41	1.39	1.38	1.40	1.39	1.37	1.36
1.35								
19.14	CFS	1.35	1.35	1.35	1.35	1.35	1.35	1.35
1.34								
19.62	CFS	1.32	1.31	1.32	1.31	1.29	1.28	1.29
1.31								
20.10	CFS	1.31	1.29	1.28	1.28	1.27	1.25	1.23
1.23								
20.58	CFS	1.25	1.26	1.24	1.23	1.23	1.24	1.22
1.20								
21.06	CFS	1.19	1.19	1.19	1.19	1.19	1.19	1.19
1.19								
21.54	CFS	1.19	1.17	1.14	1.15	1.15	1.14	1.14
1.16								

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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22.02	CFS	1.14	1.12	1.11	1.11	1.11	1.10	1.10
1.10								
22.50	CFS	1.10	1.10	1.07	1.06	1.07	1.07	1.04
1.03								
22.98	CFS	1.04	1.06	1.06	1.04	1.03	1.02	1.02
1.02								
23.46	CFS	1.01	.98	.97	.99	1.00	1.00	.98
.96								
23.94	CFS	.95	1.01	.99	.69	.36		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.45 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)  
 13.14 486.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.00 WATERSHED INCHES; 1717 CFS-HRS; 141.9 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0, CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 80.  
 \*\*\*

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.14	486.6	213.45
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.00 WATERSHED INCHES;	1717 CFS-HRS;	141.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	25.2	(RUNOFF)
15.85	1.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.24 WATERSHED INCHES;	25 CFS-HRS;	2.1 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.13	490.4	177.73
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.98 WATERSHED INCHES;	1742 CFS-HRS;	144.0 ACRE-
FEET.		

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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 2.04TEST  
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OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	55.6	(RUNOFF)
15.84	2.3	(RUNOFF)
23.71	1.1	(RUNOFF)
24.00	1.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.55 WATERSHED INCHES;	51 CFS-HRS;	4.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	78.3	(RUNOFF)

18.68 3.0 (RUNOFF)  
24.02 2.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.28 WATERSHED INCHES; 98 CFS-HRS; 8.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 85

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.20	124.2	(NULL)
20.07	4.2	(NULL)
20.63	4.0	(NULL)
24.00	3.2	(NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5							
	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = .17			
10.74 CFS	.43	.52	.62	.74	.88	1.07	1.34	
1.70								
11.22 CFS	2.13	2.65	3.23	3.91	4.65	5.50	6.97	
9.06								
11.70 CFS	11	14	18	24	32	47	71	
104								
12.18 CFS	123	119	108	93	79	68	60	
52								
12.66 CFS	45.65	40.30	36.16	33.00	30.52	28.48	26.62	
24.87								
13.14 CFS	23.27	21.90	20.74	19.70	18.73	17.82	16.91	
16.04								
13.62 CFS	15.21	14.50	13.91	13.42	13.03	12.73	12.48	
12.27								
14.10 CFS	12.05	11.81	11.56	11.32	11.10	10.91	10.72	
10.51								
14.58 CFS	10.26	10.01	9.77	9.56	9.36	9.16	8.93	
8.72								
15.06 CFS	8.50	8.26	8.02	7.82	7.67	7.57	7.51	
7.47								
15.54 CFS	7.44	7.39	7.31	7.21	7.14	7.13	7.09	
7.03								
16.02 CFS	6.94	6.85	6.79	6.75	6.70	6.64	6.57	
6.51								
16.50 CFS	6.43	6.35	6.29	6.24	6.21	6.15	6.08	
6.02								
16.98 CFS	5.98	5.95	5.89	5.80	5.69	5.62	5.60	
5.56								
17.46 CFS	5.50	5.40	5.31	5.24	5.19	5.15	5.07	
5.00								
17.94 CFS	4.95	4.91	4.87	4.80	4.73	4.68	4.64	
4.60								

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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18.42 CFS 4.53 4.49 4.50 4.52 4.53 4.49 4.48  
4.49

18.90 CFS	4.47	4.43	4.40	4.37	4.35	4.35	4.34
4.34							
19.38 CFS	4.34	4.34	4.34	4.32	4.27	4.24	4.25
4.22							
19.86 CFS	4.18	4.15	4.16	4.19	4.19	4.17	4.14
4.12							
20.34 CFS	4.10	4.04	3.99	3.99	4.01	4.03	4.00
3.97							
20.82 CFS	3.98	3.97	3.94	3.90	3.87	3.85	3.84
3.83							
21.30 CFS	3.83	3.82	3.82	3.82	3.82	3.77	3.72
3.73							
21.78 CFS	3.71	3.68	3.69	3.71	3.68	3.65	3.62
3.59							
22.26 CFS	3.57	3.57	3.56	3.56	3.56	3.54	3.48
3.45							
22.74 CFS	3.46	3.43	3.39	3.36	3.36	3.40	3.40
3.37							
23.22 CFS	3.34	3.32	3.30	3.29	3.27	3.21	3.18
3.19							
23.70 CFS	3.21	3.21	3.17	3.12	3.10	3.20	3.12
2.51							
24.18 CFS	1.79	1.19	.75	.46			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.36 WATERSHED INCHES; 149 CFS-HRS; 12.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.32	412.6	(NULL)
13.09	514.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.91 WATERSHED INCHES; 1891 CFS-HRS; 156.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.13	31.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.71 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.28	426.9	(NULL)
13.09	517.6	(NULL)
23.98	42.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55 SQ.MI.  
 7.02 CFS .47 .51 .55 .59 .63 .68 .72

.77								
7.50	CFS	.82	.86	.91	.97	1.03	1.10	1.16
1.23								
7.98	CFS	1.29	1.36	1.43	1.51	1.58	1.66	1.74
1.82								
8.46	CFS	1.91	2.01	2.12	2.24	2.36	2.50	2.64
2.79								
8.94	CFS	2.96	3.14	3.32	3.51	3.72	3.94	4.16
4.40								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

05/22/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist; GHCHUG

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9.42	CFS	4.65	4.90	5.17	5.45	5.75	6.07	6.40
6.75								
9.90	CFS	7.12	7.51	7.93	8.38	8.85	9.36	9.91
10.50								
10.38	CFS	11.14	11.82	12.55	13.34	14.20	15.14	16.14
17.22								
10.86	CFS	18.38	19.66	21.06	22.65	24.52	26.66	29.08
31.80								
11.34	CFS	34.83	38.29	42.16	46.59	52.89	60.95	69.61
80.06								
11.82	CFS	94	113	140	182	247	340	407
426								
12.30	CFS	427	422	423	430	441	451	460
470								
12.78	CFS	482	493	503	511	516	518	517
513								
13.26	CFS	508	501	492	482	471	459	447
434								
13.74	CFS	420	406	392	378	363	349	335
321								
14.22	CFS	307	294	281	269	257	246	236
227								
14.70	CFS	217	209	200	192	185	178	171
165								
15.18	CFS	159	154	149	144	140	137	133
130								
15.66	CFS	127	124	121	118	116	113	111
109								
16.14	CFS	107	105	104	102	100	99	98
96								
16.62	CFS	95.01	93.84	92.74	91.64	90.56	89.53	88.58
87.68								
17.10	CFS	86.75	85.78	84.78	83.87	83.09	82.30	81.46
80.56								
17.58	CFS	79.68	78.85	78.08	77.33	76.52	75.71	74.95
74.24								
18.06	CFS	73.53	72.76	71.99	71.26	70.57	69.88	69.15
68.47								
18.54	CFS	67.91	67.40	66.87	66.27	65.72	65.25	64.75
64.20								
19.02	CFS	63.67	63.17	62.70	62.27	61.85	61.46	61.09
60.74								
19.50	CFS	60.41	60.05	59.63	59.26	58.98	58.65	58.29
57.94								
19.98	CFS	57.67	57.50	57.27	56.98	56.69	56.41	56.14



55.80								
20.46	CFS	55.46	55.23	55.05	54.87	54.61	54.33	54.13
53.93								
20.94	CFS	53.65	53.36	53.09	52.83	52.58	52.35	52.13
51.92								
21.42	CFS	51.71	51.51	51.29	50.99	50.69	50.47	50.25
49.98								
21.90	CFS	49.78	49.61	49.37	49.09	48.82	48.57	48.34
48.12								
22.38	CFS	47.91	47.70	47.51	47.28	46.98	46.71	46.52
46.29								
22.86	CFS	46.01	45.73	45.53	45.41	45.24	45.00	44.75
44.52								
23.34	CFS	44.30	44.09	43.85	43.54	43.27	43.10	42.96
42.80								
23.82	CFS	42.53	42.23	42.00	42.04	41.75	40.25	38.30
36.49								
24.30	CFS	34.93	33.60	32.41	31.32	30.30	29.32	28.36
27.42								
24.78	CFS	26.47	25.52	24.57	23.61	22.67	21.73	20.80
19.90								
25.26	CFS	19.02	18.18	17.37	16.61	15.89	15.21	14.58
14.00								
25.74	CFS	13.45	12.95	12.49	12.05	11.65	11.28	10.94

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.92 WATERSHED INCHES; 1919 CFS-HRS; 158.6 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
 STARTING TIME = .00 RAIN DEPTH = 4.91 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =10 RAIN TABLE NO. = 9

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/22/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist; GHCHUG  
 2.04TEST  
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OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	48.0	(RUNOFF)
23.10	1.1 *	(RUNOFF)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.90 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	45.0	390.24
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.90 WATERSHED INCHES;	63 CFS-HRS;	5.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	82.2	(RUNOFF)
20.68	2.2	(RUNOFF)
23.98	1.7	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.77 WATERSHED INCHES;	104 CFS-HRS;	8.6 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	122.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.82 WATERSHED INCHES;	166 CFS-HRS;	13.8 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	121.3	383.02

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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 2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.81 WATERSHED INCHES;	166 CFS-HRS;	13.7 ACRE-
FEET.		

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	120.5	368.34
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.81 WATERSHED INCHES;	166 CFS-HRS;	13.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	101.9	(RUNOFF)
23.73	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.57 WATERSHED INCHES; 132 CFS-HRS; 10.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	213.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.70 WATERSHED INCHES; 298 CFS-HRS; 24.7 ACRE-FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	212.2	357.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.70 WATERSHED INCHES; 299 CFS-HRS; 24.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	132.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.88 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-FEET.

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\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	60.8	376.27
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.49 WATERSHED INCHES;	165 CFS-HRS;	13.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	16.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.13 WATERSHED INCHES;	13 CFS-HRS;	1.1 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.81	56.5	355.97
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.49 WATERSHED INCHES;	165 CFS-HRS;	13.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	77.9	(RUNOFF)
15.82	3.3	(RUNOFF)
18.86	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.23 WATERSHED INCHES;	78 CFS-HRS;	6.5 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 12

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	249.3	(NULL)
24.00	6.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.59 WATERSHED INCHES;	377 CFS-HRS;	31.1 ACRE-

FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	32.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	262.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.80 WATERSHED INCHES; 540 CFS-HRS; 44.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	278.8	(NULL)
23.98	12.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .006 HOURS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 23

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.83	181.9	341.39
14.03	52.8	335.13
14.15	47.8	334.94
14.27	44.0	334.79
14.38	41.0	334.68
14.49	38.7	334.58
23.97	12.6	333.57

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10

HRS	MAIN TIME	INCREMENT = .060 hr,				DRAINAGE AREA = .32		
SQ.MI.								
4.62 CFS	.00	.01	.01	.01	.01	.01	.01	.01
.01								
4.62 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
5.10 CFS	.02	.02	.02	.02	.02	.02	.02	.02
.03								
5.10 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
5.58 CFS	.03	.03	.03	.03	.04	.04	.04	.04
.04								
5.58 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
6.06 CFS	.05	.05	.05	.05	.06	.06	.06	.06
.06								
6.06 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
6.54 CFS	.07	.07	.07	.08	.08	.08	.08	.09
.09								
6.54 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
7.02 CFS	.09	.10	.10	.11	.11	.11	.11	.12
.12								
7.02 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
7.50 CFS	.13	.13	.14	.14	.16	.17	.17	.19
.20								
7.50 ELEV	333.08	333.09	333.09	333.09	333.09	333.09	333.09	333.09
333.09								
7.98 CFS	.22	.24	.26	.28	.30	.33	.33	.36
.41								
7.98 ELEV	333.09	333.09	333.09	333.09	333.09	333.09	333.09	333.09
333.10								
8.46 CFS	.45	.50	.56	.62	.68	.74	.74	.80
.87								
8.46 ELEV	333.10	333.10	333.10	333.10	333.11	333.11	333.11	333.11
333.11								
8.94 CFS	.94	1.01	1.08	1.15	1.23	1.33	1.33	1.43
1.55								
8.94 ELEV	333.12	333.12	333.12	333.12	333.13	333.13	333.13	333.14
333.14								
9.42 CFS	1.68	1.81	1.96	2.11	2.27	2.44	2.44	2.62
2.81								
9.42 ELEV	333.15	333.15	333.16	333.16	333.17	333.17	333.17	333.18
333.19								
9.90 CFS	3.01	3.21	3.42	3.64	3.88	4.12	4.12	4.37
4.63								
9.90 ELEV	333.20	333.20	333.21	333.22	333.23	333.24	333.24	333.25
333.26								
10.38 CFS	4.89	5.17	5.46	5.78	6.13	6.54	6.54	7.01
7.55								
10.38 ELEV	333.27	333.28	333.29	333.30	333.32	333.33	333.33	333.35
333.37								
10.86 CFS	8.19	8.97	9.84	10.79	11.86	13.08	13.08	14.44
15.94								
10.86 ELEV	333.40	333.43	333.46	333.50	333.54	333.59	333.59	333.64
333.70								
11.34 CFS	17.58	19.38	21.28	24.30	28.79	34.24	34.24	40.12
46.41								
11.34 ELEV	333.76	333.83	333.91	334.03	334.20	334.41	334.41	334.64
334.89								
11.82 CFS	54	64	78	98	103	112	112	126
133								

11.82 ELEV	335.19	335.58	336.10	336.89	337.10	337.50	338.14
338.55							
12.30 CFS	142	151	158	164	170	175	178
180							
12.30 ELEV	339.01	339.49	339.91	340.31	340.65	340.94	341.15
341.29							
12.78 CFS	182	182	181	180	178	176	174
171							
12.78 ELEV	341.37	341.39	341.35	341.27	341.16	341.03	340.87
340.69							
13.26 CFS	167	164	160	157	153	148	142
136							
13.26 ELEV	340.49	340.28	340.05	339.81	339.57	339.31	339.00
338.70							
13.74 CFS	131	125	114	104	47	53	45
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13.74 ELEV	338.41	338.13	337.61	337.14	334.92	335.13	334.82
334.94							
14.22 CFS	42.39	43.85	40.26	40.88	38.39	38.46	36.61
36.34							
14.22 ELEV	334.73	334.79	334.65	334.67	334.57	334.58	334.50
334.49							
14.70 CFS	34.98	34.69	33.75	33.42	32.65	32.25	31.59
31.13							
14.70 ELEV	334.44	334.43	334.39	334.38	334.35	334.33	334.31
334.29							
15.18 CFS	30.50	30.03	29.50	29.10	28.69	28.38	28.08
27.82							
15.18 ELEV	334.27	334.25	334.23	334.21	334.20	334.18	334.17
334.16							
15.66 CFS	27.55	27.29	27.05	26.88	26.72	26.54	26.34
26.14							
15.66 ELEV	334.15	334.14	334.13	334.13	334.12	334.11	334.10
334.10							
16.14 CFS	25.96	25.80	25.64	25.47	25.30	25.13	24.96
24.77							
16.14 ELEV	334.09	334.08	334.08	334.07	334.06	334.06	334.05
334.04							
16.62 CFS	24.59	24.43	24.28	24.12	23.95	23.78	23.64
23.50							
16.62 ELEV	334.04	334.03	334.02	334.02	334.01	334.01	334.00
333.99							
17.10 CFS	23.35	23.18	22.98	22.80	22.65	22.51	22.33
22.13							
17.10 ELEV	333.99	333.98	333.97	333.97	333.96	333.96	333.95
333.94							
17.58 CFS	21.93	21.75	21.58	21.41	21.22	21.03	20.86
20.70							
17.58 ELEV	333.93	333.93	333.92	333.91	333.91	333.90	333.89
333.89							
18.06 CFS	20.55	20.38	20.20	20.04	19.89	19.75	19.58
19.43							
18.06 ELEV	333.88	333.87	333.87	333.86	333.85	333.85	333.84
333.84							

18.54	CFS	19.32	19.24	19.16	19.06	18.97	18.91	18.85
18.76								
18.54	ELEV	333.83	333.83	333.83	333.82	333.82	333.82	333.81
333.81								
19.02	CFS	18.67	18.59	18.52	18.45	18.38	18.32	18.26
18.21								
19.02	ELEV	333.81	333.80	333.80	333.80	333.80	333.79	333.79
333.79								
19.50	CFS	18.16	18.11	18.03	17.94	17.89	17.83	17.75
17.65								
19.50	ELEV	333.79	333.78	333.78	333.78	333.78	333.77	333.77
333.77								
19.98	CFS	17.59	17.56	17.52	17.46	17.38	17.32	17.26
17.17								
19.98	ELEV	333.76	333.76	333.76	333.76	333.76	333.75	333.75
333.75								
20.46	CFS	17.07	16.99	16.95	16.91	16.84	16.76	16.71
16.66								
20.46	ELEV	333.74	333.74	333.74	333.74	333.74	333.73	333.73
333.73								
20.94	CFS	16.58	16.48	16.39	16.30	16.21	16.12	16.04
15.96								
20.94	ELEV	333.73	333.72	333.72	333.71	333.71	333.71	333.70
333.70								
21.42	CFS	15.89	15.82	15.76	15.67	15.56	15.48	15.41
15.32								
21.42	ELEV	333.70	333.70	333.69	333.69	333.69	333.68	333.68
333.68								
21.90	CFS	15.24	15.19	15.12	15.02	14.92	14.84	14.76
14.68								
21.90	ELEV	333.67	333.67	333.67	333.66	333.66	333.66	333.65
333.65								
22.38	CFS	14.60	14.53	14.47	14.39	14.30	14.20	14.13
14.06								
22.38	ELEV	333.65	333.65	333.64	333.64	333.64	333.63	333.63
333.63								
22.86	CFS	13.96	13.85	13.77	13.73	13.68	13.60	13.52
13.44								
22.86	ELEV	333.62	333.62	333.62	333.61	333.61	333.61	333.61
333.60								
23.34	CFS	13.37	13.31	13.23	13.13	13.02	12.96	12.92
12.86								
23.34	ELEV	333.60	333.60	333.59	333.59	333.59	333.58	333.58
333.58								
23.82	CFS	12.78	12.68	12.59	12.59	12.54	12.10	11.36
10.62								
23.82	ELEV	333.58	333.57	333.57	333.57	333.57	333.55	333.52
333.49								
24.30	CFS	9.97	9.41	8.93	8.56	8.28	8.04	7.83
7.64								
24.30	ELEV	333.47	333.45	333.43	333.41	333.40	333.39	333.38
333.38								
24.78	CFS	7.45	7.28	7.11	6.95	6.79	6.64	6.50
6.35								
24.78	ELEV	333.37	333.36	333.36	333.35	333.34	333.34	333.33
333.33								
25.26	CFS	6.22	6.08	5.95	5.82	5.70	5.57	5.45
5.34								
25.26	ELEV	333.32	333.32	333.31	333.31	333.30	333.30	333.29
333.29								

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25.74 CFS	5.22	5.11	5.00	4.89	4.79	4.68	4.57
4.45							
25.74 ELEV	333.28	333.28	333.27	333.27	333.27	333.26	333.26
333.25							
26.22 CFS	4.34	4.23	4.12	4.01	3.90	3.80	3.70
3.60							
26.22 ELEV	333.25	333.24	333.24	333.24	333.23	333.23	333.22
333.22							
26.70 CFS	3.51	3.42	3.33	3.24	3.15	3.07	2.99
2.91							
26.70 ELEV	333.22	333.21	333.21	333.21	333.20	333.20	333.20
333.19							
27.18 CFS	2.83	2.76	2.69				
27.18 ELEV	333.19	333.19	333.18				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 573 CFS-HRS; 47.4 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	73	28	22	18	16	14	7	4

DURATION(HRS) 18  
 FLOW(CFS) 3 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.83	181.9	332.78
14.03	52.8	331.74
14.15	47.8	331.68
14.27	44.0	331.63
14.38	41.0	331.59
14.49	38.7	331.56
23.97	12.6	331.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 573 CFS-HRS; 47.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	52.0	(RUNOFF)
17.34	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.57 WATERSHED INCHES; 49 CFS-HRS; 4.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 118

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	62.5	(RUNOFF)
20.87	1.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	4.13 WATERSHED INCHES;	67 CFS-HRS;
	FEET.	5.6 ACRE-

OPERATION RESVOR STRUCTURE 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.67	13.4	348.34

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
 SQ.MI.

HRS	DISCHARGE(CFS)	ELEVATION(FEET)	HRS	DISCHARGE(CFS)	ELEVATION(FEET)	HRS	DISCHARGE(CFS)	ELEVATION(FEET)
3.00	3.00	345.00	3.00	3.00	345.00	3.00	3.00	345.00
3.48	3.48	345.01	3.48	3.48	345.01	3.48	3.48	345.01
3.96	3.96	345.01	3.96	3.96	345.02	3.96	3.96	345.02
4.44	4.44	345.02	4.44	4.44	345.03	4.44	4.44	345.03
4.92	4.92	345.03	4.92	4.92	345.04	4.92	4.92	345.04
5.40	5.40	345.05	5.40	5.40	345.05	5.40	5.40	345.06
5.88	5.88	345.06	5.88	5.88	345.06	5.88	5.88	345.07
6.36	6.36	345.07	6.36	6.36	345.08	6.36	6.36	345.08

6.84 CFS	.49	.50	.52	.53	.54	.56	.57
.58							
6.84 ELEV	345.09	345.09	345.09	345.10	345.10	345.10	345.10
345.11							
7.32 CFS	.60	.61	.63	.64	.66	.67	.69
.70							
7.32 ELEV	345.11	345.11	345.11	345.12	345.12	345.12	345.13
345.13							
7.80 CFS	.72	.73	.75	.77	.78	.80	.82
.83							
7.80 ELEV	345.13	345.13	345.14	345.14	345.14	345.15	345.15
345.15							
8.28 CFS	.85	.87	.89	.90	.92	.94	.96
.98							
8.28 ELEV	345.15	345.16	345.16	345.16	345.17	345.17	345.17
345.18							
8.76 CFS	1.00	1.01	1.03	1.05	1.07	1.09	1.11
1.13							
8.76 ELEV	345.18	345.18	345.19	345.19	345.19	345.20	345.20
345.21							
9.24 CFS	1.15	1.18	1.20	1.23	1.26	1.29	1.32
1.35							
9.24 ELEV	345.21	345.21	345.22	345.22	345.23	345.23	345.24
345.25							
9.72 CFS	1.38	1.42	1.46	1.50	1.54	1.58	1.62
1.66							
9.72 ELEV	345.25	345.26	345.27	345.27	345.28	345.29	345.29
345.30							
10.20 CFS	1.71	1.75	1.80	1.84	1.89	1.94	1.99
2.05							
10.20 ELEV	345.31	345.32	345.33	345.34	345.34	345.35	345.36
345.37							
10.68 CFS	2.11	2.17	2.24	2.32	2.41	2.51	2.61
2.72							
10.68 ELEV	345.38	345.40	345.41	345.42	345.44	345.46	345.47
345.49							
11.16 CFS	2.84	2.97	3.12	3.28	3.45	3.64	3.84
4.06							

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11.16 ELEV	345.52	345.54	345.57	345.60	345.63	345.66	345.70
345.74							
11.64 CFS	4.34	4.67	5.06	5.52	6.08	6.78	7.71
9.00							
11.64 ELEV	345.79	345.85	345.92	346.01	346.11	346.23	346.40
346.64							
12.12 CFS	10.27	11.02	11.75	12.33	12.73	13.00	13.17
13.28							
12.12 ELEV	346.94	347.28	347.61	347.87	348.05	348.17	348.25
348.30							
12.60 CFS	13.35	13.37	13.36	13.33	13.28	13.22	13.15
13.07							
12.60 ELEV	348.33	348.34	348.34	348.32	348.30	348.27	348.24
348.21							
13.08 CFS	12.99	12.90	12.81	12.71	12.60	12.50	12.39
12.28							

13.08 ELEV	348.17	348.13	348.09	348.04	347.99	347.95	347.90
347.85							
13.56 CFS	12.16	12.04	11.93	11.81	11.69	11.57	11.45
11.33							
13.56 ELEV	347.80	347.74	347.69	347.64	347.58	347.53	347.47
347.42							
14.04 CFS	11.21	11.09	10.97	10.86	10.74	10.63	10.51
10.40							
14.04 ELEV	347.37	347.31	347.26	347.21	347.16	347.10	347.05
347.00							
14.52 CFS	10.29	10.18	10.06	9.86	9.54	9.24	8.94
8.66							
14.52 ELEV	346.95	346.90	346.85	346.80	346.74	346.68	346.63
346.58							
15.00 CFS	8.38	8.11	7.86	7.61	7.36	7.13	6.91
6.69							
15.00 ELEV	346.53	346.48	346.43	346.38	346.34	346.30	346.26
346.22							
15.48 CFS	6.49	6.29	6.10	5.92	5.75	5.58	5.42
5.27							
15.48 ELEV	346.18	346.15	346.11	346.08	346.05	346.02	345.99
345.96							
15.96 CFS	5.12	4.98	4.84	4.71	4.59	4.46	4.35
4.24							
15.96 ELEV	345.93	345.91	345.88	345.86	345.83	345.81	345.79
345.77							
16.44 CFS	4.13	4.02	3.92	3.83	3.73	3.64	3.56
3.47							
16.44 ELEV	345.75	345.73	345.71	345.70	345.68	345.66	345.65
345.63							
16.92 CFS	3.39	3.31	3.24	3.17	3.10	3.03	2.96
2.90							
16.92 ELEV	345.62	345.60	345.59	345.58	345.56	345.55	345.54
345.53							
17.40 CFS	2.84	2.78	2.72	2.67	2.61	2.56	2.51
2.46							
17.40 ELEV	345.52	345.51	345.50	345.49	345.48	345.47	345.46
345.45							
17.88 CFS	2.41	2.36	2.32	2.27	2.23	2.19	2.15
2.11							
17.88 ELEV	345.44	345.43	345.42	345.41	345.41	345.40	345.39
345.38							
18.36 CFS	2.07	2.03	2.00	1.96	1.93	1.90	1.87
1.84							
18.36 ELEV	345.38	345.37	345.36	345.36	345.35	345.35	345.34
345.33							
18.84 CFS	1.81	1.79	1.76	1.73	1.71	1.69	1.66
1.64							
18.84 ELEV	345.33	345.32	345.32	345.32	345.31	345.31	345.30
345.30							
19.32 CFS	1.62	1.60	1.58	1.56	1.55	1.53	1.51
1.50							
19.32 ELEV	345.30	345.29	345.29	345.28	345.28	345.28	345.28
345.27							
19.80 CFS	1.48	1.46	1.45	1.43	1.42	1.41	1.40
1.38							
19.80 ELEV	345.27	345.27	345.26	345.26	345.26	345.26	345.25
345.25							
20.28 CFS	1.37	1.36	1.35	1.33	1.32	1.31	1.30
1.29							
20.28 ELEV	345.25	345.25	345.25	345.24	345.24	345.24	345.24
345.24							
20.76 CFS	1.28	1.27	1.26	1.25	1.24	1.24	1.23
1.22							

20.76 ELEV	345.23	345.23	345.23	345.23	345.23	345.22	345.22
345.22							
21.24 CFS	1.21	1.20	1.19	1.18	1.18	1.17	1.16
1.16							
21.24 ELEV	345.22	345.22	345.22	345.22	345.21	345.21	345.21
345.21							
21.72 CFS	1.15	1.14	1.13	1.13	1.12	1.11	1.11
1.10							
21.72 ELEV	345.21	345.21	345.21	345.21	345.20	345.20	345.20
345.20							
22.20 CFS	1.10	1.09	1.08	1.08	1.07	1.06	1.06
1.05							
22.20 ELEV	345.20	345.20	345.20	345.20	345.19	345.19	345.19
345.19							
22.68 CFS	1.05	1.04	1.03	1.03	1.02	1.02	1.01
1.01							
22.68 ELEV	345.19	345.19	345.19	345.19	345.19	345.18	345.18
345.18							

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23.16 CFS	1.00	1.00	.99	.99	.98	.97	.97
.96							
23.16 ELEV	345.18	345.18	345.18	345.18	345.18	345.18	345.18
345.18							
23.64 CFS	.96	.95	.95	.94	.94	.93	.93
.92							
23.64 ELEV	345.17	345.17	345.17	345.17	345.17	345.17	345.17
345.17							
24.12 CFS	.92	.90	.87	.84	.80	.77	.74
.70							
24.12 ELEV	345.17	345.16	345.16	345.15	345.15	345.14	345.13
345.13							
24.60 CFS	.67	.64	.61	.59	.56	.53	.51
.49							
24.60 ELEV	345.12	345.12	345.11	345.11	345.10	345.10	345.09
345.09							
25.08 CFS	.47	.44	.42	.41	.39	.37	.35
.34							
25.08 ELEV	345.08	345.08	345.08	345.07	345.07	345.07	345.06
345.06							
25.56 CFS	.32	.31	.29	.28	.27	.26	.24
.23							
25.56 ELEV	345.06	345.06	345.05	345.05	345.05	345.05	345.04
345.04							
26.04 CFS	.22	.21	.20	.19	.19	.18	.17
26.04 ELEV	345.04	345.04	345.04	345.04	345.03	345.03	345.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.12 WATERSHED INCHES; 67 CFS-HRS; 5.6 ACRE-  
 FEET.

DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	11	5	3	2	1	1	1	1

DURATION (HRS)	18	18
FLOW (CFS)	1	0

OPERATION RUNOFF XSECTION 119

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	15.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.40 WATERSHED INCHES; FEET.	13 CFS-HRS;	1.1 ACRE-

OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.14	25.5	(NULL)
23.99	1.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.98 WATERSHED INCHES; FEET.	80 CFS-HRS;	6.6 ACRE-

OPERATION ADDHYD XSECTION 20

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.14	77.5	(NULL)
21.94	2.1	(NULL)
24.00	1.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.82 WATERSHED INCHES; FEET.	129 CFS-HRS;	10.6 ACRE-

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	90.5	(RUNOFF)
17.34	2.3	(RUNOFF)
24.00	1.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.23 WATERSHED INCHES; FEET.	84 CFS-HRS;	7.0 ACRE-

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION (FEET)		
12.15	167.9	(NULL)
18.57	5.0	(NULL)
20.04	4.3	(NULL)
20.60	4.0	(NULL)
23.71	3.1	(NULL)
24.00	3.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.56 WATERSHED INCHES; 213 CFS-HRS; 17.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.17	288.2	(NULL)
12.54	222.8	(NULL)
14.03	72.7	(NULL)
14.15	67.2	(NULL)
14.26	62.7	(NULL)
14.38	59.3	(NULL)
20.02	21.9	(NULL)
23.02	17.0	(NULL)
24.00	15.7	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.96 WATERSHED INCHES; 785 CFS-HRS; 64.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.31	247.2	315.73
24.03	15.7	314.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.95 WATERSHED INCHES; 783 CFS-HRS; 64.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.25	81.4	(RUNOFF)
20.13	2.0	(RUNOFF)
23.99	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.03 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-

FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS. \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS. \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	78.5	363.94
20.15	2.0	356.54
23.79	1.5	356.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.02 WATERSHED INCHES; 99 CFS-HRS; 8.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	115.6	(RUNOFF)
18.66	3.3	(RUNOFF)
23.77	2.3	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.97 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	190.6	(NULL)
20.14	5.0	(NULL)
23.14	4.0	(NULL)
23.78	3.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
----------------	---------------------	----------------------



ELEVATION(FEET)		
12.40	174.0	319.15
20.20	5.0	316.65
23.20	4.0	316.59

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	87.6	(RUNOFF)
21.94	2.0	(RUNOFF)
24.01	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.68 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	331.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.92 WATERSHED INCHES; 887 CFS-HRS; 73.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	486.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 1129 CFS-HRS; 93.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	383.7	314.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 1127 CFS-HRS; 93.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	137.5	(RUNOFF)
18.66	3.2	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	125.9	313.02
18.72	3.2	310.26
24.09	2.2	310.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	22.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.33 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
FEET.

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\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
WITH .38 AC-FT ( .07 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 377.43.  
\*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.40	9.1	380.16

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.48 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
FEET.

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	9.0	338.13
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.47 WATERSHED INCHES;	19 CFS-HRS;	1.6 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	66.9	(RUNOFF)
21.97	1.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.32 WATERSHED INCHES;	77 CFS-HRS;	6.3 ACRE-
FEET.		

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
 WITH .95 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 353.79.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	48.7	357.05
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.67 WATERSHED INCHES;	65 CFS-HRS;	5.4 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 36

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.62 WATERSHED INCHES;	84 CFS-HRS;	6.9 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
12.35 53.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.62 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
\*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.35 53.8 330.54

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.62 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.14 73.1 (RUNOFF)  
15.84 2.2 (RUNOFF)  
22.41 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.77 WATERSHED INCHES; 68 CFS-HRS; 5.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.18 101.1 (NULL)  
20.82 3.2 (NULL)  
24.00 2.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.69 WATERSHED INCHES; 152 CFS-HRS; 12.6 ACRE-  
FEET.

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OPERATION RESVOR STRUCTURE 35

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.61 52.6 330.85

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10							
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06							
HRS	SQ.MI.						
4.02 CFS	.00	.01	.01	.01	.01	.01	.01
.01							
4.02 ELEV	326.00	326.00	326.00	326.00	326.00	326.00	326.01
326.01							
4.50 CFS	.02	.02	.02	.02	.02	.03	.03
.03							
4.50 ELEV	326.01	326.01	326.01	326.01	326.01	326.01	326.01
326.01							
4.98 CFS	.03	.04	.04	.04	.05	.05	.05
.06							
4.98 ELEV	326.01	326.02	326.02	326.02	326.02	326.02	326.02
326.02							
5.46 CFS	.06	.07	.07	.07	.08	.08	.09
.09							
5.46 ELEV	326.03	326.03	326.03	326.03	326.03	326.04	326.04
326.04							
5.94 CFS	.10	.10	.11	.11	.12	.12	.13
.14							
5.94 ELEV	326.04	326.04	326.05	326.05	326.05	326.05	326.05
326.06							
6.42 CFS	.14	.15	.15	.16	.17	.18	.18
.19							
6.42 ELEV	326.06	326.06	326.07	326.07	326.07	326.07	326.08
326.08							
6.90 CFS	.20	.21	.21	.22	.23	.24	.25
.26							
6.90 ELEV	326.08	326.09	326.09	326.09	326.10	326.10	326.10
326.11							
7.38 CFS	.27	.27	.28	.29	.30	.31	.32
.34							
7.38 ELEV	326.11	326.12	326.12	326.12	326.13	326.13	326.14
326.14							
7.86 CFS	.35	.36	.37	.38	.39	.40	.42
.43							
7.86 ELEV	326.15	326.15	326.15	326.16	326.16	326.17	326.18
326.18							
8.34 CFS	.44	.46	.47	.48	.50	.51	.52
.54							
8.34 ELEV	326.19	326.19	326.20	326.20	326.21	326.21	326.22
326.23							
8.82 CFS	.55	.57	.58	.60	.61	.63	.65
.66							
8.82 ELEV	326.23	326.24	326.24	326.25	326.26	326.26	326.27
326.28							
9.30 CFS	.68	.70	.72	.74	.76	.78	.80
.82							
9.30 ELEV	326.29	326.29	326.30	326.31	326.32	326.33	326.34
326.35							
9.78 CFS	.85	.87	.90	.92	.95	.98	1.00
1.03							
9.78 ELEV	326.36	326.37	326.38	326.39	326.40	326.41	326.42
326.43							
10.26 CFS	1.06	1.09	1.12	1.16	1.19	1.22	1.26
1.30							
10.26 ELEV	326.45	326.46	326.47	326.49	326.50	326.51	326.53
326.55							
10.74 CFS	1.34	1.38	1.43	1.48	1.53	1.59	1.65
1.71							
10.74 ELEV	326.56	326.58	326.60	326.62	326.64	326.67	326.69
326.72							

11.22 CFS	1.78	1.86	1.94	2.03	2.13	2.23	2.34
2.50							
11.22 ELEV	326.75	326.78	326.82	326.85	326.89	326.94	326.98
327.05							
11.70 CFS	2.68	2.90	3.16	3.49	3.90	4.45	5.20
6.22							
11.70 ELEV	327.13	327.22	327.33	327.47	327.64	327.87	328.18
328.61							
12.18 CFS	7.43	8.62	9.71	20.86	35.26	44.96	50.03
52.53							
12.18 ELEV	329.12	329.62	330.08	330.41	330.64	330.77	330.83
330.85							
12.66 CFS	51.20	48.59	45.70	42.63	39.80	37.24	34.90
32.73							
12.66 ELEV	330.84	330.81	330.78	330.74	330.71	330.67	330.64
330.61							
13.14 CFS	30.70	28.99	27.46	26.00	24.60	23.26	21.99
20.80							
13.14 ELEV	330.58	330.55	330.53	330.50	330.48	330.46	330.43
330.41							
13.62 CFS	19.71	18.75	17.84	16.99	16.20	15.46	14.81
14.28							
13.62 ELEV	330.39	330.38	330.36	330.35	330.33	330.32	330.31
330.29							

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14.10 CFS	13.76	13.27	12.79	12.34	11.92	11.52	11.15
10.80							
14.10 ELEV	330.28	330.27	330.26	330.25	330.24	330.23	330.23
330.22							
14.58 CFS	10.47	10.15	9.99	9.97	9.94	9.92	9.89
9.85							
14.58 ELEV	330.21	330.20	330.20	330.19	330.18	330.16	330.15
330.14							
15.06 CFS	9.82	9.78	9.74	9.70	9.66	9.62	9.58
9.54							
15.06 ELEV	330.12	330.11	330.09	330.08	330.06	330.04	330.02
330.00							
15.54 CFS	9.49	9.45	9.40	9.36	9.31	9.26	9.22
9.17							
15.54 ELEV	329.99	329.97	329.95	329.93	329.91	329.89	329.87
329.85							
16.02 CFS	9.12	9.08	9.03	8.98	8.93	8.89	8.84
8.79							
16.02 ELEV	329.83	329.81	329.79	329.77	329.75	329.73	329.71
329.69							
16.50 CFS	8.74	8.69	8.65	8.60	8.55	8.50	8.45
8.40							
16.50 ELEV	329.67	329.65	329.63	329.61	329.59	329.57	329.55
329.53							
16.98 CFS	8.36	8.31	8.26	8.21	8.16	8.11	8.07
8.02							
16.98 ELEV	329.51	329.49	329.47	329.45	329.43	329.41	329.39
329.37							
17.46 CFS	7.97	7.92	7.88	7.83	7.78	7.73	7.69
7.64							

17.46 ELEV	329.35	329.33	329.31	329.29	329.27	329.25	329.23
329.21							
17.94 CFS	7.59	7.55	7.50	7.45	7.41	7.36	7.31
7.27							
17.94 ELEV	329.19	329.17	329.15	329.13	329.11	329.09	329.07
329.05							
18.42 CFS	7.22	7.18	7.13	7.09	7.04	7.00	6.95
6.91							
18.42 ELEV	329.03	329.01	328.99	328.98	328.96	328.94	328.92
328.90							
18.90 CFS	6.87	6.82	6.78	6.74	6.69	6.65	6.61
6.57							
18.90 ELEV	328.88	328.87	328.85	328.83	328.81	328.79	328.78
328.76							
19.38 CFS	6.53	6.49	6.45	6.41	6.37	6.33	6.29
6.25							
19.38 ELEV	328.74	328.73	328.71	328.69	328.68	328.66	328.64
328.63							
19.86 CFS	6.21	6.18	6.14	6.10	6.06	6.03	5.99
5.95							
19.86 ELEV	328.61	328.59	328.58	328.56	328.55	328.53	328.52
328.50							
20.34 CFS	5.92	5.88	5.85	5.81	5.78	5.74	5.71
5.68							
20.34 ELEV	328.49	328.47	328.46	328.44	328.43	328.41	328.40
328.38							
20.82 CFS	5.64	5.61	5.58	5.54	5.51	5.48	5.44
5.41							
20.82 ELEV	328.37	328.36	328.34	328.33	328.31	328.30	328.29
328.27							
21.30 CFS	5.38	5.35	5.32	5.29	5.26	5.23	5.20
5.17							
21.30 ELEV	328.26	328.25	328.23	328.22	328.21	328.20	328.18
328.17							
21.78 CFS	5.14	5.11	5.08	5.05	5.02	4.99	4.96
4.94							
21.78 ELEV	328.16	328.15	328.13	328.12	328.11	328.10	328.09
328.07							
22.26 CFS	4.91	4.88	4.85	4.83	4.80	4.77	4.75
4.72							
22.26 ELEV	328.06	328.05	328.04	328.03	328.02	328.00	327.99
327.98							
22.74 CFS	4.69	4.67	4.64	4.61	4.59	4.56	4.54
4.51							
22.74 ELEV	327.97	327.96	327.95	327.94	327.93	327.92	327.91
327.90							
23.22 CFS	4.49	4.46	4.44	4.41	4.39	4.36	4.34
4.32							
23.22 ELEV	327.88	327.87	327.86	327.85	327.84	327.83	327.82
327.81							
23.70 CFS	4.29	4.27	4.25	4.22	4.20	4.18	4.16
4.13							
23.70 ELEV	327.80	327.79	327.78	327.77	327.76	327.75	327.75
327.74							
24.18 CFS	4.10	4.07	4.04	4.01	3.97	3.94	3.91
3.88							
24.18 ELEV	327.72	327.71	327.70	327.68	327.67	327.66	327.64
327.63							
24.66 CFS	3.85	3.82	3.79	3.76	3.73	3.70	3.67
3.64							
24.66 ELEV	327.62	327.60	327.59	327.58	327.56	327.55	327.54
327.53							
25.14 CFS	3.61	3.58	3.55	3.52	3.50	3.47	3.44
3.42							

25.14 ELEV 327.52 327.50 327.49 327.48 327.47 327.46 327.45  
 327.43  
 25.62 CFS 3.39 3.36 3.34 3.31

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25.62 ELEV 327.42 327.41 327.40 327.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.33 WATERSHED INCHES; 137 CFS-HRS; 11.4 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	13
FLOW(CFS)	12	9	7	6	5	4	3 TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	5.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 4 CFS-HRS; .4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	53.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.20 WATERSHED INCHES; 142 CFS-HRS; 11.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	57.7	(RUNOFF)
23.76	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.84 WATERSHED INCHES; 72 CFS-HRS; 6.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.58	411.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)



2.92 WATERSHED INCHES; 1199 CFS-HRS; 99.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 42

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.44 498.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.98 WATERSHED INCHES; 1354 CFS-HRS; 111.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.49 543.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 1492 CFS-HRS; 123.3 ACRE-  
FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.65 527.9 290.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 1491 CFS-HRS; 123.2 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.68 526.9 302.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.98 WATERSHED INCHES; 1490 CFS-HRS; 123.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 66.8 (RUNOFF)  
23.09 1.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.88 WATERSHED INCHES; 89 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	83.3	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 114 CFS-HRS; 9.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	150.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.84 WATERSHED INCHES; 203 CFS-HRS; 16.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	81.7	(RUNOFF)
18.65	2.0	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.84 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.66	548.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.98 WATERSHED INCHES; 1576 CFS-HRS; 130.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	638.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.96 WATERSHED INCHES; 1779 CFS-HRS; 147.0 ACRE-FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.75	611.9	285.10

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.96 WATERSHED INCHES; 1777 CFS-HRS; 146.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.96 WATERSHED INCHES; 210 CFS-HRS; 146.8 ACRE-FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT, UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 53

\*\*\* MESSAGE - XSECTION 53, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.96 WATERSHED INCHES; 207 CFS-HRS; 146.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - XSECTION 54, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.96 WATERSHED INCHES; 189 CFS-HRS; 146.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	51.6	(RUNOFF)
21.97	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.61 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 56

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.75	624.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.95 WATERSHED INCHES; 1831 CFS-HRS; 151.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - XSECTION 57, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.95 WATERSHED INCHES; 214 CFS-HRS; 151.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.75	624.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.90 WATERSHED INCHES; 1833 CFS-HRS; 151.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	31.6	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
 SQ.MI.

10.80	CFS	.45	.52	.59	.67	.75	.85	.97
1.10								
11.28	CFS	1.25	1.42	1.61	1.81	2.04	2.37	2.91
3.54								
11.76	CFS	4.26	5.18	6.51	8.52	11.69	17.01	24.70
30.82								
12.24	CFS	31.12	26.88	21.99	18.16	15.28	13.24	11.56
10.00								
12.72	CFS	8.68	7.72	7.03	6.51	6.09	5.71	5.36
5.02								
13.20	CFS	4.71	4.46	4.24	4.03	3.84	3.64	3.45
3.27								
13.68	CFS	3.11	2.98	2.87	2.79	2.73	2.67	2.63
2.59								
14.16	CFS	2.54	2.48	2.43	2.38	2.34	2.30	2.25
2.20								
14.64	CFS	2.14	2.09	2.04	2.00	1.96	1.91	1.86
1.81								
15.12	CFS	1.76	1.71	1.66	1.63	1.61	1.60	1.59
1.58								
15.60	CFS	1.58	1.56	1.54	1.52	1.51	1.51	1.50
1.48								
16.08	CFS	1.46	1.44	1.43	1.42	1.41	1.40	1.38
1.37								
16.56	CFS	1.35	1.33	1.32	1.32	1.31	1.29	1.28
1.27								
17.04	CFS	1.26	1.25	1.23	1.21	1.19	1.18	1.18
1.17								
17.52	CFS	1.14	1.12	1.11	1.10	1.09	1.07	1.06
1.04								
18.00	CFS	1.04	1.03	1.02	1.00	.99	.98	.97
.96								
18.48	CFS	.95	.95	.95	.96	.95	.94	.94
.94								

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18.96	CFS	.94	.93	.92	.92	.92	.91	.91
.91								
19.44	CFS	.91	.91	.91	.90	.89	.89	.89
.88								
19.92	CFS	.87	.87	.88	.88	.88	.87	.87
.86								
20.40	CFS	.85	.84	.84	.84	.85	.84	.84
.83								
20.88	CFS	.83	.83	.82	.81	.81	.80	.80
.80								
21.36	CFS	.80	.80	.80	.80	.79	.78	.78
.78								
21.84	CFS	.78	.77	.78	.77	.77	.76	.75
.75								
22.32	CFS	.75	.75	.75	.75	.74	.73	.72
.72								
22.80	CFS	.72	.71	.70	.70	.71	.71	.71
.70								
23.28	CFS	.69	.69	.69	.68	.67	.66	.66
.67								

23.76 CFS .67 .67 .65 .65 .66 .66 .56  
.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.01 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.74 633.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.88 WATERSHED INCHES; 1867 CFS-HRS; 154.3 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.85 616.6 272.73

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.87 WATERSHED INCHES; 1866 CFS-HRS; 154.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.24 18.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.95 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.85 621.3 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02  
SQ.MI.  
6.06 CFS .49 .53 .56 .61 .65 .69 .73  
.78

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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6.54 CFS .82 .87 .92 .97 1.03 1.08 1.14  
1.20

7.02	CFS	1.26	1.33	1.39	1.46	1.53	1.61	1.69
1.78								
7.50	CFS	1.88	2.00	2.12	2.25	2.40	2.55	2.72
2.89								
7.98	CFS	3.08	3.27	3.47	3.68	3.90	4.13	4.37
4.62								
8.46	CFS	4.88	5.15	5.42	5.70	5.99	6.28	6.59
6.90								
8.94	CFS	7.22	7.55	7.89	8.23	8.59	8.96	9.35
9.75								
9.42	CFS	10.17	10.62	11.09	11.59	12.12	12.68	13.27
13.90								
9.90	CFS	14.57	15.27	16.01	16.80	17.63	18.50	19.41
20.36								
10.38	CFS	21.35	22.37	23.43	24.54	25.69	26.91	28.21
29.61								
10.86	CFS	31.13	32.77	34.57	36.53	38.68	41.04	43.67
46.59								
11.34	CFS	49.84	53.44	57.42	61.82	66.75	72.53	79.41
87.55								
11.82	CFS	97	108	121	139	164	199	251
310								
12.30	CFS	362	406	447	484	516	543	570
598								
12.78	CFS	615	621	618	607	592	573	552
533								
13.26	CFS	515	499	483	467	452	436	421
407								
13.74	CFS	393	380	367	354	341	329	317
306								
14.22	CFS	294	283	272	260	248	237	226
215								
14.70	CFS	205	196	189	181	173	165	159
152								
15.18	CFS	146	141	136	132	128	124	121
117								
15.66	CFS	114	112	109	107	104	102	100
98								
16.14	CFS	96.18	94.49	92.95	91.52	90.18	88.92	87.72
86.57								
16.62	CFS	85.47	84.42	83.42	82.46	81.53	80.62	79.75
78.91								
17.10	CFS	78.09	77.29	76.50	75.71	74.94	74.20	73.47
72.75								
17.58	CFS	72.02	71.29	70.57	69.87	69.17	68.47	67.78
67.09								
18.06	CFS	66.42	65.75	65.09	64.42	63.77	63.12	62.49
61.86								
18.54	CFS	61.24	60.66	60.10	59.56	59.04	58.53	58.05
57.58								
19.02	CFS	57.13	56.69	56.26	55.86	55.47	55.11	54.76
54.43								
19.50	CFS	54.11	53.81	53.51	53.22	52.93	52.65	52.39
52.12								
19.98	CFS	51.85	51.60	51.37	51.14	50.92	50.69	50.46
50.22								
20.46	CFS	49.98	49.74	49.51	49.29	49.08	48.87	48.65
48.44								
20.94	CFS	48.23	48.02	47.80	47.57	47.35	47.14	46.93
46.72								
21.42	CFS	46.51	46.31	46.12	45.92	45.71	45.49	45.28
45.07								
21.90	CFS	44.87	44.67	44.47	44.27	44.06	43.85	43.63
43.42								

22.38	CFS	43.21	43.00	42.80	42.60	42.39	42.18	41.96
41.75								
22.86	CFS	41.53	41.31	41.08	40.87	40.67	40.47	40.27
40.06								
23.34	CFS	39.85	39.64	39.44	39.22	39.00	38.79	38.58
38.39								
23.82	CFS	38.19	37.99	37.78	37.58	37.40	37.12	36.64
35.93								
24.30	CFS	35.06	34.10	33.09	32.03	30.94	29.81	28.65
27.47								
24.78	CFS	26.28	25.10	23.94	22.81	21.72	20.69	19.72
18.81								
25.26	CFS	17.97	17.19	16.47	15.80	15.19	14.63	14.12
13.65								
25.74	CFS	13.21	12.80					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.86 WATERSHED INCHES; 1887 CFS-HRS; 156.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 63

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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 05/22/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist; GHCHUG  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.00	606.1	249.88

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.86 WATERSHED INCHES; 1885 CFS-HRS; 155.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	15.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.24 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	8.4	334.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.24 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
 FEET.



OPERATION REACH XSECTION 65

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.85	8.2	300.61
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.23 WATERSHED INCHES; FEET.	23 CFS-HRS;	1.9 ACRE-

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	55.9	(RUNOFF)
24.02	1.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.98 WATERSHED INCHES; FEET.	59 CFS-HRS;	4.8 ACRE-

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

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OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.62	18.0	293.76
14.58	3.8	287.79
24.04	1.1	287.45
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.98 WATERSHED INCHES; FEET.	59 CFS-HRS;	4.8 ACRE-

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.82	25.9	(NULL)
18.87	2.1	(NULL)
24.04	1.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.23 WATERSHED INCHES;	82 CFS-HRS;	6.7 ACRE-

FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	109.3	(RUNOFF)
23.74	2.1	(RUNOFF)
24.03	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.22 WATERSHED INCHES; 112 CFS-HRS; 9.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	128.2	(NULL)
18.87	5.0	(NULL)
21.97	4.1	(NULL)
24.03	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.22 WATERSHED INCHES; 193 CFS-HRS; 16.0 ACRE-  
FEET.

OPERATION REACH XSECTION 70

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.45	88.5	248.66
24.15	3.5	247.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.22 WATERSHED INCHES; 193 CFS-HRS; 16.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	26.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.81 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	9.6	265.90
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.82 WATERSHED INCHES;	22 CFS-HRS;	1.8 ACRE-
FEET.		

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	8.9	247.79
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.81 WATERSHED INCHES;	22 CFS-HRS;	1.8 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	110.8	(RUNOFF)
15.85	5.4	(RUNOFF)
17.34	4.2	(RUNOFF)
20.86	3.0	(RUNOFF)
24.01	2.5	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10								
HRS	MAIN	TIME	INCREMENT = .060 hr,	DRAINAGE AREA = .11				
SQ.MI.								
10.98 CFS	.31	.51	.76	1.07	1.44	1.85	2.33	
2.88								
11.46 CFS	3.49	4.17	5.33	7.10	9.05	11.28	14.56	
19.46								
11.94 CFS	26.93	40.30	62.41	94.61	110.76	98.35	78.24	
63.21								
12.42 CFS	52.04	44.53	39.78	34.95	29.90	26.21	24.01	
22.44								

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TR20 ----- SCS

Ellicott City FloodStudy- All Combined SAs- MGMT STRUCTURES, VERSION

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12.90 CFS	21.14	20.00	18.86	17.73	16.61	15.68	14.94
14.26							
13.38 CFS	13.60	12.94	12.27	11.63	11.02	10.52	10.14
9.85							
13.86 CFS	9.62	9.44	9.31	9.18	9.03	8.85	8.64
8.46							
14.34 CFS	8.31	8.18	8.04	7.87	7.67	7.46	7.28
7.13							
14.82 CFS	7.00	6.85	6.67	6.49	6.33	6.15	5.96
5.81							
15.30 CFS	5.72	5.68	5.66	5.66	5.65	5.61	5.53
5.43							

15.78 CFS	5.39	5.40	5.39	5.33	5.24	5.17	5.13
5.11							
16.26 CFS	5.08	5.03	4.97	4.92	4.86	4.79	4.75
4.72							
16.74 CFS	4.71	4.66	4.60	4.55	4.53	4.51	4.47
4.38							
17.22 CFS	4.28	4.23	4.24	4.23	4.16	4.07	3.99
3.94							
17.70 CFS	3.92	3.90	3.83	3.77	3.73	3.72	3.69
3.63							
18.18 CFS	3.56	3.53	3.51	3.48	3.43	3.39	3.42
3.46							
18.66 CFS	3.47	3.42	3.40	3.42	3.42	3.37	3.33
3.32							
19.14 CFS	3.31	3.31	3.31	3.31	3.31	3.31	3.31
3.30							
19.62 CFS	3.24	3.21	3.23	3.22	3.18	3.14	3.16
3.21							
20.10 CFS	3.22	3.18	3.15	3.13	3.11	3.06	3.01
3.03							
20.58 CFS	3.07	3.09	3.06	3.01	3.03	3.04	3.00
2.96							
21.06 CFS	2.93	2.92	2.92	2.92	2.92	2.92	2.92
2.92							
21.54 CFS	2.91	2.87	2.81	2.82	2.84	2.81	2.81
2.84							
22.02 CFS	2.81	2.77	2.74	2.72	2.72	2.72	2.71
2.71							
22.50 CFS	2.71	2.70	2.64	2.61	2.63	2.62	2.57
2.54							
22.98 CFS	2.55	2.60	2.61	2.57	2.53	2.52	2.51
2.51							
23.46 CFS	2.49	2.43	2.39	2.42	2.46	2.47	2.42
2.36							
23.94 CFS	2.35	2.46	2.42	1.76	.95	.46	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.58 WATERSHED INCHES; 112 CFS-HRS; 9.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.99 625.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 1998 CFS-HRS; 165.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.45 97.5 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .15  
 HRS SQ.MI.  
 9.54 CFS .48 .52 .57 .63 .69 .76 .83  
 .91  
 10.02 CFS .99 1.08 1.18 1.29 1.42 1.54 1.68

1.83								
10.50	CFS	1.98	2.14	2.31	2.49	2.70	2.93	3.19
3.49								
10.98	CFS	3.83	4.20	4.61	5.06	5.56	6.13	6.79
7.49								
11.46	CFS	8.24	9.07	9.99	11.00	12.24	13.95	16.08
18.47								
11.94	CFS	21.39	25.07	29.93	36.93	47.23	61.67	78.48
91.58								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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12.42	CFS	96.90	96.63	93.34	88.79	83.89	78.83	73.90
69.37								
12.90	CFS	65.57	62.32	59.46	56.88	54.50	52.26	50.13
48.15								
13.38	CFS	46.37	44.76	43.30	41.96	40.71	39.54	38.40
37.28								
13.86	CFS	36.20	35.16	34.17	33.24	32.36	31.54	30.75
29.89								
14.34	CFS	28.92	27.91	26.66	25.31	23.94	22.46	21.21
20.10								
14.82	CFS	19.12	18.25	17.49	16.83	16.22	15.66	15.15
14.63								
15.30	CFS	14.10	13.59	13.11	12.67	12.24	11.84	11.48
11.16								
15.78	CFS	10.87	10.61	10.38	10.19	10.03	9.88	9.73
9.58								
16.26	CFS	9.44	9.26	9.07	8.90	8.73	8.59	8.46
8.34								
16.74	CFS	8.22	8.13	8.04	7.96	7.87	7.79	7.71
7.65								
17.22	CFS	7.58	7.50	7.40	7.31	7.23	7.16	7.09
7.01								
17.70	CFS	6.91	6.82	6.74	6.66	6.58	6.50	6.42
6.35								
18.18	CFS	6.28	6.21	6.13	6.05	5.98	5.92	5.85
5.79								
18.66	CFS	5.74	5.71	5.69	5.66	5.63	5.61	5.59
5.57								
19.14	CFS	5.54	5.50	5.47	5.45	5.43	5.41	5.40
5.39								
19.62	CFS	5.38	5.37	5.34	5.32	5.29	5.27	5.25
5.22								
20.10	CFS	5.19	5.18	5.18	5.17	5.15	5.13	5.11
5.08								
20.58	CFS	5.04	5.01	4.99	4.98	4.97	4.95	4.93
4.92								
21.06	CFS	4.90	4.88	4.85	4.82	4.79	4.77	4.75
4.74								
21.54	CFS	4.73	4.72	4.71	4.69	4.66	4.63	4.61
4.59								
22.02	CFS	4.58	4.57	4.56	4.53	4.51	4.48	4.45
4.43								
22.50	CFS	4.41	4.40	4.39	4.37	4.35	4.32	4.29
4.27								
22.98	CFS	4.24	4.21	4.18	4.18	4.17	4.16	4.14

4.12								
23.46 CFS	4.10	4.08	4.05	4.02	3.99	3.96	3.95	
3.95								
23.94 CFS	3.93	3.90	3.88	3.87	3.85	3.68	3.32	
2.86								
24.42 CFS	2.40	1.99	1.63	1.34	1.09	.88	.71	
.57								
24.90 CFS	.45							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.27 WATERSHED INCHES; 215 CFS-HRS; 17.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.97	686.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.68 WATERSHED INCHES; 2213 CFS-HRS; 182.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.03	686.5	229.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.68 WATERSHED INCHES; 2212 CFS-HRS; 182.8 ACRE-  
 FEET.

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	69.0	(RUNOFF)
17.34	2.3	(RUNOFF)
24.01	1.3	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05  
 SQ.MI.

10.44 CFS	.48	.54	.61	.69	.79	.90	1.03
1.17							
10.92 CFS	1.32	1.48	1.66	1.88	2.14	2.44	2.77
3.12							
11.40 CFS	3.52	3.94	4.40	5.28	6.65	8.02	9.48
11.75							
11.88 CFS	15.02	19.88	28.51	42.20	61.40	68.99	58.81

45.47								
12.36	CFS	36.20	29.51	25.09	22.34	19.48	16.56	14.53
13.33								
12.84	CFS	12.45	11.72	11.07	10.42	9.77	9.14	8.62
8.22								
13.32	CFS	7.83	7.46	7.09	6.72	6.36	6.02	5.75
5.55								
13.80	CFS	5.39	5.26	5.16	5.08	5.01	4.93	4.82
4.71								
14.28	CFS	4.60	4.52	4.45	4.37	4.28	4.16	4.05
3.95								
14.76	CFS	3.87	3.79	3.71	3.61	3.51	3.42	3.32
3.22								
15.24	CFS	3.14	3.09	3.07	3.06	3.06	3.05	3.03
2.98								
15.72	CFS	2.93	2.91	2.92	2.91	2.87	2.82	2.78
2.76								
16.20	CFS	2.75	2.74	2.70	2.67	2.65	2.61	2.57
2.55								
16.68	CFS	2.54	2.53	2.50	2.47	2.44	2.43	2.42
2.39								
17.16	CFS	2.35	2.29	2.26	2.27	2.27	2.23	2.18
2.13								
17.64	CFS	2.11	2.10	2.08	2.05	2.01	2.00	1.99
1.97								
18.12	CFS	1.94	1.90	1.88	1.87	1.86	1.83	1.81
1.83								
18.60	CFS	1.85	1.85	1.83	1.81	1.83	1.82	1.80
1.78								
19.08	CFS	1.77	1.77	1.76	1.76	1.76	1.76	1.76
1.77								
19.56	CFS	1.76	1.72	1.71	1.72	1.72	1.69	1.67
1.68								
20.04	CFS	1.71	1.71	1.69	1.67	1.66	1.66	1.63
1.60								
20.52	CFS	1.61	1.63	1.64	1.62	1.60	1.61	1.61
1.59								
21.00	CFS	1.57	1.56	1.55	1.55	1.55	1.55	1.55
1.55								
21.48	CFS	1.55	1.54	1.52	1.49	1.50	1.50	1.49
1.49								
21.96	CFS	1.50	1.49	1.46	1.45	1.44	1.44	1.44
1.44								
22.44	CFS	1.44	1.44	1.43	1.39	1.38	1.39	1.39
1.36								
22.92	CFS	1.34	1.35	1.38	1.38	1.36	1.34	1.33
1.33								
23.40	CFS	1.32	1.31	1.28	1.26	1.28	1.30	1.30
1.27								
23.88	CFS	1.24	1.24	1.31	1.28	.90	.46	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.03 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.03	696.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.65 WATERSHED INCHES; 2278 CFS-HRS; 188.3 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 80.  
 \*\*\*

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.03	696.8	214.20

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.65 WATERSHED INCHES; 2278 CFS-HRS; 188.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	37.3	(RUNOFF)
19.47	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.02	702.6	178.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.63 WATERSHED INCHES; 2314 CFS-HRS; 191.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	78.1	(RUNOFF)
15.84	3.0	(RUNOFF)
17.34	2.4	(RUNOFF)
24.00	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.15 WATERSHED INCHES; 71 CFS-HRS; 5.9 ACRE-  
 FEET.



OPERATION RUNOFF XSECTION 84  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	116.2	(RUNOFF)
18.67	4.0	(RUNOFF)
21.93	3.3	(RUNOFF)
23.13	3.0	(RUNOFF)
24.01	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.83 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 85

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	180.8	(NULL)
21.45	5.0	(NULL)
24.00	4.2	(NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10						
	MAIN TIME INCREMENT = .060 hr,			DRAINAGE AREA = .17			
10.14 CFS	.47	.53	.59	.66	.75	.87	1.02
1.20							
10.62 CFS	1.41	1.67	1.96	2.29	2.67	3.08	3.52
4.01							
11.10 CFS	4.61	5.31	6.11	7.02	8.00	9.11	10.30
11.63							
11.58 CFS	13.97	17.29	20.81	25.02	31.04	39.45	51.66
73.16							
12.06 CFS	107	154	179	173	154	133	112
96							
12.54 CFS	83.87	72.91	63.07	55.47	49.59	45.06	41.64
38.74							
13.02 CFS	36.14	33.72	31.50	29.63	28.02	26.59	25.27
24.01							
13.50 CFS	22.78	21.58	20.45	19.48	18.68	18.02	17.48
17.07							
13.98 CFS	16.73	16.43	16.13	15.81	15.46	15.13	14.84
14.58							
14.46 CFS	14.32	14.03	13.70	13.35	13.03	12.74	12.48
12.20							
14.94 CFS	11.90	11.61	11.31	10.99	10.68	10.40	10.20
10.06							
15.42 CFS	9.98	9.93	9.89	9.82	9.71	9.57	9.48
9.46							
15.90 CFS	9.41	9.32	9.20	9.09	9.00	8.94	8.88
8.79							
16.38 CFS	8.71	8.63	8.52	8.41	8.33	8.27	8.22

8.14								
16.86	CFS	8.04	7.97	7.91	7.87	7.79	7.67	7.52
7.43								
17.34	CFS	7.40	7.35	7.26	7.13	7.01	6.92	6.86
6.79								
17.82	CFS	6.70	6.60	6.53	6.48	6.42	6.33	6.24
6.17								
18.30	CFS	6.12	6.06	5.97	5.92	5.94	5.96	5.97
5.92								
18.78	CFS	5.90	5.91	5.89	5.84	5.79	5.76	5.73
5.72								
19.26	CFS	5.71	5.71	5.71	5.71	5.71	5.68	5.61
5.58								
19.74	CFS	5.58	5.55	5.50	5.46	5.46	5.51	5.51
5.48								
20.22	CFS	5.45	5.42	5.38	5.31	5.24	5.24	5.27
5.29								
20.70	CFS	5.25	5.21	5.23	5.22	5.17	5.12	5.08
5.05								
21.18	CFS	5.03	5.02	5.02	5.02	5.01	5.01	5.00
4.94								
21.66	CFS	4.88	4.89	4.87	4.83	4.84	4.86	4.82
4.78								
22.14	CFS	4.74	4.70	4.68	4.67	4.66	4.66	4.66
4.63								
22.62	CFS	4.56	4.52	4.52	4.49	4.44	4.40	4.40
4.44								
23.10	CFS	4.44	4.41	4.38	4.34	4.32	4.31	4.27
4.20								
23.58	CFS	4.15	4.17	4.20	4.20	4.15	4.08	4.06
4.19								
24.06	CFS	4.08	3.28	2.35	1.57	.98	.60	.38

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.93 WATERSHED INCHES; 211 CFS-HRS; 17.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.00	738.9	(NULL)
23.97	50.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.55 WATERSHED INCHES; 2526 CFS-HRS; 208.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.13 40.2 (RUNOFF)  
15.84 1.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.45 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.25	602.7	(NULL)
13.00	743.3	(NULL)
23.98	51.4	(NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10							
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55							
6.12 CFS	.48	.52	.56	.60	.65	.70	.74	
.79								
6.60 CFS	.84	.89	.94	1.00	1.06	1.11	1.17	
1.24								
7.08 CFS	1.31	1.39	1.46	1.54	1.61	1.69	1.78	
1.87								
7.56 CFS	1.96	2.06	2.17	2.30	2.44	2.59	2.75	
2.91								
8.04 CFS	3.09	3.28	3.48	3.68	3.90	4.13	4.36	
4.60								
8.52 CFS	4.86	5.13	5.41	5.69	5.98	6.28	6.58	
6.90								
9.00 CFS	7.23	7.57	7.91	8.27	8.65	9.04	9.44	
9.86								
9.48 CFS	10.30	10.77	11.29	11.84	12.42	13.05	13.71	
14.42								
9.96 CFS	15.18	16.00	16.86	17.77	18.73	19.75	20.83	
21.99								
10.44 CFS	23.25	24.59	26.04	27.62	29.33	31.16	33.14	
35.28								
10.92 CFS	37.62	40.19	43.02	46.30	49.99	54.12	58.68	
63.71								
11.40 CFS	69	75	82	92	104	117	133	
153								
11.88 CFS	181	219	279	369	496	584	602	
595								
12.36 CFS	598	609	626	646	663	676	688	
703								
12.84 CFS	719	733	742	743	737	725	708	
688								
13.32 CFS	667	645	623	603	583	563	544	
526								
13.80 CFS	508	491	475	460	445	430	416	
402								

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14.28 CFS 389 375 362 349 336 322 308

295								
14.76 CFS	282	269	258	247	237	227	218	
209								
15.24 CFS	201	194	187	180	175	169	165	
160								
15.72 CFS	156	152	148	145	142	139	136	
133								
16.20 CFS	131	128	126	124	122	120	118	
117								
16.68 CFS	115	114	112	111	110	108	107	
106								
17.16 CFS	105	104	102	101	100	99	98	
97								
17.64 CFS	96.09	95.14	94.20	93.18	92.16	91.20	90.31	
89.42								
18.12 CFS	88.45	87.47	86.56	85.71	84.85	83.93	83.07	
82.38								
18.60 CFS	81.77	81.11	80.34	79.64	79.07	78.47	77.80	
77.14								
19.08 CFS	76.54	75.99	75.47	74.97	74.51	74.07	73.66	
73.27								
19.56 CFS	72.84	72.33	71.89	71.57	71.21	70.76	70.34	
70.04								
20.04 CFS	69.85	69.59	69.23	68.87	68.54	68.23	67.83	
67.41								
20.52 CFS	67.14	66.95	66.75	66.42	66.06	65.83	65.60	
65.28								
21.00 CFS	64.92	64.59	64.29	64.02	63.76	63.50	63.26	
63.02								
21.48 CFS	62.79	62.54	62.20	61.83	61.60	61.37	61.06	
60.83								
21.96 CFS	60.65	60.37	60.04	59.71	59.42	59.16	58.90	
58.65								
22.44 CFS	58.41	58.18	57.90	57.51	57.18	56.97	56.69	
56.33								
22.92 CFS	55.98	55.74	55.61	55.40	55.08	54.75	54.46	
54.20								
23.40 CFS	53.95	53.65	53.25	52.91	52.71	52.56	52.35	
51.99								
23.88 CFS	51.60	51.31	51.39	51.02	49.09	46.52	44.29	
42.50								
24.36 CFS	40.96	39.50	38.06	36.66	35.30	33.95	32.63	
31.32								
24.84 CFS	30.01	28.70	27.42	26.16	24.93	23.75	22.61	
21.53								
25.32 CFS	20.50	19.54	18.64	17.81	17.04	16.33	15.68	
15.08								
25.80 CFS	14.52							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.56 WATERSHED INCHES; 2561 CFS-HRS; 211.7 ACRE-FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
 STARTING TIME = .00 RAIN DEPTH = 6.14 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =25 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	65.5	(RUNOFF)
20.13	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.01 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-FEET.

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OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	65.1	390.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.01 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	114.1	(RUNOFF)
18.64	3.2	(RUNOFF)
23.97	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.85 WATERSHED INCHES; 144 CFS-HRS; 11.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	175.6	(NULL)
20.13	4.7	(NULL)
23.11	3.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.91 WATERSHED INCHES; 231 CFS-HRS; 19.1 ACRE-FEET.

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	174.6	383.65

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.89 WATERSHED INCHES; 230 CFS-HRS; 19.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	173.4	368.63

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.90 WATERSHED INCHES; 231 CFS-HRS; 19.1 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	143.4	(RUNOFF)
23.13	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.63 WATERSHED INCHES; 187 CFS-HRS; 15.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	306.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.77 WATERSHED INCHES; 417 CFS-HRS; 34.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	305.8	358.20

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.77 WATERSHED INCHES; 417 CFS-HRS; 34.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.30 169.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.08 WATERSHED INCHES; 241 CFS-HRS; 19.9 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 21

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Row 1: 12.54, 108.8, 377.05. Includes label '1' and 'TR20'.

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.61 WATERSHED INCHES; 218 CFS-HRS; 18.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 10

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Row 1: 12.13, 23.5, (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.10 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 22

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Row 1: 12.69, 100.4, 358.68

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.60 WATERSHED INCHES; 218 CFS-HRS; 18.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 11

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows: 12.18 (113.8), 23.09 (2.1), 24.02 (1.9)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.23 WATERSHED INCHES; 113 CFS-HRS; 9.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	361.2	(NULL)
24.01	8.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.64 WATERSHED INCHES; 530 CFS-HRS; 43.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	44.8	(RUNOFF)
18.87	1.1	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.81 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	417.1	(NULL)
23.97	15.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.87 WATERSHED INCHES; 747 CFS-HRS; 61.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	438.7	(NULL)
23.99	15.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.86 WATERSHED INCHES; 794 CFS-HRS; 65.6 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .006 HOURS.



\*\*\*

OPERATION RESVOR STRUCTURE 23

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.88	234.7	344.97
14.64	50.9	335.06
14.76	47.1	334.91
14.87	44.1	334.80
14.99	41.6	334.70
15.10	39.3	334.61
23.98	15.7	333.69

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32  
 SQ.MI.

3.84 CFS	.00	.01	.01	.01	.01	.01	.01
.01							
3.84 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
4.32 CFS	.02	.02	.02	.02	.02	.03	.03
.03							
4.32 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
4.80 CFS	.03	.04	.04	.04	.04	.05	.05
.05							
4.80 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
5.28 CFS	.05	.06	.06	.06	.07	.07	.07
.08							
5.28 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
5.76 CFS	.08	.09	.09	.09	.10	.10	.11
.11							
5.76 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							

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6.24 CFS	.12	.12	.12	.13	.13	.14	.14
.16							
6.24 ELEV	333.08	333.08	333.08	333.08	333.09	333.09	333.09
333.09							
6.72 CFS	.17	.19	.21	.22	.24	.26	.28
.31							
6.72 ELEV	333.09	333.09	333.09	333.09	333.09	333.09	333.09
333.09							
7.20 CFS	.34	.38	.42	.47	.53	.59	.65
.72							
7.20 ELEV	333.09	333.09	333.10	333.10	333.10	333.10	333.11
333.11							
7.68 CFS	.79	.86	.93	1.00	1.08	1.16	1.24
1.33							
7.68 ELEV	333.11	333.11	333.12	333.12	333.12	333.13	333.13
333.13							

8.16 CFS	1.43	1.53	1.64	1.75	1.87	1.99	2.11
2.23							
8.16 ELEV	333.14	333.14	333.14	333.15	333.15	333.16	333.16
333.17							
8.64 CFS	2.36	2.50	2.63	2.77	2.90	3.04	3.18
3.33							
8.64 ELEV	333.17	333.18	333.18	333.19	333.19	333.20	333.20
333.21							
9.12 CFS	3.49	3.66	3.85	4.05	4.27	4.50	4.74
4.99							
9.12 ELEV	333.22	333.22	333.23	333.24	333.25	333.26	333.26
333.27							
9.60 CFS	5.25	5.53	5.83	6.13	6.45	6.79	7.18
7.64							
9.60 ELEV	333.28	333.30	333.31	333.32	333.33	333.34	333.36
333.38							
10.08 CFS	8.14	8.68	9.25	9.82	10.40	10.99	11.61
12.25							
10.08 ELEV	333.40	333.42	333.44	333.46	333.48	333.51	333.53
333.56							
10.56 CFS	12.92	13.67	14.52	15.46	16.50	18.56	20.99
23.16							
10.56 ELEV	333.58	333.61	333.64	333.68	333.72	333.80	333.90
333.98							
11.04 CFS	25.33	27.49	29.84	32.34	35.06	37.94	41.06
44.37							
11.04 ELEV	334.07	334.15	334.24	334.34	334.44	334.56	334.68
334.81							
11.52 CFS	48	53	59	66	75	85	100
102							
11.52 ELEV	334.95	335.12	335.37	335.66	335.99	336.40	336.96
337.06							
12.00 CFS	108	119	131	143	156	169	182
195							
12.00 ELEV	337.33	337.84	338.42	339.06	339.79	340.56	341.38
342.21							
12.48 CFS	206	214	221	227	231	233	235
235							
12.48 ELEV	342.93	343.53	344.03	344.42	344.69	344.87	344.95
344.96							
12.96 CFS	234	232	230	228	225	221	218
214							
12.96 ELEV	344.90	344.79	344.64	344.46	344.25	344.02	343.77
343.50							
13.44 CFS	210	206	202	197	191	185	180
174							
13.44 ELEV	343.23	342.94	342.65	342.32	341.96	341.60	341.25
340.90							
13.92 CFS	169	163	158	153	147	140	133
127							
13.92 ELEV	340.56	340.22	339.90	339.58	339.24	338.88	338.54
338.21							
14.40 CFS	117	105	56	44	51	43	47
42							
14.40 ELEV	337.73	337.21	335.25	334.78	335.06	334.75	334.91
334.71							
14.88 CFS	44.09	40.51	41.46	38.91	39.12	37.18	37.04
35.71							
14.88 ELEV	334.80	334.66	334.69	334.59	334.60	334.53	334.52
334.47							
15.36 CFS	35.55	34.66	34.49	33.90	33.73	33.26	33.03
32.66							
15.36 ELEV	334.46	334.43	334.42	334.40	334.39	334.37	334.36
334.35							

15.84	CFS	32.51	32.26	32.08	31.79	31.57	31.32	31.14
30.93								
15.84	ELEV	334.34	334.34	334.33	334.32	334.31	334.30	334.29
334.28								
16.32	CFS	30.72	30.49	30.29	30.06	29.83	29.60	29.40
29.21								
16.32	ELEV	334.28	334.27	334.26	334.25	334.24	334.23	334.22
334.22								
16.80	CFS	29.01	28.78	28.58	28.39	28.23	28.04	27.82
27.57								
16.80	ELEV	334.21	334.20	334.19	334.18	334.18	334.17	334.16
334.15								
17.28	CFS	27.33	27.15	26.98	26.77	26.52	26.27	26.04
25.84								
17.28	ELEV	334.14	334.14	334.13	334.12	334.11	334.10	334.09
334.08								
17.76	CFS	25.63	25.41	25.17	24.96	24.77	24.59	24.38
24.16								

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17.76	ELEV	334.08	334.07	334.06	334.05	334.04	334.04	334.03
334.02								
18.24	CFS	23.96	23.78	23.61	23.40	23.22	23.09	23.00
22.91								
18.24	ELEV	334.01	334.01	334.00	333.99	333.98	333.98	333.97
333.97								
18.72	CFS	22.78	22.68	22.61	22.55	22.45	22.34	22.25
22.16								
18.72	ELEV	333.97	333.96	333.96	333.96	333.95	333.95	333.95
333.94								
19.20	CFS	22.08	22.00	21.93	21.87	21.81	21.76	21.70
21.60								
19.20	ELEV	333.94	333.94	333.93	333.93	333.93	333.93	333.92
333.92								
19.68	CFS	21.51	21.45	21.38	21.28	21.17	21.09	21.07
21.03								
19.68	ELEV	333.92	333.91	333.91	333.91	333.90	333.90	333.90
333.90								
20.16	CFS	20.94	20.86	20.79	20.72	20.61	20.49	20.40
20.35								
20.16	ELEV	333.89	333.89	333.89	333.89	333.88	333.88	333.87
333.87								
20.64	CFS	20.30	20.22	20.12	20.06	20.02	19.94	19.84
19.75								
20.64	ELEV	333.87	333.87	333.86	333.86	333.86	333.86	333.85
333.85								
21.12	CFS	19.67	19.59	19.51	19.44	19.37	19.31	19.26
19.21								
21.12	ELEV	333.85	333.84	333.84	333.84	333.83	333.83	333.83
333.83								
21.60	CFS	19.13	19.02	18.95	18.90	18.82	18.74	18.70
18.64								
21.60	ELEV	333.82	333.82	333.82	333.82	333.81	333.81	333.81
333.81								
22.08	CFS	18.55	18.46	18.37	18.29	18.20	18.11	18.03
17.95								

22.08	ELEV	333.80	333.80	333.79	333.79	333.79	333.78	333.78
333.78								
22.56	CFS	17.87	17.74	17.62	17.55	17.46	17.33	17.20
17.11								
22.56	ELEV	333.77	333.77	333.77	333.76	333.76	333.75	333.75
333.75								
23.04	CFS	17.06	17.01	16.91	16.81	16.72	16.64	16.56
16.47								
23.04	ELEV	333.74	333.74	333.74	333.73	333.73	333.73	333.72
333.72								
23.52	CFS	16.34	16.22	16.14	16.09	16.02	15.92	15.79
15.69								
23.52	ELEV	333.72	333.71	333.71	333.71	333.70	333.70	333.69
333.69								
24.00	CFS	15.71	15.66	15.06	14.04	13.04	12.12	11.22
10.33								
24.00	ELEV	333.69	333.69	333.67	333.63	333.59	333.55	333.52
333.48								
24.48	CFS	9.71	9.34	9.07	8.84	8.65	8.49	8.33
8.19								
24.48	ELEV	333.46	333.44	333.43	333.42	333.42	333.41	333.40
333.40								
24.96	CFS	8.06	7.93	7.81	7.69	7.57	7.46	7.35
7.24								
24.96	ELEV	333.39	333.39	333.38	333.38	333.37	333.37	333.37
333.36								
25.44	CFS	7.13	7.01	6.88	6.74	6.60	6.46	6.33
6.19								
25.44	ELEV	333.36	333.35	333.35	333.34	333.34	333.33	333.33
333.32								
25.92	CFS	6.06	5.93	5.81	5.68	5.56	5.45	5.33
5.22								
25.92	ELEV	333.32	333.31	333.31	333.30	333.30	333.29	333.29
333.28								
26.40	CFS	5.11	5.00	4.89	4.79	4.69		
26.40	ELEV	333.28	333.27	333.27	333.27	333.26		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.86 WATERSHED INCHES; 794 CFS-HRS; 65.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	142	36	28	22	20	17	11	6

DURATION(HRS) 17  
 FLOW(CFS) 5 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

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OPERATION REACH XSECTION 16

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.88	234.7	333.13
14.64	50.9	331.71
14.76	47.1	331.67
14.87	44.1	331.63
14.99	41.6	331.60
15.10	39.3	331.57
23.98	15.7	331.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.86 WATERSHED INCHES; 794 CFS-HRS; 65.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	68.1	(RUNOFF)
15.84	2.0	(RUNOFF)
21.45	1.0	(RUNOFF)
21.75	1.0	(RUNOFF)
21.95	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.75 WATERSHED INCHES; 65 CFS-HRS; 5.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	79.6	(RUNOFF)
24.03	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.34 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.71	15.6	349.33

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03 SQ.MI.

HRS	2.46 CFS	.03	2.46 ELEV	2.94 CFS	.09	2.94 ELEV	345.02
.00	.01	.01	.01	.02	.02	.03	
345.00	345.00	345.00	345.00	345.00	345.00	345.00	
.04	.04	.05	.06	.06	.07	.08	
345.01	345.01	345.01	345.01	345.01	345.01	345.01	
345.01	345.01	345.01	345.01	345.01	345.01	345.01	

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3.42 CFS	.10	.10	.11	.12	.13	.14	.15
.16							
3.42 ELEV	345.02	345.02	345.02	345.02	345.02	345.03	345.03
345.03							
3.90 CFS	.17	.18	.19	.20	.21	.22	.24
.25							
3.90 ELEV	345.03	345.03	345.03	345.04	345.04	345.04	345.04
345.04							
4.38 CFS	.26	.27	.28	.29	.30	.31	.33
.34							
4.38 ELEV	345.05	345.05	345.05	345.05	345.06	345.06	345.06
345.06							
4.86 CFS	.35	.36	.37	.38	.40	.41	.42
.43							
4.86 ELEV	345.06	345.07	345.07	345.07	345.07	345.07	345.08
345.08							
5.34 CFS	.44	.46	.47	.48	.49	.50	.51
.53							
5.34 ELEV	345.08	345.08	345.08	345.09	345.09	345.09	345.09
345.10							
5.82 CFS	.54	.55	.56	.57	.59	.60	.61
.62							
5.82 ELEV	345.10	345.10	345.10	345.10	345.11	345.11	345.11
345.11							
6.30 CFS	.64	.65	.66	.68	.69	.71	.72
.74							
6.30 ELEV	345.12	345.12	345.12	345.12	345.13	345.13	345.13
345.13							
6.78 CFS	.75	.77	.79	.80	.82	.84	.85
.87							
6.78 ELEV	345.14	345.14	345.14	345.15	345.15	345.15	345.16
345.16							
7.26 CFS	.89	.91	.93	.95	.97	.99	1.01
1.03							
7.26 ELEV	345.16	345.17	345.17	345.17	345.18	345.18	345.18
345.19							
7.74 CFS	1.05	1.07	1.09	1.11	1.13	1.15	1.18
1.20							
7.74 ELEV	345.19	345.19	345.20	345.20	345.21	345.21	345.21
345.22							
8.22 CFS	1.22	1.24	1.27	1.29	1.31	1.33	1.36
1.38							
8.22 ELEV	345.22	345.23	345.23	345.23	345.24	345.24	345.25
345.25							
8.70 CFS	1.41	1.43	1.45	1.48	1.50	1.53	1.55
1.58							
8.70 ELEV	345.26	345.26	345.26	345.27	345.27	345.28	345.28
345.29							
9.18 CFS	1.60	1.63	1.66	1.70	1.73	1.77	1.81
1.85							
9.18 ELEV	345.29	345.30	345.30	345.31	345.32	345.32	345.33
345.34							
9.66 CFS	1.89	1.93	1.98	2.03	2.08	2.13	2.18
2.24							
9.66 ELEV	345.34	345.35	345.36	345.37	345.38	345.39	345.40
345.41							
10.14 CFS	2.29	2.35	2.41	2.47	2.53	2.59	2.66
2.72							
10.14 ELEV	345.42	345.43	345.44	345.45	345.46	345.47	345.48

345.50							
10.62 CFS	2.79	2.87	2.95	3.05	3.15	3.26	3.38
3.52							
10.62 ELEV	345.51	345.52	345.54	345.55	345.57	345.59	345.62
345.64							
11.10 CFS	3.66	3.81	3.98	4.17	4.38	4.61	4.85
5.11							
11.10 ELEV	345.67	345.69	345.73	345.76	345.80	345.84	345.88
345.93							
11.58 CFS	5.40	5.75	6.18	6.68	7.27	7.98	8.88
10.02							
11.58 ELEV	345.98	346.05	346.12	346.22	346.32	346.45	346.62
346.83							
12.06 CFS	10.58	11.38	12.36	13.32	14.08	14.62	14.98
15.22							
12.06 ELEV	347.08	347.44	347.88	348.32	348.66	348.90	349.07
349.18							
12.54 CFS	15.38	15.49	15.54	15.55	15.53	15.49	15.43
15.36							
12.54 ELEV	349.25	349.30	349.32	349.32	349.32	349.30	349.27
349.24							
13.02 CFS	15.29	15.20	15.11	15.00	14.89	14.78	14.67
14.54							
13.02 ELEV	349.21	349.17	349.12	349.08	349.03	348.98	348.93
348.87							
13.50 CFS	14.42	14.29	14.16	14.03	13.89	13.76	13.62
13.48							
13.50 ELEV	348.81	348.76	348.70	348.64	348.58	348.52	348.45
348.39							
13.98 CFS	13.35	13.21	13.08	12.95	12.81	12.68	12.55
12.42							
13.98 ELEV	348.33	348.27	348.21	348.15	348.09	348.03	347.97
347.91							
14.46 CFS	12.29	12.16	12.03	11.90	11.77	11.65	11.52
11.39							
14.46 ELEV	347.85	347.79	347.74	347.68	347.62	347.56	347.51
347.45							
14.94 CFS	11.27	11.14	11.02	10.90	10.77	10.65	10.53
10.41							

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14.94 ELEV	347.39	347.34	347.28	347.22	347.17	347.11	347.06
347.01							
15.42 CFS	10.29	10.18	10.06	9.84	9.52	9.21	8.91
8.62							
15.42 ELEV	346.95	346.90	346.85	346.79	346.73	346.68	346.62
346.57							
15.90 CFS	8.35	8.09	7.84	7.59	7.36	7.14	6.92
6.72							
15.90 ELEV	346.52	346.47	346.43	346.38	346.34	346.30	346.26
346.22							
16.38 CFS	6.52	6.33	6.15	5.97	5.81	5.64	5.49
5.34							
16.38 ELEV	346.19	346.15	346.12	346.09	346.06	346.03	346.00
345.97							
16.86 CFS	5.20	5.06	4.92	4.80	4.67	4.56	4.44

4.33								
16.86 ELEV	345.95	345.92	345.90	345.87	345.85	345.83	345.81	
345.79								
17.34 CFS	4.22	4.12	4.02	3.93	3.83	3.74	3.65	
3.57								
17.34 ELEV	345.77	345.75	345.73	345.71	345.70	345.68	345.67	
345.65								
17.82 CFS	3.49	3.41	3.33	3.26	3.19	3.12	3.06	
2.99								
17.82 ELEV	345.64	345.62	345.61	345.59	345.58	345.57	345.56	
345.54								
18.30 CFS	2.93	2.87	2.81	2.75	2.70	2.65	2.60	
2.55								
18.30 ELEV	345.53	345.52	345.51	345.50	345.49	345.48	345.47	
345.46								
18.78 CFS	2.51	2.46	2.42	2.38	2.34	2.30	2.27	
2.23								
18.78 ELEV	345.46	345.45	345.44	345.43	345.43	345.42	345.41	
345.41								
19.26 CFS	2.20	2.17	2.14	2.11	2.08	2.05	2.03	
2.00								
19.26 ELEV	345.40	345.39	345.39	345.38	345.38	345.37	345.37	
345.36								
19.74 CFS	1.97	1.95	1.93	1.90	1.88	1.86	1.84	
1.82								
19.74 ELEV	345.36	345.35	345.35	345.35	345.34	345.34	345.34	
345.33								
20.22 CFS	1.80	1.79	1.77	1.75	1.73	1.72	1.70	
1.68								
20.22 ELEV	345.33	345.33	345.32	345.32	345.32	345.31	345.31	
345.31								
20.70 CFS	1.67	1.65	1.64	1.63	1.61	1.60	1.59	
1.57								
20.70 ELEV	345.30	345.30	345.30	345.30	345.29	345.29	345.29	
345.29								
21.18 CFS	1.56	1.55	1.54	1.53	1.52	1.51	1.50	
1.49								
21.18 ELEV	345.28	345.28	345.28	345.28	345.28	345.27	345.27	
345.27								
21.66 CFS	1.48	1.46	1.45	1.45	1.44	1.43	1.42	
1.41								
21.66 ELEV	345.27	345.27	345.26	345.26	345.26	345.26	345.26	
345.26								
22.14 CFS	1.40	1.39	1.38	1.37	1.37	1.36	1.35	
1.34								
22.14 ELEV	345.25	345.25	345.25	345.25	345.25	345.25	345.25	
345.24								
22.62 CFS	1.34	1.33	1.32	1.31	1.30	1.29	1.29	
1.28								
22.62 ELEV	345.24	345.24	345.24	345.24	345.24	345.24	345.23	
345.23								
23.10 CFS	1.27	1.27	1.26	1.25	1.25	1.24	1.23	
1.22								
23.10 ELEV	345.23	345.23	345.23	345.23	345.23	345.23	345.22	
345.22								
23.58 CFS	1.22	1.21	1.20	1.20	1.19	1.18	1.18	
1.17								
23.58 ELEV	345.22	345.22	345.22	345.22	345.22	345.22	345.21	
345.21								
24.06 CFS	1.17	1.16	1.13	1.10	1.06	1.01	.97	
.93								
24.06 ELEV	345.21	345.21	345.21	345.20	345.19	345.18	345.18	
345.17								
24.54 CFS	.89	.85	.81	.77	.74	.71	.67	



.64								
24.54 ELEV	345.16	345.15	345.15	345.14	345.13	345.13	345.12	
345.12								
25.02 CFS	.61	.59	.56	.54	.51	.49	.47	
.45								
25.02 ELEV	345.11	345.11	345.10	345.10	345.09	345.09	345.08	
345.08								
25.50 CFS	.43	.41	.39	.37	.35	.34	.32	
.31								
25.50 ELEV	345.08	345.07	345.07	345.07	345.06	345.06	345.06	
345.06								

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.32 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-  
 FEET.

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DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	13	8	4	3	2	2	1	1
DURATION(HRS)	18	20						
FLOW(CFS)	1	0						

OPERATION RUNOFF XSECTION 119

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.13 19.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.55 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.14 31.3 (NULL)  
 23.99 1.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.17 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.14 99.4 (NULL)  
 20.81 3.0 (NULL)  
 24.00 2.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.00 WATERSHED INCHES; 169 CFS-HRS; 14.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	121.1	(RUNOFF)
15.84	3.8	(RUNOFF)
20.85	2.0	(RUNOFF)
24.00	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.37 WATERSHED INCHES; 114 CFS-HRS; 9.4 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	220.5	(NULL)
18.82	6.4	(NULL)
20.83	5.1	(NULL)
23.05	4.2	(NULL)
24.00	4.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.73 WATERSHED INCHES; 283 CFS-HRS; 23.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.16	357.4	(NULL)
12.56	281.4	(NULL)
12.75	279.3	(NULL)
14.64	71.7	(NULL)
14.75	67.3	(NULL)
14.87	63.7	(NULL)
14.98	60.5	(NULL)
20.02	26.6	(NULL)
23.02	21.3	(NULL)
24.00	19.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.04 WATERSHED INCHES; 1073 CFS-HRS; 88.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.29	312.6	315.93
24.04	19.7	314.16

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.04 WATERSHED INCHES; 1072 CFS-HRS; 88.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.25	110.9	(RUNOFF)
23.13	2.1	(RUNOFF)
23.99	1.9	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.15 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.32	106.9	364.70
23.15	2.1	356.55
23.79	2.0	356.54

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.16 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.26	158.3	(RUNOFF)
18.66	4.2	(RUNOFF)
23.13	3.1	(RUNOFF)
23.97	2.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.08 WATERSHED INCHES; 197 CFS-HRS; 16.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	259.5	(NULL)
18.67	7.1	(NULL)
20.68	6.3	(NULL)
23.14	5.2	(NULL)
23.78	4.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.11 WATERSHED INCHES; 332 CFS-HRS; 27.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.39	246.0	319.41
20.21	6.5	316.75
23.20	5.2	316.66

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.10 WATERSHED INCHES; 332 CFS-HRS; 27.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.24	122.5	(RUNOFF)
18.67	3.3	(RUNOFF)
20.13	3.0	(RUNOFF)
24.01	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.75 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.27	435.3	(NULL)
24.03	21.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.00 WATERSHED INCHES; 1217 CFS-HRS; 100.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	651.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.02 WATERSHED INCHES; 1549 CFS-HRS; 128.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	535.3	316.48

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.02 WATERSHED INCHES; 1546 CFS-HRS; 127.7 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	183.4	(RUNOFF)
18.66	4.1	(RUNOFF)
21.96	3.3	(RUNOFF)
23.11	3.0	(RUNOFF)
24.03	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.64 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	167.8	313.44
18.72	4.1	310.34
20.73	3.6	310.29
24.09	2.8	310.23

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.65 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-  
 FEET.

FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	28.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .44 AC-FT ( .08 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 377.74.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	20.6	380.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 25 CFS-HRS; 2.0 ACRE-FEET.

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\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
 \*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	20.6	338.23

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 25 CFS-HRS; 2.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	84.9	(RUNOFF)
24.02	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.54 WATERSHED INCHES; 98 CFS-HRS; 8.1 ACRE-

FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
 WITH .99 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 353.96.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	71.4	357.38
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.86 WATERSHED INCHES;	86 CFS-HRS;	7.1 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	91.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.79 WATERSHED INCHES;	111 CFS-HRS;	9.2 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 34

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	91.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.79 WATERSHED INCHES;	111 CFS-HRS;	9.2 ACRE-
FEET.		

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
 \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	91.4	330.73
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.79 WATERSHED INCHES;	111 CFS-HRS;	9.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.14	94.7	(RUNOFF)
17.34	2.1	(RUNOFF)
24.00	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.97 WATERSHED INCHES; 90 CFS-HRS; 7.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	155.3	(NULL)
20.04	4.1	(NULL)
24.00	3.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.87 WATERSHED INCHES; 201 CFS-HRS; 16.6 ACRE-FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.47	85.7	331.53

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06 SQ.MI.

3.30 CFS	.00	.01	.01	.01	.01	.01	.01
.01							
3.30 ELEV	326.00	326.00	326.00	326.00	326.00	326.00	326.01
326.01							

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3.78 CFS	.02	.02	.02	.02	.03	.03	.03
.04							
3.78 ELEV	326.01	326.01	326.01	326.01	326.01	326.01	326.01
326.02							
4.26 CFS	.04	.04	.05	.05	.06	.06	.07
.07							
4.26 ELEV	326.02	326.02	326.02	326.02	326.02	326.03	326.03
326.03							
4.74 CFS	.08	.08	.09	.09	.10	.10	.11
.12							
4.74 ELEV	326.03	326.03	326.04	326.04	326.04	326.04	326.05
326.05							
5.22 CFS	.12	.13	.14	.14	.15	.16	.16



.17								
5.22 ELEV	326.05	326.05	326.06	326.06	326.06	326.07	326.07	
326.07								
5.70 CFS	.18	.19	.20	.20	.21	.22	.23	
.24								
5.70 ELEV	326.08	326.08	326.08	326.09	326.09	326.09	326.10	
326.10								
6.18 CFS	.25	.25	.26	.27	.28	.29	.30	
.31								
6.18 ELEV	326.10	326.11	326.11	326.11	326.12	326.12	326.13	
326.13								
6.66 CFS	.32	.34	.35	.36	.37	.38	.39	
.41								
6.66 ELEV	326.14	326.14	326.15	326.15	326.16	326.16	326.17	
326.17								
7.14 CFS	.42	.43	.45	.46	.47	.49	.50	
.52								
7.14 ELEV	326.18	326.18	326.19	326.19	326.20	326.20	326.21	
326.22								
7.62 CFS	.53	.55	.56	.58	.59	.61	.63	
.64								
7.62 ELEV	326.22	326.23	326.24	326.24	326.25	326.26	326.26	
326.27								
8.10 CFS	.66	.68	.70	.71	.73	.75	.77	
.79								
8.10 ELEV	326.28	326.29	326.29	326.30	326.31	326.32	326.32	
326.33								
8.58 CFS	.81	.83	.85	.87	.89	.91	.93	
.95								
8.58 ELEV	326.34	326.35	326.36	326.37	326.37	326.38	326.39	
326.40								
9.06 CFS	.98	1.00	1.02	1.05	1.07	1.10	1.12	
1.15								
9.06 ELEV	326.41	326.42	326.43	326.44	326.45	326.46	326.47	
326.48								
9.54 CFS	1.18	1.21	1.24	1.27	1.30	1.34	1.37	
1.41								
9.54 ELEV	326.50	326.51	326.52	326.53	326.55	326.56	326.58	
326.59								
10.02 CFS	1.44	1.48	1.52	1.56	1.60	1.64	1.68	
1.73								
10.02 ELEV	326.61	326.62	326.64	326.65	326.67	326.69	326.71	
326.72								
10.50 CFS	1.77	1.82	1.87	1.92	1.97	2.03	2.10	
2.16								
10.50 ELEV	326.74	326.76	326.78	326.81	326.83	326.85	326.88	
326.91								
10.98 CFS	2.23	2.32	2.41	2.51	2.63	2.76	2.90	
3.06								
10.98 ELEV	326.94	326.97	327.01	327.05	327.10	327.16	327.22	
327.29								
11.46 CFS	3.24	3.43	3.65	3.91	4.21	4.55	4.95	
5.42								
11.46 ELEV	327.36	327.44	327.53	327.64	327.77	327.91	328.08	
328.28								
11.94 CFS	6.00	6.75	7.79	9.23	26.57	66.80	82.29	
84.48								
11.94 ELEV	328.52	328.84	329.27	329.87	330.51	330.98	331.27	
331.43								
12.42 CFS	85.53	85.73	85.29	84.38	83.09	81.50	77.66	
63.01								
12.42 ELEV	331.51	331.53	331.49	331.42	331.33	331.20	331.07	
330.94								
12.90 CFS	52.79	47.01	43.19	39.94	37.11	34.61	32.40	

30.42								
12.90 ELEV	330.85	330.79	330.75	330.71	330.67	330.63	330.60	
330.58								
13.38 CFS	28.83	27.38	25.99	24.65	23.36	22.16	21.04	
20.02								
13.38 ELEV	330.55	330.53	330.50	330.48	330.46	330.44	330.42	
330.40								
13.86 CFS	19.17	18.38	17.64	16.97	16.33	15.74	15.18	
14.70								
13.86 ELEV	330.39	330.37	330.36	330.35	330.33	330.32	330.31	
330.30								
14.34 CFS	14.27	13.86	13.47	13.09	12.71	12.35	12.00	
11.66								
14.34 ELEV	330.29	330.29	330.28	330.27	330.26	330.25	330.24	
330.24								
14.82 CFS	11.34	11.04	10.75	10.46	10.19	9.99	9.98	
9.95								
14.82 ELEV	330.23	330.22	330.22	330.21	330.20	330.20	330.19	
330.18								
15.30 CFS	9.93	9.90	9.87	9.85	9.82	9.79	9.75	
9.72								

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15.30 ELEV	330.17	330.16	330.15	330.14	330.12	330.11	330.10	
330.08								
15.78 CFS	9.69	9.65	9.62	9.58	9.55	9.51	9.47	
9.43								
15.78 ELEV	330.07	330.05	330.04	330.02	330.01	329.99	329.98	
329.96								
16.26 CFS	9.39	9.36	9.32	9.28	9.24	9.20	9.16	
9.12								
16.26 ELEV	329.95	329.93	329.91	329.90	329.88	329.86	329.85	
329.83								
16.74 CFS	9.08	9.03	8.99	8.95	8.91	8.87	8.83	
8.78								
16.74 ELEV	329.81	329.79	329.78	329.76	329.74	329.72	329.71	
329.69								
17.22 CFS	8.74	8.70	8.66	8.61	8.57	8.53	8.48	
8.44								
17.22 ELEV	329.67	329.65	329.64	329.62	329.60	329.58	329.56	
329.54								
17.70 CFS	8.40	8.35	8.31	8.26	8.22	8.17	8.13	
8.09								
17.70 ELEV	329.53	329.51	329.49	329.47	329.45	329.43	329.41	
329.40								
18.18 CFS	8.04	8.00	7.95	7.91	7.86	7.82	7.77	
7.73								
18.18 ELEV	329.38	329.36	329.34	329.32	329.30	329.28	329.26	
329.25								
18.66 CFS	7.69	7.64	7.60	7.56	7.52	7.47	7.43	
7.39								
18.66 ELEV	329.23	329.21	329.19	329.17	329.16	329.14	329.12	
329.10								
19.14 CFS	7.35	7.31	7.27	7.23	7.19	7.15	7.11	
7.07								
19.14 ELEV	329.09	329.07	329.05	329.04	329.02	329.00	328.99	

328.97								
19.62 CFS	7.03	6.99	6.96	6.92	6.88	6.84	6.81	
6.77								
19.62 ELEV	328.95	328.94	328.92	328.91	328.89	328.87	328.86	
328.84								
20.10 CFS	6.73	6.70	6.66	6.62	6.59	6.55	6.52	
6.48								
20.10 ELEV	328.83	328.81	328.80	328.78	328.77	328.75	328.74	
328.72								
20.58 CFS	6.45	6.41	6.38	6.35	6.31	6.28	6.25	
6.21								
20.58 ELEV	328.71	328.69	328.68	328.67	328.65	328.64	328.62	
328.61								
21.06 CFS	6.18	6.15	6.12	6.08	6.05	6.02	5.99	
5.96								
21.06 ELEV	328.60	328.58	328.57	328.56	328.54	328.53	328.52	
328.50								
21.54 CFS	5.93	5.90	5.87	5.84	5.81	5.78	5.75	
5.72								
21.54 ELEV	328.49	328.48	328.46	328.45	328.44	328.43	328.41	
328.40								
22.02 CFS	5.69	5.66	5.63	5.60	5.57	5.55	5.52	
5.49								
22.02 ELEV	328.39	328.38	328.37	328.35	328.34	328.33	328.32	
328.31								
22.50 CFS	5.46	5.43	5.41	5.38	5.35	5.32	5.30	
5.27								
22.50 ELEV	328.29	328.28	328.27	328.26	328.25	328.24	328.23	
328.21								
22.98 CFS	5.24	5.22	5.19	5.17	5.14	5.11	5.09	
5.06								
22.98 ELEV	328.20	328.19	328.18	328.17	328.16	328.15	328.14	
328.13								
23.46 CFS	5.04	5.01	4.99	4.96	4.94	4.91	4.89	
4.86								
23.46 ELEV	328.12	328.11	328.09	328.08	328.07	328.06	328.05	
328.04								
23.94 CFS	4.84	4.81	4.79	4.76	4.73	4.69	4.66	
4.62								
23.94 ELEV	328.03	328.02	328.01	328.00	327.99	327.97	327.96	
327.94								
24.42 CFS	4.58	4.54	4.50	4.46	4.42	4.39	4.35	
4.31								
24.42 ELEV	327.92	327.91	327.89	327.87	327.86	327.84	327.83	
327.81								
24.90 CFS	4.28	4.24	4.20	4.17	4.13	4.10	4.07	
4.03								
24.90 ELEV	327.80	327.78	327.77	327.75	327.74	327.72	327.71	
327.69								
25.38 CFS	4.00	3.97						
25.38 ELEV	327.68	327.67						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.44 WATERSHED INCHES; 183 CFS-HRS; 15.1 ACRE-FEET.

DURATION (HRS)	2	4	6	8	10	12	14	
FLOW (CFS)	16	9	8	7	6	5	4	TRUNCATED

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OPERATION RUNOFF XSECTION 140

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	8.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.23 WATERSHED INCHES;	7 CFS-HRS;	.6 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	88.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.29 WATERSHED INCHES;	190 CFS-HRS;	15.7 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	78.9	(RUNOFF)
20.13	2.0	(RUNOFF)
23.76	1.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.94 WATERSHED INCHES;	100 CFS-HRS;	8.2 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	579.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.01 WATERSHED INCHES;	1646 CFS-HRS;	136.0 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	691.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.07 WATERSHED INCHES;	1853 CFS-HRS;	153.1 ACRE-
FEEET.		

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OPERATION ADDHYD XSECTION 43  
 PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.48 778.9 (NULL)  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.08 WATERSHED INCHES; 2039 CFS-HRS; 168.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 44  
 PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.59 759.9 290.91  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.08 WATERSHED INCHES; 2037 CFS-HRS; 168.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 2  
 PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.62 757.8 303.01  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.08 WATERSHED INCHES; 2034 CFS-HRS; 168.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 45  
 PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.30 91.8 (RUNOFF)  
 23.08 2.0 (RUNOFF)  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.99 WATERSHED INCHES; 123 CFS-HRS; 10.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46  
 PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.32 114.6 (RUNOFF)  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.90 WATERSHED INCHES; 158 CFS-HRS; 13.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	206.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.94 WATERSHED INCHES; 281 CFS-HRS; 23.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	112.4	(RUNOFF)
21.97	2.1	(RUNOFF)
24.03	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.93 WATERSHED INCHES; 119 CFS-HRS; 9.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	791.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.07 WATERSHED INCHES; 2153 CFS-HRS; 178.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.53	918.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.05 WATERSHED INCHES; 2434 CFS-HRS; 201.2 ACRE-  
FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.66	905.9	285.79

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

4.05 WATERSHED INCHES; 2433 CFS-HRS; 201.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 52

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.64 WATERSHED INCHES; 4 CFS-HRS; .3 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	1.7	288.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.64 WATERSHED INCHES; 4 CFS-HRS; .3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - XSECTION 54, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.64 WATERSHED INCHES; 212 CFS-HRS; .3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	72.5	(RUNOFF)
24.03	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.67 WATERSHED INCHES; 76 CFS-HRS; 6.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 56

```

PEAK TIME(HRS)          PEAK DISCHARGE(CFS)          PEAK
ELEVATION(FEET)
  12.65                   925.9                          (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
  4.04 WATERSHED INCHES;    2510 CFS-HRS;    207.4 ACRE-
FEET.

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OPERATION ADDHYD XSECTION 57

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PEAK TIME(HRS)          PEAK DISCHARGE(CFS)          PEAK
ELEVATION(FEET)
  12.33                   1.8                          (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
  .45 WATERSHED INCHES;    5 CFS-HRS;    .4 ACRE-
FEET.

```

OPERATION ADDHYD XSECTION 58

```

PEAK TIME(HRS)          PEAK DISCHARGE(CFS)          PEAK
ELEVATION(FEET)
  12.65                   927.2                        (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
  3.98 WATERSHED INCHES;    2514 CFS-HRS;    207.8 ACRE-
FEET.

```

OPERATION RUNOFF XSECTION 59

```

PEAK TIME(HRS)          PEAK DISCHARGE(CFS)          PEAK
ELEVATION(FEET)
  12.21                   47.1                         (RUNOFF)
  21.97                   1.1                          (RUNOFF)

```

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      HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25
      MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03
      SQ.MI.
10.08 CFS    .48    .52    .56    .60    .64    .69    .73
.78
10.56 CFS    .84    .90    .98    1.08    1.18    1.30    1.43
1.57
11.04 CFS    1.71    1.88    2.08    2.31    2.57    2.85    3.15
3.48
11.52 CFS    3.83    4.38    5.24    6.26    7.38    8.82    10.85
13.87
12.00 CFS    18.80    26.74    37.61    46.18    45.89    39.69    32.20
26.43
12.48 CFS    22.12    19.01    16.54    14.23    12.30    10.89    9.91
9.16

```



12.96 CFS	8.55	8.01	7.51	7.03	6.60	6.23	5.92
5.63							
13.44 CFS	5.35	5.08	4.81	4.55	4.32	4.14	3.99
3.88							
13.92 CFS	3.78	3.71	3.65	3.59	3.52	3.44	3.36
3.29							
14.40 CFS	3.23	3.18	3.11	3.04	2.96	2.89	2.82
2.76							
14.88 CFS	2.70	2.63	2.57	2.50	2.43	2.36	2.29
2.24							
15.36 CFS	2.21	2.20	2.19	2.18	2.17	2.15	2.11
2.09							
15.84 CFS	2.08	2.08	2.06	2.03	2.00	1.98	1.97
1.96							
16.32 CFS	1.94	1.92	1.90	1.88	1.85	1.83	1.81
1.80							
16.80 CFS	1.79	1.77	1.75	1.74	1.73	1.71	1.69
1.65							
17.28 CFS	1.63	1.62	1.61	1.60	1.57	1.54	1.51
1.50							
17.76 CFS	1.49	1.47	1.45	1.43	1.42	1.41	1.39
1.37							
18.24 CFS	1.35	1.34	1.33	1.31	1.29	1.29	1.30
1.31							
18.72 CFS	1.30	1.29	1.29	1.29	1.28	1.27	1.26
1.25							
19.20 CFS	1.25	1.25	1.25	1.25	1.25	1.25	1.24
1.23							
19.68 CFS	1.22	1.21	1.21	1.20	1.19	1.19	1.20
1.20							
20.16 CFS	1.20	1.19	1.18	1.17	1.16	1.14	1.14
1.14							
20.64 CFS	1.15	1.15	1.14	1.13	1.14	1.13	1.12
1.10							

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21.12 CFS	1.10	1.09	1.09	1.09	1.09	1.09	1.09
1.09							
21.60 CFS	1.08	1.06	1.06	1.06	1.05	1.05	1.05
1.05							
22.08 CFS	1.04	1.03	1.02	1.02	1.01	1.01	1.01
1.01							
22.56 CFS	1.01	.99	.98	.98	.98	.97	.95
.95							
23.04 CFS	.96	.97	.96	.95	.94	.94	.93
.93							
23.52 CFS	.91	.90	.90	.91	.91	.91	.89
.88							
24.00 CFS	.90	.89	.77	.53	.32		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.96 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.64 942.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.95 WATERSHED INCHES; 2565 CFS-HRS; 212.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.76 912.1 275.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.95 WATERSHED INCHES; 2563 CFS-HRS; 211.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.24 28.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.89 WATERSHED INCHES; 32 CFS-HRS; 2.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.75 920.0 (NULL)

		HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25						
		MAIN TIME INCREMENT = .060 hr,					DRAINAGE AREA = 1.02	
HRS	SQ.MI.							
5.04 CFS	.83	.46	.51	.55	.61	.66	.71	.77
5.52 CFS	1.34	.88	.95	1.01	1.07	1.14	1.20	1.27
6.00 CFS	1.98	1.41	1.48	1.55	1.63	1.70	1.79	1.88
6.48 CFS	3.18	2.09	2.21	2.35	2.49	2.65	2.82	2.99
6.96 CFS	5.09	3.38	3.60	3.82	4.05	4.29	4.55	4.81

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7.44 CFS	7.65	5.37	5.67	5.97	6.29	6.62	6.95	7.29
7.92 CFS		8.01	8.38	8.77	9.16	9.57	9.99	10.41

10.85							
8.40 CFS	11.30	11.76	12.23	12.70	13.19	13.68	14.19
14.71							
8.88 CFS	15.24	15.78	16.34	16.91	17.50	18.10	18.73
19.38							
9.36 CFS	20.07	20.79	21.55	22.35	23.20	24.09	25.04
26.05							
9.84 CFS	27.11	28.22	29.39	30.60	31.87	33.20	34.58
36.02							
10.32 CFS	37.50	39.03	40.62	42.26	43.97	45.76	47.67
49.71							
10.80 CFS	51.92	54.33	56.95	59.82	62.94	66.36	70.13
74.33							
11.28 CFS	79	84	90	96	103	110	118
128							
11.76 CFS	140	154	171	192	222	269	329
402							
12.24 CFS	484	559	622	680	747	816	868
902							
12.72 CFS	918	919	906	881	848	810	768
727							
13.20 CFS	690	656	626	599	575	553	533
516							
13.68 CFS	501	487	475	462	449	436	423
410							
14.16 CFS	398	387	375	364	353	342	332
321							
14.64 CFS	311	301	291	281	270	259	248
237							
15.12 CFS	226	215	205	196	188	181	173
166							
15.60 CFS	160	154	149	144	140	136	133
130							
16.08 CFS	127	124	122	120	118	116	114
112							
16.56 CFS	111	109	108	106	105	104	102
101							
17.04 CFS	99.71	98.48	97.34	96.23	95.15	94.10	93.10
92.13							
17.52 CFS	91.17	90.19	89.22	88.27	87.33	86.41	85.49
84.57							
18.00 CFS	83.67	82.78	81.91	81.04	80.17	79.31	78.47
77.65							
18.48 CFS	76.83	76.04	75.29	74.58	73.89	73.22	72.58
71.98							
18.96 CFS	71.39	70.82	70.27	69.74	69.24	68.76	68.31
67.88							
19.44 CFS	67.47	67.09	66.72	66.36	65.99	65.64	65.30
64.97							
19.92 CFS	64.64	64.32	64.01	63.73	63.46	63.18	62.90
62.62							
20.40 CFS	62.33	62.03	61.73	61.45	61.18	60.93	60.66
60.40							
20.88 CFS	60.14	59.88	59.62	59.35	59.07	58.80	58.54
58.28							
21.36 CFS	58.02	57.77	57.53	57.30	57.06	56.81	56.55
56.30							
21.84 CFS	56.06	55.82	55.59	55.37	55.14	54.90	54.66
54.41							
22.32 CFS	54.17	53.93	53.70	53.48	53.26	53.02	52.78
52.53							
22.80 CFS	52.28	52.03	51.78	51.51	51.26	51.03	50.80
50.56							
23.28 CFS	50.31	50.06	49.81	49.57	49.31	49.05	48.78

48.53								
23.76	CFS	48.29	48.06	47.81	47.55	47.30	47.08	46.73
46.10								
24.24	CFS	45.14	43.97	42.67	41.31	39.88	38.41	36.88
35.30								
24.72	CFS	33.70	32.09	30.49	28.92	27.41	25.97	24.61
23.34								
25.20	CFS	22.17	21.08	20.09	19.18	18.36		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.93 WATERSHED INCHES; 2595 CFS-HRS; 214.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.89	901.3	250.30

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.93 WATERSHED INCHES; 2592 CFS-HRS; 214.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	20.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.38 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	14.5	334.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.38 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.72	14.1	300.79

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

4.38 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.20	83.6	(RUNOFF)
20.10	2.1	(RUNOFF)
24.03	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.93 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

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OPERATION RESVOR STRUCTURE 62

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.47	36.9	295.13
20.12	2.1	287.57
24.04	1.6	287.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.94 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.60	49.3	(NULL)
23.11	2.1	(NULL)
23.76	2.0	(NULL)
24.04	2.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.21 WATERSHED INCHES; 118 CFS-HRS; 9.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	159.6	(RUNOFF)
21.97	3.2	(RUNOFF)
24.02	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.22 WATERSHED INCHES; 162 CFS-HRS; 13.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	181.3	(NULL)
20.10	6.3	(NULL)
20.65	6.1	(NULL)
21.97	5.5	(NULL)
23.10	5.1	(NULL)
24.03	4.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.21 WATERSHED INCHES; 279 CFS-HRS; 23.1 ACRE-FEET.

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OPERATION REACH XSECTION 70

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	128.1	248.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.22 WATERSHED INCHES; 279 CFS-HRS; 23.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	36.6	(RUNOFF)
15.83	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.92 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.29 15.7 266.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.90 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-
FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.44 15.5 247.89

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.91 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.18 176.2 (RUNOFF)
15.85 7.7 (RUNOFF)
17.34 6.0 (RUNOFF)
21.46 4.1 (RUNOFF)
24.01 3.4 (RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .11
SQ.MI.
10.26 CFS .46 .59 .72 .86 1.01 1.18 1.37
1.61

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Table with 9 columns: Time (HRS), Discharge (CFS), and 7 other values. Rows include: 10.74 CFS (4.89), 11.22 CFS (15.99), 11.70 CFS (153), 12.18 CFS (52), 12.66 CFS (25.81), 13.14 CFS (16.80), 13.62 CFS (13.20), 14.10 CFS (11.27), 14.58 CFS (9.27), 15.06 CFS (8.05), 15.54 CFS.

7.58								
16.02	CFS	7.45	7.34	7.28	7.25	7.22	7.13	7.04
6.98								
16.50	CFS	6.90	6.79	6.73	6.69	6.67	6.60	6.51
6.44								
16.98	CFS	6.41	6.39	6.32	6.20	6.05	5.98	5.99
5.98								
17.46	CFS	5.89	5.75	5.63	5.57	5.54	5.50	5.41
5.32								
17.94	CFS	5.27	5.24	5.21	5.12	5.03	4.97	4.95
4.91								
18.42	CFS	4.83	4.78	4.82	4.88	4.88	4.82	4.78
4.82								
18.90	CFS	4.81	4.74	4.69	4.67	4.66	4.65	4.65
4.65								
19.38	CFS	4.66	4.66	4.66	4.64	4.56	4.51	4.54
4.53								
19.86	CFS	4.47	4.42	4.44	4.51	4.52	4.46	4.42
4.40								
20.34	CFS	4.37	4.30	4.23	4.25	4.31	4.33	4.29
4.22								
20.82	CFS	4.24	4.26	4.21	4.15	4.11	4.10	4.09
4.09								
21.30	CFS	4.09	4.09	4.09	4.09	4.08	4.01	3.94
3.96								
21.78	CFS	3.97	3.93	3.93	3.97	3.94	3.87	3.83
3.81								
22.26	CFS	3.80	3.80	3.80	3.80	3.80	3.77	3.69
3.64								
22.74	CFS	3.67	3.66	3.59	3.54	3.57	3.64	3.65
3.59								
23.22	CFS	3.54	3.52	3.51	3.50	3.47	3.39	3.34
3.38								
23.70	CFS	3.44	3.44	3.37	3.29	3.27	3.44	3.37
2.46								
24.18	CFS	1.33	.64	.31				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.44 WATERSHED INCHES; 173 CFS-HRS; 14.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.88 932.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.78 WATERSHED INCHES; 2766 CFS-HRS; 228.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.42 143.6 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .15  
 HRS SQ.MI.  
 8.40 CFS .50 .54 .58 .63 .67 .73 .78  
 .84



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8.88	CFS	.90	.95	1.02	1.09	1.16	1.24	1.33
1.42								
9.36	CFS	1.53	1.64	1.77	1.90	2.04	2.18	2.34
2.50								
9.84	CFS	2.68	2.87	3.05	3.25	3.45	3.67	3.89
4.13								
10.32	CFS	4.37	4.62	4.87	5.13	5.41	5.70	6.03
6.40								
10.80	CFS	6.84	7.33	7.88	8.50	9.14	9.80	10.54
11.38								
11.28	CFS	12.34	13.40	14.58	15.87	17.25	18.71	20.47
22.82								
11.76	CFS	25.79	29.20	33.18	38.24	44.97	54.51	68.57
91.09								
12.24	CFS	118	134	141	144	141	137	131
125								
12.72	CFS	118	110	102	94	87	82	76
72								
13.20	CFS	67.51	63.78	60.43	57.42	54.75	52.38	50.28
48.38								
13.68	CFS	46.66	45.10	43.70	42.46	41.34	40.35	39.46
38.65								
14.16	CFS	37.91	37.21	36.48	35.74	34.99	34.26	33.54
32.82								
14.64	CFS	32.07	31.29	30.49	29.60	28.60	27.55	26.34
25.01								
15.12	CFS	23.68	22.31	20.99	19.87	18.93	18.14	17.49
16.94								
15.60	CFS	16.49	16.10	15.70	15.30	14.92	14.56	14.23
13.92								
16.08	CFS	13.62	13.32	13.04	12.80	12.58	12.40	12.22
12.05								
16.56	CFS	11.89	11.73	11.57	11.42	11.29	11.17	11.04
10.90								
17.04	CFS	10.72	10.56	10.40	10.25	10.09	9.93	9.81
9.70								
17.52	CFS	9.60	9.47	9.34	9.21	9.09	8.99	8.88
8.76								
18.00	CFS	8.65	8.55	8.46	8.36	8.26	8.16	8.06
7.98								
18.48	CFS	7.89	7.79	7.73	7.68	7.66	7.62	7.58
7.55								
18.96	CFS	7.52	7.49	7.45	7.40	7.36	7.33	7.30
7.28								
19.44	CFS	7.26	7.24	7.23	7.21	7.18	7.14	7.11
7.09								
19.92	CFS	7.05	7.01	6.97	6.96	6.96	6.95	6.92
6.89								
20.40	CFS	6.86	6.82	6.77	6.72	6.69	6.68	6.67
6.64								
20.88	CFS	6.62	6.60	6.58	6.54	6.50	6.46	6.43
6.40								
21.36	CFS	6.37	6.35	6.34	6.32	6.31	6.29	6.25
6.21								

21.84 CFS	6.18	6.16	6.13	6.12	6.10	6.08	6.04
6.00							
22.32 CFS	5.97	5.94	5.91	5.89	5.88	5.86	5.82
5.78							
22.80 CFS	5.75	5.72	5.68	5.64	5.60	5.59	5.58
5.57							
23.28 CFS	5.54	5.51	5.48	5.46	5.43	5.39	5.34
5.30							
23.76 CFS	5.29	5.28	5.26	5.22	5.18	5.18	5.18
4.98							
24.24 CFS	4.51	3.89	3.26	2.69	2.21	1.80	1.46
1.18							
24.72 CFS	.95	.76	.61	.48			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.27 WATERSHED INCHES; 309 CFS-HRS; 25.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.84	1031.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.72 WATERSHED INCHES; 3075 CFS-HRS; 254.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 77

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.91	1031.3	230.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.72 WATERSHED INCHES; 3074 CFS-HRS; 254.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	103.0	(RUNOFF)
15.85	4.0	(RUNOFF)
17.34	3.1	(RUNOFF)
21.96	2.0	(RUNOFF)
24.01	1.8	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05  
 SQ.MI.

9.54 CFS .89	.47	.52	.58	.64	.70	.77	.83
10.02 CFS 1.55	.96	1.04	1.13	1.21	1.29	1.37	1.45
10.50 CFS 3.05	1.65	1.76	1.91	2.09	2.30	2.54	2.78
10.98 CFS 6.71	3.33	3.62	3.99	4.43	4.94	5.49	6.07
11.46 CFS 24.66	7.36	8.07	9.49	11.74	13.93	16.18	19.66
11.94 CFS 52.24	31.93	44.76	64.75	92.26	102.86	86.40	66.13
12.42 CFS 17.47	42.31	35.81	31.74	27.58	23.38	20.48	18.73
12.90 CFS 10.91	16.43	15.50	14.58	13.66	12.77	12.03	11.45
13.38 CFS 7.47	10.38	9.86	9.34	8.83	8.36	7.97	7.69
13.86 CFS 6.36	7.28	7.15	7.04	6.94	6.82	6.67	6.51
14.34 CFS 5.33	6.24	6.14	6.04	5.90	5.74	5.58	5.44
14.82 CFS 4.32	5.23	5.11	4.97	4.84	4.71	4.57	4.43
15.30 CFS 4.02	4.25	4.22	4.21	4.20	4.20	4.16	4.10
15.78 CFS 3.77	3.99	4.00	3.99	3.94	3.87	3.82	3.79
16.26 CFS 3.48	3.75	3.71	3.66	3.63	3.58	3.53	3.49
16.74 CFS 3.21	3.46	3.43	3.37	3.34	3.33	3.31	3.27
17.22 CFS 2.88	3.13	3.10	3.11	3.10	3.05	2.97	2.91
17.70 CFS 2.64	2.87	2.85	2.80	2.75	2.72	2.71	2.69
18.18 CFS 2.52	2.60	2.57	2.56	2.54	2.49	2.47	2.49
18.66 CFS 2.41	2.52	2.49	2.47	2.49	2.48	2.45	2.42
19.14 CFS 2.39	2.40	2.40	2.40	2.40	2.40	2.40	2.40
19.62 CFS 2.33	2.35	2.32	2.34	2.34	2.30	2.27	2.29
20.10 CFS 2.19	2.33	2.30	2.27	2.26	2.25	2.21	2.17
20.58 CFS 2.13	2.22	2.23	2.21	2.17	2.19	2.19	2.16
21.06 CFS 2.10	2.11	2.11	2.10	2.10	2.10	2.10	2.10
21.54 CFS 2.04	2.10	2.06	2.02	2.03	2.04	2.02	2.02
22.02 CFS 1.95	2.02	1.99	1.96	1.96	1.95	1.95	1.95
22.50 CFS 1.82	1.95	1.94	1.89	1.87	1.89	1.88	1.84
22.98 CFS 1.79	1.83	1.87	1.87	1.84	1.81	1.80	1.80
23.46 CFS 1.68	1.78	1.73	1.71	1.74	1.77	1.77	1.73
23.94 CFS	1.68	1.77	1.73	1.21	.62	.29	

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.99 WATERSHED INCHES; 98 CFS-HRS; 8.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.90 1047.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.69 WATERSHED INCHES; 3172 CFS-HRS; 262.1 ACRE-  
FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.97 1046.6 215.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.69 WATERSHED INCHES; 3171 CFS-HRS; 262.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.17 57.5 (RUNOFF)  
15.85 2.3 (RUNOFF)  
23.07 1.1 (RUNOFF)  
23.73 1.0 (RUNOFF)  
24.01 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.69 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.97 1055.2 179.20

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.67 WATERSHED INCHES; 3225 CFS-HRS; 266.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 83

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	114.2	(RUNOFF)
15.84	4.1	(RUNOFF)
17.34	3.2	(RUNOFF)
22.47	2.0	(RUNOFF)
24.00	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.13 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	176.5	(RUNOFF)
20.12	5.2	(RUNOFF)
23.12	4.1	(RUNOFF)
24.01	3.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.74 WATERSHED INCHES; 210 CFS-HRS; 17.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 85

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	274.2	(NULL)
18.83	8.1	(NULL)
20.82	7.1	(NULL)
22.72	6.2	(NULL)
23.07	6.1	(NULL)
24.00	5.7	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .17 SQ.MI.

9.24 CFS	.46	.52	.59	.67	.77	.88	1.02
1.17							
9.72 CFS	1.34	1.51	1.69	1.87	2.06	2.27	2.50
2.74							
10.20 CFS	2.98	3.22	3.46	3.72	4.00	4.30	4.64
5.05							
10.68 CFS	5.54	6.10	6.74	7.44	8.19	8.99	9.86
10.91							
11.16 CFS	12.12	13.51	15.04	16.71	18.56	20.49	22.61
26.33							
11.64 CFS	32	38	44	54	67	86	118
168							
12.12 CFS	236	273	259	231	197	164	140
122							

12.60	CFS	105	91	80	71	64	59	55
51								
13.08	CFS	47.67	44.49	41.77	39.46	37.42	35.52	33.73
31.96								
13.56	CFS	30.27	28.68	27.29	26.16	25.21	24.45	23.85
23.36								
14.04	CFS	22.95	22.51	22.05	21.56	21.09	20.68	20.30
19.94								
14.52	CFS	19.52	19.06	18.57	18.12	17.71	17.34	16.95
16.52								
15.00	CFS	16.11	15.70	15.25	14.82	14.43	14.14	13.95
13.83								
15.48	CFS	13.75	13.70	13.59	13.44	13.24	13.12	13.08
13.01								
15.96	CFS	12.89	12.73	12.56	12.44	12.36	12.27	12.15
12.02								

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16.44	CFS	11.91	11.76	11.61	11.49	11.40	11.33	11.22
11.09								
16.92	CFS	10.99	10.91	10.84	10.73	10.57	10.37	10.24
10.19								
17.40	CFS	10.12	10.00	9.82	9.65	9.52	9.43	9.34
9.21								
17.88	CFS	9.08	8.98	8.91	8.83	8.70	8.58	8.48
8.41								
18.36	CFS	8.33	8.21	8.14	8.15	8.19	8.19	8.13
8.10								
18.84	CFS	8.11	8.08	8.01	7.95	7.90	7.87	7.85
7.84								
19.32	CFS	7.83	7.83	7.83	7.83	7.79	7.70	7.65
7.65								
19.80	CFS	7.61	7.54	7.48	7.49	7.55	7.55	7.50
7.46								
20.28	CFS	7.42	7.37	7.27	7.18	7.18	7.21	7.24
7.19								
20.76	CFS	7.14	7.15	7.14	7.07	7.01	6.95	6.91
6.88								
21.24	CFS	6.87	6.86	6.86	6.86	6.85	6.84	6.76
6.67								
21.72	CFS	6.67	6.65	6.60	6.61	6.64	6.59	6.53
6.47								
22.20	CFS	6.42	6.39	6.38	6.37	6.36	6.36	6.32
6.22								
22.68	CFS	6.17	6.18	6.13	6.05	6.00	6.00	6.06
6.06								
23.16	CFS	6.02	5.97	5.92	5.89	5.87	5.83	5.72
5.67								
23.64	CFS	5.69	5.72	5.73	5.66	5.57	5.54	5.71
5.56								
24.12	CFS	4.50	3.21	2.14	1.33	.82	.51	.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.86 WATERSHED INCHES; 314 CFS-HRS; 25.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.95 1110.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.58 WATERSHED INCHES; 3539 CFS-HRS; 292.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.13 53.1 (RUNOFF)  
 17.34 1.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.62 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.38 903.4 (NULL)  
 12.95 1116.1 (NULL)

		HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25						
		MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55						
HRS	SQ.MI.							
5.16 CFS	.84	.46	.51	.56	.61	.66	.72	.78
5.64 CFS	1.40	.91	.97	1.03	1.09	1.16	1.24	1.32

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6.12 CFS	2.09	1.47	1.55	1.64	1.72	1.81	1.90	1.99
6.60 CFS	3.24	2.19	2.31	2.43	2.57	2.73	2.88	3.05
7.08 CFS	5.13	3.44	3.65	3.87	4.10	4.33	4.59	4.86
7.56 CFS	7.71	5.41	5.70	6.01	6.33	6.66	7.00	7.35
8.04 CFS	11.03	8.08	8.46	8.85	9.23	9.66	10.11	10.56
8.52 CFS	15.47	11.53	12.05	12.59	13.13	13.69	14.26	14.85
9.00 CFS	21.37	16.12	16.79	17.46	18.16	18.91	19.70	20.51
9.48 CFS	30.51	22.28	23.25	24.31	25.42	26.61	27.86	29.15

9.96 CFS 44.67	31.95	33.48	35.12	36.85	38.68	40.58	42.57
10.44 CFS 67.22	46.86	49.16	51.60	54.24	57.11	60.22	63.60
10.92 CFS 112	71	75	80	85	91	97	104
11.40 CFS 242	121	130	140	154	172	191	214
11.88 CFS 901	279	330	407	522	681	807	871
12.36 CFS 1067	903	902	917	942	966	996	1032
12.84 CFS 975	1095	1112	1116	1108	1087	1056	1018
13.32 CFS 671	930	884	841	801	763	730	699
13.80 CFS 527	646	625	606	589	573	557	542
14.28 CFS 420	513	498	485	471	458	445	432
14.76 CFS 321	407	395	383	371	359	347	334
15.24 CFS 231	308	295	282	270	259	249	240
15.72 CFS 180	222	215	207	201	195	189	184
16.20 CFS 154	175	172	168	165	162	159	156
16.68 CFS 139	152	150	148	146	144	142	140
17.16 CFS 126	137	135	133	132	130	129	127
17.64 CFS 115	124	123	121	120	119	117	116
18.12 CFS 106	114	112	111	110	109	108	107
18.60 CFS 99	105	104	103	102	101	100	99
19.08 CFS 93.44	97.77	97.02	96.32	95.67	95.06	94.49	93.95
19.56 CFS 89.31	92.90	92.29	91.74	91.27	90.76	90.25	89.74
20.04 CFS 86.02	89.00	88.65	88.27	87.86	87.43	87.01	86.51
20.52 CFS 83.23	85.64	85.32	85.04	84.68	84.28	83.97	83.62
21.00 CFS 80.36	82.84	82.41	82.01	81.64	81.30	80.97	80.66
21.48 CFS 77.65	80.07	79.76	79.36	78.94	78.62	78.27	77.90
21.96 CFS 74.98	77.38	77.04	76.69	76.31	75.93	75.59	75.27
22.44 CFS 72.23	74.69	74.41	74.09	73.67	73.29	72.98	72.62
22.92 CFS 69.65	71.84	71.52	71.30	71.03	70.72	70.37	70.00
23.40 CFS 66.93	69.34	68.98	68.53	68.12	67.81	67.55	67.29
23.88 CFS 55.44	66.50	66.12	66.08	65.59	63.68	61.11	58.23
24.36 CFS 40.15	53.11	51.07	49.14	47.28	45.46	43.67	41.90
24.84 CFS 26.80	38.40	36.65	34.91	33.19	31.51	29.88	28.30



25.32 CFS 25.39 24.06 22.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.59 WATERSHED INCHES; 3586 CFS-HRS; 296.4 ACRE-
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4

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EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88
STARTING TIME = .00 RAIN DEPTH = 7.23 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS
ALTERNATE NO. = 1 STORM NO. =50 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK (RUNOFF). Rows: 12.29, 20.13, 23.08.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-
FEET.

OPERATION REACH XSECTION 2

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows: 12.35, 81.3, 390.61.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 3

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK (RUNOFF). Rows: 12.27, 20.68, 23.97.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.85 WATERSHED INCHES; 181 CFS-HRS; 15.0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	220.1	(NULL)
20.13	5.7	(NULL)
23.12	4.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.91 WATERSHED INCHES; 290 CFS-HRS; 24.0 ACRE-  
 FEET.

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\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,  
 VALUE EXTRAPOLATED.  
 \*\*\*

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	218.8	384.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.39	218.2	368.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	181.7	(RUNOFF)
20.14	4.8	(RUNOFF)
23.74	3.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.60 WATERSHED INCHES; 237 CFS-HRS; 19.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
12.35 387.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.75 WATERSHED INCHES; 526 CFS-HRS; 43.5 ACRE-  
FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.41 386.9 358.49

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.75 WATERSHED INCHES; 526 CFS-HRS; 43.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 203.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.15 WATERSHED INCHES; 291 CFS-HRS; 24.1 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.51 139.6 377.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.58 WATERSHED INCHES; 264 CFS-HRS; 21.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.13 30.4 (RUNOFF)  
15.46 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.03 WATERSHED INCHES; 25 CFS-HRS; 2.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	112.3	359.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.57 WATERSHED INCHES; 264 CFS-HRS; 21.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 11

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	146.1	(RUNOFF)
15.81	5.5	(RUNOFF)
20.09	3.2	(RUNOFF)
20.64	3.0	(RUNOFF)
24.02	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.16 WATERSHED INCHES; 146 CFS-HRS; 12.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	458.9	(NULL)
24.00	10.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.61 WATERSHED INCHES; 672 CFS-HRS; 55.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	56.4	(RUNOFF)
21.97	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.80 WATERSHED INCHES; 60 CFS-HRS; 4.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	552.8	(NULL)
23.98	17.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.84 WATERSHED INCHES; 934 CFS-HRS; 77.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	582.5	(NULL)
23.99	18.5	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 994 CFS-HRS; 82.1 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .006 HOURS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.73	367.8	346.87
14.94	78.5	336.14
15.06	65.2	335.62
15.18	56.1	335.26
15.30	49.7	335.01
15.42	45.3	334.84
15.54	42.2	334.72
15.66	40.1	334.64
15.78	38.6	334.58
15.90	37.8	334.55

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32  
 SQ.MI.  
 3.36 CFS .00 .01 .01 .01 .01 .01 .01  
 .02  
 3.36 ELEV 333.08 333.08 333.08 333.08 333.08 333.08 333.08  
 333.08  
 3.84 CFS .02 .02 .02 .02 .03 .03 .03  
 .03  
 3.84 ELEV 333.08 333.08 333.08 333.08 333.08 333.08 333.08

333.08							
4.32 CFS	.04	.04	.04	.05	.05	.05	.06
.06							
4.32 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
4.80 CFS	.06	.07	.07	.08	.08	.08	.09
.09							
4.80 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
5.28 CFS	.10	.10	.11	.11	.12	.12	.13
.13							
5.28 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.09							
5.76 CFS	.14	.15	.16	.18	.19	.21	.23
.24							
5.76 ELEV	333.09	333.09	333.09	333.09	333.09	333.09	333.09
333.09							
6.24 CFS	.26	.28	.31	.35	.39	.43	.48
.54							
6.24 ELEV	333.09	333.09	333.09	333.09	333.10	333.10	333.10
333.10							
6.72 CFS	.60	.66	.73	.80	.87	.95	1.02
1.10							
6.72 ELEV	333.10	333.11	333.11	333.11	333.11	333.12	333.12
333.12							
7.20 CFS	1.19	1.27	1.37	1.47	1.59	1.70	1.82
1.95							
7.20 ELEV	333.13	333.13	333.13	333.14	333.14	333.15	333.15
333.16							
7.68 CFS	2.07	2.20	2.33	2.47	2.61	2.76	2.91
3.06							
7.68 ELEV	333.16	333.17	333.17	333.18	333.18	333.19	333.19
333.20							
8.16 CFS	3.22	3.37	3.53	3.69	3.86	4.02	4.18
4.36							
8.16 ELEV	333.21	333.21	333.22	333.22	333.23	333.24	333.24
333.25							
8.64 CFS	4.54	4.73	4.92	5.11	5.29	5.47	5.66
5.87							
8.64 ELEV	333.26	333.26	333.27	333.28	333.29	333.29	333.30
333.31							
9.12 CFS	6.11	6.41	6.77	7.19	7.64	8.12	8.60
9.10							
9.12 ELEV	333.32	333.33	333.34	333.36	333.38	333.40	333.41
333.43							
9.60 CFS	9.62	10.17	10.74	11.34	11.94	12.55	13.16
13.80							

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9.60 ELEV	333.45	333.48	333.50	333.52	333.54	333.57	333.59
333.62							
10.08 CFS	14.46	15.13	16.27	18.01	19.56	20.86	22.06
23.15							
10.08 ELEV	333.64	333.67	333.71	333.78	333.84	333.89	333.94
333.98							
10.56 CFS	24.25	25.39	26.65	28.04	29.58	31.25	33.08

35.05								
10.56 ELEV	334.02	334.07	334.12	334.17	334.23	334.30	334.37	
334.44								
11.04 CFS	37.18	39.55	42.25	45.27	48.58	52.21	56.19	
60.47								
11.04 ELEV	334.53	334.62	334.72	334.84	334.97	335.11	335.27	
335.43								
11.52 CFS	65	71	79	89	100	101	105	
112								
11.52 ELEV	335.61	335.84	336.17	336.54	336.96	337.03	337.21	
337.53								
12.00 CFS	124	132	145	160	176	195	211	
225								
12.00 ELEV	338.05	338.49	339.17	340.03	341.05	342.19	343.26	
344.28								
12.48 CFS	238	250	308	355	367	362	346	
327								
12.48 ELEV	345.23	346.03	346.55	346.80	346.87	346.84	346.75	
346.65								
12.96 CFS	307	291	278	264	250	247	244	
240								
12.96 ELEV	346.54	346.42	346.30	346.17	346.04	345.85	345.63	
345.37								
13.44 CFS	236	232	228	223	219	214	209	
205								
13.44 ELEV	345.09	344.79	344.48	344.16	343.84	343.51	343.18	
342.85								
13.92 CFS	200	194	188	182	176	170	165	
159								
13.92 ELEV	342.51	342.12	341.74	341.37	341.00	340.65	340.31	
339.98								
14.40 CFS	154	149	142	135	129	122	110	
100								
14.40 ELEV	339.67	339.35	338.99	338.65	338.33	337.96	337.43	
336.98								
14.88 CFS	15.77	78.40	27.04	65.12	33.09	56.03	35.91	
49.67								
14.88 ELEV	333.69	336.13	334.13	335.61	334.37	335.26	334.48	
335.01								
15.36 CFS	37.03	45.26	37.31	42.22	37.19	40.10	36.91	
38.64								
15.36 ELEV	334.52	334.84	334.53	334.72	334.53	334.64	334.52	
334.58								
15.84 CFS	36.70	37.76	36.46	36.96	36.03	36.25	35.63	
35.70								
15.84 ELEV	334.51	334.55	334.50	334.52	334.48	334.49	334.47	
334.47								
16.32 CFS	35.20	35.12	34.73	34.58	34.21	34.01	33.71	
33.53								
16.32 ELEV	334.45	334.45	334.43	334.43	334.41	334.40	334.39	
334.38								
16.80 CFS	33.26	33.02	32.76	32.56	32.35	32.14	31.87	
31.57								
16.80 ELEV	334.37	334.36	334.35	334.35	334.34	334.33	334.32	
334.31								
17.28 CFS	31.29	31.08	30.88	30.63	30.33	30.03	29.76	
29.52								
17.28 ELEV	334.30	334.29	334.28	334.27	334.26	334.25	334.24	
334.23								
17.76 CFS	29.28	29.01	28.73	28.48	28.26	28.04	27.80	
27.54								
17.76 ELEV	334.22	334.21	334.20	334.19	334.18	334.17	334.16	
334.15								
18.24 CFS	27.31	27.10	26.90	26.67	26.45	26.31	26.22	

26.13								
18.24	ELEV	334.14	334.13	334.13	334.12	334.11	334.10	334.10
334.10								
18.72	CFS	25.99	25.87	25.81	25.75	25.65	25.53	25.42
25.33								
18.72	ELEV	334.09	334.09	334.08	334.08	334.08	334.07	334.07
334.07								
19.20	CFS	25.23	25.15	25.07	25.00	24.94	24.88	24.82
24.71								
19.20	ELEV	334.06	334.06	334.06	334.05	334.05	334.05	334.05
334.04								
19.68	CFS	24.60	24.54	24.46	24.34	24.22	24.13	24.11
24.06								
19.68	ELEV	334.04	334.03	334.03	334.03	334.02	334.02	334.02
334.02								
20.16	CFS	23.98	23.89	23.80	23.72	23.60	23.45	23.35
23.30								
20.16	ELEV	334.01	334.01	334.01	334.00	334.00	333.99	333.99
333.99								
20.64	CFS	23.25	23.16	23.05	22.98	22.94	22.85	22.73
22.63								
20.64	ELEV	333.98	333.98	333.98	333.97	333.97	333.97	333.96
333.96								
21.12	CFS	22.53	22.44	22.35	22.27	22.20	22.14	22.08
22.03								
21.12	ELEV	333.96	333.95	333.95	333.95	333.94	333.94	333.94
333.94								

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21.60	CFS	21.93	21.81	21.74	21.68	21.58	21.50	21.46
21.39								
21.60	ELEV	333.93	333.93	333.93	333.92	333.92	333.92	333.91
333.91								
22.08	CFS	21.28	21.18	21.08	21.00	20.92	20.84	20.77
20.71								
22.08	ELEV	333.91	333.90	333.90	333.90	333.89	333.89	333.89
333.89								
22.56	CFS	20.63	20.51	20.40	20.33	20.25	20.13	19.99
19.91								
22.56	ELEV	333.88	333.88	333.87	333.87	333.87	333.86	333.86
333.85								
23.04	CFS	19.88	19.84	19.75	19.66	19.58	19.51	19.43
19.33								
23.04	ELEV	333.85	333.85	333.85	333.84	333.84	333.84	333.84
333.83								
23.52	CFS	19.19	19.04	18.95	18.90	18.83	18.70	18.56
18.44								
23.52	ELEV	333.83	333.82	333.82	333.82	333.81	333.81	333.80
333.80								
24.00	CFS	18.47	18.40	17.67	16.45	15.23	14.11	13.01
11.93								
24.00	ELEV	333.80	333.80	333.77	333.72	333.67	333.63	333.59
333.54								
24.48	CFS	10.95	10.29	9.96	9.70	9.49	9.30	9.14
8.98								
24.48	ELEV	333.51	333.48	333.47	333.46	333.45	333.44	333.44



333.43								
24.96 CFS	8.84	8.70	8.57	8.44	8.31	8.19	8.07	
7.95								
24.96 ELEV	333.42	333.42	333.41	333.41	333.40	333.40	333.39	
333.39								
25.44 CFS	7.84	7.73	7.62	7.51	7.41	7.30	7.20	
7.10								
25.44 ELEV	333.39	333.38	333.38	333.37	333.37	333.36	333.36	
333.36								
25.92 CFS	7.00	6.90	6.81	6.71	6.60	6.48		
25.92 ELEV	333.35	333.35	333.34	333.34	333.34	333.33		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.85 WATERSHED INCHES; 997 CFS-HRS; 82.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	168	42	32	26	23	21	16	8

DURATION(HRS) 17  
 FLOW(CFS) 6 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.73	367.8	333.90
14.94	78.5	332.06
15.06	65.2	331.89
15.18	56.1	331.78
15.30	49.7	331.70
15.42	45.3	331.64
15.54	42.2	331.61
15.66	40.1	331.58
15.78	38.6	331.56
15.90	37.8	331.55

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.85 WATERSHED INCHES; 997 CFS-HRS; 82.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.14	82.4	(RUNOFF)
15.84	2.4	(RUNOFF)
23.05	1.1	(RUNOFF)

23.71 1.0 (RUNOFF)  
 24.00 1.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.80 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.18	94.7	(RUNOFF)
24.03	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.73	17.5	350.21

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03 SQ.MI.

HRS	DISCHARGE (CFS)	ELEVATION (FEET)	HRS	DISCHARGE (CFS)	ELEVATION (FEET)	HRS	DISCHARGE (CFS)	ELEVATION (FEET)
2.10	.03	345.01	2.10	.03	345.01	2.10	.03	345.01
2.58	.10	345.02	2.58	.10	345.02	2.58	.10	345.02
3.06	.19	345.04	3.06	.19	345.04	3.06	.19	345.04
3.54	.30	345.05	3.54	.30	345.05	3.54	.30	345.05
4.02	.41	345.08	4.02	.41	345.08	4.02	.41	345.08
4.50	.53	345.10	4.50	.53	345.10	4.50	.53	345.10
4.98	.65	345.12	4.98	.65	345.12	4.98	.65	345.12
5.46	.77	345.14	5.46	.77	345.14	5.46	.77	345.14

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5.94 CFS	.78	.79	.81	.82	.84	.85	.87
.89							
5.94 ELEV	345.14	345.14	345.15	345.15	345.15	345.16	345.16
345.16							
6.42 CFS	.90	.92	.94	.96	.97	.99	1.01
1.03							
6.42 ELEV	345.16	345.17	345.17	345.17	345.18	345.18	345.18
345.19							
6.90 CFS	1.05	1.07	1.09	1.11	1.13	1.16	1.18
1.20							
6.90 ELEV	345.19	345.20	345.20	345.20	345.21	345.21	345.21
345.22							
7.38 CFS	1.23	1.25	1.27	1.30	1.32	1.35	1.37
1.39							
7.38 ELEV	345.22	345.23	345.23	345.24	345.24	345.24	345.25
345.25							
7.86 CFS	1.42	1.44	1.47	1.50	1.52	1.55	1.58
1.60							
7.86 ELEV	345.26	345.26	345.27	345.27	345.28	345.28	345.29
345.29							
8.34 CFS	1.63	1.66	1.69	1.71	1.74	1.77	1.80
1.83							
8.34 ELEV	345.30	345.30	345.31	345.31	345.32	345.32	345.33
345.33							
8.82 CFS	1.86	1.89	1.91	1.94	1.97	2.00	2.03
2.07							
8.82 ELEV	345.34	345.34	345.35	345.35	345.36	345.36	345.37
345.38							
9.30 CFS	2.10	2.14	2.19	2.23	2.28	2.33	2.38
2.43							
9.30 ELEV	345.38	345.39	345.40	345.41	345.41	345.42	345.43
345.44							
9.78 CFS	2.49	2.54	2.60	2.66	2.73	2.79	2.86
2.93							
9.78 ELEV	345.45	345.46	345.47	345.48	345.50	345.51	345.52
345.53							
10.26 CFS	3.00	3.07	3.15	3.22	3.30	3.37	3.46
3.55							
10.26 ELEV	345.55	345.56	345.57	345.59	345.60	345.61	345.63
345.65							
10.74 CFS	3.65	3.76	3.89	4.02	4.17	4.32	4.49
4.68							
10.74 ELEV	345.66	345.68	345.71	345.73	345.76	345.79	345.82
345.85							
11.22 CFS	4.89	5.11	5.36	5.63	5.92	6.23	6.58
7.00							
11.22 ELEV	345.89	345.93	345.98	346.02	346.08	346.13	346.20
346.27							
11.70 CFS	7.51	8.11	8.82	9.67	10.25	10.74	11.43
12.40							
11.70 ELEV	346.37	346.48	346.60	346.76	346.93	347.15	347.47
347.90							
12.18 CFS	13.58	14.74	15.66	16.31	16.76	17.06	17.27
17.41							
12.18 ELEV	348.44	348.96	349.38	349.67	349.87	350.01	350.10
350.16							
12.66 CFS	17.48	17.51	17.50	17.46	17.41	17.34	17.26

17.17								
12.66	ELEV	350.20	350.21	350.20	350.19	350.16	350.13	350.10
350.06								
13.14	CFS	17.07	16.97	16.85	16.73	16.60	16.47	16.33
16.19								
13.14	ELEV	350.01	349.96	349.91	349.86	349.80	349.74	349.68
349.62								
13.62	CFS	16.05	15.90	15.75	15.60	15.45	15.30	15.15
15.00								
13.62	ELEV	349.55	349.48	349.42	349.35	349.28	349.21	349.14
349.08								
14.10	CFS	14.85	14.70	14.56	14.41	14.26	14.11	13.97
13.83								
14.10	ELEV	349.01	348.94	348.88	348.81	348.74	348.68	348.61
348.55								
14.58	CFS	13.68	13.54	13.40	13.25	13.11	12.97	12.83
12.69								
14.58	ELEV	348.48	348.42	348.35	348.29	348.22	348.16	348.10
348.03								
15.06	CFS	12.55	12.41	12.28	12.14	12.00	11.87	11.73
11.60								
15.06	ELEV	347.97	347.91	347.85	347.79	347.72	347.66	347.60
347.54								
15.54	CFS	11.47	11.34	11.22	11.09	10.97	10.85	10.73
10.61								
15.54	ELEV	347.48	347.43	347.37	347.31	347.26	347.20	347.15
347.09								
16.02	CFS	10.49	10.37	10.26	10.14	10.03	9.76	9.45
9.15								
16.02	ELEV	347.04	346.99	346.94	346.88	346.83	346.78	346.72
346.66								
16.50	CFS	8.86	8.58	8.31	8.05	7.81	7.57	7.35
7.13								
16.50	ELEV	346.61	346.56	346.51	346.47	346.42	346.38	346.34
346.30								
16.98	CFS	6.92	6.72	6.53	6.34	6.16	5.99	5.83
5.67								
16.98	ELEV	346.26	346.22	346.19	346.15	346.12	346.09	346.06
346.03								
17.46	CFS	5.51	5.37	5.22	5.09	4.95	4.83	4.70
4.58								

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17.46	ELEV	346.00	345.98	345.95	345.93	345.90	345.88	345.86
345.83								
17.94	CFS	4.47	4.36	4.25	4.15	4.05	3.95	3.86
3.77								
17.94	ELEV	345.81	345.79	345.77	345.76	345.74	345.72	345.70
345.69								
18.42	CFS	3.69	3.60	3.52	3.45	3.37	3.31	3.24
3.17								
18.42	ELEV	345.67	345.66	345.64	345.63	345.61	345.60	345.59
345.58								
18.90	CFS	3.11	3.05	3.00	2.94	2.89	2.84	2.79
2.74								
18.90	ELEV	345.57	345.56	345.55	345.54	345.53	345.52	345.51

345.50								
19.38 CFS	2.70	2.66	2.62	2.58	2.54	2.50	2.47	
2.43								
19.38 ELEV	345.49	345.48	345.48	345.47	345.46	345.46	345.45	
345.44								
19.86 CFS	2.40	2.37	2.33	2.30	2.28	2.25	2.22	
2.20								
19.86 ELEV	345.44	345.43	345.42	345.42	345.41	345.41	345.40	
345.40								
20.34 CFS	2.17	2.15	2.12	2.10	2.08	2.06	2.04	
2.02								
20.34 ELEV	345.40	345.39	345.39	345.38	345.38	345.37	345.37	
345.37								
20.82 CFS	2.00	1.98	1.96	1.94	1.92	1.91	1.89	
1.87								
20.82 ELEV	345.36	345.36	345.36	345.35	345.35	345.35	345.34	
345.34								
21.30 CFS	1.86	1.84	1.83	1.81	1.80	1.79	1.77	
1.76								
21.30 ELEV	345.34	345.34	345.33	345.33	345.33	345.33	345.32	
345.32								
21.78 CFS	1.75	1.73	1.72	1.71	1.70	1.69	1.68	
1.66								
21.78 ELEV	345.32	345.32	345.31	345.31	345.31	345.31	345.31	
345.30								
22.26 CFS	1.65	1.64	1.63	1.62	1.61	1.60	1.59	
1.58								
22.26 ELEV	345.30	345.30	345.30	345.30	345.29	345.29	345.29	
345.29								
22.74 CFS	1.57	1.56	1.55	1.54	1.53	1.52	1.51	
1.51								
22.74 ELEV	345.29	345.28	345.28	345.28	345.28	345.28	345.28	
345.27								
23.22 CFS	1.50	1.49	1.48	1.47	1.46	1.45	1.44	
1.43								
23.22 ELEV	345.27	345.27	345.27	345.27	345.27	345.26	345.26	
345.26								
23.70 CFS	1.43	1.42	1.41	1.40	1.39	1.39	1.38	
1.37								
23.70 ELEV	345.26	345.26	345.26	345.26	345.25	345.25	345.25	
345.25								
24.18 CFS	1.34	1.30	1.25	1.20	1.15	1.10	1.05	
1.00								
24.18 ELEV	345.24	345.24	345.23	345.22	345.21	345.20	345.19	
345.18								
24.66 CFS	.96	.92	.88	.84	.80	.76	.73	
.70								
24.66 ELEV	345.17	345.17	345.16	345.15	345.15	345.14	345.13	
345.13								
25.14 CFS	.66	.63	.61	.58	.55	.53	.50	
.48								
25.14 ELEV	345.12	345.12	345.11	345.11	345.10	345.10	345.09	
345.09								
25.62 CFS	.46							
25.62 ELEV	345.08							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.38 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
 FEET.

DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	15	11	6	3	2	2	2	1
DURATION (HRS)	18	20	21					

FLOW(CFS) 1 1 0

OPERATION RUNOFF XSECTION 119

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	24.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	5.59 WATERSHED INCHES;	21 CFS-HRS;
	FEET.	1.8 ACRE-

OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	36.7	(NULL)
23.99	1.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	6.23 WATERSHED INCHES;	126 CFS-HRS;
	FEET.	10.4 ACRE-

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	119.0	(NULL)
20.02	4.1	(NULL)
21.93	3.3	(NULL)
24.00	2.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	6.06 WATERSHED INCHES;	204 CFS-HRS;
	FEET.	16.9 ACRE-

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	148.6	(RUNOFF)
15.84	4.6	(RUNOFF)
17.34	3.5	(RUNOFF)
22.75	2.1	(RUNOFF)
23.06	2.1	(RUNOFF)
24.00	2.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	5.41 WATERSHED INCHES;	141 CFS-HRS;
	FEET.	11.6 ACRE-

OPERATION ADDHYD XSECTION 22  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	267.4	(NULL)
20.83	6.1	(NULL)
22.74	5.1	(NULL)
23.05	5.0	(NULL)
24.00	4.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.77 WATERSHED INCHES; 345 CFS-HRS; 28.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	419.0	(NULL)
12.72	424.5	(NULL)
14.94	100.8	(NULL)
15.06	86.7	(NULL)
15.18	76.7	(NULL)
15.30	69.8	(NULL)
15.42	65.1	(NULL)
15.54	61.7	(NULL)
15.66	59.1	(NULL)
15.78	57.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.04 WATERSHED INCHES; 1338 CFS-HRS; 110.6 ACRE-  
FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	369.5	316.10
12.85	406.3	316.19
14.98	98.3	315.07
15.11	80.9	314.97
15.23	72.6	314.90
15.35	67.4	314.85
15.46	63.9	314.82
15.58	61.4	314.80
24.05	23.2	314.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.02 WATERSHED INCHES; 1333 CFS-HRS; 110.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 24

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.25	136.5	(RUNOFF)
20.68	3.0	(RUNOFF)
23.99	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.17 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.30	131.8	365.04
20.69	3.0	356.63
23.79	2.4	356.57

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.15 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.26	196.3	(RUNOFF)
18.66	5.1	(RUNOFF)
20.68	4.5	(RUNOFF)
23.98	3.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 246 CFS-HRS; 20.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
-----------------	----------------------	-----------------------



12.28	325.1	(NULL)
18.67	8.6	(NULL)
20.68	7.5	(NULL)
23.14	6.2	(NULL)
23.78	5.9	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.12 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	312.6	319.62
20.73	7.5	316.81
23.20	6.2	316.73

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.12 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.24	154.0	(RUNOFF)
21.94	3.2	(RUNOFF)
24.01	2.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.74 WATERSHED INCHES; 183 CFS-HRS; 15.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	524.9	(NULL)
12.83	442.7	(NULL)
14.98	106.5	(NULL)
15.11	88.7	(NULL)
15.23	79.9	(NULL)
15.35	74.5	(NULL)
15.46	70.8	(NULL)
15.58	68.1	(NULL)
24.04	25.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.99 WATERSHED INCHES; 1516 CFS-HRS; 125.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 30

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	807.8	(NULL)
14.98	125.2	(NULL)
15.10	106.5	(NULL)
15.23	96.7	(NULL)
15.34	90.4	(NULL)
15.46	86.0	(NULL)
15.58	83.0	(NULL)
24.03	31.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.01 WATERSHED INCHES; 1930 CFS-HRS; 159.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.47	714.5	317.26

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.01 WATERSHED INCHES; 1927 CFS-HRS; 159.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	220.6	(RUNOFF)
20.86	4.2	(RUNOFF)
24.02	3.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	204.5	313.75
20.73	4.3	310.35
24.09	3.3	310.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-

FEET.

OPERATION RUNOFF XSECTION 33

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	33.8	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	6.63 WATERSHED INCHES;	36 CFS-HRS;
	FEET.	3.0 ACRE-

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
WITH .48 AC-FT ( .09 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 377.99.  
\*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	29.2	380.63
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	5.55 WATERSHED INCHES;	30 CFS-HRS;
	FEET.	2.5 ACRE-

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
\*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	29.2	338.28
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	5.55 WATERSHED INCHES;	30 CFS-HRS;
	FEET.	2.5 ACRE-

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	100.5	(RUNOFF)
18.65	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		

6.63 WATERSHED INCHES; 118 CFS-HRS; 9.7 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
WITH 1.02 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 354.08.  
\*\*\*

OPERATION RESVOR STRUCTURE 33

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	84.8	357.61
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.93 WATERSHED INCHES;	105 CFS-HRS;	8.7 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	113.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.84 WATERSHED INCHES;	135 CFS-HRS;	11.2 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	113.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.84 WATERSHED INCHES;	135 CFS-HRS;	11.2 ACRE-
FEET.		

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
\*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	113.8	330.82
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.84 WATERSHED INCHES;	135 CFS-HRS;	11.2 ACRE-

FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.14	113.8	(RUNOFF)
15.84	3.3	(RUNOFF)
17.34	2.5	(RUNOFF)
18.61	2.0	(RUNOFF)
18.84	2.0	(RUNOFF)
24.00	1.4	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.03 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.19	206.2	(NULL)
18.82	5.1	(NULL)
21.94	4.1	(NULL)
24.00	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.92 WATERSHED INCHES; 244 CFS-HRS; 20.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.47	98.6	332.51

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06  
 SQ.MI.  
 2.88 CFS .00 .01 .01 .01 .01 .01 .01  
 .02  
 2.88 ELEV 326.00 326.00 326.00 326.00 326.00 326.00 326.01  
 326.01  
 3.36 CFS .02 .02 .02 .03 .03 .04 .04  
 .04  
 3.36 ELEV 326.01 326.01 326.01 326.01 326.01 326.01 326.02  
 326.02  
 3.84 CFS .05 .05 .06 .06 .07 .07 .08  
 .09  
 3.84 ELEV 326.02 326.02 326.02 326.03 326.03 326.03 326.03  
 326.04

4.32 CFS	.09	.10	.11	.11	.12	.13	.13
.14							
4.32 ELEV	326.04	326.04	326.04	326.05	326.05	326.05	326.06
326.06							
4.80 CFS	.15	.16	.17	.18	.18	.19	.20
.21							
4.80 ELEV	326.06	326.07	326.07	326.07	326.08	326.08	326.08
326.09							
5.28 CFS	.22	.23	.24	.25	.26	.27	.28
.29							
5.28 ELEV	326.09	326.10	326.10	326.10	326.11	326.11	326.12
326.12							
5.76 CFS	.30	.31	.32	.33	.35	.36	.37
.38							
5.76 ELEV	326.13	326.13	326.14	326.14	326.15	326.15	326.16
326.16							
6.24 CFS	.39	.41	.42	.43	.45	.46	.47
.49							
6.24 ELEV	326.17	326.17	326.18	326.18	326.19	326.19	326.20
326.20							
6.72 CFS	.50	.52	.53	.55	.56	.58	.60
.61							
6.72 ELEV	326.21	326.22	326.22	326.23	326.24	326.24	326.25
326.26							
7.20 CFS	.63	.65	.67	.68	.70	.72	.74
.76							
7.20 ELEV	326.26	326.27	326.28	326.29	326.30	326.30	326.31
326.32							
7.68 CFS	.78	.80	.82	.84	.86	.88	.90
.93							
7.68 ELEV	326.33	326.34	326.34	326.35	326.36	326.37	326.38
326.39							
8.16 CFS	.95	.97	.99	1.02	1.04	1.07	1.09
1.11							
8.16 ELEV	326.40	326.41	326.42	326.43	326.44	326.45	326.46
326.47							
8.64 CFS	1.14	1.17	1.19	1.22	1.24	1.27	1.30
1.32							
8.64 ELEV	326.48	326.49	326.50	326.51	326.52	326.53	326.54
326.56							
9.12 CFS	1.35	1.38	1.41	1.44	1.48	1.51	1.54
1.58							

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9.12 ELEV	326.57	326.58	326.59	326.61	326.62	326.63	326.65
326.66							
9.60 CFS	1.62	1.65	1.69	1.73	1.78	1.82	1.86
1.91							
9.60 ELEV	326.68	326.69	326.71	326.73	326.75	326.76	326.78
326.80							
10.08 CFS	1.95	2.00	2.05	2.10	2.15	2.20	2.26
2.32							
10.08 ELEV	326.82	326.84	326.86	326.88	326.90	326.93	326.95
326.98							
10.56 CFS	2.39	2.46	2.54	2.63	2.73	2.84	2.96
3.09							

10.56 ELEV	327.00	327.03	327.07	327.11	327.15	327.19	327.24
327.30							
11.04 CFS	3.22	3.37	3.53	3.70	3.89	4.10	4.32
4.56							
11.04 ELEV	327.35	327.42	327.48	327.56	327.64	327.72	327.81
327.91							
11.52 CFS	4.81	5.09	5.42	5.80	6.22	6.71	7.29
8.00							
11.52 ELEV	328.02	328.14	328.28	328.43	328.61	328.82	329.06
329.36							
12.00 CFS	8.94	13.84	49.29	83.43	89.28	93.74	96.79
98.34							
12.00 ELEV	329.76	330.28	330.82	331.35	331.80	332.14	332.37
332.49							
12.48 CFS	98.62	98.16	97.10	95.58	93.74	91.68	89.46
87.12							
12.48 ELEV	332.51	332.48	332.40	332.28	332.14	331.98	331.81
331.63							
12.96 CFS	84.71	82.28	78.99	60.45	49.15	43.81	39.58
36.14							
12.96 ELEV	331.45	331.26	331.08	330.92	330.82	330.76	330.70
330.66							
13.44 CFS	33.30	30.89	28.97	27.36	25.86	24.50	23.25
22.13							
13.44 ELEV	330.62	330.58	330.55	330.53	330.50	330.48	330.46
330.44							
13.92 CFS	21.12	20.22	19.47	18.78	18.14	17.53	16.95
16.41							
13.92 ELEV	330.42	330.40	330.39	330.38	330.37	330.36	330.35
330.34							
14.40 CFS	15.91	15.43	14.99	14.62	14.25	13.88	13.52
13.18							
14.40 ELEV	330.33	330.32	330.31	330.30	330.29	330.29	330.28
330.27							
14.88 CFS	12.84	12.51	12.19	11.87	11.56	11.26	10.96
10.69							
14.88 ELEV	330.26	330.26	330.25	330.24	330.23	330.23	330.22
330.22							
15.36 CFS	10.43	10.20	10.00	9.98	9.97	9.95	9.93
9.91							
15.36 ELEV	330.21	330.20	330.20	330.19	330.19	330.18	330.17
330.16							
15.84 CFS	9.89	9.87	9.84	9.82	9.79	9.77	9.74
9.71							
15.84 ELEV	330.15	330.14	330.13	330.12	330.11	330.10	330.09
330.08							
16.32 CFS	9.68	9.65	9.62	9.59	9.56	9.52	9.49
9.46							
16.32 ELEV	330.07	330.05	330.04	330.03	330.01	330.00	329.99
329.97							
16.80 CFS	9.42	9.39	9.36	9.32	9.29	9.25	9.21
9.18							
16.80 ELEV	329.96	329.94	329.93	329.91	329.90	329.89	329.87
329.85							
17.28 CFS	9.14	9.10	9.07	9.03	8.99	8.95	8.91
8.87							
17.28 ELEV	329.84	329.82	329.81	329.79	329.78	329.76	329.74
329.73							
17.76 CFS	8.83	8.79	8.75	8.71	8.67	8.63	8.59
8.54							
17.76 ELEV	329.71	329.69	329.68	329.66	329.64	329.62	329.61
329.59							
18.24 CFS	8.50	8.46	8.42	8.38	8.33	8.29	8.25
8.21							

18.24 ELEV	329.57	329.55	329.54	329.52	329.50	329.48	329.47
329.45							
18.72 CFS	8.17	8.13	8.09	8.05	8.01	7.96	7.92
7.88							
18.72 ELEV	329.43	329.41	329.40	329.38	329.36	329.35	329.33
329.31							
19.20 CFS	7.84	7.80	7.77	7.73	7.69	7.65	7.61
7.57							
19.20 ELEV	329.29	329.28	329.26	329.25	329.23	329.21	329.20
329.18							
19.68 CFS	7.54	7.50	7.46	7.42	7.39	7.35	7.32
7.28							
19.68 ELEV	329.17	329.15	329.13	329.12	329.10	329.09	329.07
329.06							
20.16 CFS	7.24	7.21	7.17	7.14	7.10	7.07	7.04
7.00							
20.16 ELEV	329.04	329.03	329.01	329.00	328.98	328.97	328.95
328.94							
20.64 CFS	6.97	6.93	6.90	6.87	6.84	6.80	6.77
6.74							
20.64 ELEV	328.93	328.91	328.90	328.88	328.87	328.86	328.84
328.83							

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21.12 CFS	6.71	6.67	6.64	6.61	6.58	6.55	6.52
6.49							
21.12 ELEV	328.82	328.80	328.79	328.78	328.76	328.75	328.74
328.72							
21.60 CFS	6.46	6.43	6.39	6.36	6.33	6.31	6.28
6.25							
21.60 ELEV	328.71	328.70	328.69	328.67	328.66	328.65	328.64
328.62							
22.08 CFS	6.22	6.19	6.16	6.13	6.10	6.07	6.05
6.02							
22.08 ELEV	328.61	328.60	328.59	328.57	328.56	328.55	328.54
328.53							
22.56 CFS	5.99	5.96	5.93	5.91	5.88	5.85	5.82
5.80							
22.56 ELEV	328.52	328.50	328.49	328.48	328.47	328.46	328.45
328.43							
23.04 CFS	5.77	5.74	5.72	5.69	5.66	5.64	5.61
5.59							
23.04 ELEV	328.42	328.41	328.40	328.39	328.38	328.37	328.36
328.35							
23.52 CFS	5.56	5.53	5.51	5.48	5.46	5.43	5.41
5.38							
23.52 ELEV	328.34	328.32	328.31	328.30	328.29	328.28	328.27
328.26							
24.00 CFS	5.36	5.33	5.30	5.27	5.23	5.19	5.14
5.10							
24.00 ELEV	328.25	328.24	328.23	328.21	328.20	328.18	328.16
328.14							
24.48 CFS	5.05	5.01	4.97	4.92	4.88	4.84	4.79
4.75							
24.48 ELEV	328.12	328.10	328.09	328.07	328.05	328.03	328.01
328.00							



24.96 CFS	4.71	4.67	4.63	4.59	4.55
24.96 ELEV	327.98	327.96	327.94	327.93	327.91

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.43 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14
FLOW(CFS)	19	10	9	7	6	5	5 TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.13		11.4		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.03 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.45		101.8		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.26 WATERSHED INCHES; 233 CFS-HRS; 19.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 40

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 TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.27		99.5		(RUNOFF)
20.67		2.3		(RUNOFF)
23.97		1.8		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.94 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.45		788.1		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.00 WATERSHED INCHES; 2052 CFS-HRS; 169.6 ACRE-

FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	950.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.07 WATERSHED INCHES; 2306 CFS-HRS; 190.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	1052.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.08 WATERSHED INCHES; 2535 CFS-HRS; 209.5 ACRE-FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.53	1008.8	291.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.07 WATERSHED INCHES; 2533 CFS-HRS; 209.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 2

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 TR20 ----- SCS  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	1006.7	303.62

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.07 WATERSHED INCHES; 2530 CFS-HRS; 209.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	114.7	(RUNOFF)
23.09	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.00 WATERSHED INCHES; 154 CFS-HRS; 12.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	143.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.90 WATERSHED INCHES; 199 CFS-HRS; 16.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	257.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.94 WATERSHED INCHES; 352 CFS-HRS; 29.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	140.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.03	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.93 WATERSHED INCHES; 149 CFS-HRS; 12.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

1  
 TR20 ----- SCS  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	1054.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.06 WATERSHED INCHES; 2679 CFS-HRS; 221.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
12.51 1230.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.05 WATERSHED INCHES; 3032 CFS-HRS; 250.5 ACRE-  
FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.61 1207.2 286.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.04 WATERSHED INCHES; 3030 CFS-HRS; 250.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 52

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.18 4.6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.06 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.26 4.3 288.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.06 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 54

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\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
AT XSECTION 54  
\*\*\*

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)

12.54 .6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.47 WATERSHED INCHES; 2 CFS-HRS; .2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.20 91.3 (RUNOFF)
18.86 2.1 (RUNOFF)
24.03 1.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.65 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.61 1234.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.03 WATERSHED INCHES; 3126 CFS-HRS; 258.4 ACRE-
FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.27 4.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.79 WATERSHED INCHES; 8 CFS-HRS; .7 ACRE-
FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.61 1237.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.96 WATERSHED INCHES; 3135 CFS-HRS; 259.0 ACRE-
FEET.

1 TR20 ----- SCS
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OPERATION RUNOFF XSECTION 59

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)							PEAK
12.21	61.6							(RUNOFF)
24.02	1.1							(RUNOFF)
HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03 SQ.MI.								
9.48 CFS	.50	.53	.57	.61	.66	.70	.75	
.79								
9.96 CFS	.84	.89	.94	1.00	1.06	1.12	1.17	
1.23								
10.44 CFS	1.29	1.36	1.44	1.53	1.65	1.79	1.94	
2.11								
10.92 CFS	2.30	2.49	2.69	2.93	3.21	3.54	3.90	
4.29								
11.40 CFS	4.70	5.14	5.62	6.36	7.55	8.94	10.44	
12.37								
11.88 CFS	15.06	19.06	25.51	35.80	49.74	60.51	59.80	
51.47								
12.36 CFS	41.55	33.96	28.31	24.25	21.04	18.07	15.59	
13.77								
12.84 CFS	12.52	11.55	10.77	10.09	9.45	8.84	8.29	
7.83								
13.32 CFS	7.43	7.07	6.71	6.37	6.02	5.70	5.41	
5.18								
13.80 CFS	5.00	4.85	4.73	4.64	4.56	4.49	4.40	
4.30								
14.28 CFS	4.20	4.11	4.04	3.97	3.89	3.79	3.69	
3.60								
14.76 CFS	3.51	3.44	3.37	3.28	3.20	3.11	3.03	
2.94								
15.24 CFS	2.86	2.80	2.76	2.74	2.72	2.72	2.70	
2.67								
15.72 CFS	2.63	2.60	2.59	2.58	2.56	2.53	2.49	
2.46								
16.20 CFS	2.45	2.43	2.41	2.38	2.36	2.33	2.30	
2.27								
16.68 CFS	2.25	2.24	2.22	2.20	2.17	2.15	2.14	
2.13								
17.16 CFS	2.09	2.05	2.02	2.01	2.00	1.98	1.94	
1.91								
17.64 CFS	1.88	1.86	1.84	1.82	1.79	1.77	1.76	
1.74								
18.12 CFS	1.72	1.69	1.67	1.66	1.64	1.62	1.60	
1.60								
18.60 CFS	1.61	1.62	1.61	1.60	1.60	1.60	1.59	
1.57								
19.08 CFS	1.56	1.55	1.55	1.54	1.54	1.54	1.54	
1.54								
19.56 CFS	1.54	1.52	1.51	1.50	1.50	1.49	1.47	
1.47								
20.04 CFS	1.48	1.49	1.48	1.47	1.46	1.45	1.44	
1.41								
20.52 CFS	1.41	1.42	1.43	1.42	1.41	1.40	1.40	
1.40								
21.00 CFS	1.38	1.37	1.36	1.35	1.35	1.35	1.35	
1.35								
21.48 CFS	1.35	1.35	1.33	1.31	1.31	1.31	1.30	
1.30								
21.96 CFS	1.30	1.30	1.29	1.27	1.26	1.26	1.25	
1.25								
22.44 CFS	1.25	1.25	1.24	1.23	1.21	1.21	1.21	

1.19							
22.92 CFS	1.18	1.17	1.19	1.19	1.19	1.17	1.16
1.16							
23.40 CFS	1.15	1.15	1.13	1.11	1.11	1.12	1.13
1.12							
23.88 CFS	1.09	1.08	1.11	1.10	.94	.65	.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.86 WATERSHED INCHES; 66 CFS-HRS; 5.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	1258.3	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.93 WATERSHED INCHES; 3201 CFS-HRS; 264.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	1230.3	276.93

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.93 WATERSHED INCHES; 3198 CFS-HRS; 264.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	37.1	(RUNOFF)
18.66	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.78 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	1242.4	(NULL)

HRS MAIN TIME INCREMENT = .060 hr, HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 DRAINAGE AREA = 1.02

SQ.MI.								
4.44 CFS	.46	.52	.58	.65	.71	.78	.85	
.92								
4.92 CFS	.99	1.07	1.15	1.23	1.31	1.39	1.47	
1.56								
5.40 CFS	1.65	1.74	1.84	1.95	2.07	2.19	2.33	
2.48								
5.88 CFS	2.64	2.81	2.99	3.18	3.38	3.58	3.79	
4.02								
6.36 CFS	4.24	4.48	4.73	4.99	5.26	5.54	5.84	
6.14								
6.84 CFS	6.46	6.79	7.13	7.48	7.84	8.22	8.60	
9.01								
7.32 CFS	9.42	9.85	10.29	10.74	11.21	11.69	12.18	
12.68								
7.80 CFS	13.19	13.71	14.24	14.78	15.34	15.92	16.51	
17.12								
8.28 CFS	17.75	18.39	19.04	19.71	20.39	21.08	21.78	
22.49								
8.76 CFS	23.22	23.96	24.71	25.47	26.23	27.01	27.80	
28.62								
9.24 CFS	29.46	30.34	31.26	32.24	33.27	34.36	35.50	
36.73								
9.72 CFS	38.03	39.41	40.88	42.43	44.06	45.76	47.54	
49.40								
10.20 CFS	51.34	53.36	55.45	57.59	59.80	62.09	64.47	
66.97								
10.68 CFS	69.64	72.52	75.66	79.10	82.84	86.92	91.36	
96.19								
11.16 CFS	101	106	112	119	126	134	143	
153								
11.64 CFS	164	177	193	212	240	273	313	
368								
12.12 CFS	445	545	647	739	829	925	1014	
1114								
12.60 CFS	1202	1241	1228	1183	1127	1074	1023	
985								
13.08 CFS	945	906	866	828	788	746	707	
671								
13.56 CFS	640	612	588	566	546	527	511	
497								

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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14.04 CFS	484	472	460	448	435	423	411	
400								
14.52 CFS	389	379	368	358	347	337	327	
317								
15.00 CFS	308	298	288	277	266	255	243	
232								
15.48 CFS	222	212	202	195	188	181	174	
168								
15.96 CFS	163	158	154	150	146	143	140	
138								
16.44 CFS	135	133	131	129	127	126	124	
123								
16.92 CFS	121	120	118	117	116	114	113	



112								
17.40	CFS	111	110	108	107	106	105	104
103								
17.88	CFS	101	100	99	98	97	95	94
93								
18.36	CFS	92.30	91.29	90.29	89.32	88.40	87.54	86.71
85.91								
18.84	CFS	85.13	84.40	83.71	83.03	82.37	81.74	81.14
80.57								
19.32	CFS	80.04	79.53	79.05	78.60	78.17	77.74	77.31
76.90								
19.80	CFS	76.50	76.12	75.73	75.34	74.98	74.65	74.34
74.01								
20.28	CFS	73.68	73.35	73.02	72.67	72.31	71.98	71.67
71.37								
20.76	CFS	71.06	70.74	70.44	70.14	69.83	69.51	69.19
68.87								
21.24	CFS	68.56	68.26	67.96	67.67	67.39	67.12	66.84
66.55								
21.72	CFS	66.25	65.96	65.68	65.40	65.13	64.87	64.61
64.33								
22.20	CFS	64.05	63.76	63.48	63.20	62.93	62.67	62.41
62.14								
22.68	CFS	61.85	61.56	61.28	61.00	60.70	60.40	60.11
59.85								
23.16	CFS	59.60	59.33	59.05	58.78	58.51	58.24	57.96
57.66								
23.64	CFS	57.36	57.09	56.84	56.58	56.31	56.01	55.75
55.50								
24.12	CFS	55.11	54.35	53.18	51.74	50.16	48.49	46.73
44.91								
24.60	CFS	43.01	41.07	39.09	37.11	35.16	33.25	31.42
29.67								
25.08	CFS	28.03	26.50	25.09				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.91 WATERSHED INCHES; 3240 CFS-HRS; 267.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.79	1203.1	250.67

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.90 WATERSHED INCHES; 3237 CFS-HRS; 267.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	25.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.41 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 61

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	19.3	335.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.41 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-  
FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.67	19.0	300.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.41 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	109.3	(RUNOFF)
23.10	2.1	(RUNOFF)
24.03	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.83 WATERSHED INCHES; 113 CFS-HRS; 9.4 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	52.1	296.06
23.12	2.0	287.56
24.04	1.9	287.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.83 WATERSHED INCHES; 113 CFS-HRS; 9.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 67

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.55	67.2	(NULL)
20.86	3.1	(NULL)
24.04	2.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.13 WATERSHED INCHES; 151 CFS-HRS; 12.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	205.6	(RUNOFF)
21.45	4.1	(RUNOFF)
24.03	3.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.15 WATERSHED INCHES; 208 CFS-HRS; 17.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	234.2	(NULL)
18.87	8.4	(NULL)
20.87	7.3	(NULL)
23.10	6.2	(NULL)
24.03	5.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.14 WATERSHED INCHES; 360 CFS-HRS; 29.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.47	171.3	248.99
24.15	5.8	247.73

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.14 WATERSHED INCHES; 360 CFS-HRS; 29.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	45.5	(RUNOFF)
15.83	1.3	(RUNOFF)
17.33	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.90 WATERSHED INCHES;		38 CFS-HRS;
FEET.		3.1 ACRE-

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	27.4	267.40
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.90 WATERSHED INCHES;		38 CFS-HRS;
FEET.		3.1 ACRE-

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	25.6	248.04
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.91 WATERSHED INCHES;		38 CFS-HRS;
FEET.		3.1 ACRE-

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	237.2	(RUNOFF)
15.84	9.7	(RUNOFF)
17.34	7.6	(RUNOFF)
18.86	6.1	(RUNOFF)
21.45	5.1	(RUNOFF)
24.01	4.3	(RUNOFF)

HRS	MAIN	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50					
SQ.MI.	TIME	INCREMENT = .060 hr, DRAINAGE AREA = .11					
9.60 CFS	.49	.61	.73	.86	1.00	1.13	1.27
1.43							
10.08 CFS	1.60	1.78	1.96	2.13	2.32	2.51	2.72
2.94							
10.56 CFS	3.20	3.51	3.89	4.33	4.82	5.35	5.93
6.54							

11.04	CFS	7.19	8.00	8.96	10.08	11.28	12.57	14.01
15.50								
11.52	CFS	17.15	20.19	25.09	30.06	35.22	43.00	54.20
70.81								
12.00	CFS	99	145	208	237	207	161	128
104								
12.48	CFS	87.51	77.29	67.40	57.39	50.08	45.64	42.48
39.91								
12.96	CFS	37.67	35.43	33.20	31.06	29.25	27.85	26.52
25.25								
13.44	CFS	24.00	22.74	21.53	20.36	19.41	18.71	18.15
17.71								
13.92	CFS	17.37	17.10	16.86	16.56	16.22	15.83	15.47
15.19								
14.40	CFS	14.94	14.69	14.36	13.99	13.60	13.25	12.98
12.73								

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14.88	CFS	12.44	12.11	11.79	11.50	11.15	10.81	10.53
10.36								
15.36	CFS	10.28	10.24	10.23	10.21	10.13	9.99	9.81
9.72								
15.84	CFS	9.74	9.72	9.61	9.45	9.31	9.23	9.19
9.15								
16.32	CFS	9.04	8.93	8.85	8.74	8.60	8.52	8.48
8.45								
16.80	CFS	8.36	8.24	8.15	8.12	8.08	7.99	7.84
7.66								
17.28	CFS	7.56	7.58	7.56	7.44	7.27	7.12	7.04
7.00								
17.76	CFS	6.95	6.84	6.72	6.66	6.62	6.58	6.47
6.35								
18.24	CFS	6.28	6.25	6.20	6.09	6.04	6.09	6.16
6.16								
18.72	CFS	6.08	6.03	6.08	6.07	5.99	5.92	5.89
5.88								
19.20	CFS	5.87	5.87	5.87	5.87	5.87	5.87	5.84
5.74								
19.68	CFS	5.68	5.72	5.71	5.63	5.56	5.59	5.68
5.70								
20.16	CFS	5.63	5.56	5.54	5.51	5.42	5.33	5.35
5.42								
20.64	CFS	5.46	5.40	5.32	5.34	5.37	5.29	5.22
5.17								
21.12	CFS	5.16	5.15	5.14	5.14	5.14	5.14	5.15
5.13								
21.60	CFS	5.05	4.96	4.98	5.00	4.94	4.94	4.99
4.95								
22.08	CFS	4.87	4.81	4.79	4.78	4.77	4.77	4.77
4.77								
22.56	CFS	4.74	4.64	4.58	4.62	4.60	4.52	4.45
4.48								
23.04	CFS	4.57	4.58	4.51	4.45	4.42	4.40	4.40
4.36								
23.52	CFS	4.26	4.19	4.25	4.32	4.33	4.24	4.13
4.11								

24.00 CFS        4.33        4.25        3.08        1.66        .80        .39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.26 WATERSHED INCHES;        232 CFS-HRS;        19.1 ACRE-FEET.

OPERATION ADDHYD    XSECTION    74

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.79	1248.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.74 WATERSHED INCHES;        3469 CFS-HRS;        286.6 ACRE-FEET.

OPERATION ADDHYD    XSECTION    75

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.44	190.7	(NULL)

HYDROGRAPH POINTS FOR    ALTERNATE = 1,    STORM =50  
MAIN TIME INCREMENT = .060 hr,    DRAINAGE AREA = .15

HRS	7.62	8.10	8.58	9.06	9.54	10.02	10.50	10.98	11.46	11.94
SQ.MI.	.85	1.45	2.28	3.39	5.20	7.67	11.26	19.48	39.88	184
CFS	.50	.91	1.54	2.39	3.58	5.47	8.01	11.99	20.99	45
	.53	.97	1.64	2.50	3.77	5.74	8.37	12.79	22.65	51
	.58	1.04	1.74	2.63	3.98	6.04	8.75	13.65	24.47	60
	.62	1.12	1.85	2.76	4.19	6.34	9.16	14.58	26.47	75
	.68	1.19	1.95	2.89	4.42	6.66	9.59	15.61	28.83	99
	.73	1.27	2.06	3.04	4.67	6.99	10.07	16.79	31.84	133
	.78	1.36	2.17	3.21	4.93	7.33	10.62	18.08	35.53	165

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12.42	144	12.90	13.38	51.04	13.86
CFS	190	CFS	CFS	CFS	CFS
	189				
	185				
	179				
	172				
	164				
	154				
	86				
	53.21				
	42.02				

41.23								
14.34	CFS	40.48	39.77	39.09	38.46	37.85	37.20	36.52
35.81								
14.82	CFS	35.08	34.35	33.60	32.81	32.00	31.18	30.36
29.43								
15.30	CFS	28.40	27.34	26.13	24.86	23.65	22.56	21.49
20.62								
15.78	CFS	19.90	19.27	18.72	18.28	17.91	17.58	17.21
16.84								
16.26	CFS	16.51	16.19	15.89	15.61	15.32	15.04	14.78
14.52								
16.74	CFS	14.28	14.06	13.88	13.72	13.55	13.39	13.23
13.10								
17.22	CFS	12.96	12.81	12.64	12.47	12.31	12.18	12.05
11.85								
17.70	CFS	11.63	11.42	11.24	11.08	10.92	10.77	10.62
10.49								
18.18	CFS	10.37	10.25	10.12	9.99	9.87	9.76	9.65
9.54								
18.66	CFS	9.46	9.41	9.38	9.34	9.29	9.25	9.22
9.18								
19.14	CFS	9.13	9.07	9.02	8.98	8.95	8.92	8.90
8.88								
19.62	CFS	8.86	8.84	8.80	8.75	8.71	8.68	8.64
8.58								
20.10	CFS	8.54	8.53	8.53	8.51	8.48	8.44	8.40
8.35								
20.58	CFS	8.28	8.23	8.20	8.19	8.17	8.13	8.10
8.08								
21.06	CFS	8.05	8.01	7.95	7.91	7.86	7.83	7.80
7.78								
21.54	CFS	7.76	7.74	7.72	7.69	7.64	7.60	7.56
7.53								
22.02	CFS	7.50	7.49	7.47	7.43	7.38	7.34	7.30
7.26								
22.50	CFS	7.23	7.21	7.19	7.16	7.12	7.07	7.02
6.99								
22.98	CFS	6.94	6.89	6.85	6.83	6.82	6.81	6.77
6.73								
23.46	CFS	6.70	6.67	6.63	6.58	6.52	6.48	6.46
6.45								
23.94	CFS	6.43	6.38	6.33	6.33	6.29	5.99	5.38
4.60								
24.42	CFS	3.83	3.14	2.56	2.07	1.66	1.33	1.06
.85								
24.90	CFS	.67	.52	.42				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.20 WATERSHED INCHES; 397 CFS-HRS; 32.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.77	1402.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.68 WATERSHED INCHES; 3866 CFS-HRS; 319.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.83	1402.0	230.92
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.68 WATERSHED INCHES;	3864 CFS-HRS;	319.3 ACRE-
FEET.		

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OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	133.1	(RUNOFF)
15.84	5.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.01	2.2	(RUNOFF)

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50							
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05							
HRS								
SQ.MI.								
8.82 CFS	.48	.51	.55	.59	.64	.69	.73	
.79								
9.30 CFS	.86	.93	1.00	1.07	1.13	1.21	1.30	
1.39								
9.78 CFS	1.48	1.57	1.66	1.75	1.86	1.97	2.09	
2.20								
10.26 CFS	2.31	2.42	2.53	2.67	2.81	2.97	3.19	
3.45								
10.74 CFS	3.75	4.09	4.44	4.82	5.21	5.63	6.15	
6.77								
11.22 CFS	7.47	8.22	9.01	9.88	10.77	11.74	13.66	
16.76								
11.70 CFS	20	23	27	34	44	60	86	
120								
12.18 CFS	133	112	85	67	54	45	40	
35								
12.66 CFS	29.53	25.82	23.63	22.02	20.68	19.50	18.32	
17.15								
13.14 CFS	16.02	15.09	14.36	13.67	13.01	12.36	11.69	
11.06								
13.62 CFS	10.46	9.97	9.61	9.33	9.10	8.93	8.79	
8.67								
14.10 CFS	8.51	8.32	8.12	7.94	7.79	7.66	7.53	
7.36								
14.58 CFS	7.16	6.95	6.78	6.64	6.51	6.36	6.19	
6.02								
15.06 CFS	5.87	5.69	5.51	5.37	5.29	5.25	5.23	
5.23								
15.54 CFS	5.22	5.17	5.09	5.00	4.96	4.97	4.96	
4.90								
16.02 CFS	4.81	4.74	4.70	4.68	4.66	4.60	4.54	
4.50								



16.50 CFS	4.44	4.38	4.33	4.31	4.30	4.25	4.19
4.14							
16.98 CFS	4.13	4.11	4.06	3.98	3.88	3.84	3.85
3.84							
17.46 CFS	3.77	3.68	3.61	3.57	3.55	3.53	3.47
3.41							
17.94 CFS	3.37	3.36	3.33	3.27	3.21	3.18	3.17
3.14							
18.42 CFS	3.09	3.06	3.09	3.12	3.12	3.08	3.06
3.08							
18.90 CFS	3.07	3.03	3.00	2.98	2.97	2.97	2.97
2.97							
19.38 CFS	2.97	2.97	2.97	2.95	2.90	2.87	2.90
2.89							
19.86 CFS	2.84	2.81	2.83	2.88	2.88	2.84	2.81
2.80							
20.34 CFS	2.78	2.73	2.69	2.70	2.74	2.76	2.72
2.68							
20.82 CFS	2.70	2.71	2.67	2.63	2.61	2.60	2.60
2.60							
21.30 CFS	2.59	2.59	2.60	2.60	2.59	2.54	2.50
2.51							
21.78 CFS	2.52	2.49	2.49	2.52	2.49	2.45	2.42
2.41							
22.26 CFS	2.41	2.40	2.40	2.40	2.40	2.39	2.33
2.30							
22.74 CFS	2.33	2.32	2.27	2.24	2.26	2.31	2.31
2.27							
23.22 CFS	2.24	2.22	2.22	2.21	2.19	2.14	2.11
2.14							
23.70 CFS	2.18	2.18	2.13	2.07	2.07	2.18	2.13
1.50							
24.18 CFS	.78	.36					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.89 WATERSHED INCHES; 128 CFS-HRS; 10.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 79

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET) 12.83 1424.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.65 WATERSHED INCHES; 3992 CFS-HRS; 329.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)

12.90 1420.2 216.91

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.65 WATERSHED INCHES; 3990 CFS-HRS; 329.7 ACRE-
FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.17 76.0 (RUNOFF)
17.34 2.3 (RUNOFF)
24.01 1.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.55 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-
FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.90 1432.0 179.97

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.62 WATERSHED INCHES; 4062 CFS-HRS; 335.7 ACRE-
FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.15 148.3 (RUNOFF)
15.84 5.1 (RUNOFF)
19.47 3.1 (RUNOFF)
24.00 2.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.06 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-
FEET.

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OPERATION RUNOFF XSECTION 84

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.25 235.5 (RUNOFF)
20.68 6.2 (RUNOFF)
23.12 5.2 (RUNOFF)
24.01 4.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.61 WATERSHED INCHES; 277 CFS-HRS; 22.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 85

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.19	359.3	(NULL)
18.83	10.1	(NULL)
20.07	9.4	(NULL)
21.95	8.2	(NULL)
23.73	7.1	(NULL)
24.00	7.1	(NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50							
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .17							
8.46 CFS	.48	.53	.59	.67	.76	.85	.95	
1.05								
8.94 CFS	1.15	1.28	1.42	1.55	1.70	1.86	2.05	
2.24								
9.42 CFS	2.44	2.64	2.84	3.07	3.32	3.58	3.86	
4.12								
9.90 CFS	4.39	4.67	4.98	5.31	5.66	6.00	6.34	
6.68								
10.38 CFS	7.05	7.43	7.85	8.33	8.93	9.65	10.46	
11.40								
10.86 CFS	12.42	13.52	14.67	15.88	17.37	19.10	21.08	
23.24								
11.34 CFS	25.53	28.09	30.74	33.65	38.84	46.34	54.20	
63.26								
11.82 CFS	76	93	118	161	226	313	358	
341								
12.30 CFS	301	256	213	181	157	135	116	
102								
12.78 CFS	90.34	81.68	75.15	69.65	64.79	60.30	56.21	
52.77								
13.26 CFS	49.81	47.18	44.78	42.50	40.27	38.12	36.09	
34.33								
13.74 CFS	32.89	31.70	30.72	29.96	29.34	28.81	28.26	
27.67								
14.22 CFS	27.05	26.45	25.93	25.45	24.98	24.46	23.87	
23.26								
14.70 CFS	22.69	22.17	21.70	21.21	20.68	20.16	19.64	
19.07								
15.18 CFS	18.53	18.04	17.68	17.43	17.28	17.18	17.11	
16.98								
15.66 CFS	16.78	16.54	16.38	16.33	16.24	16.10	15.88	
15.68								
16.14 CFS	15.52	15.42	15.31	15.15	14.99	14.85	14.67	
14.47								
16.62 CFS	14.32	14.22	14.13	13.98	13.82	13.69	13.59	
13.51								
17.10 CFS	13.37	13.16	12.91	12.75	12.69	12.60	12.44	
12.23								
17.58 CFS	12.01	11.85	11.74	11.63	11.46	11.30	11.18	
11.08								
18.06 CFS	10.98	10.82	10.67	10.54	10.45	10.36	10.20	
10.12								
18.54 CFS	10.13	10.18	10.18	10.10	10.06	10.08	10.04	
9.96								
19.02 CFS	9.88	9.82	9.77	9.75	9.73	9.73	9.72	

9.72								
19.50 CFS	9.72	9.68	9.56	9.49	9.50	9.45	9.36	
9.29								
19.98 CFS	9.29	9.37	9.37	9.32	9.26	9.20	9.14	
9.02								

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20.46 CFS	8.91	8.91	8.95	8.98	8.92	8.85	8.87	
8.85								
20.94 CFS	8.77	8.69	8.62	8.57	8.53	8.52	8.51	
8.50								
21.42 CFS	8.50	8.50	8.47	8.37	8.27	8.27	8.25	
8.18								
21.90 CFS	8.20	8.22	8.16	8.09	8.02	7.96	7.92	
7.90								
22.38 CFS	7.89	7.88	7.87	7.83	7.71	7.64	7.65	
7.59								
22.86 CFS	7.50	7.42	7.43	7.50	7.50	7.45	7.39	
7.33								
23.34 CFS	7.29	7.27	7.21	7.08	7.01	7.04	7.08	
7.09								
23.82 CFS	7.00	6.89	6.86	7.07	6.90	5.55	3.98	
2.66								
24.30 CFS	1.65	1.02	.64	.39				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.75 WATERSHED INCHES; 411 CFS-HRS; 34.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET) 12.89 1507.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.52 WATERSHED INCHES; 4473 CFS-HRS; 369.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET) 12.13 64.3 (RUNOFF)  
20.04 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.67 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION (FEET)  
12.89 1515.3 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55  
 HRS SQ.MI.

4.56 CFS	.48	.53	.59	.66	.73	.80	.87
.95							
5.04 CFS	1.02	1.10	1.18	1.27	1.36	1.45	1.54
1.63							
5.52 CFS	1.74	1.84	1.94	2.05	2.16	2.27	2.40
2.55							
6.00 CFS	2.71	2.88	3.05	3.24	3.44	3.65	3.86
4.09							
6.48 CFS	4.33	4.57	4.83	5.09	5.35	5.64	5.94
6.24							
6.96 CFS	6.55	6.88	7.23	7.60	7.96	8.34	8.72
9.13							
7.44 CFS	9.56	10.00	10.45	10.93	11.44	11.97	12.52
13.08							
7.92 CFS	13.67	14.28	14.90	15.56	16.22	16.88	17.59
18.34							
8.40 CFS	19.07	19.83	20.63	21.48	22.37	23.28	24.21
25.16							
8.88 CFS	26.12	27.12	28.18	29.26	30.33	31.45	32.62
33.86							
9.36 CFS	35.14	36.47	37.86	39.33	40.90	42.58	44.37
46.23							

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9.84 CFS	48.16	50.18	52.31	54.60	57.02	59.56	62.18
64.89							
10.32 CFS	67.70	70.64	73.72	76.94	80.36	84.08	88.13
92.52							
10.80 CFS	97	102	108	114	120	127	135
144							
11.28 CFS	154	165	177	189	202	220	244
270							
11.76 CFS	300	338	386	452	554	705	912
1070							
12.24 CFS	1153	1187	1190	1195	1221	1258	1300
1347							
12.72 CFS	1404	1462	1504	1515	1491	1444	1385
1322							
13.20 CFS	1264	1208	1154	1101	1051	1000	951
902							
13.68 CFS	856	814	776	743	713	687	663
642							
14.16 CFS	623	606	590	575	560	546	532
518							
14.64 CFS	504	491	478	466	453	441	429
417							
15.12 CFS	405	393	381	369	358	346	334
321							
15.60 CFS	308	296	284	272	262	253	245
237							

16.08 CFS	229	222	216	210	205	201	196
192							
16.56 CFS	189	185	182	180	177	174	172
170							
17.04 CFS	168	166	164	162	160	158	157
155							
17.52 CFS	153	151	149	148	146	144	143
141							
18.00 CFS	139	138	136	135	133	131	130
128							
18.48 CFS	127	126	125	124	122	121	120
119							
18.96 CFS	118	117	116	115	115	114	113
112							
19.44 CFS	112	111	110	110	109	108	108
107							
19.92 CFS	107	106	106	105	105	104	104
103							
20.40 CFS	103	102	102	101	101	101	100
100							
20.88 CFS	99.39	98.93	98.46	97.95	97.46	97.03	96.63
96.24							
21.36 CFS	95.87	95.51	95.16	94.79	94.30	93.81	93.43
93.02							
21.84 CFS	92.60	92.30	91.97	91.56	91.15	90.69	90.23
89.84							
22.32 CFS	89.47	89.12	88.78	88.44	88.06	87.55	87.10
86.74							
22.80 CFS	86.32	85.87	85.40	85.00	84.76	84.45	84.09
83.66							
23.28 CFS	83.21	82.82	82.46	82.06	81.53	81.05	80.70
80.42							
23.76 CFS	80.15	79.72	79.20	78.76	78.76	78.21	75.87
72.77							
24.24 CFS	69.24	65.96	63.32	60.96	58.58	56.19	53.84
51.52							
24.72 CFS	49.24	47.00	44.77	42.57	40.38	38.24	36.15
34.14							
25.20 CFS	32.22						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.54 WATERSHED INCHES; 4531 CFS-HRS; 374.4 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 5

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 88  
 STARTING TIME = .00 RAIN DEPTH = 8.47 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =99 RAIN TABLE NO. = 9

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OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	99.6	(RUNOFF)
20.13	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.18 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	99.4	390.78
20.19	2.5	389.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.18 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	175.5	(RUNOFF)
20.68	4.1	(RUNOFF)
23.97	3.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.00 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	270.3	(NULL)
20.14	6.8	(NULL)
23.12	5.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.07 WATERSHED INCHES; 359 CFS-HRS; 29.6 ACRE-FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,  
 VALUE EXTRAPOLATED.  
 \*\*\*

OPERATION RESVOR STRUCTURE 11  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	268.8	384.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.04 WATERSHED INCHES; 357 CFS-HRS; 29.5 ACRE-FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	268.4	369.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.05 WATERSHED INCHES; 357 CFS-HRS; 29.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	226.3	(RUNOFF)
20.13	5.8	(RUNOFF)
23.74	4.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.74 WATERSHED INCHES; 295 CFS-HRS; 24.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	479.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.90 WATERSHED INCHES; 653 CFS-HRS; 54.0 ACRE-FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	479.0	358.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.90 WATERSHED INCHES; 653 CFS-HRS; 53.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 9

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	242.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.38 WATERSHED INCHES; 350 CFS-HRS; 28.9 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 21, TRUNCATED AT 400 POINTS  
 WITH 2.68 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 370.65.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	153.9	378.71

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.69 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	38.4	(RUNOFF)
15.83	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.11 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.91	127.4	360.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 11

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	184.3	(RUNOFF)
18.87	4.1	(RUNOFF)
22.76	3.1	(RUNOFF)
23.09	3.1	(RUNOFF)
24.03	2.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.26 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	571.3	(NULL)
24.01	12.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.75 WATERSHED INCHES; 837 CFS-HRS; 69.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	69.3	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.95 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	675.4	(NULL)
24.00	20.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1151 CFS-HRS; 95.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	717.1	(NULL)
24.00	21.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.3 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .006 HOURS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.59	552.3	347.71
15.18	58.7	335.36
15.30	54.3	335.19
15.41	51.0	335.06
15.53	48.6	334.97
15.65	46.7	334.90
15.76	45.1	334.84
15.87	44.0	334.79
24.01	21.3	333.91

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32 SQ.MI.

HRS	3.00 CFS	3.48 CFS	3.96 CFS	4.44 CFS	4.92 CFS	5.40 CFS	5.88 CFS	6.36 CFS
.00	.00	.01	.01	.01	.01	.01	.01	.02
.02	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
.04	.02	.02	.03	.03	.03	.04	.04	.04
.06	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
.08	.05	.05	.05	.06	.06	.07	.07	.07
.10	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
.12	.08	.08	.09	.09	.10	.10	.11	.11
.14	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
.16	.12	.13	.13	.14	.15	.17	.17	.19
.18	333.08	333.08	333.09	333.09	333.09	333.09	333.09	333.09
.20	.23	.25	.27	.30	.33	.37	.42	.42
.22	333.09	333.09	333.09	333.09	333.09	333.09	333.09	333.10
.24	.52	.58	.65	.72	.79	.86	.93	.93
.26	333.10	333.10	333.11	333.11	333.11	333.11	333.11	333.12
.28	1.08	1.16	1.25	1.34	1.45	1.56	1.67	1.67

1.79								
6.36 ELEV	333.12	333.13	333.13	333.13	333.14	333.14	333.15	
333.15								
6.84 CFS	1.92	2.05	2.18	2.32	2.46	2.61	2.76	
2.92								
6.84 ELEV	333.15	333.16	333.16	333.17	333.18	333.18	333.19	
333.19								
7.32 CFS	3.08	3.24	3.40	3.57	3.74	3.91	4.08	
4.26								
7.32 ELEV	333.20	333.21	333.21	333.22	333.23	333.23	333.24	
333.25								
7.80 CFS	4.45	4.63	4.83	5.04	5.24	5.45	5.67	
5.87								
7.80 ELEV	333.25	333.26	333.27	333.28	333.28	333.29	333.30	
333.31								
8.28 CFS	6.07	6.33	6.63	6.96	7.31	7.69	8.08	
8.48								
8.28 ELEV	333.32	333.33	333.34	333.35	333.36	333.38	333.39	
333.41								
8.76 CFS	8.88	9.27	9.65	10.03	10.43	10.86	11.30	
11.76								
8.76 ELEV	333.43	333.44	333.46	333.47	333.49	333.50	333.52	
333.54								
9.24 CFS	12.25	12.79	13.36	13.94	14.52	16.02	17.51	
18.65								
9.24 ELEV	333.56	333.58	333.60	333.62	333.64	333.70	333.76	
333.81								

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9.72 CFS	19.82	20.82	21.84	22.77	23.74	24.68	25.68	
26.68								
9.72 ELEV	333.85	333.89	333.93	333.97	334.00	334.04	334.08	
334.12								
10.20 CFS	27.71	28.70	29.69	30.67	31.68	32.73	33.84	
35.09								
10.20 ELEV	334.16	334.20	334.23	334.27	334.31	334.35	334.40	
334.44								
10.68 CFS	36.52	38.17	40.04	42.12	44.45	46.97	49.69	
52.74								
10.68 ELEV	334.50	334.56	334.64	334.72	334.81	334.91	335.01	
335.13								
11.16 CFS	56.20	60.10	64.37	69.01	74.06	79.44	85.21	
92.63								
11.16 ELEV	335.27	335.42	335.58	335.76	335.96	336.17	336.39	
336.68								
11.64 CFS	100	102	106	111	120	128	136	
149								
11.64 ELEV	336.98	337.06	337.23	337.49	337.87	338.26	338.67	
339.34								
12.12 CFS	163	182	204	223	242	323	467	
539								
12.12 ELEV	340.21	341.39	342.78	344.11	345.47	346.63	347.35	
347.66								
12.60 CFS	552	532	498	461	424	392	366	
342								
12.60 ELEV	347.71	347.63	347.49	347.32	347.16	347.01	346.87	

346.73								
13.08 CFS	320	300	288	275	263	252	248	
246								
13.08 ELEV	346.61	346.50	346.39	346.28	346.17	346.06	345.94	
345.76								
13.56 CFS	243	239	235	230	226	221	216	
212								
13.56 ELEV	345.53	345.26	344.96	344.65	344.33	344.00	343.67	
343.34								
14.04 CFS	207	203	197	191	185	180	174	
169								
14.04 ELEV	343.02	342.69	342.34	341.96	341.60	341.24	340.90	
340.57								
14.52 CFS	163	159	154	149	142	136	130	
124								
14.52 ELEV	340.25	339.94	339.64	339.34	339.00	338.68	338.37	
338.07								
15.00 CFS	113	103	50	59	49	54	48	
51								
15.00 ELEV	337.56	337.12	335.03	335.36	335.00	335.19	334.96	
335.06								
15.48 CFS	47.05	48.55	45.94	46.64	44.80	45.05	43.85	
43.94								
15.48 ELEV	334.91	334.97	334.87	334.89	334.82	334.83	334.79	
334.79								
15.96 CFS	43.02	42.83	42.07	41.82	41.24	40.98	40.50	
40.21								
15.96 ELEV	334.75	334.75	334.72	334.71	334.68	334.67	334.66	
334.64								
16.44 CFS	39.83	39.56	39.18	38.88	38.58	38.34	38.04	
37.74								
16.44 ELEV	334.63	334.62	334.60	334.59	334.58	334.57	334.56	
334.55								
16.92 CFS	37.44	37.20	36.96	36.71	36.39	36.04	35.71	
35.47								
16.92 ELEV	334.54	334.53	334.52	334.51	334.50	334.48	334.47	
334.46								
17.40 CFS	35.23	34.94	34.58	34.23	33.91	33.63	33.35	
33.03								
17.40 ELEV	334.45	334.44	334.43	334.41	334.40	334.39	334.38	
334.36								
17.88 CFS	32.70	32.41	32.15	31.90	31.61	31.31	31.04	
30.80								
17.88 ELEV	334.35	334.34	334.33	334.32	334.31	334.30	334.29	
334.28								
18.36 CFS	30.56	30.29	30.03	29.87	29.77	29.67	29.51	
29.38								
18.36 ELEV	334.27	334.26	334.25	334.24	334.24	334.23	334.23	
334.22								
18.84 CFS	29.31	29.25	29.13	28.99	28.88	28.77	28.67	
28.58								
18.84 ELEV	334.22	334.22	334.21	334.21	334.20	334.20	334.20	
334.19								
19.32 CFS	28.50	28.43	28.37	28.32	28.25	28.13	28.01	
27.95								
19.32 ELEV	334.19	334.19	334.18	334.18	334.18	334.17	334.17	
334.17								
19.80 CFS	27.88	27.74	27.60	27.51	27.49	27.45	27.35	
27.25								
19.80 ELEV	334.16	334.16	334.15	334.15	334.15	334.15	334.14	
334.14								
20.28 CFS	27.16	27.07	26.93	26.76	26.65	26.59	26.54	
26.43								
20.28 ELEV	334.14	334.13	334.13	334.12	334.12	334.11	334.11	

334.11								
20.76	CFS	26.30	26.24	26.19	26.09	25.96	25.84	25.73
25.63								
20.76	ELEV	334.10	334.10	334.10	334.09	334.09	334.08	334.08
334.08								
21.24	CFS	25.53	25.44	25.36	25.29	25.23	25.17	25.06
24.92								

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21.24	ELEV	334.07	334.07	334.07	334.06	334.06	334.06	334.05
334.05								
21.72	CFS	24.84	24.77	24.66	24.57	24.53	24.45	24.33
24.21								
21.72	ELEV	334.05	334.04	334.04	334.04	334.03	334.03	334.03
334.02								
22.20	CFS	24.10	24.01	23.91	23.83	23.75	23.68	23.60
23.46								
22.20	ELEV	334.02	334.01	334.01	334.01	334.00	334.00	334.00
333.99								
22.68	CFS	23.32	23.25	23.16	23.02	22.87	22.77	22.75
22.70								
22.68	ELEV	333.99	333.98	333.98	333.98	333.97	333.97	333.96
333.96								
23.16	CFS	22.60	22.49	22.40	22.32	22.24	22.14	21.99
21.84								
23.16	ELEV	333.96	333.95	333.95	333.95	333.95	333.94	333.94
333.93								
23.64	CFS	21.76	21.72	21.67	21.55	21.40	21.29	21.35
21.31								
23.64	ELEV	333.93	333.92	333.92	333.92	333.91	333.91	333.91
333.91								
24.12	CFS	20.45	19.01	17.55	16.21	14.92	13.65	12.50
11.48								
24.12	ELEV	333.88	333.82	333.76	333.71	333.66	333.61	333.57
333.53								
24.60	CFS	10.94	10.67	10.43	10.25	10.05	9.89	9.73
9.58								
24.60	ELEV	333.51	333.50	333.49	333.48	333.47	333.46	333.46
333.45								
25.08	CFS	9.44	9.30	9.16	9.03	8.90	8.78	8.65
8.53								
25.08	ELEV	333.45	333.44	333.44	333.43	333.43	333.42	333.42
333.41								
25.56	CFS	8.42	8.30	8.18	8.07	7.96	7.85	7.74
25.56	ELEV	333.41	333.40	333.40	333.39	333.39	333.39	333.38

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	189	55	38	30	27	24	21	10

DURATION(HRS) 17  
 FLOW(CFS) 8 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.59	552.3	334.88
15.18	58.7	331.81
15.30	54.3	331.76
15.41	51.0	331.72
15.53	48.6	331.69
15.65	46.7	331.66
15.76	45.1	331.64
15.87	44.0	331.63
24.01	21.3	331.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.96 WATERSHED INCHES; 1225 CFS-HRS; 101.2 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.14	98.2	(RUNOFF)
17.34	2.2	(RUNOFF)
24.00	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.01 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	111.9	(RUNOFF)
18.86	2.1	(RUNOFF)
19.75	2.0	(RUNOFF)
24.02	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.65 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)

12.75 19.8 351.23

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03
SQ.MI.

Table with 8 columns: HRS, CFS, ELEV, and 5 intermediate columns. Rows include data for 1.86, 2.34, 2.82, 3.30, 3.78, 4.26, 4.74, 5.22, 5.70, 6.18 hours.

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Table with 8 columns: HRS, CFS, ELEV, and 5 intermediate columns. Rows include data for 6.18, 6.66, 7.14 hours.



7.62 CFS	1.69	1.72	1.75	1.77	1.80	1.83	1.87
1.90							
7.62 ELEV	345.31	345.31	345.32	345.32	345.33	345.33	345.34
345.35							
8.10 CFS	1.93	1.96	1.99	2.02	2.06	2.09	2.12
2.15							
8.10 ELEV	345.35	345.36	345.36	345.37	345.37	345.38	345.39
345.39							
8.58 CFS	2.18	2.22	2.25	2.29	2.32	2.36	2.39
2.42							
8.58 ELEV	345.40	345.40	345.41	345.42	345.42	345.43	345.43
345.44							
9.06 CFS	2.46	2.49	2.53	2.57	2.61	2.66	2.71
2.76							
9.06 ELEV	345.45	345.45	345.46	345.47	345.48	345.48	345.49
345.50							
9.54 CFS	2.82	2.87	2.93	3.00	3.06	3.13	3.20
3.28							
9.54 ELEV	345.51	345.52	345.53	345.55	345.56	345.57	345.58
345.60							
10.02 CFS	3.35	3.43	3.51	3.59	3.67	3.76	3.85
3.93							
10.02 ELEV	345.61	345.62	345.64	345.65	345.67	345.68	345.70
345.72							
10.50 CFS	4.02	4.12	4.22	4.32	4.44	4.58	4.72
4.88							
10.50 ELEV	345.73	345.75	345.77	345.79	345.81	345.83	345.86
345.89							
10.98 CFS	5.06	5.24	5.45	5.67	5.91	6.18	6.47
6.79							
10.98 ELEV	345.92	345.95	345.99	346.03	346.08	346.12	346.18
346.24							
11.46 CFS	7.13	7.50	7.91	8.41	9.02	9.73	10.19
10.54							
11.46 ELEV	346.30	346.37	346.44	346.53	346.64	346.77	346.91
347.06							
11.94 CFS	10.99	11.59	12.42	13.57	14.99	16.38	17.48
18.26							
11.94 ELEV	347.27	347.54	347.91	348.43	349.07	349.70	350.20
350.55							
12.42 CFS	18.80	19.17	19.43	19.61	19.71	19.76	19.75
19.72							
12.42 ELEV	350.79	350.96	351.08	351.16	351.20	351.22	351.22
351.21							
12.90 CFS	19.67	19.61	19.53	19.44	19.33	19.21	19.09
18.96							
12.90 ELEV	351.19	351.16	351.12	351.08	351.03	350.98	350.92
350.86							
13.38 CFS	18.82	18.68	18.53	18.37	18.21	18.05	17.88
17.72							
13.38 ELEV	350.80	350.74	350.67	350.60	350.53	350.45	350.38
350.30							
13.86 CFS	17.55	17.38	17.21	17.05	16.88	16.71	16.55
16.38							
13.86 ELEV	350.23	350.15	350.07	350.00	349.92	349.85	349.78
349.70							
14.34 CFS	16.22	16.06	15.89	15.73	15.57	15.41	15.25
15.09							
14.34 ELEV	349.63	349.55	349.48	349.41	349.33	349.26	349.19
349.12							
14.82 CFS	14.93	14.77	14.62	14.46	14.30	14.15	13.99
13.84							
14.82 ELEV	349.05	348.97	348.90	348.83	348.76	348.69	348.62
348.55							

15.30	CFS	13.68	13.53	13.38	13.23	13.09	12.94	12.80
12.66								
15.30	ELEV	348.48	348.41	348.35	348.28	348.21	348.15	348.08
348.02								
15.78	CFS	12.52	12.38	12.24	12.11	11.98	11.84	11.71
11.59								
15.78	ELEV	347.96	347.89	347.83	347.77	347.71	347.65	347.59
347.54								
16.26	CFS	11.46	11.33	11.21	11.09	10.96	10.84	10.72
10.61								
16.26	ELEV	347.48	347.42	347.37	347.31	347.26	347.20	347.15
347.09								
16.74	CFS	10.49	10.38	10.26	10.15	10.04	9.79	9.48
9.18								
16.74	ELEV	347.04	346.99	346.94	346.89	346.84	346.78	346.73
346.67								
17.22	CFS	8.89	8.62	8.35	8.10	7.85	7.62	7.39
7.17								
17.22	ELEV	346.62	346.57	346.52	346.47	346.43	346.39	346.35
346.31								
17.70	CFS	6.96	6.76	6.57	6.38	6.20	6.03	5.86
5.70								
17.70	ELEV	346.27	346.23	346.20	346.16	346.13	346.10	346.07
346.04								

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18.18	CFS	5.55	5.40	5.26	5.12	4.99	4.86	4.74
4.62								
18.18	ELEV	346.01	345.98	345.96	345.93	345.91	345.88	345.86
345.84								
18.66	CFS	4.51	4.41	4.30	4.21	4.11	4.02	3.94
3.85								
18.66	ELEV	345.82	345.80	345.78	345.77	345.75	345.73	345.72
345.70								
19.14	CFS	3.77	3.70	3.62	3.55	3.49	3.42	3.36
3.30								
19.14	ELEV	345.69	345.67	345.66	345.65	345.63	345.62	345.61
345.60								
19.62	CFS	3.25	3.19	3.14	3.09	3.04	2.99	2.94
2.90								
19.62	ELEV	345.59	345.58	345.57	345.56	345.55	345.54	345.54
345.53								
20.10	CFS	2.86	2.82	2.78	2.74	2.70	2.67	2.63
2.60								
20.10	ELEV	345.52	345.51	345.51	345.50	345.49	345.49	345.48
345.47								
20.58	CFS	2.57	2.54	2.51	2.48	2.45	2.42	2.40
2.37								
20.58	ELEV	345.47	345.46	345.46	345.45	345.45	345.44	345.44
345.43								
21.06	CFS	2.35	2.32	2.30	2.28	2.25	2.23	2.21
2.19								
21.06	ELEV	345.43	345.42	345.42	345.41	345.41	345.41	345.40
345.40								
21.54	CFS	2.18	2.16	2.14	2.12	2.10	2.08	2.07
2.05								

21.54 ELEV	345.40	345.39	345.39	345.39	345.38	345.38	345.38
345.37							
22.02 CFS	2.04	2.02	2.01	1.99	1.98	1.96	1.95
1.93							
22.02 ELEV	345.37	345.37	345.37	345.36	345.36	345.36	345.35
345.35							
22.50 CFS	1.92	1.91	1.90	1.88	1.87	1.86	1.84
1.83							
22.50 ELEV	345.35	345.35	345.35	345.34	345.34	345.34	345.34
345.33							
22.98 CFS	1.82	1.81	1.80	1.79	1.77	1.76	1.75
1.74							
22.98 ELEV	345.33	345.33	345.33	345.32	345.32	345.32	345.32
345.32							
23.46 CFS	1.73	1.72	1.71	1.70	1.69	1.68	1.67
1.66							
23.46 ELEV	345.32	345.31	345.31	345.31	345.31	345.31	345.30
345.30							
23.94 CFS	1.65	1.64	1.63	1.62	1.58	1.54	1.48
1.42							
23.94 ELEV	345.30	345.30	345.30	345.29	345.29	345.28	345.27
345.26							
24.42 CFS	1.36	1.30	1.24	1.18	1.13	1.08	1.03
.99							
24.42 ELEV	345.25	345.24	345.23	345.22	345.21	345.20	345.19
345.18							
24.90 CFS	.94	.90	.86	.82	.78	.75	.71
.68							
24.90 ELEV	345.17	345.16	345.16	345.15	345.14	345.14	345.13
345.12							
25.38 CFS	.65	.62					
25.38 ELEV	345.12	345.11					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.60 WATERSHED INCHES; 124 CFS-HRS; 10.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	16	12	8	4	3	2	2	2
DURATION(HRS)	18	20	21					
FLOW(CFS)	1	1	1	TRUNCATED				

OPERATION RUNOFF XSECTION 119

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)	12.13	28.9		(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.81 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.14	42.7	(NULL)
23.99	2.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.45 WATERSHED INCHES; 150 CFS-HRS; 12.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.14	140.8	(NULL)
20.01	5.0	(NULL)
20.80	4.4	(NULL)
24.00	3.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.27 WATERSHED INCHES; 245 CFS-HRS; 20.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	179.0	(RUNOFF)
15.84	5.4	(RUNOFF)
17.34	4.2	(RUNOFF)
19.75	3.1	(RUNOFF)
20.05	3.1	(RUNOFF)
24.00	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.60 WATERSHED INCHES; 172 CFS-HRS; 14.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 22

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	319.7	(NULL)
20.04	8.1	(NULL)
20.83	7.3	(NULL)
21.94	6.6	(NULL)
22.74	6.0	(NULL)
24.00	5.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.98 WATERSHED INCHES; 418 CFS-HRS; 34.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	491.7	(NULL)
12.57	637.4	(NULL)
15.18	82.7	(NULL)
15.30	77.6	(NULL)
15.41	74.0	(NULL)
15.53	71.3	(NULL)
15.64	68.9	(NULL)
15.75	66.7	(NULL)
20.03	35.6	(NULL)
23.03	28.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.17 WATERSHED INCHES; 1638 CFS-HRS; 135.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	445.5	316.29
12.70	600.6	316.64
24.06	26.9	314.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.17 WATERSHED INCHES; 1638 CFS-HRS; 135.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	165.8	(RUNOFF)
18.66	4.1	(RUNOFF)
20.68	3.6	(RUNOFF)
23.12	3.0	(RUNOFF)
24.00	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.34 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.

\*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	160.7	365.43
18.69	4.1	356.71
20.69	3.6	356.67
23.15	3.0	356.62
24.03	2.8	356.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.35 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	237.1	(RUNOFF)
18.65	6.1	(RUNOFF)
20.67	5.3	(RUNOFF)
23.98	4.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.26 WATERSHED INCHES; 302 CFS-HRS; 25.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	395.1	(NULL)
18.66	10.2	(NULL)
20.14	9.4	(NULL)
20.68	8.9	(NULL)
23.14	7.4	(NULL)
23.78	7.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.30 WATERSHED INCHES; 509 CFS-HRS; 42.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	384.2	319.84
20.20	9.4	316.93
20.74	8.9	316.91
23.20	7.4	316.81
23.83	7.0	316.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.29 WATERSHED INCHES; 509 CFS-HRS; 42.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.24	190.4	(RUNOFF)
20.67	4.2	(RUNOFF)
24.01	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.89 WATERSHED INCHES; 228 CFS-HRS; 18.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	634.4	(NULL)
12.68	663.1	(NULL)
24.04	30.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.14 WATERSHED INCHES; 1866 CFS-HRS; 154.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 30

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	982.2	(NULL)
12.61	875.5	(NULL)
24.04	37.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.17 WATERSHED INCHES; 2375 CFS-HRS; 196.2 ACRE-FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.43	906.2	317.91
12.64	871.4	317.80

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.15 WATERSHED INCHES; 2369 CFS-HRS; 195.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	264.7	(RUNOFF)
20.66	5.1	(RUNOFF)
23.11	4.2	(RUNOFF)
24.02	3.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	244.6	314.09
20.73	5.1	310.41
23.19	4.2	310.34
24.09	3.9	310.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	39.4	(RUNOFF)
15.84	1.2	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.86 WATERSHED INCHES; 43 CFS-HRS; 3.5 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
WITH .53 AC-FT ( .10 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 378.24.  
\*\*\*



OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	32.9	380.81

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
 \*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	32.9	338.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	118.2	(RUNOFF)
20.86	2.0	(RUNOFF)
24.02	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.86 WATERSHED INCHES; 139 CFS-HRS; 11.5 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
 WITH 1.05 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 354.18.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	96.1	357.96

1 TR20 ----- SCS  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.15 WATERSHED INCHES; 127 CFS-HRS; 10.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	128.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	128.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
 \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	128.6	330.88

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	135.6	(RUNOFF)
15.84	3.9	(RUNOFF)
20.84	2.1	(RUNOFF)
24.00	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.24 WATERSHED INCHES; 131 CFS-HRS; 10.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 139

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	245.1	(NULL)
20.83	5.1	(NULL)
24.00	4.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.13 WATERSHED INCHES; 294 CFS-HRS; 24.3 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	109.4	333.51

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06  
SQ.MI.

2.58 CFS	.00	.01	.01	.01	.01	.02	.02
.02							
2.58 ELEV	326.00	326.00	326.00	326.00	326.01	326.01	326.01
326.01							
3.06 CFS	.02	.03	.03	.04	.04	.05	.05
.06							
3.06 ELEV	326.01	326.01	326.01	326.02	326.02	326.02	326.02
326.02							
3.54 CFS	.06	.07	.08	.08	.09	.10	.10
.11							
3.54 ELEV	326.03	326.03	326.03	326.04	326.04	326.04	326.04
326.05							
4.02 CFS	.12	.13	.14	.15	.16	.17	.17
.18							
4.02 ELEV	326.05	326.05	326.06	326.06	326.07	326.07	326.07
326.08							
4.50 CFS	.19	.20	.22	.23	.24	.25	.26
.27							
4.50 ELEV	326.08	326.09	326.09	326.09	326.10	326.10	326.11
326.11							
4.98 CFS	.28	.29	.31	.32	.33	.34	.36
.37							
4.98 ELEV	326.12	326.12	326.13	326.13	326.14	326.14	326.15
326.16							
5.46 CFS	.38	.40	.41	.42	.44	.45	.47
.48							
5.46 ELEV	326.16	326.17	326.17	326.18	326.18	326.19	326.20
326.20							
5.94 CFS	.50	.51	.53	.54	.56	.57	.59
.61							
5.94 ELEV	326.21	326.21	326.22	326.23	326.23	326.24	326.25
326.26							
6.42 CFS	.62	.64	.66	.68	.70	.72	.73
.75							
6.42 ELEV	326.26	326.27	326.28	326.28	326.29	326.30	326.31
326.32							
6.90 CFS	.77	.79	.81	.84	.86	.88	.90
.92							
6.90 ELEV	326.33	326.33	326.34	326.35	326.36	326.37	326.38
326.39							
7.38 CFS	.95	.97	.99	1.02	1.04	1.07	1.09
1.12							
7.38 ELEV	326.40	326.41	326.42	326.43	326.44	326.45	326.46

326.47								
7.86 CFS	1.14	1.17	1.20	1.23	1.25	1.28	1.31	
1.34								
7.86 ELEV	326.48	326.49	326.50	326.51	326.53	326.54	326.55	
326.56								
8.34 CFS	1.37	1.40	1.43	1.46	1.49	1.52	1.55	
1.58								
8.34 ELEV	326.57	326.59	326.60	326.61	326.62	326.64	326.65	
326.66								
8.82 CFS	1.61	1.65	1.68	1.71	1.75	1.78	1.82	
1.85								
8.82 ELEV	326.68	326.69	326.70	326.72	326.73	326.75	326.76	
326.78								
9.30 CFS	1.89	1.93	1.97	2.01	2.06	2.10	2.15	
2.20								
9.30 ELEV	326.79	326.81	326.83	326.85	326.86	326.88	326.90	
326.92								
9.78 CFS	2.25	2.31	2.37	2.43	2.51	2.58	2.66	
2.75								
9.78 ELEV	326.95	326.97	326.99	327.02	327.05	327.08	327.12	
327.15								
10.26 CFS	2.84	2.93	3.03	3.13	3.24	3.35	3.47	
3.59								
10.26 ELEV	327.19	327.23	327.27	327.32	327.36	327.41	327.46	
327.51								

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10.74 CFS	3.72	3.86	4.01	4.17	4.33	4.51	4.70	
4.90								
10.74 ELEV	327.56	327.62	327.68	327.75	327.82	327.89	327.97	
328.06								
11.22 CFS	5.12	5.35	5.60	5.87	6.16	6.46	6.80	
7.20								
11.22 ELEV	328.15	328.25	328.35	328.47	328.59	328.71	328.86	
329.02								
11.70 CFS	7.65	8.16	8.76	9.48	15.53	37.13	73.75	
85.47								
11.70 ELEV	329.21	329.43	329.68	329.98	330.32	330.67	331.04	
331.51								
12.18 CFS	93	100	104	107	109	109	109	
109								
12.18 ELEV	332.10	332.64	333.00	333.26	333.43	333.50	333.49	
333.43								
12.66 CFS	107	106	104	103	101	98	95	
93								
12.66 ELEV	333.32	333.19	333.03	332.86	332.69	332.48	332.27	
332.05								
13.14 CFS	89.67	86.89	84.17	81.52	71.45	54.38	45.63	
40.30								
13.14 ELEV	331.83	331.62	331.41	331.21	331.02	330.87	330.78	
330.71								
13.62 CFS	36.11	32.76	30.06	28.17	26.54	25.12	23.88	
22.80								
13.62 ELEV	330.66	330.61	330.57	330.54	330.51	330.49	330.47	
330.45								
14.10 CFS	21.84	20.99	20.21	19.54	18.94	18.38	17.85	

17.35								
14.10 ELEV	330.43	330.42	330.40	330.39	330.38	330.37	330.36	
330.35								
14.58 CFS	16.87	16.40	15.95	15.51	15.10	14.75	14.42	
14.08								
14.58 ELEV	330.34	330.34	330.33	330.32	330.31	330.30	330.30	
330.29								
15.06 CFS	13.74	13.41	13.07	12.74	12.42	12.12	11.85	
11.60								
15.06 ELEV	330.28	330.27	330.27	330.26	330.25	330.25	330.24	
330.24								
15.54 CFS	11.37	11.16	10.95	10.76	10.57	10.40	10.25	
10.11								
15.54 ELEV	330.23	330.23	330.22	330.22	330.21	330.21	330.21	
330.20								
16.02 CFS	10.00	9.99	9.97	9.96	9.95	9.93	9.92	
9.90								
16.02 ELEV	330.20	330.19	330.19	330.18	330.18	330.17	330.16	
330.16								
16.50 CFS	9.88	9.86	9.84	9.82	9.79	9.77	9.75	
9.72								
16.50 ELEV	330.15	330.14	330.13	330.12	330.11	330.10	330.09	
330.08								
16.98 CFS	9.70	9.67	9.64	9.62	9.59	9.56	9.53	
9.50								
16.98 ELEV	330.07	330.06	330.05	330.04	330.03	330.01	330.00	
329.99								
17.46 CFS	9.46	9.43	9.40	9.37	9.33	9.30	9.26	
9.23								
17.46 ELEV	329.97	329.96	329.95	329.93	329.92	329.90	329.89	
329.88								
17.94 CFS	9.19	9.16	9.12	9.08	9.04	9.01	8.97	
8.93								
17.94 ELEV	329.86	329.85	329.83	329.81	329.80	329.78	329.77	
329.75								
18.42 CFS	8.89	8.85	8.81	8.78	8.74	8.70	8.66	
8.62								
18.42 ELEV	329.73	329.72	329.70	329.69	329.67	329.65	329.64	
329.62								
18.90 CFS	8.59	8.55	8.51	8.47	8.44	8.40	8.36	
8.32								
18.90 ELEV	329.61	329.59	329.57	329.56	329.54	329.53	329.51	
329.50								
19.38 CFS	8.29	8.25	8.21	8.18	8.14	8.11	8.07	
8.04								
19.38 ELEV	329.48	329.47	329.45	329.44	329.42	329.40	329.39	
329.38								
19.86 CFS	8.00	7.96	7.93	7.90	7.86	7.83	7.79	
7.76								
19.86 ELEV	329.36	329.35	329.33	329.32	329.30	329.29	329.27	
329.26								
20.34 CFS	7.73	7.69	7.66	7.62	7.59	7.56	7.52	
7.49								
20.34 ELEV	329.24	329.23	329.22	329.20	329.19	329.17	329.16	
329.15								
20.82 CFS	7.46	7.43	7.40	7.36	7.33	7.30	7.27	
7.24								
20.82 ELEV	329.13	329.12	329.11	329.09	329.08	329.07	329.05	
329.04								
21.30 CFS	7.20	7.17	7.14	7.11	7.08	7.05	7.02	
6.99								
21.30 ELEV	329.03	329.01	329.00	328.99	328.97	328.96	328.95	
328.94								
21.78 CFS	6.96	6.93	6.90	6.87	6.84	6.81	6.78	

6.76  
 21.78 ELEV 328.92 328.91 328.90 328.89 328.87 328.86 328.85  
 328.84  
 22.26 CFS 6.73 6.70 6.67 6.64 6.61 6.59 6.56  
 6.53

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22.26 ELEV 328.83 328.81 328.80 328.79 328.78 328.77 328.75  
 328.74  
 22.74 CFS 6.50 6.47 6.45 6.42 6.39 6.36 6.34  
 6.31  
 22.74 ELEV 328.73 328.72 328.71 328.70 328.68 328.67 328.66  
 328.65  
 23.22 CFS 6.28 6.26 6.23 6.20 6.18 6.15 6.12  
 6.10  
 23.22 ELEV 328.64 328.63 328.62 328.61 328.59 328.58 328.57  
 328.56  
 23.70 CFS 6.07 6.05 6.02 5.99 5.97 5.94 5.92  
 5.89  
 23.70 ELEV 328.55 328.54 328.53 328.52 328.51 328.50 328.49  
 328.47  
 24.18 CFS 5.85 5.81 5.76 5.71 5.67 5.62 5.57  
 5.52  
 24.18 ELEV 328.46 328.44 328.42 328.40 328.38 328.36 328.34  
 328.32  
 24.66 CFS 5.47 5.42 5.37 5.32 5.27 5.22 5.18  
 24.66 ELEV 328.30 328.28 328.25 328.23 328.21 328.19 328.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.57 WATERSHED INCHES; 271 CFS-HRS; 22.4 ACRE-  
 FEET.

DURATION (HRS)	2	4	6	8	10	12	13
FLOW (CFS)	24	10	9	8	7	6	5 TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.13	15.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.98 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.48	113.2	(NULL)
23.97	6.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.39 WATERSHED INCHES; 283 CFS-HRS; 23.4 ACRE-

FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	121.2	(RUNOFF)
18.64	3.2	(RUNOFF)
23.76	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.41	1000.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.15 WATERSHED INCHES; 2524 CFS-HRS; 208.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	1226.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.22 WATERSHED INCHES; 2832 CFS-HRS; 234.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	1338.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.23 WATERSHED INCHES; 3110 CFS-HRS; 257.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.49	1284.5	291.63

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.22 WATERSHED INCHES; 3107 CFS-HRS; 256.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	1277.8	304.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.21 WATERSHED INCHES; 3103 CFS-HRS; 256.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 45

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	140.0	(RUNOFF)
20.10	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.16 WATERSHED INCHES; 190 CFS-HRS; 15.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	175.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.06 WATERSHED INCHES; 245 CFS-HRS; 20.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	315.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 435 CFS-HRS; 36.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
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ELEVATION(FEET)		
12.20	171.6	(RUNOFF)
21.97	3.0	(RUNOFF)
24.03	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.09 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	1347.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.21 WATERSHED INCHES; 3287 CFS-HRS; 271.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 50

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	1584.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.20 WATERSHED INCHES; 3722 CFS-HRS; 307.6 ACRE-FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	1554.0	286.94

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.19 WATERSHED INCHES; 3721 CFS-HRS; 307.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	8.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.63 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN

2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	8.0	288.45
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.63 WATERSHED INCHES;	9 CFS-HRS;	.8 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	1.7	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.85 WATERSHED INCHES;	4 CFS-HRS;	.3 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 55

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	112.9	(RUNOFF)
21.97	2.0	(RUNOFF)
24.03	1.8	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.79 WATERSHED INCHES;	120 CFS-HRS;	9.9 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	1591.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.18 WATERSHED INCHES;	3841 CFS-HRS;	317.4 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
 12.25 9.7 (NULL)  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.28 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.56 1596.1 (NULL)  
 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 3854 CFS-HRS; 318.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.20 78.5 (RUNOFF)  
 24.02 1.3 (RUNOFF)

		HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99						
		MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = .03		
HRS	SQ.MI.							
8.76	CFS	.49	.52	.54	.56	.59	.62	.65
.69								
9.24	CFS	.73	.77	.82	.87	.92	.97	1.02
1.08								
9.72	CFS	1.15	1.21	1.28	1.34	1.40	1.47	1.54
1.62								
10.20	CFS	1.70	1.78	1.85	1.93	2.02	2.11	2.21
2.34								
10.68	CFS	2.50	2.69	2.91	3.14	3.39	3.65	3.93
4.24								
11.16	CFS	4.63	5.07	5.55	6.07	6.62	7.19	7.81
8.79								

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11.64	CFS	10.36	12.19	14.15	16.65	20.13	25.27	33.50
46.51								
12.12	CFS	64.00	77.27	76.01	65.16	52.39	42.68	35.46
30.29								
12.60	CFS	26.22	22.48	19.36	17.08	15.51	14.30	13.32
12.47								
13.08	CFS	11.67	10.91	10.23	9.66	9.16	8.71	8.27
7.84								
13.56	CFS	7.42	7.02	6.66	6.37	6.15	5.96	5.82
5.71								
14.04	CFS	5.61	5.51	5.40	5.28	5.16	5.05	4.96
4.87								
14.52	CFS	4.77	4.66	4.53	4.41	4.31	4.22	4.13

4.02								
15.00	CFS	3.92	3.82	3.71	3.60	3.50	3.42	3.38
3.35								
15.48	CFS	3.34	3.32	3.31	3.27	3.22	3.18	3.17
3.16								
15.96	CFS	3.14	3.09	3.05	3.01	2.99	2.97	2.95
2.91								
16.44	CFS	2.88	2.85	2.81	2.78	2.75	2.74	2.72
2.68								
16.92	CFS	2.65	2.63	2.62	2.60	2.56	2.51	2.47
2.45								
17.40	CFS	2.44	2.42	2.37	2.33	2.29	2.27	2.25
2.22								
17.88	CFS	2.19	2.16	2.14	2.13	2.10	2.07	2.04
2.02								
18.36	CFS	2.00	1.98	1.96	1.95	1.97	1.97	1.96
1.95								
18.84	CFS	1.95	1.95	1.93	1.91	1.90	1.89	1.89
1.88								
19.32	CFS	1.88	1.88	1.88	1.88	1.88	1.85	1.83
1.83								
19.80	CFS	1.83	1.81	1.80	1.79	1.80	1.82	1.81
1.79								
20.28	CFS	1.78	1.77	1.75	1.72	1.71	1.72	1.74
1.73								
20.76	CFS	1.71	1.71	1.71	1.70	1.68	1.66	1.65
1.65								
21.24	CFS	1.64	1.64	1.64	1.64	1.64	1.64	1.62
1.60								
21.72	CFS	1.59	1.59	1.58	1.58	1.58	1.58	1.56
1.55								
22.20	CFS	1.53	1.53	1.52	1.52	1.52	1.52	1.51
1.49								
22.68	CFS	1.47	1.47	1.47	1.45	1.43	1.43	1.44
1.45								
23.16	CFS	1.44	1.43	1.41	1.40	1.40	1.39	1.37
1.35								
23.64	CFS	1.35	1.36	1.37	1.36	1.33	1.32	1.34
1.34								
24.12	CFS	1.15	.80	.47				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.92 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.56 1624.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.07 WATERSHED INCHES; 3939 CFS-HRS; 325.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.61 1602.0 278.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

6.06 WATERSHED INCHES; 3935 CFS-HRS; 325.2 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	47.3	(RUNOFF)
21.96	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.83 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-		
FEET.		

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	1619.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02  
SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	1.02
3.90 CFS	.44	.51	.58	.66	.73	.81	.90			
.98										
4.38 CFS	1.08	1.17	1.27	1.37	1.47	1.57	1.68			
1.79										
4.86 CFS	1.91	2.04	2.18	2.33	2.50	2.68	2.88			
3.09										
5.34 CFS	3.31	3.54	3.79	4.04	4.31	4.58	4.87			
5.16										
5.82 CFS	5.45	5.76	6.06	6.38	6.70	7.02	7.36			
7.70										
6.30 CFS	8.04	8.40	8.77	9.15	9.54	9.95	10.38			
10.82										
6.78 CFS	11.27	11.74	12.23	12.73	13.24	13.77	14.31			
14.87										
7.26 CFS	15.45	16.05	16.66	17.30	17.96	18.64	19.33			
20.04										
7.74 CFS	20.76	21.49	22.23	22.99	23.77	24.55	25.36			
26.18										
8.22 CFS	27.01	27.85	28.71	29.58	30.46	31.36	32.26			
33.17										
8.70 CFS	34.11	35.06	36.03	37.01	38.00	39.01	40.05			
41.13										
9.18 CFS	42.24	43.40	44.61	45.90	47.26	48.71	50.23			
51.84										
9.66 CFS	53.54	55.35	57.26	59.28	61.41	63.65	66.01			
68.49										
10.14 CFS	71.11	73.84	76.69	79.62	82.63	85.72	88.89			
92.15										
10.62 CFS	96	99	103	106	110	115	119			

125								
11.10	CFS	130	137	144	151	160	169	179
191								
11.58	CFS	203	221	242	265	292	323	363
414								
12.06	CFS	487	585	705	834	963	1098	1284
1454								
12.54	CFS	1575	1618	1600	1546	1480	1415	1357
1301								
13.02	CFS	1239	1173	1112	1052	1002	955	906
857								
13.50	CFS	810	764	721	682	648	618	593
570								
13.98	CFS	550	531	516	503	491	480	469
457								
14.46	CFS	446	435	424	413	402	392	382
372								
14.94	CFS	362	353	343	333	323	314	304
294								
15.42	CFS	284	273	262	251	241	231	221
212								
15.90	CFS	204	198	192	186	180	175	171
167								
16.38	CFS	163	159	156	154	151	149	147
145								
16.86	CFS	143	141	140	138	137	135	134
132								
17.34	CFS	131	130	128	127	126	124	123
122								
17.82	CFS	120	119	118	116	115	114	113
111								
18.30	CFS	110	109	108	106	105	104	103
102								
18.78	CFS	101	100	99	98	97	96	96
95								

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19.26	CFS	94.12	93.48	92.87	92.29	91.75	91.23	90.72
90.21								
19.74	CFS	89.72	89.25	88.79	88.33	87.87	87.44	87.05
86.68								
20.22	CFS	86.30	85.91	85.52	85.12	84.71	84.30	83.90
83.54								
20.70	CFS	83.19	82.83	82.46	82.10	81.75	81.39	81.01
80.63								
21.18	CFS	80.26	79.89	79.54	79.19	78.86	78.53	78.21
77.88								
21.66	CFS	77.54	77.19	76.85	76.53	76.20	75.89	75.60
75.29								
22.14	CFS	74.96	74.63	74.29	73.96	73.65	73.33	73.03
72.73								
22.62	CFS	72.41	72.08	71.74	71.41	71.08	70.73	70.38
70.05								
23.10	CFS	69.75	69.45	69.14	68.82	68.49	68.18	67.86
67.54								
23.58	CFS	67.19	66.85	66.53	66.24	65.95	65.63	65.29

64.98								
24.06	CFS	64.70	64.24	63.34	61.95	60.20	58.28	56.26
54.14								
24.54	CFS	51.93	49.63	47.28	44.89	42.50	40.15	37.87
35.68								
25.02	CFS	33.61						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.04 WATERSHED INCHES; 3989 CFS-HRS; 329.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.73		1574.7		251.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.04 WATERSHED INCHES; 3984 CFS-HRS; 329.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.36		30.8		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.55		24.7		335.67

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.63		24.4		301.03

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	139.6	(RUNOFF)
20.10	3.1	(RUNOFF)
24.02	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.89 WATERSHED INCHES; 145 CFS-HRS; 11.9 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.42	70.1	297.03
20.12	3.1	287.70
24.04	2.3	287.60

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.89 WATERSHED INCHES; 145 CFS-HRS; 11.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.51	90.2	(NULL)
18.87	4.3	(NULL)
23.11	3.2	(NULL)
24.04	3.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.22 WATERSHED INCHES; 191 CFS-HRS; 15.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 68

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
-----------------------------------	---------------------	------



12.19	258.6	(RUNOFF)
20.87	5.1	(RUNOFF)
23.74	4.1	(RUNOFF)
24.03	4.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 263 CFS-HRS; 21.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	309.1	(NULL)
18.87	10.1	(NULL)
20.10	9.4	(NULL)
20.65	9.0	(NULL)
21.97	8.2	(NULL)
23.10	7.5	(NULL)
23.75	7.1	(NULL)
24.03	7.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 455 CFS-HRS; 37.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	230.4	249.15
20.14	9.4	247.79
24.09	7.0	247.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.23 WATERSHED INCHES; 455 CFS-HRS; 37.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	54.7	(RUNOFF)
17.33	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	44.5	267.78
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.07 WATERSHED INCHES;	47 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	40.6	248.21
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.05 WATERSHED INCHES;	46 CFS-HRS;	3.8 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	312.6	(RUNOFF)
15.84	12.1	(RUNOFF)
17.34	9.4	(RUNOFF)
19.75	7.1	(RUNOFF)
20.08	7.0	(RUNOFF)
21.96	6.2	(RUNOFF)
24.01	5.3	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .11 SQ.MI.

HRS	8.82 CFS	.43	.51	.59	.68	.78	.88	.98
1.10	9.30 CFS	1.24	1.38	1.53	1.67	1.82	1.98	2.17
2.36	9.78 CFS	2.56	2.76	2.95	3.16	3.39	3.63	3.89
4.15	10.26 CFS	4.40	4.65	4.91	5.20	5.52	5.89	6.35
6.91	10.74 CFS	7.57	8.30	9.08	9.92	10.78	11.71	12.86
14.23	11.22 CFS	15.80	17.48	19.28	21.25	23.29	25.46	29.59
36.52	11.70 CFS	43	50	61	75	98	135	195
276	12.18 CFS	313	268	207	164	133	112	98
86	12.66 CFS	72.72	63.35	57.67	53.61	50.33	47.44	44.61
41.80	13.14 CFS	39.05	36.77	34.96	33.30	31.70	30.10	28.51
26.97	13.62 CFS	25.51	24.32	23.42	22.72	22.16	21.73	21.39
21.08	14.10 CFS	20.70	20.26	19.77	19.33	18.96	18.65	18.33
17.93	14.58 CFS	17.45	16.96	16.53	16.19	15.87	15.52	15.09
14.69	15.06 CFS	14.32	13.89	13.46	13.12	12.90	12.80	12.75
12.73								

15.54	CFS	12.71	12.61	12.43	12.21	12.09	12.11	12.09
11.95								
16.02	CFS	11.74	11.57	11.47	11.42	11.37	11.23	11.09
10.99								
16.50	CFS	10.85	10.69	10.58	10.53	10.49	10.38	10.22
10.12								
16.98	CFS	10.07	10.03	9.92	9.73	9.50	9.38	9.40
9.37								
17.46	CFS	9.23	9.01	8.83	8.73	8.68	8.62	8.48
8.33								
17.94	CFS	8.25	8.21	8.15	8.01	7.87	7.78	7.74
7.68								
18.42	CFS	7.55	7.48	7.54	7.62	7.63	7.53	7.47
7.52								

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18.90	CFS	7.51	7.41	7.33	7.29	7.27	7.26	7.26
7.26								
19.38	CFS	7.26	7.26	7.26	7.23	7.10	7.03	7.08
7.06								
19.86	CFS	6.96	6.88	6.91	7.03	7.04	6.95	6.88
6.84								
20.34	CFS	6.81	6.70	6.58	6.60	6.70	6.74	6.67
6.57								
20.82	CFS	6.60	6.62	6.54	6.44	6.39	6.37	6.36
6.35								
21.30	CFS	6.35	6.35	6.35	6.35	6.34	6.23	6.12
6.14								
21.78	CFS	6.16	6.10	6.10	6.16	6.11	6.01	5.94
5.91								
22.26	CFS	5.90	5.89	5.89	5.89	5.89	5.84	5.72
5.65								
22.74	CFS	5.69	5.68	5.57	5.49	5.52	5.63	5.65
5.56								
23.22	CFS	5.48	5.45	5.43	5.42	5.37	5.24	5.17
5.24								
23.70	CFS	5.32	5.33	5.22	5.09	5.06	5.32	5.21
3.80								
24.18	CFS	2.04	.99	.48				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.26 WATERSHED INCHES; 302 CFS-HRS; 25.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.72 1637.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.86 WATERSHED INCHES; 4287 CFS-HRS; 354.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.35	260.5	(NULL)
20.14	10.3	(NULL)
23.13	8.2	(NULL)
24.09	7.7	(NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99							
	MAIN	TIME	INCREMENT = .060 hr,	DRAINAGE AREA = .15				
6.78 CFS	.49	.52	.57	.62	.67	.73	.79	
.85								
7.26 CFS	.92	.99	1.06	1.14	1.22	1.31	1.40	
1.50								
7.74 CFS	1.60	1.70	1.81	1.92	2.04	2.16	2.28	
2.40								
8.22 CFS	2.53	2.65	2.78	2.91	3.04	3.17	3.31	
3.44								
8.70 CFS	3.59	3.74	3.89	4.04	4.18	4.32	4.47	
4.64								
9.18 CFS	4.81	5.00	5.20	5.43	5.69	5.96	6.24	
6.53								
9.66 CFS	6.83	7.15	7.49	7.86	8.23	8.61	8.99	
9.38								
10.14 CFS	9.79	10.21	10.63	11.05	11.48	11.90	12.35	
12.81								
10.62 CFS	13.30	13.85	14.49	15.25	16.13	17.12	18.18	
19.30								
11.10 CFS	20.50	21.82	23.30	24.99	26.90	29.01	31.22	
33.45								
11.58 CFS	35.80	38.67	42.69	47.52	52.98	59.58	67.97	
79.25								
12.06 CFS	99	129	174	229	257	260	255	
244								
12.54 CFS	231	220	209	197	183	170	157	
145								
13.02 CFS	133	123	114	107	99	91	84	
77								
13.50 CFS	71.93	67.34	63.36	59.86	56.88	54.37	52.29	
50.55								

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13.98 CFS	49.09	47.87	46.82	45.90	45.06	44.27	43.52	
42.82								
14.46 CFS	42.16	41.53	40.92	40.30	39.67	39.04	38.43	
37.80								
14.94 CFS	37.14	36.44	35.72	34.96	34.15	33.31	32.44	
31.61								
15.42 CFS	30.82	30.09	29.29	28.45	27.60	26.68	25.63	
24.58								
15.90 CFS	23.64	22.83	22.11	21.48	20.92	20.40	19.96	
19.60								
16.38 CFS	19.28	18.99	18.72	18.43	18.11	17.81	17.53	
17.28								

16.86	CFS	17.03	16.77	16.51	16.26	16.04	15.83	15.61
15.36								
17.34	CFS	15.11	14.91	14.75	14.58	14.39	14.18	13.97
13.78								
17.82	CFS	13.62	13.44	13.26	13.08	12.93	12.78	12.63
12.46								
18.30	CFS	12.25	12.06	11.88	11.72	11.56	11.44	11.38
11.34								
18.78	CFS	11.29	11.22	11.18	11.15	11.10	11.03	10.96
10.90								
19.26	CFS	10.85	10.80	10.77	10.75	10.73	10.71	10.69
10.64								
19.74	CFS	10.57	10.52	10.49	10.43	10.36	10.31	10.30
10.30								
20.22	CFS	10.28	10.24	10.20	10.15	10.08	9.99	9.92
9.89								
20.70	CFS	9.88	9.86	9.82	9.78	9.76	9.72	9.66
9.60								
21.18	CFS	9.54	9.48	9.44	9.41	9.38	9.36	9.34
9.32								
21.66	CFS	9.28	9.22	9.16	9.12	9.08	9.04	9.03
9.01								
22.14	CFS	8.97	8.91	8.85	8.80	8.75	8.72	8.69
8.67								
22.62	CFS	8.64	8.58	8.51	8.46	8.42	8.36	8.29
8.24								
23.10	CFS	8.22	8.23	8.21	8.17	8.12	8.07	8.03
7.99								
23.58	CFS	7.93	7.85	7.79	7.78	7.77	7.75	7.68
7.62								
24.06	CFS	7.62	7.63	7.29	6.48	5.44	4.43	3.54
2.81								
24.54	CFS	2.21	1.73	1.36	1.05	.82	.63	.49

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.30 WATERSHED INCHES; 501 CFS-HRS; 41.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.70 1835.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.80 WATERSHED INCHES; 4788 CFS-HRS; 395.7 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 77.  
 \*\*\*

OPERATION REACH XSECTION 77

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.70 1835.8 231.38

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.80 WATERSHED INCHES; 4788 CFS-HRS; 395.7 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	171.1	(RUNOFF)
15.84	6.1	(RUNOFF)
17.34	4.7	(RUNOFF)
21.96	3.1	(RUNOFF)
24.01	2.7	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99									
HRS	MAIN	TIME	INCREMENT =	.060 hr,					DRAINAGE AREA =
SQ.MI.	.05								
7.98 CFS	.47	.51	.55	.59	.62	.66	.71		
.76									
8.46 CFS	.79	.84	.89	.94	1.00	1.04	1.08		
1.12									
8.94 CFS	1.17	1.23	1.30	1.36	1.43	1.52	1.62		
1.72									
9.42 CFS	1.82	1.91	2.01	2.12	2.24	2.38	2.51		
2.63									
9.90 CFS	2.75	2.87	3.01	3.17	3.33	3.49	3.63		
3.77									
10.38 CFS	3.92	4.10	4.29	4.51	4.80	5.17	5.59		
6.05									
10.86 CFS	6.54	7.05	7.58	8.12	8.82	9.66	10.62		
11.62									
11.34 CFS	12.66	13.80	14.95	16.16	18.71	22.84	26.72		
30.55									
11.82 CFS	37	45	57	78	111	154	171		
141									
12.30 CFS	107	84	67	57	50	43	37		
32									
12.78 CFS	29.22	27.20	25.54	24.07	22.61	21.15	19.76		
18.60									
13.26 CFS	17.69	16.83	16.01	15.20	14.38	13.60	12.86		
12.26									
13.74 CFS	11.82	11.46	11.18	10.96	10.79	10.64	10.44		
10.21									
14.22 CFS	9.96	9.73	9.55	9.39	9.23	9.02	8.77		
8.52									
14.70 CFS	8.31	8.13	7.97	7.79	7.57	7.37	7.18		
6.96									
15.18 CFS	6.75	6.58	6.47	6.42	6.40	6.39	6.38		
6.33									
15.66 CFS	6.23	6.11	6.06	6.08	6.06	5.99	5.88		
5.79									
16.14 CFS	5.74	5.72	5.69	5.62	5.55	5.50	5.43		
5.34									
16.62 CFS	5.29	5.27	5.25	5.19	5.11	5.06	5.04		
5.02									
17.10 CFS	4.95	4.85	4.74	4.68	4.70	4.68	4.60		
4.49									

17.58 CFS	4.40	4.35	4.33	4.30	4.23	4.15	4.11
4.09							
18.06 CFS	4.06	3.99	3.92	3.88	3.86	3.83	3.76
3.72							
18.54 CFS	3.76	3.80	3.81	3.75	3.72	3.75	3.74
3.69							
19.02 CFS	3.65	3.63	3.62	3.62	3.62	3.62	3.62
3.62							
19.50 CFS	3.62	3.60	3.53	3.50	3.53	3.51	3.46
3.42							
19.98 CFS	3.44	3.50	3.50	3.46	3.42	3.40	3.38
3.33							
20.46 CFS	3.27	3.29	3.34	3.35	3.31	3.26	3.28
3.29							
20.94 CFS	3.25	3.20	3.17	3.16	3.16	3.16	3.16
3.16							
21.42 CFS	3.16	3.16	3.15	3.09	3.03	3.05	3.06
3.02							
21.90 CFS	3.03	3.06	3.03	2.98	2.95	2.93	2.93
2.92							
22.38 CFS	2.92	2.92	2.92	2.90	2.83	2.80	2.83
2.81							
22.86 CFS	2.76	2.72	2.74	2.80	2.80	2.75	2.72
2.70							
23.34 CFS	2.69	2.69	2.66	2.59	2.56	2.60	2.64
2.64							
23.82 CFS	2.58	2.51	2.51	2.66	2.60	1.82	.92
.43							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.96 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.70	1869.1	(NULL)
23.97	81.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 4951 CFS-HRS; 409.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.77	1864.0	217.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.76 WATERSHED INCHES; 4949 CFS-HRS; 409.0 ACRE-

FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	97.7	(RUNOFF)
15.84	3.6	(RUNOFF)
20.07	2.1	(RUNOFF)
24.01	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.57 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.77	1881.0	180.88

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.74 WATERSHED INCHES; 5041 CFS-HRS; 416.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 83

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	187.0	(RUNOFF)
15.84	6.2	(RUNOFF)
17.34	4.8	(RUNOFF)
21.95	3.1	(RUNOFF)
24.00	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.14 WATERSHED INCHES; 170 CFS-HRS; 14.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 84

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	301.9	(RUNOFF)
18.67	8.6	(RUNOFF)
20.67	7.5	(RUNOFF)
23.12	6.3	(RUNOFF)
24.02	5.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)



4.65 WATERSHED INCHES; 356 CFS-HRS; 29.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 85

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.19	459.2	(NULL)
18.83	12.3	(NULL)
20.07	11.5	(NULL)
20.82	10.8	(NULL)
21.95	10.0	(NULL)
23.07	9.2	(NULL)
24.00	8.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .17

HRS SQ.MI.	7.68 CFS	8.16 CFS	8.64 CFS	9.12 CFS	9.60 CFS	10.08 CFS	10.56 CFS	11.04 CFS	11.52 CFS	12.00 CFS	12.48 CFS	12.96 CFS	13.44 CFS
1.13	.49	.55	.61	.69	.79	.89	1.00						
2.17	1.25	1.36	1.48	1.63	1.76	1.88	2.02						
3.42	2.33	2.49	2.63	2.77	2.91	3.05	3.23						
5.51	3.61	3.82	4.07	4.34	4.63	4.93	5.22						
8.53	5.84	6.20	6.58	6.97	7.35	7.72	8.11						
12.43	8.99	9.47	9.95	10.41	10.86	11.35	11.87						
21.85	13.08	13.90	14.90	16.05	17.35	18.76	20.27						
43.43	23.52	25.53	27.87	30.53	33.46	36.57	39.94						
158	47	54	64	74	86	103	125						
270	211	293	403	458	435	385	326						
93	228	197	170	146	127	113	102						
55.39	86.60	80.44	74.78	69.68	65.35	61.69	58.39						
37.91	52.55	49.77	47.11	44.58	42.40	40.60	39.11						

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13.92 CFS	36.95	36.18	35.51	34.83	34.10	33.32	32.59
31.93							
14.40 CFS	31.34	30.76	30.11	29.38	28.62	27.91	27.28
26.69							
14.88 CFS	26.08	25.42	24.79	24.15	23.45	22.77	22.17
21.72							
15.36 CFS	21.41	21.22	21.10	21.01	20.85	20.60	20.30
20.11							
15.84 CFS	20.04	19.93	19.75	19.49	19.23	19.04	18.91

18.78								
16.32	CFS	18.58	18.38	18.21	17.98	17.74	17.55	17.42
17.31								
16.80	CFS	17.14	16.93	16.77	16.65	16.54	16.37	16.12
15.81								
17.28	CFS	15.61	15.54	15.43	15.24	14.97	14.71	14.51
14.37								
17.76	CFS	14.23	14.03	13.83	13.67	13.56	13.44	13.24
13.05								
18.24	CFS	12.90	12.79	12.67	12.48	12.38	12.39	12.44
12.45								
18.72	CFS	12.35	12.30	12.33	12.28	12.17	12.08	12.00
11.94								
19.20	CFS	11.91	11.90	11.89	11.88	11.88	11.87	11.82
11.68								
19.68	CFS	11.60	11.61	11.54	11.43	11.34	11.35	11.44
11.44								
20.16	CFS	11.37	11.30	11.24	11.17	11.01	10.88	10.87
10.92								
20.64	CFS	10.96	10.89	10.80	10.82	10.80	10.70	10.60
10.52								
21.12	CFS	10.45	10.41	10.39	10.38	10.37	10.37	10.37
10.34								
21.60	CFS	10.22	10.09	10.09	10.06	9.97	9.99	10.03
9.96								
22.08	CFS	9.86	9.78	9.70	9.66	9.63	9.62	9.61
9.60								
22.56	CFS	9.54	9.40	9.31	9.32	9.25	9.14	9.05
9.05								
23.04	CFS	9.14	9.15	9.08	9.00	8.94	8.89	8.86
8.79								
23.52	CFS	8.63	8.54	8.57	8.63	8.64	8.53	8.39
8.34								
24.00	CFS	8.60	8.39	6.76	4.85	3.26	2.04	1.24
.78								
24.48	CFS	.48						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.80 WATERSHED INCHES; 526 CFS-HRS; 43.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	1684.6	(NULL)
12.75	1999.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.63 WATERSHED INCHES; 5567 CFS-HRS; 460.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.13	76.9	(RUNOFF)
15.84	2.2	(RUNOFF)
22.42	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.87 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-FEET.

FEET.

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OPERATION ADDHYD XSECTION 88

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.30	1717.9	(NULL)
12.75	2009.8	(NULL)
23.97	92.4	(NULL)

HRS	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99							
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55 SQ.MI.							
3.96 CFS	.46	.53	.60	.68	.76	.84	.92	
1.02								
4.44 CFS	1.12	1.22	1.32	1.42	1.54	1.66	1.78	
1.89								
4.92 CFS	2.02	2.15	2.28	2.43	2.59	2.78	2.96	
3.16								
5.40 CFS	3.37	3.61	3.86	4.12	4.38	4.66	4.94	
5.22								
5.88 CFS	5.52	5.85	6.18	6.51	6.83	7.16	7.52	
7.87								
6.36 CFS	8.23	8.61	8.99	9.37	9.78	10.19	10.62	
11.09								
6.84 CFS	11.60	12.11	12.64	13.21	13.81	14.42	15.06	
15.71								
7.32 CFS	16.39	17.11	17.85	18.61	19.39	20.19	21.04	
21.93								
7.80 CFS	22.83	23.79	24.79	25.81	26.86	27.95	29.04	
30.12								
8.28 CFS	31.27	32.47	33.62	34.80	36.04	37.34	38.68	
40.03								
8.76 CFS	41.39	42.76	44.14	45.54	47.04	48.59	50.14	
51.78								
9.24 CFS	53.52	55.39	57.35	59.37	61.48	63.68	66.02	
68.52								
9.72 CFS	71.18	73.96	76.83	79.82	82.93	86.23	89.73	
93.40								
10.20 CFS	97	101	105	109	114	118	123	
128								
10.68 CFS	134	141	147	155	162	171	179	
189								
11.16 CFS	200	213	226	241	257	275	294	
319								
11.64 CFS	352	391	435	492	565	662	808	
1024								
12.12 CFS	1324	1581	1700	1718	1694	1684	1707	
1782								
12.60 CFS	1877	1961	2005	2003	1961	1894	1816	
1736								
13.08 CFS	1657	1577	1496	1419	1343	1273	1208	
1145								

13.56 CFS	1084	1026	970	917	868	825	786
753							
14.04 CFS	724	698	674	653	635	619	605
591							
14.52 CFS	578	564	550	537	524	511	499
486							
15.00 CFS	474	462	450	438	426	414	403
392							
15.48 CFS	382	371	360	348	335	323	311
300							
15.96 CFS	289	279	270	262	255	248	242
236							
16.44 CFS	231	226	221	217	213	210	207
204							
16.92 CFS	201	198	196	194	191	189	187
185							
17.40 CFS	183	181	179	177	175	173	171
169							
17.88 CFS	167	165	163	162	160	158	156
154							
18.36 CFS	153	151	149	148	147	145	144
143							
18.84 CFS	141	140	139	138	136	135	134
133							
19.32 CFS	133	132	131	130	130	129	128
127							
19.80 CFS	127	126	125	125	124	124	123
123							
20.28 CFS	122	122	121	120	119	119	119
118							
20.76 CFS	118	117	117	116	116	115	114
114							
21.24 CFS	113	113	113	112	112	111	111
110							
21.72 CFS	110	109	109	108	108	108	107
106							
22.20 CFS	106	105	105	105	104	104	103
103							
22.68 CFS	102	102	101	101	100	100	99
99							

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23.16 CFS	98.72	98.18	97.66	97.20	96.77	96.29	95.64
95.00							
23.64 CFS	94.58	94.34	94.06	93.55	92.89	92.34	92.37
91.93							
24.12 CFS	88.93	84.07	78.93	74.53	70.80	67.49	64.42
61.53							
24.60 CFS	58.77	56.07	53.42	50.80	48.20	45.63	43.11
40.66							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.64 WATERSHED INCHES; 5638 CFS-HRS; 465.9 ACRE-  
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 6  
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT					.0 hrs.		
RAINTABLE NUMBER 9, ARC 2							
MAIN TIME INCREMENT .060 HOURS							
ALTERNATE	1	STORM	2				
STRUCTURE 11	RESVOR	.09	1.39	382.15	12.47	51	566.7
XSECTION 7	ADDHYD	.17	1.31	---	12.44	85	500.0
XSECTION 8	REACH	.17	1.31	357.10	12.52	84	494.1
STRUCTURE 21	RESVOR	.07	1.91	374.07	13.56F	10F	142.9
STRUCTURE 22	RESVOR	.07	1.91	353.09	13.68F	10F	142.9
STRUCTURE 23	RESVOR	.32	1.40	337.25	12.61	106	331.3
XSECTION 16	REACH	.32	1.40	332.26	12.61	106	331.3
STRUCTURE 24	RESVOR	.03	2.45	347.01	12.59	10	333.3
XSECTION 20	ADDHYD	.05	2.19	---	12.15	44	880.0
XSECTION 21	ADDHYD	.41	1.52	---	12.19	172	419.5
XSECTION 23	REACH	.41	1.52	315.31	12.44	143	348.8
STRUCTURE 31	RESVOR	.05	1.55	362.31	12.46	28	560.0
STRUCTURE 1	RESVOR	.60	1.50	312.17	12.78	201	335.0
STRUCTURE 32	RESVOR	.01	2.01	379.28	13.56R	1R	100.0
STRUCTURE 33	RESVOR	.03	2.08	355.98	12.47	18	600.0
STRUCTURE 34	RESVOR	.04	2.06	---	12.48	18	450.0
STRUCTURE 35	RESVOR	.06	1.85	329.42	13.93T	8T	133.3
XSECTION 141	ADDHYD	.07	1.75	---	13.90T	8T	114.3
XSECTION 43	ADDHYD	.77	1.55	---	12.55	259	336.4
XSECTION 44	REACH	.77	1.55	289.87	12.80	248	322.1
STRUCTURE 2	RESVOR	.77	1.55	299.43	12.92	244	316.9
XSECTION 49	ADDHYD	.82	1.54	---	12.90	252	307.3
XSECTION 51	REACH	.93	1.52	284.03	12.99	274	294.6
XSECTION 60	ADDHYD	1.01	1.47	---	12.97	281	278.2
STRUCTURE 3	RESVOR	1.01	1.47	269.51	13.08	278	275.2
XSECTION 62	ADDHYD	1.02	1.46	---	13.08	280	274.5
XSECTION 63	REACH	1.02	1.46	249.25	13.29	272	266.7
STRUCTURE 61	RESVOR	.01	1.71	332.36	12.74	5	500.0

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE		RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE		
		AREA (SQ MI)				TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE		1	STORM	2				
STRUCTURE 62	RESVOR	.05		.83	290.42	12.43	12	240.0
STRUCTURE 63	RESVOR	.01		1.40	263.40	12.49	3	300.0
XSECTION 76	ADDHYD	1.28		1.33	---	13.23	298	232.8
XSECTION 77	REACH	1.28		1.33	228.66	13.30	298	232.8
XSECTION 84	RUNOFF	.12		.73	---	12.28	41	341.7
XSECTION 88	ADDHYD	1.55		1.25	---	13.33	318	205.2
RAINFALL OF		4.10 inches AND		24.00 hr	DURATION, BEGINS AT		.0 hrs.	
ALTERNATE		1	STORM	5				
STRUCTURE 11	RESVOR	.09		2.13	382.73	12.33	97	1077.8
XSECTION 7	ADDHYD	.17		2.02	---	12.38	161	947.1
XSECTION 8	REACH	.17		2.02	357.55	12.45	156	917.6
STRUCTURE 21	RESVOR	.07		2.74	375.57	12.90	30	428.6
STRUCTURE 22	RESVOR	.07		2.74	354.29	13.04	29	414.3
STRUCTURE 23	RESVOR	.32		2.12	339.31	12.68	148	462.5
XSECTION 16	REACH	.32		2.12	332.55	12.68	148	462.5
STRUCTURE 24	RESVOR	.03		3.33	347.70	12.64	12	400.0
XSECTION 20	ADDHYD	.05		3.04	---	12.15	62	1240.0
XSECTION 21	ADDHYD	.41		2.26	---	12.16	238	580.5
XSECTION 23	REACH	.41		2.26	315.56	12.34	201	490.2
STRUCTURE 31	RESVOR	.05		2.31	363.56	12.36	55	1100.0
STRUCTURE 1	RESVOR	.60		2.24	313.59	12.68	300	500.0
STRUCTURE 32	RESVOR	.01		2.77	379.83	12.63T	4T	400.0
STRUCTURE 33	RESVOR	.03		2.91	356.65	12.37	33	1100.0
STRUCTURE 34	RESVOR	.04		2.87	---	12.39	35	875.0
STRUCTURE 35	RESVOR	.06		2.61	330.48	12.99T	25T	416.7
XSECTION 141	ADDHYD	.07		2.50	---	12.99T	25T	357.1
XSECTION 43	ADDHYD	.77		2.29	---	12.50	389	505.2
XSECTION 44	REACH	.77		2.29	290.19	12.71	377	489.6

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

ALTERNATE		1	STORM	5				
STRUCTURE	2	RESVOR	.77	2.29	301.07	12.85	370	480.5
XSECTION	49	ADDHYD	.82	2.28	---	12.83	382	465.9
XSECTION	51	REACH	.93	2.26	284.56	12.86	424	455.9
XSECTION	60	ADDHYD	1.01	2.19	---	12.83	437	432.7
STRUCTURE	3	RESVOR	1.01	2.19	271.11	12.94	433	428.7
XSECTION	62	ADDHYD	1.02	2.18	---	12.94	436	427.5
XSECTION	63	REACH	1.02	2.18	249.57	13.13	428	419.6
STRUCTURE	61	RESVOR	.01	2.50	333.50	12.82	6	600.0
STRUCTURE	62	RESVOR	.05	1.41	292.31	12.54	16	320.0
STRUCTURE	63	RESVOR	.01	2.13	265.07	12.59	4	400.0
XSECTION	76	ADDHYD	1.28	2.02	---	13.08	480	375.0
XSECTION	77	REACH	1.28	2.02	229.27	13.14	480	375.0
XSECTION	84	RUNOFF	.12	1.28	---	12.26	78	650.0
XSECTION	88	ADDHYD	1.55	1.92	---	13.09	518	334.2

RAINFALL OF 4.91 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE		1	STORM	10				
STRUCTURE	11	RESVOR	.09	2.81	383.02	12.34	121	1344.4
XSECTION	7	ADDHYD	.17	2.70	---	12.36	213	1252.9
XSECTION	8	REACH	.17	2.70	357.82	12.43	212	1247.1
STRUCTURE	21	RESVOR	.07	3.49	376.27	12.68	61	871.4
STRUCTURE	22	RESVOR	.07	3.49	355.97	12.81	57	814.3
STRUCTURE	23	RESVOR	.32	2.79	341.39	12.83	182	568.8
XSECTION	16	REACH	.32	2.79	332.78	12.83	182	568.8
STRUCTURE	24	RESVOR	.03	4.12	348.34	12.67	13	433.3
XSECTION	20	ADDHYD	.05	3.82	---	12.14	77	1540.0
XSECTION	21	ADDHYD	.41	2.96	---	12.17	288	702.4
XSECTION	23	REACH	.41	2.95	315.73	12.31	247	602.4
STRUCTURE	31	RESVOR	.05	3.02	363.94	12.32	78	1560.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE	1	STORM	10				
STRUCTURE 1	RESVOR	.60	2.93	314.82	12.63	384	640.0
STRUCTURE 32	RESVOR	.01	3.48	380.16	12.40	9	900.0
STRUCTURE 33	RESVOR	.03	3.67	357.05	12.32	49	1633.3
STRUCTURE 34	RESVOR	.04	3.62	---	12.35	54	1350.0
STRUCTURE 35	RESVOR	.06	3.33	330.85	12.61	53	883.3
XSECTION 141	ADDHYD	.07	3.20	---	12.61	54	771.4
XSECTION 43	ADDHYD	.77	2.99	---	12.49	543	705.2
XSECTION 44	REACH	.77	2.99	290.50	12.65	528	685.7
STRUCTURE 2	RESVOR	.77	2.98	302.28	12.68	527	684.4
XSECTION 49	ADDHYD	.82	2.98	---	12.66	549	669.5
XSECTION 51	REACH	.93	2.96	285.10	12.75	612	658.1
XSECTION 60	ADDHYD	1.01	2.88	---	12.74	633	626.7
STRUCTURE 3	RESVOR	1.01	2.87	272.73	12.85	617	610.9
XSECTION 62	ADDHYD	1.02	2.86	---	12.85	621	608.8
XSECTION 63	REACH	1.02	2.86	249.88	13.00	606	594.1
STRUCTURE 61	RESVOR	.01	3.24	334.33	12.74	8	800.0
STRUCTURE 62	RESVOR	.05	1.98	293.76	12.62	18	360.0
STRUCTURE 63	RESVOR	.01	2.82	265.90	12.33	10	1000.0
XSECTION 76	ADDHYD	1.28	2.68	---	12.97	687	536.7
XSECTION 77	REACH	1.28	2.68	229.77	13.03	687	536.7
XSECTION 84	RUNOFF	.12	1.83	---	12.25	116	966.7
XSECTION 88	ADDHYD	1.55	2.56	---	13.00	743	479.4

RAINFALL OF 6.14 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE	1	STORM	25				
STRUCTURE 11	RESVOR	.09	3.89	383.65	12.33	175	1944.4
XSECTION 7	ADDHYD	.17	3.77	---	12.35	307	1805.9
XSECTION 8	REACH	.17	3.77	358.20	12.42	306	1800.0
STRUCTURE 21	RESVOR	.07	4.61	377.05	12.54	109	1557.1

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL		DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE		
	OPERATION					TIME (HR)	RATE (CFS)	RATE (CSM)
	ALTERNATE	1	STORM	25				
STRUCTURE 22	RESVOR		.07	4.60	358.68	12.69	100	1428.6
STRUCTURE 23	RESVOR		.32	3.86	344.97	12.88	235	734.4
XSECTION 16	REACH		.32	3.86	333.13	12.88	235	734.4
STRUCTURE 24	RESVOR		.03	5.32	349.33	12.71	16	533.3
XSECTION 20	ADDHYD		.05	5.00	---	12.14	99	1980.0
XSECTION 21	ADDHYD		.41	4.04	---	12.16	357	870.7
XSECTION 23	REACH		.41	4.04	315.93	12.29	313	763.4
STRUCTURE 31	RESVOR		.05	4.16	364.70	12.32	107	2140.0
STRUCTURE 1	RESVOR		.60	4.02	316.48	12.56	535	891.7
STRUCTURE 32	RESVOR		.01	4.57	380.46	12.27	21	2100.0
STRUCTURE 33	RESVOR		.03	4.86	357.38	12.28	71	2366.7
STRUCTURE 34	RESVOR		.04	4.79	---	12.28	91	2275.0
STRUCTURE 35	RESVOR		.06	4.44	331.53	12.47	86	1433.3
XSECTION 141	ADDHYD		.07	4.29	---	12.45	88	1257.1
XSECTION 43	ADDHYD		.77	4.08	---	12.48	779	1011.7
XSECTION 44	REACH		.77	4.08	290.91	12.59	760	987.0
STRUCTURE 2	RESVOR		.77	4.08	303.01	12.62	758	984.4
XSECTION 49	ADDHYD		.82	4.07	---	12.61	791	964.6
XSECTION 51	REACH		.93	4.05	285.79	12.66	906	974.2
XSECTION 60	ADDHYD		1.01	3.95	---	12.64	942	932.7
STRUCTURE 3	RESVOR		1.01	3.95	275.11	12.76	912	903.0
XSECTION 62	ADDHYD		1.02	3.93	---	12.75	920	902.0
XSECTION 63	REACH		1.02	3.93	250.30	12.89	901	883.3
STRUCTURE 61	RESVOR		.01	4.38	334.86	12.62	14	1400.0
STRUCTURE 62	RESVOR		.05	2.94	295.13	12.47	37	740.0
STRUCTURE 63	RESVOR		.01	3.90	266.77	12.29	16	1600.0
XSECTION 76	ADDHYD		1.28	3.72	---	12.84	1032	806.3
XSECTION 77	REACH		1.28	3.72	230.42	12.91	1031	805.5
XSECTION 84	RUNOFF		.12	2.74	---	12.25	176	1466.7
XSECTION 88	ADDHYD		1.55	3.59	---	12.95	1116	720.0

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 05/22/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist; GHCHUG  
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SUMMARY TABLE 1

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 SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)
RAINFALL OF 7.23 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
ALTERNATE	1	STORM	50				
STRUCTURE 11	RESVOR	.09	4.89	384.18	12.32	219	2433.3
XSECTION 7	ADDHYD	.17	4.75	---	12.35	387	2276.5
XSECTION 8	REACH	.17	4.75	358.49	12.41	387	2276.5
STRUCTURE 21	RESVOR	.07	5.58	377.76	12.51	140	2000.0
STRUCTURE 22	RESVOR	.07	5.57	359.61	12.80	112	1600.0
STRUCTURE 23	RESVOR	.32	4.85	346.87	12.73	368	1150.0
XSECTION 16	REACH	.32	4.85	333.90	12.73	368	1150.0
STRUCTURE 24	RESVOR	.03	6.38	350.21	12.73	18	600.0
XSECTION 20	ADDHYD	.05	6.06	---	12.14	119	2380.0
XSECTION 21	ADDHYD	.41	5.04	---	12.72	424	1034.1
XSECTION 23	REACH	.41	5.02	316.19	12.85	406	990.2
STRUCTURE 31	RESVOR	.05	5.15	365.04	12.30	132	2640.0
STRUCTURE 1	RESVOR	.60	5.01	317.26	12.47	715	1191.7
STRUCTURE 32	RESVOR	.01	5.55	380.63	12.24	29	2900.0
STRUCTURE 33	RESVOR	.03	5.93	357.61	12.27	85	2833.3
STRUCTURE 34	RESVOR	.04	5.84	---	12.26	114	2850.0
STRUCTURE 35	RESVOR	.06	5.43	332.51	12.47	99	1650.0
XSECTION 141	ADDHYD	.07	5.26	---	12.45	102	1457.1
XSECTION 43	ADDHYD	.77	5.08	---	12.43	1052	1366.2
XSECTION 44	REACH	.77	5.07	291.27	12.53	1009	1310.4
STRUCTURE 2	RESVOR	.77	5.07	303.62	12.56	1007	1307.8
XSECTION 49	ADDHYD	.82	5.06	---	12.55	1055	1286.6
XSECTION 51	REACH	.93	5.04	286.36	12.61	1207	1297.8
XSECTION 60	ADDHYD	1.01	4.93	---	12.60	1258	1245.5

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL		DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE		
	ID	OPERATION				TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE		1	STORM	50				
STRUCTURE 3	RESVOR		1.01	4.93	276.93	12.68	1230	1217.8
XSECTION 62	ADDHYD		1.02	4.91	---	12.68	1242	1217.6
XSECTION 63	REACH		1.02	4.90	250.67	12.79	1203	1179.4
STRUCTURE 61	RESVOR		.01	5.41	335.25	12.57	19	1900.0
STRUCTURE 62	RESVOR		.05	3.83	296.06	12.44	52	1040.0
STRUCTURE 63	RESVOR		.01	4.90	267.40	12.24	27	2700.0
XSECTION 76	ADDHYD		1.28	4.68	---	12.77	1403	1096.1
XSECTION 77	REACH		1.28	4.68	230.92	12.83	1402	1095.3
XSECTION 84	RUNOFF		.12	3.61	---	12.25	236	1966.7
XSECTION 88	ADDHYD		1.55	4.54	---	12.89	1515	977.4

RAINFALL OF 8.47 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE		1	STORM	99				
STRUCTURE 11	RESVOR		.09	6.04	384.78	12.32	269	2988.9
XSECTION 7	ADDHYD		.17	5.90	---	12.34	479	2817.6
XSECTION 8	REACH		.17	5.90	358.76	12.40	479	2817.6
STRUCTURE 21	RESVOR		.07	6.69	378.71	12.54	154	2200.0
STRUCTURE 22	RESVOR		.07	6.68	360.78	12.91	127	1814.3
STRUCTURE 23	RESVOR		.32	5.96	347.71	12.59	552	1725.0
XSECTION 16	REACH		.32	5.96	334.88	12.59	552	1725.0
STRUCTURE 24	RESVOR		.03	7.60	351.23	12.75	20	666.7
XSECTION 20	ADDHYD		.05	7.27	---	12.14	141	2820.0
XSECTION 21	ADDHYD		.41	6.17	---	12.57	637	1553.7
XSECTION 23	REACH		.41	6.17	316.64	12.70	601	1465.9
STRUCTURE 31	RESVOR		.05	6.35	365.43	12.30	161	3220.0
STRUCTURE 1	RESVOR		.60	6.15	317.91	12.43	906	1510.0
STRUCTURE 32	RESVOR		.01	6.68	380.81	12.23	33	3300.0
STRUCTURE 33	RESVOR		.03	7.15	357.96	12.29	96	3200.0
STRUCTURE 34	RESVOR		.04	7.04	---	12.27	129	3225.0

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SUMMARY TABLE 1

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 SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL		DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE		
	OPERATION					TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE		1	STORM	99				
STRUCTURE 35	RESVOR		.06	6.57	333.51	12.50	109	1816.7
XSECTION 141	ADDHYD		.07	6.39	---	12.48	113	1614.3
XSECTION 43	ADDHYD		.77	6.23	---	12.38	1339	1739.0
XSECTION 44	REACH		.77	6.22	291.63	12.49	1285	1668.8
STRUCTURE 2	RESVOR		.77	6.21	304.13	12.51	1278	1659.7
XSECTION 49	ADDHYD		.82	6.21	---	12.50	1348	1643.9
XSECTION 51	REACH		.93	6.19	286.94	12.57	1554	1671.0
XSECTION 60	ADDHYD		1.01	6.07	---	12.56	1625	1608.9
STRUCTURE 3	RESVOR		1.01	6.06	278.11	12.61	1602	1586.1
XSECTION 62	ADDHYD		1.02	6.04	---	12.61	1620	1588.2
XSECTION 63	REACH		1.02	6.04	251.05	12.73	1575	1544.1
STRUCTURE 61	RESVOR		.01	6.61	335.67	12.55	25	2500.0
STRUCTURE 62	RESVOR		.05	4.89	297.03	12.42	70	1400.0
STRUCTURE 63	RESVOR		.01	6.07	267.78	12.19	44	4400.0
XSECTION 76	ADDHYD		1.28	5.80	---	12.70	1836	1434.4
XSECTION 77	REACH		1.28	5.80	231.38	12.70	1836	1434.4
XSECTION 84	RUNOFF		.12	4.65	---	12.25	302	2516.7
XSECTION 88	ADDHYD		1.55	5.64	---	12.75	2010	1296.8

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SUMMARY TABLE 2

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 MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION					ROUTING PARAMETERS					
XSEC ID	REACH LENGTH COEFF	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		PEAK RATIO Q/I	ATT- KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)		

BASEFLOW IS .0 CFS

ALTERNATE	1	STORM	2						
2	1170	24	12.3	23	12.4	1.55	1.37	.029	.952
.58									
5	797	51	12.5	50	12.5	2.26	1.19	.019	.989
.75?									
8	1221	85	12.4	84	12.5	1.15	1.48	.009	.990
.76?									
16	920	106	12.6	106	12.6	3.61	1.49	.001	1.000
1.00?									
23	1379	171	12.2	143	12.4	1.20	1.14	.052	.839
.32									
27	1021	84	12.3	77	12.4	1.10	1.18	.061	.910
.41									
32	1603	76	12.2	68	12.4	1.28	1.33	.055	.899
.48									
34	583	1	13.6	1	13.7	1.14	1.62	.001	.998
.49									
37	934	18	12.5	18	12.5	2.31	1.55	.002	.999
.92?									
44	1428	258	12.5	248	12.8	.66	1.25	.030	.959
.34									
51	1275	279	12.8	274	13.0	.78	1.24	.021	.983
.41									
53	652	0	.0	0	.0	.000	.00	.000	.000
.00									
63	1959	280	13.1	272	13.3	1.20	1.17	.037	.970
.29									
65	1283	5	12.7	5	12.8	2.47	1.43	.012	.996
.53									
70	2166	58	12.2	52	12.3	1.72	1.40	.032	.899
.49									
72	1081	3	12.5	3	12.7	1.50	1.61	.007	.994
.49									
77	884	298	13.2	298	13.3	1.75	1.25	.005	1.000
.85?									
80	1296	301	13.3	301	13.4	1.55	1.45	.002	1.000
.97?									
ALTERNATE	1	STORM	5						
2	1170	36	12.3	34	12.4	1.72	1.27	.038	.945
.55									
5	797	94	12.3	90	12.4	2.08	1.23	.018	.965
.83?									
8	1221	159	12.4	155	12.5	1.22	1.46	.010	.971
.84?									
16	920	148	12.7	148	12.7	3.61	1.49	.001	1.000
1.00?									
23	1379	237	12.2	201	12.4	.98	1.19	.038	.846
.36									
27	1021	137	12.3	123	12.4	1.07	1.18	.060	.901
.44									
32	1603	107	12.2	98	12.3	1.33	1.32	.050	.915
.51									
34	583	4	12.6	4	12.7	1.14	1.62	.002	.994

.71?

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.

QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;

ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION

ROUTING PARAMETERS

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
	ALTERNATE	1	STORM	5							
37	934		35	12.4	35	12.4	2.31	1.55	.003	1.000	
	1.00?										
44	1428		388	12.5	377	12.7	.46	1.34	.020	.970	
	.41										
51	1275		429	12.7	424	12.8	.60	1.30	.015	.990	
	.47										
53	652		0	13.3	0	13.4	2.05	1.40	.007	.956	
	.32										
63	1959		436	13.0	428	13.1	.79	1.27	.025	.982	
	.35										
65	1283		6	12.8	6	13.0	2.47	1.43	.009	.997	
	.55										
70	2166		94	12.2	74	12.4	1.68	1.19	.086	.790	
	.32										
72	1081		4	12.6	4	12.7	1.50	1.61	.004	.998	
	.52										
77	884		480	13.1	480	13.1	1.92	1.22	.005	1.000	
	.87?										
80	1296		487	13.1	487	13.1	1.60	1.44	.002	1.000	
	1.00?										
	ALTERNATE	1	STORM	10							
2	1170		48	12.3	45	12.4	1.90	1.19	.047	.937	
	.52										
5	797		121	12.4	120	12.4	2.00	1.25	.016	.996	
	.87?										
8	1221		213	12.4	212	12.4	1.26	1.44	.009	.993	
	.88?										
16	920		182	12.8	182	12.8	3.61	1.49	.001	1.000	
	1.00?										
23	1379		287	12.2	247	12.3	.88	1.22	.030	.860	

.38									
27	1021	191	12.3	174	12.4	.73	1.29	.043	.911
.52									
32	1603	136	12.2	125	12.3	1.35	1.31	.047	.925
.52									
34	583	9	12.4	9	12.5	1.14	1.62	.004	.994
.86?									
37	934	54	12.4	54	12.4	2.32	1.54	.003	1.000
1.00?									
44	1428	543	12.5	528	12.7	.37	1.39	.016	.972
.46									
51	1275	633	12.6	611	12.8	.51	1.34	.013	.966
.52									
53	652	0	12.5	0	12.7	2.05	1.40	.010	.932
.47									
63	1959	621	12.8	606	13.0	.60	1.34	.019	.975
.40									
65	1283	8	12.7	8	12.8	2.46	1.41	.010	.978
.59									
70	2166	127	12.2	88	12.4	1.90	1.05	.154	.692
.22									

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.

QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;

ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION					ROUTING PARAMETERS						
XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
ALTERNATE		1	STORM	10							
72	1081		9	12.4	9	12.4	1.48	1.55	.008	.934	
.61											
77	884		687	13.0	686	13.0	1.91	1.22	.005	.999	
.91?											
80	1296		697	13.0	697	13.0	1.77	1.39	.002	1.000	
1.00?											
ALTERNATE		1	STORM	25							
2	1170		65	12.3	65	12.4	.29	2.00	.003	.995	
.89?											

5	797	173	12.3	172	12.4	1.91	1.27	.014	.995
.92?									
8	1221	306	12.4	306	12.4	1.28	1.44	.009	.997
.93?									
16	920	235	12.9	235	12.9	3.63	1.49	.000	1.000
1.00?									
23	1379	355	12.2	312	12.3	.76	1.26	.022	.879
.41									
27	1021	260	12.3	244	12.4	.48	1.40	.027	.939
.60									
32	1603	180	12.2	168	12.3	1.37	1.30	.043	.930
.55									
34	583	20	12.2	20	12.2	1.14	1.62	.005	1.000
1.00?									
37	934	91	12.3	91	12.3	2.39	1.52	.004	1.000
1.00?									
44	1428	779	12.5	760	12.6	.30	1.43	.013	.976
.51									
51	1275	918	12.5	906	12.7	.46	1.36	.012	.986
.57									
53	652	2	12.2	2	12.3	2.05	1.40	.014	.917
.63									
63	1959	919	12.8	901	12.9	.47	1.39	.015	.981
.46									
65	1283	14	12.6	14	12.7	2.48	1.39	.012	.979
.64									
70	2166	181	12.2	128	12.4	1.83	1.06	.150	.709
.22									
72	1081	16	12.3	15	12.4	1.53	1.49	.011	.986
.66									
77	884	1032	12.8	1031	12.9	1.95	1.22	.005	.999
.94?									
80	1296	1048	12.9	1046	13.0	3.22	1.18	.007	.999
.88?									

ALTERNATE 1 STORM 50

2	1170	81	12.3	81	12.4	.29	2.00	.003	.998
.94?									
5	797	217	12.3	216	12.4	1.85	1.28	.012	.995
.95?									

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED. QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0; ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION

ROUTING PARAMETERS



XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT- KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
ALTERNATE		1	STORM	50							
8	1221		387	12.4	386	12.4	1.29	1.44	.008	.999	
	.96?										
16	920		367	12.7	367	12.7	3.85	1.46	.001	1.000	
	1.00?										
23	1379		424	12.7	406	12.8	.70	1.27	.018	.957	
	.43										
27	1021		323	12.3	312	12.4	.40	1.45	.021	.967	
	.65										
32	1603		216	12.2	204	12.3	1.38	1.30	.040	.944	
	.56										
34	583		29	12.2	29	12.2	1.14	1.61	.006	1.000	
	1.00?										
37	934		113	12.2	113	12.2	2.43	1.51	.004	1.000	
	1.00?										
44	1428		1052	12.4	1009	12.5	.28	1.45	.012	.959	
	.56										
51	1275		1226	12.5	1206	12.6	.44	1.37	.011	.984	
	.61										
53	652		5	12.2	4	12.2	2.05	1.40	.017	.927	
	.75?										
63	1959		1241	12.7	1202	12.8	.41	1.42	.014	.969	
	.50										
65	1283		19	12.6	19	12.7	2.49	1.38	.012	.986	
	.67?										
70	2166		231	12.2	171	12.5	1.69	1.08	.138	.742	
	.23										
72	1081		27	12.2	25	12.3	1.66	1.42	.017	.927	
	.70?										
77	884		1402	12.8	1402	12.8	1.90	1.22	.005	1.000	
	.97?										
80	1296		1424	12.8	1420	12.9	4.16	1.12	.010	.998	
	.84?										
ALTERNATE		1	STORM	99							
2	1170		99	12.3	99	12.4	.27	2.00	.002	.999	
	.97?										
5	797		267	12.3	267	12.4	1.81	1.28	.011	.998	
	.97?										
8	1221		478	12.4	478	12.4	1.30	1.43	.007	1.000	
	.99?										
16	920		552	12.6	552	12.6	4.18	1.43	.001	1.000	
	1.00?										
23	1379		634	12.6	600	12.7	.61	1.31	.019	.945	
	.48										
27	1021		392	12.3	384	12.4	.35	1.48	.017	.980	
	.70?										
32	1603		260	12.2	244	12.3	1.50	1.27	.043	.941	
	.55										
34	583		33	12.2	33	12.2	1.15	1.61	.005	1.000	

1.00?  
 1  
 TR20 ----- SCS  
 -  
 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/22/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist; GHCHUG  
 2.04TEST  
 12:22:51 SUMMARY, JOB NO. 1 PAGE  
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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;  
 LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION				ROUTING PARAMETERS							
XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	INFLOW PEAK (CFS)	TIME (HR)	OUTFLOW PEAK (CFS)	TIME (HR)	Q-A EQ. COEFF	POWER	LENGTH FACTOR (k*)	PEAK RATIO Q/I	ATT- KIN (C)
		ALTERNATE 1	STORM 99				(X)	(M)		(Q*)	
37	934		127	12.3	127	12.3	2.45	1.51	.003	1.000	
44	1428		1331	12.4	1283	12.5	.26	1.46	.011	.964	
51	1275		1584	12.5	1547	12.5	.43	1.38	.011	.976	
53	652		8	12.2	8	12.2	2.05	1.40	.017	.971	
63	1959		1618	12.6	1574	12.7	.38	1.43	.013	.973	
65	1283		25	12.5	24	12.7	2.51	1.37	.012	.982	
70	2166		304	12.2	230	12.4	1.33	1.14	.117	.755	
72	1081		44	12.2	39	12.2	1.69	1.41	.021	.888	
77	884		1834	12.7	1834	12.7	1.81	1.23	.005	1.000	
80	1296		1866	12.7	1863	12.8	4.34	1.11	.011	.999	

1  
 TR20 ----- SCS  
 -  
 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/22/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist; GHCHUG  
 2.04TEST  
 12:22:51 SUMMARY, JOB NO. 1 PAGE  
 227

SUMMARY TABLE 3

-----  
 STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
STRUCTURE 63	.01					
----- ALTERNATE 27	1	3	4	10	16	
STRUCTURE 62	.05					
----- ALTERNATE 52	1	12	16	18	37	
STRUCTURE 61	.01					
----- ALTERNATE 19	1	5	6	8	14	
STRUCTURE 35	.06					
----- ALTERNATE 99	1	8	25	53	86	
STRUCTURE 34	.04					
----- ALTERNATE 114	1	18	35	54	91	
STRUCTURE 33	.03					
----- ALTERNATE 85	1	18	33	49	71	
STRUCTURE 32	.01					
----- ALTERNATE 29	1	1?	4	9	21	
STRUCTURE 31	.05					
----- ALTERNATE 132	1	28	55	78	107	
STRUCTURE 24	.03					
----- ALTERNATE 18	1	10	12	13	16	
STRUCTURE 23	.32					
----- ALTERNATE 368	1	106	148	182	235	
STRUCTURE 22	.07					
----- ALTERNATE 112	1	10	29	57	100	

STRUCTURE 21 .07

-----  
 ALTERNATE 1 10 30 61 109  
 140

STRUCTURE 11 .09

-----  
 ALTERNATE 1 51 97 121 175  
 219

STRUCTURE 3 1.01

1

TR20 ----- SCS

-----  
 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/22/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist; GHCHUG  
 2.04TEST  
 12:22:51 SUMMARY, JOB NO. 1 PAGE  
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SUMMARY TABLE 3

-----  
 STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
STRUCTURE 3	1.01					
----- ALTERNATE 1 1230	1	278	433	617	912	
STRUCTURE 2	.77					
----- ALTERNATE 1 1007	1	244	370	527	758	
STRUCTURE 1	.60					
----- ALTERNATE 1 715	1	201	300	384	535	
XSECTION 7	.17					
----- ALTERNATE 1 387	1	85	161	213	307	
XSECTION 8	.17					
----- ALTERNATE 1 387	1	84	156	212	306	
XSECTION 16	.32					
----- ALTERNATE 1 368	1	106	148	182	235	
XSECTION 20	.05					

ALTERNATE 119	1		44	62	77	99
XSECTION	21	.41				
ALTERNATE 424	1		172	238	288	357
XSECTION	23	.41				
ALTERNATE 406	1		143	201	247	313
XSECTION	43	.77				
ALTERNATE 1052	1		259	389	543	779
XSECTION	44	.77				
ALTERNATE 1009	1		248	377	528	760
XSECTION	49	.82				
ALTERNATE 1055	1		252	382	549	791
XSECTION	51	.93				
ALTERNATE 1207	1		274	424	612	906
XSECTION	60	1.01				
ALTERNATE 1258	1		281	437	633	942

1

TR20 ----- SCS  
-

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION  
05/22/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist; GHCHUG  
2.04TEST  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
XSECTION	62	1.02				
ALTERNATE 1242	1		280	436	621	920

XSECTION	63	1.02				
ALTERNATE	1		272	428	606	901
	1203					
XSECTION	76	1.28				
ALTERNATE	1		298	480	687	1032
	1403					
XSECTION	77	1.28				
ALTERNATE	1		298	480	687	1031
	1402					
XSECTION	84	.12				
ALTERNATE	1		41	78	116	176
	236					
XSECTION	88	1.55				
ALTERNATE	1		318	518	743	1116
	1515					
XSECTION	141	.07				
ALTERNATE	1		8	25	54	88
	102					

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
STRUCTURE 63	.01	
ALTERNATE 1		44
STRUCTURE 62	.05	
ALTERNATE 1		70
STRUCTURE 61	.01	
ALTERNATE 1		25
STRUCTURE 35	.06	
ALTERNATE 1		109
STRUCTURE 34	.04	
ALTERNATE 1		129
STRUCTURE 33	.03	
ALTERNATE 1		96

TR20 ----- SCS  
 -  
 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/22/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist; GHCHUG  
 2.04TEST  
 12:22:51 SUMMARY, JOB NO. 1 PAGE  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
STRUCTURE 32	.01	
-----		
ALTERNATE 1		33
STRUCTURE 31	.05	
-----		
ALTERNATE 1		161
STRUCTURE 24	.03	
-----		
ALTERNATE 1		20
STRUCTURE 23	.32	
-----		
ALTERNATE 1		552
STRUCTURE 22	.07	
-----		
ALTERNATE 1		127
STRUCTURE 21	.07	
-----		
ALTERNATE 1		154
STRUCTURE 11	.09	
-----		
ALTERNATE 1		269
STRUCTURE 3	1.01	
-----		
ALTERNATE 1		1602
STRUCTURE 2	.77	
-----		
ALTERNATE 1		1278
STRUCTURE 1	.60	
-----		
ALTERNATE 1		906
XSECTION 7	.17	
-----		
ALTERNATE 1		479

XSECTION	8	.17	
ALTERNATE	1		479
XSECTION	16	.32	
ALTERNATE	1		552

1  
 TR20 ----- SCS  
 -  
 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/22/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist; GHCHUG  
 2.04TEST  
 12:22:51 SUMMARY, JOB NO. 1 PAGE  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
XSECTION 20	.05	
ALTERNATE 1		141
XSECTION 21	.41	
ALTERNATE 1		637
XSECTION 23	.41	
ALTERNATE 1		601
XSECTION 43	.77	
ALTERNATE 1		1339
XSECTION 44	.77	
ALTERNATE 1		1285
XSECTION 49	.82	
ALTERNATE 1		1348
XSECTION 51	.93	
ALTERNATE 1		1554
XSECTION 60	1.01	
ALTERNATE 1		1625
XSECTION 62	1.02	
ALTERNATE 1		1620



XSECTION	63	1.02	
ALTERNATE	1		1575
XSECTION	76	1.28	
ALTERNATE	1		1836
XSECTION	77	1.28	
ALTERNATE	1		1836
XSECTION	84	.12	
ALTERNATE	1		302

1  
 TR20 ----- SCS  
 -  
 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/22/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist; GHCHUG  
 2.04TEST  
 12:22:51 SUMMARY, JOB NO. 1 PAGE  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
XSECTION 88	1.55	
ALTERNATE 1		2010
XSECTION 141	.07	
ALTERNATE 1		113

1  
 TR20 ----- SCS  
 -  
 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/22/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist; GHCHUG  
 2.04TEST

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST  
FILES

INPUT = NCOM1.DAT , GIVEN DATA FILE  
OUTPUT = NCOM1.OUT , DATED  
05/22/\*\*,12:22:51

FILES GENERATED - DATED 05/22/\*\*,12:22:51

NONE!

TOTAL NUMBER OF WARNINGS = 65, MESSAGES = 34

\*\*\* TR-20 RUN COMPLETED \*\*\*

1

\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20  
 HYDROLOGY\*\*\*\*\*

JOB TR-20				NOPLOTS
TITLE	Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,			
TITLE	CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist;H1&H8UG;GHCHUG			
2 XSECTN	002	1.0	389.50	
8		389.00	0.00	0.00
8		389.25	1.65	1.06
8		389.50	6.25	2.75
8		389.75	14.40	5.06
8		390.00	26.75	8.00
8		390.25	45.54	14.33
8		390.50	68.67	15.00
8		390.75	96.11	18.88
8		391.00	127.89	23.00
8		391.25	164.08	27.38
8		391.50	204.77	32.00
8		391.75	250.06	36.88
9 ENDTBL				
2 XSECTN	005	1.0	367.00	
8		366.00	0.00	0.00
8		366.50	3.51	1.5
8		367.00	13.55	4.00
8		367.50	30.53	9.00
8		367.75	47.87	13.00
8		368.00	72.23	18.00
8		368.25	104.79	23.98
8		368.50	146.13	30.94
8		368.75	197.14	38.86
8		369.00	258.63	47.75
8		369.25	331.41	57.61
8		369.50	416.25	68.44
9 ENDTBL				
3 STRUCT	11			
8		380.00	0.00	0.00
8		381.00	2.70	0.53
8		382.20	53.00	1.16
8		383.80	186.80	1.40
9 ENDTBL				
2 XSECTN	008	1.0	330.00	
8		356.00	0.00	0.00
8		356.50	20.21	6.94
8		357.00	68.51	15.75
8		357.50	144.11	26.44
8		358.00	248.93	39.00
8		358.50	389.07	53.25
8		359.00	561.31	69.00
8		359.50	767.14	86.25
8		360.00	1008.16	105.00
8		361.00	1375.68	147.50
8		361.50	1604.19	171.38
9 ENDTBL				

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

2	XSECTN	016	1.0	333.08		
8			331.08	0.00	0.00	
8			332.08	80.21	8.00	
8			333.08	225.50	16.00	
8			333.58	310.09	20.00	
8			334.08	399.94	24.00	
8			334.58	493.86	28.00	
8			335.08	590.97	32.00	
8			335.58	690.67	36.00	
8			336.08	792.47	40.00	
8			336.58	896.02	44.00	
9	ENDTBL					
2	XSECTN	023	1.0	314.40		
8			313.22	0.00	0.00	
8			313.51	1.10	0.89	
8			313.81	3.51	1.84	
8			314.10	16.22	5.61	
8			314.40	34.66	9.74	
8			314.68	48.28	24.71	
8			314.96	79.66	42.09	
8			315.24	126.64	61.87	
8			315.52	189.07	84.06	
8			315.80	267.27	108.64	
8			316.08	361.75	135.63	
8			316.36	473.14	165.02	
8			316.64	602.11	196.81	
8			316.92	749.37	231.00	
8			317.20	878.70	277.25	
8			317.48	1103.89	329.14	
8			317.76	1358.10	382.70	
8			318.04	1640.58	437.94	
8			318.32	1950.87	494.86	
8			318.60	2288.69	553.45	
9	ENDTBL					
3	STRUCT	21				
8			364.00	0.00	0.00	
8			366.00	0.30	0.55	
8			368.00	0.50	1.31	
8			369.00	3.20	1.80	
8			370.00	5.20	2.29	
8			372.00	7.80	3.48	
8			374.00	9.60	5.00	
8			375.00	10.40	5.86	
8			376.00	45.30	6.79	
8			376.50	74.10	7.31	
8			377.00	106.80	7.83	
8			378.00	149.80	8.90	
8			379.00	155.60	10.06	
8			380.00	162.00	11.29	
9	ENDTBL					

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

3	STRUCT	22				
8			352.50	0.00	0.00	
8			358.65	100.00	0.91	
8			361.76	140.00	3.28	
8			363.64	160.00	5.47	
8			366.18	180.00	9.58	
8			368.71	200.00	14.77	

8			370.61	250.00	19.31
9	ENDTBL				
3	STRUCT	23			
8			333.08	0.00	0.00
8			336.97	100.00	0.03
8			338.11	125.00	0.68
8			339.41	150.00	2.19
8			342.51	200.00	6.68
8			346.05	250.00	12.84
8			346.50	300.00	13.70
8			347.05	400.00	14.76
8			347.50	500.00	15.64
8			347.91	600.00	16.47
8			348.31	700.00	17.30
8			349.01	850.00	18.76
8			350.42	900.00	21.84
8			352.03	1112.97	25.53
9	ENDTBL				
2	XSECTN	027	1.0	317.00	
8			316.00	0.00	0.00
8			316.50	2.68	2.59
8			317.00	10.37	6.88
8			317.50	24.26	12.84
8			318.00	45.55	20.50
8			318.50	70.64	34.75
8			319.00	137.01	60.50
8			319.25	200.57	76.25
8			319.50	273.06	92.00
8			319.75	353.76	107.75
8			320.00	442.13	123.50
8			320.50	640.03	155.00
8			321.00	863.72	186.50
9	ENDTBL				
2	XSECTN	032	1.0	313.00	
8			310.00	0.00	0.00
8			311.00	12.25	5.50
8			312.00	52.16	16.00
8			312.50	83.38	23.13
8			313.00	123.94	31.50
8			313.25	148.02	36.16
8			313.50	174.79	41.13
8			313.75	204.34	46.41
8			314.00	236.81	52.00

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			314.50	278.65	65.75
8			315.00	353.72	84.00
9	ENDTBL				
2	XSECTN	034	1.0	338.50	
8			338.00	0.00	0.00
8			338.10	4.87	2.46
8			338.25	22.73	6.38
8			338.50	73.99	13.53
8			338.75	149.34	21.45
8			339.00	247.95	30.13
8			339.50	515.65	49.78
9	ENDTBL				
2	XSECTN	037	1.0	331.00	
8			330.00	0.00	0.00

8			330.25	14.29	3.25
8			330.50	46.85	7.00
8			330.75	95.34	11.25
8			331.00	159.64	16.00
8			331.25	240.13	21.25
8			331.50	337.44	27.00
8			331.75	452.26	33.25
8			332.00	585.36	40.00
8			332.50	875.33	55.81
8			333.00	1272.05	75.25
9	ENDTBL				
2	XSECTN	044	1.0	288.90	
8			287.68	0.00	0.00
8			287.99	1.15	0.94
8			288.29	3.69	1.95
8			288.60	17.06	5.98
8			288.90	36.44	10.37
8			289.19	63.07	39.25
8			289.47	121.85	69.50
8			289.76	206.05	101.12
8			290.05	313.23	134.09
8			290.33	442.07	168.42
8			290.62	591.78	204.12
8			290.91	761.87	241.18
8			291.19	952.02	279.60
8			291.48	1162.04	319.38
8			291.77	1391.84	360.52
8			292.05	1641.40	403.02
8			292.34	1910.74	446.89
8			292.63	2199.92	492.11
8			292.91	2509.04	538.70
8			293.20	2838.22	586.65
9	ENDTBL				
3	STRUCT	31			
8			356.38	0.0	0.00
8			357.26	10.90	0.02

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			357.50	12.30	0.03
8			358.00	14.70	0.05
8			359.00	18.70	0.10
8			360.00	22.00	0.16
8			361.00	24.90	0.25
8			361.50	26.20	0.30
8			362.00	27.50	0.36
8			362.50	28.70	0.43
8			362.90	29.60	0.49
8			363.50	51.30	0.60
8			363.75	65.70	0.67
8			364.00	82.60	0.72
8			364.20	83.30	0.83
8			364.60	100.00	0.88
8			366.80	260.00	1.47
8			366.92	340.00	1.49
8			366.98	380.00	1.50
9	ENDTBL				
3	STRUCT	32			
8			375.40	0.00	0.00
8			379.36	1.00	0.74

8		380.00	5.00	0.89
8		380.20	10.00	0.94
8		380.33	15.00	0.98
8		380.45	20.00	1.01
8		380.55	25.00	1.04
8		380.65	30.00	1.06
8		381.19	40.00	1.21
8		381.78	44.00	1.39
8		382.59	66.00	1.66
8		382.79	88.00	1.75
8		382.89	110.00	1.79
8		382.97	132.00	1.83
9	ENDTBL			
3	STRUCT	33		
8		350.00	0.00	0.00
8		354.30	1.00	1.08
8		354.47	2.00	1.15
8		354.87	5.00	1.30
8		355.38	10.00	1.50
8		356.18	20.00	1.84
8		356.88	40.00	2.15
8		357.27	60.00	2.33
8		357.46	80.00	2.42
8		358.08	100.00	2.73
8		358.14	120.00	2.76
8		358.19	140.00	2.78
8		358.25	171.00	2.81
8		358.27	180.00	2.82
9	ENDTBL			

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

3	STRUCT	34		
9	ENDTBL			
3	STRUCT	02		
8		295.00	0.00	0.00
8		297.06	100.00	0.942
8		298.88	200.00	1.948
8		299.50	250.00	2.334
8		300.13	300.00	2.741
8		301.47	400.00	3.690
8		302.00	437.50	4.089
8		303.31	853.50	5.156
8		303.75	1069.10	5.534
8		304.20	1317.66	5.934
8		305.27	2019.83	6.939
9	ENDTBL			
2	XSECTN	051	1.0	282.40
8		281.10	0.00	0.00
8		281.42	1.24	1.09
8		281.75	3.96	2.26
8		282.07	18.30	6.92
8		282.40	39.09	12.00
8		282.88	67.33	37.27
8		283.36	131.17	65.87
8		283.84	225.10	97.78
8		284.32	348.01	133.01
8		284.80	499.91	171.56
8		285.28	681.29	213.43
8		285.76	892.92	258.61

8			286.24	1135.70	307.11
8			286.72	1410.63	358.94
8			287.20	1718.74	414.08
8			287.68	2061.13	472.54
8			288.16	2438.87	534.31
8			288.64	2853.08	599.41
8			289.12	3301.76	667.84
8			289.60	3785.91	739.78
9	ENDTBL				
2	XSECTN	053	1.0	289.00	
8			288.00	0.00	0.00
8			288.50	9.00	2.88
8			289.00	34.26	7.50
8			289.50	79.27	13.88
8			290.00	147.75	22.00
8			290.50	227.49	31.94
8			291.00	332.02	43.75
8			291.50	463.75	57.44
8			291.75	540.56	64.98
8			292.00	625.07	73.00
9	ENDTBL				
2	XSECTN	063	1.0	248.40	

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			247.07	0.00	0.00
8			247.41	1.85	1.14
8			247.74	5.93	2.35
8			248.07	27.43	7.18
8			248.40	58.61	12.46
8			248.67	89.70	40.04
8			248.95	158.39	68.99
8			249.22	256.90	99.30
8			249.49	382.40	130.99
8			249.77	533.43	164.04
8			250.04	709.09	198.46
8			250.31	908.86	234.24
8			250.59	1132.40	271.40
8			250.86	1379.55	309.92
8			251.13	1650.25	349.81
8			251.41	1944.49	391.07
8			251.68	2262.35	433.69
8			251.95	2603.94	477.69
8			252.23	2969.40	523.05
8			252.50	3358.93	569.78
9	ENDTBL				
3	STRUCT	61			
8			329.75	0.00	0.00
8			330.00	1.56	0.01
8			332.00	4.37	0.13
8			334.00	5.96	0.39
8			334.10	6.01	0.40
8			334.50	10.20	0.47
8			335.00	16.10	0.56
8			336.00	28.91	0.75
8			337.00	40.10	0.97
9	ENDTBL				
3	STRUCT	62			
8			287.30	0.00	0.00
8			288.00	5.45	0.01



8		289.00	9.05	0.05
8		290.00	11.60	0.13
8		292.00	15.35	0.50
8		294.00	18.40	1.19
8		294.30	18.92	1.26
8		294.50	20.73	1.40
8		295.00	36.40	1.60
8		295.40	38.00	1.80
8		296.00	51.10	2.15
8		297.00	69.60	2.75
8		298.00	86.80	3.44
8		298.68	98.50	3.91
8		298.80	107.56	4.00
9	ENDTBL			
3	STRUCT	63		

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8		259.43	0.00	0.00
8		260.00	1.30	0.026
8		260.50	1.70	0.050
8		261.00	2.10	0.075
8		261.50	2.40	0.095
8		262.00	2.70	0.119
8		262.50	2.90	0.160
8		263.00	3.20	0.205
8		263.50	3.40	0.245
8		264.00	3.60	0.285
8		264.50	3.80	0.360
8		265.00	3.90	0.415
8		265.50	4.10	0.480
8		266.00	11.00	0.537
8		266.50	15.40	0.620
8		267.00	16.00	0.709
8		267.50	30.30	0.798
8		268.00	56.00	0.887
8		268.50	145.68	0.976
9	ENDTBL			
2	XSECTN	065	1.0	300.50
8		300.00	0.00	0.00
8		300.10	0.29	0.23
8		300.25	1.47	0.69
8		300.40	3.55	1.28
8		300.50	5.48	1.75
8		300.60	7.88	2.28
8		300.75	12.45	3.19
8		300.90	18.28	4.23
8		301.00	22.91	5.00
8		301.10	28.18	5.83
8		301.25	37.36	7.19
8		301.40	48.14	8.68
8		301.50	56.26	9.75
9	ENDTBL			
2	XSECTN	070	1.0	248.40
8		247.07	0.00	0.00
8		247.41	1.85	1.14
8		247.74	5.93	2.35
8		248.07	27.43	7.18
8		248.40	58.61	12.46
8		248.67	89.70	40.04

8	248.95	158.39	68.99
8	249.22	256.90	99.30
8	249.49	382.40	130.99
8	249.77	533.43	164.04
8	250.04	709.09	198.46
8	250.31	908.86	234.24
8	250.59	1132.40	271.40
8	250.86	1379.55	309.92

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8	251.13	1650.25	349.81
8	251.41	1944.49	391.07
8	251.68	2262.35	433.69
8	251.95	2603.94	477.69
8	252.23	2969.40	523.05
8	252.50	3358.93	569.78
9	ENDTBL		
2	XSECTN 072	1.0	248.40
8		247.07	0.00 0.00
8		247.41	1.85 1.14
8		247.74	5.93 2.35
8		248.07	27.43 7.18
8		248.40	58.61 12.46
8		248.67	89.70 40.04
8		248.95	158.39 68.99
8		249.22	256.90 99.30
8		249.49	382.40 130.99
8		249.77	533.43 164.04
8		250.04	709.09 198.46
8		250.31	908.86 234.24
8		250.59	1132.40 271.40
8		250.86	1379.55 309.92
8		251.13	1650.25 349.81
8		251.41	1944.49 391.07
8		251.68	2262.35 433.69
8		251.95	2603.94 477.69
8		252.23	2969.40 523.05
8		252.50	3358.93 569.78
9	ENDTBL		
2	XSECTN 077	1.0	229.00
8		226.00	0.00 0.00
8		226.50	11.73 5.31
8		227.00	42.97 13.25
8		227.50	96.50 23.81
8		228.00	175.93 37.00
8		228.50	258.13 54.25
8		229.00	385.22 77.00
8		229.50	561.82 105.25
8		230.00	793.74 139.00
8		230.50	1079.38 179.94
8		231.00	1462.49 229.75
8		231.50	1953.75 288.44
8		232.00	2564.16 356.00
8		232.50	3408.70 429.13
8		233.00	4351.01 504.50
9	ENDTBL		
2	XSECTN 080	1.0	212.00
8		210.50	0.00 0.00
8		210.75	4.72 2.23

8		211.00	15.68	4.92
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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		211.25	32.36	8.06
8		211.50	54.93	11.67
8		211.75	83.70	15.73
8		212.00	119.05	20.25
8		212.25	163.87	25.14
8		212.50	215.35	30.31
8		212.75	273.55	35.77
8		213.00	338.57	41.50
8		214.00	669.42	67.25
8		215.00	806.07	99.00
8		216.00	1088.03	138.25
8		217.00	1451.30	187.50
8		218.00	1978.93	249.25
8		219.00	2262.06	340.00
8		220.00	3115.20	476.25
8		221.00	4892.67	639.25

9 ENDTBL  
 3 STRUCT 03

8		265.00	0.00	0.00
8		266.81	100.00	0.933
8		268.63	200.00	2.082
8		269.76	300.00	2.912
8		270.81	400.00	3.767
8		271.72	500.00	4.571
8		272.59	600.00	5.401
8		273.41	700.00	6.236
8		274.21	800.00	7.101
8		275.01	900.00	8.013
8		276.00	1025.00	9.223
8		276.61	1143.95	10.007
8		277.45	1373.75	11.134
8		278.33	1678.37	12.382
8		279.24	2056.25	13.758

9 ENDTBL  
 3 STRUCT 24

8		345.00	0.00	0.00
8		346.82	10.00	1.08
8		353.59	25.00	5.89
8		357.97	50.00	10.61
8		358.32	75.00	11.05
8		358.61	100.00	11.43
8		358.87	125.00	11.77
8		359.11	150.00	12.09
8		359.35	175.00	12.41
8		360.02	205.00	13.34
8		360.74	209.00	14.40
8		361.38	352.23	15.42

9 ENDTBL  
 3 STRUCT 35

8		326.00	0.00	0.00
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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			330.20	10.00	3.69
8			330.31	15.00	3.81
8			330.40	20.00	3.91
8			330.57	30.00	4.09
8			330.71	40.00	4.24
8			330.83	50.00	4.39
8			331.09	80.00	4.68
8			332.62	100.00	6.56
8			334.97	125.00	9.87
8			335.52	135.00	10.75
8			336.10	157.48	11.70
8			336.22	166.53	11.89
8			336.45	252.42	12.28
9	ENDTBL				
3	STRUCT	71			
8			149.00	0.00	00.00
8			154.00	0.01	05.00
8			159.00	0.02	10.01
8			164.00	0.03	15.01
8			169.00	0.04	20.01
8			174.00	0.05	25.02
8			175.00	310.00	26.02
8			176.00	876.81	27.02
8			177.00	1610.81	28.02
8			178.00	2480.00	29.02
8			179.00	3465.91	30.02
9	ENDTBL				
2	XSECTN	081	1.0	180.00	
8			175.00	0.00	0.00
8			176.00	84.89	14.48
8			177.00	278.13	31.90
8			178.00	568.14	52.58
8			179.00	956.14	75.60
8			180.00	1449.15	101.88
9	ENDTBL				
2	XSECTN	082	1.0	180.00	
8			175.00	0.00	0.00
8			176.00	84.89	14.48
8			177.00	278.13	31.90
8			178.00	568.14	52.58
8			179.00	956.14	75.60
8			180.00	1449.15	101.88
9	ENDTBL				
3	STRUCT	01			
8			308.00	0.00	0.00
8			310.42	100.00	3.248
8			312.15	200.00	5.766
8			312.86	250.00	6.857
8			313.58	300.00	7.993
8			315.06	400.00	10.420

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			316.00	454.00	12.045
8			316.85	597.18	13.542
8			317.89	897.54	15.453
8			318.81	1251.79	17.190
9	ENDTBL				
3	STRUCT	72			

8		220.00	0.00	0.00
8		225.00	0.01	10.22
8		230.00	0.02	20.44
8		235.00	0.03	30.66
8		240.00	0.04	40.88
8		241.00	310.00	42.92
8		242.00	876.81	44.97
8		243.00	1610.81	47.01
9	ENDTBL5			
3	STRUCT	73		
8		240.00	0.00	0.00
8		245.00	0.01	4.13
8		250.00	0.02	8.25
8		255.00	0.03	12.38
8		260.00	0.04	16.50
8		261.00	310.00	17.33
8		262.00	876.81	18.15
8		263.00	1610.81	18.98
9	ENDTBL			
3	STRUCT	81		
8		190.00	0.00	0.00
8		192.00	0.01	1.19
8		194.00	0.02	3.13
8		196.00	0.03	5.24
8		198.00	0.04	7.18
8		200.00	0.05	8.37
8		201.00	310.00	8.38
8		202.00	876.81	8.39
8		203.00	1610.81	8.40
9	ENDTBL			
3	STRUCT	82		
8		308.00	0.00	0.00
8		310.00	0.01	1.36
8		312.00	0.02	3.56
8		314.00	0.03	5.96
8		316.00	0.04	8.16
8		318.00	0.05	9.52
8		319.00	310.00	9.53
8		320.00	876.81	9.54
8		321.00	1610.81	9.55
9	ENDTBL			
3	STRUCT	83		
8		312.00	0.00	0.00
8		314.00	0.01	1.52

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8		316.00	0.02	4.00
8		318.00	0.03	6.71
8		320.00	0.04	9.19
8		322.00	0.05	10.71
8		323.00	310.00	10.72
8		324.00	876.81	10.73
8		325.00	1610.81	10.74
9	ENDTBL			
3	STRUCT	84		
8		348.00	0.00	0.00
8		350.00	0.01	1.62
8		352.00	0.02	4.24
8		354.00	0.03	7.12

8		356.00	0.04	9.74	
8		358.00	0.05	11.36	
8		359.00	310.00	11.37	
8		360.00	876.81	11.38	
8		361.00	1610.81	11.39	
9	ENDTBL				
5	RAINFL 9	.1			
8	0.0000	0.0013	0.0023	0.0034	0.0044
8	0.0055	0.0065	0.0076	0.0087	0.0098
8	0.0109	0.0121	0.0132	0.0143	0.0155
8	0.0167	0.0178	0.0190	0.0202	0.0214
8	0.0226	0.0238	0.0251	0.0263	0.0276
8	0.0288	0.0301	0.0314	0.0327	0.0340
8	0.0353	0.0366	0.0379	0.0393	0.0406
8	0.0420	0.0434	0.0447	0.0461	0.0475
8	0.0489	0.0504	0.0518	0.0532	0.0547
8	0.0562	0.0576	0.0591	0.0606	0.0621
8	0.0636	0.0651	0.0667	0.0682	0.0697
8	0.0713	0.0729	0.0745	0.0760	0.0776
8	0.0793	0.0809	0.0826	0.0843	0.0861
8	0.0879	0.0898	0.0916	0.0936	0.0955
8	0.0975	0.0996	0.1017	0.1038	0.1060
8	0.1082	0.1104	0.1127	0.1150	0.1174
8	0.1198	0.1223	0.1247	0.1273	0.1298
8	0.1324	0.1351	0.1378	0.1405	0.1432
8	0.1461	0.1490	0.1521	0.1554	0.1588
8	0.1623	0.1660	0.1699	0.1739	0.1780
8	0.1823	0.1868	0.1914	0.1961	0.2010
8	0.2061	0.2117	0.2179	0.2247	0.2321
8	0.2400	0.2490	0.2591	0.2702	0.2825
8	0.2955	0.3157	0.3370	0.3662	0.4067
8	0.4766	0.5933	0.6338	0.6630	0.6843
8	0.7045	0.7176	0.7298	0.7409	0.7510
8	0.7600	0.7679	0.7753	0.7821	0.7883
8	0.7939	0.7990	0.8039	0.8086	0.8132
8	0.8177	0.8220	0.8261	0.8301	0.8340
8	0.8377	0.8412	0.8446	0.8479	0.8510

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)

\*\*\*\*\*

8	0.8540	0.8568	0.8595	0.8622	0.8649
8	0.8676	0.8702	0.8727	0.8753	0.8778
8	0.8802	0.8826	0.8850	0.8873	0.8896
8	0.8918	0.8940	0.8962	0.8983	0.9004
8	0.9025	0.9045	0.9064	0.9084	0.9103
8	0.9121	0.9139	0.9157	0.9174	0.9191
8	0.9208	0.9224	0.9240	0.9256	0.9271
8	0.9287	0.9303	0.9318	0.9334	0.9349
8	0.9364	0.9379	0.9394	0.9409	0.9424
8	0.9439	0.9453	0.9468	0.9482	0.9496
8	0.9511	0.9525	0.9539	0.9553	0.9566
8	0.9580	0.9594	0.9607	0.9621	0.9634
8	0.9647	0.9660	0.9673	0.9686	0.9699
8	0.9712	0.9724	0.9737	0.9749	0.9762
8	0.9774	0.9786	0.9798	0.9810	0.9822
8	0.9834	0.9845	0.9857	0.9868	0.9879
8	0.9891	0.9902	0.9913	0.9924	0.9935
8	0.9945	0.9956	0.9967	0.9977	0.9987
8	1.0000	1.0000	1.0000	1.0000	1.0000
9	ENDTBL				

6	RUNOFF	1	001		1	0.0336	80.992	0.4051		DA1
6	REACH	3	002	1	2	1170.0		1		
6	RUNOFF	1	003		1	0.0580	79.488	0.3751		DA2
6	ADDHYD	4	004	1	2 3			1		DA1+2
6	RESVOR	2		11	3 1			1		1
SWMF10										
6	REACH	3	005	1	2	797.0		1		
6	RUNOFF	1	006		3	0.0798	77.284	0.3921		DA3
6	ADDHYD	4	007	2	3 4			1		1
DA12+3										
6	DIVERT	6	107	4	2 3	213	082	1		1 SA1-
UG4										
6	RESVOR	2		84	3 1			1		1 H8UG4
6	ADDHYD	4	108	1	2 3			1		1
UG4+SA1										
6	REACH	3	008	3	7	1221.0		1		1 SA1-
SA2										
6	RUNOFF	1	009		1	0.0734	90.928	0.4221		DA1
6	RESVOR	2		21	1 2			1		1
SWMF13										
6	RUNOFF	1	010		3	0.0097	72.007	0.1281		DA7
6	RESVOR	2		22	2 3 4			1		1 HWY
STOR										
6	RUNOFF	1	011		2	0.0544	73.278	0.2201		DA2
6	ADDHYD	4	012	7	2 3			1		
SA1+DA2										
6	RUNOFF	1	013		5	0.0193	79.062	0.2481		DA3
6	ADDHYD	4	014	4	3 6			1		
DA17+2										
6	ADDHYD	4	015	6	5 3			1		
DA172+3										
6	RESVOR	2		23	3 1			1	1 1 1 1	1 CNCPT
1										
6	REACH	3	016	1	2	920.0		1		1
6	RUNOFF	1	017		3	0.0211	87.900	0.1641		DA4
6	RUNOFF	1	118		1	0.0253	93.221	0.2231		DA5A
6	RESVOR	2		24	1 4			1	1 1 1 1	1 CNCPT
2										
6	RUNOFF	1	119		5	0.0059	86.148	0.1361		DA5B
6	ADDHYD	4	120	4	5 6			1		
DA5a+5b										
6	ADDHYD	4	020	3	6 4			1		1 DA4+5
6	RUNOFF	1	019		5	0.0404	84.467	0.1681		DA6

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
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6	ADDHYD	4	022	4	5 3			1		
DA45+6										
6	ADDHYD	4	021	2	3 1			1		1
DA123+6										
6	DIVERT	6	122	1	2 3	168	082	1		1 SA2-
UG3										
6	RESVOR	2		83	3 1			1		1 H8UG3
6	ADDHYD	4	123	1	2 3			1		1
UG3+SA2										
6	REACH	3	023	3	7	1379.0		1		1 SA2-
SA3										
6	RUNOFF	1	024		1	0.0505	82.333	0.3401		DA1
6	RESVOR	2		31	1 2			1		1 SWMF3
6	RUNOFF	1	025		3	0.0748	81.676	0.3581		DA2

6	ADDHYD	4	026	2	3	4				1		DA1+2
6	REACH	3	027	4	1		1021.0			1		
6	RUNOFF	1	028		2		0.0599	78.523		0.3231		DA3
6	ADDHYD	4	029	7	2	3				1		
SA2+DA3												
6	ADDHYD	4	030	1	3	2				1		
DA12+3												
6	RESVOR	2	01	2	5					1		1 PROP1
6	RUNOFF	1	031		1		0.0692	86.978		0.2761		DA4
6	REACH	3	032	1	6		1603.0			1		
6	RUNOFF	1	033		2		0.0084	95.000		0.1921		DA5
6	RESVOR	2	32	2	3					1		1
SWMF11												
6	REACH	3	034	3	7		583.0			1		
6	RUNOFF	1	035		1		0.0275	94.960		0.2481		DA6
6	RESVOR	2	33	1	2					1		1 SWMF8
6	ADDHYD	4	036	7	2	1				1		DA5+6
6	RESVOR	2	34	1	2					1		1
HWYSTOR3												
6	REACH	3	037	2	4		934.0			1		
6	RUNOFF	1	138		1		0.0280	89.879		0.1551		DA7a
6	ADDHYD	4	139	4	1	3				1		
DA56+7a												
6	RESVOR	2	35	3	2					1	1	1
4												
6	RUNOFF	1	140		3		0.0048	62.603		0.1261		DA7b
6	ADDHYD	4	141	2	3	4				1		1
DA7a+7b												
6	RUNOFF	1	040		2		0.0393	80.311		0.3671		DA8
6	ADDHYD	4	041	5	2	1				1		DA3+8
6	ADDHYD	4	042	6	1	2				1		DA4+8
6	ADDHYD	4	043	4	2	1				1		1 DA7+8
6	DIVERT	6	144	1	2	3	543	082		1		1 SA3-
UG2												
6	RESVOR	2	82	3	1					1		1 H8UG2
6	ADDHYD	4	145	1	2	3				1		1
UG2+SA3												
6	REACH	3	044	3	2		1428.0			1		1 SA3-
SA4												
6	RESVOR	2	02	2	7					1		1 PROP2
6	RUNOFF	1	045		1		0.0477	80.798		0.4121		DA1
6	RUNOFF	1	046		2		0.0628	79.968		0.4401		DA2
6	ADDHYD	4	047	1	2	3				1		DA1+2
6	RUNOFF	1	048		1		0.0469	80.250		0.2491		DA3
6	ADDHYD	4	049	7	1	2				1		1
SA3+DA3												
6	ADDHYD	4	050	2	3	4				1		
DA12+3												
6	REACH	3	051	4	7		1275.0			1		1 SA4-
SA5												
6	RUNOFF	1	052		1		0.0087	41.639		0.1631		DA1
6	REACH	3	053	1	5		652.0			1		
6	RUNOFF	1	054		1		0.0072	33.729		0.2561		DA2
6	RUNOFF	1	055		2		0.0322	77.752		0.2491		DA3

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

6	ADDHYD	4	056	7	2	4				1		
SA4+DA3												
6	ADDHYD	4	057	5	1	3				1		DA1+2



6	ADDHYD	4	058	4	3	5				1	
DA12+3											
6	RUNOFF	1	059			1	0.0266	70.478	0.2611	1	DA4
6	ADDHYD	4	060	5	1	2				1	1
DA123+4											
6	RESVOR	2	03	2		1				1	1 PROP3
6	RUNOFF	1	061			3	0.0173	69.728	0.2971		DA5
6	ADDHYD	4	062	1	3	6				1	1
DA1234+5											
6	DIVERT	6	162	6	2	3	621	082		1	1 SA5-
UG3											
6	RESVOR	2	73	3		1				1	1 H1UG3
6	ADDHYD	4	163	1	2	3				1	1
UG1+SA5											
6	REACH	3	063	3		7	1959.0			1	1 SA5-
SA6											
6	RUNOFF	1	064			1	0.0110	84.520	0.5211		DA1
6	RESVOR	2	61	1		2				1	1
SWMF19											
6	REACH	3	065	2		3	1283.0			1	
6	RUNOFF	1	066			1	0.0458	70.198	0.2391		DA2
6	RESVOR	2	62	1		2				1	1
SWMF18											
6	ADDHYD	4	067	3	2	4				1	DA1+2
6	RUNOFF	1	068			5	0.0778	73.165	0.2281		DA3
6	ADDHYD	4	069	4	5	1				1	
DA12+3											
6	REACH	3	070	1		2	2166.0			1	
6	RUNOFF	1	071			1	0.0119	80.036	0.1221		DA4
6	RESVOR	2	63	1		3				1	1 SWMF2
6	REACH	3	072	3		4	1081.0			1	
6	RUNOFF	1	073			5	0.1100	64.864	0.2051	1	DA5
6	ADDHYD	4	074	7	5	1				1	
SA5+DA5											
6	ADDHYD	4	075	2	4	6				1	1
DA123+4											
6	ADDHYD	4	076	1	6	4				1	1
DA12345											
6	DIVERT	6	176	4	2	3	691	082		1	1 SA6-
UG2											
6	RESVOR	2	72	3		1				1	1 H1UG2
6	ADDHYD	4	177	1	2	3				1	1
UG1+SA6											
6	REACH	3	077	3		7	884.0			1	1 SA6-
SA7											
6	RUNOFF	1	078			2	0.0510	70.802	0.1971	1	DA1
6	ADDHYD	4	079	7	2	1				1	
SA6+DA1											
6	REACH	3	080	1		2	1296.0			1	
6	RUNOFF	1	081			3	0.0313	67.555	0.1861		DA2
6	ADDHYD	4	082	2	3	4				1	DA1+2
6	RUNOFF	1	083			3	0.0513	72.309	0.1621		DA3
6	RUNOFF	1	084			7	0.0725	71.389	0.3211		1 DA4a
6	DIVERT	6	184	7	6	5	118	082		1	1 DA4a-
UG1											
6	RESVOR	2	81	5		1				1	1 H8UG1
6	ADDHYD	4	185	1	6	5				1	1
UG1+DA4a											
6	RUNOFF	1	186			2	0.0463	63.182	0.3211		DA4
6	ADDHYD	4	187	2	5	6				1	1
DA4+DA4a											
6	ADDHYD	4	085	3	6	1				1	1 DA3+4
6	ADDHYD	4	086	1	4	2				1	
DA123+4											

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6 RUNOFF 1 087      4      0.0159      86.785      0.1421      DA5
6 ADDHYD 4 088    2 4 7      1 1      1
DA1234+5
6 DIVERT 6 081    7 2 3      730      082      1      1 SA7-
UG1
6 RESVOR 2      71 3 1      1      1 H1UG1
1

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

```

6 ADDHYD 4 089    1 2 4      1 1      1
UG1+SA7
  ENDDATA
7 INCREM 6      .06
7 COMPUT 7 001    089      0.0      3.19      1.09 2 1 2
  ENDCMP 1
7 COMPUT 7 001    089      0.0      4.10      1.09 2 1 5
  ENDCMP 1
7 COMPUT 7 001    089      0.0      4.91      1.09 2 1 10
  ENDCMP 1
7 COMPUT 7 001    089      0.0      6.14      1.09 2 1 25
  ENDCMP 1
7 COMPUT 7 001    089      0.0      7.23      1.09 2 1 50
  ENDCMP 1
7 COMPUT 7 001    089      0.0      8.47      1.09 2 1 99
  ENDCMP 1
  ENDJOB 2

```

\*\*\*\*\*END OF 80-80  
LIST\*\*\*\*\*

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TR20 ----- SCS
-
      Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,
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Dist;H1&H8UG;GHC2.04TEST
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EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .060 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 89  
STARTING TIME = .00 RAIN DEPTH = 3.19 RAIN DURATION = 1.00  
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. = 2 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 23.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.46 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-  
FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	22.7	389.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.46 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	39.9	(RUNOFF)
23.14	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.36 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	60.4	(NULL)
23.10	1.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 83 CFS-HRS; 6.8 ACRE-FEET.

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 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	50.9	382.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 82 CFS-HRS; 6.8 ACRE-FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	50.4	367.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.39 WATERSHED INCHES; 82 CFS-HRS; 6.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 47.5 (RUNOFF)  
23.75 1.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.22 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.44 85.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
FEET.

OPERATION DIVERT XSECTION 107  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.44 85.2 (DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
145 CFS-HRS; 12.0 ACRE-FEET.

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OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 84, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE

STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 358.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 84

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 108  
NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.44 85.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.52 84.4 357.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 77.8 (RUNOFF)

1

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.24 WATERSHED INCHES; 106 CFS-HRS; 8.8 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE

STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.56	9.7 *	374.07
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.91 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	6.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .92 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.68	9.6 *	353.09
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.91 WATERSHED INCHES; 90 CFS-HRS; 7.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	33.2	(RUNOFF)
19.76	1.0	(RUNOFF)
20.09	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .99 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-FEET.

1  
 TR20 ----- SCS

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 Dist;H1&H8UG;GHC2.04TEST  
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OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	98.2	(NULL)
24.00	3.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.24 WATERSHED INCHES; 180 CFS-HRS; 14.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	15.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.33 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	105.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 270 CFS-HRS; 22.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	112.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .006 HOURS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	106.1	337.25
12.95	74.1	335.96
13.06	62.1	335.50
13.17	53.0	335.14

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HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32  
 SQ.MI.

6.42 CFS	.00	.01	.01	.01	.01	.01	.01
.01							
6.42 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
6.90 CFS	.01	.01	.01	.02	.02	.02	.02
.02							
6.90 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
7.38 CFS	.02	.02	.03	.03	.03	.03	.03
.03							
7.38 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
7.86 CFS	.04	.04	.04	.04	.04	.05	.05
.05							
7.86 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
8.34 CFS	.05	.06	.06	.06	.06	.07	.07
.07							
8.34 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
8.82 CFS	.08	.08	.08	.09	.09	.09	.10
.10							
8.82 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
9.30 CFS	.10	.11	.11	.12	.12	.13	.13
.14							
9.30 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.09
333.09							
9.78 CFS	.15	.16	.17	.18	.20	.23	.25
.27							
9.78 ELEV	333.09	333.09	333.09	333.09	333.09	333.09	333.09
333.09							
10.26 CFS	.30	.34	.38	.44	.50	.58	.66
.75							
10.26 ELEV	333.09	333.09	333.09	333.10	333.10	333.10	333.11
333.11							
10.74 CFS	.86	.98	1.12	1.27	1.45	1.67	1.93
2.24							
10.74 ELEV	333.11	333.12	333.12	333.13	333.14	333.14	333.16
333.17							
11.22 CFS	2.60	3.02	3.50	4.04	4.64	5.32	6.21
7.46							
11.22 ELEV	333.18	333.20	333.22	333.24	333.26	333.29	333.32
333.37							
11.70 CFS	9.00	10.83	13.24	16.56	21.46	29.40	42.13
61.35							
11.70 ELEV	333.43	333.50	333.60	333.72	333.91	334.22	334.72
335.47							
12.18 CFS	80	93	100	101	102	104	105
106							
12.18 ELEV	336.20	336.70	336.98	337.01	337.08	337.16	337.22
337.25							
12.66 CFS	106	104	102	89	69	73	60
61							
12.66 ELEV	337.23	337.17	337.06	336.53	335.76	335.94	335.41
335.47							
13.14 CFS	52.02	52.24	45.85	45.46	41.03	40.32	37.17
36.34							
13.14 ELEV	335.10	335.11	334.86	334.85	334.68	334.65	334.53
334.49							
13.62 CFS	34.01	33.15	31.44	30.67	29.41	28.75	27.82
27.29							
13.62 ELEV	334.40	334.37	334.30	334.27	334.22	334.20	334.16
334.14							



14.10 CFS	26.59	26.14	25.58	25.18	24.73	24.39	24.02
23.70							
14.10 ELEV	334.11	334.10	334.07	334.06	334.04	334.03	334.01
334.00							
14.58 CFS	23.35	23.03	22.69	22.39	22.08	21.78	21.47
21.16							
14.58 ELEV	333.99	333.98	333.96	333.95	333.94	333.93	333.92
333.90							
15.06 CFS	20.86	20.55	20.24	19.94	19.65	19.40	19.18
18.98							
15.06 ELEV	333.89	333.88	333.87	333.86	333.84	333.83	333.83
333.82							
15.54 CFS	18.80	18.63	18.46	18.30	18.15	18.03	17.93
17.81							
15.54 ELEV	333.81	333.80	333.80	333.79	333.79	333.78	333.78
333.77							
16.02 CFS	17.69	17.56	17.45	17.34	17.24	17.13	17.02
16.91							
16.02 ELEV	333.77	333.76	333.76	333.75	333.75	333.75	333.74
333.74							
16.50 CFS	16.80	16.68	16.57	16.46	16.36	16.26	16.15
16.04							
16.50 ELEV	333.73	333.73	333.72	333.72	333.72	333.71	333.71
333.70							
16.98 CFS	15.94	15.85	15.75	15.64	15.52	15.40	15.31
15.22							
16.98 ELEV	333.70	333.70	333.69	333.69	333.68	333.68	333.68
333.67							
17.46 CFS	15.11	14.98	14.86	14.75	14.64	14.54	14.42
14.31							
17.46 ELEV	333.67	333.66	333.66	333.65	333.65	333.65	333.64
333.64							

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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17.94 CFS	14.22	14.13	14.04	13.94	13.83	13.73	13.63
13.54							
17.94 ELEV	333.63	333.63	333.63	333.62	333.62	333.61	333.61
333.61							
18.42 CFS	13.43	13.33	13.26	13.19	13.13	13.05	12.97
12.91							
18.42 ELEV	333.60	333.60	333.60	333.59	333.59	333.59	333.58
333.58							
18.90 CFS	12.85	12.77	12.68	12.61	12.53	12.46	12.39
12.33							
18.90 ELEV	333.58	333.58	333.57	333.57	333.57	333.56	333.56
333.56							
19.38 CFS	12.27	12.21	12.15	12.09	12.01	11.93	11.87
11.81							
19.38 ELEV	333.56	333.55	333.55	333.55	333.55	333.54	333.54
333.54							
19.86 CFS	11.73	11.66	11.60	11.55	11.50	11.44	11.38
11.31							
19.86 ELEV	333.54	333.53	333.53	333.53	333.53	333.53	333.52
333.52							
20.34 CFS	11.25	11.18	11.09	11.03	10.98	10.93	10.87
10.81							

20.34 ELEV	333.52	333.51	333.51	333.51	333.51	333.51	333.50
333.50							
20.82 CFS	10.76	10.71	10.65	10.58	10.51	10.45	10.39
10.33							
20.82 ELEV	333.50	333.50	333.49	333.49	333.49	333.49	333.48
333.48							
21.30 CFS	10.27	10.20	10.13	10.06	9.99	9.90	9.80
9.72							
21.30 ELEV	333.48	333.48	333.47	333.47	333.47	333.47	333.46
333.46							
21.78 CFS	9.65	9.57	9.49	9.43	9.36	9.28	9.20
9.12							
21.78 ELEV	333.46	333.45	333.45	333.45	333.44	333.44	333.44
333.43							
22.26 CFS	9.04	8.97	8.91	8.84	8.78	8.72	8.64
8.56							
22.26 ELEV	333.43	333.43	333.43	333.42	333.42	333.42	333.42
333.41							
22.74 CFS	8.50	8.44	8.36	8.28	8.22	8.18	8.13
8.07							
22.74 ELEV	333.41	333.41	333.41	333.40	333.40	333.40	333.40
333.39							
23.22 CFS	8.01	7.95	7.89	7.84	7.77	7.70	7.63
7.58							
23.22 ELEV	333.39	333.39	333.39	333.38	333.38	333.38	333.38
333.37							
23.70 CFS	7.54	7.50	7.43	7.36	7.29	7.27	7.22
6.95							
23.70 ELEV	333.37	333.37	333.37	333.37	333.36	333.36	333.36
333.35							
24.18 CFS	6.52	6.10	5.72	5.39	5.09	4.84	4.63
4.46							
24.18 ELEV	333.33	333.32	333.30	333.29	333.28	333.27	333.26
333.25							
24.66 CFS	4.31	4.18	4.06	3.94	3.83	3.73	3.63
3.53							
24.66 ELEV	333.25	333.24	333.24	333.23	333.23	333.23	333.22
333.22							
25.14 CFS	3.43	3.34	3.26	3.17	3.09	3.01	2.93
2.85							
25.14 ELEV	333.21	333.21	333.21	333.20	333.20	333.20	333.19
333.19							
25.62 CFS	2.78	2.71	2.64	2.57	2.50	2.43	2.37
2.31							
25.62 ELEV	333.19	333.19	333.18	333.18	333.18	333.17	333.17
333.17							
26.10 CFS	2.25	2.19	2.13	2.08	2.02	1.97	1.92
1.87							
26.10 ELEV	333.17	333.17	333.16	333.16	333.16	333.16	333.15
333.15							
26.58 CFS	1.82	1.77	1.72	1.68	1.64	1.59	1.55
1.51							
26.58 ELEV	333.15	333.15	333.15	333.15	333.14	333.14	333.14
333.14							
27.06 CFS	1.47	1.43	1.40	1.36	1.32	1.29	1.26
1.22							
27.06 ELEV	333.14	333.14	333.13	333.13	333.13	333.13	333.13
333.13							
27.54 CFS	1.19	1.16	1.13	1.10	1.07	1.04	1.02
.99							
27.54 ELEV	333.13	333.13	333.12	333.12	333.12	333.12	333.12
333.12							
28.02 CFS	.96	.94	.92	.90	.88	.87	.86
.84							

28.02 ELEV 333.12 333.12 333.12 333.11 333.11 333.11 333.11  
 333.11  
 28.50 CFS .84 .83 .82 .81 .80 .79  
 28.50 ELEV 333.11 333.11 333.11 333.11 333.11 333.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
 FEET.

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DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	28	18	14	12	10	8	3	1

DURATION(HRS)	18	18
FLOW(CFS)	1	1 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.61	106.1	332.26
12.95	74.1	332.00
13.06	62.1	331.85
13.17	53.0	331.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	29.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 27 CFS-HRS; 2.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	38.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.46 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.59 10.4 347.01

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
 HRS SQ.MI.  
 4.32 CFS .00 .01 .01 .01 .01 .01 .02  
 .02  
 4.32 ELEV 345.00 345.00 345.00 345.00 345.00 345.00 345.00  
 345.00  
 4.80 CFS .02 .02 .03 .03 .03 .04 .04  
 .04

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4.80 ELEV	345.00	345.00	345.00	345.01	345.01	345.01	345.01
345.01							
5.28 CFS	.05	.05	.05	.06	.06	.06	.07
.07							
5.28 ELEV	345.01	345.01	345.01	345.01	345.01	345.01	345.01
345.01							
5.76 CFS	.08	.08	.08	.09	.09	.10	.10
.11							
5.76 ELEV	345.01	345.01	345.02	345.02	345.02	345.02	345.02
345.02							
6.24 CFS	.11	.12	.12	.12	.13	.14	.14
.15							
6.24 ELEV	345.02	345.02	345.02	345.02	345.02	345.02	345.03
345.03							
6.72 CFS	.15	.16	.16	.17	.18	.18	.19
.20							
6.72 ELEV	345.03	345.03	345.03	345.03	345.03	345.03	345.03
345.04							
7.20 CFS	.20	.21	.22	.23	.23	.24	.25
.26							
7.20 ELEV	345.04	345.04	345.04	345.04	345.04	345.04	345.05
345.05							
7.68 CFS	.27	.27	.28	.29	.30	.31	.32
.33							
7.68 ELEV	345.05	345.05	345.05	345.05	345.05	345.06	345.06
345.06							
8.16 CFS	.34	.35	.36	.37	.38	.39	.40
.41							
8.16 ELEV	345.06	345.06	345.06	345.07	345.07	345.07	345.07
345.07							
8.64 CFS	.42	.43	.44	.45	.46	.47	.48
.49							
8.64 ELEV	345.08	345.08	345.08	345.08	345.08	345.09	345.09
345.09							
9.12 CFS	.50	.52	.53	.54	.56	.57	.59
.60							
9.12 ELEV	345.09	345.09	345.10	345.10	345.10	345.10	345.11

345.11								
9.60 CFS	.62	.64	.66	.68	.70	.72	.74	
.77								
9.60 ELEV	345.11	345.12	345.12	345.12	345.13	345.13	345.14	
345.14								
10.08 CFS	.79	.82	.84	.87	.90	.92	.95	
.98								
10.08 ELEV	345.14	345.15	345.15	345.16	345.16	345.17	345.17	
345.18								
10.56 CFS	1.01	1.04	1.08	1.11	1.16	1.20	1.25	
1.31								
10.56 ELEV	345.18	345.19	345.20	345.20	345.21	345.22	345.23	
345.24								
11.04 CFS	1.37	1.43	1.50	1.58	1.66	1.76	1.86	
1.97								
11.04 ELEV	345.25	345.26	345.27	345.29	345.30	345.32	345.34	
345.36								
11.52 CFS	2.09	2.22	2.38	2.58	2.81	3.09	3.42	
3.84								
11.52 ELEV	345.38	345.40	345.43	345.47	345.51	345.56	345.62	
345.70								
12.00 CFS	4.40	5.18	6.28	7.62	8.90	9.87	10.17	
10.30								
12.00 ELEV	345.80	345.94	346.14	346.39	346.62	346.80	346.90	
346.96								
12.48 CFS	10.37	10.41	10.42	10.40	10.36	10.31	10.25	
10.19								
12.48 ELEV	346.99	347.00	347.01	347.00	346.98	346.96	346.93	
346.90								
12.96 CFS	10.11	10.04	9.87	9.63	9.39	9.15	8.91	
8.67								
12.96 ELEV	346.87	346.84	346.80	346.75	346.71	346.66	346.62	
346.58								
13.44 CFS	8.43	8.20	7.96	7.74	7.51	7.29	7.08	
6.87								
13.44 ELEV	346.53	346.49	346.45	346.41	346.37	346.33	346.29	
346.25								
13.92 CFS	6.67	6.47	6.28	6.10	5.93	5.76	5.59	
5.43								
13.92 ELEV	346.21	346.18	346.14	346.11	346.08	346.05	346.02	
345.99								
14.40 CFS	5.28	5.13	4.99	4.85	4.71	4.58	4.46	
4.33								
14.40 ELEV	345.96	345.93	345.91	345.88	345.86	345.83	345.81	
345.79								
14.88 CFS	4.21	4.10	3.98	3.87	3.77	3.66	3.56	
3.47								
14.88 ELEV	345.77	345.75	345.73	345.71	345.69	345.67	345.65	
345.63								
15.36 CFS	3.37	3.28	3.19	3.11	3.03	2.95	2.88	
2.81								
15.36 ELEV	345.61	345.60	345.58	345.57	345.55	345.54	345.52	
345.51								
15.84 CFS	2.74	2.67	2.61	2.55	2.49	2.43	2.38	
2.32								
15.84 ELEV	345.50	345.49	345.47	345.46	345.45	345.44	345.43	
345.42								
16.32 CFS	2.27	2.22	2.18	2.13	2.08	2.04	2.00	
1.96								
16.32 ELEV	345.41	345.40	345.40	345.39	345.38	345.37	345.36	
345.36								

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16.80 CFS	1.92	1.88	1.84	1.81	1.77	1.74	1.71
1.68							
16.80 ELEV	345.35	345.34	345.34	345.33	345.32	345.32	345.31
345.31							
17.28 CFS	1.65	1.62	1.59	1.56	1.53	1.51	1.48
1.45							
17.28 ELEV	345.30	345.29	345.29	345.28	345.28	345.27	345.27
345.26							
17.76 CFS	1.43	1.40	1.38	1.36	1.34	1.31	1.29
1.27							
17.76 ELEV	345.26	345.26	345.25	345.25	345.24	345.24	345.24
345.23							
18.24 CFS	1.25	1.23	1.21	1.19	1.17	1.16	1.14
1.12							
18.24 ELEV	345.23	345.22	345.22	345.22	345.21	345.21	345.21
345.20							
18.72 CFS	1.11	1.09	1.08	1.07	1.05	1.04	1.03
1.01							
18.72 ELEV	345.20	345.20	345.20	345.19	345.19	345.19	345.19
345.18							
19.20 CFS	1.00	.99	.98	.97	.96	.95	.94
.93							
19.20 ELEV	345.18	345.18	345.18	345.18	345.17	345.17	345.17
345.17							
19.68 CFS	.92	.91	.91	.90	.89	.88	.87
.87							
19.68 ELEV	345.17	345.17	345.16	345.16	345.16	345.16	345.16
345.16							
20.16 CFS	.86	.85	.85	.84	.83	.83	.82
.81							
20.16 ELEV	345.16	345.16	345.15	345.15	345.15	345.15	345.15
345.15							
20.64 CFS	.81	.80	.80	.79	.79	.78	.78
.77							
20.64 ELEV	345.15	345.15	345.15	345.14	345.14	345.14	345.14
345.14							
21.12 CFS	.77	.76	.76	.75	.75	.74	.74
.73							
21.12 ELEV	345.14	345.14	345.14	345.14	345.14	345.14	345.13
345.13							
21.60 CFS	.73	.73	.72	.72	.71	.71	.71
.70							
21.60 ELEV	345.13	345.13	345.13	345.13	345.13	345.13	345.13
345.13							
22.08 CFS	.70	.69	.69	.69	.68	.68	.68
.67							
22.08 ELEV	345.13	345.13	345.13	345.13	345.12	345.12	345.12
345.12							
22.56 CFS	.67	.67	.66	.66	.65	.65	.65
.64							
22.56 ELEV	345.12	345.12	345.12	345.12	345.12	345.12	345.12
345.12							
23.04 CFS	.64	.64	.63	.63	.63	.62	.62
.62							
23.04 ELEV	345.12	345.12	345.12	345.11	345.11	345.11	345.11
345.11							
23.52 CFS	.61	.61	.61	.60	.60	.60	.60

.59								
23.52 ELEV	345.11	345.11	345.11	345.11	345.11	345.11	345.11	345.11
345.11								
24.00 CFS	.59	.59	.58	.57	.55	.53	.51	
.49								
24.00 ELEV	345.11	345.11	345.11	345.10	345.10	345.10	345.09	
345.09								
24.48 CFS	.47	.45	.43	.41	.39	.37	.35	
.34								
24.48 ELEV	345.09	345.08	345.08	345.07	345.07	345.07	345.06	
345.06								
24.96 CFS	.32	.31	.30	.28	.27	.26	.25	
.23								
24.96 ELEV	345.06	345.06	345.05	345.05	345.05	345.05	345.04	
345.04								
25.44 CFS	.22	.21	.20	.20	.19	.18	.17	
.16								
25.44 ELEV	345.04	345.04	345.04	345.04	345.03	345.03	345.03	
345.03								
25.92 CFS	.16	.15	.14	.14	.13	.12	.12	
.11								
25.92 ELEV	345.03	345.03	345.03	345.02	345.02	345.02	345.02	
345.02								
26.40 CFS	.11	.10	.10	.09	.09	.09	.08	
.08								
26.40 ELEV	345.02	345.02	345.02	345.02	345.02	345.02	345.01	
345.01								
26.88 CFS	.07	.07	.07	.06	.06	.06	.06	
.05								
26.88 ELEV	345.01	345.01	345.01	345.01	345.01	345.01	345.01	
345.01								
27.36 CFS	.05	.05	.05	.04	.04			
27.36 ELEV	345.01	345.01	345.01	345.01	345.01			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.45 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
 FEET.

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DURATION (HRS)	2	4	6	8	10	12	14	15
FLOW (CFS)	6	3	2	1	1	1	1	0

OPERATION RUNOFF XSECTION 119

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET)  
 12.13 8.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.83 WATERSHED INCHES; 7 CFS-HRS; .6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	14.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.34 WATERSHED INCHES;	47 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	44.1	(NULL)
24.00	1.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.19 WATERSHED INCHES;	74 CFS-HRS;	6.1 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	48.6	(RUNOFF)
19.47	1.0	(RUNOFF)
19.75	1.0	(RUNOFF)
20.06	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.71 WATERSHED INCHES;	44 CFS-HRS;	3.7 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 22

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	92.7	(NULL)
18.58	3.0	(NULL)
22.74	2.0	(NULL)
23.05	2.0	(NULL)
24.00	1.9	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.98 WATERSHED INCHES;	118 CFS-HRS;	9.8 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------



ELEVATION (FEET)		
12.19	171.5	(NULL)
12.94	95.8	(NULL)
13.05	82.3	(NULL)
23.99	9.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 404 CFS-HRS; 33.4 ACRE-FEET.

OPERATION DIVERT XSECTION 122  
 OUTPUT #1 HYDROGRAPH

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.20	169.0	(DIVERT)
12.94	95.8	(DIVERT)
13.05	82.3	(DIVERT)
23.99	9.2	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 404 CFS-HRS; 33.4 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.18	2.7	175.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 83, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 322.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

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OPERATION RESVOR STRUCTURE 83

\*\*\* MESSAGE - STRUCTURE 83, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 398 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 123

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	169.0	(NULL)
12.94	95.8	(NULL)
13.05	82.3	(NULL)
23.99	9.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 404 CFS-HRS; 33.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	143.0	315.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 403 CFS-HRS; 33.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	41.6	(RUNOFF)
20.68	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

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OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	28.2	362.31
20.70	1.1	356.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	58.7	(RUNOFF)
23.97	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.51 WATERSHED INCHES; 73 CFS-HRS; 6.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	84.2	(NULL)
18.68	3.2	(NULL)
23.78	2.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-  
FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.43	76.6	318.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	42.0	(RUNOFF)
23.12	1.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.30 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	176.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 454 CFS-HRS; 37.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	251.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.50 WATERSHED INCHES; 577 CFS-HRS; 47.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.78	201.0	312.16

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.50 WATERSHED INCHES; 576 CFS-HRS; 47.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	76.8	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	68.8	312.27
24.15	1.3	310.11

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	14.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.63 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .28 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 376.89.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
 AT STRUCTURE 32  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.56	1.0	379.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.01 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 34, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 34

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
 AT XSECTION 34  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.68	1.0	338.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.00 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	41.8	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.63 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	17.5	355.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.08 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	18.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	18.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	18.2	330.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	42.9	(RUNOFF)
17.34	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.15 WATERSHED INCHES; 39 CFS-HRS; 3.2 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 139

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.15	44.6	(NULL)
23.69	2.0	(NULL)
24.00	2.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.10 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
13.93	8.1	329.42

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06  
 SQ.MI.

HRS	CFS	ELEV	CFS	ELEV	CFS	ELEV	CFS	ELEV
5.76	.01	326.00	.01	326.00	.01	326.00	.01	326.00
6.24	.02	326.01	.02	326.01	.02	326.01	.02	326.01
6.72	.04	326.01	.03	326.01	.03	326.01	.04	326.02
7.20	.07	326.02	.05	326.02	.06	326.02	.06	326.03
7.68	.10	326.03	.07	326.03	.08	326.03	.09	326.04
8.16	.15	326.05	.11	326.05	.12	326.05	.13	326.06
8.64	.20	326.06	.15	326.07	.17	326.07	.18	326.08
9.12	.27	326.09	.21	326.09	.22	326.09	.24	326.10
9.60	.36	326.11	.28	326.09	.30	326.10	.32	326.11

9.60 ELEV	326.12	326.12	326.13	326.13	326.13	326.14	326.14
326.15							
10.08 CFS	.37	.39	.40	.41	.43	.44	.46
.48							
10.08 ELEV	326.16	326.16	326.17	326.17	326.18	326.19	326.19
326.20							
10.56 CFS	.49	.51	.53	.55	.58	.60	.63
.65							
10.56 ELEV	326.21	326.22	326.22	326.23	326.24	326.25	326.26
326.27							
11.04 CFS	.68	.71	.75	.78	.82	.87	.91
.96							
11.04 ELEV	326.29	326.30	326.31	326.33	326.35	326.36	326.38
326.41							
11.52 CFS	1.02	1.08	1.15	1.24	1.34	1.46	1.60
1.78							
11.52 ELEV	326.43	326.45	326.49	326.52	326.56	326.61	326.67
326.75							
12.00 CFS	2.03	2.37	2.84	3.39	3.88	4.28	4.65
5.00							
12.00 ELEV	326.85	327.00	327.19	327.42	327.63	327.80	327.95
328.10							
12.48 CFS	5.33	5.65	5.94	6.21	6.45	6.67	6.87
7.05							
12.48 ELEV	328.24	328.37	328.50	328.61	328.71	328.80	328.88
328.96							
12.96 CFS	7.21	7.35	7.48	7.59	7.69	7.77	7.85
7.91							

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12.96 ELEV	329.03	329.09	329.14	329.19	329.23	329.26	329.30
329.32							
13.44 CFS	7.97	8.02	8.05	8.08	8.11	8.12	8.14
8.14							
13.44 ELEV	329.35	329.37	329.38	329.40	329.41	329.41	329.42
329.42							
13.92 CFS	8.15	8.14	8.14	8.13	8.12	8.11	8.10
8.08							
13.92 ELEV	329.42	329.42	329.42	329.42	329.41	329.41	329.40
329.39							
14.40 CFS	8.06	8.04	8.01	7.99	7.96	7.93	7.90
7.87							
14.40 ELEV	329.38	329.38	329.37	329.36	329.34	329.33	329.32
329.31							
14.88 CFS	7.84	7.81	7.77	7.73	7.70	7.66	7.62
7.58							
14.88 ELEV	329.29	329.28	329.26	329.25	329.23	329.22	329.20
329.18							
15.36 CFS	7.54	7.50	7.46	7.41	7.37	7.33	7.29
7.25							
15.36 ELEV	329.17	329.15	329.13	329.11	329.10	329.08	329.06
329.04							
15.84 CFS	7.20	7.16	7.12	7.08	7.04	6.99	6.95
6.91							
15.84 ELEV	329.03	329.01	328.99	328.97	328.96	328.94	328.92
328.90							



16.32 CFS	6.87	6.83	6.78	6.74	6.70	6.66	6.62
6.58							
16.32 ELEV	328.88	328.87	328.85	328.83	328.81	328.80	328.78
328.76							
16.80 CFS	6.53	6.49	6.45	6.41	6.37	6.33	6.29
6.25							
16.80 ELEV	328.74	328.73	328.71	328.69	328.68	328.66	328.64
328.62							
17.28 CFS	6.21	6.17	6.13	6.09	6.05	6.01	5.97
5.93							
17.28 ELEV	328.61	328.59	328.57	328.56	328.54	328.52	328.51
328.49							
17.76 CFS	5.89	5.85	5.81	5.77	5.73	5.69	5.65
5.62							
17.76 ELEV	328.47	328.46	328.44	328.42	328.41	328.39	328.37
328.36							
18.24 CFS	5.58	5.54	5.50	5.46	5.43	5.39	5.35
5.31							
18.24 ELEV	328.34	328.33	328.31	328.29	328.28	328.26	328.25
328.23							
18.72 CFS	5.28	5.24	5.21	5.17	5.14	5.10	5.07
5.03							
18.72 ELEV	328.22	328.20	328.19	328.17	328.16	328.14	328.13
328.11							
19.20 CFS	5.00	4.97	4.93	4.90	4.87	4.84	4.81
4.77							
19.20 ELEV	328.10	328.09	328.07	328.06	328.04	328.03	328.02
328.01							
19.68 CFS	4.74	4.71	4.68	4.65	4.62	4.59	4.57
4.54							
19.68 ELEV	327.99	327.98	327.97	327.95	327.94	327.93	327.92
327.91							
20.16 CFS	4.51	4.48	4.45	4.43	4.40	4.37	4.34
4.32							
20.16 ELEV	327.89	327.88	327.87	327.86	327.85	327.84	327.82
327.81							
20.64 CFS	4.29	4.27	4.24	4.21	4.19	4.16	4.14
4.11							
20.64 ELEV	327.80	327.79	327.78	327.77	327.76	327.75	327.74
327.73							
21.12 CFS	4.09	4.07	4.04	4.02	4.00	3.97	3.95
3.93							
21.12 ELEV	327.72	327.71	327.70	327.69	327.68	327.67	327.66
327.65							
21.60 CFS	3.90	3.88	3.86	3.84	3.82	3.80	3.77
3.75							
21.60 ELEV	327.64	327.63	327.62	327.61	327.60	327.59	327.59
327.58							
22.08 CFS	3.73	3.71	3.69	3.67	3.65	3.63	3.61
3.59							
22.08 ELEV	327.57	327.56	327.55	327.54	327.53	327.52	327.52
327.51							
22.56 CFS	3.57	3.55	3.53	3.51	3.50	3.48	3.46
3.44							
22.56 ELEV	327.50	327.49	327.48	327.48	327.47	327.46	327.45
327.44							
23.04 CFS	3.42	3.40	3.39	3.37	3.35	3.33	3.32
3.30							
23.04 ELEV	327.44	327.43	327.42	327.42	327.41	327.40	327.39
327.39							
23.52 CFS	3.28	3.27	3.25	3.23	3.22	3.20	3.18
3.17							
23.52 ELEV	327.38	327.37	327.36	327.36	327.35	327.34	327.34
327.33							

24.00 CFS	3.15	3.14	3.12	3.10	3.08	3.05	3.03
3.01							
24.00 ELEV	327.32	327.32	327.31	327.30	327.29	327.28	327.27
327.26							
24.48 CFS	2.99	2.97	2.95	2.93	2.90	2.88	2.86
2.84							
24.48 ELEV	327.26	327.25	327.24	327.23	327.22	327.21	327.20
327.19							

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24.96 CFS	2.82	2.80	2.78	2.76	2.74	2.72	2.70
2.69							
24.96 ELEV	327.19	327.18	327.17	327.16	327.15	327.14	327.14
327.13							
25.44 CFS	2.67	2.65	2.63	2.61	2.59	2.57	2.56
2.54							
25.44 ELEV	327.12	327.11	327.10	327.10	327.09	327.08	327.07
327.07							
25.92 CFS	2.52	2.50	2.49	2.47	2.45	2.43	2.42
2.40							
25.92 ELEV	327.06	327.05	327.04	327.04	327.03	327.02	327.02
327.01							
26.40 CFS	2.38	2.37	2.35	2.34	2.32	2.30	
26.40 ELEV	327.00	326.99	326.99	326.98	326.97	326.97	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.85 WATERSHED INCHES; 76 CFS-HRS; 6.3 ACRE-  
FEET.

DURATION(HRS)	2	4	6	8	10	12	14
FLOW(CFS)	8	7	5	4	4	3	2 TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.14 1.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.50 WATERSHED INCHES; 2 CFS-HRS; .1 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 141  
VOLUME TRUNCATED AT 28.% IN LOCATION 2 ADDING HYDROGRAPHS.  
\*\*\*

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
13.90 8.3 (NULL)

\*\*\* WARNING - XSECTION 141, HYDROGRAPH VOLUME TRUNCATED AT 2 CFS  
ADDHYD ( 28. % OF MAX. HYDROGRAPH COORDINATE)

MAIN TIME INCREMENT TOO SMALL.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.75 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	28.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.41 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	211.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.49 WATERSHED INCHES; 612 CFS-HRS; 50.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	251.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.53 WATERSHED INCHES; 697 CFS-HRS; 57.6 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 43  
VOLUME TRUNCATED AT 28.% AND 1.% WHEN ADDING HYDROGRAPHS  
IN LOCATIONS 4 AND 2.  
\*\*\*

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	258.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.55 WATERSHED INCHES; 773 CFS-HRS; 63.9 ACRE-

FEET.

OPERATION DIVERT XSECTION 144  
 OUTPUT #1 HYDROGRAPH

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.55	258.2	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 773 CFS-HRS; 63.9 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

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\*\*\* MESSAGE - STRUCTURE 82, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 318.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 82

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* WARNING - XSECTION 145  
 NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 145

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.55	258.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.55 WATERSHED INCHES; 773 CFS-HRS; 63.9 ACRE-FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	247.7	289.87

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.55 WATERSHED INCHES; 772 CFS-HRS; 63.8 ACRE-FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.92	244.2	299.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.55 WATERSHED INCHES; 772 CFS-HRS; 63.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	33.3	(RUNOFF)
20.10	1.1 *	(RUNOFF)

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\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.45 WATERSHED INCHES; 45 CFS-HRS; 3.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	40.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 56 CFS-HRS; 4.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	74.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.42 WATERSHED INCHES; 101 CFS-HRS; 8.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.20	40.1	(RUNOFF)
20.10	1.1	(RUNOFF)
20.65	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.41 WATERSHED INCHES; 43 CFS-HRS; 3.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.90	251.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.54 WATERSHED INCHES; 814 CFS-HRS; 67.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.82	278.5	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.52 WATERSHED INCHES; 915 CFS-HRS; 75.6 ACRE-  
FEET.

OPERATION REACH XSECTION 51

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.99	273.8	284.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.52 WATERSHED INCHES; 914 CFS-HRS; 75.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.52 WATERSHED INCHES; 145 CFS-HRS; 75.6 ACRE-
FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,
UNLESS NEW RATING TABLE VALUES ARE INSERTED.
\*\*\*

OPERATION REACH XSECTION 53

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 55

Table with 3 columns: PEAK TIME(HRS), PEAK DISCHARGE(CFS), PEAK ELEVATION(FEET). Row 1: 12.21, 24.1, (RUNOFF). Includes header '1 TR20' and 'SCS'.

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.25 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 56

Table with 3 columns: PEAK TIME(HRS), PEAK DISCHARGE(CFS), PEAK ELEVATION(FEET). Row 1: 12.98, 278.3, (NULL).

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.51 WATERSHED INCHES; 940 CFS-HRS; 77.7 ACRE-
FEET.

\*\*\* WARNING - XSECTION 57
NO HYDROGRAPH IN INPUT LOCATION 5 OR 1 FOR ADDHYD OPERATION.

\*\*\*

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.98 278.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.49 WATERSHED INCHES; 940 CFS-HRS; 77.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.23 12.3 (RUNOFF)

		HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2						
		DRAINAGE AREA = .03						
		MAIN TIME INCREMENT = .060 hr,						
HRS	SQ.MI.							
11.64	CFS	.36	.53	.75	1.07	1.53	2.25	3.44
5.60								
12.12	CFS	8.86	11.72	12.23	10.90	9.15	7.73	6.64
5.84								
12.60	CFS	5.17	4.51	3.95	3.54	3.25	3.02	2.84
2.68								
13.08	CFS	2.52	2.37	2.23	2.11	2.01	1.92	1.83
1.74								
13.56	CFS	1.65	1.57	1.49	1.43	1.38	1.35	1.32
1.29								
14.04	CFS	1.27	1.25	1.23	1.21	1.18	1.16	1.14
1.12								
14.52	CFS	1.10	1.08	1.05	1.02	1.00	.98	.96
.94								
15.00	CFS	.91	.89	.87	.84	.82	.80	.79
.79								
15.48	CFS	.79	.78	.78	.77	.76	.75	.75
.75								
15.96	CFS	.74	.73	.72	.72	.71	.71	.70
.70								

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16.44 CFS .69 .68 .67 .67 .66 .66 .65



.65							
16.92 CFS	.64	.63	.63	.63	.62	.61	.60
.59							
17.40 CFS	.59	.59	.57	.56	.56	.55	.55
.54							
17.88 CFS	.53	.53	.52	.52	.51	.50	.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .85 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.98	281.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 955 CFS-HRS; 78.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.08	277.9	269.51

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 954 CFS-HRS; 78.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	7.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .81 WATERSHED INCHES; 9 CFS-HRS; .7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.08	279.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02  
 SQ.MI.

HRS							
8.28 CFS	.49	.52	.56	.60	.64	.68	.72
.76							
8.76 CFS	.81	.86	.90	.95	1.00	1.06	1.11
1.17							
9.24 CFS	1.22	1.28	1.34	1.41	1.48	1.55	1.63
1.73							
9.72 CFS	1.83	1.95	2.09	2.24	2.40	2.59	2.79
3.00							
10.20 CFS	3.24	3.50	3.77	4.06	4.37	4.70	5.05
5.42							

10.68 CFS	5.81	6.23	6.68	7.17	7.70	8.28	8.91
9.61							
11.16 CFS	10.38	11.23	12.19	13.26	14.47	15.84	17.38
19.14							
11.64 CFS	21.21	23.70	26.68	30.29	34.73	40.40	48.04
58.91							

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12.12 CFS	75	95	116	134	152	167	182
195							
12.60 CFS	210	226	239	251	261	270	275
279							
13.08 CFS	280	279	276	272	266	259	252
243							
13.56 CFS	235	226	217	207	199	192	184
176							
14.04 CFS	168	160	153	146	140	134	129
123							
14.52 CFS	119	114	110	106	102	99	95
92							
15.00 CFS	89.35	86.79	84.41	82.20	80.11	78.14	76.28
74.53							
15.48 CFS	72.89	71.33	69.87	68.47	67.14	65.87	64.67
63.53							
15.96 CFS	62.45	61.43	60.45	59.52	58.64	57.80	57.01
56.25							
16.44 CFS	55.53	54.84	54.17	53.53	52.92	52.33	51.77
51.22							
16.92 CFS	50.69	50.18	49.68	49.20	48.73	48.26	47.79
47.34							
17.40 CFS	46.90	46.47	46.04	45.61	45.18	44.76	44.34
43.93							
17.88 CFS	43.52	43.11	42.71	42.31	41.91	41.52	41.13
40.74							
18.36 CFS	40.35	39.97	39.60	39.23	38.87	38.54	38.21
37.88							
18.84 CFS	37.57	37.27	36.97	36.69	36.40	36.13	35.87
35.61							
19.32 CFS	35.37	35.14	34.92	34.70	34.49	34.29	34.08
33.88							
19.80 CFS	33.69	33.50	33.31	33.12	32.94	32.77	32.60
32.44							
20.28 CFS	32.27	32.10	31.93	31.76	31.59	31.42	31.26
31.11							
20.76 CFS	30.95	30.80	30.64	30.49	30.33	30.18	30.02
29.86							
21.24 CFS	29.71	29.55	29.41	29.26	29.12	28.98	28.84
28.69							
21.72 CFS	28.54	28.40	28.25	28.11	27.97	27.84	27.70
27.55							
22.20 CFS	27.41	27.26	27.11	26.96	26.81	26.67	26.52
26.38							
22.68 CFS	26.22	26.07	25.91	25.76	25.60	25.44	25.29
25.15							
23.16 CFS	25.00	24.86	24.71	24.56	24.41	24.27	24.12
23.97							

23.64 CFS	23.82	23.67	23.54	23.40	23.26	23.12	22.98
22.85							
24.12 CFS	22.67	22.39	22.00	21.53	21.02	20.49	19.95
19.39							
24.60 CFS	18.81	18.23	17.62	16.99	16.35	15.70	15.04
14.40							
25.08 CFS	13.77	13.16	12.58	12.02	11.50	11.00	10.54
10.12							
25.56 CFS	9.72	9.35	9.01	8.69	8.40	8.13	7.87
7.63							
26.04 CFS	7.41	7.21	7.01	6.83	6.66	6.50	6.34
6.20							
26.52 CFS	6.06	5.93	5.80	5.68			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.46 WATERSHED INCHES; 963 CFS-HRS; 79.6 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 162  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.08	279.6	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 963 CFS-HRS; 79.6 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 73, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 20.00 FEET BELOW ASSUMED CREST ELEVATION AT 260.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 73

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 163  
 NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 163

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)							PEAK
ELEVATION(FEET)								(NULL)
13.08	279.6							(NULL)
HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02								
HRS	SQ.MI.							
8.28 CFS	.49	.52	.56	.60	.64	.68	.72	.76
8.76 CFS	.81	.86	.90	.95	1.00	1.06	1.11	1.17
9.24 CFS	1.22	1.28	1.34	1.41	1.48	1.55	1.63	1.73
9.72 CFS	1.83	1.95	2.09	2.24	2.40	2.59	2.79	3.00
10.20 CFS	3.24	3.50	3.77	4.06	4.37	4.70	5.05	5.42
10.68 CFS	5.81	6.23	6.68	7.17	7.70	8.28	8.91	9.61
11.16 CFS	10.38	11.23	12.19	13.26	14.47	15.84	17.38	19.14
11.64 CFS	21.21	23.70	26.68	30.29	34.73	40.40	48.04	58.91
12.12 CFS	75	95	116	134	152	167	182	195
12.60 CFS	210	226	239	251	261	270	275	279
13.08 CFS	280	279	276	272	266	259	252	243
13.56 CFS	235	226	217	207	199	192	184	176
14.04 CFS	168	160	153	146	140	134	129	123
14.52 CFS	119	114	110	106	102	99	95	92
15.00 CFS	89.35	86.79	84.41	82.20	80.11	78.14	76.28	74.53
15.48 CFS	72.89	71.33	69.87	68.47	67.14	65.87	64.67	63.53
15.96 CFS	62.45	61.43	60.45	59.52	58.64	57.80	57.01	56.25
16.44 CFS	55.53	54.84	54.17	53.53	52.92	52.33	51.77	51.22
16.92 CFS	50.69	50.18	49.68	49.20	48.73	48.26	47.79	47.34
17.40 CFS	46.90	46.47	46.04	45.61	45.18	44.76	44.34	43.93
17.88 CFS	43.52	43.11	42.71	42.31	41.91	41.52	41.13	40.74
18.36 CFS	40.35	39.97	39.60	39.23	38.87	38.54	38.21	37.88
18.84 CFS	37.57	37.27	36.97	36.69	36.40	36.13	35.87	35.61
19.32 CFS	35.37	35.14	34.92	34.70	34.49	34.29	34.08	33.88

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19.80	CFS	33.69	33.50	33.31	33.12	32.94	32.77	32.60
32.44								
20.28	CFS	32.27	32.10	31.93	31.76	31.59	31.42	31.26
31.11								
20.76	CFS	30.95	30.80	30.64	30.49	30.33	30.18	30.02
29.86								
21.24	CFS	29.71	29.55	29.41	29.26	29.12	28.98	28.84
28.69								
21.72	CFS	28.54	28.40	28.25	28.11	27.97	27.84	27.70
27.55								
22.20	CFS	27.41	27.26	27.11	26.96	26.81	26.67	26.52
26.38								
22.68	CFS	26.22	26.07	25.91	25.76	25.60	25.44	25.29
25.15								
23.16	CFS	25.00	24.86	24.71	24.56	24.41	24.27	24.12
23.97								
23.64	CFS	23.82	23.67	23.54	23.40	23.26	23.12	22.98
22.85								
24.12	CFS	22.67	22.39	22.00	21.53	21.02	20.49	19.95
19.39								
24.60	CFS	18.81	18.23	17.62	16.99	16.35	15.70	15.04
14.40								
25.08	CFS	13.77	13.16	12.58	12.02	11.50	11.00	10.54
10.12								
25.56	CFS	9.72	9.35	9.01	8.69	8.40	8.13	7.87
7.63								
26.04	CFS	7.41	7.21	7.01	6.83	6.66	6.50	6.34
6.20								
26.52	CFS	6.06	5.93	5.80	5.68			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.46 WATERSHED INCHES; 963 CFS-HRS; 79.6 ACRE-  
FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.29	271.4	249.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.46 WATERSHED INCHES; 962 CFS-HRS; 79.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	8.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
FEET.

OPERATION RESVOR      STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	4.7	332.36
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.71 WATERSHED INCHES;	12 CFS-HRS;	1.0 ACRE-
FEEET.		

OPERATION REACH      XSECTION 65

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.86	4.6	300.46
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.71 WATERSHED INCHES;	12 CFS-HRS;	1.0 ACRE-
FEEET.		

OPERATION RUNOFF      XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	21.6	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.83 WATERSHED INCHES;	25 CFS-HRS;	2.0 ACRE-
FEEET.		

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR      STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	12.4	290.42
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.83 WATERSHED INCHES;	25 CFS-HRS;	2.0 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 67

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.58	16.5	(NULL)
20.11	1.0	(NULL)
20.66	1.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.00 WATERSHED INCHES; 37 CFS-HRS; 3.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.20	46.1	(RUNOFF)
24.02	1.1	(RUNOFF)

1

TR20 ----- SCS

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION  
04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.98 WATERSHED INCHES; 49 CFS-HRS; 4.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.21	59.0	(NULL)
21.97	2.2	(NULL)
23.10	2.0	(NULL)
24.03	1.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.99 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
FEET.

OPERATION REACH XSECTION 70

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.32	52.5	248.34
22.02	2.2	247.44
23.17	2.0	247.42
24.09	1.9	247.41

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.99 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.13	13.2	
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.40 WATERSHED INCHES;	11 CFS-HRS;	.9 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	3.4	263.40
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.40 WATERSHED INCHES;	11 CFS-HRS;	.9 ACRE-
FEET.		

OPERATION REACH XSECTION 72

1  
 TR20 ----- SCS  
 -  
 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.64	3.3	247.53
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.39 WATERSHED INCHES;	11 CFS-HRS;	.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	34.3	(RUNOFF)
15.86	2.4	(RUNOFF)
24.02	1.2	(RUNOFF)
HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2		
HRS	MAIN TIME INCREMENT = .060 hr,	DRAINAGE AREA = .11
SQ.MI.		
11.82 CFS	.39	1.24 3.08 6.90 14.15 26.24 33.87
32.06		
12.30 CFS	26.87	22.73 19.37 17.02 15.52 13.85 12.00
10.64		
12.78 CFS	9.83	9.24 8.76 8.33 7.90 7.45 7.01
6.64		
13.26 CFS	6.35	6.08 5.81 5.55 5.28 5.01 4.76
4.55		
13.74 CFS	4.40	4.28 4.19 4.12 4.06 4.02 3.96
3.88		
14.22 CFS	3.80	3.72 3.66 3.61 3.56 3.48 3.40



3.31								
14.70	CFS	3.23	3.17	3.11	3.05	2.97	2.90	2.83
2.75								
15.18	CFS	2.67	2.61	2.57	2.55	2.54	2.54	2.54
2.53								
15.66	CFS	2.49	2.45	2.43	2.44	2.44	2.41	2.37
2.34								
16.14	CFS	2.32	2.32	2.31	2.28	2.26	2.24	2.21
2.18								
16.62	CFS	2.16	2.15	2.15	2.13	2.10	2.08	2.07
2.07								
17.10	CFS	2.05	2.01	1.96	1.94	1.95	1.94	1.91
1.87								
17.58	CFS	1.83	1.81	1.81	1.79	1.77	1.74	1.72
1.71								
18.06	CFS	1.70	1.68	1.65	1.63	1.62	1.61	1.58
1.57								
18.54	CFS	1.58	1.60	1.61	1.59	1.57	1.59	1.59
1.57								
19.02	CFS	1.55	1.54	1.54	1.54	1.54	1.54	1.54
1.54								
19.50	CFS	1.54	1.54	1.51	1.50	1.51	1.51	1.48
1.47								
19.98	CFS	1.48	1.50	1.51	1.49	1.47	1.47	1.46
1.44								
20.46	CFS	1.41	1.42	1.44	1.45	1.43	1.41	1.42
1.43								
20.94	CFS	1.41	1.39	1.38	1.37	1.37	1.37	1.37
1.37								
21.42	CFS	1.37	1.38	1.37	1.35	1.33	1.33	1.34
1.32								
21.90	CFS	1.33	1.34	1.33	1.31	1.29	1.29	1.28
1.28								
22.38	CFS	1.28	1.28	1.29	1.28	1.25	1.23	1.24
1.24								
22.86	CFS	1.22	1.20	1.21	1.24	1.24	1.22	1.20
1.20								
23.34	CFS	1.19	1.19	1.18	1.15	1.14	1.15	1.17
1.17								
23.82	CFS	1.15	1.12	1.12	1.18	1.16	.84	.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .59 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

Dist;H1&H8UG;GHC2.04TEST

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.28	277.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.37 WATERSHED INCHES; 1004 CFS-HRS; 82.9 ACRE-

FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.33	55.6	(NULL)
24.09	2.1	(NULL)

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2						
	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = .15		
HRS							
SQ.MI.							
11.04 CFS	.49	.56	.65	.78	.95	1.16	1.40
1.69							
11.52 CFS	2.03	2.44	3.01	3.84	4.91	6.23	7.89
10.15							
12.00 CFS	13.48	18.88	26.76	38.51	49.56	55.03	54.55
51.34							
12.48 CFS	47.52	44.02	41.15	38.63	36.19	33.98	31.91
30.07							
12.96 CFS	28.46	26.76	24.95	23.27	21.59	19.88	18.73
17.79							
13.44 CFS	16.98	16.22	15.50	14.80	14.08	13.38	12.74
12.18							
13.92 CFS	11.68	11.23	10.83	10.47	10.14	9.83	9.53
9.22							
14.40 CFS	8.87	8.52	8.21	7.93	7.65	7.34	7.04
6.78							
14.88 CFS	6.55	6.35	6.17	5.99	5.82	5.65	5.49
5.34							
15.36 CFS	5.20	5.10	5.03	4.98	4.94	4.90	4.85
4.79							
15.84 CFS	4.74	4.70	4.67	4.64	4.60	4.54	4.49
4.45							
16.32 CFS	4.42	4.39	4.35	4.30	4.26	4.21	4.16
4.13							
16.80 CFS	4.10	4.07	4.03	3.99	3.95	3.92	3.89
3.85							
17.28 CFS	3.79	3.74	3.70	3.68	3.64	3.60	3.54
3.49							
17.76 CFS	3.44	3.41	3.37	3.33	3.29	3.25	3.22
3.19							
18.24 CFS	3.15	3.11	3.07	3.05	3.01	2.98	2.96
2.96							
18.72 CFS	2.96	2.95	2.94	2.93	2.93	2.92	2.89
2.88							
19.20 CFS	2.86	2.85	2.84	2.84	2.84	2.84	2.84
2.83							
19.68 CFS	2.81	2.79	2.78	2.77	2.76	2.74	2.72
2.73							
20.16 CFS	2.74	2.74	2.72	2.71	2.69	2.67	2.64
2.62							
20.64 CFS	2.62	2.63	2.63	2.61	2.60	2.60	2.59
2.57							
21.12 CFS	2.55	2.53	2.52	2.51	2.51	2.50	2.50
2.50							
21.60 CFS	2.50	2.48	2.46	2.44	2.44	2.43	2.42
2.42							
22.08 CFS	2.42	2.40	2.38	2.36	2.35	2.34	2.34
2.33							
22.56 CFS	2.33	2.32	2.30	2.28	2.27	2.26	2.24
2.22							
23.04 CFS	2.21	2.21	2.22	2.22	2.20	2.18	2.17

2.16								
23.52 CFS	2.15	2.13	2.10	2.09	2.10	2.10	2.09	
2.07								
24.00 CFS	2.05	2.06	2.07	1.92	1.58	1.19	.86	
.62								
24.48 CFS	.44							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.02 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

Dist;H1&H8UG;GHC2.04TEST

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.23	297.7	(NULL)

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2						
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28						
HRS							
SQ.MI.							
8.46 CFS	.48	.51	.55	.59	.63	.67	.72
.76							
8.94 CFS	.81	.86	.91	.96	1.02	1.07	1.13
1.19							
9.42 CFS	1.25	1.31	1.38	1.45	1.52	1.61	1.70
1.81							
9.90 CFS	1.92	2.06	2.20	2.36	2.54	2.73	2.94
3.17							
10.38 CFS	3.42	3.69	3.97	4.27	4.60	4.94	5.30
5.69							
10.86 CFS	6.11	6.56	7.05	7.58	8.18	8.86	9.62
10.49							
11.34 CFS	11.47	12.58	13.83	15.25	16.88	18.82	21.23
24.22							
11.82 CFS	28	33	40	51	69	96	124
146							
12.30 CFS	162	173	183	193	203	214	224
236							
12.78 CFS	247	259	269	279	286	292	296
297							
13.26 CFS	297	296	293	289	284	277	270
262							
13.74 CFS	253	244	235	227	218	210	202
193							
14.22 CFS	185	178	170	163	156	150	144
138							
14.70 CFS	133	128	123	118	114	110	107
103							
15.18 CFS	99.87	96.90	94.16	91.64	89.30	87.14	85.14
83.24							
15.66 CFS	81.44	79.72	78.10	76.58	75.16	73.79	72.48
71.22							
16.14 CFS	70.03	68.90	67.84	66.83	65.85	64.93	64.04

63.18								
16.62	CFS	62.36	61.59	60.86	60.15	59.46	58.79	58.16
57.56								
17.10	CFS	56.96	56.37	55.77	55.19	54.66	54.14	53.62
53.08								
17.58	CFS	52.55	52.03	51.53	51.05	50.56	50.06	49.58
49.12								
18.06	CFS	48.66	48.20	47.73	47.27	46.82	46.38	45.93
45.49								
18.54	CFS	45.09	44.71	44.34	43.96	43.59	43.24	42.90
42.55								
19.02	CFS	42.20	41.87	41.54	41.24	40.94	40.66	40.39
40.14								
19.50	CFS	39.89	39.64	39.39	39.13	38.90	38.68	38.44
38.21								
19.98	CFS	38.00	37.81	37.63	37.44	37.24	37.05	36.85
36.64								
20.46	CFS	36.43	36.23	36.06	35.90	35.73	35.54	35.37
35.21								
20.94	CFS	35.03	34.85	34.66	34.48	34.30	34.13	33.97
33.81								
21.42	CFS	33.65	33.50	33.35	33.18	33.00	32.83	32.67
32.51								
21.90	CFS	32.35	32.22	32.06	31.90	31.73	31.56	31.40
31.24								
22.38	CFS	31.09	30.93	30.78	30.63	30.45	30.27	30.10
29.94								
22.86	CFS	29.76	29.57	29.40	29.26	29.11	28.95	28.78
28.61								
23.34	CFS	28.44	28.28	28.12	27.93	27.74	27.58	27.44
27.30								
23.82	CFS	27.14	26.96	26.79	26.69	26.54	26.09	25.40
24.64								
24.30	CFS	23.89	23.19	22.55	21.95	21.37	20.80	20.22
19.64								
24.78	CFS	19.05	18.45	17.84	17.21	16.58	15.94	15.31
14.67								
25.26	CFS	14.06	13.46	12.88	12.33	11.81	11.31	10.85
10.41								
25.74	CFS	10.00	9.62	9.26	8.93	8.62	8.33	8.06
7.81								
26.22	CFS	7.58	7.36	7.15	6.96	6.78	6.61	6.45
6.29								
26.70	CFS	6.15						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.33 WATERSHED INCHES; 1100 CFS-HRS; 90.9 ACRE-FEET.

OPERATION DIVERT XSECTION 176

1 TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
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OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK



12.78 CFS	247	259	269	279	286	292	296
297							
13.26 CFS	297	296	293	289	284	277	270
262							
13.74 CFS	253	244	235	227	218	210	202
193							

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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14.22 CFS	185	178	170	163	156	150	144
138							
14.70 CFS	133	128	123	118	114	110	107
103							
15.18 CFS	99.87	96.90	94.16	91.64	89.30	87.14	85.14
83.24							
15.66 CFS	81.44	79.72	78.10	76.58	75.16	73.79	72.48
71.22							
16.14 CFS	70.03	68.90	67.84	66.83	65.85	64.93	64.04
63.18							
16.62 CFS	62.36	61.59	60.86	60.15	59.46	58.79	58.16
57.56							
17.10 CFS	56.96	56.37	55.77	55.19	54.66	54.14	53.62
53.08							
17.58 CFS	52.55	52.03	51.53	51.05	50.56	50.06	49.58
49.12							
18.06 CFS	48.66	48.20	47.73	47.27	46.82	46.38	45.93
45.49							
18.54 CFS	45.09	44.71	44.34	43.96	43.59	43.24	42.90
42.55							
19.02 CFS	42.20	41.87	41.54	41.24	40.94	40.66	40.39
40.14							
19.50 CFS	39.89	39.64	39.39	39.13	38.90	38.68	38.44
38.21							
19.98 CFS	38.00	37.81	37.63	37.44	37.24	37.05	36.85
36.64							
20.46 CFS	36.43	36.23	36.06	35.90	35.73	35.54	35.37
35.21							
20.94 CFS	35.03	34.85	34.66	34.48	34.30	34.13	33.97
33.81							
21.42 CFS	33.65	33.50	33.35	33.18	33.00	32.83	32.67
32.51							
21.90 CFS	32.35	32.22	32.06	31.90	31.73	31.56	31.40
31.24							
22.38 CFS	31.09	30.93	30.78	30.63	30.45	30.27	30.10
29.94							
22.86 CFS	29.76	29.57	29.40	29.26	29.11	28.95	28.78
28.61							
23.34 CFS	28.44	28.28	28.12	27.93	27.74	27.58	27.44
27.30							
23.82 CFS	27.14	26.96	26.79	26.69	26.54	26.09	25.40
24.64							
24.30 CFS	23.89	23.19	22.55	21.95	21.37	20.80	20.22
19.64							
24.78 CFS	19.05	18.45	17.84	17.21	16.58	15.94	15.31
14.67							
25.26 CFS	14.06	13.46	12.88	12.33	11.81	11.31	10.85
10.41							

25.74 CFS	10.00	9.62	9.26	8.93	8.62	8.33	8.06
7.81							
26.22 CFS	7.58	7.36	7.15	6.96	6.78	6.61	6.45
6.29							
26.70 CFS	6.15						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.33 WATERSHED INCHES; 1100 CFS-HRS; 90.9 ACRE-FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.30	297.4	228.65

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.33 WATERSHED INCHES; 1100 CFS-HRS; 90.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	27.4	(RUNOFF)
17.35	1.1	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05 SQ.MI.

HRS	11.52 CFS	.41	.66	1.01	1.43	1.94	2.73	3.90
	5.71							
	12.00 CFS	9.08	14.77	23.27	27.41	23.98	19.09	15.59
	12.97							

1 TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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12.48 CFS	11.21	10.12	8.90	7.63	6.74	6.21	5.83
5.51							
12.96 CFS	5.22	4.93	4.64	4.35	4.11	3.93	3.75
3.58							
13.44 CFS	3.41	3.23	3.07	2.91	2.78	2.69	2.61
2.55							
13.92 CFS	2.51	2.47	2.44	2.40	2.35	2.30	2.25
2.21							
14.40 CFS	2.18	2.15	2.10	2.05	1.99	1.94	1.91
1.87							
14.88 CFS	1.83	1.78	1.74	1.69	1.64	1.59	1.56
1.53							
15.36 CFS	1.52	1.52	1.52	1.52	1.51	1.48	1.46
1.45							
15.84 CFS	1.45	1.45	1.43	1.41	1.39	1.38	1.38
1.37							
16.32 CFS	1.35	1.34	1.33	1.31	1.29	1.28	1.27
1.27							

16.80 CFS	1.26	1.24	1.23	1.22	1.22	1.21	1.18
1.15							
17.28 CFS	1.14	1.15	1.14	1.12	1.10	1.08	1.07
1.06							
17.76 CFS	1.05	1.04	1.02	1.01	1.01	1.00	.98
.96							
18.24 CFS	.95	.95	.94	.93	.92	.93	.94
.94							
18.72 CFS	.93	.92	.93	.93	.91	.90	.90
.90							
19.20 CFS	.90	.90	.90	.90	.90	.90	.90
.88							
19.68 CFS	.87	.88	.88	.86	.85	.86	.87
.88							
20.16 CFS	.86	.85	.85	.85	.83	.82	.82
.84							
20.64 CFS	.84	.83	.82	.82	.83	.82	.80
.80							
21.12 CFS	.80	.79	.79	.79	.79	.80	.80
.79							
21.60 CFS	.78	.77	.77	.77	.76	.77	.77
.77							
22.08 CFS	.75	.75	.74	.74	.74	.74	.74
.74							
22.56 CFS	.74	.72	.71	.72	.72	.70	.69
.70							
23.04 CFS	.71	.71	.70	.69	.69	.69	.68
.68							
23.52 CFS	.66	.65	.66	.67	.68	.66	.64
.64							
24.00 CFS	.68	.66	.46				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .86 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.29	301.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.31 WATERSHED INCHES; 1128 CFS-HRS; 93.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.36	301.2	212.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.31 WATERSHED INCHES; 1128 CFS-HRS; 93.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 81

1 TR20 ----- SCS



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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	13.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.71 WATERSHED INCHES; 14 CFS-HRS;		
FEET. 1.2 ACRE-		
OPERATION ADDHYD XSECTION 82		
PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.35	303.1	177.09
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.30 WATERSHED INCHES; 1142 CFS-HRS;		
FEET. 94.4 ACRE-		
OPERATION RUNOFF XSECTION 83		
PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	32.4	(RUNOFF)
17.34	1.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.94 WATERSHED INCHES; 31 CFS-HRS;		
FEET. 2.6 ACRE-		
OPERATION RUNOFF XSECTION 84		
PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	32.5	(RUNOFF)
23.12	1.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.89 WATERSHED INCHES; 42 CFS-HRS;		
FEET. 3.4 ACRE-		
OPERATION DIVERT XSECTION 184		
OUTPUT #1 HYDROGRAPH		
PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	32.5	(DIVERT)
23.12	1.0	(DIVERT)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
42 CFS-HRS; 3.4 ACRE-FEET.		
OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)		

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\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 81, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 200.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 81

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 185  
 NO HYDROGRAPH IN INPUT LOCATION 1 OR 6 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 185

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	32.5	(NULL)
23.12	1.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .89 WATERSHED INCHES; 42 CFS-HRS; 3.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 186

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	9.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .52 WATERSHED INCHES; 16 CFS-HRS; 1.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 187

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	42.0	(NULL)
24.02	1.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .75 WATERSHED INCHES; 57 CFS-HRS; 4.7 ACRE-  
 FEET.

1

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OPERATION ADDHYD XSECTION 85

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	68.1	(NULL)
24.00	2.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .17  
 SQ.MI.

11.34 CFS	.49	.74	1.04	1.40	2.02	2.88	3.85
5.10							
11.82 CFS	6.91	9.68	14.06	21.82	35.47	55.61	67.12
65.85							
12.30 CFS	60.68	53.25	45.81	40.10	35.81	31.52	27.61
24.55							
12.78 CFS	22.17	20.33	18.90	17.71	16.60	15.55	14.59
13.76							
13.26 CFS	13.06	12.42	11.83	11.27	10.71	10.17	9.65
9.21							
13.74 CFS	8.85	8.54	8.31	8.12	7.97	7.84	7.71
7.56							
14.22 CFS	7.40	7.25	7.12	7.00	6.89	6.75	6.60
6.44							
14.70 CFS	6.29	6.15	6.03	5.90	5.76	5.62	5.49
5.33							
15.18 CFS	5.18	5.06	4.96	4.90	4.86	4.84	4.82
4.79							
15.66 CFS	4.74	4.67	4.63	4.63	4.60	4.57	4.51
4.45							
16.14 CFS	4.41	4.39	4.36	4.32	4.28	4.24	4.19
4.14							
16.62 CFS	4.10	4.07	4.05	4.01	3.97	3.93	3.91
3.89							
17.10 CFS	3.85	3.79	3.72	3.68	3.66	3.64	3.60
3.53							
17.58 CFS	3.47	3.43	3.40	3.37	3.32	3.28	3.24
3.22							
18.06 CFS	3.19	3.15	3.10	3.07	3.04	3.02	2.97
2.95							
18.54 CFS	2.96	2.97	2.98	2.95	2.94	2.95	2.94
2.92							
19.02 CFS	2.89	2.88	2.87	2.86	2.86	2.86	2.86
2.86							

19.50 CFS	2.86	2.85	2.81	2.80	2.80	2.79	2.76
2.74							
19.98 CFS	2.74	2.77	2.77	2.75	2.74	2.72	2.71
2.67							
20.46 CFS	2.64	2.64	2.65	2.66	2.65	2.62	2.63
2.63							
20.94 CFS	2.60	2.58	2.56	2.55	2.54	2.53	2.53
2.53							
21.42 CFS	2.53	2.53	2.53	2.50	2.47	2.47	2.46
2.44							
21.90 CFS	2.45	2.46	2.44	2.42	2.40	2.38	2.37
2.37							
22.38 CFS	2.36	2.36	2.36	2.35	2.31	2.29	2.30
2.28							
22.86 CFS	2.25	2.23	2.23	2.26	2.26	2.24	2.22
2.21							
23.34 CFS	2.20	2.19	2.17	2.13	2.11	2.12	2.14
2.14							
23.82 CFS	2.11	2.08	2.07	2.14	2.08	1.66	1.18
.79							
24.30 CFS	.49						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .80 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.33	315.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.24 WATERSHED INCHES; 1231 CFS-HRS; 101.7 ACRE-  
 FEET.

1 TR20 ----- SCS

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OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	22.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.89 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.33	317.3	(NULL)

		HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2						
		MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = 1.55		
HRS	SQ.MI.							
8.40	CFS	.48	.51	.55	.59	.63	.67	.71
.76								
8.88	CFS	.81	.86	.91	.97	1.02	1.08	1.15
1.21								
9.36	CFS	1.28	1.35	1.42	1.49	1.57	1.65	1.73
1.82								
9.84	CFS	1.92	2.02	2.14	2.28	2.43	2.59	2.76
2.95								
10.32	CFS	3.16	3.39	3.64	3.90	4.19	4.52	4.87
5.24								
10.80	CFS	5.64	6.06	6.51	6.98	7.49	8.10	8.78
9.59								
11.28	CFS	10.51	11.58	12.87	14.34	16.05	18.53	21.66
25.07								
11.76	CFS	29	35	43	55	75	106	153
189								
12.24	CFS	209	223	230	233	235	238	241
245								
12.72	CFS	251	258	266	276	285	294	302
308								
13.20	CFS	313	316	317	317	315	311	307
301								
13.68	CFS	293	286	277	268	259	250	241
233								
14.16	CFS	224	215	207	199	191	183	175
168								
14.64	CFS	162	155	149	144	138	133	129
124								
15.12	CFS	120	116	112	109	106	103	100
98								
15.60	CFS	95.45	93.32	91.29	89.40	87.65	85.98	84.38
82.84								
16.08	CFS	81.36	79.97	78.66	77.42	76.21	75.06	73.98
72.91								
16.56	CFS	71.89	70.92	70.01	69.16	68.31	67.50	66.72
65.99								
17.04	CFS	65.29	64.59	63.88	63.16	62.49	61.88	61.26
60.65								
17.52	CFS	60.01	59.39	58.79	58.21	57.64	57.06	56.50
55.95								
18.00	CFS	55.42	54.90	54.36	53.82	53.30	52.79	52.29
51.77								
18.48	CFS	51.28	50.85	50.45	50.04	49.62	49.23	48.86
48.47								
18.96	CFS	48.08	47.69	47.32	46.95	46.61	46.28	45.97
45.67								
19.44	CFS	45.39	45.12	44.84	44.53	44.25	44.01	43.74
43.46								
19.92	CFS	43.19	42.97	42.78	42.57	42.35	42.13	41.92
41.70								
20.40	CFS	41.44	41.19	40.98	40.80	40.63	40.42	40.22
40.05								
20.88	CFS	39.87	39.66	39.45	39.24	39.04	38.84	38.65
38.47								
21.36	CFS	38.30	38.14	37.98	37.81	37.61	37.40	37.23
37.05								
21.84	CFS	36.85	36.70	36.55	36.37	36.19	36.00	35.81
35.63								
22.32	CFS	35.45	35.29	35.12	34.97	34.79	34.58	34.39
34.22								

22.80	CFS	34.02	33.81	33.60	33.43	33.29	33.12	32.95
32.76								
23.28	CFS	32.58	32.39	32.21	32.02	31.79	31.58	31.42
31.26								
23.76	CFS	31.11	30.92	30.71	30.52	30.48	30.23	29.41
28.38								

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24.24	CFS	27.27	26.17	25.16	24.25	23.46	22.76	22.12
21.52								
24.72	CFS	20.93	20.35	19.76	19.17	18.57	17.96	17.34
16.71								
25.20	CFS	16.07	15.43	14.80	14.18	13.58	13.00	12.44
11.92								
25.68	CFS	11.41	10.94	10.50	10.08	9.69	9.33	8.99
8.68								
26.16	CFS	8.39	8.12	7.86	7.62	7.40	7.19	7.00
6.82								
26.64	CFS	6.64	6.48					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.25 WATERSHED INCHES; 1250 CFS-HRS; 103.3 ACRE-  
FEET.

OPERATION DIVERT XSECTION 81  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.33	317.3	177.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1250 CFS-HRS; 103.3 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 71, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE

STARTS 25.00 FEET BELOW ASSUMED CREST ELEVATION AT 174.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 71

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 89  
 NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 89

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.33	317.3	(NULL)

1

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		HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2						
		MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = 1.55		
HRS	SQ.MI.							
8.40 CFS	.76	.48	.51	.55	.59	.63	.67	.71
8.88 CFS	1.21	.81	.86	.91	.97	1.02	1.08	1.15
9.36 CFS	1.82	1.28	1.35	1.42	1.49	1.57	1.65	1.73
9.84 CFS	2.95	1.92	2.02	2.14	2.28	2.43	2.59	2.76
10.32 CFS	5.24	3.16	3.39	3.64	3.90	4.19	4.52	4.87
10.80 CFS	9.59	5.64	6.06	6.51	6.98	7.49	8.10	8.78
11.28 CFS	25.07	10.51	11.58	12.87	14.34	16.05	18.53	21.66
11.76 CFS	189	29	35	43	55	75	106	153
12.24 CFS	245	209	223	230	233	235	238	241
12.72 CFS	308	251	258	266	276	285	294	302
13.20 CFS	301	313	316	317	317	315	311	307
13.68 CFS	233	293	286	277	268	259	250	241
14.16 CFS	168	224	215	207	199	191	183	175
14.64 CFS	124	162	155	149	144	138	133	129
15.12 CFS	98	120	116	112	109	106	103	100
15.60 CFS	82.84	95.45	93.32	91.29	89.40	87.65	85.98	84.38
16.08 CFS	72.91	81.36	79.97	78.66	77.42	76.21	75.06	73.98
16.56 CFS		71.89	70.92	70.01	69.16	68.31	67.50	66.72

65.99								
17.04	CFS	65.29	64.59	63.88	63.16	62.49	61.88	61.26
60.65								
17.52	CFS	60.01	59.39	58.79	58.21	57.64	57.06	56.50
55.95								
18.00	CFS	55.42	54.90	54.36	53.82	53.30	52.79	52.29
51.77								
18.48	CFS	51.28	50.85	50.45	50.04	49.62	49.23	48.86
48.47								
18.96	CFS	48.08	47.69	47.32	46.95	46.61	46.28	45.97
45.67								
19.44	CFS	45.39	45.12	44.84	44.53	44.25	44.01	43.74
43.46								
19.92	CFS	43.19	42.97	42.78	42.57	42.35	42.13	41.92
41.70								
20.40	CFS	41.44	41.19	40.98	40.80	40.63	40.42	40.22
40.05								
20.88	CFS	39.87	39.66	39.45	39.24	39.04	38.84	38.65
38.47								
21.36	CFS	38.30	38.14	37.98	37.81	37.61	37.40	37.23
37.05								
21.84	CFS	36.85	36.70	36.55	36.37	36.19	36.00	35.81
35.63								
22.32	CFS	35.45	35.29	35.12	34.97	34.79	34.58	34.39
34.22								
22.80	CFS	34.02	33.81	33.60	33.43	33.29	33.12	32.95
32.76								
23.28	CFS	32.58	32.39	32.21	32.02	31.79	31.58	31.42
31.26								
23.76	CFS	31.11	30.92	30.71	30.52	30.48	30.23	29.41
28.38								
24.24	CFS	27.27	26.17	25.16	24.25	23.46	22.76	22.12
21.52								
24.72	CFS	20.93	20.35	19.76	19.17	18.57	17.96	17.34
16.71								
25.20	CFS	16.07	15.43	14.80	14.18	13.58	13.00	12.44
11.92								
25.68	CFS	11.41	10.94	10.50	10.08	9.69	9.33	8.99
8.68								
26.16	CFS	8.39	8.12	7.86	7.62	7.40	7.19	7.00
6.82								
26.64	CFS	6.64	6.48					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.25 WATERSHED INCHES; 1250 CFS-HRS; 103.3 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

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EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 89  
 STARTING TIME = .00 RAIN DEPTH = 4.10 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS



ALTERNATE NO. = 1

STORM NO. = 5

RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	36.2	(RUNOFF)
20.13	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.20 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	34.3	390.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.20 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	61.8	(RUNOFF)
23.98	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.08 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	92.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.13 WATERSHED INCHES; 126 CFS-HRS; 10.4 ACRE-FEET.

OPERATION RESVOR STRUCTURE 11

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	97.1	382.73

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.13 WATERSHED INCHES; 126 CFS-HRS; 10.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	90.5	368.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.12 WATERSHED INCHES; 125 CFS-HRS; 10.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	75.6	(RUNOFF)
20.13	2.4	(RUNOFF)
23.74	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.91 WATERSHED INCHES; 98 CFS-HRS; 8.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	161.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.02 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 107  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	161.2	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 224 CFS-HRS; 18.5 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

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\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 84, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 358.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 84

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 108  
NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	161.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.02 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-  
FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	155.6	357.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.02 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	106.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.10 WATERSHED INCHES; 147 CFS-HRS; 12.1 ACRE-  
FEET.

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\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE

STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.

THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.

\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.90	30.4	375.57
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.74 WATERSHED INCHES; 130 CFS-HRS; 10.7 ACRE-FEET.		

OPERATION RUNOFF XSECTION 10

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.13	11.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.53 WATERSHED INCHES; 10 CFS-HRS; .8 ACRE-FEET.		

OPERATION RESVOR STRUCTURE 22

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
13.04	29.1	354.29
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.74 WATERSHED INCHES; 130 CFS-HRS; 10.7 ACRE-FEET.		

OPERATION RUNOFF XSECTION 11

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.19	56.1	(RUNOFF)
15.83	2.5	(RUNOFF)
24.02	1.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.62 WATERSHED INCHES; 57 CFS-HRS; 4.7 ACRE-FEET.		

OPERATION ADDHYD XSECTION 12

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.44	182.5	(NULL)

24.01 5.4 (NULL)
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.93 WATERSHED INCHES; 281 CFS-HRS; 23.2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.20 24.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.05 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.44 191.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.12 WATERSHED INCHES; 409 CFS-HRS; 33.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.44 203.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.11 WATERSHED INCHES; 435 CFS-HRS; 35.9 ACRE-
FEET.

\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE
TIME INCREMENT OF .006 HOURS.
\*\*\*

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.68 148.0 339.31
13.55 64.5 335.59
13.67 55.8 335.25
13.79 49.1 334.99
13.90 43.9 334.79
14.01 39.9 334.63

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5								
HRS	MAIN TIME INCREMENT = .060 hr,			DRAINAGE AREA = .32				
SQ.MI.								
5.28 CFS	.00	.01	.01	.01	.01	.01	.01	.01
.01								
5.28 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
5.76 CFS	.01	.01	.02	.02	.02	.02	.02	.02
.02								
5.76 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								

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6.24 CFS	.02	.03	.03	.03	.03	.03	.03	.03
.04								
6.24 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
6.72 CFS	.04	.04	.04	.04	.05	.05	.05	.05
.05								
6.72 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
7.20 CFS	.06	.06	.06	.07	.07	.07	.07	.08
.08								
7.20 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
7.68 CFS	.08	.09	.09	.09	.10	.10	.10	.10
.11								
7.68 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
8.16 CFS	.11	.12	.12	.13	.13	.13	.13	.14
.15								
8.16 ELEV	333.08	333.08	333.08	333.08	333.09	333.09	333.09	333.09
333.09								
8.64 CFS	.16	.17	.18	.20	.22	.23	.23	.25
.27								
8.64 ELEV	333.09	333.09	333.09	333.09	333.09	333.09	333.09	333.09
333.09								
9.12 CFS	.29	.32	.36	.40	.45	.50	.50	.56
.63								
9.12 ELEV	333.09	333.09	333.09	333.10	333.10	333.10	333.10	333.10
333.10								
9.60 CFS	.70	.77	.85	.94	1.03	1.13	1.13	1.23
1.34								
9.60 ELEV	333.11	333.11	333.11	333.12	333.12	333.12	333.12	333.13
333.13								
10.08 CFS	1.46	1.60	1.76	1.92	2.09	2.26	2.26	2.45
2.64								
10.08 ELEV	333.14	333.14	333.15	333.15	333.16	333.17	333.17	333.18
333.18								
10.56 CFS	2.85	3.08	3.34	3.64	3.98	4.36	4.36	4.78
5.24								
10.56 ELEV	333.19	333.20	333.21	333.22	333.23	333.25	333.25	333.27
333.28								
11.04 CFS	5.74	6.30	6.95	7.69	8.52	9.44	9.44	10.51
11.75								

11.04 ELEV	333.30	333.33	333.35	333.38	333.41	333.45	333.49
333.54							
11.52 CFS	13.19	15.09	17.77	20.96	24.61	29.28	36.49
47.74							
11.52 ELEV	333.59	333.67	333.77	333.90	334.04	334.22	334.50
334.94							
12.00 CFS	64	87	102	108	118	126	131
136							
12.00 ELEV	335.57	336.48	337.06	337.36	337.79	338.17	338.40
338.66							
12.48 CFS	141	145	147	148	148	147	145
143							
12.48 ELEV	338.92	339.13	339.25	339.30	339.30	339.24	339.15
339.05							
12.96 CFS	141	138	135	132	129	125	117
109							
12.96 ELEV	338.93	338.80	338.64	338.48	338.30	338.12	337.75
337.40							
13.44 CFS	102	55	64	51	56	47	49
43							
13.44 ELEV	337.07	335.23	335.58	335.06	335.24	334.89	334.98
334.74							
13.92 CFS	43.60	39.41	39.58	36.66	36.44	34.33	33.95
32.54							
13.92 ELEV	334.78	334.61	334.62	334.51	334.50	334.42	334.40
334.35							
14.40 CFS	32.27	31.36	31.09	30.38	30.04	29.45	29.10
28.59							
14.40 ELEV	334.34	334.30	334.29	334.26	334.25	334.23	334.21
334.19							
14.88 CFS	28.23	27.75	27.36	26.90	26.50	26.04	25.63
25.24							
14.88 ELEV	334.18	334.16	334.14	334.13	334.11	334.09	334.08
334.06							
15.36 CFS	24.90	24.59	24.33	24.09	23.87	23.65	23.44
23.25							
15.36 ELEV	334.05	334.04	334.03	334.02	334.01	334.00	333.99
333.98							
15.84 CFS	23.10	22.97	22.82	22.66	22.50	22.35	22.22
22.09							
15.84 ELEV	333.98	333.97	333.97	333.96	333.96	333.95	333.94
333.94							
16.32 CFS	21.95	21.80	21.66	21.52	21.37	21.22	21.09
20.96							
16.32 ELEV	333.93	333.93	333.92	333.92	333.91	333.91	333.90
333.90							
16.80 CFS	20.82	20.67	20.53	20.40	20.28	20.15	20.00
19.84							
16.80 ELEV	333.89	333.88	333.88	333.87	333.87	333.86	333.86
333.85							
17.28 CFS	19.68	19.55	19.43	19.29	19.12	18.96	18.80
18.66							
17.28 ELEV	333.85	333.84	333.84	333.83	333.82	333.82	333.81
333.81							
17.76 CFS	18.52	18.37	18.21	18.06	17.93	17.80	17.66
17.51							

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17.76 ELEV	333.80	333.79	333.79	333.78	333.78	333.77	333.77
333.76							
18.24 CFS	17.37	17.25	17.13	16.99	16.86	16.77	16.70
16.63							
18.24 ELEV	333.76	333.75	333.75	333.74	333.74	333.73	333.73
333.73							
18.72 CFS	16.54	16.46	16.41	16.35	16.28	16.20	16.13
16.06							
18.72 ELEV	333.72	333.72	333.72	333.72	333.71	333.71	333.71
333.70							
19.20 CFS	16.00	15.94	15.88	15.83	15.78	15.73	15.68
15.61							
19.20 ELEV	333.70	333.70	333.70	333.70	333.69	333.69	333.69
333.69							
19.68 CFS	15.54	15.49	15.44	15.37	15.29	15.23	15.20
15.15							
19.68 ELEV	333.68	333.68	333.68	333.68	333.67	333.67	333.67
333.67							
20.16 CFS	15.07	14.99	14.91	14.83	14.74	14.63	14.54
14.47							
20.16 ELEV	333.67	333.66	333.66	333.66	333.65	333.65	333.65
333.64							
20.64 CFS	14.41	14.33	14.23	14.17	14.11	14.02	13.93
13.84							
20.64 ELEV	333.64	333.64	333.63	333.63	333.63	333.63	333.62
333.62							
21.12 CFS	13.76	13.68	13.61	13.54	13.49	13.44	13.39
13.33							
21.12 ELEV	333.62	333.61	333.61	333.61	333.60	333.60	333.60
333.60							
21.60 CFS	13.26	13.18	13.11	13.05	12.98	12.92	12.88
12.83							
21.60 ELEV	333.60	333.59	333.59	333.59	333.59	333.58	333.58
333.58							
22.08 CFS	12.75	12.68	12.61	12.54	12.48	12.42	12.37
12.32							
22.08 ELEV	333.58	333.57	333.57	333.57	333.57	333.56	333.56
333.56							
22.56 CFS	12.26	12.18	12.10	12.04	11.99	11.91	11.83
11.77							
22.56 ELEV	333.56	333.55	333.55	333.55	333.55	333.54	333.54
333.54							
23.04 CFS	11.74	11.70	11.63	11.57	11.51	11.45	11.39
11.33							
23.04 ELEV	333.54	333.53	333.53	333.53	333.53	333.53	333.52
333.52							
23.52 CFS	11.24	11.16	11.10	11.05	10.99	10.90	10.79
10.70							
23.52 ELEV	333.52	333.51	333.51	333.51	333.51	333.50	333.50
333.50							
24.00 CFS	10.67	10.61	10.23	9.61	9.00	8.46	7.98
7.56							
24.00 ELEV	333.50	333.49	333.48	333.45	333.43	333.41	333.39
333.37							
24.48 CFS	7.22	6.96	6.73	6.54	6.37	6.21	6.06
5.92							
24.48 ELEV	333.36	333.35	333.34	333.33	333.33	333.32	333.32
333.31							
24.96 CFS	5.78	5.65	5.53	5.40	5.28	5.17	5.06
4.94							
24.96 ELEV	333.30	333.30	333.30	333.29	333.29	333.28	333.28
333.27							



25.44 CFS	4.83	4.71	4.59	4.47	4.35	4.24	4.13
4.02							
25.44 ELEV	333.27	333.26	333.26	333.25	333.25	333.24	333.24
333.24							
25.92 CFS	3.92	3.81	3.71	3.61	3.52	3.43	3.34
3.25							
25.92 ELEV	333.23	333.23	333.22	333.22	333.22	333.21	333.21
333.21							
26.40 CFS	3.16	3.08	3.00	2.92	2.84	2.77	2.70
2.63							
26.40 ELEV	333.20	333.20	333.20	333.19	333.19	333.19	333.18
333.18							
26.88 CFS	2.56	2.49	2.42	2.36	2.30	2.24	2.18
2.12							
26.88 ELEV	333.18	333.18	333.17	333.17	333.17	333.17	333.16
333.16							
27.36 CFS	2.07	2.01	1.96	1.91	1.86	1.81	1.76
1.71							
27.36 ELEV	333.16	333.16	333.16	333.15	333.15	333.15	333.15
333.15							
27.84 CFS	1.67						
27.84 ELEV	333.14						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.12 WATERSHED INCHES; 436 CFS-HRS; 36.0 ACRE-  
 FEET.

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	42	23	19	16	13	11	6	3
DURATION(HRS)	18							
FLOW(CFS)	2 TRUNCATED							

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.68	148.0	332.55
13.55	64.5	331.88
13.67	55.8	331.78
13.79	49.1	331.69
13.90	43.9	331.63
14.01	39.9	331.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.12 WATERSHED INCHES; 436 CFS-HRS; 36.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.15	41.3	(RUNOFF)
15.84	1.3	(RUNOFF)
17.34	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	51.3	(RUNOFF)
18.86	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.34 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 24

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.64	12.0	347.70

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
 SQ.MI.

3.48 CFS	.00	.01	.01	.01	.01	.02	.02
.02							
3.48 ELEV	345.00	345.00	345.00	345.00	345.00	345.00	345.00
345.00							
3.96 CFS	.02	.03	.03	.04	.04	.04	.05
.05							
3.96 ELEV	345.00	345.01	345.01	345.01	345.01	345.01	345.01
345.01							
4.44 CFS	.06	.06	.07	.07	.08	.08	.09
.10							
4.44 ELEV	345.01	345.01	345.01	345.01	345.01	345.02	345.02
345.02							
4.92 CFS	.10	.11	.11	.12	.12	.13	.14
.14							
4.92 ELEV	345.02	345.02	345.02	345.02	345.02	345.02	345.02
345.03							
5.40 CFS	.15	.16	.16	.17	.17	.18	.19
.20							
5.40 ELEV	345.03	345.03	345.03	345.03	345.03	345.03	345.03
345.04							

5.88 CFS	.20	.21	.21	.22	.23	.24	.24
.25							
5.88 ELEV	345.04	345.04	345.04	345.04	345.04	345.04	345.04
345.05							
6.36 CFS	.26	.27	.27	.28	.29	.30	.31
.32							
6.36 ELEV	345.05	345.05	345.05	345.05	345.05	345.05	345.06
345.06							
6.84 CFS	.33	.34	.35	.36	.37	.38	.39
.40							
6.84 ELEV	345.06	345.06	345.06	345.06	345.07	345.07	345.07
345.07							
7.32 CFS	.41	.42	.43	.44	.45	.47	.48
.49							
7.32 ELEV	345.07	345.08	345.08	345.08	345.08	345.08	345.09
345.09							
7.80 CFS	.50	.51	.53	.54	.55	.57	.58
.59							
7.80 ELEV	345.09	345.09	345.10	345.10	345.10	345.10	345.11
345.11							
8.28 CFS	.61	.62	.64	.65	.66	.68	.69
.71							
8.28 ELEV	345.11	345.11	345.12	345.12	345.12	345.12	345.13
345.13							
8.76 CFS	.72	.74	.75	.77	.78	.80	.81
.83							
8.76 ELEV	345.13	345.13	345.14	345.14	345.14	345.15	345.15
345.15							
9.24 CFS	.85	.87	.89	.91	.93	.96	.98
1.01							
9.24 ELEV	345.15	345.16	345.16	345.17	345.17	345.17	345.18
345.18							
9.72 CFS	1.03	1.06	1.09	1.12	1.15	1.19	1.22
1.25							
9.72 ELEV	345.19	345.19	345.20	345.20	345.21	345.22	345.22
345.23							
10.20 CFS	1.29	1.33	1.36	1.40	1.44	1.48	1.52
1.57							
10.20 ELEV	345.23	345.24	345.25	345.26	345.26	345.27	345.28
345.28							
10.68 CFS	1.61	1.67	1.72	1.79	1.86	1.93	2.01
2.10							
10.68 ELEV	345.29	345.30	345.31	345.33	345.34	345.35	345.37
345.38							
11.16 CFS	2.20	2.31	2.42	2.55	2.69	2.84	3.01
3.19							
11.16 ELEV	345.40	345.42	345.44	345.46	345.49	345.52	345.55
345.58							
11.64 CFS	3.41	3.68	4.00	4.37	4.82	5.39	6.15
7.20							
11.64 ELEV	345.62	345.67	345.73	345.80	345.88	345.98	346.12
346.31							
12.12 CFS	8.67	10.15	10.74	11.20	11.51	11.71	11.84
11.91							
12.12 ELEV	346.58	346.89	347.15	347.36	347.50	347.59	347.65
347.68							
12.60 CFS	11.95	11.96	11.93	11.89	11.84	11.78	11.71
11.63							
12.60 ELEV	347.70	347.70	347.69	347.67	347.65	347.62	347.59
347.56							
13.08 CFS	11.55	11.46	11.37	11.28	11.18	11.08	10.98
10.87							
13.08 ELEV	347.52	347.48	347.44	347.40	347.35	347.31	347.26
347.21							

13.56 CFS	10.77	10.66	10.55	10.44	10.33	10.22	10.11
10.01							
13.56 ELEV	347.17	347.12	347.07	347.02	346.97	346.92	346.87
346.82							
14.04 CFS	9.70	9.40	9.10	8.82	8.55	8.29	8.03
7.79							

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14.04 ELEV	346.77	346.71	346.66	346.61	346.56	346.51	346.46
346.42							
14.52 CFS	7.55	7.32	7.10	6.89	6.68	6.48	6.29
6.10							
14.52 ELEV	346.37	346.33	346.29	346.25	346.22	346.18	346.14
346.11							
15.00 CFS	5.92	5.75	5.58	5.41	5.25	5.10	4.95
4.81							
15.00 ELEV	346.08	346.05	346.02	345.99	345.96	345.93	345.90
345.87							
15.48 CFS	4.67	4.54	4.41	4.29	4.18	4.06	3.96
3.85							
15.48 ELEV	345.85	345.83	345.80	345.78	345.76	345.74	345.72
345.70							
15.96 CFS	3.75	3.66	3.57	3.48	3.39	3.31	3.23
3.15							
15.96 ELEV	345.68	345.67	345.65	345.63	345.62	345.60	345.59
345.57							
16.44 CFS	3.08	3.01	2.94	2.87	2.81	2.75	2.69
2.63							
16.44 ELEV	345.56	345.55	345.54	345.52	345.51	345.50	345.49
345.48							
16.92 CFS	2.58	2.52	2.47	2.42	2.37	2.32	2.28
2.23							
16.92 ELEV	345.47	345.46	345.45	345.44	345.43	345.42	345.41
345.41							
17.40 CFS	2.19	2.15	2.11	2.07	2.03	1.99	1.95
1.92							
17.40 ELEV	345.40	345.39	345.38	345.38	345.37	345.36	345.36
345.35							
17.88 CFS	1.88	1.85	1.82	1.78	1.75	1.72	1.69
1.66							
17.88 ELEV	345.34	345.34	345.33	345.32	345.32	345.31	345.31
345.30							
18.36 CFS	1.64	1.61	1.58	1.56	1.53	1.51	1.49
1.47							
18.36 ELEV	345.30	345.29	345.29	345.28	345.28	345.27	345.27
345.27							
18.84 CFS	1.45	1.43	1.41	1.39	1.37	1.35	1.34
1.32							
18.84 ELEV	345.26	345.26	345.26	345.25	345.25	345.25	345.24
345.24							
19.32 CFS	1.31	1.29	1.28	1.26	1.25	1.24	1.22
1.21							
19.32 ELEV	345.24	345.23	345.23	345.23	345.23	345.23	345.22
345.22							
19.80 CFS	1.20	1.19	1.18	1.17	1.16	1.15	1.14
1.13							

19.80 ELEV	345.22	345.22	345.21	345.21	345.21	345.21	345.21
345.21							
20.28 CFS	1.12	1.11	1.10	1.09	1.08	1.07	1.06
1.06							
20.28 ELEV	345.20	345.20	345.20	345.20	345.20	345.20	345.19
345.19							
20.76 CFS	1.05	1.04	1.04	1.03	1.02	1.01	1.01
1.00							
20.76 ELEV	345.19	345.19	345.19	345.19	345.19	345.18	345.18
345.18							
21.24 CFS	.99	.99	.98	.97	.97	.96	.96
.95							
21.24 ELEV	345.18	345.18	345.18	345.18	345.18	345.18	345.17
345.17							
21.72 CFS	.95	.94	.93	.93	.92	.92	.91
.91							
21.72 ELEV	345.17	345.17	345.17	345.17	345.17	345.17	345.17
345.17							
22.20 CFS	.90	.90	.89	.89	.88	.88	.87
.87							
22.20 ELEV	345.16	345.16	345.16	345.16	345.16	345.16	345.16
345.16							
22.68 CFS	.86	.86	.86	.85	.85	.84	.84
.83							
22.68 ELEV	345.16	345.16	345.16	345.15	345.15	345.15	345.15
345.15							
23.16 CFS	.83	.82	.82	.82	.81	.81	.80
.80							
23.16 ELEV	345.15	345.15	345.15	345.15	345.15	345.15	345.15
345.15							
23.64 CFS	.79	.79	.78	.78	.78	.77	.77
.76							
23.64 ELEV	345.14	345.14	345.14	345.14	345.14	345.14	345.14
345.14							
24.12 CFS	.76	.74	.72	.69	.67	.64	.61
.58							
24.12 ELEV	345.14	345.14	345.13	345.13	345.12	345.12	345.11
345.11							
24.60 CFS	.56	.53	.51	.48	.46	.44	.42
.40							
24.60 ELEV	345.10	345.10	345.09	345.09	345.08	345.08	345.08
345.07							
25.08 CFS	.39	.37	.35	.34	.32	.31	.29
.28							
25.08 ELEV	345.07	345.07	345.06	345.06	345.06	345.06	345.05
345.05							
25.56 CFS	.27	.25	.24	.23	.22	.21	.20
.19							
25.56 ELEV	345.05	345.05	345.04	345.04	345.04	345.04	345.04
345.04							

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26.04 CFS	.18	.18	.17	.16	.15	.15	.14
.13							
26.04 ELEV	345.03	345.03	345.03	345.03	345.03	345.03	345.03
345.02							

26.52 CFS	.13	.12	.12	.11	.11	.10	.10
.09							
26.52 ELEV	345.02	345.02	345.02	345.02	345.02	345.02	345.02
345.02							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.33 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	9	4	2	2	1	1	1	1

DURATION(HRS) 17  
 FLOW(CFS) 0

OPERATION RUNOFF XSECTION 119

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	11.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.64 WATERSHED INCHES; 10 CFS-HRS; .8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	21.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.20 WATERSHED INCHES; 64 CFS-HRS; 5.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	62.2	(NULL)
20.03	2.1	(NULL)
24.00	1.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.04 WATERSHED INCHES; 103 CFS-HRS; 8.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		
12.15	70.7	(RUNOFF)
15.84	2.4	(RUNOFF)
23.06	1.1	(RUNOFF)
23.71	1.0	(RUNOFF)
24.00	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.50 WATERSHED INCHES; 65 CFS-HRS; 5.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	132.5	(NULL)
18.57	4.1	(NULL)
20.83	3.2	(NULL)
24.00	2.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.80 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	238.2	(NULL)
12.52	188.2	(NULL)
13.55	84.1	(NULL)
13.67	74.4	(NULL)
13.78	67.0	(NULL)
13.90	61.3	(NULL)
20.01	18.7	(NULL)
23.02	14.4	(NULL)
23.99	13.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.26 WATERSHED INCHES; 600 CFS-HRS; 49.6 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 122  
 OUTPUT #1 HYDROGRAPH

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.06	168.0 *	(DIVERT)
13.55	84.1	(DIVERT)
13.67	74.4	(DIVERT)
13.78	67.0	(DIVERT)

13.90	61.3	(DIVERT)
20.01	18.7	(DIVERT)
23.02	14.4	(DIVERT)
23.99	13.2	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 577 CFS-HRS; 47.7 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.16	70.2	175.83
12.52	20.2	175.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .08 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 83, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 322.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 83

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
 AT STRUCTURE 83  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.02	.0	314.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 123

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.93	168.4	(NULL)
13.55	84.2	(NULL)
13.67	74.4	(NULL)
13.78	67.0	(NULL)
13.90	61.3	(NULL)
20.01	18.7	(NULL)
23.02	14.5	(NULL)



23.99 13.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.18 WATERSHED INCHES; 577 CFS-HRS; 47.7 ACRE-
FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
13.11 168.0 315.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.18 WATERSHED INCHES; 578 CFS-HRS; 47.8 ACRE-
FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.25 62.7 (RUNOFF)
23.99 1.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.31 WATERSHED INCHES; 75 CFS-HRS; 6.2 ACRE-
FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE
TIME INCREMENT OF .043 HOURS.
\*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES
FIRST NEGATIVE VALUE IS 0 CFS.
\*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.36 54.8 363.56
23.79 1.2 356.48

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.31 WATERSHED INCHES; 75 CFS-HRS; 6.2 ACRE-
FEET.

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OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)

12.27	87.7	(RUNOFF)
20.68	2.3	(RUNOFF)
23.97	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.26 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	138.3	(NULL)
20.14	4.0	(NULL)
23.78	3.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.28 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.44	123.7	318.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.28 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	65.5	(RUNOFF)
24.01	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.01 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	199.6	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.16 WATERSHED INCHES; 655 CFS-HRS; 54.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	321.6	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.18 WATERSHED INCHES;	840 CFS-HRS;	69.4 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.75	263.6	313.06
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.18 WATERSHED INCHES;	838 CFS-HRS;	69.3 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	108.7	(RUNOFF)
21.97	2.1	(RUNOFF)
24.03	1.8	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.72 WATERSHED INCHES;	122 CFS-HRS;	10.1 ACRE-
FEET.		

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	98.7	312.69
20.73	2.3	310.19
24.09	1.8	310.15
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.72 WATERSHED INCHES;	122 CFS-HRS;	10.1 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	18.5	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.53 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .34 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 377.21.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	3.9	379.83

\*\*\* WARNING - STRUCTURE 32, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS  
 RESVOR ( 12. % OF MAX. HYDROGRAPH COORDINATE)  
 MAIN TIME INCREMENT TOO SMALL.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.77 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 34, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.72	3.9	338.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.76 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	55.1	(RUNOFF)
20.10	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.52 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
 WITH .90 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 353.60.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	33.5	356.65

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.91 WATERSHED INCHES; 52 CFS-HRS; 4.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	35.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.87 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	35.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.87 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-  
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
\*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	35.1	330.41

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.87 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	58.9	(RUNOFF)
19.74	1.0	(RUNOFF)
20.05	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

3.00 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.16	74.3	(NULL)
18.81	3.2	(NULL)
24.00	2.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.93 WATERSHED INCHES; 121 CFS-HRS; 10.0 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.99	24.8	330.48

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06 SQ.MI.

HRS	4.62 CFS	5.10 CFS	5.58 CFS	6.06 CFS	6.54 CFS	7.02 CFS	7.50 CFS
.01	.00	.01	.01	.01	.01	.01	.01
4.62 ELEV	326.00	326.00	326.00	326.00	326.00	326.00	326.00
.03	.01	.01	.02	.02	.02	.02	.02
5.10 ELEV	326.01	326.01	326.01	326.01	326.01	326.01	326.01
.05	.03	.03	.03	.04	.04	.04	.04
5.58 ELEV	326.01	326.01	326.01	326.02	326.02	326.02	326.02
.08	.05	.05	.06	.06	.06	.07	.07
6.06 ELEV	326.02	326.02	326.02	326.03	326.03	326.03	326.03
.11	.08	.08	.09	.09	.10	.10	.11
6.54 ELEV	326.03	326.04	326.04	326.04	326.04	326.04	326.05
.16	.12	.12	.13	.13	.14	.15	.15
7.02 ELEV	326.05	326.05	326.05	326.06	326.06	326.06	326.06
.22	.17	.17	.18	.19	.19	.20	.21
7.50 ELEV	326.07	326.07	326.08	326.08	326.08	326.08	326.09

7.98 CFS	.23	.23	.24	.25	.26	.27	.28
.29							
7.98 ELEV	326.09	326.10	326.10	326.11	326.11	326.11	326.12
326.12							
8.46 CFS	.30	.31	.32	.33	.34	.35	.36
.37							
8.46 ELEV	326.12	326.13	326.13	326.14	326.14	326.15	326.15
326.16							
8.94 CFS	.38	.39	.40	.41	.43	.44	.45
.47							
8.94 ELEV	326.16	326.16	326.17	326.17	326.18	326.18	326.19
326.20							
9.42 CFS	.48	.50	.51	.53	.54	.56	.58
.60							
9.42 ELEV	326.20	326.21	326.21	326.22	326.23	326.24	326.24
326.25							
9.90 CFS	.62	.63	.65	.68	.70	.72	.74
.76							
9.90 ELEV	326.26	326.27	326.27	326.28	326.29	326.30	326.31
326.32							
10.38 CFS	.79	.81	.84	.86	.89	.92	.95
.99							
10.38 ELEV	326.33	326.34	326.35	326.36	326.37	326.39	326.40
326.41							
10.86 CFS	1.02	1.06	1.10	1.14	1.19	1.24	1.30
1.36							
10.86 ELEV	326.43	326.45	326.46	326.48	326.50	326.52	326.54
326.57							
11.34 CFS	1.42	1.49	1.56	1.64	1.73	1.84	1.97
2.11							
11.34 ELEV	326.60	326.63	326.66	326.69	326.73	326.77	326.83
326.89							
11.82 CFS	2.28	2.49	2.77	3.16	3.71	4.49	5.40
6.27							

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11.82 ELEV	326.96	327.05	327.16	327.33	327.56	327.89	328.27
328.63							
12.30 CFS	7.04	7.73	8.36	8.93	9.43	9.87	13.46
17.73							
12.30 ELEV	328.96	329.25	329.51	329.75	329.96	330.15	330.28
330.36							
12.78 CFS	20.85	22.99	24.19	24.70	24.71	24.33	23.70
22.89							
12.78 ELEV	330.41	330.45	330.47	330.48	330.48	330.47	330.46
330.45							
13.26 CFS	21.99	21.04	20.08	19.22	18.36	17.50	16.67
15.86							
13.26 ELEV	330.43	330.42	330.40	330.39	330.37	330.36	330.34
330.33							
13.74 CFS	15.09	14.46	13.86	13.29	12.75	12.24	11.76
11.30							
13.74 ELEV	330.31	330.30	330.28	330.27	330.26	330.25	330.24
330.23							
14.22 CFS	10.88	10.48	10.11	9.98	9.96	9.93	9.90
9.87							

14.22 ELEV	330.22	330.21	330.20	330.19	330.18	330.17	330.16
330.14							
14.70 CFS	9.83	9.79	9.75	9.71	9.67	9.62	9.58
9.53							
14.70 ELEV	330.13	330.11	330.10	330.08	330.06	330.04	330.02
330.00							
15.18 CFS	9.48	9.43	9.38	9.33	9.28	9.23	9.18
9.13							
15.18 ELEV	329.98	329.96	329.94	329.92	329.90	329.88	329.86
329.83							
15.66 CFS	9.07	9.02	8.97	8.92	8.86	8.81	8.76
8.70							
15.66 ELEV	329.81	329.79	329.77	329.74	329.72	329.70	329.68
329.66							
16.14 CFS	8.65	8.60	8.54	8.49	8.44	8.39	8.33
8.28							
16.14 ELEV	329.63	329.61	329.59	329.57	329.54	329.52	329.50
329.48							
16.62 CFS	8.23	8.18	8.12	8.07	8.02	7.97	7.92
7.87							
16.62 ELEV	329.46	329.43	329.41	329.39	329.37	329.35	329.33
329.30							
17.10 CFS	7.82	7.77	7.72	7.67	7.62	7.57	7.52
7.47							
17.10 ELEV	329.28	329.26	329.24	329.22	329.20	329.18	329.16
329.14							
17.58 CFS	7.42	7.37	7.32	7.27	7.22	7.17	7.13
7.08							
17.58 ELEV	329.12	329.10	329.07	329.05	329.03	329.01	328.99
328.97							
18.06 CFS	7.03	6.98	6.93	6.89	6.84	6.79	6.75
6.70							
18.06 ELEV	328.95	328.93	328.91	328.89	328.87	328.85	328.83
328.81							
18.54 CFS	6.65	6.61	6.56	6.52	6.47	6.43	6.38
6.34							
18.54 ELEV	328.79	328.78	328.76	328.74	328.72	328.70	328.68
328.66							
19.02 CFS	6.30	6.25	6.21	6.17	6.13	6.09	6.05
6.00							
19.02 ELEV	328.65	328.63	328.61	328.59	328.57	328.56	328.54
328.52							
19.50 CFS	5.96	5.92	5.89	5.85	5.81	5.77	5.73
5.69							
19.50 ELEV	328.51	328.49	328.47	328.46	328.44	328.42	328.41
328.39							
19.98 CFS	5.65	5.62	5.58	5.54	5.51	5.47	5.44
5.40							
19.98 ELEV	328.37	328.36	328.34	328.33	328.31	328.30	328.28
328.27							
20.46 CFS	5.36	5.33	5.29	5.26	5.23	5.19	5.16
5.13							
20.46 ELEV	328.25	328.24	328.22	328.21	328.20	328.18	328.17
328.15							
20.94 CFS	5.09	5.06	5.03	5.00	4.97	4.93	4.90
4.87							
20.94 ELEV	328.14	328.13	328.11	328.10	328.09	328.07	328.06
328.05							
21.42 CFS	4.84	4.81	4.78	4.75	4.72	4.69	4.67
4.64							
21.42 ELEV	328.03	328.02	328.01	328.00	327.98	327.97	327.96
327.95							
21.90 CFS	4.61	4.58	4.55	4.53	4.50	4.47	4.45
4.42							



21.90 ELEV	327.94	327.92	327.91	327.90	327.89	327.88	327.87
327.86							
22.38 CFS	4.39	4.37	4.34	4.32	4.29	4.27	4.24
4.22							
22.38 ELEV	327.85	327.83	327.82	327.81	327.80	327.79	327.78
327.77							
22.86 CFS	4.19	4.17	4.15	4.12	4.10	4.08	4.05
4.03							
22.86 ELEV	327.76	327.75	327.74	327.73	327.72	327.71	327.70
327.69							
23.34 CFS	4.01	3.99	3.97	3.94	3.92	3.90	3.88
3.86							
23.34 ELEV	327.68	327.67	327.67	327.66	327.65	327.64	327.63
327.62							

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23.82 CFS	3.84	3.82	3.80	3.78	3.76	3.73	3.71
3.68							
23.82 ELEV	327.61	327.60	327.59	327.59	327.58	327.57	327.56
327.55							
24.30 CFS	3.65	3.62	3.60	3.57	3.54	3.51	3.49
3.46							
24.30 ELEV	327.53	327.52	327.51	327.50	327.49	327.48	327.46
327.45							
24.78 CFS	3.43	3.41	3.38	3.35	3.33	3.30	3.28
3.25							
24.78 ELEV	327.44	327.43	327.42	327.41	327.40	327.39	327.38
327.37							
25.26 CFS	3.23	3.20	3.18	3.16	3.13	3.11	3.08
3.06							
25.26 ELEV	327.36	327.35	327.34	327.33	327.32	327.31	327.30
327.29							
25.74 CFS	3.04	3.02	2.99	2.97	2.95	2.93	2.91
25.74 ELEV	327.28	327.27	327.26	327.25	327.24	327.23	327.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.61 WATERSHED INCHES; 108 CFS-HRS; 8.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	14
FLOW(CFS)	10	8	7	5	4	4	3	3
TRUNCATED								

OPERATION RUNOFF XSECTION 140

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET) 12.14 3.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .95 WATERSHED INCHES; 3 CFS-HRS; .2 ACRE-FEET.

\*\*\* WARNING - XSECTION 141  
 VOLUME TRUNCATED AT 12.% IN LOCATION 2 ADDING HYDROGRAPHS.

\*\*\*

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.99	25.3	(NULL)

\*\*\* WARNING - XSECTION 141, HYDROGRAPH VOLUME TRUNCATED AT 3 CFS  
 ADDHYD ( 12. % OF MAX. HYDROGRAPH COORDINATE)  
 MAIN TIME INCREMENT TOO SMALL.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.50 WATERSHED INCHES; 111 CFS-HRS; 9.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	43.4	(RUNOFF)
20.67	1.2	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.15 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	280.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.18 WATERSHED INCHES; 893 CFS-HRS; 73.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	330.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.23 WATERSHED INCHES; 1015 CFS-HRS; 83.8 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 43  
 VOLUME TRUNCATED AT 12.% AND 1.% WHEN ADDING HYDROGRAPHS

IN LOCATIONS 4 AND 2.  
\*\*\*

OPERATION ADDHYD XSECTION 43

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.55	340.9	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.25 WATERSHED INCHES;	1121 CFS-HRS;	92.6 ACRE-
FEET.		

OPERATION DIVERT XSECTION 144  
OUTPUT #1 HYDROGRAPH

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.55	340.9	(DIVERT)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1121 CFS-HRS;	92.6 ACRE-FEET.	

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.00 WATERSHED INCHES;	0 CFS-HRS;	.0 ACRE-
FEET.		

\*\*\* MESSAGE - STRUCTURE 82, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE

STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 318.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 82

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.00 WATERSHED INCHES;	0 CFS-HRS;	.0 ACRE-
FEET.		

\*\*\* WARNING - XSECTION 145  
NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 145

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	340.9	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.25 WATERSHED INCHES;	1121 CFS-HRS;	92.6 ACRE-
FEET.		

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.79	334.3	290.10
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.24 WATERSHED INCHES;	1120 CFS-HRS;	92.5 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.92	329.6	300.53
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.24 WATERSHED INCHES;	1119 CFS-HRS;	92.4 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 45

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 -  
 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	50.8	(RUNOFF)
20.13	1.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.19 WATERSHED INCHES;	67 CFS-HRS;	5.6 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	62.6	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		

2.12 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	113.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.15 WATERSHED INCHES; 153 CFS-HRS; 12.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	61.6	(RUNOFF)
24.03	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.14 WATERSHED INCHES; 65 CFS-HRS; 5.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.90	340.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.24 WATERSHED INCHES; 1183 CFS-HRS; 97.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 50

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.71	383.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.22 WATERSHED INCHES; 1337 CFS-HRS; 110.5 ACRE-  
FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.88	380.2	284.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.22 WATERSHED INCHES; 1336 CFS-HRS; 110.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.22 WATERSHED INCHES; 205 CFS-HRS; 110.4 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 53

\*\*\* MESSAGE - XSECTION 53, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.22 WATERSHED INCHES; 203 CFS-HRS; 110.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - XSECTION 54, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.22 WATERSHED INCHES; 74 CFS-HRS; 110.4 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	38.2	(RUNOFF)
18.87	1.0	(RUNOFF)
19.44	1.0 *	(RUNOFF)
* FIRST POINT OF FLAT PEAK		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.95 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.86 387.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.21 WATERSHED INCHES; 1376 CFS-HRS; 113.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - XSECTION 57, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.21 WATERSHED INCHES; 209 CFS-HRS; 113.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.86 387.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.18 WATERSHED INCHES; 1377 CFS-HRS; 113.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.22 22.0 (RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
 SQ.MI.  
 11.22 CFS .44 .53 .63 .75 .88 1.03 1.24  
 1.58

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11.70 CFS	1.98	2.45	3.07	3.96	5.32	7.49	11.28
16.76							
12.18 CFS	21.35	21.74	19.02	15.70	13.05	11.07	9.63
8.45							
12.66 CFS	7.33	6.38	5.69	5.20	4.82	4.51	4.24
3.98							
13.14 CFS	3.73	3.51	3.32	3.16	3.01	2.87	2.72
2.58							
13.62 CFS	2.45	2.33	2.23	2.16	2.09	2.05	2.01
1.98							

14.10 CFS	1.94	1.91	1.87	1.83	1.79	1.76	1.73
1.70							
14.58 CFS	1.66	1.62	1.58	1.54	1.51	1.48	1.44
1.41							
15.06 CFS	1.37	1.33	1.29	1.26	1.23	1.22	1.21
1.20							
15.54 CFS	1.20	1.19	1.18	1.16	1.15	1.15	1.14
1.14							
16.02 CFS	1.12	1.11	1.09	1.09	1.08	1.07	1.06
1.05							
16.50 CFS	1.04	1.02	1.01	1.00	1.00	.99	.98
.97							
16.98 CFS	.96	.96	.95	.94	.92	.90	.90
.90							
17.46 CFS	.89	.87	.85	.84	.83	.83	.82
.81							
17.94 CFS	.80	.79	.78	.77	.76	.75	.75
.74							
18.42 CFS	.73	.72	.72	.73	.73	.73	.72
.72							
18.90 CFS	.72	.72	.71	.70	.70	.70	.70
.70							
19.38 CFS	.70	.70	.70	.70	.69	.68	.68
.68							
19.86 CFS	.68	.67	.67	.67	.68	.67	.67
.66							
20.34 CFS	.66	.65	.64	.64	.64	.65	.65
.64							
20.82 CFS	.64	.64	.64	.63	.62	.62	.62
.62							
21.30 CFS	.62	.61	.61	.62	.61	.61	.60
.60							
21.78 CFS	.60	.59	.59	.59	.59	.59	.58
.58							
22.26 CFS	.57	.57	.57	.57	.57	.57	.56
.55							
22.74 CFS	.55	.55	.55	.54	.54	.54	.55
.54							
23.22 CFS	.54	.53	.53	.53	.53	.52	.51
.51							
23.70 CFS	.51	.52	.51	.50	.50	.51	.51
.43							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.85	392.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.16 WATERSHED INCHES; 1401 CFS-HRS; 115.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.97	389.6	270.70



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.16 WATERSHED INCHES; 1400 CFS-HRS; 115.7 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.24 12.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.38 WATERSHED INCHES; 15 CFS-HRS; 1.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.96 392.5 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02 SQ.MI.

HRS	7.02	7.50	7.98	8.46	8.94	9.42	9.90	10.38	10.86	11.34	11.82	12.30	12.78	13.26
CFS	.48	.80	1.23	1.86	3.03	4.76	7.39	11.46	17.55	29.63	60	231	383	374
CFS	.52	.85	1.29	1.98	3.22	5.03	7.81	12.09	18.60	31.96	68	265	388	368
CFS	.55	.90	1.36	2.10	3.41	5.31	8.26	12.74	19.76	34.55	78	291	391	360
CFS	.59	.95	1.43	2.23	3.61	5.61	8.73	13.41	21.03	37.40	91	313	393	352
CFS	.63	1.00	1.50	2.38	3.82	5.92	9.22	14.13	22.42	40.62	109	331	392	344
CFS	.67	1.06	1.58	2.53	4.04	6.26	9.74	14.88	23.94	44.37	132	348	389	335
CFS	.71	1.11	1.66	2.69	4.27	6.61	10.29	15.70	25.64	48.84	162	362	385	326
CFS	1.17	1.17	1.66	2.69	4.27	6.61	10.29	15.70	25.64	48.84	162	362	385	326
CFS	1.76	1.76	1.66	2.69	4.27	6.61	10.29	15.70	25.64	48.84	162	362	385	326
CFS	2.86	2.86	1.66	2.69	4.27	6.61	10.29	15.70	25.64	48.84	162	362	385	326
CFS	4.51	4.51	1.66	2.69	4.27	6.61	10.29	15.70	25.64	48.84	162	362	385	326
CFS	6.99	6.99	1.66	2.69	4.27	6.61	10.29	15.70	25.64	48.84	162	362	385	326
CFS	10.86	10.86	1.66	2.69	4.27	6.61	10.29	15.70	25.64	48.84	162	362	385	326
CFS	16.58	16.58	1.66	2.69	4.27	6.61	10.29	15.70	25.64	48.84	162	362	385	326
CFS	27.53	27.53	1.66	2.69	4.27	6.61	10.29	15.70	25.64	48.84	162	362	385	326
CFS	54.14	54.14	1.66	2.69	4.27	6.61	10.29	15.70	25.64	48.84	162	362	385	326
CFS	195	195	1.66	2.69	4.27	6.61	10.29	15.70	25.64	48.84	162	362	385	326
CFS	374	374	1.66	2.69	4.27	6.61	10.29	15.70	25.64	48.84	162	362	385	326
CFS	380	380	1.66	2.69	4.27	6.61	10.29	15.70	25.64	48.84	162	362	385	326
CFS	317	317	1.66	2.69	4.27	6.61	10.29	15.70	25.64	48.84	162	362	385	326

13.74	CFS	308	299	289	280	270	260	250
240								
14.22	CFS	230	220	210	201	194	186	178
171								
14.70	CFS	164	157	150	144	139	134	129
125								
15.18	CFS	121	117	113	110	107	104	101
98								
15.66	CFS	95.88	93.55	91.42	89.47	87.66	85.97	84.38
82.88								
16.14	CFS	81.46	80.12	78.85	77.65	76.51	75.43	74.39
73.41								
16.62	CFS	72.46	71.55	70.68	69.86	69.06	68.29	67.55
66.83								
17.10	CFS	66.14	65.47	64.80	64.14	63.49	62.87	62.26
61.66								
17.58	CFS	61.06	60.45	59.86	59.28	58.70	58.13	57.56
56.99								
18.06	CFS	56.44	55.89	55.35	54.80	54.26	53.73	53.20
52.68								
18.54	CFS	52.18	51.69	51.22	50.77	50.33	49.89	49.48
49.08								
19.02	CFS	48.68	48.30	47.92	47.56	47.22	46.89	46.57
46.27								
19.50	CFS	45.98	45.70	45.43	45.16	44.90	44.65	44.41
44.16								
19.98	CFS	43.92	43.70	43.49	43.28	43.08	42.88	42.67
42.47								
20.46	CFS	42.26	42.05	41.85	41.66	41.47	41.28	41.09
40.91								
20.94	CFS	40.72	40.53	40.34	40.14	39.94	39.74	39.55
39.35								
21.42	CFS	39.17	38.98	38.80	38.61	38.42	38.22	38.03
37.84								
21.90	CFS	37.65	37.47	37.29	37.12	36.93	36.75	36.56
36.38								
22.38	CFS	36.20	36.03	35.85	35.69	35.51	35.33	35.15
34.98								

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22.86	CFS	34.80	34.62	34.43	34.26	34.09	33.93	33.77
33.60								
23.34	CFS	33.43	33.26	33.09	32.92	32.74	32.57	32.40
32.24								
23.82	CFS	32.08	31.91	31.74	31.58	31.43	31.21	30.83
30.29								
24.30	CFS	29.63	28.91	28.15	27.36	26.56	25.75	24.92
24.09								
24.78	CFS	23.25	22.41	21.57	20.72	19.89	19.08	18.29
17.52								
25.26	CFS	16.79	16.09	15.43	14.81	14.23	13.69	13.19
12.73								
25.74	CFS	12.29	11.89	11.51	11.17	10.84	10.54	10.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.14 WATERSHED INCHES; 1415 CFS-HRS; 117.0 ACRE-

FEET.

OPERATION DIVERT XSECTION 162  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.96	392.5	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1415 CFS-HRS; 117.0 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 73, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
STARTS 20.00 FEET BELOW ASSUMED CREST ELEVATION AT 260.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 73

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* WARNING - XSECTION 163  
NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 163

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.96	392.5	(NULL)

1

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HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02  
SQ.MI.  
7.02 CFS .48 .52 .55 .59 .63 .67 .71

.76							
7.50 CFS	.80	.85	.90	.95	1.00	1.06	1.11
1.17							
7.98 CFS	1.23	1.29	1.36	1.43	1.50	1.58	1.66
1.76							
8.46 CFS	1.86	1.98	2.10	2.23	2.38	2.53	2.69
2.86							
8.94 CFS	3.03	3.22	3.41	3.61	3.82	4.04	4.27
4.51							
9.42 CFS	4.76	5.03	5.31	5.61	5.92	6.26	6.61
6.99							
9.90 CFS	7.39	7.81	8.26	8.73	9.22	9.74	10.29
10.86							
10.38 CFS	11.46	12.09	12.74	13.41	14.13	14.88	15.70
16.58							
10.86 CFS	17.55	18.60	19.76	21.03	22.42	23.94	25.64
27.53							
11.34 CFS	29.63	31.96	34.55	37.40	40.62	44.37	48.84
54.14							
11.82 CFS	60	68	78	91	109	132	162
195							
12.30 CFS	231	265	291	313	331	348	362
374							
12.78 CFS	383	388	391	393	392	389	385
380							
13.26 CFS	374	368	360	352	344	335	326
317							
13.74 CFS	308	299	289	280	270	260	250
240							
14.22 CFS	230	220	210	201	194	186	178
171							
14.70 CFS	164	157	150	144	139	134	129
125							
15.18 CFS	121	117	113	110	107	104	101
98							
15.66 CFS	95.88	93.55	91.42	89.47	87.66	85.97	84.38
82.88							
16.14 CFS	81.46	80.12	78.85	77.65	76.51	75.43	74.39
73.41							
16.62 CFS	72.46	71.55	70.68	69.86	69.06	68.29	67.55
66.83							
17.10 CFS	66.14	65.47	64.80	64.14	63.49	62.87	62.26
61.66							
17.58 CFS	61.06	60.45	59.86	59.28	58.70	58.13	57.56
56.99							
18.06 CFS	56.44	55.89	55.35	54.80	54.26	53.73	53.20
52.68							
18.54 CFS	52.18	51.69	51.22	50.77	50.33	49.89	49.48
49.08							
19.02 CFS	48.68	48.30	47.92	47.56	47.22	46.89	46.57
46.27							
19.50 CFS	45.98	45.70	45.43	45.16	44.90	44.65	44.41
44.16							
19.98 CFS	43.92	43.70	43.49	43.28	43.08	42.88	42.67
42.47							
20.46 CFS	42.26	42.05	41.85	41.66	41.47	41.28	41.09
40.91							
20.94 CFS	40.72	40.53	40.34	40.14	39.94	39.74	39.55
39.35							
21.42 CFS	39.17	38.98	38.80	38.61	38.42	38.22	38.03
37.84							
21.90 CFS	37.65	37.47	37.29	37.12	36.93	36.75	36.56
36.38							
22.38 CFS	36.20	36.03	35.85	35.69	35.51	35.33	35.15

34.98								
22.86	CFS	34.80	34.62	34.43	34.26	34.09	33.93	33.77
33.60								
23.34	CFS	33.43	33.26	33.09	32.92	32.74	32.57	32.40
32.24								
23.82	CFS	32.08	31.91	31.74	31.58	31.43	31.21	30.83
30.29								
24.30	CFS	29.63	28.91	28.15	27.36	26.56	25.75	24.92
24.09								
24.78	CFS	23.25	22.41	21.57	20.72	19.89	19.08	18.29
17.52								
25.26	CFS	16.79	16.09	15.43	14.81	14.23	13.69	13.19
12.73								
25.74	CFS	12.29	11.89	11.51	11.17	10.84	10.54	10.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.14 WATERSHED INCHES; 1415 CFS-HRS; 117.0 ACRE-FEET.

OPERATION REACH XSECTION 63

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist;H1&H8UG;GHC2.04TEST

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.16	386.3	249.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.14 WATERSHED INCHES; 1413 CFS-HRS; 116.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	12.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.50 WATERSHED INCHES; 18 CFS-HRS; 1.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	5.6	333.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.50 WATERSHED INCHES; 18 CFS-HRS; 1.5 ACRE-FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.94	5.5	300.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.50 WATERSHED INCHES; 18 CFS-HRS; 1.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	38.8	(RUNOFF)
21.97	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.41 WATERSHED INCHES; 42 CFS-HRS; 3.4 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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 04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	15.8	292.31
13.93	3.5	287.75
22.00	1.0	287.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.41 WATERSHED INCHES; 42 CFS-HRS; 3.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.71	21.0	(NULL)
13.90	8.0	(NULL)
24.03	1.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.62 WATERSHED INCHES; 59 CFS-HRS; 4.9 ACRE-FEET.

## OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	78.8	(RUNOFF)
20.09	2.1	(RUNOFF)
20.64	2.0	(RUNOFF)
24.02	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.61 WATERSHED INCHES; 81 CFS-HRS; 6.7 ACRE-  
FEET.

## OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	94.7	(NULL)
21.97	3.2	(NULL)
24.03	2.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.61 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-  
FEET.

## OPERATION REACH XSECTION 70

1  
TR20 ----- SCS  
-  
Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION  
04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	74.2	248.54
20.68	3.5	247.54
24.09	2.7	247.48

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.61 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-  
FEET.

## OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	20.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.13 WATERSHED INCHES; 16 CFS-HRS; 1.4 ACRE-  
FEET.

## OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.59	3.9	265.07
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.13 WATERSHED INCHES;	16 CFS-HRS;	1.3 ACRE-
FEET.		

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.71	3.9	247.58
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.12 WATERSHED INCHES;	16 CFS-HRS;	1.3 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	72.3	(RUNOFF)
17.34	3.1	(RUNOFF)
22.47	2.0	(RUNOFF)
24.01	1.8	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5								
HRS	MAIN	TIME	INCREMENT = .060 hr,	DRAINAGE AREA = .11				
SQ.MI.								
11.46 CFS	.45	.81	1.39	2.30	3.37	4.71	6.70	
9.67								
11.94 CFS	14.42	23.06	37.77	59.83	72.15	65.02	52.35	
42.97								
12.42 CFS	35.80	30.87	27.76	24.51	21.08	18.56	17.03	
15.94								
12.90 CFS	15.05	14.26	13.48	12.68	11.89	11.24	10.73	
10.25								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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13.38 CFS	9.78	9.32	8.85	8.39	7.95	7.60	7.33	
7.13								
13.86 CFS	6.96	6.84	6.74	6.66	6.55	6.42	6.28	
6.14								
14.34 CFS	6.04	5.95	5.85	5.73	5.59	5.44	5.31	
5.20								
14.82 CFS	5.10	5.00	4.87	4.74	4.63	4.49	4.36	
4.25								
15.30 CFS	4.18	4.15	4.14	4.14	4.14	4.11	4.05	
3.98								
15.78 CFS	3.95	3.96	3.96	3.91	3.85	3.79	3.76	
3.75								
16.26 CFS	3.74	3.69	3.65	3.62	3.58	3.52	3.49	



3.48								
16.74 CFS	3.46	3.43	3.38	3.35	3.34	3.32	3.29	
3.23								
17.22 CFS	3.15	3.12	3.12	3.12	3.07	3.00	2.94	
2.91								
17.70 CFS	2.89	2.88	2.83	2.78	2.76	2.74	2.73	
2.68								
18.18 CFS	2.63	2.61	2.59	2.58	2.53	2.51	2.53	
2.56								
18.66 CFS	2.56	2.53	2.51	2.53	2.53	2.49	2.47	
2.46								
19.14 CFS	2.45	2.45	2.45	2.45	2.45	2.45	2.45	
2.44								
19.62 CFS	2.40	2.38	2.40	2.39	2.36	2.33	2.34	
2.38								
20.10 CFS	2.39	2.36	2.33	2.32	2.31	2.28	2.24	
2.25								
20.58 CFS	2.28	2.29	2.27	2.24	2.25	2.26	2.23	
2.20								
21.06 CFS	2.18	2.17	2.17	2.17	2.17	2.17	2.17	
2.17								
21.54 CFS	2.17	2.13	2.10	2.10	2.11	2.09	2.09	
2.11								
22.02 CFS	2.10	2.06	2.04	2.03	2.02	2.02	2.02	
2.02								
22.50 CFS	2.02	2.01	1.97	1.94	1.96	1.95	1.92	
1.89								
22.98 CFS	1.90	1.94	1.95	1.92	1.89	1.88	1.87	
1.87								
23.46 CFS	1.86	1.81	1.79	1.81	1.84	1.84	1.81	
1.76								
23.94 CFS	1.75	1.84	1.80	1.31	.71	.34		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.08 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
13.14	398.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.04 WATERSHED INCHES; 1490 CFS-HRS; 123.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.36	77.9	(NULL)
20.16	4.0	(NULL)
23.80	3.1	(NULL)
24.09	3.0	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .15  
 SQ.MI.

10.20 CFS	.48	.53	.59	.66	.73	.81	.90
.99							
10.68 CFS	1.10	1.22	1.37	1.54	1.74	1.97	2.23

2.53								
11.16	CFS	2.86	3.25	3.70	4.22	4.80	5.45	6.18
6.98								
11.64	CFS	7.97	9.30	10.97	12.98	15.49	18.70	22.97
29.41								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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12.12	CFS	38.90	52.87	67.14	75.80	77.89	75.90	71.96
67.42								
12.60	CFS	63.09	59.05	55.17	51.62	48.58	46.05	43.90
42.04								
13.08	CFS	40.39	38.87	37.45	36.12	34.90	33.76	32.69
31.67								
13.56	CFS	30.58	29.34	28.06	26.51	24.87	23.25	21.51
20.27								
14.04	CFS	19.27	18.45	17.73	17.07	16.46	15.89	15.37
14.91								
14.52	CFS	14.49	14.09	13.70	13.31	12.88	12.46	12.06
11.68								
15.00	CFS	11.28	10.83	10.39	9.96	9.57	9.22	8.91
8.66								
15.48	CFS	8.45	8.29	8.15	8.02	7.83	7.63	7.44
7.29								
15.96	CFS	7.17	7.07	6.97	6.87	6.77	6.70	6.63
6.57								
16.44	CFS	6.50	6.44	6.37	6.30	6.23	6.16	6.11
6.06								
16.92	CFS	6.00	5.94	5.89	5.84	5.79	5.73	5.66
5.58								
17.40	CFS	5.52	5.47	5.42	5.36	5.28	5.20	5.14
5.08								
17.88	CFS	5.02	4.96	4.90	4.84	4.79	4.74	4.68
4.62								
18.36	CFS	4.57	4.52	4.47	4.42	4.39	4.38	4.37
4.36								
18.84	CFS	4.33	4.32	4.31	4.30	4.27	4.24	4.22
4.20								
19.32	CFS	4.19	4.18	4.17	4.16	4.16	4.15	4.13
4.11								
19.80	CFS	4.09	4.07	4.05	4.03	4.01	4.01	4.01
4.01								
20.28	CFS	3.99	3.97	3.95	3.93	3.89	3.86	3.85
3.85								
20.76	CFS	3.85	3.83	3.82	3.81	3.80	3.77	3.75
3.72								
21.24	CFS	3.70	3.69	3.68	3.67	3.66	3.66	3.65
3.63								
21.72	CFS	3.61	3.59	3.57	3.56	3.54	3.54	3.53
3.51								
22.20	CFS	3.49	3.47	3.45	3.43	3.42	3.41	3.40
3.39								
22.68	CFS	3.37	3.34	3.32	3.31	3.28	3.26	3.23
3.23								
23.16	CFS	3.24	3.23	3.21	3.19	3.17	3.16	3.14
3.12								
23.64	CFS	3.09	3.06	3.06	3.06	3.05	3.03	3.00

3.00  
 24.12 CFS      3.01      2.86      2.50      2.05      1.62      1.26      .97  
 .74  
 24.60 CFS      .57      .43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.66 WATERSHED INCHES;      157 CFS-HRS;      12.9 ACRE-  
 FEET.

OPERATION ADDHYD      XSECTION      76

PEAK TIME(HRS)      PEAK DISCHARGE(CFS)      PEAK  
 ELEVATION(FEET)  
 13.09      437.6      (NULL)

HYDROGRAPH POINTS FOR      ALTERNATE = 1,      STORM = 5  
 MAIN TIME INCREMENT = .060 hr,      DRAINAGE AREA = 1.28  
 SQ.MI.  
 HRS      7.20 CFS      .49      .52      .56      .60      .63      .68      .72  
 .77  
 7.68 CFS      .82      .87      .92      .98      1.03      1.09      1.15  
 1.22  
 8.16 CFS      1.28      1.35      1.42      1.49      1.57      1.66      1.75  
 1.86  
 8.64 CFS      1.98      2.10      2.23      2.38      2.53      2.69      2.86  
 3.03  
 9.12 CFS      3.22      3.42      3.62      3.83      4.05      4.29      4.53  
 4.79  
 9.60 CFS      5.06      5.34      5.65      5.97      6.31      6.66      7.05  
 7.45  
 10.08 CFS      7.88      8.33      8.82      9.34      9.90      10.49      11.11  
 11.77  
 10.56 CFS      12.45      13.17      13.93      14.75      15.62      16.58      17.63  
 18.78  
 11.04 CFS      20.03      21.42      22.94      24.63      26.53      28.68      31.17  
 34.03  
 11.52 CFS      37.27      41.06      45.63      51.07      57.60      65.72      76.08  
 89.87  
 12.00 CFS      110      140      184      226      254      274      296  
 317  
 12.48 CFS      337      356      372      386      399      410      420  
 428

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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12.96 CFS      433      436      438      437      435      431      426  
 420  
 13.44 CFS      413      405      397      387      378      368      357  
 346  
 13.92 CFS      336      325      315      304      293      283      272  
 261  
 14.40 CFS      251      241      231      222      214      205      197  
 189  
 14.88 CFS      181      174      167      161      155      149      144  
 139  
 15.36 CFS      134      130      127      123      120      117      113

110								
15.84	CFS	108	105	103	101	99	97	95
94								
16.32	CFS	92.01	90.54	89.16	87.83	86.56	85.35	84.22
83.14								
16.80	CFS	82.10	81.09	80.13	79.21	78.34	77.48	76.63
75.77								
17.28	CFS	74.95	74.19	73.45	72.70	71.94	71.19	70.46
69.75								
17.76	CFS	69.06	68.36	67.67	66.99	66.33	65.69	65.03
64.37								
18.24	CFS	63.72	63.10	62.48	61.85	61.24	60.68	60.15
59.63								
18.72	CFS	59.10	58.58	58.11	57.64	57.15	56.68	56.23
55.79								
19.20	CFS	55.37	54.97	54.58	54.22	53.86	53.53	53.20
52.85								
19.68	CFS	52.52	52.22	51.92	51.61	51.30	51.03	50.80
50.56								
20.16	CFS	50.31	50.06	49.82	49.58	49.31	49.04	48.81
48.60								
20.64	CFS	48.40	48.17	47.94	47.74	47.54	47.32	47.09
46.86								
21.12	CFS	46.63	46.41	46.19	45.98	45.78	45.57	45.38
45.18								
21.60	CFS	44.95	44.71	44.50	44.29	44.07	43.86	43.68
43.47								
22.08	CFS	43.25	43.03	42.81	42.60	42.39	42.19	42.00
41.81								
22.56	CFS	41.61	41.38	41.16	40.97	40.77	40.55	40.32
40.12								
23.04	CFS	39.96	39.79	39.59	39.38	39.19	38.99	38.80
38.61								
23.52	CFS	38.38	38.16	37.98	37.81	37.64	37.43	37.21
37.01								
24.00	CFS	36.91	36.71	36.07	35.13	34.16	33.19	32.22
31.27								
24.48	CFS	30.34	29.43	28.53	27.65	26.77	25.90	25.02
24.15								
24.96	CFS	23.29	22.43	21.58	20.74	19.92	19.11	18.32
17.57								
25.44	CFS	16.85	16.16	15.51	14.90	14.32	13.78	13.28
12.81								
25.92	CFS	12.37	11.96	11.59	11.23			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.99 WATERSHED INCHES; 1646 CFS-HRS; 136.1 ACRE-FEET.

OPERATION DIVERT XSECTION 176  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(DIVERT)
13.09	437.6	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1646 CFS-HRS; 136.1 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.

\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

Dist;H1&H8UG;GHC2.04TEST

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PASS 2 JOB NO. 1

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\*\*\* MESSAGE - STRUCTURE 72, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE

STARTS 20.00 FEET BELOW ASSUMED CREST ELEVATION AT 240.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.

\*\*\*

OPERATION RESVOR STRUCTURE 72

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.

\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 177

NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.

\*\*\*

OPERATION ADDHYD XSECTION 177

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)		PEAK				
ELEVATION (FEET)			(NULL)				
13.09	437.6		(NULL)				
HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28 SQ.MI.							
7.20 CFS	.49	.52	.56	.60	.63	.68	.72
.77							
7.68 CFS	.82	.87	.92	.98	1.03	1.09	1.15
1.22							
8.16 CFS	1.28	1.35	1.42	1.49	1.57	1.66	1.75
1.86							
8.64 CFS	1.98	2.10	2.23	2.38	2.53	2.69	2.86
3.03							
9.12 CFS	3.22	3.42	3.62	3.83	4.05	4.29	4.53
4.79							
9.60 CFS	5.06	5.34	5.65	5.97	6.31	6.66	7.05
7.45							
10.08 CFS	7.88	8.33	8.82	9.34	9.90	10.49	11.11
11.77							
10.56 CFS	12.45	13.17	13.93	14.75	15.62	16.58	17.63
18.78							
11.04 CFS	20.03	21.42	22.94	24.63	26.53	28.68	31.17
34.03							

11.52 CFS	37.27	41.06	45.63	51.07	57.60	65.72	76.08
89.87							
12.00 CFS	110	140	184	226	254	274	296
317							
12.48 CFS	337	356	372	386	399	410	420
428							
12.96 CFS	433	436	438	437	435	431	426
420							
13.44 CFS	413	405	397	387	378	368	357
346							
13.92 CFS	336	325	315	304	293	283	272
261							
14.40 CFS	251	241	231	222	214	205	197
189							
14.88 CFS	181	174	167	161	155	149	144
139							
15.36 CFS	134	130	127	123	120	117	113
110							
15.84 CFS	108	105	103	101	99	97	95
94							
16.32 CFS	92.01	90.54	89.16	87.83	86.56	85.35	84.22
83.14							
16.80 CFS	82.10	81.09	80.13	79.21	78.34	77.48	76.63
75.77							
17.28 CFS	74.95	74.19	73.45	72.70	71.94	71.19	70.46
69.75							
17.76 CFS	69.06	68.36	67.67	66.99	66.33	65.69	65.03
64.37							
18.24 CFS	63.72	63.10	62.48	61.85	61.24	60.68	60.15
59.63							
18.72 CFS	59.10	58.58	58.11	57.64	57.15	56.68	56.23
55.79							
19.20 CFS	55.37	54.97	54.58	54.22	53.86	53.53	53.20
52.85							
19.68 CFS	52.52	52.22	51.92	51.61	51.30	51.03	50.80
50.56							

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20.16 CFS	50.31	50.06	49.82	49.58	49.31	49.04	48.81
48.60							
20.64 CFS	48.40	48.17	47.94	47.74	47.54	47.32	47.09
46.86							
21.12 CFS	46.63	46.41	46.19	45.98	45.78	45.57	45.38
45.18							
21.60 CFS	44.95	44.71	44.50	44.29	44.07	43.86	43.68
43.47							
22.08 CFS	43.25	43.03	42.81	42.60	42.39	42.19	42.00
41.81							
22.56 CFS	41.61	41.38	41.16	40.97	40.77	40.55	40.32
40.12							
23.04 CFS	39.96	39.79	39.59	39.38	39.19	38.99	38.80
38.61							
23.52 CFS	38.38	38.16	37.98	37.81	37.64	37.43	37.21
37.01							
24.00 CFS	36.91	36.71	36.07	35.13	34.16	33.19	32.22
31.27							

24.48 CFS	30.34	29.43	28.53	27.65	26.77	25.90	25.02
24.15							
24.96 CFS	23.29	22.43	21.58	20.74	19.92	19.11	18.32
17.57							
25.44 CFS	16.85	16.16	15.51	14.90	14.32	13.78	13.28
12.81							
25.92 CFS	12.37	11.96	11.59	11.23			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.99 WATERSHED INCHES; 1646 CFS-HRS; 136.1 ACRE-FEET.

OPERATION REACH XSECTION 77

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
13.16	437.4	229.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.99 WATERSHED INCHES; 1646 CFS-HRS; 136.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	48.4	(RUNOFF)
15.85	2.2	(RUNOFF)
23.07	1.1	(RUNOFF)
23.73	1.0	(RUNOFF)
24.02	1.0	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05 SQ.MI.

HRS	10.98	11.46	11.94	12.42	12.90	13.38	13.86	14.34	14.82	15.30	15.78	16.26	16.74
10.98 CFS	.48	.59	.72	.87	1.05	1.26	1.48						
1.74													
11.46 CFS	2.01	2.32	2.87	3.73	4.63	5.62	7.12						
9.35													
11.94 CFS	12.68	18.63	28.32	42.26	48.42	41.74	32.58						
26.16													
12.42 CFS	21.43	18.33	16.41	14.35	12.20	10.74	9.87						
9.24													
12.90 CFS	8.71	8.24	7.77	7.29	6.83	6.44	6.14						
5.86													
13.38 CFS	5.59	5.32	5.04	4.77	4.52	4.31	4.17						
4.05													
13.86 CFS	3.95	3.88	3.83	3.78	3.71	3.63	3.55						
3.47													
14.34 CFS	3.41	3.36	3.30	3.23	3.15	3.06	2.98						
2.92													
14.82 CFS	2.87	2.81	2.73	2.66	2.59	2.52	2.44						
2.38													
15.30 CFS	2.34	2.33	2.32	2.32	2.32	2.30	2.26						
2.22													
15.78 CFS	2.21	2.21	2.21	2.18	2.14	2.11	2.10						
2.09													
16.26 CFS	2.08	2.06	2.03	2.01	1.99	1.96	1.94						
1.93													
16.74 CFS	1.93	1.90	1.88	1.86	1.85	1.85	1.82						
1.79													

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17.22 CFS	1.75	1.73	1.73	1.73	1.70	1.66	1.63
1.61							
17.70 CFS	1.60	1.59	1.56	1.54	1.52	1.52	1.51
1.48							
18.18 CFS	1.45	1.44	1.43	1.42	1.40	1.38	1.40
1.41							
18.66 CFS	1.41	1.39	1.38	1.40	1.39	1.37	1.36
1.35							
19.14 CFS	1.35	1.35	1.35	1.35	1.35	1.35	1.35
1.34							
19.62 CFS	1.32	1.31	1.32	1.31	1.29	1.28	1.29
1.31							
20.10 CFS	1.31	1.29	1.28	1.28	1.27	1.25	1.23
1.23							
20.58 CFS	1.25	1.26	1.24	1.23	1.23	1.24	1.22
1.20							
21.06 CFS	1.19	1.19	1.19	1.19	1.19	1.19	1.19
1.19							
21.54 CFS	1.19	1.17	1.14	1.15	1.15	1.14	1.14
1.16							
22.02 CFS	1.14	1.12	1.11	1.11	1.11	1.10	1.10
1.10							
22.50 CFS	1.10	1.10	1.07	1.06	1.07	1.07	1.04
1.03							
22.98 CFS	1.04	1.06	1.06	1.04	1.03	1.02	1.02
1.02							
23.46 CFS	1.01	.98	.97	.99	1.00	1.00	.98
.96							
23.94 CFS	.95	1.01	.99	.69	.36		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.45 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.15	444.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.97 WATERSHED INCHES; 1693 CFS-HRS; 139.9 ACRE-  
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 80.  
\*\*\*

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.15	444.2	213.32



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.97 WATERSHED INCHES; 1693 CFS-HRS; 139.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	25.2	(RUNOFF)
15.85	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.24 WATERSHED INCHES; 25 CFS-HRS; 2.1 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.14	447.9	177.59

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.96 WATERSHED INCHES; 1718 CFS-HRS; 142.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	55.6	(RUNOFF)
15.84	2.3	(RUNOFF)
23.71	1.1	(RUNOFF)
24.00	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	57.2	(RUNOFF)
18.67	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 184  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	57.2	(DIVERT)
18.67	2.0	(DIVERT)
24.02	1.4	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
70 CFS-HRS; 5.8 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.

\*\*\*

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 81, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE

STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 200.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.

\*\*\*

OPERATION RESVOR STRUCTURE 81

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.

\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 185

NO HYDROGRAPH IN INPUT LOCATION 1 OR 6 FOR ADDHYD OPERATION.

\*\*\*

OPERATION ADDHYD XSECTION 185

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	57.2	(NULL)
18.67	2.0	(NULL)
24.02	1.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.49 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 186

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.28	21.8	(RUNOFF)
18.68	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.98 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 187

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.26	79.0	(NULL)
18.68	3.0	(NULL)
24.02	2.1	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.29 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 85

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.20	124.9	(NULL)
20.07	4.2	(NULL)
20.63	4.0	(NULL)
24.00	3.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .17  
SQ.MI.

HRS	10.62 CFS	11.10 CFS	11.58 CFS	12.06 CFS	12.54 CFS	13.02 CFS	13.50 CFS
1.76	.40	.53	.67	.84	1.04	1.25	1.49
6.00	2.08	2.46	2.90	3.40	3.95	4.57	5.23
47.03	7.40	9.43	11.59	14.31	18.26	23.98	32.53
68.49	71.10	104.97	123.68	119.65	108.49	93.73	79.37
28.53	60.44	52.66	45.78	40.40	36.24	33.06	30.57
17.83	26.66	24.90	23.30	21.93	20.77	19.72	18.76
13.50 CFS	16.93	16.06	15.23	14.51	13.92	13.43	13.05

12.74								
13.98	CFS	12.49	12.28	12.06	11.82	11.57	11.33	11.11
10.92								
14.46	CFS	10.73	10.51	10.27	10.01	9.77	9.56	9.37
9.16								
14.94	CFS	8.94	8.72	8.50	8.26	8.03	7.82	7.67
7.57								
15.42	CFS	7.51	7.47	7.45	7.39	7.31	7.21	7.14
7.13								
15.90	CFS	7.09	7.03	6.94	6.86	6.79	6.75	6.71
6.64								
16.38	CFS	6.57	6.51	6.43	6.35	6.29	6.25	6.21
6.15								
16.86	CFS	6.08	6.02	5.98	5.95	5.89	5.80	5.69
5.62								
17.34	CFS	5.60	5.56	5.50	5.40	5.31	5.24	5.19
5.15								
17.82	CFS	5.07	5.00	4.95	4.91	4.87	4.80	4.73
4.68								
18.30	CFS	4.64	4.60	4.53	4.49	4.50	4.52	4.53
4.49								
18.78	CFS	4.48	4.49	4.47	4.43	4.40	4.37	4.35
4.35								
19.26	CFS	4.34	4.34	4.34	4.34	4.34	4.32	4.27
4.24								
19.74	CFS	4.25	4.22	4.18	4.15	4.16	4.19	4.19
4.17								
20.22	CFS	4.14	4.12	4.10	4.04	3.99	3.99	4.01
4.03								
20.70	CFS	4.00	3.97	3.98	3.97	3.94	3.90	3.87
3.85								
21.18	CFS	3.84	3.83	3.82	3.82	3.82	3.82	3.81
3.77								
21.66	CFS	3.72	3.72	3.71	3.68	3.69	3.71	3.68
3.64								
22.14	CFS	3.61	3.59	3.57	3.56	3.56	3.56	3.56
3.54								
22.62	CFS	3.48	3.45	3.46	3.43	3.39	3.36	3.36
3.39								
23.10	CFS	3.40	3.37	3.34	3.32	3.30	3.29	3.27
3.21								
23.58	CFS	3.17	3.19	3.21	3.21	3.17	3.12	3.10
3.20								
24.06	CFS	3.12	2.51	1.78	1.19	.75	.46	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.37 WATERSHED INCHES; 150 CFS-HRS; 12.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 86

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PEAK TIME(HRS)  
 ELEVATION(FEET)

PEAK DISCHARGE(CFS)

PEAK

12.31 406.8 (NULL)  
 13.09 472.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.89 WATERSHED INCHES; 1868 CFS-HRS; 154.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.13 31.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.71 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.27 423.7 (NULL)  
 13.08 475.2 (NULL)  
 23.98 42.3 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55  
 SQ.MI.

HRS	7.08	8.04	9.00	9.96	10.44	10.92	11.40	11.88	12.36	12.84	13.32	13.80	14.28	14.76
CFS	.48	1.29	3.00	7.27	11.44	19.56	37.92	111	416	460	463	391	303	222
	.51	1.36	3.18	7.68	12.17	21.03	41.61	137	413	466	457	380	292	213
	.55	1.43	3.37	8.11	12.96	22.65	45.86	179	418	471	449	369	281	205
	.59	1.49	3.57	8.56	13.84	24.53	51.97	244	427	474	441	357	270	197
	.63	1.57	3.78	9.05	14.81	26.65	59.84	337	434	475	432	346	259	189
	.68	1.65	4.01	9.58	15.85	29.02	68.33	403	439	474	422	336	249	182
	.72	1.73	4.24	10.15	16.99	31.66	78.60	422	445	472	412	325	240	175
	.77	1.81	4.48	10.77	18.21	34.59	92.47	421	453	468	401	314	231	169

15.24 CFS	163	157	152	147	143	139	136
132							
15.72 CFS	129	125	122	120	117	115	112
110							
16.20 CFS	108	106	105	103	101	100	98
97							
16.68 CFS	95.63	94.44	93.24	92.07	90.97	89.94	88.98
87.99							
17.16 CFS	86.96	85.91	84.96	84.14	83.31	82.43	81.50
80.59							
17.64 CFS	79.74	78.95	78.17	77.34	76.52	75.75	75.02
74.29							
18.12 CFS	73.52	72.74	72.00	71.31	70.61	69.87	69.19
68.62							

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18.60 CFS	68.11	67.57	66.97	66.41	65.93	65.42	64.86
64.32							
19.08 CFS	63.81	63.33	62.88	62.45	62.05	61.66	61.29
60.94							
19.56 CFS	60.57	60.13	59.74	59.44	59.10	58.71	58.35
58.07							
20.04 CFS	57.88	57.63	57.33	57.03	56.75	56.47	56.12
55.77							
20.52 CFS	55.53	55.34	55.16	54.89	54.61	54.41	54.20
53.93							
21.00 CFS	53.63	53.36	53.10	52.86	52.63	52.41	52.20
51.99							
21.48 CFS	51.79	51.57	51.28	50.97	50.76	50.53	50.26
50.06							
21.96 CFS	49.90	49.65	49.37	49.10	48.84	48.61	48.38
48.17							
22.44 CFS	47.97	47.77	47.54	47.23	46.97	46.78	46.54
46.26							
22.92 CFS	45.97	45.78	45.66	45.48	45.24	45.00	44.76
44.54							
23.40 CFS	44.33	44.10	43.78	43.51	43.34	43.21	43.04
42.77							
23.88 CFS	42.47	42.24	42.27	41.98	40.49	38.54	36.73
35.18							
24.36 CFS	33.85	32.68	31.60	30.60	29.64	28.72	27.81
26.92							
24.84 CFS	26.04	25.16	24.29	23.43	22.57	21.72	20.87
20.05							
25.32 CFS	19.23	18.45	17.69	16.96	16.26	15.61	14.99
14.41							
25.80 CFS	13.86	13.36	12.88	12.44	12.03	11.64	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.90 WATERSHED INCHES; 1896 CFS-HRS; 156.7 ACRE-  
FEET.

OPERATION DIVERT XSECTION 81  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.27	423.7	177.50
13.08	475.2	177.68
23.98	42.3	175.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1896 CFS-HRS; 156.7 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 71, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 25.00 FEET BELOW ASSUMED CREST ELEVATION AT 174.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 71

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* WARNING - XSECTION 89  
 NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 89

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.27	423.7	(NULL)
13.08	475.2	(NULL)
23.98	42.3	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55 SQ.MI.  
 7.08 CFS .48 .51 .55 .59 .63 .68 .72  
 .77  
 7.56 CFS .81 .86 .92 .98 1.03 1.09 1.16

1.22								
8.04 CFS	1.29	1.36	1.43	1.49	1.57	1.65	1.73	
1.81								
8.52 CFS	1.91	2.01	2.13	2.25	2.38	2.52	2.67	
2.83								
9.00 CFS	3.00	3.18	3.37	3.57	3.78	4.01	4.24	
4.48								
9.48 CFS	4.73	4.99	5.27	5.56	5.87	6.20	6.54	
6.89								
9.96 CFS	7.27	7.68	8.11	8.56	9.05	9.58	10.15	
10.77								
10.44 CFS	11.44	12.17	12.96	13.84	14.81	15.85	16.99	
18.21								
10.92 CFS	19.56	21.03	22.65	24.53	26.65	29.02	31.66	
34.59								
11.40 CFS	37.92	41.61	45.86	51.97	59.84	68.33	78.60	
92.47								
11.88 CFS	111	137	179	244	337	403	422	
421								
12.36 CFS	416	413	418	427	434	439	445	
453								
12.84 CFS	460	466	471	474	475	474	472	
468								
13.32 CFS	463	457	449	441	432	422	412	
401								
13.80 CFS	391	380	369	357	346	336	325	
314								
14.28 CFS	303	292	281	270	259	249	240	
231								
14.76 CFS	222	213	205	197	189	182	175	
169								
15.24 CFS	163	157	152	147	143	139	136	
132								
15.72 CFS	129	125	122	120	117	115	112	
110								
16.20 CFS	108	106	105	103	101	100	98	
97								
16.68 CFS	95.63	94.44	93.24	92.07	90.97	89.94	88.98	
87.99								
17.16 CFS	86.96	85.91	84.96	84.14	83.31	82.43	81.50	
80.59								
17.64 CFS	79.74	78.95	78.17	77.34	76.52	75.75	75.02	
74.29								
18.12 CFS	73.52	72.74	72.00	71.31	70.61	69.87	69.19	
68.62								
18.60 CFS	68.11	67.57	66.97	66.41	65.93	65.42	64.86	
64.32								
19.08 CFS	63.81	63.33	62.88	62.45	62.05	61.66	61.29	
60.94								
19.56 CFS	60.57	60.13	59.74	59.44	59.10	58.71	58.35	
58.07								
20.04 CFS	57.88	57.63	57.33	57.03	56.75	56.47	56.12	
55.77								
20.52 CFS	55.53	55.34	55.16	54.89	54.61	54.41	54.20	
53.93								
21.00 CFS	53.63	53.36	53.10	52.86	52.63	52.41	52.20	
51.99								
21.48 CFS	51.79	51.57	51.28	50.97	50.76	50.53	50.26	
50.06								
21.96 CFS	49.90	49.65	49.37	49.10	48.84	48.61	48.38	
48.17								
22.44 CFS	47.97	47.77	47.54	47.23	46.97	46.78	46.54	
46.26								
22.92 CFS	45.97	45.78	45.66	45.48	45.24	45.00	44.76	



44.54

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23.40 CFS	44.33	44.10	43.78	43.51	43.34	43.21	43.04
42.77							
23.88 CFS	42.47	42.24	42.27	41.98	40.49	38.54	36.73
35.18							
24.36 CFS	33.85	32.68	31.60	30.60	29.64	28.72	27.81
26.92							
24.84 CFS	26.04	25.16	24.29	23.43	22.57	21.72	20.87
20.05							
25.32 CFS	19.23	18.45	17.69	16.96	16.26	15.61	14.99
14.41							
25.80 CFS	13.86	13.36	12.88	12.44	12.03	11.64	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.90 WATERSHED INCHES; 1896 CFS-HRS; 156.7 ACRE-  
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 89  
STARTING TIME = .00 RAIN DEPTH = 4.91 RAIN DURATION = 1.00  
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. =10 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	48.0	(RUNOFF)
23.10	1.1 *	(RUNOFF)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.90 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	45.0	390.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.90 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		
12.28	82.2	(RUNOFF)
20.68	2.2	(RUNOFF)
23.98	1.7	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.77 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	122.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.82 WATERSHED INCHES; 166 CFS-HRS; 13.8 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	121.3	383.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.81 WATERSHED INCHES; 166 CFS-HRS; 13.7 ACRE-  
FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	120.5	368.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.81 WATERSHED INCHES; 166 CFS-HRS; 13.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	101.9	(RUNOFF)
23.73	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.57 WATERSHED INCHES; 132 CFS-HRS; 10.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	213.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.70 WATERSHED INCHES; 298 CFS-HRS; 24.7 ACRE-  
FEET.

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OPERATION DIVERT XSECTION 107  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	213.0	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
298 CFS-HRS; 24.7 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - XSECTION 82, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.70 WATERSHED INCHES; 399 CFS-HRS; 24.7 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 84, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE

STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 358.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 84

\*\*\* MESSAGE - STRUCTURE 84, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.70 WATERSHED INCHES; 398 CFS-HRS; 24.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	213.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.70 WATERSHED INCHES; 298 CFS-HRS; 24.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	211.8	357.82

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.70 WATERSHED INCHES; 299 CFS-HRS; 24.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	132.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.88 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	60.8	376.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.49 WATERSHED INCHES; 165 CFS-HRS; 13.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	16.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.13 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.81	56.5	355.97

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.49 WATERSHED INCHES; 165 CFS-HRS; 13.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 11

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	77.9	(RUNOFF)
15.82	3.3	(RUNOFF)
18.86	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.23 WATERSHED INCHES; 78 CFS-HRS; 6.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	249.0	(NULL)
24.00	6.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.59 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	32.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.44 261.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.80 WATERSHED INCHES; 540 CFS-HRS; 44.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.41	278.4	(NULL)
23.98	12.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-  
 FEET.

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\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .006 HOURS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.83	181.9	341.39
14.03	52.9	335.14
14.15	47.8	334.94
14.27	44.0	334.79
14.38	41.0	334.68
14.49	38.7	334.58
23.97	12.6	333.57

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32  
 SQ.MI.

4.62 CFS	.00	.01	.01	.01	.01	.01	.01
.01							
4.62 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
5.10 CFS	.02	.02	.02	.02	.02	.02	.02
.03							
5.10 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
5.58 CFS	.03	.03	.03	.03	.04	.04	.04
.04							
5.58 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
6.06 CFS	.05	.05	.05	.05	.06	.06	.06
.06							
6.06 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							

6.54 CFS	.07	.07	.07	.08	.08	.08	.09
.09							
6.54 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
7.02 CFS	.09	.10	.10	.11	.11	.11	.12
.12							
7.02 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
7.50 CFS	.13	.13	.14	.14	.16	.17	.19
.20							
7.50 ELEV	333.08	333.09	333.09	333.09	333.09	333.09	333.09
333.09							
7.98 CFS	.22	.24	.26	.28	.30	.33	.36
.41							
7.98 ELEV	333.09	333.09	333.09	333.09	333.09	333.09	333.09
333.10							
8.46 CFS	.45	.50	.56	.62	.68	.74	.80
.87							
8.46 ELEV	333.10	333.10	333.10	333.10	333.11	333.11	333.11
333.11							
8.94 CFS	.94	1.01	1.08	1.15	1.23	1.33	1.43
1.55							
8.94 ELEV	333.12	333.12	333.12	333.12	333.13	333.13	333.14
333.14							
9.42 CFS	1.68	1.81	1.96	2.11	2.27	2.44	2.62
2.81							
9.42 ELEV	333.15	333.15	333.16	333.16	333.17	333.17	333.18
333.19							
9.90 CFS	3.01	3.21	3.42	3.64	3.88	4.12	4.37
4.63							
9.90 ELEV	333.20	333.20	333.21	333.22	333.23	333.24	333.25
333.26							
10.38 CFS	4.89	5.17	5.46	5.78	6.13	6.54	7.01
7.55							
10.38 ELEV	333.27	333.28	333.29	333.30	333.32	333.33	333.35
333.37							
10.86 CFS	8.19	8.97	9.84	10.79	11.86	13.08	14.44
15.94							
10.86 ELEV	333.40	333.43	333.46	333.50	333.54	333.59	333.64
333.70							
11.34 CFS	17.58	19.38	21.28	24.30	28.79	34.24	40.12
46.41							
11.34 ELEV	333.76	333.83	333.91	334.03	334.20	334.41	334.64
334.89							
11.82 CFS	54	64	78	98	103	112	126
133							
11.82 ELEV	335.19	335.58	336.10	336.89	337.10	337.50	338.14
338.55							
12.30 CFS	142	151	158	164	170	175	178
180							

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12.30 ELEV	339.01	339.49	339.91	340.31	340.65	340.94	341.15
341.29							
12.78 CFS	182	182	181	180	178	176	174
171							

12.78 ELEV	341.37	341.39	341.35	341.27	341.16	341.03	340.87
340.69							
13.26 CFS	167	164	160	157	153	148	142
136							
13.26 ELEV	340.49	340.27	340.05	339.81	339.57	339.31	339.00
338.70							
13.74 CFS	131	125	114	104	47	53	45
48							
13.74 ELEV	338.41	338.13	337.61	337.14	334.91	335.13	334.82
334.94							
14.22 CFS	42.34	43.88	40.24	40.90	38.37	38.47	36.60
36.35							
14.22 ELEV	334.73	334.79	334.65	334.67	334.57	334.58	334.50
334.49							
14.70 CFS	34.97	34.70	33.74	33.43	32.65	32.25	31.58
31.13							
14.70 ELEV	334.44	334.43	334.39	334.38	334.35	334.33	334.31
334.29							
15.18 CFS	30.50	30.03	29.50	29.10	28.69	28.38	28.08
27.82							
15.18 ELEV	334.27	334.25	334.23	334.21	334.20	334.18	334.17
334.16							
15.66 CFS	27.55	27.29	27.05	26.88	26.72	26.54	26.34
26.14							
15.66 ELEV	334.15	334.14	334.13	334.13	334.12	334.11	334.10
334.10							
16.14 CFS	25.96	25.80	25.64	25.47	25.30	25.13	24.96
24.77							
16.14 ELEV	334.09	334.08	334.08	334.07	334.06	334.06	334.05
334.04							
16.62 CFS	24.59	24.43	24.28	24.12	23.95	23.78	23.64
23.50							
16.62 ELEV	334.04	334.03	334.02	334.02	334.01	334.01	334.00
333.99							
17.10 CFS	23.35	23.18	22.98	22.80	22.65	22.51	22.33
22.13							
17.10 ELEV	333.99	333.98	333.97	333.97	333.96	333.96	333.95
333.94							
17.58 CFS	21.93	21.75	21.58	21.41	21.22	21.03	20.86
20.70							
17.58 ELEV	333.93	333.93	333.92	333.91	333.91	333.90	333.89
333.89							
18.06 CFS	20.55	20.38	20.20	20.04	19.89	19.75	19.58
19.43							
18.06 ELEV	333.88	333.87	333.87	333.86	333.85	333.85	333.84
333.84							
18.54 CFS	19.32	19.24	19.16	19.06	18.97	18.91	18.85
18.76							
18.54 ELEV	333.83	333.83	333.83	333.82	333.82	333.82	333.81
333.81							
19.02 CFS	18.67	18.59	18.52	18.45	18.38	18.32	18.26
18.21							
19.02 ELEV	333.81	333.80	333.80	333.80	333.80	333.79	333.79
333.79							
19.50 CFS	18.16	18.11	18.03	17.94	17.89	17.83	17.75
17.65							
19.50 ELEV	333.79	333.78	333.78	333.78	333.78	333.77	333.77
333.77							
19.98 CFS	17.59	17.56	17.52	17.46	17.38	17.32	17.26
17.17							
19.98 ELEV	333.76	333.76	333.76	333.76	333.76	333.75	333.75
333.75							
20.46 CFS	17.07	16.99	16.95	16.91	16.84	16.76	16.71
16.66							



20.46 ELEV	333.74	333.74	333.74	333.74	333.74	333.74	333.73	333.73
333.73								
20.94 CFS	16.58	16.48	16.39	16.30	16.21	16.12	16.12	16.04
15.96								
20.94 ELEV	333.73	333.72	333.72	333.71	333.71	333.71	333.71	333.70
333.70								
21.42 CFS	15.89	15.82	15.76	15.67	15.56	15.48	15.48	15.41
15.32								
21.42 ELEV	333.70	333.70	333.69	333.69	333.69	333.68	333.68	333.68
333.68								
21.90 CFS	15.24	15.19	15.12	15.02	14.92	14.84	14.84	14.76
14.68								
21.90 ELEV	333.67	333.67	333.67	333.66	333.66	333.66	333.66	333.65
333.65								
22.38 CFS	14.60	14.53	14.47	14.39	14.30	14.20	14.20	14.13
14.06								
22.38 ELEV	333.65	333.65	333.64	333.64	333.64	333.63	333.63	333.63
333.63								
22.86 CFS	13.96	13.85	13.77	13.73	13.68	13.60	13.60	13.52
13.44								
22.86 ELEV	333.62	333.62	333.62	333.61	333.61	333.61	333.61	333.61
333.60								
23.34 CFS	13.37	13.31	13.23	13.13	13.02	12.96	12.96	12.92
12.86								
23.34 ELEV	333.60	333.60	333.59	333.59	333.59	333.58	333.58	333.58
333.58								
23.82 CFS	12.78	12.68	12.59	12.59	12.54	12.10	12.10	11.36
10.62								
23.82 ELEV	333.58	333.57	333.57	333.57	333.57	333.55	333.55	333.52
333.49								

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24.30 CFS	9.97	9.41	8.93	8.56	8.28	8.04	8.04	7.83
7.64								
24.30 ELEV	333.47	333.45	333.43	333.41	333.40	333.39	333.39	333.38
333.38								
24.78 CFS	7.45	7.28	7.11	6.95	6.79	6.64	6.64	6.50
6.35								
24.78 ELEV	333.37	333.36	333.36	333.35	333.34	333.34	333.34	333.33
333.33								
25.26 CFS	6.22	6.08	5.95	5.82	5.70	5.57	5.57	5.45
5.34								
25.26 ELEV	333.32	333.32	333.31	333.31	333.30	333.30	333.30	333.29
333.29								
25.74 CFS	5.22	5.11	5.00	4.89	4.79	4.68	4.68	4.57
4.45								
25.74 ELEV	333.28	333.28	333.27	333.27	333.27	333.26	333.26	333.26
333.25								
26.22 CFS	4.34	4.23	4.12	4.01	3.90	3.80	3.80	3.70
3.60								
26.22 ELEV	333.25	333.24	333.24	333.24	333.23	333.23	333.23	333.22
333.22								
26.70 CFS	3.51	3.42	3.33	3.24	3.15	3.07	3.07	2.99
2.91								
26.70 ELEV	333.22	333.21	333.21	333.21	333.20	333.20	333.20	333.20
333.19								

27.18 CFS        2.83     2.76     2.69  
 27.18 ELEV    333.19   333.19   333.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES;     573 CFS-HRS;     47.4 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	73	28	22	18	16	14	7	4

DURATION(HRS) 18  
 FLOW(CFS) 3 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH     XSECTION 16

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.83	181.9	332.78
14.03	52.9	331.74
14.15	47.8	331.68
14.27	44.0	331.63
14.38	41.0	331.59
14.49	38.7	331.56
23.97	12.6	331.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES;     573 CFS-HRS;     47.4 ACRE-  
 FEET.

OPERATION RUNOFF    XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	52.0	(RUNOFF)
17.34	1.2	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.57 WATERSHED INCHES;     49 CFS-HRS;     4.0 ACRE-  
 FEET.

OPERATION RUNOFF    XSECTION 118

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	62.5	(RUNOFF)
20.87	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.13 WATERSHED INCHES; 67 CFS-HRS; 5.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.67	13.4	348.34

		HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 10						
		DRAINAGE AREA = .03						
		MAIN TIME INCREMENT = .060 hr,						
HRS	SQ.MI.							
3.00 CFS	.03	.00	.01	.01	.01	.02	.02	.02
3.00 ELEV	345.00	345.00	345.00	345.00	345.00	345.00	345.00	345.00
3.48 CFS	.07	.03	.04	.04	.05	.05	.06	.06
3.48 ELEV	345.01	345.01	345.01	345.01	345.01	345.01	345.01	345.01
3.96 CFS	.12	.07	.08	.09	.09	.10	.11	.11
3.96 ELEV	345.01	345.01	345.02	345.02	345.02	345.02	345.02	345.02
4.44 CFS	.18	.13	.14	.14	.15	.16	.17	.18
4.44 ELEV	345.02	345.02	345.03	345.03	345.03	345.03	345.03	345.03
4.92 CFS	.25	.19	.20	.21	.22	.22	.23	.24
4.92 ELEV	345.03	345.04	345.04	345.04	345.04	345.04	345.04	345.04
5.40 CFS	.32	.26	.27	.28	.28	.29	.30	.31
5.40 ELEV	345.05	345.05	345.05	345.05	345.05	345.05	345.06	345.06
5.88 CFS	.39	.33	.34	.35	.36	.36	.37	.38
5.88 ELEV	345.06	345.06	345.06	345.06	345.06	345.07	345.07	345.07
6.36 CFS	.48	.40	.41	.42	.43	.45	.46	.47
6.36 ELEV	345.07	345.08	345.08	345.08	345.08	345.08	345.08	345.09
6.84 CFS	.58	.49	.50	.52	.53	.54	.56	.57
6.84 ELEV	345.09	345.09	345.09	345.10	345.10	345.10	345.10	345.10
7.32 CFS	.70	.60	.61	.63	.64	.66	.67	.69
7.32 ELEV	345.11	345.11	345.11	345.12	345.12	345.12	345.12	345.13
7.80 CFS	.83	.72	.73	.75	.77	.78	.80	.82
7.80 ELEV	345.13	345.13	345.14	345.14	345.14	345.14	345.15	345.15
8.28 CFS	.98	.85	.87	.89	.90	.92	.94	.96
8.28 ELEV	345.15	345.16	345.16	345.16	345.17	345.17	345.17	345.17
8.76 CFS	1.13	1.00	1.01	1.03	1.05	1.07	1.09	1.11

8.76 ELEV	345.18	345.18	345.19	345.19	345.19	345.20	345.20
345.21							
9.24 CFS	1.15	1.18	1.20	1.23	1.26	1.29	1.32
1.35							
9.24 ELEV	345.21	345.21	345.22	345.22	345.23	345.23	345.24
345.25							
9.72 CFS	1.38	1.42	1.46	1.50	1.54	1.58	1.62
1.66							

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9.72 ELEV	345.25	345.26	345.27	345.27	345.28	345.29	345.29
345.30							
10.20 CFS	1.71	1.75	1.80	1.84	1.89	1.94	1.99
2.05							
10.20 ELEV	345.31	345.32	345.33	345.34	345.34	345.35	345.36
345.37							
10.68 CFS	2.11	2.17	2.24	2.32	2.41	2.51	2.61
2.72							
10.68 ELEV	345.38	345.40	345.41	345.42	345.44	345.46	345.47
345.49							
11.16 CFS	2.84	2.97	3.12	3.28	3.45	3.64	3.84
4.06							
11.16 ELEV	345.52	345.54	345.57	345.60	345.63	345.66	345.70
345.74							
11.64 CFS	4.34	4.67	5.06	5.52	6.08	6.78	7.71
9.00							
11.64 ELEV	345.79	345.85	345.92	346.01	346.11	346.23	346.40
346.64							
12.12 CFS	10.27	11.02	11.75	12.33	12.73	13.00	13.17
13.28							
12.12 ELEV	346.94	347.28	347.61	347.87	348.05	348.17	348.25
348.30							
12.60 CFS	13.35	13.37	13.36	13.33	13.28	13.22	13.15
13.07							
12.60 ELEV	348.33	348.34	348.34	348.32	348.30	348.27	348.24
348.21							
13.08 CFS	12.99	12.90	12.81	12.71	12.60	12.50	12.39
12.28							
13.08 ELEV	348.17	348.13	348.09	348.04	347.99	347.95	347.90
347.85							
13.56 CFS	12.16	12.04	11.93	11.81	11.69	11.57	11.45
11.33							
13.56 ELEV	347.80	347.74	347.69	347.64	347.58	347.53	347.47
347.42							
14.04 CFS	11.21	11.09	10.97	10.86	10.74	10.63	10.51
10.40							
14.04 ELEV	347.37	347.31	347.26	347.21	347.16	347.10	347.05
347.00							
14.52 CFS	10.29	10.18	10.06	9.86	9.54	9.24	8.94
8.66							
14.52 ELEV	346.95	346.90	346.85	346.80	346.74	346.68	346.63
346.58							
15.00 CFS	8.38	8.11	7.86	7.61	7.36	7.13	6.91
6.69							
15.00 ELEV	346.53	346.48	346.43	346.38	346.34	346.30	346.26
346.22							

15.48 CFS	6.49	6.29	6.10	5.92	5.75	5.58	5.42
5.27							
15.48 ELEV	346.18	346.15	346.11	346.08	346.05	346.02	345.99
345.96							
15.96 CFS	5.12	4.98	4.84	4.71	4.59	4.46	4.35
4.24							
15.96 ELEV	345.93	345.91	345.88	345.86	345.83	345.81	345.79
345.77							
16.44 CFS	4.13	4.02	3.92	3.83	3.73	3.64	3.56
3.47							
16.44 ELEV	345.75	345.73	345.71	345.70	345.68	345.66	345.65
345.63							
16.92 CFS	3.39	3.31	3.24	3.17	3.10	3.03	2.96
2.90							
16.92 ELEV	345.62	345.60	345.59	345.58	345.56	345.55	345.54
345.53							
17.40 CFS	2.84	2.78	2.72	2.67	2.61	2.56	2.51
2.46							
17.40 ELEV	345.52	345.51	345.50	345.49	345.48	345.47	345.46
345.45							
17.88 CFS	2.41	2.36	2.32	2.27	2.23	2.19	2.15
2.11							
17.88 ELEV	345.44	345.43	345.42	345.41	345.41	345.40	345.39
345.38							
18.36 CFS	2.07	2.03	2.00	1.96	1.93	1.90	1.87
1.84							
18.36 ELEV	345.38	345.37	345.36	345.36	345.35	345.35	345.34
345.33							
18.84 CFS	1.81	1.79	1.76	1.73	1.71	1.69	1.66
1.64							
18.84 ELEV	345.33	345.32	345.32	345.32	345.31	345.31	345.30
345.30							
19.32 CFS	1.62	1.60	1.58	1.56	1.55	1.53	1.51
1.50							
19.32 ELEV	345.30	345.29	345.29	345.28	345.28	345.28	345.28
345.27							
19.80 CFS	1.48	1.46	1.45	1.43	1.42	1.41	1.40
1.38							
19.80 ELEV	345.27	345.27	345.26	345.26	345.26	345.26	345.25
345.25							
20.28 CFS	1.37	1.36	1.35	1.33	1.32	1.31	1.30
1.29							
20.28 ELEV	345.25	345.25	345.25	345.24	345.24	345.24	345.24
345.24							
20.76 CFS	1.28	1.27	1.26	1.25	1.24	1.24	1.23
1.22							
20.76 ELEV	345.23	345.23	345.23	345.23	345.23	345.22	345.22
345.22							
21.24 CFS	1.21	1.20	1.19	1.18	1.18	1.17	1.16
1.16							
21.24 ELEV	345.22	345.22	345.22	345.22	345.21	345.21	345.21
345.21							

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21.72 CFS	1.15	1.14	1.13	1.13	1.12	1.11	1.11
1.10							

21.72 ELEV	345.21	345.21	345.21	345.21	345.20	345.20	345.20
345.20							
22.20 CFS	1.10	1.09	1.08	1.08	1.07	1.06	1.06
1.05							
22.20 ELEV	345.20	345.20	345.20	345.20	345.19	345.19	345.19
345.19							
22.68 CFS	1.05	1.04	1.03	1.03	1.02	1.02	1.01
1.01							
22.68 ELEV	345.19	345.19	345.19	345.19	345.19	345.18	345.18
345.18							
23.16 CFS	1.00	1.00	.99	.99	.98	.97	.97
.96							
23.16 ELEV	345.18	345.18	345.18	345.18	345.18	345.18	345.18
345.18							
23.64 CFS	.96	.95	.95	.94	.94	.93	.93
.92							
23.64 ELEV	345.17	345.17	345.17	345.17	345.17	345.17	345.17
345.17							
24.12 CFS	.92	.90	.87	.84	.80	.77	.74
.70							
24.12 ELEV	345.17	345.16	345.16	345.15	345.15	345.14	345.13
345.13							
24.60 CFS	.67	.64	.61	.59	.56	.53	.51
.49							
24.60 ELEV	345.12	345.12	345.11	345.11	345.10	345.10	345.09
345.09							
25.08 CFS	.47	.44	.42	.41	.39	.37	.35
.34							
25.08 ELEV	345.08	345.08	345.08	345.07	345.07	345.07	345.06
345.06							
25.56 CFS	.32	.31	.29	.28	.27	.26	.24
.23							
25.56 ELEV	345.06	345.06	345.05	345.05	345.05	345.05	345.04
345.04							
26.04 CFS	.22	.21	.20	.19	.19	.18	.17
26.04 ELEV	345.04	345.04	345.04	345.04	345.03	345.03	345.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.12 WATERSHED INCHES; 67 CFS-HRS; 5.6 ACRE-FEET.

DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	11	5	3	2	1	1	1	1
DURATION (HRS)	18	18						
FLOW (CFS)	1	0						

OPERATION RUNOFF XSECTION 119

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET)  
 12.13 15.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.40 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 120

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET)  
 12.14 25.5 (NULL)

23.99 1.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.98 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE-
FEET.

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OPERATION ADDHYD XSECTION 20

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Values include 12.14, 21.94, 24.00 and 77.5, 2.1, 1.8.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.82 WATERSHED INCHES; 129 CFS-HRS; 10.6 ACRE-
FEET.

OPERATION RUNOFF XSECTION 19

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Values include 12.15, 17.34, 24.00 and 90.5, 2.3, 1.3.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.23 WATERSHED INCHES; 84 CFS-HRS; 7.0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 22

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Values include 12.15, 18.57, 20.04, 20.60, 23.71, 24.00 and 167.9, 5.0, 4.3, 4.0, 3.1, 3.1.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.56 WATERSHED INCHES; 213 CFS-HRS; 17.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 21

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.17	288.2	(NULL)
12.54	222.8	(NULL)
14.03	72.8	(NULL)
14.15	67.2	(NULL)
14.26	62.7	(NULL)
14.38	59.3	(NULL)
20.02	21.9	(NULL)
23.02	17.0	(NULL)
24.00	15.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.96 WATERSHED INCHES; 785 CFS-HRS; 64.9 ACRE-FEET.

OPERATION DIVERT XSECTION 122  
 OUTPUT #1 HYDROGRAPH

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.00	168.0 *	(DIVERT)
14.03	72.8	(DIVERT)
14.15	67.2	(DIVERT)
14.26	62.7	(DIVERT)
14.38	59.3	(DIVERT)
20.02	21.9	(DIVERT)
23.02	17.0	(DIVERT)
24.00	15.7	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 710 CFS-HRS; 58.6 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.17	120.2	176.18
12.54	54.8	175.65

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .29 WATERSHED INCHES; 76 CFS-HRS; 6.3 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 83, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 322.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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OPERATION RESVOR STRUCTURE 83

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
 AT STRUCTURE 83  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.62	.0	317.67
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.00 WATERSHED INCHES;		0 CFS-HRS;
FEET.		.0 ACRE-

OPERATION ADDHYD XSECTION 123

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.53	168.5	(NULL)
14.03	72.9	(NULL)
14.15	67.2	(NULL)
14.26	62.8	(NULL)
14.38	59.3	(NULL)
20.02	21.9	(NULL)
23.02	17.1	(NULL)
24.00	15.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.68 WATERSHED INCHES;		710 CFS-HRS;
FEET.		58.7 ACRE-

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.71	168.2	315.43
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.67 WATERSHED INCHES;		708 CFS-HRS;
FEET.		58.5 ACRE-

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	81.4	(RUNOFF)
20.13	2.0	(RUNOFF)
23.99	1.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.03 WATERSHED INCHES;		99 CFS-HRS;
FEET.		8.2 ACRE-

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\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

## OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	78.5	363.94
20.15	2.0	356.54
23.79	1.5	356.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 99 CFS-HRS; 8.1 ACRE-  
 FEET.

## OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	115.6	(RUNOFF)
18.66	3.3	(RUNOFF)
23.77	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.97 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-  
 FEET.

## OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	190.6	(NULL)
20.14	5.0	(NULL)
23.14	4.0	(NULL)
23.78	3.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-  
 FEET.

## OPERATION REACH XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.40	174.0	319.15
20.20	5.0	316.65

23.20 4.0 316.59  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	87.6	(RUNOFF)
21.94	2.0	(RUNOFF)
24.01	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.68 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	233.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.67 WATERSHED INCHES; 811 CFS-HRS; 67.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	399.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.74 WATERSHED INCHES; 1053 CFS-HRS; 87.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.65	317.8	313.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 1051 CFS-HRS; 86.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	137.5	(RUNOFF)
18.66	3.2	(RUNOFF)
24.02	2.2	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	125.9	313.02
18.72	3.2	310.26
24.09	2.2	310.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.16	22.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.33 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .38 AC-FT ( .07 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 377.43.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.40	9.1	380.16

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	9.0	338.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.47 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 35

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	66.9	(RUNOFF)
21.97	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.32 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
WITH .95 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 353.79.  
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	48.7	357.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.67 WATERSHED INCHES; 65 CFS-HRS; 5.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.62 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.62 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
 \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	330.54

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.62 WATERSHED INCHES; 84 CFS-HRS; 6.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	73.1	(RUNOFF)
15.84	2.2	(RUNOFF)
22.41	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.77 WATERSHED INCHES; 68 CFS-HRS; 5.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	101.1	(NULL)
20.82	3.2	(NULL)
24.00	2.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.69 WATERSHED INCHES; 152 CFS-HRS; 12.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	52.6	330.85

HRS HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06

SQ.MI.								
4.02 CFS	.00	.01	.01	.01	.01	.01	.01	.01
.01								
4.02 ELEV	326.00	326.00	326.00	326.00	326.00	326.00	326.00	326.01
326.01								
4.50 CFS	.02	.02	.02	.02	.02	.02	.03	.03
.03								
4.50 ELEV	326.01	326.01	326.01	326.01	326.01	326.01	326.01	326.01
326.01								
4.98 CFS	.03	.04	.04	.04	.05	.05	.05	.05
.06								
4.98 ELEV	326.01	326.02	326.02	326.02	326.02	326.02	326.02	326.02
326.02								
5.46 CFS	.06	.07	.07	.07	.08	.08	.08	.09
.09								
5.46 ELEV	326.03	326.03	326.03	326.03	326.03	326.03	326.04	326.04
326.04								
5.94 CFS	.10	.10	.11	.11	.12	.12	.12	.13
.14								
5.94 ELEV	326.04	326.04	326.05	326.05	326.05	326.05	326.05	326.05
326.06								
6.42 CFS	.14	.15	.15	.16	.17	.17	.18	.18
.19								
6.42 ELEV	326.06	326.06	326.07	326.07	326.07	326.07	326.07	326.08
326.08								
6.90 CFS	.20	.21	.21	.22	.23	.23	.24	.25
.26								
6.90 ELEV	326.08	326.09	326.09	326.09	326.10	326.10	326.10	326.10
326.11								
7.38 CFS	.27	.27	.28	.29	.30	.30	.31	.32
.34								
7.38 ELEV	326.11	326.12	326.12	326.12	326.13	326.13	326.13	326.14
326.14								
7.86 CFS	.35	.36	.37	.38	.39	.39	.40	.42
.43								

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7.86 ELEV	326.15	326.15	326.15	326.16	326.16	326.17	326.18
326.18							
8.34 CFS	.44	.46	.47	.48	.50	.51	.52
.54							
8.34 ELEV	326.19	326.19	326.20	326.20	326.21	326.21	326.22
326.23							
8.82 CFS	.55	.57	.58	.60	.61	.63	.65
.66							
8.82 ELEV	326.23	326.24	326.24	326.25	326.26	326.26	326.27
326.28							
9.30 CFS	.68	.70	.72	.74	.76	.78	.80
.82							
9.30 ELEV	326.29	326.29	326.30	326.31	326.32	326.33	326.34
326.35							
9.78 CFS	.85	.87	.90	.92	.95	.98	1.00
1.03							
9.78 ELEV	326.36	326.37	326.38	326.39	326.40	326.41	326.42
326.43							
10.26 CFS	1.06	1.09	1.12	1.16	1.19	1.22	1.26

1.30								
10.26 ELEV	326.45	326.46	326.47	326.49	326.50	326.51	326.53	
326.55								
10.74 CFS	1.34	1.38	1.43	1.48	1.53	1.59	1.65	
1.71								
10.74 ELEV	326.56	326.58	326.60	326.62	326.64	326.67	326.69	
326.72								
11.22 CFS	1.78	1.86	1.94	2.03	2.13	2.23	2.34	
2.50								
11.22 ELEV	326.75	326.78	326.82	326.85	326.89	326.94	326.98	
327.05								
11.70 CFS	2.68	2.90	3.16	3.49	3.90	4.45	5.20	
6.22								
11.70 ELEV	327.13	327.22	327.33	327.47	327.64	327.87	328.18	
328.61								
12.18 CFS	7.43	8.62	9.71	20.86	35.26	44.96	50.03	
52.53								
12.18 ELEV	329.12	329.62	330.08	330.41	330.64	330.77	330.83	
330.85								
12.66 CFS	51.20	48.59	45.70	42.63	39.80	37.24	34.90	
32.73								
12.66 ELEV	330.84	330.81	330.78	330.74	330.71	330.67	330.64	
330.61								
13.14 CFS	30.70	28.99	27.46	26.00	24.60	23.26	21.99	
20.80								
13.14 ELEV	330.58	330.55	330.53	330.50	330.48	330.46	330.43	
330.41								
13.62 CFS	19.71	18.75	17.84	16.99	16.20	15.46	14.81	
14.28								
13.62 ELEV	330.39	330.38	330.36	330.35	330.33	330.32	330.31	
330.29								
14.10 CFS	13.76	13.27	12.79	12.34	11.92	11.52	11.15	
10.80								
14.10 ELEV	330.28	330.27	330.26	330.25	330.24	330.23	330.23	
330.22								
14.58 CFS	10.47	10.15	9.99	9.97	9.94	9.92	9.89	
9.85								
14.58 ELEV	330.21	330.20	330.20	330.19	330.18	330.16	330.15	
330.14								
15.06 CFS	9.82	9.78	9.74	9.70	9.66	9.62	9.58	
9.54								
15.06 ELEV	330.12	330.11	330.09	330.08	330.06	330.04	330.02	
330.00								
15.54 CFS	9.49	9.45	9.40	9.36	9.31	9.26	9.22	
9.17								
15.54 ELEV	329.99	329.97	329.95	329.93	329.91	329.89	329.87	
329.85								
16.02 CFS	9.12	9.08	9.03	8.98	8.93	8.89	8.84	
8.79								
16.02 ELEV	329.83	329.81	329.79	329.77	329.75	329.73	329.71	
329.69								
16.50 CFS	8.74	8.69	8.65	8.60	8.55	8.50	8.45	
8.40								
16.50 ELEV	329.67	329.65	329.63	329.61	329.59	329.57	329.55	
329.53								
16.98 CFS	8.36	8.31	8.26	8.21	8.16	8.11	8.07	
8.02								
16.98 ELEV	329.51	329.49	329.47	329.45	329.43	329.41	329.39	
329.37								
17.46 CFS	7.97	7.92	7.88	7.83	7.78	7.73	7.69	
7.64								
17.46 ELEV	329.35	329.33	329.31	329.29	329.27	329.25	329.23	
329.21								
17.94 CFS	7.59	7.55	7.50	7.45	7.41	7.36	7.31	



7.27								
17.94	ELEV	329.19	329.17	329.15	329.13	329.11	329.09	329.07
329.05								
18.42	CFS	7.22	7.18	7.13	7.09	7.04	7.00	6.95
6.91								
18.42	ELEV	329.03	329.01	328.99	328.98	328.96	328.94	328.92
328.90								
18.90	CFS	6.87	6.82	6.78	6.74	6.69	6.65	6.61
6.57								
18.90	ELEV	328.88	328.87	328.85	328.83	328.81	328.79	328.78
328.76								
19.38	CFS	6.53	6.49	6.45	6.41	6.37	6.33	6.29
6.25								
19.38	ELEV	328.74	328.73	328.71	328.69	328.68	328.66	328.64
328.63								

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19.86	CFS	6.21	6.18	6.14	6.10	6.06	6.03	5.99
5.95								
19.86	ELEV	328.61	328.59	328.58	328.56	328.55	328.53	328.52
328.50								
20.34	CFS	5.92	5.88	5.85	5.81	5.78	5.74	5.71
5.68								
20.34	ELEV	328.49	328.47	328.46	328.44	328.43	328.41	328.40
328.38								
20.82	CFS	5.64	5.61	5.58	5.54	5.51	5.48	5.44
5.41								
20.82	ELEV	328.37	328.36	328.34	328.33	328.31	328.30	328.29
328.27								
21.30	CFS	5.38	5.35	5.32	5.29	5.26	5.23	5.20
5.17								
21.30	ELEV	328.26	328.25	328.23	328.22	328.21	328.20	328.18
328.17								
21.78	CFS	5.14	5.11	5.08	5.05	5.02	4.99	4.96
4.94								
21.78	ELEV	328.16	328.15	328.13	328.12	328.11	328.10	328.09
328.07								
22.26	CFS	4.91	4.88	4.85	4.83	4.80	4.77	4.75
4.72								
22.26	ELEV	328.06	328.05	328.04	328.03	328.02	328.00	327.99
327.98								
22.74	CFS	4.69	4.67	4.64	4.61	4.59	4.56	4.54
4.51								
22.74	ELEV	327.97	327.96	327.95	327.94	327.93	327.92	327.91
327.90								
23.22	CFS	4.49	4.46	4.44	4.41	4.39	4.36	4.34
4.32								
23.22	ELEV	327.88	327.87	327.86	327.85	327.84	327.83	327.82
327.81								
23.70	CFS	4.29	4.27	4.25	4.22	4.20	4.18	4.16
4.13								
23.70	ELEV	327.80	327.79	327.78	327.77	327.76	327.75	327.75
327.74								
24.18	CFS	4.10	4.07	4.04	4.01	3.97	3.94	3.91
3.88								
24.18	ELEV	327.72	327.71	327.70	327.68	327.67	327.66	327.64

327.63								
24.66 CFS	3.85	3.82	3.79	3.76	3.73	3.70	3.67	
3.64								
24.66 ELEV	327.62	327.60	327.59	327.58	327.56	327.55	327.54	
327.53								
25.14 CFS	3.61	3.58	3.55	3.52	3.50	3.47	3.44	
3.42								
25.14 ELEV	327.52	327.50	327.49	327.48	327.47	327.46	327.45	
327.43								
25.62 CFS	3.39	3.36	3.34	3.31				
25.62 ELEV	327.42	327.41	327.40	327.39				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.33 WATERSHED INCHES; 137 CFS-HRS; 11.4 ACRE-  
 FEET.

DURATION (HRS)	2	4	6	8	10	12	13	
FLOW (CFS)	12	9	7	6	5	4	3	TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME (HRS)		PEAK DISCHARGE (CFS)		PEAK
ELEVATION (FEET)				
12.13		5.1		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 4 CFS-HRS; .4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME (HRS)		PEAK DISCHARGE (CFS)		PEAK
ELEVATION (FEET)				
12.61		53.7		(NULL)

1 TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.20 WATERSHED INCHES; 142 CFS-HRS; 11.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME (HRS)		PEAK DISCHARGE (CFS)		PEAK
ELEVATION (FEET)				
12.27		57.7		(RUNOFF)
23.76		1.2		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.84 WATERSHED INCHES; 72 CFS-HRS; 6.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.59	345.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.74 WATERSHED INCHES; 1123 CFS-HRS; 92.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	430.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 1279 CFS-HRS; 105.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	475.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.84 WATERSHED INCHES; 1416 CFS-HRS; 117.0 ACRE-FEET.

OPERATION DIVERT XSECTION 144  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	475.1	(DIVERT)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1416 CFS-HRS; 117.0 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 82, USER ENTERED STARTING ELEVATION OR STRUCTURE

## TABLE

STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 318.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 82

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 145  
NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 145

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	475.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.84 WATERSHED INCHES; 1416 CFS-HRS; 117.0 ACRE-  
FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.66	459.8	290.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.83 WATERSHED INCHES; 1414 CFS-HRS; 116.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 2

1

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION

04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

Dist;H1&H8UG;GHC2.04TEST

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.78	450.5	302.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.83 WATERSHED INCHES; 1413 CFS-HRS; 116.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	66.8	(RUNOFF)
23.09	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.88 WATERSHED INCHES; 89 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	83.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 114 CFS-HRS; 9.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	150.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.84 WATERSHED INCHES; 203 CFS-HRS; 16.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	81.7	(RUNOFF)
18.65	2.0	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.84 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

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 TR20 ----- SCS  
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 VERSION  
 04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.77	467.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 1499 CFS-HRS; 123.8 ACRE-

FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.71	528.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 1701 CFS-HRS; 140.6 ACRE-FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	525.8	284.87

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 1700 CFS-HRS; 140.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 210 CFS-HRS; 140.5 ACRE-FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT, UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 53

\*\*\* MESSAGE - XSECTION 53, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 207 CFS-HRS; 140.5 ACRE-FEET.

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 Dist;H1&H8UG;GHC2.04TEST  
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OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - XSECTION 54, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.83 WATERSHED INCHES; 189 CFS-HRS; 140.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	51.6	(RUNOFF)
21.97	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.61 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.81	536.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.82 WATERSHED INCHES; 1754 CFS-HRS; 145.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - XSECTION 57, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.82 WATERSHED INCHES; 214 CFS-HRS; 145.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.81	536.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.78 WATERSHED INCHES; 1756 CFS-HRS; 145.1 ACRE-  
 FEET.

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 Dist;H1&H8UG;GHC2.04TEST  
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OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.21		31.6					(RUNOFF)		
HYDROGRAPH POINTS FOR		ALTERNATE = 1,					STORM =10		
MAIN TIME INCREMENT = .060 hr,		DRAINAGE AREA = .03							
HRS	SQ.MI.								
10.80	CFS	.45	.52	.59	.67	.75	.85	.97	
1.10									
11.28	CFS	1.25	1.42	1.61	1.81	2.04	2.37	2.91	
3.54									
11.76	CFS	4.26	5.18	6.51	8.52	11.69	17.01	24.70	
30.82									
12.24	CFS	31.12	26.88	21.99	18.16	15.28	13.24	11.56	
10.00									
12.72	CFS	8.68	7.72	7.03	6.51	6.09	5.71	5.36	
5.02									
13.20	CFS	4.71	4.46	4.24	4.03	3.84	3.64	3.45	
3.27									
13.68	CFS	3.11	2.98	2.87	2.79	2.73	2.67	2.63	
2.59									
14.16	CFS	2.54	2.48	2.43	2.38	2.34	2.30	2.25	
2.20									
14.64	CFS	2.14	2.09	2.04	2.00	1.96	1.91	1.86	
1.81									
15.12	CFS	1.76	1.71	1.66	1.63	1.61	1.60	1.59	
1.58									
15.60	CFS	1.58	1.56	1.54	1.52	1.51	1.51	1.50	
1.48									
16.08	CFS	1.46	1.44	1.43	1.42	1.41	1.40	1.38	
1.37									
16.56	CFS	1.35	1.33	1.32	1.32	1.31	1.29	1.28	
1.27									
17.04	CFS	1.26	1.25	1.23	1.21	1.19	1.18	1.18	
1.17									
17.52	CFS	1.14	1.12	1.11	1.10	1.09	1.07	1.06	
1.04									
18.00	CFS	1.04	1.03	1.02	1.00	.99	.98	.97	
.96									
18.48	CFS	.95	.95	.95	.96	.95	.94	.94	
.94									
18.96	CFS	.94	.93	.92	.92	.92	.91	.91	
.91									
19.44	CFS	.91	.91	.91	.90	.89	.89	.89	
.88									
19.92	CFS	.87	.87	.88	.88	.88	.87	.87	
.86									
20.40	CFS	.85	.84	.84	.84	.85	.84	.84	
.83									
20.88	CFS	.83	.83	.82	.81	.81	.80	.80	
.80									
21.36	CFS	.80	.80	.80	.80	.79	.78	.78	
.78									
21.84	CFS	.78	.77	.78	.77	.77	.76	.75	
.75									
22.32	CFS	.75	.75	.75	.75	.74	.73	.72	
.72									
22.80	CFS	.72	.71	.70	.70	.71	.71	.71	
.70									
23.28	CFS	.69	.69	.69	.68	.67	.66	.66	
.67									
23.76	CFS	.67	.67	.65	.65	.66	.66	.56	
.39									

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.01 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-



FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.81 543.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.76 WATERSHED INCHES; 1790 CFS-HRS; 148.0 ACRE-  
 FEET.

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OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.88 537.2 272.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.76 WATERSHED INCHES; 1789 CFS-HRS; 147.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.24 18.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.95 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.87 541.7 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02  
 SQ.MI.

HRS	6.12	6.60	7.08	7.56	8.04				
CFS	.77	1.18	1.78	2.94					
	.48	.81	1.24	1.89	3.13	.52	.86	1.31	2.01
	.56	.91	1.37	2.14	3.53	.60	.96	1.44	2.28
	.64	1.01	1.51	2.43	3.75	.68	1.07	1.59	2.43
	.72	1.12	1.68	2.76	4.46				

4.71								
8.52	CFS	4.97	5.23	5.51	5.79	6.08	6.38	6.68
7.00								
9.00	CFS	7.32	7.64	7.98	8.33	8.69	9.06	9.45
9.87								
9.48	CFS	10.30	10.76	11.25	11.76	12.30	12.87	13.47
14.11								
9.96	CFS	14.79	15.50	16.25	17.05	17.88	18.76	19.68
20.63								
10.44	CFS	21.61	22.64	23.71	24.82	26.00	27.27	28.63
30.10								
10.92	CFS	31.70	33.45	35.34	37.41	39.69	42.21	45.01
48.11								
11.40	CFS	51.54	55.33	59.50	64.19	69.69	76.23	84.00
93.22								
11.88	CFS	104	116	133	157	191	239	296
345								
12.36	CFS	384	418	450	476	498	515	527
536								
12.84	CFS	541	541	536	527	515	502	486
469								
13.32	CFS	452	435	418	402	388	374	361
349								
13.80	CFS	337	327	317	308	299	291	284
277								
14.28	CFS	271	265	258	251	243	235	227
218								
14.76	CFS	210	201	194	186	179	171	164
158								
15.24	CFS	151	146	140	136	131	127	124
120								
15.72	CFS	117	114	111	109	106	104	102
100								
16.20	CFS	97.77	95.92	94.24	92.70	91.26	89.91	88.63
87.40								
16.68	CFS	86.24	85.14	84.09	83.08	82.10	81.16	80.26
79.40								
17.16	CFS	78.55	77.71	76.88	76.07	75.29	74.53	73.78
73.03								

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17.64	CFS	72.28	71.54	70.82	70.10	69.39	68.69	67.99
67.31								
18.12	CFS	66.63	65.96	65.29	64.63	63.98	63.33	62.69
62.07								
18.60	CFS	61.48	60.91	60.36	59.83	59.31	58.81	58.33
57.86								
19.08	CFS	57.40	56.95	56.52	56.11	55.72	55.35	54.99
54.66								
19.56	CFS	54.33	54.02	53.70	53.40	53.10	52.82	52.53
52.25								
20.04	CFS	51.99	51.74	51.51	51.27	51.04	50.80	50.56
50.31								
20.52	CFS	50.07	49.83	49.61	49.39	49.17	48.95	48.74
48.53								
21.00	CFS	48.32	48.09	47.87	47.65	47.43	47.21	47.01

46.80								
21.48	CFS	46.60	46.41	46.21	46.00	45.79	45.58	45.37
45.17								
21.96	CFS	44.97	44.77	44.57	44.36	44.15	43.93	43.72
43.51								
22.44	CFS	43.31	43.10	42.90	42.70	42.48	42.26	42.05
41.83								
22.92	CFS	41.61	41.39	41.17	40.97	40.77	40.57	40.36
40.15								
23.40	CFS	39.95	39.74	39.53	39.31	39.09	38.88	38.68
38.49								
23.88	CFS	38.28	38.07	37.87	37.69	37.41	36.93	36.23
35.36								
24.36	CFS	34.42	33.43	32.41	31.38	30.34	29.28	28.22
27.15								
24.84	CFS	26.09	25.03	23.98	22.96	21.97	21.01	20.10
19.24								
25.32	CFS	18.42	17.66	16.95	16.29	15.67	15.10	14.58
14.09								
25.80	CFS	13.64						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.74 WATERSHED INCHES; 1811 CFS-HRS; 149.6 ACRE-FEET.

OPERATION DIVERT XSECTION 162  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.87	541.7	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1811 CFS-HRS; 149.6 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 73, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 20.00 FEET BELOW ASSUMED CREST ELEVATION AT 260.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 73

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

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 TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 163  
NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 163

PEAK TIME (HRS) ELEVATION (FEET)	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 10							
12.87	DRAINAGE AREA = 1.02							
	MAIN TIME INCREMENT = .060 hr,							
	6.12	6.60	7.08	7.56	8.04	8.52	9.00	9.48
	.48	.81	1.24	1.89	3.13	4.97	7.32	10.30
	.52	.86	1.31	2.01	3.32	5.23	7.64	10.76
	.56	.91	1.37	2.14	3.53	5.51	7.98	11.25
	.60	.96	1.44	2.28	3.75	5.79	8.33	11.76
	.64	1.01	1.51	2.43	3.98	6.08	8.69	12.30
	.68	1.07	1.59	2.59	4.21	6.38	9.06	12.87
	.72	1.12	1.68	2.76	4.46	6.68	9.45	13.47
	.77	1.18	1.78	2.94	4.71	7.00	9.87	14.11
	1.18	1.78	2.94	4.71	7.00	9.87	14.11	20.63
	2.94	4.71	7.00	9.87	14.11	20.63	30.10	48.11
	4.71	7.00	9.87	14.11	20.63	30.10	48.11	93.22
	7.00	9.87	14.11	20.63	30.10	48.11	93.22	111.40
	9.87	14.11	20.63	30.10	48.11	93.22	111.40	345
	14.11	20.63	30.10	48.11	93.22	111.40	345	536
	20.63	30.10	48.11	93.22	111.40	345	536	469
	30.10	48.11	93.22	111.40	345	536	469	349
	48.11	93.22	111.40	345	536	469	349	277
	93.22	111.40	345	536	469	349	277	218
	111.40	345	536	469	349	277	218	158
	345	536	469	349	277	218	158	120
	536	469	349	277	218	158	120	100
	469	349	277	218	158	120	100	
	349	277	218	158	120	100		
	277	218	158	120	100			
	218	158	120	100				
	158	120	100					
	120	100						
	100							

16.20	CFS	97.77	95.92	94.24	92.70	91.26	89.91	88.63
87.40								
16.68	CFS	86.24	85.14	84.09	83.08	82.10	81.16	80.26
79.40								
17.16	CFS	78.55	77.71	76.88	76.07	75.29	74.53	73.78
73.03								
17.64	CFS	72.28	71.54	70.82	70.10	69.39	68.69	67.99
67.31								
18.12	CFS	66.63	65.96	65.29	64.63	63.98	63.33	62.69
62.07								
18.60	CFS	61.48	60.91	60.36	59.83	59.31	58.81	58.33
57.86								
19.08	CFS	57.40	56.95	56.52	56.11	55.72	55.35	54.99
54.66								
19.56	CFS	54.33	54.02	53.70	53.40	53.10	52.82	52.53
52.25								
20.04	CFS	51.99	51.74	51.51	51.27	51.04	50.80	50.56
50.31								
20.52	CFS	50.07	49.83	49.61	49.39	49.17	48.95	48.74
48.53								
21.00	CFS	48.32	48.09	47.87	47.65	47.43	47.21	47.01
46.80								
21.48	CFS	46.60	46.41	46.21	46.00	45.79	45.58	45.37
45.17								
21.96	CFS	44.97	44.77	44.57	44.36	44.15	43.93	43.72
43.51								
22.44	CFS	43.31	43.10	42.90	42.70	42.48	42.26	42.05
41.83								
22.92	CFS	41.61	41.39	41.17	40.97	40.77	40.57	40.36
40.15								

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23.40	CFS	39.95	39.74	39.53	39.31	39.09	38.88	38.68
38.49								
23.88	CFS	38.28	38.07	37.87	37.69	37.41	36.93	36.23
35.36								
24.36	CFS	34.42	33.43	32.41	31.38	30.34	29.28	28.22
27.15								
24.84	CFS	26.09	25.03	23.98	22.96	21.97	21.01	20.10
19.24								
25.32	CFS	18.42	17.66	16.95	16.29	15.67	15.10	14.58
14.09								
25.80	CFS	13.64						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.74 WATERSHED INCHES; 1811 CFS-HRS; 149.6 ACRE-  
FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
13.02 532.1 249.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.74 WATERSHED INCHES; 1808 CFS-HRS; 149.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	15.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.24 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	8.4	334.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.24 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.85	8.2	300.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.23 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 66

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	55.9	(RUNOFF)
24.02	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.98 WATERSHED INCHES; 59 CFS-HRS; 4.8 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.

\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.62	18.0	293.76
14.58	3.8	287.79
24.04	1.1	287.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.98 WATERSHED INCHES; 59 CFS-HRS; 4.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.82	25.9	(NULL)
18.87	2.1	(NULL)
24.04	1.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.23 WATERSHED INCHES; 82 CFS-HRS; 6.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	109.3	(RUNOFF)
23.74	2.1	(RUNOFF)
24.03	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.22 WATERSHED INCHES; 112 CFS-HRS; 9.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 69

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	128.2	(NULL)
18.87	5.0	(NULL)
21.97	4.1	(NULL)
24.03	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.22 WATERSHED INCHES; 193 CFS-HRS; 16.0 ACRE-  
FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.45	88.5	248.66
24.15	3.5	247.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.22 WATERSHED INCHES; 193 CFS-HRS; 16.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	26.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.81 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	9.6	265.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.82 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.44	8.9	247.79

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.81 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 73

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	110.8	(RUNOFF)
15.85	5.4	(RUNOFF)
17.34	4.2	(RUNOFF)



20.86 3.0 (RUNOFF)  
 24.01 2.5 (RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .11  
 SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	.11
10.98 CFS	.31	.51	.76	1.07	1.44	1.85	2.33			
2.88										
11.46 CFS	3.49	4.17	5.33	7.10	9.05	11.28	14.56			
19.46										
11.94 CFS	26.93	40.30	62.41	94.61	110.76	98.35	78.24			
63.21										
12.42 CFS	52.04	44.53	39.78	34.95	29.90	26.21	24.01			
22.44										
12.90 CFS	21.14	20.00	18.86	17.73	16.61	15.68	14.94			
14.26										
13.38 CFS	13.60	12.94	12.27	11.63	11.02	10.52	10.14			
9.85										
13.86 CFS	9.62	9.44	9.31	9.18	9.03	8.85	8.64			
8.46										
14.34 CFS	8.31	8.18	8.04	7.87	7.67	7.46	7.28			
7.13										
14.82 CFS	7.00	6.85	6.67	6.49	6.33	6.15	5.96			
5.81										
15.30 CFS	5.72	5.68	5.66	5.66	5.65	5.61	5.53			
5.43										
15.78 CFS	5.39	5.40	5.39	5.33	5.24	5.17	5.13			
5.11										
16.26 CFS	5.08	5.03	4.97	4.92	4.86	4.79	4.75			
4.72										
16.74 CFS	4.71	4.66	4.60	4.55	4.53	4.51	4.47			
4.38										
17.22 CFS	4.28	4.23	4.24	4.23	4.16	4.07	3.99			
3.94										
17.70 CFS	3.92	3.90	3.83	3.77	3.73	3.72	3.69			
3.63										
18.18 CFS	3.56	3.53	3.51	3.48	3.43	3.39	3.42			
3.46										
18.66 CFS	3.47	3.42	3.40	3.42	3.42	3.37	3.33			
3.32										
19.14 CFS	3.31	3.31	3.31	3.31	3.31	3.31	3.31			
3.30										
19.62 CFS	3.24	3.21	3.23	3.22	3.18	3.14	3.16			
3.21										
20.10 CFS	3.22	3.18	3.15	3.13	3.11	3.06	3.01			
3.03										
20.58 CFS	3.07	3.09	3.06	3.01	3.03	3.04	3.00			
2.96										
21.06 CFS	2.93	2.92	2.92	2.92	2.92	2.92	2.92			
2.92										
21.54 CFS	2.91	2.87	2.81	2.82	2.84	2.81	2.81			
2.84										
22.02 CFS	2.81	2.77	2.74	2.72	2.72	2.72	2.71			
2.71										
22.50 CFS	2.71	2.70	2.64	2.61	2.63	2.62	2.57			
2.54										
22.98 CFS	2.55	2.60	2.61	2.57	2.53	2.52	2.51			
2.51										
23.46 CFS	2.49	2.43	2.39	2.42	2.46	2.47	2.42			
2.36										
23.94 CFS	2.35	2.46	2.42	1.76	.95	.46				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.58 WATERSHED INCHES; 112 CFS-HRS; 9.3 ACRE-

FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 13.01 551.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.63 WATERSHED INCHES; 1921 CFS-HRS; 158.7 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.45 97.5 (NULL)

HRS	MAIN	TIME	INCREMENT	FOR	ALTERNATE = 1,	STORM =10		
SQ.MI.	HYDROGRAPH POINTS			DRAINAGE AREA =				
9.54 CFS	.48	.52	.57	.63	.69	.76	.83	
.91								
10.02 CFS	.99	1.08	1.18	1.29	1.42	1.54	1.68	
1.83								
10.50 CFS	1.98	2.14	2.31	2.49	2.70	2.93	3.19	
3.49								
10.98 CFS	3.83	4.20	4.61	5.06	5.56	6.13	6.79	
7.49								
11.46 CFS	8.24	9.07	9.99	11.00	12.24	13.95	16.08	
18.47								
11.94 CFS	21.39	25.07	29.93	36.93	47.23	61.67	78.48	
91.58								
12.42 CFS	96.90	96.63	93.34	88.79	83.89	78.83	73.90	
69.37								
12.90 CFS	65.57	62.32	59.46	56.88	54.50	52.26	50.13	
48.15								
13.38 CFS	46.37	44.76	43.30	41.96	40.71	39.54	38.40	
37.28								
13.86 CFS	36.20	35.16	34.17	33.24	32.36	31.54	30.75	
29.89								
14.34 CFS	28.92	27.91	26.66	25.31	23.94	22.46	21.21	
20.10								
14.82 CFS	19.12	18.25	17.49	16.83	16.22	15.66	15.15	
14.63								
15.30 CFS	14.10	13.59	13.11	12.67	12.24	11.84	11.48	
11.16								
15.78 CFS	10.87	10.61	10.38	10.19	10.03	9.88	9.73	
9.58								
16.26 CFS	9.44	9.26	9.07	8.90	8.73	8.59	8.46	
8.34								
16.74 CFS	8.22	8.13	8.04	7.96	7.87	7.79	7.71	

7.65								
17.22 CFS	7.58	7.50	7.40	7.31	7.23	7.16	7.09	
7.01								
17.70 CFS	6.91	6.82	6.74	6.66	6.58	6.50	6.42	
6.35								
18.18 CFS	6.28	6.21	6.13	6.05	5.98	5.92	5.85	
5.79								
18.66 CFS	5.74	5.71	5.69	5.66	5.63	5.61	5.59	
5.57								
19.14 CFS	5.54	5.50	5.47	5.45	5.43	5.41	5.40	
5.39								
19.62 CFS	5.38	5.37	5.34	5.32	5.29	5.27	5.25	
5.22								
20.10 CFS	5.19	5.18	5.18	5.17	5.15	5.13	5.11	
5.08								
20.58 CFS	5.04	5.01	4.99	4.98	4.97	4.95	4.93	
4.92								
21.06 CFS	4.90	4.88	4.85	4.82	4.79	4.77	4.75	
4.74								
21.54 CFS	4.73	4.72	4.71	4.69	4.66	4.63	4.61	
4.59								
22.02 CFS	4.58	4.57	4.56	4.53	4.51	4.48	4.45	
4.43								
22.50 CFS	4.41	4.40	4.39	4.37	4.35	4.32	4.29	
4.27								
22.98 CFS	4.24	4.21	4.18	4.18	4.17	4.16	4.14	
4.12								
23.46 CFS	4.10	4.08	4.05	4.02	3.99	3.96	3.95	
3.95								
23.94 CFS	3.93	3.90	3.88	3.87	3.85	3.68	3.32	
2.86								
24.42 CFS	2.40	1.99	1.63	1.34	1.09	.88	.71	
.57								
24.90 CFS	.45							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.27 WATERSHED INCHES; 215 CFS-HRS; 17.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.97	612.0	(NULL)

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HRS	MAIN	TIME INCREMENT =	ALTERNATE = 1,	STORM =10	DRAINAGE AREA =	SQ.MI.
6.30 CFS	.50	.54	.57	.61	.65	.74
.79						
6.78 CFS	.83	.88	.93	.99	1.05	1.17
1.24						
7.26 CFS	1.30	1.37	1.44	1.52	1.60	1.79

1.90								
7.74 CFS	2.03	2.16	2.30	2.46	2.62	2.80	2.98	
3.17								
8.22 CFS	3.37	3.59	3.81	4.04	4.28	4.53	4.79	
5.05								
8.70 CFS	5.33	5.61	5.90	6.20	6.50	6.81	7.13	
7.46								
9.18 CFS	7.80	8.15	8.51	8.88	9.27	9.69	10.13	
10.60								
9.66 CFS	11.09	11.62	12.18	12.78	13.40	14.07	14.77	
15.52								
10.14 CFS	16.32	17.16	18.05	19.00	19.98	21.02	22.10	
23.22								
10.62 CFS	24.39	25.63	26.93	28.34	29.88	31.61	33.53	
35.65								
11.10 CFS	38.00	40.58	43.46	46.65	50.21	54.15	58.47	
63.27								
11.58 CFS	69	76	84	93	105	119	138	
166								
12.06 CFS	205	261	311	346	385	428	465	
496								
12.54 CFS	524	548	566	581	594	603	609	
612								
13.02 CFS	610	605	596	584	569	553	536	
518								
13.50 CFS	500	482	464	448	433	418	404	
391								
13.98 CFS	378	367	356	346	337	328	320	
312								
14.46 CFS	304	295	287	277	268	259	249	
240								
14.94 CFS	231	222	214	205	197	189	182	
175								
15.42 CFS	169	163	157	152	147	143	139	
135								
15.90 CFS	132	129	126	123	121	118	116	
114								
16.38 CFS	111	109	108	106	104	103	101	
100								
16.86 CFS	98.58	97.35	96.20	95.09	94.00	92.92	91.85	
90.84								
17.34 CFS	89.90	88.96	88.00	87.04	86.11	85.22	84.34	
83.47								
17.82 CFS	82.58	81.71	80.87	80.06	79.24	78.41	77.58	
76.79								
18.30 CFS	76.02	75.25	74.46	73.70	73.01	72.35	71.69	
71.01								
18.78 CFS	70.38	69.82	69.24	68.64	68.08	67.54	67.02	
66.51								
19.26 CFS	66.03	65.57	65.13	64.72	64.32	63.93	63.52	
63.13								
19.74 CFS	62.80	62.45	62.07	61.72	61.41	61.14	60.85	
60.54								
20.22 CFS	60.25	59.97	59.70	59.38	59.07	58.81	58.57	
58.31								
20.70 CFS	58.03	57.75	57.53	57.30	57.03	56.75	56.50	
56.24								
21.18 CFS	55.99	55.74	55.49	55.25	55.02	54.80	54.57	
54.31								
21.66 CFS	54.05	53.84	53.62	53.35	53.13	52.93	52.69	
52.43								
22.14 CFS	52.19	51.95	51.71	51.47	51.23	51.00	50.77	
50.53								
22.62 CFS	50.26	50.00	49.79	49.54	49.25	48.98	48.75	

48.55								
23.10	CFS	48.32	48.06	47.81	47.58	47.35	47.11	46.86
46.58								
23.58	CFS	46.31	46.10	45.89	45.65	45.39	45.12	44.89
44.77								
24.06	CFS	44.50	43.64	42.58	41.59	40.53	39.33	38.07
36.79								
24.54	CFS	35.52	34.26	33.02	31.80	30.60	29.41	28.24
27.10								
25.02	CFS	25.97	24.87	23.80	22.77	21.77	20.82	19.92
19.06								
25.50	CFS	18.26	17.51	16.81	16.16	15.56	14.99	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.59 WATERSHED INCHES; 2135 CFS-HRS; 176.5 ACRE-FEET.

OPERATION DIVERT XSECTION 176  
 OUTPUT #1 HYDROGRAPH

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		(DIVERT)
12.97	612.0	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2135 CFS-HRS; 176.5 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 72, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 20.00 FEET BELOW ASSUMED CREST ELEVATION AT 240.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 72

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* WARNING - XSECTION 177  
 NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 177

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET)  
 12.97 612.0 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28  
 SQ.MI.  
 6.30 CFS .50 .54 .57 .61 .65 .70 .74  
 .79  
 6.78 CFS .83 .88 .93 .99 1.05 1.11 1.17  
 1.24  
 7.26 CFS 1.30 1.37 1.44 1.52 1.60 1.69 1.79  
 1.90  
 7.74 CFS 2.03 2.16 2.30 2.46 2.62 2.80 2.98  
 3.17  
 8.22 CFS 3.37 3.59 3.81 4.04 4.28 4.53 4.79  
 5.05  
 8.70 CFS 5.33 5.61 5.90 6.20 6.50 6.81 7.13  
 7.46  
 9.18 CFS 7.80 8.15 8.51 8.88 9.27 9.69 10.13  
 10.60  
 9.66 CFS 11.09 11.62 12.18 12.78 13.40 14.07 14.77  
 15.52  
 10.14 CFS 16.32 17.16 18.05 19.00 19.98 21.02 22.10  
 23.22  
 10.62 CFS 24.39 25.63 26.93 28.34 29.88 31.61 33.53  
 35.65  
 11.10 CFS 38.00 40.58 43.46 46.65 50.21 54.15 58.47  
 63.27  
 11.58 CFS 69 76 84 93 105 119 138  
 166  
 12.06 CFS 205 261 311 346 385 428 465  
 496

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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12.54 CFS 524 548 566 581 594 603 609  
 612  
 13.02 CFS 610 605 596 584 569 553 536  
 518  
 13.50 CFS 500 482 464 448 433 418 404  
 391  
 13.98 CFS 378 367 356 346 337 328 320  
 312  
 14.46 CFS 304 295 287 277 268 259 249  
 240  
 14.94 CFS 231 222 214 205 197 189 182  
 175  
 15.42 CFS 169 163 157 152 147 143 139  
 135

15.90 CFS	132	129	126	123	121	118	116
114							
16.38 CFS	111	109	108	106	104	103	101
100							
16.86 CFS	98.58	97.35	96.20	95.09	94.00	92.92	91.85
90.84							
17.34 CFS	89.90	88.96	88.00	87.04	86.11	85.22	84.34
83.47							
17.82 CFS	82.58	81.71	80.87	80.06	79.24	78.41	77.58
76.79							
18.30 CFS	76.02	75.25	74.46	73.70	73.01	72.35	71.69
71.01							
18.78 CFS	70.38	69.82	69.24	68.64	68.08	67.54	67.02
66.51							
19.26 CFS	66.03	65.57	65.13	64.72	64.32	63.93	63.52
63.13							
19.74 CFS	62.80	62.45	62.07	61.72	61.41	61.14	60.85
60.54							
20.22 CFS	60.25	59.97	59.70	59.38	59.07	58.81	58.57
58.31							
20.70 CFS	58.03	57.75	57.53	57.30	57.03	56.75	56.50
56.24							
21.18 CFS	55.99	55.74	55.49	55.25	55.02	54.80	54.57
54.31							
21.66 CFS	54.05	53.84	53.62	53.35	53.13	52.93	52.69
52.43							
22.14 CFS	52.19	51.95	51.71	51.47	51.23	51.00	50.77
50.53							
22.62 CFS	50.26	50.00	49.79	49.54	49.25	48.98	48.75
48.55							
23.10 CFS	48.32	48.06	47.81	47.58	47.35	47.11	46.86
46.58							
23.58 CFS	46.31	46.10	45.89	45.65	45.39	45.12	44.89
44.77							
24.06 CFS	44.50	43.64	42.58	41.59	40.53	39.33	38.07
36.79							
24.54 CFS	35.52	34.26	33.02	31.80	30.60	29.41	28.24
27.10							
25.02 CFS	25.97	24.87	23.80	22.77	21.77	20.82	19.92
19.06							
25.50 CFS	18.26	17.51	16.81	16.16	15.56	14.99	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.59 WATERSHED INCHES; 2135 CFS-HRS; 176.5 ACRE-FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.03	611.8	229.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.58 WATERSHED INCHES; 2134 CFS-HRS; 176.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	69.0	(RUNOFF)
17.34	2.3	(RUNOFF)

1 24.01 1.3 (RUNOFF)  
 TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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HRS	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10						
SQ.MI.	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05						
10.44 CFS	.48	.54	.61	.69	.79	.90	1.03
1.17							
10.92 CFS	1.32	1.48	1.66	1.88	2.14	2.44	2.77
3.12							
11.40 CFS	3.52	3.94	4.40	5.28	6.65	8.02	9.48
11.75							
11.88 CFS	15.02	19.88	28.51	42.20	61.40	68.99	58.81
45.47							
12.36 CFS	36.20	29.51	25.09	22.34	19.48	16.56	14.53
13.33							
12.84 CFS	12.45	11.72	11.07	10.42	9.77	9.14	8.62
8.22							
13.32 CFS	7.83	7.46	7.09	6.72	6.36	6.02	5.75
5.55							
13.80 CFS	5.39	5.26	5.16	5.08	5.01	4.93	4.82
4.71							
14.28 CFS	4.60	4.52	4.45	4.37	4.28	4.16	4.05
3.95							
14.76 CFS	3.87	3.79	3.71	3.61	3.51	3.42	3.32
3.22							
15.24 CFS	3.14	3.09	3.07	3.06	3.06	3.05	3.03
2.98							
15.72 CFS	2.93	2.91	2.92	2.91	2.87	2.82	2.78
2.76							
16.20 CFS	2.75	2.74	2.70	2.67	2.65	2.61	2.57
2.55							
16.68 CFS	2.54	2.53	2.50	2.47	2.44	2.43	2.42
2.39							
17.16 CFS	2.35	2.29	2.26	2.27	2.27	2.23	2.18
2.13							
17.64 CFS	2.11	2.10	2.08	2.05	2.01	2.00	1.99
1.97							
18.12 CFS	1.94	1.90	1.88	1.87	1.86	1.83	1.81
1.83							
18.60 CFS	1.85	1.85	1.83	1.81	1.83	1.82	1.80
1.78							
19.08 CFS	1.77	1.77	1.76	1.76	1.76	1.76	1.76
1.77							
19.56 CFS	1.76	1.72	1.71	1.72	1.72	1.69	1.67
1.68							
20.04 CFS	1.71	1.71	1.69	1.67	1.66	1.66	1.63
1.60							
20.52 CFS	1.61	1.63	1.64	1.62	1.60	1.61	1.61
1.59							
21.00 CFS	1.57	1.56	1.55	1.55	1.55	1.55	1.55
1.55							
21.48 CFS	1.55	1.54	1.52	1.49	1.50	1.50	1.49
1.49							
21.96 CFS	1.50	1.49	1.46	1.45	1.44	1.44	1.44



1.44							
22.44 CFS	1.44	1.44	1.43	1.39	1.38	1.39	1.39
1.36							
22.92 CFS	1.34	1.35	1.38	1.38	1.36	1.34	1.33
1.33							
23.40 CFS	1.32	1.31	1.28	1.26	1.28	1.30	1.30
1.27							
23.88 CFS	1.24	1.24	1.31	1.28	.90	.46	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.03 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.03	622.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.56 WATERSHED INCHES; 2201 CFS-HRS; 181.9 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 80.  
 \*\*\*

OPERATION REACH XSECTION 80

1  
 TR20 ----- SCS  
 -

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.03	622.1	213.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.56 WATERSHED INCHES; 2201 CFS-HRS; 181.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	37.3	(RUNOFF)
19.47	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.78 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.02	627.8	178.15
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.55 WATERSHED INCHES;	2237 CFS-HRS;	184.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	78.1	(RUNOFF)
15.84	3.0	(RUNOFF)
17.34	2.4	(RUNOFF)
24.00	1.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.15 WATERSHED INCHES;	71 CFS-HRS;	5.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	81.9	(RUNOFF)
21.93	2.2	(RUNOFF)
24.01	1.8	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.08 WATERSHED INCHES;	97 CFS-HRS;	8.0 ACRE-
FEET.		

1  
 TR20 ----- SCS  
 -

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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OPERATION DIVERT XSECTION 184  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	81.9	(DIVERT)
21.93	2.2	(DIVERT)
24.01	1.8	(DIVERT)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
97 CFS-HRS;	8.0 ACRE-FEET.	

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 81, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 200.00.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 81

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

\*\*\* WARNING - XSECTION 185
NO HYDROGRAPH IN INPUT LOCATION 1 OR 6 FOR ADDHYD OPERATION.
\*\*\*

OPERATION ADDHYD XSECTION 185

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Data rows: (12.25, 81.9, NULL), (21.93, 2.2, NULL), (24.01, 1.8, NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.08 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 186

1
TR20 ----- SCS
-
Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,
VERSION
04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA
Dist;H1&H8UG;GHC2.04TEST
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Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Data rows: (12.26, 34.6, RUNOFF), (23.12, 1.0, RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.46 WATERSHED INCHES; 44 CFS-HRS; 3.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 187

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK

12.25	116.5	(NULL)
18.67	4.0	(NULL)
21.94	3.3	(NULL)
23.12	3.0	(NULL)
24.01	2.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.84 WATERSHED INCHES; 141 CFS-HRS; 11.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 85

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	181.6	(NULL)
20.83	5.2	(NULL)
24.00	4.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .17  
 SQ.MI.

9.96 CFS	.48	.59	.69	.81	.93	1.05	1.18
1.31							
10.44 CFS	1.45	1.60	1.78	1.98	2.22	2.49	2.81
3.15							
10.92 CFS	3.53	3.93	4.36	4.92	5.57	6.35	7.23
8.21							
11.40 CFS	9.32	10.51	11.85	14.18	17.53	21.09	25.31
31.36							
11.88 CFS	40	52	74	108	155	180	174
155							
12.36 CFS	133	112	96	84	73	63	56
50							
12.84 CFS	45.11	41.66	38.75	36.16	33.73	31.52	29.64
28.02							
13.32 CFS	26.59	25.27	24.01	22.77	21.58	20.45	19.48
18.68							
13.80 CFS	18.02	17.48	17.06	16.72	16.43	16.13	15.81
15.46							
14.28 CFS	15.13	14.84	14.58	14.32	14.02	13.69	13.35
13.03							
14.76 CFS	12.74	12.47	12.20	11.90	11.60	11.31	10.99
10.67							
15.24 CFS	10.40	10.20	10.06	9.97	9.92	9.89	9.81
9.70							
15.72 CFS	9.56	9.48	9.45	9.40	9.32	9.20	9.08
9.00							
16.20 CFS	8.94	8.88	8.79	8.70	8.62	8.52	8.40
8.32							
16.68 CFS	8.26	8.21	8.13	8.04	7.96	7.91	7.86
7.78							
17.16 CFS	7.66	7.52	7.43	7.40	7.34	7.26	7.13
7.01							
17.64 CFS	6.91	6.85	6.79	6.69	6.60	6.53	6.47
6.42							
18.12 CFS	6.33	6.23	6.16	6.11	6.06	5.97	5.92
5.93							
18.60 CFS	5.96	5.96	5.91	5.89	5.91	5.88	5.83
5.79							
19.08 CFS	5.75	5.73	5.72	5.71	5.71	5.70	5.70
5.70							

-

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION

04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
Dist;H1&H8UG;GHC2.04TEST

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19.56 CFS	5.68	5.61	5.57	5.58	5.55	5.50	5.46
5.46							
20.04 CFS	5.51	5.51	5.48	5.44	5.41	5.38	5.31
5.24							
20.52 CFS	5.24	5.27	5.28	5.25	5.21	5.22	5.21
5.16							
21.00 CFS	5.12	5.08	5.05	5.03	5.02	5.01	5.01
5.01							
21.48 CFS	5.01	5.00	4.94	4.88	4.88	4.87	4.83
4.84							
21.96 CFS	4.86	4.82	4.77	4.73	4.70	4.68	4.67
4.66							
22.44 CFS	4.66	4.65	4.63	4.56	4.52	4.52	4.49
4.43							
22.92 CFS	4.39	4.39	4.44	4.44	4.41	4.37	4.34
4.32							
23.40 CFS	4.30	4.27	4.19	4.15	4.17	4.20	4.20
4.15							
23.88 CFS	4.08	4.06	4.19	4.08	3.29	2.34	1.57
.97							
24.36 CFS	.60	.37					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.93 WATERSHED INCHES; 212 CFS-HRS; 17.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	571.0	(NULL)
12.98	664.7	(NULL)
23.97	51.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.48 WATERSHED INCHES; 2449 CFS-HRS; 202.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	40.2	(RUNOFF)
15.84	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.45 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.25	593.4	(NULL)
12.98	669.2	(NULL)
23.98	51.7	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55

HRS								
SQ.MI.								
6.18 CFS	.47	.51	.56	.60	.65	.69	.74	
.79								
6.66 CFS	.84	.88	.94	.99	1.04	1.10	1.17	
1.24								
7.14 CFS	1.31	1.38	1.45	1.52	1.60	1.68	1.76	
1.85								
7.62 CFS	1.95	2.06	2.18	2.31	2.45	2.61	2.77	
2.94								
8.10 CFS	3.13	3.32	3.52	3.73	3.96	4.18	4.42	
4.67								

1  
 TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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8.58 CFS	4.94	5.21	5.49	5.77	6.06	6.35	6.66	
6.99								
9.06 CFS	7.32	7.65	8.00	8.37	8.74	9.13	9.54	
9.97								
9.54 CFS	10.43	10.93	11.47	12.06	12.69	13.36	14.10	
14.88								
10.02 CFS	15.72	16.61	17.55	18.54	19.58	20.68	21.84	
23.08								
10.50 CFS	24.39	25.79	27.32	28.97	30.74	32.66	34.72	
36.98								
10.98 CFS	39.45	42.17	45.35	48.92	52.94	57.39	62.30	
67.81								
11.46 CFS	74	80	90	102	115	130	150	
177								
11.94 CFS	215	275	364	490	577	593	584	
583								
12.42 CFS	591	604	620	632	640	648	655	
662								
12.90 CFS	667	669	668	663	655	643	629	
613								
13.38 CFS	595	576	556	536	516	497	480	
463								
13.86 CFS	447	433	419	406	394	383	372	
362								
14.34 CFS	353	344	336	327	318	309	299	
290								
14.82 CFS	280	270	260	250	241	232	223	
215								
15.30 CFS	207	199	192	185	179	174	168	
163								
15.78 CFS	159	155	151	147	144	141	138	
135								
16.26 CFS	133	130	128	125	123	121	119	
118								
16.74 CFS	116	114	113	112	110	109	108	
106								
17.22 CFS	105	104	103	102	101	100	98	

97								
17.70	CFS	96.31	95.34	94.29	93.25	92.27	91.36	90.45
89.47								
18.18	CFS	88.48	87.55	86.69	85.83	84.89	84.03	83.33
82.70								
18.66	CFS	82.04	81.26	80.55	79.97	79.35	78.67	78.00
77.38								
19.14	CFS	76.81	76.27	75.76	75.27	74.81	74.37	73.95
73.50								
19.62	CFS	72.97	72.50	72.16	71.77	71.30	70.86	70.54
70.33								
20.10	CFS	70.05	69.68	69.30	68.96	68.64	68.22	67.80
67.52								
20.58	CFS	67.32	67.11	66.78	66.41	66.17	65.94	65.61
65.25								
21.06	CFS	64.92	64.62	64.35	64.08	63.83	63.58	63.34
63.11								
21.54	CFS	62.86	62.51	62.15	61.92	61.69	61.38	61.15
60.97								
22.02	CFS	60.70	60.36	60.03	59.75	59.48	59.23	58.98
58.74								
22.50	CFS	58.51	58.23	57.84	57.51	57.30	57.02	56.66
56.31								
22.98	CFS	56.07	55.94	55.73	55.41	55.09	54.79	54.53
54.28								
23.46	CFS	53.98	53.59	53.24	53.04	52.89	52.67	52.32
51.93								
23.94	CFS	51.64	51.71	51.34	49.41	46.85	44.62	42.84
41.32								
24.42	CFS	39.88	38.46	37.09	35.76	34.46	33.20	31.97
30.75								
24.90	CFS	29.55	28.38	27.23	26.10	25.00	23.93	22.89
21.89								
25.38	CFS	20.93	20.02	19.17	18.36	17.60	16.89	16.24
15.63								

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.49 WATERSHED INCHES; 2485 CFS-HRS; 205.3 ACRE-FEET.

OPERATION DIVERT XSECTION 81  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.25	593.4	178.07
12.98	669.2	178.26
23.98	51.7	175.61

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2485 CFS-HRS; 205.3 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 71, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 25.00 FEET BELOW ASSUMED CREST ELEVATION AT 174.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 71

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 89  
NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 89

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	593.4	(NULL)
12.98	669.2	(NULL)
23.98	51.7	(NULL)

HRS	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10							
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55 SQ.MI.							
6.18 CFS	.47	.51	.56	.60	.65	.69	.74	.79
6.66 CFS	.84	.88	.94	.99	1.04	1.10	1.17	1.24
7.14 CFS	1.31	1.38	1.45	1.52	1.60	1.68	1.76	1.85
7.62 CFS	1.95	2.06	2.18	2.31	2.45	2.61	2.77	2.94
8.10 CFS	3.13	3.32	3.52	3.73	3.96	4.18	4.42	4.67
8.58 CFS	4.94	5.21	5.49	5.77	6.06	6.35	6.66	6.99
9.06 CFS	7.32	7.65	8.00	8.37	8.74	9.13	9.54	9.97
9.54 CFS	10.43	10.93	11.47	12.06	12.69	13.36	14.10	14.88
10.02 CFS	15.72	16.61	17.55	18.54	19.58	20.68	21.84	23.08
10.50 CFS	24.39	25.79	27.32	28.97	30.74	32.66	34.72	36.98
10.98 CFS	39.45	42.17	45.35	48.92	52.94	57.39	62.30	67.81
11.46 CFS	74	80	90	102	115	130	150	



177								
11.94 CFS	215	275	364	490	577	593	584	
583								
12.42 CFS	591	604	620	632	640	648	655	
662								

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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12.90 CFS	667	669	668	663	655	643	629
613							
13.38 CFS	595	576	556	536	516	497	480
463							
13.86 CFS	447	433	419	406	394	383	372
362							
14.34 CFS	353	344	336	327	318	309	299
290							
14.82 CFS	280	270	260	250	241	232	223
215							
15.30 CFS	207	199	192	185	179	174	168
163							
15.78 CFS	159	155	151	147	144	141	138
135							
16.26 CFS	133	130	128	125	123	121	119
118							
16.74 CFS	116	114	113	112	110	109	108
106							
17.22 CFS	105	104	103	102	101	100	98
97							
17.70 CFS	96.31	95.34	94.29	93.25	92.27	91.36	90.45
89.47							
18.18 CFS	88.48	87.55	86.69	85.83	84.89	84.03	83.33
82.70							
18.66 CFS	82.04	81.26	80.55	79.97	79.35	78.67	78.00
77.38							
19.14 CFS	76.81	76.27	75.76	75.27	74.81	74.37	73.95
73.50							
19.62 CFS	72.97	72.50	72.16	71.77	71.30	70.86	70.54
70.33							
20.10 CFS	70.05	69.68	69.30	68.96	68.64	68.22	67.80
67.52							
20.58 CFS	67.32	67.11	66.78	66.41	66.17	65.94	65.61
65.25							
21.06 CFS	64.92	64.62	64.35	64.08	63.83	63.58	63.34
63.11							
21.54 CFS	62.86	62.51	62.15	61.92	61.69	61.38	61.15
60.97							
22.02 CFS	60.70	60.36	60.03	59.75	59.48	59.23	58.98
58.74							
22.50 CFS	58.51	58.23	57.84	57.51	57.30	57.02	56.66
56.31							
22.98 CFS	56.07	55.94	55.73	55.41	55.09	54.79	54.53
54.28							
23.46 CFS	53.98	53.59	53.24	53.04	52.89	52.67	52.32
51.93							
23.94 CFS	51.64	51.71	51.34	49.41	46.85	44.62	42.84
41.32							
24.42 CFS	39.88	38.46	37.09	35.76	34.46	33.20	31.97

30.75  
 24.90 CFS      29.55    28.38    27.23    26.10    25.00    23.93    22.89  
 21.89  
 25.38 CFS      20.93    20.02    19.17    18.36    17.60    16.89    16.24  
 15.63

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.49 WATERSHED INCHES;      2485 CFS-HRS;      205.3 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP      COMPUTATIONS COMPLETED FOR PASS    3

EXECUTIVE CONTROL COMPUT      FROM XSECTION    1    TO XSECTION    89  
 STARTING TIME = .00      RAIN DEPTH = 6.14      RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2      MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1      STORM NO. =25      RAIN TABLE NO. = 9

OPERATION RUNOFF    XSECTION    1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	65.5	(RUNOFF)
20.13	1.7	(RUNOFF)

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.01 WATERSHED INCHES;      87 CFS-HRS;      7.2 ACRE-  
 FEET.

OPERATION REACH    XSECTION    2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	65.1	390.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.01 WATERSHED INCHES;      87 CFS-HRS;      7.2 ACRE-  
 FEET.

OPERATION RUNOFF    XSECTION    3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	114.1	(RUNOFF)
18.64	3.2	(RUNOFF)
23.97	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.85 WATERSHED INCHES;      144 CFS-HRS;      11.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	175.6	(NULL)
20.13	4.7	(NULL)
23.11	3.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.91 WATERSHED INCHES; 231 CFS-HRS; 19.1 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	174.6	383.63

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.89 WATERSHED INCHES; 230 CFS-HRS; 19.0 ACRE-  
FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.39	173.4	368.63

1

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.90 WATERSHED INCHES; 231 CFS-HRS; 19.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	143.4	(RUNOFF)
23.13	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.63 WATERSHED INCHES; 187 CFS-HRS; 15.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	306.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.77 WATERSHED INCHES; 417 CFS-HRS; 34.5 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 107  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	213.0 *	(DIVERT)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 394 CFS-HRS; 32.6 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	93.7	176.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .21 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 84, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 358.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

1  
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OPERATION RESVOR STRUCTURE 84

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
 AT STRUCTURE 84  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	.0	350.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.51 214.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.57 WATERSHED INCHES; 394 CFS-HRS; 32.6 ACRE-
FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.57 214.5 357.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.56 WATERSHED INCHES; 394 CFS-HRS; 32.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.30 169.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.08 WATERSHED INCHES; 241 CFS-HRS; 19.9 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.54 108.8 377.05

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.61 WATERSHED INCHES; 218 CFS-HRS; 18.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.13 23.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.10 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-

FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	100.4	358.68
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.60 WATERSHED INCHES;	218 CFS-HRS;	18.0 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	113.8	(RUNOFF)
23.09	2.1	(RUNOFF)
24.02	1.9	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.23 WATERSHED INCHES;	113 CFS-HRS;	9.4 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	309.3	(NULL)
24.01	8.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.48 WATERSHED INCHES;	507 CFS-HRS;	41.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	44.8	(RUNOFF)
18.87	1.1	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.81 WATERSHED INCHES;	47 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		
12.26	323.4	(NULL)
12.58	344.6	(NULL)
23.97	15.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.75 WATERSHED INCHES; 723 CFS-HRS; 59.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	364.1	(NULL)
12.57	359.4	(NULL)
23.99	15.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.75 WATERSHED INCHES; 771 CFS-HRS; 63.7 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .006 HOURS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.91	223.4	344.17
14.58	50.7	335.05
14.69	47.4	334.92
14.81	44.7	334.82
14.91	42.4	334.73
23.98	15.7	333.69

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32  
 SQ.MI.

HRS	3.84	4.32	4.80	5.28	5.76
CFS	3.84	4.32	4.80	5.28	5.76
ELEV	333.08	333.08	333.08	333.08	333.08

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5.76 ELEV 333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
6.24 CFS .16	.12	.12	.12	.13	.13	.14	.14	.14
6.24 ELEV 333.09	333.08	333.08	333.08	333.08	333.09	333.09	333.09	333.09
6.72 CFS .31	.17	.19	.21	.22	.24	.26	.28	.28
6.72 ELEV 333.09	333.09	333.09	333.09	333.09	333.09	333.09	333.09	333.09
7.20 CFS .71	.34	.38	.42	.47	.53	.59	.65	.65
7.20 ELEV 333.11	333.09	333.09	333.10	333.10	333.10	333.10	333.11	333.11
7.68 CFS 1.33	.78	.85	.92	1.00	1.08	1.15	1.24	1.24
7.68 ELEV 333.13	333.11	333.11	333.12	333.12	333.12	333.12	333.13	333.13
8.16 CFS 2.23	1.42	1.53	1.63	1.75	1.87	1.98	2.10	2.10
8.16 ELEV 333.17	333.14	333.14	333.14	333.15	333.15	333.16	333.16	333.16
8.64 CFS 3.33	2.36	2.49	2.63	2.77	2.90	3.03	3.17	3.17
8.64 ELEV 333.21	333.17	333.18	333.18	333.19	333.19	333.20	333.20	333.20
9.12 CFS 4.98	3.49	3.66	3.84	4.04	4.26	4.50	4.74	4.74
9.12 ELEV 333.27	333.22	333.22	333.23	333.24	333.25	333.25	333.26	333.26
9.60 CFS 7.63	5.24	5.52	5.82	6.12	6.44	6.78	7.17	7.17
9.60 ELEV 333.38	333.28	333.29	333.31	333.32	333.33	333.34	333.36	333.36
10.08 CFS 12.23	8.13	8.67	9.23	9.81	10.39	10.98	11.59	11.59
10.08 ELEV 333.56	333.40	333.42	333.44	333.46	333.48	333.51	333.53	333.53
10.56 CFS 23.06	12.90	13.65	14.50	15.44	16.47	18.48	20.88	20.88
10.56 ELEV 333.98	333.58	333.61	333.64	333.68	333.72	333.80	333.89	333.89
11.04 CFS 44.25	25.24	27.40	29.75	32.25	34.97	37.83	40.94	40.94
11.04 ELEV 334.80	334.06	334.15	334.24	334.33	334.44	334.55	334.67	334.67
11.52 CFS 102	48	52	59	66	74	85	99	99
11.52 ELEV 337.05	334.94	335.12	335.36	335.65	335.98	336.39	336.94	336.94
12.00 CFS 185	108	119	131	143	156	166	176	176
12.00 ELEV 341.58	337.32	337.83	338.40	339.04	339.76	340.42	341.02	341.02
12.48 CFS 223	194	202	208	214	218	221	223	223
12.48 ELEV 344.17	342.13	342.64	343.07	343.47	343.78	344.00	344.12	344.12
12.96 CFS	223	222	220	218	215	213	209	209



206								
12.96 ELEV	344.14	344.06	343.94	343.79	343.61	343.40	343.18	
342.94								
13.44 CFS	202	198	193	188	182	177	172	
167								
13.44 ELEV	342.68	342.40	342.08	341.75	341.42	341.09	340.77	
340.45								
13.92 CFS	162	157	152	146	139	132	126	
116								
13.92 ELEV	340.13	339.82	339.52	339.18	338.83	338.50	338.19	
337.69								
14.40 CFS	105	55	47	51	45	47	44	
45								
14.40 ELEV	337.19	335.21	334.90	335.05	334.85	334.92	334.78	
334.82								
14.88 CFS	42.05	42.19	40.22	39.96	38.37	37.84	36.60	
36.13								
14.88 ELEV	334.72	334.72	334.64	334.63	334.57	334.55	334.50	
334.49								
15.36 CFS	35.29	34.93	34.35	34.07	33.65	33.37	32.99	
32.74								
15.36 ELEV	334.45	334.44	334.42	334.41	334.39	334.38	334.36	
334.35								
15.84 CFS	32.49	32.32	32.07	31.84	31.57	31.36	31.15	
30.96								
15.84 ELEV	334.34	334.34	334.33	334.32	334.31	334.30	334.29	
334.28								
16.32 CFS	30.74	30.52	30.30	30.09	29.85	29.62	29.42	
29.23								
16.32 ELEV	334.28	334.27	334.26	334.25	334.24	334.23	334.22	
334.22								
16.80 CFS	29.03	28.80	28.60	28.41	28.24	28.06	27.83	
27.58								
16.80 ELEV	334.21	334.20	334.19	334.19	334.18	334.17	334.16	
334.15								
17.28 CFS	27.35	27.18	27.00	26.79	26.54	26.29	26.06	
25.86								
17.28 ELEV	334.14	334.14	334.13	334.12	334.11	334.10	334.09	
334.09								

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17.76 CFS	25.65	25.43	25.19	24.98	24.79	24.61	24.40	
24.18								
17.76 ELEV	334.08	334.07	334.06	334.05	334.04	334.04	334.03	
334.02								
18.24 CFS	23.98	23.80	23.62	23.42	23.23	23.10	23.01	
22.92								
18.24 ELEV	334.01	334.01	334.00	333.99	333.98	333.98	333.98	
333.97								
18.72 CFS	22.80	22.69	22.63	22.57	22.46	22.36	22.26	
22.18								
18.72 ELEV	333.97	333.96	333.96	333.96	333.95	333.95	333.95	
333.94								
19.20 CFS	22.10	22.02	21.95	21.88	21.83	21.77	21.71	
21.62								
19.20 ELEV	333.94	333.94	333.93	333.93	333.93	333.93	333.92	

333.92							
19.68 CFS	21.52	21.46	21.40	21.29	21.18	21.11	21.08
21.04							
19.68 ELEV	333.92	333.91	333.91	333.91	333.90	333.90	333.90
333.90							
20.16 CFS	20.96	20.87	20.80	20.73	20.63	20.50	20.41
20.37							
20.16 ELEV	333.90	333.89	333.89	333.89	333.88	333.88	333.87
333.87							
20.64 CFS	20.32	20.23	20.14	20.08	20.03	19.96	19.85
19.76							
20.64 ELEV	333.87	333.87	333.86	333.86	333.86	333.86	333.85
333.85							
21.12 CFS	19.68	19.60	19.52	19.45	19.39	19.33	19.28
19.22							
21.12 ELEV	333.85	333.84	333.84	333.84	333.83	333.83	333.83
333.83							
21.60 CFS	19.14	19.03	18.97	18.91	18.83	18.76	18.72
18.65							
21.60 ELEV	333.82	333.82	333.82	333.82	333.81	333.81	333.81
333.81							
22.08 CFS	18.56	18.47	18.39	18.30	18.21	18.12	18.04
17.97							
22.08 ELEV	333.80	333.80	333.80	333.79	333.79	333.78	333.78
333.78							
22.56 CFS	17.88	17.76	17.64	17.56	17.47	17.35	17.22
17.12							
22.56 ELEV	333.78	333.77	333.77	333.76	333.76	333.75	333.75
333.75							
23.04 CFS	17.08	17.02	16.92	16.82	16.74	16.66	16.57
16.48							
23.04 ELEV	333.74	333.74	333.74	333.73	333.73	333.73	333.72
333.72							
23.52 CFS	16.36	16.23	16.15	16.10	16.04	15.93	15.80
15.71							
23.52 ELEV	333.72	333.71	333.71	333.71	333.70	333.70	333.69
333.69							
24.00 CFS	15.72	15.67	15.07	14.06	13.07	12.16	11.27
10.39							
24.00 ELEV	333.69	333.69	333.67	333.63	333.59	333.55	333.52
333.48							
24.48 CFS	9.75	9.37	9.09	8.86	8.67	8.50	8.35
8.21							
24.48 ELEV	333.46	333.44	333.43	333.42	333.42	333.41	333.40
333.40							
24.96 CFS	8.07	7.95	7.82	7.70	7.58	7.47	7.36
7.26							
24.96 ELEV	333.39	333.39	333.38	333.38	333.37	333.37	333.37
333.36							
25.44 CFS	7.14	7.02	6.89	6.75	6.61	6.48	6.34
6.21							
25.44 ELEV	333.36	333.35	333.35	333.34	333.34	333.33	333.33
333.32							
25.92 CFS	6.08	5.95	5.82	5.70	5.58	5.46	5.34
5.23							
25.92 ELEV	333.32	333.31	333.31	333.30	333.30	333.29	333.29
333.28							
26.40 CFS	5.12	5.01	4.90	4.80	4.70		
26.40 ELEV	333.28	333.27	333.27	333.27	333.26		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.75 WATERSHED INCHES; 771 CFS-HRS; 63.7 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	137	36	28	22	20	17	11	6
DURATION(HRS)	17							
FLOW(CFS)	5 TRUNCATED							

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\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.91	223.4	333.07
14.58	50.7	331.71
14.69	47.4	331.67
14.81	44.7	331.64
14.91	42.4	331.61
23.98	15.7	331.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.75 WATERSHED INCHES; 771 CFS-HRS; 63.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	68.1	(RUNOFF)
15.84	2.0	(RUNOFF)
21.45	1.0	(RUNOFF)
21.75	1.0	(RUNOFF)
21.95	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.75 WATERSHED INCHES; 65 CFS-HRS; 5.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	79.6	(RUNOFF)
24.03	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.34 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET)  
 12.71 15.6 349.33

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
 SQ.MI.  
 2.46 CFS .00 .01 .01 .01 .02 .02 .03  
 .03  
 2.46 ELEV 345.00 345.00 345.00 345.00 345.00 345.00 345.00  
 345.01

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2.94 CFS .04 .04 .05 .06 .06 .07 .08  
 .09  
 2.94 ELEV 345.01 345.01 345.01 345.01 345.01 345.01 345.01  
 345.02  
 3.42 CFS .10 .10 .11 .12 .13 .14 .15  
 .16  
 3.42 ELEV 345.02 345.02 345.02 345.02 345.02 345.03 345.03  
 345.03  
 3.90 CFS .17 .18 .19 .20 .21 .22 .24  
 .25  
 3.90 ELEV 345.03 345.03 345.03 345.04 345.04 345.04 345.04  
 345.04  
 4.38 CFS .26 .27 .28 .29 .30 .31 .33  
 .34  
 4.38 ELEV 345.05 345.05 345.05 345.05 345.06 345.06 345.06  
 345.06  
 4.86 CFS .35 .36 .37 .38 .40 .41 .42  
 .43  
 4.86 ELEV 345.06 345.07 345.07 345.07 345.07 345.07 345.08  
 345.08  
 5.34 CFS .44 .46 .47 .48 .49 .50 .51  
 .53  
 5.34 ELEV 345.08 345.08 345.08 345.09 345.09 345.09 345.09  
 345.10  
 5.82 CFS .54 .55 .56 .57 .59 .60 .61  
 .62  
 5.82 ELEV 345.10 345.10 345.10 345.10 345.11 345.11 345.11  
 345.11  
 6.30 CFS .64 .65 .66 .68 .69 .71 .72  
 .74  
 6.30 ELEV 345.12 345.12 345.12 345.12 345.13 345.13 345.13  
 345.13  
 6.78 CFS .75 .77 .79 .80 .82 .84 .85  
 .87  
 6.78 ELEV 345.14 345.14 345.14 345.15 345.15 345.15 345.16  
 345.16  
 7.26 CFS .89 .91 .93 .95 .97 .99 1.01  
 1.03  
 7.26 ELEV 345.16 345.17 345.17 345.17 345.18 345.18 345.18  
 345.19  
 7.74 CFS 1.05 1.07 1.09 1.11 1.13 1.15 1.18

1.20								
7.74 ELEV	345.19	345.19	345.20	345.20	345.21	345.21	345.21	
345.22								
8.22 CFS	1.22	1.24	1.27	1.29	1.31	1.33	1.36	
1.38								
8.22 ELEV	345.22	345.23	345.23	345.23	345.24	345.24	345.25	
345.25								
8.70 CFS	1.41	1.43	1.45	1.48	1.50	1.53	1.55	
1.58								
8.70 ELEV	345.26	345.26	345.26	345.27	345.27	345.28	345.28	
345.29								
9.18 CFS	1.60	1.63	1.66	1.70	1.73	1.77	1.81	
1.85								
9.18 ELEV	345.29	345.30	345.30	345.31	345.32	345.32	345.33	
345.34								
9.66 CFS	1.89	1.93	1.98	2.03	2.08	2.13	2.18	
2.24								
9.66 ELEV	345.34	345.35	345.36	345.37	345.38	345.39	345.40	
345.41								
10.14 CFS	2.29	2.35	2.41	2.47	2.53	2.59	2.66	
2.72								
10.14 ELEV	345.42	345.43	345.44	345.45	345.46	345.47	345.48	
345.50								
10.62 CFS	2.79	2.87	2.95	3.05	3.15	3.26	3.38	
3.52								
10.62 ELEV	345.51	345.52	345.54	345.55	345.57	345.59	345.62	
345.64								
11.10 CFS	3.66	3.81	3.98	4.17	4.38	4.61	4.85	
5.11								
11.10 ELEV	345.67	345.69	345.73	345.76	345.80	345.84	345.88	
345.93								
11.58 CFS	5.40	5.75	6.18	6.68	7.27	7.98	8.88	
10.02								
11.58 ELEV	345.98	346.05	346.12	346.22	346.32	346.45	346.62	
346.83								
12.06 CFS	10.58	11.38	12.36	13.32	14.08	14.62	14.98	
15.22								
12.06 ELEV	347.08	347.44	347.88	348.32	348.66	348.90	349.07	
349.18								
12.54 CFS	15.38	15.49	15.54	15.55	15.53	15.49	15.43	
15.36								
12.54 ELEV	349.25	349.30	349.32	349.32	349.32	349.30	349.27	
349.24								
13.02 CFS	15.29	15.20	15.11	15.00	14.89	14.78	14.67	
14.54								
13.02 ELEV	349.21	349.17	349.12	349.08	349.03	348.98	348.93	
348.87								
13.50 CFS	14.42	14.29	14.16	14.03	13.89	13.76	13.62	
13.48								
13.50 ELEV	348.81	348.76	348.70	348.64	348.58	348.52	348.45	
348.39								
13.98 CFS	13.35	13.21	13.08	12.95	12.81	12.68	12.55	
12.42								
13.98 ELEV	348.33	348.27	348.21	348.15	348.09	348.03	347.97	
347.91								
14.46 CFS	12.29	12.16	12.03	11.90	11.77	11.65	11.52	
11.39								

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14.46 ELEV	347.85	347.79	347.74	347.68	347.62	347.56	347.51
347.45							
14.94 CFS	11.27	11.14	11.02	10.90	10.77	10.65	10.53
10.41							
14.94 ELEV	347.39	347.34	347.28	347.22	347.17	347.11	347.06
347.01							
15.42 CFS	10.29	10.18	10.06	9.84	9.52	9.21	8.91
8.62							
15.42 ELEV	346.95	346.90	346.85	346.79	346.73	346.68	346.62
346.57							
15.90 CFS	8.35	8.09	7.84	7.59	7.36	7.14	6.92
6.72							
15.90 ELEV	346.52	346.47	346.43	346.38	346.34	346.30	346.26
346.22							
16.38 CFS	6.52	6.33	6.15	5.97	5.81	5.64	5.49
5.34							
16.38 ELEV	346.19	346.15	346.12	346.09	346.06	346.03	346.00
345.97							
16.86 CFS	5.20	5.06	4.92	4.80	4.67	4.56	4.44
4.33							
16.86 ELEV	345.95	345.92	345.90	345.87	345.85	345.83	345.81
345.79							
17.34 CFS	4.22	4.12	4.02	3.93	3.83	3.74	3.65
3.57							
17.34 ELEV	345.77	345.75	345.73	345.71	345.70	345.68	345.67
345.65							
17.82 CFS	3.49	3.41	3.33	3.26	3.19	3.12	3.06
2.99							
17.82 ELEV	345.64	345.62	345.61	345.59	345.58	345.57	345.56
345.54							
18.30 CFS	2.93	2.87	2.81	2.75	2.70	2.65	2.60
2.55							
18.30 ELEV	345.53	345.52	345.51	345.50	345.49	345.48	345.47
345.46							
18.78 CFS	2.51	2.46	2.42	2.38	2.34	2.30	2.27
2.23							
18.78 ELEV	345.46	345.45	345.44	345.43	345.43	345.42	345.41
345.41							
19.26 CFS	2.20	2.17	2.14	2.11	2.08	2.05	2.03
2.00							
19.26 ELEV	345.40	345.39	345.39	345.38	345.38	345.37	345.37
345.36							
19.74 CFS	1.97	1.95	1.93	1.90	1.88	1.86	1.84
1.82							
19.74 ELEV	345.36	345.35	345.35	345.35	345.34	345.34	345.34
345.33							
20.22 CFS	1.80	1.79	1.77	1.75	1.73	1.72	1.70
1.68							
20.22 ELEV	345.33	345.33	345.32	345.32	345.32	345.31	345.31
345.31							
20.70 CFS	1.67	1.65	1.64	1.63	1.61	1.60	1.59
1.57							
20.70 ELEV	345.30	345.30	345.30	345.30	345.29	345.29	345.29
345.29							
21.18 CFS	1.56	1.55	1.54	1.53	1.52	1.51	1.50
1.49							
21.18 ELEV	345.28	345.28	345.28	345.28	345.28	345.27	345.27
345.27							
21.66 CFS	1.48	1.46	1.45	1.45	1.44	1.43	1.42
1.41							
21.66 ELEV	345.27	345.27	345.26	345.26	345.26	345.26	345.26

345.26								
22.14 CFS	1.40	1.39	1.38	1.37	1.37	1.36	1.35	
1.34								
22.14 ELEV	345.25	345.25	345.25	345.25	345.25	345.25	345.25	
345.24								
22.62 CFS	1.34	1.33	1.32	1.31	1.30	1.29	1.29	
1.28								
22.62 ELEV	345.24	345.24	345.24	345.24	345.24	345.24	345.23	
345.23								
23.10 CFS	1.27	1.27	1.26	1.25	1.25	1.24	1.23	
1.22								
23.10 ELEV	345.23	345.23	345.23	345.23	345.23	345.23	345.22	
345.22								
23.58 CFS	1.22	1.21	1.20	1.20	1.19	1.18	1.18	
1.17								
23.58 ELEV	345.22	345.22	345.22	345.22	345.22	345.22	345.21	
345.21								
24.06 CFS	1.17	1.16	1.13	1.10	1.06	1.01	.97	
.93								
24.06 ELEV	345.21	345.21	345.21	345.20	345.19	345.18	345.18	
345.17								
24.54 CFS	.89	.85	.81	.77	.74	.71	.67	
.64								
24.54 ELEV	345.16	345.15	345.15	345.14	345.13	345.13	345.12	
345.12								
25.02 CFS	.61	.59	.56	.54	.51	.49	.47	
.45								
25.02 ELEV	345.11	345.11	345.10	345.10	345.09	345.09	345.08	
345.08								
25.50 CFS	.43	.41	.39	.37	.35	.34	.32	
.31								
25.50 ELEV	345.08	345.07	345.07	345.07	345.06	345.06	345.06	
345.06								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.32 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-  
 FEET.

DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	13	8	4	3	2	2	1	1

DURATION (HRS)	18	20
FLOW (CFS)	1	0

OPERATION RUNOFF XSECTION 119

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.13	19.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.55 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-  
 FEET.

## OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.14	31.3	(NULL)
23.99	1.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.17 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
FEET.

## OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.14	99.4	(NULL)
20.81	3.0	(NULL)
24.00	2.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.00 WATERSHED INCHES; 169 CFS-HRS; 14.0 ACRE-  
FEET.

## OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	121.1	(RUNOFF)
15.84	3.8	(RUNOFF)
20.85	2.0	(RUNOFF)
24.00	1.7	(RUNOFF)

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.37 WATERSHED INCHES; 114 CFS-HRS; 9.4 ACRE-  
FEET.

## OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	220.5	(NULL)
18.82	6.4	(NULL)
20.83	5.1	(NULL)
23.05	4.2	(NULL)
24.00	4.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.73 WATERSHED INCHES; 283 CFS-HRS; 23.4 ACRE-  
FEET.



OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	357.1	(NULL)
12.55	268.7	(NULL)
12.80	266.9	(NULL)
14.57	72.0	(NULL)
14.69	68.0	(NULL)
14.80	64.7	(NULL)
20.02	26.6	(NULL)
23.02	21.3	(NULL)
24.00	19.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.96 WATERSHED INCHES; 1050 CFS-HRS; 86.8 ACRE-FEET.

OPERATION DIVERT XSECTION 122  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
11.88	168.0 *	(DIVERT)
14.57	72.0	(DIVERT)
14.69	68.0	(DIVERT)
14.80	64.7	(DIVERT)
20.02	26.6	(DIVERT)
23.02	21.3	(DIVERT)
24.00	19.7	(DIVERT)

\* FIRST POINT OF FLAT PEAK

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 877 CFS-HRS; 72.4 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	189.1	176.54
12.55	100.7	176.08
12.80	98.9	176.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .65 WATERSHED INCHES; 173 CFS-HRS; 14.3 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 83, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE

STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 322.00.

THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 83

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
13.20	131.0	322.42
13.32	120.0	322.39
13.44	108.7	322.35
13.56	95.1	322.31
13.68	80.8	322.26
13.80	61.4	322.20
13.92	35.6	322.11
14.04	18.2	322.06

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .21 WATERSHED INCHES; 56 CFS-HRS; 4.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 123

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
13.20	299.0	(NULL)
13.32	288.0	(NULL)
13.44	276.7	(NULL)
13.56	263.1	(NULL)
13.68	248.8	(NULL)
13.80	229.4	(NULL)
13.92	203.6	(NULL)
14.04	186.2	(NULL)
14.57	72.0	(NULL)
14.69	68.0	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.51 WATERSHED INCHES; 932 CFS-HRS; 77.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
13.28	222.5	315.64
13.39	241.1	315.71
13.50	243.2	315.71
13.61	237.3	315.69
13.73	227.1	315.66
13.85	214.2	315.61
13.96	199.7	315.56
24.04	19.8	314.16

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.45 WATERSHED INCHES; 917 CFS-HRS; 75.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	110.9	(RUNOFF)
23.13	2.1	(RUNOFF)
23.99	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.15 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	106.9	364.70
23.15	2.1	356.55
23.79	2.0	356.54

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.16 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	158.3	(RUNOFF)
18.66	4.2	(RUNOFF)
23.13	3.1	(RUNOFF)
23.97	2.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.08 WATERSHED INCHES; 197 CFS-HRS; 16.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	259.5	(NULL)
18.67	7.1	(NULL)
20.68	6.3	(NULL)
23.14	5.2	(NULL)
23.78	4.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.11 WATERSHED INCHES; 332 CFS-HRS; 27.5 ACRE-FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.39	246.0	319.41
20.21	6.5	316.75
23.20	5.2	316.66

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.10 WATERSHED INCHES; 332 CFS-HRS; 27.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	122.5	(RUNOFF)
18.67	3.3	(RUNOFF)
20.13	3.0	(RUNOFF)
24.01	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.75 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-FEET.

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OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	288.1	(NULL)
13.28	239.3	(NULL)
13.39	256.3	(NULL)
13.50	257.0	(NULL)
13.61	249.7	(NULL)
13.73	238.4	(NULL)
13.85	224.6	(NULL)
13.96	209.6	(NULL)

24.03 22.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.49 WATERSHED INCHES; 1062 CFS-HRS; 87.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 30

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.35, 13.28, 13.38, 13.49, 13.61, 13.73, 13.85, 13.96 and discharge values like 511.4, 291.2, 303.1, 298.6, 285.6, 268.9, 250.9, 233.0.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.62 WATERSHED INCHES; 1394 CFS-HRS; 115.2 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 1

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.57, 13.51 and discharge values like 408.0, 286.7, and peak elevations like 315.20, 313.39.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.62 WATERSHED INCHES; 1394 CFS-HRS; 115.2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 31

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Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 12.21, 18.66, 21.96, 23.11, 24.03 and discharge values like 183.4, 4.1, 3.3, 3.0, 2.8.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-
FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	167.8	313.44
18.72	4.1	310.34
20.73	3.6	310.29
24.09	2.8	310.23

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.65 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.16	28.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS WITH .44 AC-FT ( .08 WATERSHED INCHES) FLOOD STORAGE REMAINING IN RESERVOIR AT ELEV. 377.74.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.27	20.6	380.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 25 CFS-HRS; 2.0 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0, CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
 \*\*\*

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OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.27	20.6	338.23

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 25 CFS-HRS; 2.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	84.9	(RUNOFF)
24.02	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.54 WATERSHED INCHES; 98 CFS-HRS; 8.1 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
WITH .99 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 353.96.  
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	71.4	357.38

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.86 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	91.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.79 WATERSHED INCHES; 111 CFS-HRS; 9.2 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	91.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.79 WATERSHED INCHES; 111 CFS-HRS; 9.2 ACRE-  
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
\*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	91.4	330.73
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.79 WATERSHED INCHES;	111 CFS-HRS;	9.2 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	94.7	(RUNOFF)
17.34	2.1	(RUNOFF)
24.00	1.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.97 WATERSHED INCHES;	90 CFS-HRS;	7.4 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	155.3	(NULL)
20.04	4.1	(NULL)
24.00	3.1	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.87 WATERSHED INCHES;	201 CFS-HRS;	16.6 ACRE-
FEEET.		

OPERATION RESVOR STRUCTURE 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	85.7	331.53
HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25		
HRS	MAIN TIME INCREMENT = .060 hr,	DRAINAGE AREA = .06
SQ.MI.		
3.30 CFS	.00 .01 .01 .01 .01 .01 .01	.01
.01		
3.30 ELEV	326.00 326.00 326.00 326.00 326.00 326.00 326.01	326.01
326.01		
3.78 CFS	.02 .02 .02 .02 .03 .03 .03	.03
.04		
3.78 ELEV	326.01 326.01 326.01 326.01 326.01 326.01 326.01	326.01
326.02		
4.26 CFS	.04 .04 .05 .05 .06 .06 .07	.07
.07		

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4.26 ELEV	326.02	326.02	326.02	326.02	326.02	326.03	326.03
326.03							
4.74 CFS	.08	.08	.09	.09	.10	.10	.11
.12							
4.74 ELEV	326.03	326.03	326.04	326.04	326.04	326.04	326.05
326.05							
5.22 CFS	.12	.13	.14	.14	.15	.16	.16
.17							
5.22 ELEV	326.05	326.05	326.06	326.06	326.06	326.07	326.07
326.07							
5.70 CFS	.18	.19	.20	.20	.21	.22	.23
.24							
5.70 ELEV	326.08	326.08	326.08	326.09	326.09	326.09	326.10
326.10							
6.18 CFS	.25	.25	.26	.27	.28	.29	.30
.31							
6.18 ELEV	326.10	326.11	326.11	326.11	326.12	326.12	326.13
326.13							
6.66 CFS	.32	.34	.35	.36	.37	.38	.39
.41							
6.66 ELEV	326.14	326.14	326.15	326.15	326.16	326.16	326.17
326.17							
7.14 CFS	.42	.43	.45	.46	.47	.49	.50
.52							
7.14 ELEV	326.18	326.18	326.19	326.19	326.20	326.20	326.21
326.22							
7.62 CFS	.53	.55	.56	.58	.59	.61	.63
.64							
7.62 ELEV	326.22	326.23	326.24	326.24	326.25	326.26	326.26
326.27							
8.10 CFS	.66	.68	.70	.71	.73	.75	.77
.79							
8.10 ELEV	326.28	326.29	326.29	326.30	326.31	326.32	326.32
326.33							
8.58 CFS	.81	.83	.85	.87	.89	.91	.93
.95							
8.58 ELEV	326.34	326.35	326.36	326.37	326.37	326.38	326.39
326.40							
9.06 CFS	.98	1.00	1.02	1.05	1.07	1.10	1.12
1.15							
9.06 ELEV	326.41	326.42	326.43	326.44	326.45	326.46	326.47
326.48							
9.54 CFS	1.18	1.21	1.24	1.27	1.30	1.34	1.37
1.41							
9.54 ELEV	326.50	326.51	326.52	326.53	326.55	326.56	326.58
326.59							
10.02 CFS	1.44	1.48	1.52	1.56	1.60	1.64	1.68
1.73							
10.02 ELEV	326.61	326.62	326.64	326.65	326.67	326.69	326.71
326.72							
10.50 CFS	1.77	1.82	1.87	1.92	1.97	2.03	2.10
2.16							
10.50 ELEV	326.74	326.76	326.78	326.81	326.83	326.85	326.88
326.91							
10.98 CFS	2.23	2.32	2.41	2.51	2.63	2.76	2.90
3.06							
10.98 ELEV	326.94	326.97	327.01	327.05	327.10	327.16	327.22
327.29							
11.46 CFS	3.24	3.43	3.65	3.91	4.21	4.55	4.95
5.42							
11.46 ELEV	327.36	327.44	327.53	327.64	327.77	327.91	328.08
328.28							

11.94 CFS	6.00	6.75	7.79	9.23	26.57	66.80	82.29
84.48							
11.94 ELEV	328.52	328.84	329.27	329.87	330.51	330.98	331.27
331.43							
12.42 CFS	85.53	85.73	85.29	84.38	83.09	81.50	77.66
63.01							
12.42 ELEV	331.51	331.53	331.49	331.42	331.33	331.20	331.07
330.94							
12.90 CFS	52.79	47.01	43.19	39.94	37.11	34.61	32.40
30.42							
12.90 ELEV	330.85	330.79	330.75	330.71	330.67	330.63	330.60
330.58							
13.38 CFS	28.83	27.38	25.99	24.65	23.36	22.16	21.04
20.02							
13.38 ELEV	330.55	330.53	330.50	330.48	330.46	330.44	330.42
330.40							
13.86 CFS	19.17	18.38	17.64	16.97	16.33	15.74	15.18
14.70							
13.86 ELEV	330.39	330.37	330.36	330.35	330.33	330.32	330.31
330.30							
14.34 CFS	14.27	13.86	13.47	13.09	12.71	12.35	12.00
11.66							
14.34 ELEV	330.29	330.29	330.28	330.27	330.26	330.25	330.24
330.24							
14.82 CFS	11.34	11.04	10.75	10.46	10.19	9.99	9.98
9.95							
14.82 ELEV	330.23	330.22	330.22	330.21	330.20	330.20	330.19
330.18							
15.30 CFS	9.93	9.90	9.87	9.85	9.82	9.79	9.75
9.72							
15.30 ELEV	330.17	330.16	330.15	330.14	330.12	330.11	330.10
330.08							
15.78 CFS	9.69	9.65	9.62	9.58	9.55	9.51	9.47
9.43							
15.78 ELEV	330.07	330.05	330.04	330.02	330.01	329.99	329.98
329.96							

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16.26 CFS	9.39	9.36	9.32	9.28	9.24	9.20	9.16
9.12							
16.26 ELEV	329.95	329.93	329.91	329.90	329.88	329.86	329.85
329.83							
16.74 CFS	9.08	9.03	8.99	8.95	8.91	8.87	8.83
8.78							
16.74 ELEV	329.81	329.79	329.78	329.76	329.74	329.72	329.71
329.69							
17.22 CFS	8.74	8.70	8.66	8.61	8.57	8.53	8.48
8.44							
17.22 ELEV	329.67	329.65	329.64	329.62	329.60	329.58	329.56
329.54							
17.70 CFS	8.40	8.35	8.31	8.26	8.22	8.17	8.13
8.09							
17.70 ELEV	329.53	329.51	329.49	329.47	329.45	329.43	329.41
329.40							
18.18 CFS	8.04	8.00	7.95	7.91	7.86	7.82	7.77
7.73							

18.18 ELEV	329.38	329.36	329.34	329.32	329.30	329.28	329.26
329.25							
18.66 CFS	7.69	7.64	7.60	7.56	7.52	7.47	7.43
7.39							
18.66 ELEV	329.23	329.21	329.19	329.17	329.16	329.14	329.12
329.10							
19.14 CFS	7.35	7.31	7.27	7.23	7.19	7.15	7.11
7.07							
19.14 ELEV	329.09	329.07	329.05	329.04	329.02	329.00	328.99
328.97							
19.62 CFS	7.03	6.99	6.96	6.92	6.88	6.84	6.81
6.77							
19.62 ELEV	328.95	328.94	328.92	328.91	328.89	328.87	328.86
328.84							
20.10 CFS	6.73	6.70	6.66	6.62	6.59	6.55	6.52
6.48							
20.10 ELEV	328.83	328.81	328.80	328.78	328.77	328.75	328.74
328.72							
20.58 CFS	6.45	6.41	6.38	6.35	6.31	6.28	6.25
6.21							
20.58 ELEV	328.71	328.69	328.68	328.67	328.65	328.64	328.62
328.61							
21.06 CFS	6.18	6.15	6.12	6.08	6.05	6.02	5.99
5.96							
21.06 ELEV	328.60	328.58	328.57	328.56	328.54	328.53	328.52
328.50							
21.54 CFS	5.93	5.90	5.87	5.84	5.81	5.78	5.75
5.72							
21.54 ELEV	328.49	328.48	328.46	328.45	328.44	328.43	328.41
328.40							
22.02 CFS	5.69	5.66	5.63	5.60	5.57	5.55	5.52
5.49							
22.02 ELEV	328.39	328.38	328.37	328.35	328.34	328.33	328.32
328.31							
22.50 CFS	5.46	5.43	5.41	5.38	5.35	5.32	5.30
5.27							
22.50 ELEV	328.29	328.28	328.27	328.26	328.25	328.24	328.23
328.21							
22.98 CFS	5.24	5.22	5.19	5.17	5.14	5.11	5.09
5.06							
22.98 ELEV	328.20	328.19	328.18	328.17	328.16	328.15	328.14
328.13							
23.46 CFS	5.04	5.01	4.99	4.96	4.94	4.91	4.89
4.86							
23.46 ELEV	328.12	328.11	328.09	328.08	328.07	328.06	328.05
328.04							
23.94 CFS	4.84	4.81	4.79	4.76	4.73	4.69	4.66
4.62							
23.94 ELEV	328.03	328.02	328.01	328.00	327.99	327.97	327.96
327.94							
24.42 CFS	4.58	4.54	4.50	4.46	4.42	4.39	4.35
4.31							
24.42 ELEV	327.92	327.91	327.89	327.87	327.86	327.84	327.83
327.81							
24.90 CFS	4.28	4.24	4.20	4.17	4.13	4.10	4.07
4.03							
24.90 ELEV	327.80	327.78	327.77	327.75	327.74	327.72	327.71
327.69							
25.38 CFS	4.00	3.97					
25.38 ELEV	327.68	327.67					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.44 WATERSHED INCHES; 183 CFS-HRS; 15.1 ACRE-  
 FEET.

DURATION (HRS)	2	4	6	8	10	12	14	
FLOW (CFS)	16	9	8	7	6	5	4	TRUNCATED

OPERATION RUNOFF XSECTION 140

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.13	8.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.23 WATERSHED INCHES; 7 CFS-HRS; .6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.45	88.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.29 WATERSHED INCHES; 190 CFS-HRS; 15.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.27	78.9	(RUNOFF)
20.13	2.0	(RUNOFF)
23.76	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.94 WATERSHED INCHES; 100 CFS-HRS; 8.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.50	453.6	(NULL)
13.48	296.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.64 WATERSHED INCHES; 1493 CFS-HRS; 123.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	591.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.74 WATERSHED INCHES; 1701 CFS-HRS; 140.6 ACRE-FEET.

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	679.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.78 WATERSHED INCHES; 1887 CFS-HRS; 155.9 ACRE-FEET.

OPERATION DIVERT XSECTION 144  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	543.0 *	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1840 CFS-HRS; 152.0 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	136.5	176.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .09 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 82, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 318.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 82

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
 AT STRUCTURE 82  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.78	.0	312.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 145

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	544.0	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.69 WATERSHED INCHES; 1840 CFS-HRS; 152.0 ACRE-FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	542.6	290.52

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.68 WATERSHED INCHES; 1838 CFS-HRS; 151.9 ACRE-FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.83	542.1	302.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.68 WATERSHED INCHES; 1836 CFS-HRS; 151.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	91.8	(RUNOFF)
23.08	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.99 WATERSHED INCHES; 123 CFS-HRS; 10.1 ACRE-FEET.

## OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	114.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.90 WATERSHED INCHES; 158 CFS-HRS; 13.1 ACRE-  
FEET.

## OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	206.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.94 WATERSHED INCHES; 281 CFS-HRS; 23.2 ACRE-  
FEET.

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## OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	112.4	(RUNOFF)
21.97	2.1	(RUNOFF)
24.03	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.93 WATERSHED INCHES; 119 CFS-HRS; 9.8 ACRE-  
FEET.

## OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.63	567.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.69 WATERSHED INCHES; 1955 CFS-HRS; 161.6 ACRE-  
FEET.

## OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.56	703.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

3.72 WATERSHED INCHES; 2236 CFS-HRS; 184.8 ACRE-  
FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.67	680.5	285.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.64 WATERSHED INCHES; 2234 CFS-HRS; 184.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.64 WATERSHED INCHES; 4 CFS-HRS; .3 ACRE-  
FEET.

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\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	1.7	288.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.64 WATERSHED INCHES; 4 CFS-HRS; .3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - XSECTION 54, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.64 WATERSHED INCHES; 212 CFS-HRS; .3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 55



PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	72.5	(RUNOFF)
24.03	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.67 WATERSHED INCHES; 76 CFS-HRS; 6.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.66	699.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.72 WATERSHED INCHES; 2310 CFS-HRS; 190.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	1.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .45 WATERSHED INCHES; 5 CFS-HRS; .4 ACRE-FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.65	701.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.66 WATERSHED INCHES; 2315 CFS-HRS; 191.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	47.1	(RUNOFF)
21.97	1.1	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
 SQ.MI.  
 10.08 CFS .48 .52 .56 .60 .64 .69 .73

.78							
10.56 CFS	.84	.90	.98	1.08	1.18	1.30	1.43
1.57							
11.04 CFS	1.71	1.88	2.08	2.31	2.57	2.85	3.15
3.48							
11.52 CFS	3.83	4.38	5.24	6.26	7.38	8.82	10.85
13.87							
12.00 CFS	18.80	26.74	37.61	46.18	45.89	39.69	32.20
26.43							
12.48 CFS	22.12	19.01	16.54	14.23	12.30	10.89	9.91
9.16							
12.96 CFS	8.55	8.01	7.51	7.03	6.60	6.23	5.92
5.63							
13.44 CFS	5.35	5.08	4.81	4.55	4.32	4.14	3.99
3.88							
13.92 CFS	3.78	3.71	3.65	3.59	3.52	3.44	3.36
3.29							
14.40 CFS	3.23	3.18	3.11	3.04	2.96	2.89	2.82
2.76							
14.88 CFS	2.70	2.63	2.57	2.50	2.43	2.36	2.29
2.24							
15.36 CFS	2.21	2.20	2.19	2.18	2.17	2.15	2.11
2.09							
15.84 CFS	2.08	2.08	2.06	2.03	2.00	1.98	1.97
1.96							
16.32 CFS	1.94	1.92	1.90	1.88	1.85	1.83	1.81
1.80							
16.80 CFS	1.79	1.77	1.75	1.74	1.73	1.71	1.69
1.65							
17.28 CFS	1.63	1.62	1.61	1.60	1.57	1.54	1.51
1.50							
17.76 CFS	1.49	1.47	1.45	1.43	1.42	1.41	1.39
1.37							
18.24 CFS	1.35	1.34	1.33	1.31	1.29	1.29	1.30
1.31							
18.72 CFS	1.30	1.29	1.29	1.29	1.28	1.27	1.26
1.25							
19.20 CFS	1.25	1.25	1.25	1.25	1.25	1.25	1.24
1.23							
19.68 CFS	1.22	1.21	1.21	1.20	1.19	1.19	1.20
1.20							
20.16 CFS	1.20	1.19	1.18	1.17	1.16	1.14	1.14
1.14							
20.64 CFS	1.15	1.15	1.14	1.13	1.14	1.13	1.12
1.10							
21.12 CFS	1.10	1.09	1.09	1.09	1.09	1.09	1.09
1.09							
21.60 CFS	1.08	1.06	1.06	1.06	1.05	1.05	1.05
1.05							
22.08 CFS	1.04	1.03	1.02	1.02	1.01	1.01	1.01
1.01							
22.56 CFS	1.01	.99	.98	.98	.98	.97	.95
.95							
23.04 CFS	.96	.97	.96	.95	.94	.94	.93
.93							
23.52 CFS	.91	.90	.90	.91	.91	.91	.89
.88							

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24.00 CFS .90 .89 .77 .53 .32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.96 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.64 715.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.64 WATERSHED INCHES; 2365 CFS-HRS; 195.5 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.75 700.7 273.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.64 WATERSHED INCHES; 2364 CFS-HRS; 195.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.24 28.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.89 WATERSHED INCHES; 32 CFS-HRS; 2.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.74 708.8 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02  
SQ.MI.

HRS	5.16	5.64	6.12	6.60	7.08	7.56	8.01
CFS	.49	.54	.59	.64	.69	.75	.80
	.86						
CFS	.92	.98	1.04	1.11	1.17	1.24	1.31
	1.38						
CFS	1.45	1.52	1.60	1.68	1.76	1.86	1.96
	2.08						
CFS	2.20	2.34	2.49	2.65	2.82	3.00	3.19
	3.39						
CFS	3.60	3.82	4.06	4.30	4.56	4.82	5.10
	5.38						
CFS	5.68	5.98	6.29	6.62	6.95	7.29	7.64
	8.01						

8.04 CFS	8.38	8.76	9.16	9.56	9.98	10.40	10.84
11.28							
8.52 CFS	11.74	12.20	12.68	13.16	13.66	14.17	14.69
15.22							
9.00 CFS	15.75	16.31	16.89	17.49	18.10	18.74	19.41
20.11							
9.48 CFS	20.85	21.62	22.43	23.29	24.19	25.14	26.15
27.21							
9.96 CFS	28.32	29.48	30.69	31.95	33.28	34.66	36.09
37.56							

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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10.44 CFS	39.08	40.66	42.31	44.04	45.87	47.84	49.98
52.29							
10.92 CFS	54.80	57.52	60.47	63.67	67.19	71.09	75.43
80.25							
11.40 CFS	86	91	98	105	112	121	132
146							
11.88 CFS	161	181	207	250	308	377	448
514							
12.36 CFS	565	604	635	659	681	700	708
707							
12.84 CFS	700	690	678	665	649	628	603
576							
13.32 CFS	551	528	508	488	469	452	437
424							
13.80 CFS	414	404	397	390	383	376	370
363							
14.28 CFS	356	348	341	333	324	316	308
300							
14.76 CFS	291	282	272	262	252	241	230
220							
15.24 CFS	210	201	193	186	179	172	165
159							
15.72 CFS	153	148	144	140	136	133	130
127							
16.20 CFS	125	122	120	118	116	114	112
111							
16.68 CFS	109	108	106	105	104	103	101
100							
17.16 CFS	98.85	97.66	96.52	95.43	94.39	93.39	92.40
91.42							
17.64 CFS	90.43	89.46	88.51	87.58	86.65	85.73	84.82
83.92							
18.12 CFS	83.04	82.16	81.28	80.41	79.57	78.73	77.90
77.09							
18.60 CFS	76.33	75.60	74.90	74.21	73.55	72.91	72.29
71.69							
19.08 CFS	71.10	70.54	70.00	69.49	69.01	68.56	68.13
67.72							
19.56 CFS	67.33	66.94	66.55	66.18	65.82	65.48	65.13
64.79							
20.04 CFS	64.48	64.19	63.91	63.63	63.34	63.05	62.76
62.45							
20.52 CFS	62.14	61.86	61.59	61.34	61.07	60.81	60.55
60.29							

21.00	CFS	60.02	59.75	59.47	59.19	58.92	58.66	58.41
58.17								
21.48	CFS	57.93	57.69	57.45	57.19	56.93	56.68	56.43
56.19								
21.96	CFS	55.96	55.73	55.51	55.27	55.02	54.77	54.53
54.29								
22.44	CFS	54.06	53.84	53.61	53.38	53.14	52.89	52.64
52.39								
22.92	CFS	52.14	51.88	51.63	51.41	51.18	50.95	50.70
50.45								
23.40	CFS	50.20	49.95	49.69	49.42	49.15	48.90	48.67
48.44								
23.88	CFS	48.19	47.93	47.69	47.46	47.11	46.48	45.53
44.39								
24.36	CFS	43.15	41.90	40.64	39.38	38.09	36.76	35.36
33.92								
24.84	CFS	32.44	30.94	29.46	28.00	26.58	25.24	23.96
22.77								
25.32	CFS	21.67	20.65	19.71	18.86			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.63 WATERSHED INCHES; 2396 CFS-HRS; 198.0 ACRE-FEET.

OPERATION DIVERT XSECTION 162  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.48	621.0 *	(DIVERT)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2357 CFS-HRS; 194.8 ACRE-FEET.

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.74	87.8	176.01

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .06 WATERSHED INCHES; 39 CFS-HRS; 3.2 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 73, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 20.00 FEET BELOW ASSUMED CREST ELEVATION AT 260.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 73

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
 AT STRUCTURE 73  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.20	.0	243.88
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-		
FEET.		

OPERATION ADDHYD XSECTION 163

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.11	623.3	(NULL)

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25							
	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = 1.02			
HRS								
SQ.MI.								
5.16 CFS	.49	.54	.59	.64	.69	.75	.80	
.86								
5.64 CFS	.92	.98	1.04	1.11	1.17	1.24	1.31	
1.38								
6.12 CFS	1.45	1.52	1.60	1.68	1.76	1.86	1.96	
2.08								
6.60 CFS	2.20	2.34	2.49	2.65	2.82	3.00	3.19	
3.39								
7.08 CFS	3.60	3.82	4.06	4.30	4.56	4.82	5.10	
5.38								
7.56 CFS	5.68	5.98	6.29	6.62	6.95	7.29	7.64	
8.01								
8.04 CFS	8.38	8.76	9.16	9.56	9.98	10.40	10.84	
11.28								
8.52 CFS	11.74	12.20	12.68	13.16	13.66	14.17	14.69	
15.22								
9.00 CFS	15.75	16.31	16.89	17.49	18.10	18.74	19.41	
20.11								
9.48 CFS	20.85	21.62	22.43	23.29	24.19	25.14	26.15	
27.21								
9.96 CFS	28.32	29.48	30.69	31.95	33.28	34.66	36.09	
37.56								
10.44 CFS	39.08	40.66	42.31	44.04	45.87	47.84	49.98	
52.29								
10.92 CFS	54.80	57.52	60.47	63.67	67.19	71.09	75.43	
80.25								
11.40 CFS	86	91	98	105	112	121	132	
146								
11.88 CFS	161	181	207	250	308	377	448	
514								
12.36 CFS	565	604	621	621	621	621	621	
621								
12.84 CFS	621	621	621	621	621	621	603	
576								

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13.32 CFS	551	528	508	488	469	452	437
424							
13.80 CFS	414	404	397	390	383	376	370
363							
14.28 CFS	356	348	341	333	324	316	308
300							
14.76 CFS	291	282	272	262	252	241	231
220							
15.24 CFS	210	201	193	186	179	172	165
159							
15.72 CFS	153	148	144	140	136	133	130
127							
16.20 CFS	125	122	120	118	116	114	112
111							
16.68 CFS	109	108	106	105	104	103	101
100							
17.16 CFS	98.85	97.67	96.52	95.44	94.40	93.40	92.41
91.42							
17.64 CFS	90.44	89.47	88.52	87.58	86.66	85.73	84.82
83.93							
18.12 CFS	83.05	82.17	81.29	80.42	79.57	78.74	77.91
77.10							
18.60 CFS	76.34	75.61	74.91	74.22	73.56	72.92	72.30
71.70							
19.08 CFS	71.11	70.54	70.01	69.50	69.02	68.56	68.13
67.73							
19.56 CFS	67.34	66.95	66.56	66.19	65.83	65.48	65.14
64.80							
20.04 CFS	64.49	64.20	63.92	63.64	63.35	63.06	62.77
62.46							
20.52 CFS	62.15	61.86	61.60	61.34	61.08	60.82	60.56
60.30							
21.00 CFS	60.03	59.75	59.47	59.20	58.93	58.67	58.42
58.17							
21.48 CFS	57.93	57.70	57.46	57.20	56.94	56.69	56.44
56.20							
21.96 CFS	55.96	55.74	55.51	55.27	55.03	54.78	54.53
54.30							
22.44 CFS	54.07	53.84	53.62	53.39	53.14	52.89	52.65
52.40							
22.92 CFS	52.14	51.88	51.64	51.41	51.19	50.95	50.71
50.46							
23.40 CFS	50.20	49.95	49.70	49.43	49.16	48.91	48.68
48.45							
23.88 CFS	48.20	47.94	47.70	47.47	47.12	46.49	45.54
44.39							
24.36 CFS	43.16	41.91	40.65	39.39	38.10	36.76	35.37
33.93							
24.84 CFS	32.45	30.95	29.46	28.00	26.59	25.24	23.97
22.78							
25.32 CFS	21.67	20.66	19.72	18.86			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.57 WATERSHED INCHES; 2357 CFS-HRS; 194.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION(FEET)  
 13.23                                  621.7                                  249.91

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.57 WATERSHED INCHES;          2354 CFS-HRS;          194.5 ACRE-  
 FEET.

OPERATION RUNOFF      XSECTION      64

PEAK TIME(HRS)                                  PEAK DISCHARGE(CFS)                                  PEAK  
 ELEVATION(FEET)  
 12.36    20.7    (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.38 WATERSHED INCHES;          31 CFS-HRS;          2.6 ACRE-  
 FEET.

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OPERATION RESVOR      STRUCTURE      61

PEAK TIME(HRS)                                  PEAK DISCHARGE(CFS)                                  PEAK  
 ELEVATION(FEET)  
 12.62    14.5    334.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.38 WATERSHED INCHES;          31 CFS-HRS;          2.6 ACRE-  
 FEET.

OPERATION REACH      XSECTION      65

PEAK TIME(HRS)                                  PEAK DISCHARGE(CFS)                                  PEAK  
 ELEVATION(FEET)  
 12.72    14.1    300.79

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.38 WATERSHED INCHES;          31 CFS-HRS;          2.6 ACRE-  
 FEET.

OPERATION RUNOFF      XSECTION      66

PEAK TIME(HRS)                                  PEAK DISCHARGE(CFS)                                  PEAK  
 ELEVATION(FEET)  
 12.20    83.6    (RUNOFF)  
 20.10    2.1    (RUNOFF)  
 24.03    1.6    (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES;          87 CFS-HRS;          7.2 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE



TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.47	36.9	295.13
20.12	2.1	287.57
24.04	1.6	287.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.94 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 67

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.60	49.3	(NULL)
23.11	2.1	(NULL)
23.76	2.0	(NULL)
24.04	2.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.21 WATERSHED INCHES; 118 CFS-HRS; 9.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	159.6	(RUNOFF)
21.97	3.2	(RUNOFF)
24.02	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.22 WATERSHED INCHES; 162 CFS-HRS; 13.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	181.3	(NULL)
20.10	6.3	(NULL)

20.65	6.1	(NULL)
21.97	5.5	(NULL)
23.10	5.1	(NULL)
24.03	4.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.21 WATERSHED INCHES; 279 CFS-HRS; 23.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	128.1	248.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.22 WATERSHED INCHES; 279 CFS-HRS; 23.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	36.6	(RUNOFF)
15.83	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.92 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	15.7	266.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.90 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	15.5	247.89

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.91 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	176.2	(RUNOFF)
15.85	7.7	(RUNOFF)
17.34	6.0	(RUNOFF)
21.46	4.1	(RUNOFF)
24.01	3.4	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 25  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .11 SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	.11	SQ.MI.
10.26 CFS	.46	.59	.72	.86	1.01	1.18	1.37				
1.61											
10.74 CFS	1.87	2.18	2.52	2.89	3.28	3.72	4.25				
4.89											
11.22 CFS	5.63	6.43	7.32	8.32	9.38	10.53	12.63				
15.99											
11.70 CFS	19	23	29	37	49	70	105				
153											
12.18 CFS	176	154	121	96	79	67	59				
52											
12.66 CFS	44.19	38.62	35.27	32.88	30.92	29.20	27.50				
25.81											
13.14 CFS	24.15	22.77	21.67	20.66	19.69	18.72	17.74				
16.80											
13.62 CFS	15.90	15.17	14.62	14.19	13.85	13.59	13.38				
13.20											
14.10 CFS	12.97	12.70	12.40	12.13	11.91	11.72	11.52				
11.27											
14.58 CFS	10.98	10.67	10.41	10.19	10.00	9.78	9.52				
9.27											
15.06 CFS	9.04	8.77	8.50	8.29	8.15	8.09	8.06				
8.05											
15.54 CFS	8.04	7.98	7.87	7.73	7.66	7.68	7.66				
7.58											
16.02 CFS	7.45	7.34	7.28	7.25	7.22	7.13	7.04				
6.98											

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16.50 CFS	6.90	6.79	6.73	6.69	6.67	6.60	6.51				
6.44											
16.98 CFS	6.41	6.39	6.32	6.20	6.05	5.98	5.99				
5.98											
17.46 CFS	5.89	5.75	5.63	5.57	5.54	5.50	5.41				
5.32											
17.94 CFS	5.27	5.24	5.21	5.12	5.03	4.97	4.95				
4.91											
18.42 CFS	4.83	4.78	4.82	4.88	4.88	4.82	4.78				
4.82											
18.90 CFS	4.81	4.74	4.69	4.67	4.66	4.65	4.65				
4.65											
19.38 CFS	4.66	4.66	4.66	4.64	4.56	4.51	4.54				
4.53											

19.86 CFS	4.47	4.42	4.44	4.51	4.52	4.46	4.42
4.40							
20.34 CFS	4.37	4.30	4.23	4.25	4.31	4.33	4.29
4.22							
20.82 CFS	4.24	4.26	4.21	4.15	4.11	4.10	4.09
4.09							
21.30 CFS	4.09	4.09	4.09	4.09	4.08	4.01	3.94
3.96							
21.78 CFS	3.97	3.93	3.93	3.97	3.94	3.87	3.83
3.81							
22.26 CFS	3.80	3.80	3.80	3.80	3.80	3.77	3.69
3.64							
22.74 CFS	3.67	3.66	3.59	3.54	3.57	3.64	3.65
3.59							
23.22 CFS	3.54	3.52	3.51	3.50	3.47	3.39	3.34
3.38							
23.70 CFS	3.44	3.44	3.37	3.29	3.27	3.44	3.37
2.46							
24.18 CFS	1.33	.64	.31				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.44 WATERSHED INCHES; 173 CFS-HRS; 14.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.93	647.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.46 WATERSHED INCHES; 2527 CFS-HRS; 208.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.42	143.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .15 SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	.15
8.40 CFS	.50	.54	.58	.63	.67	.73	.78			
.84										
8.88 CFS	.90	.95	1.02	1.09	1.16	1.24	1.33			
1.42										
9.36 CFS	1.53	1.64	1.77	1.90	2.04	2.18	2.34			
2.50										
9.84 CFS	2.68	2.87	3.05	3.25	3.45	3.67	3.89			
4.13										
10.32 CFS	4.37	4.62	4.87	5.13	5.41	5.70	6.03			
6.40										
10.80 CFS	6.84	7.33	7.88	8.50	9.14	9.80	10.54			
11.38										
11.28 CFS	12.34	13.40	14.58	15.87	17.25	18.71	20.47			
22.82										
11.76 CFS	25.79	29.20	33.18	38.24	44.97	54.51	68.57			
91.09										
12.24 CFS	118	134	141	144	141	137	131			
125										
12.72 CFS	118	110	102	94	87	82	76			

72								
13.20	CFS	67.51	63.78	60.43	57.42	54.75	52.38	50.28
48.38								
13.68	CFS	46.66	45.10	43.70	42.46	41.34	40.35	39.46
38.65								
14.16	CFS	37.91	37.21	36.48	35.74	34.99	34.26	33.54
32.82								

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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14.64	CFS	32.07	31.29	30.49	29.60	28.60	27.55	26.34
25.01								
15.12	CFS	23.68	22.31	20.99	19.87	18.93	18.14	17.49
16.94								
15.60	CFS	16.49	16.10	15.70	15.30	14.92	14.56	14.23
13.92								
16.08	CFS	13.62	13.32	13.04	12.80	12.58	12.40	12.22
12.05								
16.56	CFS	11.89	11.73	11.57	11.42	11.29	11.17	11.04
10.90								
17.04	CFS	10.72	10.56	10.40	10.25	10.09	9.93	9.81
9.70								
17.52	CFS	9.60	9.47	9.34	9.21	9.09	8.99	8.88
8.76								
18.00	CFS	8.65	8.55	8.46	8.36	8.26	8.16	8.06
7.98								
18.48	CFS	7.89	7.79	7.73	7.68	7.66	7.62	7.58
7.55								
18.96	CFS	7.52	7.49	7.45	7.40	7.36	7.33	7.30
7.28								
19.44	CFS	7.26	7.24	7.23	7.21	7.18	7.14	7.11
7.09								
19.92	CFS	7.05	7.01	6.97	6.96	6.96	6.95	6.92
6.89								
20.40	CFS	6.86	6.82	6.77	6.72	6.69	6.68	6.67
6.64								
20.88	CFS	6.62	6.60	6.58	6.54	6.50	6.46	6.43
6.40								
21.36	CFS	6.37	6.35	6.34	6.32	6.31	6.29	6.25
6.21								
21.84	CFS	6.18	6.16	6.13	6.12	6.10	6.08	6.04
6.00								
22.32	CFS	5.97	5.94	5.91	5.89	5.88	5.86	5.82
5.78								
22.80	CFS	5.75	5.72	5.68	5.64	5.60	5.59	5.58
5.57								
23.28	CFS	5.54	5.51	5.48	5.46	5.43	5.39	5.34
5.30								
23.76	CFS	5.29	5.28	5.26	5.22	5.18	5.18	5.18
4.98								
24.24	CFS	4.51	3.89	3.26	2.69	2.21	1.80	1.46
1.18								
24.72	CFS	.95	.76	.61	.48			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.27 WATERSHED INCHES; 309 CFS-HRS; 25.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.69 758.6 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	1.28
5.34 CFS	.47	.51	.56	.61	.67	.72	.78			
5.82 CFS	.90	.96	1.03	1.10	1.17	1.24	1.31			
6.30 CFS	1.46	1.53	1.62	1.70	1.79	1.89	2.01			
6.78 CFS	2.26	2.40	2.55	2.72	2.89	3.07	3.27			
7.26 CFS	3.70	3.93	4.17	4.42	4.68	4.96	5.24			
7.74 CFS	5.83	6.15	6.47	6.80	7.14	7.50	7.86			
8.22 CFS	8.63	9.03	9.45	9.88	10.33	10.79	11.27			
8.70 CFS	12.26	12.77	13.30	13.84	14.39	14.96	15.54			
9.18 CFS	16.75	17.40	18.06	18.75	19.48	20.24	21.03			
9.66 CFS	22.73	23.64	24.60	25.62	26.69	27.83	29.06			
10.14 CFS	31.76	33.23	34.78	36.39	38.06	39.81	41.62			
10.62 CFS	45.51	47.63	49.89	52.34	54.99	57.86	60.97			
11.10 CFS	68	72	76	81	87	93	99			
11.58 CFS	115	126	138	151	168	189	217			
12.06 CFS	317	399	474	519	554	597	644			
12.54 CFS	725	749	758	758	754	749	742			
13.02 CFS	729	722	716	711	706	695	676			

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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13.50 CFS	629	605	582	560	540	521	504			
13.98 CFS	476	464	454	445	437	429	421			
14.46 CFS	405	396	388	379	370	361	351			
14.94 CFS	332	321	310	299	287	275	264			
15.42 CFS	242	232	223	215	207	199	192			

185							
15.90 CFS	179	174	168	164	159	156	152
149							
16.38 CFS	146	143	140	138	136	134	132
130							
16.86 CFS	128	126	125	123	121	120	118
117							
17.34 CFS	115	114	113	111	110	109	108
107							
17.82 CFS	105	104	103	102	101	100	99
98							
18.30 CFS	96.60	95.58	94.53	93.53	92.62	91.76	90.90
90.00							
18.78 CFS	89.16	88.41	87.65	86.86	86.10	85.38	84.70
84.04							
19.26 CFS	83.41	82.81	82.24	81.70	81.20	80.69	80.15
79.66							
19.74 CFS	79.24	78.80	78.32	77.86	77.47	77.15	76.80
76.41							
20.22 CFS	76.03	75.68	75.34	74.95	74.54	74.21	73.93
73.63							
20.70 CFS	73.28	72.91	72.63	72.35	72.02	71.67	71.34
71.02							
21.18 CFS	70.70	70.39	70.09	69.79	69.51	69.23	68.95
68.63							
21.66 CFS	68.29	68.02	67.75	67.43	67.15	66.91	66.62
66.30							
22.14 CFS	65.99	65.71	65.43	65.15	64.87	64.61	64.34
64.07							
22.62 CFS	63.74	63.43	63.18	62.90	62.57	62.23	61.97
61.75							
23.10 CFS	61.49	61.18	60.88	60.60	60.32	60.04	59.75
59.39							
23.58 CFS	59.05	58.79	58.55	58.28	57.94	57.59	57.30
57.18							
24.06 CFS	56.86	55.70	54.13	52.69	51.32	49.89	48.41
46.88							
24.54 CFS	45.36	43.84	42.36	40.89	39.42	37.95	36.44
34.93							
25.02 CFS	33.41	31.88	30.37	28.89	27.45	26.08	24.77
23.53							
25.50 CFS	22.39	21.32					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.44 WATERSHED INCHES; 2836 CFS-HRS; 234.4 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 176  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	691.0 *	(DIVERT)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2802 CFS-HRS; 231.6 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.69 67.6 175.80  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .04 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 72, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 20.00 FEET BELOW ASSUMED CREST ELEVATION AT 240.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 72

\*\*\* MESSAGE - STRUCTURE 72, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .04 WATERSHED INCHES; 398 CFS-HRS; 2.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 177

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	691.0 *	(NULL)
	* FIRST POINT OF FLAT PEAK	

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25							
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28							
HRS								
SQ.MI.								
5.34 CFS	.47	.51	.56	.61	.67	.72	.78	
.83								
5.82 CFS	.90	.96	1.03	1.10	1.17	1.24	1.31	
1.38								
6.30 CFS	1.46	1.53	1.62	1.70	1.79	1.89	2.01	
2.13								
6.78 CFS	2.26	2.40	2.55	2.72	2.89	3.07	3.27	
3.48								
7.26 CFS	3.70	3.93	4.17	4.42	4.68	4.96	5.24	
5.53								
7.74 CFS	5.83	6.15	6.47	6.80	7.14	7.50	7.86	
8.24								
8.22 CFS	8.63	9.03	9.45	9.88	10.33	10.79	11.27	
11.76								
8.70 CFS	12.26	12.77	13.30	13.84	14.39	14.96	15.54	
16.14								
9.18 CFS	16.75	17.40	18.06	18.75	19.48	20.24	21.03	
21.86								
9.66 CFS	22.73	23.64	24.60	25.62	26.69	27.83	29.06	
30.37								
10.14 CFS	31.76	33.23	34.78	36.39	38.06	39.81	41.62	



43.51								
10.62 CFS	45.51	47.63	49.89	52.34	54.99	57.86	60.97	
64.29								
11.10 CFS	68	72	76	81	87	93	99	
106								
11.58 CFS	115	126	138	151	168	189	217	
258								
12.06 CFS	317	399	474	519	554	597	644	
687								
12.54 CFS	691	691	691	691	691	691	691	
691								
13.02 CFS	691	691	691	691	691	691	676	
653								
13.50 CFS	629	605	582	560	540	521	504	
489								
13.98 CFS	476	464	454	445	437	429	421	
413								
14.46 CFS	405	396	388	379	370	361	351	
342								
14.94 CFS	332	321	310	299	287	275	264	
252								
15.42 CFS	242	232	223	215	207	199	192	
185								
15.90 CFS	179	174	168	164	159	156	152	
149								

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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16.38 CFS	146	143	140	138	136	134	132	
130								
16.86 CFS	128	126	125	123	121	120	118	
117								
17.34 CFS	115	114	113	111	110	109	108	
107								
17.82 CFS	105	104	103	102	101	100	99	
98								
18.30 CFS	96.60	95.58	94.53	93.53	92.62	91.76	90.90	
90.00								
18.78 CFS	89.16	88.41	87.65	86.86	86.10	85.38	84.70	
84.04								
19.26 CFS	83.41	82.81	82.24	81.70	81.20	80.69	80.15	
79.66								
19.74 CFS	79.24	78.80	78.32	77.86	77.47	77.15	76.80	
76.41								
20.22 CFS	76.03	75.68	75.34	74.95	74.54	74.21	73.93	
73.63								
20.70 CFS	73.28	72.91	72.63	72.35	72.02	71.67	71.34	
71.02								
21.18 CFS	70.70	70.39	70.09	69.79	69.51	69.23	68.95	
68.63								
21.66 CFS	68.29	68.02	67.75	67.43	67.15	66.91	66.62	
66.30								
22.14 CFS	65.99	65.71	65.43	65.15	64.87	64.61	64.34	
64.07								
22.62 CFS	63.74	63.43	63.18	62.90	62.57	62.23	61.97	
61.75								
23.10 CFS	61.49	61.18	60.88	60.60	60.32	60.04	59.75	

59.39								
23.58	CFS	59.05	58.79	58.55	58.28	57.94	57.59	57.30
57.18								
24.06	CFS	56.86	55.70	54.13	52.69	51.32	49.89	48.41
46.88								
24.54	CFS	45.36	43.84	42.36	40.89	39.42	37.95	36.44
34.93								
25.02	CFS	33.41	31.88	30.37	28.89	27.45	26.08	24.77
23.53								
25.50	CFS	22.39	21.32					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.39 WATERSHED INCHES; 2802 CFS-HRS; 231.6 ACRE-FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.78	691.0 *	229.78

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.39 WATERSHED INCHES; 2800 CFS-HRS; 231.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	103.0	(RUNOFF)
15.85	4.0	(RUNOFF)
17.34	3.1	(RUNOFF)
21.96	2.0	(RUNOFF)
24.01	1.8	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05 SQ.MI.

HRS	9.54	10.02	10.50	10.98	11.46	11.94	12.42
CFS	.89	1.55	3.05	6.71	11.46	11.94	12.42
	.47	.96	1.65	3.33	7.36	31.93	42.31
	.52	1.04	1.76	3.62	8.07	44.76	35.81
	.58	1.13	1.91	3.99	9.49	64.75	31.74
	.64	1.21	2.09	4.43	11.74	92.26	27.58
	.70	1.29	2.30	4.94	13.93	102.86	23.38
	.77	1.37	2.54	5.49	16.18	86.40	20.48
	.83	1.45	2.78	6.07	19.66	66.13	18.73

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11.46	CFS	7.36	8.07	9.49	11.74	13.93	16.18	19.66
24.66								
11.94	CFS	31.93	44.76	64.75	92.26	102.86	86.40	66.13
52.24								
12.42	CFS	42.31	35.81	31.74	27.58	23.38	20.48	18.73

17.47								
12.90 CFS	16.43	15.50	14.58	13.66	12.77	12.03	11.45	
10.91								
13.38 CFS	10.38	9.86	9.34	8.83	8.36	7.97	7.69	
7.47								
13.86 CFS	7.28	7.15	7.04	6.94	6.82	6.67	6.51	
6.36								
14.34 CFS	6.24	6.14	6.04	5.90	5.74	5.58	5.44	
5.33								
14.82 CFS	5.23	5.11	4.97	4.84	4.71	4.57	4.43	
4.32								
15.30 CFS	4.25	4.22	4.21	4.20	4.20	4.16	4.10	
4.02								
15.78 CFS	3.99	4.00	3.99	3.94	3.87	3.82	3.79	
3.77								
16.26 CFS	3.75	3.71	3.66	3.63	3.58	3.53	3.49	
3.48								
16.74 CFS	3.46	3.43	3.37	3.34	3.33	3.31	3.27	
3.21								
17.22 CFS	3.13	3.10	3.11	3.10	3.05	2.97	2.91	
2.88								
17.70 CFS	2.87	2.85	2.80	2.75	2.72	2.71	2.69	
2.64								
18.18 CFS	2.60	2.57	2.56	2.54	2.49	2.47	2.49	
2.52								
18.66 CFS	2.52	2.49	2.47	2.49	2.48	2.45	2.42	
2.41								
19.14 CFS	2.40	2.40	2.40	2.40	2.40	2.40	2.40	
2.39								
19.62 CFS	2.35	2.32	2.34	2.34	2.30	2.27	2.29	
2.33								
20.10 CFS	2.33	2.30	2.27	2.26	2.25	2.21	2.17	
2.19								
20.58 CFS	2.22	2.23	2.21	2.17	2.19	2.19	2.16	
2.13								
21.06 CFS	2.11	2.11	2.10	2.10	2.10	2.10	2.10	
2.10								
21.54 CFS	2.10	2.06	2.02	2.03	2.04	2.02	2.02	
2.04								
22.02 CFS	2.02	1.99	1.96	1.96	1.95	1.95	1.95	
1.95								
22.50 CFS	1.95	1.94	1.89	1.87	1.89	1.88	1.84	
1.82								
22.98 CFS	1.83	1.87	1.87	1.84	1.81	1.80	1.80	
1.79								
23.46 CFS	1.78	1.73	1.71	1.74	1.77	1.77	1.73	
1.68								
23.94 CFS	1.68	1.77	1.73	1.21	.62	.29		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 98 CFS-HRS; 8.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET)  
 12.60 717.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.38 WATERSHED INCHES; 2899 CFS-HRS; 239.5 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 80.  
 \*\*\*

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	717.8	214.35

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.38 WATERSHED INCHES; 2899 CFS-HRS; 239.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	57.5	(RUNOFF)
15.85	2.3	(RUNOFF)
23.07	1.1	(RUNOFF)
23.73	1.0	(RUNOFF)
24.01	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.69 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.58	733.5	178.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.36 WATERSHED INCHES; 2953 CFS-HRS; 244.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	114.2	(RUNOFF)
15.84	4.1	(RUNOFF)
17.34	3.2	(RUNOFF)
22.47	2.0	(RUNOFF)
24.00	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.13 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-

FEET.

OPERATION RUNOFF XSECTION 84

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	120.6	(RUNOFF)
20.68	3.2	(RUNOFF)
24.02	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.05 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-FEET.

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION  
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OPERATION DIVERT XSECTION 184  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	118.3	(DIVERT)
20.68	3.2	(DIVERT)
24.02	2.5	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
142 CFS-HRS; 11.8 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	2.3	175.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 81, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 200.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 81

\*\*\* MESSAGE - STRUCTURE 81, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 277 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 185

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	118.3	(NULL)
20.68	3.2	(NULL)
24.02	2.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.04 WATERSHED INCHES; 142 CFS-HRS; 11.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 186

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TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION  
04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	56.8	(RUNOFF)
24.01	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.29 WATERSHED INCHES; 68 CFS-HRS; 5.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 187

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	175.1	(NULL)
20.13	5.1	(NULL)
23.13	4.1	(NULL)
24.01	3.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.75 WATERSHED INCHES; 211 CFS-HRS; 17.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 85

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	272.7	(NULL)
18.83	8.1	(NULL)
20.82	7.1	(NULL)
22.72	6.2	(NULL)
23.07	6.1	(NULL)
24.00	5.7	(NULL)

HRS HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .17

SQ.MI.								
8.94	CFS	.44	.51	.59	.66	.75	.84	.94
1.05								
9.42	CFS	1.17	1.28	1.40	1.53	1.67	1.83	1.98
2.14								
9.90	CFS	2.30	2.46	2.64	2.84	3.04	3.24	3.44
3.66								
10.38	CFS	3.89	4.15	4.44	4.77	5.18	5.67	6.24
6.88								
10.86	CFS	7.58	8.34	9.15	10.02	11.06	12.29	13.69
15.24								
11.34	CFS	16.91	18.76	20.69	22.83	26.66	32.17	37.85
44.54								
11.82	CFS	54	67	86	118	168	236	272
258								
12.30	CFS	231	197	164	140	122	105	91
80								
12.78	CFS	70.91	64.25	59.16	54.94	51.15	47.63	44.44
41.74								
13.26	CFS	39.44	37.38	35.49	33.70	31.94	30.25	28.65
27.27								
13.74	CFS	26.13	25.19	24.43	23.83	23.34	22.92	22.49
22.03								
14.22	CFS	21.54	21.07	20.66	20.29	19.92	19.50	19.04
18.55								
14.70	CFS	18.10	17.69	17.32	16.93	16.51	16.10	15.69
15.24								
15.18	CFS	14.80	14.41	14.13	13.93	13.81	13.74	13.68
13.58								
15.66	CFS	13.42	13.23	13.11	13.07	13.00	12.88	12.71
12.55								
16.14	CFS	12.43	12.34	12.26	12.13	12.01	11.90	11.75
11.59								
16.62	CFS	11.48	11.39	11.32	11.21	11.08	10.97	10.90
10.83								
17.10	CFS	10.72	10.56	10.36	10.23	10.18	10.11	9.98
9.81								

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TR20 ----- SCS

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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17.58	CFS	9.64	9.51	9.42	9.33	9.20	9.07	8.97
8.90								
18.06	CFS	8.82	8.69	8.57	8.47	8.40	8.32	8.20
8.13								
18.54	CFS	8.14	8.18	8.18	8.12	8.09	8.11	8.07
8.00								
19.02	CFS	7.94	7.89	7.86	7.84	7.83	7.82	7.82
7.82								
19.50	CFS	7.82	7.78	7.69	7.64	7.64	7.60	7.53
7.47								
19.98	CFS	7.48	7.54	7.54	7.50	7.45	7.41	7.36
7.26								
20.46	CFS	7.17	7.17	7.20	7.23	7.18	7.13	7.14
7.13								
20.94	CFS	7.06	7.00	6.94	6.90	6.88	6.86	6.85
6.85								
21.42	CFS	6.85	6.85	6.83	6.75	6.67	6.67	6.65

6.59								
21.90 CFS	6.60	6.63	6.58	6.52	6.46	6.42	6.39	
6.37								
22.38 CFS	6.36	6.35	6.35	6.31	6.22	6.16	6.17	
6.12								
22.86 CFS	6.05	5.99	5.99	6.05	6.05	6.01	5.96	
5.92								
23.34 CFS	5.88	5.87	5.82	5.72	5.66	5.68	5.72	
5.72								
23.82 CFS	5.65	5.56	5.53	5.70	5.56	4.47	3.20	
2.15								
24.30 CFS	1.34	.82	.51	.32				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.87 WATERSHED INCHES; 315 CFS-HRS; 26.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	858.7	(NULL)
12.54	854.2	(NULL)
23.98	65.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.31 WATERSHED INCHES; 3268 CFS-HRS; 270.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.13	53.1	(RUNOFF)
17.34	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.62 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.24	889.2	(NULL)
12.54	865.9	(NULL)
23.98	66.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55  
 SQ.MI.  
 5.28 CFS .49 .54 .59 .64 .70 .76 .82  
 .88

1  
 TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
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5.76 CFS	.94	1.00	1.07	1.14	1.22	1.30	1.37
1.45							
6.24 CFS	1.53	1.61	1.69	1.78	1.87	1.97	2.07
2.18							
6.72 CFS	2.29	2.43	2.58	2.72	2.88	3.06	3.25
3.45							
7.20 CFS	3.65	3.87	4.10	4.34	4.59	4.86	5.13
5.41							
7.68 CFS	5.70	6.01	6.33	6.65	6.99	7.34	7.69
8.06							
8.16 CFS	8.44	8.81	9.23	9.66	10.11	10.57	11.06
11.58							
8.64 CFS	12.12	12.68	13.25	13.86	14.47	15.11	15.80
16.50							
9.12 CFS	17.20	17.94	18.73	19.56	20.42	21.30	22.23
23.20							
9.60 CFS	24.24	25.34	26.50	27.70	28.95	30.25	31.61
33.09							
10.08 CFS	34.68	36.36	38.12	39.94	41.86	43.88	46.00
48.25							
10.56 CFS	50.65	53.28	56.18	59.31	62.73	66.40	70.37
74.61							
11.04 CFS	79	84	90	97	104	112	120
129							
11.52 CFS	139	154	173	193	217	247	287
342							
12.00 CFS	430	562	745	870	889	871	847
837							
12.48 CFS	847	866	848	826	810	798	789
782							
12.96 CFS	776	771	765	760	756	753	750
747							
13.44 CFS	730	705	679	653	628	604	582
561							
13.92 CFS	543	527	514	501	491	481	471
463							
14.40 CFS	454	445	437	428	418	409	399
389							
14.88 CFS	379	369	358	347	336	323	311
299							
15.36 CFS	287	276	265	255	246	237	229
221							
15.84 CFS	214	207	200	194	189	184	180
176							
16.32 CFS	172	168	165	162	159	156	154
152							
16.80 CFS	150	148	146	144	142	140	138
137							
17.28 CFS	135	133	132	130	128	127	125
124							
17.76 CFS	123	121	120	119	117	116	115
114							
18.24 CFS	112	111	110	109	108	107	106
105							
18.72 CFS	104	103	102	101	101	100	99
98							
19.20 CFS	97.30	96.63	95.99	95.38	94.81	94.27	93.70
93.00							
19.68 CFS	92.39	91.94	91.44	90.85	90.28	89.86	89.61
89.27							
20.16 CFS	88.81	88.33	87.89	87.47	86.94	86.39	86.03
85.80							

20.64 CFS	85.55	85.14	84.67	84.37	84.07	83.66	83.20
82.77							
21.12 CFS	82.39	82.03	81.70	81.38	81.07	80.78	80.49
80.18							
21.60 CFS	79.74	79.27	78.97	78.67	78.29	78.01	77.80
77.45							
22.08 CFS	77.03	76.62	76.26	75.93	75.63	75.34	75.06
74.79							
22.56 CFS	74.45	73.98	73.57	73.32	72.99	72.56	72.13
71.84							
23.04 CFS	71.71	71.48	71.11	70.71	70.34	70.02	69.72
69.36							
23.52 CFS	68.86	68.42	68.16	67.99	67.74	67.31	66.80
66.43							
24.00 CFS	66.53	66.09	63.52	60.04	56.90	54.39	52.37
50.59							
24.48 CFS	48.89	47.24	45.64	44.07	42.56	41.07	39.59
38.10							
24.96 CFS	36.60	35.09	33.56	32.04	30.53	29.04	27.60
26.22							
25.44 CFS	24.90	23.66	22.51				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.32 WATERSHED INCHES; 3315 CFS-HRS; 274.0 ACRE-FEET.

OPERATION DIVERT XSECTION 81  
 OUTPUT #1 HYDROGRAPH

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.12	730.0 *	178.42
23.98	66.6	175.78

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3218 CFS-HRS; 265.9 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.24	159.2	176.38
12.54	135.9	176.26

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .10 WATERSHED INCHES; 97 CFS-HRS; 8.1 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 71, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE

STARTS 25.00 FEET BELOW ASSUMED CREST ELEVATION AT 174.00.

THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 71

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
 AT STRUCTURE 71  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.44	.0	157.14
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	.00 WATERSHED INCHES;	0 CFS-HRS; .0 ACRE-
	FEET.	

OPERATION ADDHYD XSECTION 89

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.35	730.0	(NULL)
23.98	66.6	(NULL)

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25						
	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = 1.55		
HRS							
SQ.MI.							
5.28 CFS	.49	.54	.59	.64	.70	.76	.82
.88							
5.76 CFS	.94	1.00	1.07	1.14	1.22	1.30	1.37
1.45							
6.24 CFS	1.53	1.61	1.69	1.78	1.87	1.97	2.07
2.18							
6.72 CFS	2.29	2.43	2.58	2.72	2.88	3.06	3.25
3.45							
7.20 CFS	3.65	3.87	4.10	4.34	4.59	4.86	5.13
5.41							
7.68 CFS	5.70	6.01	6.33	6.65	6.99	7.34	7.69
8.06							

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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8.16 CFS	8.44	8.81	9.23	9.66	10.11	10.57	11.06
11.58							
8.64 CFS	12.12	12.68	13.25	13.86	14.47	15.11	15.80
16.50							
9.12 CFS	17.20	17.94	18.73	19.56	20.42	21.30	22.23
23.20							
9.60 CFS	24.24	25.34	26.50	27.70	28.95	30.25	31.61
33.09							
10.08 CFS	34.68	36.36	38.12	39.94	41.86	43.88	46.00
48.25							
10.56 CFS	50.65	53.28	56.18	59.31	62.73	66.40	70.37
74.61							
11.04 CFS	79	84	90	97	104	112	120

129							
11.52 CFS	139	154	173	193	217	247	287
342							
12.00 CFS	430	562	730	730	730	730	730
730							
12.48 CFS	730	730	730	730	730	730	730
730							
12.96 CFS	730	730	730	730	730	730	730
730							
13.44 CFS	730	705	679	653	628	604	582
561							
13.92 CFS	543	527	514	501	491	481	471
463							
14.40 CFS	454	445	437	428	418	409	399
389							
14.88 CFS	379	369	358	347	336	323	311
299							
15.36 CFS	287	276	265	255	246	237	229
221							
15.84 CFS	214	207	200	194	189	184	180
176							
16.32 CFS	172	168	165	162	159	156	154
152							
16.80 CFS	150	148	146	144	142	140	138
137							
17.28 CFS	135	133	132	130	128	127	125
124							
17.76 CFS	123	121	120	119	117	116	115
114							
18.24 CFS	112	111	110	109	108	107	106
105							
18.72 CFS	104	103	102	101	101	100	99
98							
19.20 CFS	97.32	96.64	96.01	95.40	94.83	94.29	93.71
93.02							
19.68 CFS	92.40	91.96	91.46	90.87	90.29	89.88	89.63
89.29							
20.16 CFS	88.83	88.35	87.91	87.49	86.96	86.41	86.05
85.81							
20.64 CFS	85.57	85.15	84.69	84.38	84.09	83.67	83.22
82.79							
21.12 CFS	82.40	82.05	81.72	81.40	81.09	80.79	80.51
80.20							
21.60 CFS	79.76	79.28	78.98	78.69	78.31	78.03	77.81
77.47							
22.08 CFS	77.05	76.64	76.27	75.95	75.65	75.36	75.08
74.80							
22.56 CFS	74.47	74.00	73.59	73.33	73.01	72.58	72.14
71.86							
23.04 CFS	71.73	71.49	71.12	70.73	70.36	70.03	69.73
69.37							
23.52 CFS	68.87	68.43	68.18	68.00	67.76	67.33	66.82
66.44							
24.00 CFS	66.55	66.11	63.54	60.06	56.92	54.41	52.39
50.61							
24.48 CFS	48.90	47.25	45.65	44.09	42.57	41.08	39.61
38.12							
24.96 CFS	36.61	35.10	33.58	32.06	30.54	29.06	27.62
26.23							
25.44 CFS	24.92	23.68	22.52				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.22 WATERSHED INCHES; 3218 CFS-HRS; 265.9 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4  
 1  
 TR20 ----- SCS  
 -  
 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 89  
 STARTING TIME = .00 RAIN DEPTH = 7.23 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =50 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.29	81.5	(RUNOFF)
20.13	2.1	(RUNOFF)
23.08	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-FEET.

OPERATION REACH XSECTION 2

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.35	81.3	390.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.27	142.8	(RUNOFF)
20.68	3.4	(RUNOFF)
23.97	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.85 WATERSHED INCHES; 181 CFS-HRS; 15.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.30	220.1	(NULL)
20.13	5.7	(NULL)

23.12 4.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.91 WATERSHED INCHES; 290 CFS-HRS; 24.0 ACRE-  
 FEET.

1  
 TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,  
 VALUE EXTRAPOLATED.  
 \*\*\*

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	218.8	384.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	218.2	368.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	181.7	(RUNOFF)
20.14	4.8	(RUNOFF)
23.74	3.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.60 WATERSHED INCHES; 237 CFS-HRS; 19.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	387.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.75 WATERSHED INCHES; 526 CFS-HRS; 43.5 ACRE-

FEET.

OPERATION DIVERT XSECTION 107  
OUTPUT #1 HYDROGRAPH

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.12	213.0 *	(DIVERT)

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\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
471 CFS-HRS; 38.9 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.35	174.5	176.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.50 WATERSHED INCHES; 55 CFS-HRS; 4.5 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 84, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 358.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 84

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
AT STRUCTURE 84  
\*\*\*

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.66	.0	352.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 108

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.57	213.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

4.26 WATERSHED INCHES; 471 CFS-HRS; 39.0 ACRE-  
FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	213.1	357.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.26 WATERSHED INCHES; 471 CFS-HRS; 38.9 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	203.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.15 WATERSHED INCHES; 291 CFS-HRS; 24.1 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	139.6	377.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.58 WATERSHED INCHES; 264 CFS-HRS; 21.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	30.4	(RUNOFF)
15.46	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.03 WATERSHED INCHES; 25 CFS-HRS; 2.1 ACRE-  
FEET.



## OPERATION RESVOR      STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	112.3	359.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.57 WATERSHED INCHES;      264 CFS-HRS;      21.8 ACRE-FEET.

## OPERATION RUNOFF      XSECTION 11

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	146.1	(RUNOFF)
15.81	5.5	(RUNOFF)
20.09	3.2	(RUNOFF)
20.64	3.0	(RUNOFF)
24.02	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.16 WATERSHED INCHES;      146 CFS-HRS;      12.1 ACRE-FEET.

## OPERATION ADDHYD      XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	357.8	(NULL)
24.00	10.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.24 WATERSHED INCHES;      617 CFS-HRS;      51.0 ACRE-FEET.

## OPERATION RUNOFF      XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	56.4	(RUNOFF)
21.97	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.80 WATERSHED INCHES;      60 CFS-HRS;      4.9 ACRE-FEET.

## OPERATION ADDHYD      XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		
12.25	376.1	(NULL)
12.41	378.9	(NULL)
23.98	17.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.55 WATERSHED INCHES; 879 CFS-HRS; 72.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	429.6	(NULL)
23.99	18.5	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 939 CFS-HRS; 77.6 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .006 HOURS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.01	252.8	346.08
14.94	68.7	335.75
15.06	59.1	335.38
15.18	52.4	335.12
15.30	47.5	334.93
15.42	43.9	334.79
15.54	41.4	334.69
15.66	39.6	334.62
15.78	38.4	334.57
15.89	37.6	334.54

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32 SQ.MI.

3.36 CFS	.00	.01	.01	.01	.01	.01	.01
.02							
3.36 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
3.84 CFS	.02	.02	.02	.02	.03	.03	.03
.03							
3.84 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
4.32 CFS	.04	.04	.04	.05	.05	.05	.06
.06							

4.32 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
4.80 CFS	.06	.07	.07	.08	.08	.08	.09	.09
.09								
4.80 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
5.28 CFS	.10	.10	.11	.11	.12	.12	.13	.13
.13								
5.28 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.09								
5.76 CFS	.14	.15	.16	.18	.19	.21	.23	.23
.24								
5.76 ELEV	333.09	333.09	333.09	333.09	333.09	333.09	333.09	333.09
333.09								
6.24 CFS	.26	.28	.31	.35	.38	.43	.48	.48
.54								
6.24 ELEV	333.09	333.09	333.09	333.09	333.09	333.10	333.10	333.10
333.10								
6.72 CFS	.60	.66	.73	.80	.87	.94	1.02	1.02
1.10								
6.72 ELEV	333.10	333.11	333.11	333.11	333.11	333.12	333.12	333.12
333.12								
7.20 CFS	1.18	1.27	1.36	1.47	1.58	1.70	1.81	1.81
1.94								
7.20 ELEV	333.13	333.13	333.13	333.14	333.14	333.15	333.15	333.15
333.16								
7.68 CFS	2.06	2.19	2.33	2.46	2.60	2.75	2.90	2.90
3.05								
7.68 ELEV	333.16	333.17	333.17	333.18	333.18	333.19	333.19	333.19
333.20								
8.16 CFS	3.21	3.36	3.52	3.68	3.85	4.01	4.17	4.17
4.35								
8.16 ELEV	333.20	333.21	333.22	333.22	333.23	333.24	333.24	333.24
333.25								
8.64 CFS	4.53	4.72	4.91	5.09	5.27	5.45	5.65	5.65
5.86								
8.64 ELEV	333.26	333.26	333.27	333.28	333.29	333.29	333.30	333.30
333.31								
9.12 CFS	6.10	6.39	6.76	7.17	7.62	8.10	8.58	8.58
9.08								
9.12 ELEV	333.32	333.33	333.34	333.36	333.38	333.39	333.41	333.41
333.43								
9.60 CFS	9.60	10.15	10.72	11.31	11.91	12.52	13.14	13.14
13.78								

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9.60 ELEV	333.45	333.47	333.50	333.52	333.54	333.57	333.59	333.59
333.62								
10.08 CFS	14.43	15.10	16.19	17.87	19.44	20.76	21.97	21.97
23.08								
10.08 ELEV	333.64	333.67	333.71	333.78	333.84	333.89	333.93	333.93
333.98								
10.56 CFS	24.18	25.32	26.58	27.96	29.49	31.15	32.98	32.98
34.93								
10.56 ELEV	334.02	334.07	334.11	334.17	334.23	334.29	334.36	334.36
334.44								

11.04 CFS	37.05	39.41	42.09	45.10	48.39	51.99	55.95
60.20							
11.04 ELEV	334.52	334.61	334.72	334.83	334.96	335.10	335.26
335.42							
11.52 CFS	65	71	79	89	99	101	105
112							
11.52 ELEV	335.60	335.83	336.15	336.53	336.94	337.03	337.20
337.52							
12.00 CFS	123	132	145	159	174	187	199
208							
12.00 ELEV	338.03	338.48	339.14	339.98	340.87	341.70	342.46
343.05							
12.48 CFS	215	222	228	234	240	244	247
249							
12.48 ELEV	343.59	344.08	344.53	344.94	345.32	345.63	345.86
346.00							
12.96 CFS	252	253	250	249	247	245	242
238							
12.96 ELEV	346.07	346.07	346.04	345.97	345.85	345.67	345.45
345.20							
13.44 CFS	234	230	226	221	217	212	208
203							
13.44 ELEV	344.93	344.64	344.34	344.03	343.71	343.39	343.06
342.73							
13.92 CFS	198	192	186	180	174	169	163
158							
13.92 ELEV	342.39	342.00	341.63	341.26	340.90	340.56	340.22
339.90							
14.40 CFS	153	147	140	134	128	119	108
83							
14.40 ELEV	339.59	339.26	338.90	338.57	338.26	337.83	337.32
336.29							
14.88 CFS	28.47	68.60	34.88	59.12	37.94	52.37	38.93
47.45							
14.88 ELEV	334.19	335.75	334.44	335.38	334.56	335.12	334.59
334.93							
15.36 CFS	38.91	43.93	38.49	41.41	37.93	39.61	37.38
38.36							
15.36 ELEV	334.59	334.79	334.58	334.69	334.56	334.62	334.53
334.57							
15.84 CFS	37.00	37.60	36.66	36.87	36.16	36.22	35.73
35.69							
15.84 ELEV	334.52	334.54	334.51	334.51	334.49	334.49	334.47
334.47							
16.32 CFS	35.28	35.13	34.79	34.60	34.26	34.04	33.76
33.57							
16.32 ELEV	334.45	334.45	334.43	334.43	334.41	334.40	334.39
334.39							
16.80 CFS	33.30	33.06	32.80	32.59	32.39	32.17	31.90
31.61							
16.80 ELEV	334.38	334.37	334.36	334.35	334.34	334.33	334.32
334.31							
17.28 CFS	31.33	31.12	30.92	30.67	30.37	30.07	29.80
29.56							
17.28 ELEV	334.30	334.29	334.28	334.27	334.26	334.25	334.24
334.23							
17.76 CFS	29.32	29.05	28.77	28.52	28.30	28.08	27.84
27.58							
17.76 ELEV	334.22	334.21	334.20	334.19	334.18	334.17	334.16
334.15							
18.24 CFS	27.35	27.14	26.94	26.70	26.49	26.35	26.25
26.16							
18.24 ELEV	334.14	334.14	334.13	334.12	334.11	334.10	334.10
334.10							

18.72	CFS	26.02	25.90	25.84	25.78	25.67	25.55	25.45
25.35								
18.72	ELEV	334.09	334.09	334.09	334.08	334.08	334.07	334.07
334.07								
19.20	CFS	25.26	25.17	25.10	25.03	24.96	24.91	24.84
24.73								
19.20	ELEV	334.06	334.06	334.06	334.05	334.05	334.05	334.05
334.04								
19.68	CFS	24.62	24.56	24.49	24.37	24.24	24.16	24.13
24.09								
19.68	ELEV	334.04	334.04	334.03	334.03	334.02	334.02	334.02
334.02								
20.16	CFS	24.00	23.91	23.83	23.75	23.63	23.48	23.38
23.33								
20.16	ELEV	334.01	334.01	334.01	334.00	334.00	333.99	333.99
333.99								
20.64	CFS	23.28	23.18	23.07	23.01	22.97	22.88	22.76
22.65								
20.64	ELEV	333.99	333.98	333.98	333.97	333.97	333.97	333.97
333.96								
21.12	CFS	22.56	22.47	22.38	22.30	22.23	22.17	22.11
22.05								
21.12	ELEV	333.96	333.95	333.95	333.95	333.94	333.94	333.94
333.94								

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21.60	CFS	21.96	21.84	21.76	21.70	21.60	21.52	21.48
21.41								
21.60	ELEV	333.93	333.93	333.93	333.92	333.92	333.92	333.92
333.91								
22.08	CFS	21.31	21.20	21.11	21.02	20.94	20.86	20.79
20.73								
22.08	ELEV	333.91	333.90	333.90	333.90	333.89	333.89	333.89
333.89								
22.56	CFS	20.66	20.54	20.42	20.35	20.28	20.15	20.02
19.94								
22.56	ELEV	333.88	333.88	333.87	333.87	333.87	333.86	333.86
333.86								
23.04	CFS	19.91	19.87	19.78	19.68	19.60	19.53	19.45
19.36								
23.04	ELEV	333.85	333.85	333.85	333.85	333.84	333.84	333.84
333.83								
23.52	CFS	19.21	19.07	18.98	18.92	18.85	18.73	18.58
18.47								
23.52	ELEV	333.83	333.82	333.82	333.82	333.81	333.81	333.80
333.80								
24.00	CFS	18.49	18.42	17.70	16.49	15.29	14.19	13.11
12.05								
24.00	ELEV	333.80	333.80	333.77	333.72	333.67	333.63	333.59
333.55								
24.48	CFS	11.06	10.37	10.01	9.74	9.52	9.34	9.17
9.01								
24.48	ELEV	333.51	333.48	333.47	333.46	333.45	333.44	333.44
333.43								
24.96	CFS	8.87	8.73	8.59	8.46	8.34	8.21	8.10
7.98								

24.96 ELEV	333.42	333.42	333.41	333.41	333.40	333.40	333.39
333.39							
25.44 CFS	7.87	7.76	7.65	7.54	7.43	7.33	7.23
7.13							
25.44 ELEV	333.39	333.38	333.38	333.37	333.37	333.37	333.36
333.36							
25.92 CFS	7.03	6.93	6.83	6.73	6.62	6.50	
25.92 ELEV	333.35	333.35	333.35	333.34	333.34	333.33	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.58 WATERSHED INCHES; 941 CFS-HRS; 77.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	167	42	33	26	23	21	16	8

DURATION(HRS) 17  
 FLOW(CFS) 7 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
13.01	252.8	333.24
14.94	68.7	331.94
15.06	59.1	331.82
15.18	52.4	331.73
15.30	47.5	331.67
15.42	43.9	331.63
15.54	41.4	331.60
15.66	39.6	331.57
15.78	38.4	331.56
15.89	37.6	331.55

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.58 WATERSHED INCHES; 941 CFS-HRS; 77.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.14	82.4	(RUNOFF)
15.84	2.4	(RUNOFF)
23.05	1.1	(RUNOFF)
23.71	1.0	(RUNOFF)
24.00	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.80 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	94.7	(RUNOFF)
24.03	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.73	17.5	350.21

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
 SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	.03
2.10 CFS	.00	.01	.01	.01	.02	.02	.03			
.03										
2.10 ELEV	345.00	345.00	345.00	345.00	345.00	345.00	345.01			
345.01										
2.58 CFS	.04	.05	.06	.07	.07	.08	.09			
.10										
2.58 ELEV	345.01	345.01	345.01	345.01	345.01	345.02	345.02			
345.02										
3.06 CFS	.11	.12	.14	.15	.16	.17	.18			
.19										
3.06 ELEV	345.02	345.02	345.02	345.03	345.03	345.03	345.03			
345.04										
3.54 CFS	.21	.22	.23	.25	.26	.27	.29			
.30										
3.54 ELEV	345.04	345.04	345.04	345.04	345.05	345.05	345.05			
345.05										
4.02 CFS	.31	.33	.34	.36	.37	.39	.40			
.41										
4.02 ELEV	345.06	345.06	345.06	345.07	345.07	345.07	345.07			
345.08										
4.50 CFS	.43	.44	.46	.47	.49	.50	.52			
.53										
4.50 ELEV	345.08	345.08	345.08	345.09	345.09	345.09	345.09			
345.10										
4.98 CFS	.55	.56	.58	.59	.61	.62	.64			
.65										
4.98 ELEV	345.10	345.10	345.10	345.11	345.11	345.11	345.12			
345.12										
5.46 CFS	.66	.68	.69	.71	.72	.74	.75			
.77										
5.46 ELEV	345.12	345.12	345.13	345.13	345.13	345.13	345.14			
345.14										

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5.94 CFS	.78	.79	.81	.82	.84	.85	.87
.89							
5.94 ELEV	345.14	345.14	345.15	345.15	345.15	345.16	345.16
345.16							
6.42 CFS	.90	.92	.94	.96	.97	.99	1.01
1.03							
6.42 ELEV	345.16	345.17	345.17	345.17	345.18	345.18	345.18
345.19							
6.90 CFS	1.05	1.07	1.09	1.11	1.13	1.16	1.18
1.20							
6.90 ELEV	345.19	345.20	345.20	345.20	345.21	345.21	345.21
345.22							
7.38 CFS	1.23	1.25	1.27	1.30	1.32	1.35	1.37
1.39							
7.38 ELEV	345.22	345.23	345.23	345.24	345.24	345.24	345.25
345.25							
7.86 CFS	1.42	1.44	1.47	1.50	1.52	1.55	1.58
1.60							
7.86 ELEV	345.26	345.26	345.27	345.27	345.28	345.28	345.29
345.29							
8.34 CFS	1.63	1.66	1.69	1.71	1.74	1.77	1.80
1.83							
8.34 ELEV	345.30	345.30	345.31	345.31	345.32	345.32	345.33
345.33							
8.82 CFS	1.86	1.89	1.91	1.94	1.97	2.00	2.03
2.07							
8.82 ELEV	345.34	345.34	345.35	345.35	345.36	345.36	345.37
345.38							
9.30 CFS	2.10	2.14	2.19	2.23	2.28	2.33	2.38
2.43							
9.30 ELEV	345.38	345.39	345.40	345.41	345.41	345.42	345.43
345.44							
9.78 CFS	2.49	2.54	2.60	2.66	2.73	2.79	2.86
2.93							
9.78 ELEV	345.45	345.46	345.47	345.48	345.50	345.51	345.52
345.53							
10.26 CFS	3.00	3.07	3.15	3.22	3.30	3.37	3.46
3.55							
10.26 ELEV	345.55	345.56	345.57	345.59	345.60	345.61	345.63
345.65							
10.74 CFS	3.65	3.76	3.89	4.02	4.17	4.32	4.49
4.68							
10.74 ELEV	345.66	345.68	345.71	345.73	345.76	345.79	345.82
345.85							
11.22 CFS	4.89	5.11	5.36	5.63	5.92	6.23	6.58
7.00							
11.22 ELEV	345.89	345.93	345.98	346.02	346.08	346.13	346.20
346.27							
11.70 CFS	7.51	8.11	8.82	9.67	10.25	10.74	11.43
12.40							
11.70 ELEV	346.37	346.48	346.60	346.76	346.93	347.15	347.47
347.90							
12.18 CFS	13.58	14.74	15.66	16.31	16.76	17.06	17.27
17.41							
12.18 ELEV	348.44	348.96	349.38	349.67	349.87	350.01	350.10
350.16							
12.66 CFS	17.48	17.51	17.50	17.46	17.41	17.34	17.26
17.17							
12.66 ELEV	350.20	350.21	350.20	350.19	350.16	350.13	350.10
350.06							



13.14 CFS	17.07	16.97	16.85	16.73	16.60	16.47	16.33
16.19							
13.14 ELEV	350.01	349.96	349.91	349.86	349.80	349.74	349.68
349.62							
13.62 CFS	16.05	15.90	15.75	15.60	15.45	15.30	15.15
15.00							
13.62 ELEV	349.55	349.48	349.42	349.35	349.28	349.21	349.14
349.08							
14.10 CFS	14.85	14.70	14.56	14.41	14.26	14.11	13.97
13.83							
14.10 ELEV	349.01	348.94	348.88	348.81	348.74	348.68	348.61
348.55							
14.58 CFS	13.68	13.54	13.40	13.25	13.11	12.97	12.83
12.69							
14.58 ELEV	348.48	348.42	348.35	348.29	348.22	348.16	348.10
348.03							
15.06 CFS	12.55	12.41	12.28	12.14	12.00	11.87	11.73
11.60							
15.06 ELEV	347.97	347.91	347.85	347.79	347.72	347.66	347.60
347.54							
15.54 CFS	11.47	11.34	11.22	11.09	10.97	10.85	10.73
10.61							
15.54 ELEV	347.48	347.43	347.37	347.31	347.26	347.20	347.15
347.09							
16.02 CFS	10.49	10.37	10.26	10.14	10.03	9.76	9.45
9.15							
16.02 ELEV	347.04	346.99	346.94	346.88	346.83	346.78	346.72
346.66							
16.50 CFS	8.86	8.58	8.31	8.05	7.81	7.57	7.35
7.13							
16.50 ELEV	346.61	346.56	346.51	346.47	346.42	346.38	346.34
346.30							
16.98 CFS	6.92	6.72	6.53	6.34	6.16	5.99	5.83
5.67							
16.98 ELEV	346.26	346.22	346.19	346.15	346.12	346.09	346.06
346.03							
17.46 CFS	5.51	5.37	5.22	5.09	4.95	4.83	4.70
4.58							

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17.46 ELEV	346.00	345.98	345.95	345.93	345.90	345.88	345.86
345.83							
17.94 CFS	4.47	4.36	4.25	4.15	4.05	3.95	3.86
3.77							
17.94 ELEV	345.81	345.79	345.77	345.76	345.74	345.72	345.70
345.69							
18.42 CFS	3.69	3.60	3.52	3.45	3.37	3.31	3.24
3.17							
18.42 ELEV	345.67	345.66	345.64	345.63	345.61	345.60	345.59
345.58							
18.90 CFS	3.11	3.05	3.00	2.94	2.89	2.84	2.79
2.74							
18.90 ELEV	345.57	345.56	345.55	345.54	345.53	345.52	345.51
345.50							
19.38 CFS	2.70	2.66	2.62	2.58	2.54	2.50	2.47
2.43							

19.38 ELEV	345.49	345.48	345.48	345.47	345.46	345.46	345.45
345.44							
19.86 CFS	2.40	2.37	2.33	2.30	2.28	2.25	2.22
2.20							
19.86 ELEV	345.44	345.43	345.42	345.42	345.41	345.41	345.40
345.40							
20.34 CFS	2.17	2.15	2.12	2.10	2.08	2.06	2.04
2.02							
20.34 ELEV	345.40	345.39	345.39	345.38	345.38	345.37	345.37
345.37							
20.82 CFS	2.00	1.98	1.96	1.94	1.92	1.91	1.89
1.87							
20.82 ELEV	345.36	345.36	345.36	345.35	345.35	345.35	345.34
345.34							
21.30 CFS	1.86	1.84	1.83	1.81	1.80	1.79	1.77
1.76							
21.30 ELEV	345.34	345.34	345.33	345.33	345.33	345.33	345.32
345.32							
21.78 CFS	1.75	1.73	1.72	1.71	1.70	1.69	1.68
1.66							
21.78 ELEV	345.32	345.32	345.31	345.31	345.31	345.31	345.31
345.30							
22.26 CFS	1.65	1.64	1.63	1.62	1.61	1.60	1.59
1.58							
22.26 ELEV	345.30	345.30	345.30	345.30	345.29	345.29	345.29
345.29							
22.74 CFS	1.57	1.56	1.55	1.54	1.53	1.52	1.51
1.51							
22.74 ELEV	345.29	345.28	345.28	345.28	345.28	345.28	345.28
345.27							
23.22 CFS	1.50	1.49	1.48	1.47	1.46	1.45	1.44
1.43							
23.22 ELEV	345.27	345.27	345.27	345.27	345.27	345.26	345.26
345.26							
23.70 CFS	1.43	1.42	1.41	1.40	1.39	1.39	1.38
1.37							
23.70 ELEV	345.26	345.26	345.26	345.26	345.25	345.25	345.25
345.25							
24.18 CFS	1.34	1.30	1.25	1.20	1.15	1.10	1.05
1.00							
24.18 ELEV	345.24	345.24	345.23	345.22	345.21	345.20	345.19
345.18							
24.66 CFS	.96	.92	.88	.84	.80	.76	.73
.70							
24.66 ELEV	345.17	345.17	345.16	345.15	345.15	345.14	345.13
345.13							
25.14 CFS	.66	.63	.61	.58	.55	.53	.50
.48							
25.14 ELEV	345.12	345.12	345.11	345.11	345.10	345.10	345.09
345.09							
25.62 CFS	.46						
25.62 ELEV	345.08						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.38 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
 FEET.

DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	15	11	6	3	2	2	2	1
DURATION (HRS)	18	20	21					
FLOW (CFS)	1	1	0					

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	24.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.59 WATERSHED INCHES;	21 CFS-HRS;	1.8 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	36.7	(NULL)
23.99	1.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.23 WATERSHED INCHES;	126 CFS-HRS;	10.4 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	119.0	(NULL)
20.02	4.1	(NULL)
21.93	3.3	(NULL)
24.00	2.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.06 WATERSHED INCHES;	204 CFS-HRS;	16.9 ACRE-
FEEET.		

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	148.6	(RUNOFF)
15.84	4.6	(RUNOFF)
17.34	3.5	(RUNOFF)
22.75	2.1	(RUNOFF)
23.06	2.1	(RUNOFF)
24.00	2.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.41 WATERSHED INCHES;	141 CFS-HRS;	11.6 ACRE-
FEEET.		

OPERATION ADDHYD XSECTION 22

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.15	267.4	(NULL)
20.83	6.1	(NULL)
22.74	5.1	(NULL)
23.05	5.0	(NULL)
24.00	4.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.77 WATERSHED INCHES; 345 CFS-HRS; 28.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.16	418.5	(NULL)
12.51	301.7	(NULL)
12.95	299.5	(NULL)
14.94	91.0	(NULL)
15.06	80.7	(NULL)
15.18	73.1	(NULL)
15.30	67.6	(NULL)
15.42	63.7	(NULL)
15.54	61.0	(NULL)
15.65	58.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.83 WATERSHED INCHES; 1282 CFS-HRS; 105.9 ACRE-FEET.

OPERATION DIVERT XSECTION 122  
OUTPUT #1 HYDROGRAPH

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
11.82	168.0 *	(DIVERT)
14.94	91.0	(DIVERT)
15.06	80.7	(DIVERT)
15.18	73.1	(DIVERT)
15.30	67.6	(DIVERT)
15.42	63.7	(DIVERT)
15.54	61.0	(DIVERT)
15.65	58.7	(DIVERT)
15.77	57.0	(DIVERT)
15.89	56.0	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1014 CFS-HRS; 83.8 ACRE-FEET.

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## OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	250.5	176.86
12.51	133.7	176.25
12.95	131.5	176.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.01 WATERSHED INCHES; 268 CFS-HRS; 22.1 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 83, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE

STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 322.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

## OPERATION RESVOR STRUCTURE 83

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.84	190.0	322.61
12.96	187.5	322.60
13.08	178.9	322.58
13.20	170.1	322.55
13.32	159.6	322.51
13.44	147.4	322.48
13.56	134.4	322.43
13.68	121.4	322.39
13.80	108.9	322.35
13.92	96.3	322.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.44 WATERSHED INCHES; 117 CFS-HRS; 9.6 ACRE-  
FEET.

## OPERATION ADDHYD XSECTION 123

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.84	358.0	(NULL)
12.96	355.5	(NULL)
13.08	346.9	(NULL)
13.20	338.1	(NULL)
13.32	327.6	(NULL)
13.44	315.4	(NULL)
13.56	302.4	(NULL)
13.68	289.4	(NULL)
13.80	276.9	(NULL)
13.92	264.3	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.26 WATERSHED INCHES; 1131 CFS-HRS; 93.5 ACRE-  
FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.92	268.3	315.80
13.03	296.5	315.89
13.14	304.1	315.91
13.26	302.3	315.90
13.38	296.3	315.89
13.49	287.8	315.86
13.61	277.6	315.83
13.73	266.6	315.80
13.85	255.6	315.76
13.97	244.7	315.72

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.35 WATERSHED INCHES; 1155 CFS-HRS; 95.4 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	136.5	(RUNOFF)
20.68	3.0	(RUNOFF)
23.99	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.17 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	131.8	365.04
20.69	3.0	356.63
23.79	2.4	356.57

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.15 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	196.3	(RUNOFF)
18.66	5.1	(RUNOFF)
20.68	4.5	(RUNOFF)
23.98	3.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.09 WATERSHED INCHES; 246 CFS-HRS; 20.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	325.1	(NULL)
18.67	8.6	(NULL)
20.68	7.5	(NULL)
23.14	6.2	(NULL)
23.78	5.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.12 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.37	312.6	319.62
20.73	7.5	316.81
23.20	6.2	316.73

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.12 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	154.0	(RUNOFF)
21.94	3.2	(RUNOFF)

24.01 2.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.74 WATERSHED INCHES; 183 CFS-HRS; 15.1 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	321.4	(NULL)
12.92	300.1	(NULL)
13.03	324.0	(NULL)
13.14	328.1	(NULL)
13.26	323.3	(NULL)
13.38	315.2	(NULL)
13.49	304.7	(NULL)
13.61	292.8	(NULL)
13.73	280.3	(NULL)
13.85	268.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.40 WATERSHED INCHES; 1338 CFS-HRS; 110.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	609.1	(NULL)
12.91	394.0	(NULL)
13.02	400.4	(NULL)
13.14	394.8	(NULL)
13.25	383.4	(NULL)
13.37	369.7	(NULL)
13.49	354.1	(NULL)
13.61	337.0	(NULL)
13.73	318.8	(NULL)
13.85	301.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.55 WATERSHED INCHES; 1752 CFS-HRS; 144.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.53	488.4	316.20

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)



4.53 WATERSHED INCHES; 1743 CFS-HRS; 144.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 31

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	220.6	(RUNOFF)
20.86	4.2	(RUNOFF)
24.02	3.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-  
FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	204.5	313.75
20.73	4.3	310.35
24.09	3.3	310.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	33.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.63 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
WITH .48 AC-FT ( .09 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 377.99.  
\*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	29.2	380.63

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-

FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
\*\*\*

OPERATION REACH XSECTION 34

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	29.2	338.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	100.5	(RUNOFF)
18.65	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.63 WATERSHED INCHES; 118 CFS-HRS; 9.7 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
WITH 1.02 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 354.08.  
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.27	84.8	357.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.93 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	113.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

5.84 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	113.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.84 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-  
FEET.

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\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
\*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	113.8	330.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.84 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	113.8	(RUNOFF)
15.84	3.3	(RUNOFF)
17.34	2.5	(RUNOFF)
18.61	2.0	(RUNOFF)
18.84	2.0	(RUNOFF)
24.00	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.03 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	206.2	(NULL)
18.82	5.1	(NULL)
21.94	4.1	(NULL)
24.00	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.92 WATERSHED INCHES; 244 CFS-HRS; 20.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.47 98.6 332.51

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06  
 SQ.MI.  
 2.88 CFS .00 .01 .01 .01 .01 .01 .01  
 .02  
 2.88 ELEV 326.00 326.00 326.00 326.00 326.00 326.00 326.01  
 326.01  
 3.36 CFS .02 .02 .02 .03 .03 .04 .04  
 .04  
 3.36 ELEV 326.01 326.01 326.01 326.01 326.01 326.01 326.02  
 326.02

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3.84 CFS .05 .05 .06 .06 .07 .07 .08  
 .09  
 3.84 ELEV 326.02 326.02 326.02 326.03 326.03 326.03 326.03  
 326.04  
 4.32 CFS .09 .10 .11 .11 .12 .13 .13  
 .14  
 4.32 ELEV 326.04 326.04 326.04 326.05 326.05 326.05 326.06  
 326.06  
 4.80 CFS .15 .16 .17 .18 .18 .19 .20  
 .21  
 4.80 ELEV 326.06 326.07 326.07 326.07 326.08 326.08 326.08  
 326.09  
 5.28 CFS .22 .23 .24 .25 .26 .27 .28  
 .29  
 5.28 ELEV 326.09 326.10 326.10 326.10 326.11 326.11 326.12  
 326.12  
 5.76 CFS .30 .31 .32 .33 .35 .36 .37  
 .38  
 5.76 ELEV 326.13 326.13 326.14 326.14 326.15 326.15 326.16  
 326.16  
 6.24 CFS .39 .41 .42 .43 .45 .46 .47  
 .49  
 6.24 ELEV 326.17 326.17 326.18 326.18 326.19 326.19 326.20  
 326.20  
 6.72 CFS .50 .52 .53 .55 .56 .58 .60  
 .61  
 6.72 ELEV 326.21 326.22 326.22 326.23 326.24 326.24 326.25  
 326.26  
 7.20 CFS .63 .65 .67 .68 .70 .72 .74  
 .76  
 7.20 ELEV 326.26 326.27 326.28 326.29 326.30 326.30 326.31

326.32							
7.68 CFS	.78	.80	.82	.84	.86	.88	.90
.93							
7.68 ELEV	326.33	326.34	326.34	326.35	326.36	326.37	326.38
326.39							
8.16 CFS	.95	.97	.99	1.02	1.04	1.07	1.09
1.11							
8.16 ELEV	326.40	326.41	326.42	326.43	326.44	326.45	326.46
326.47							
8.64 CFS	1.14	1.17	1.19	1.22	1.24	1.27	1.30
1.32							
8.64 ELEV	326.48	326.49	326.50	326.51	326.52	326.53	326.54
326.56							
9.12 CFS	1.35	1.38	1.41	1.44	1.48	1.51	1.54
1.58							
9.12 ELEV	326.57	326.58	326.59	326.61	326.62	326.63	326.65
326.66							
9.60 CFS	1.62	1.65	1.69	1.73	1.78	1.82	1.86
1.91							
9.60 ELEV	326.68	326.69	326.71	326.73	326.75	326.76	326.78
326.80							
10.08 CFS	1.95	2.00	2.05	2.10	2.15	2.20	2.26
2.32							
10.08 ELEV	326.82	326.84	326.86	326.88	326.90	326.93	326.95
326.98							
10.56 CFS	2.39	2.46	2.54	2.63	2.73	2.84	2.96
3.09							
10.56 ELEV	327.00	327.03	327.07	327.11	327.15	327.19	327.24
327.30							
11.04 CFS	3.22	3.37	3.53	3.70	3.89	4.10	4.32
4.56							
11.04 ELEV	327.35	327.42	327.48	327.56	327.64	327.72	327.81
327.91							
11.52 CFS	4.81	5.09	5.42	5.80	6.22	6.71	7.29
8.00							
11.52 ELEV	328.02	328.14	328.28	328.43	328.61	328.82	329.06
329.36							
12.00 CFS	8.94	13.84	49.29	83.43	89.28	93.74	96.79
98.34							
12.00 ELEV	329.76	330.28	330.82	331.35	331.80	332.14	332.37
332.49							
12.48 CFS	98.62	98.16	97.10	95.58	93.74	91.68	89.46
87.12							
12.48 ELEV	332.51	332.48	332.40	332.28	332.14	331.98	331.81
331.63							
12.96 CFS	84.71	82.28	78.99	60.45	49.15	43.81	39.58
36.14							
12.96 ELEV	331.45	331.26	331.08	330.92	330.82	330.76	330.70
330.66							
13.44 CFS	33.30	30.89	28.97	27.36	25.86	24.50	23.25
22.13							
13.44 ELEV	330.62	330.58	330.55	330.53	330.50	330.48	330.46
330.44							
13.92 CFS	21.12	20.22	19.47	18.78	18.14	17.53	16.95
16.41							
13.92 ELEV	330.42	330.40	330.39	330.38	330.37	330.36	330.35
330.34							
14.40 CFS	15.91	15.43	14.99	14.62	14.25	13.88	13.52
13.18							
14.40 ELEV	330.33	330.32	330.31	330.30	330.29	330.29	330.28
330.27							
14.88 CFS	12.84	12.51	12.19	11.87	11.56	11.26	10.96
10.69							
14.88 ELEV	330.26	330.26	330.25	330.24	330.23	330.23	330.22

330.22								
15.36 CFS	10.43	10.20	10.00	9.98	9.97	9.95	9.93	
9.91								

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15.36 ELEV	330.21	330.20	330.20	330.19	330.19	330.18	330.17	
330.16								
15.84 CFS	9.89	9.87	9.84	9.82	9.79	9.77	9.74	
9.71								
15.84 ELEV	330.15	330.14	330.13	330.12	330.11	330.10	330.09	
330.08								
16.32 CFS	9.68	9.65	9.62	9.59	9.56	9.52	9.49	
9.46								
16.32 ELEV	330.07	330.05	330.04	330.03	330.01	330.00	329.99	
329.97								
16.80 CFS	9.42	9.39	9.36	9.32	9.29	9.25	9.21	
9.18								
16.80 ELEV	329.96	329.94	329.93	329.91	329.90	329.89	329.87	
329.85								
17.28 CFS	9.14	9.10	9.07	9.03	8.99	8.95	8.91	
8.87								
17.28 ELEV	329.84	329.82	329.81	329.79	329.78	329.76	329.74	
329.73								
17.76 CFS	8.83	8.79	8.75	8.71	8.67	8.63	8.59	
8.54								
17.76 ELEV	329.71	329.69	329.68	329.66	329.64	329.62	329.61	
329.59								
18.24 CFS	8.50	8.46	8.42	8.38	8.33	8.29	8.25	
8.21								
18.24 ELEV	329.57	329.55	329.54	329.52	329.50	329.48	329.47	
329.45								
18.72 CFS	8.17	8.13	8.09	8.05	8.01	7.96	7.92	
7.88								
18.72 ELEV	329.43	329.41	329.40	329.38	329.36	329.35	329.33	
329.31								
19.20 CFS	7.84	7.80	7.77	7.73	7.69	7.65	7.61	
7.57								
19.20 ELEV	329.29	329.28	329.26	329.25	329.23	329.21	329.20	
329.18								
19.68 CFS	7.54	7.50	7.46	7.42	7.39	7.35	7.32	
7.28								
19.68 ELEV	329.17	329.15	329.13	329.12	329.10	329.09	329.07	
329.06								
20.16 CFS	7.24	7.21	7.17	7.14	7.10	7.07	7.04	
7.00								
20.16 ELEV	329.04	329.03	329.01	329.00	328.98	328.97	328.95	
328.94								
20.64 CFS	6.97	6.93	6.90	6.87	6.84	6.80	6.77	
6.74								
20.64 ELEV	328.93	328.91	328.90	328.88	328.87	328.86	328.84	
328.83								
21.12 CFS	6.71	6.67	6.64	6.61	6.58	6.55	6.52	
6.49								
21.12 ELEV	328.82	328.80	328.79	328.78	328.76	328.75	328.74	
328.72								
21.60 CFS	6.46	6.43	6.39	6.36	6.33	6.31	6.28	

6.25								
21.60 ELEV	328.71	328.70	328.69	328.67	328.66	328.65	328.64	
328.62								
22.08 CFS	6.22	6.19	6.16	6.13	6.10	6.07	6.05	
6.02								
22.08 ELEV	328.61	328.60	328.59	328.57	328.56	328.55	328.54	
328.53								
22.56 CFS	5.99	5.96	5.93	5.91	5.88	5.85	5.82	
5.80								
22.56 ELEV	328.52	328.50	328.49	328.48	328.47	328.46	328.45	
328.43								
23.04 CFS	5.77	5.74	5.72	5.69	5.66	5.64	5.61	
5.59								
23.04 ELEV	328.42	328.41	328.40	328.39	328.38	328.37	328.36	
328.35								
23.52 CFS	5.56	5.53	5.51	5.48	5.46	5.43	5.41	
5.38								
23.52 ELEV	328.34	328.32	328.31	328.30	328.29	328.28	328.27	
328.26								
24.00 CFS	5.36	5.33	5.30	5.27	5.23	5.19	5.14	
5.10								
24.00 ELEV	328.25	328.24	328.23	328.21	328.20	328.18	328.16	
328.14								
24.48 CFS	5.05	5.01	4.97	4.92	4.88	4.84	4.79	
4.75								
24.48 ELEV	328.12	328.10	328.09	328.07	328.05	328.03	328.01	
328.00								
24.96 CFS	4.71	4.67	4.63	4.59	4.55			
24.96 ELEV	327.98	327.96	327.94	327.93	327.91			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.43 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	
FLOW(CFS)	19	10	9	7	6	5	5 TRUNCATED	

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OPERATION RUNOFF XSECTION 140

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				(RUNOFF)
12.13		11.4		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.03 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				(NULL)
12.45		101.8		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.26 WATERSHED INCHES; 233 CFS-HRS; 19.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	99.5	(RUNOFF)
20.67	2.3	(RUNOFF)
23.97	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.94 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	546.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.55 WATERSHED INCHES; 1868 CFS-HRS; 154.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	707.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.67 WATERSHED INCHES; 2122 CFS-HRS; 175.4 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	808.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.71 WATERSHED INCHES; 2351 CFS-HRS; 194.3 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 144  
 OUTPUT #1 HYDROGRAPH



PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	543.0 *	(DIVERT)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2226 CFS-HRS; 184.0 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	265.2	176.93

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .25 WATERSHED INCHES; 124 CFS-HRS; 10.3 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 82, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 318.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.79	81.8	318.26
13.01	8.5	318.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .02 WATERSHED INCHES; 9 CFS-HRS; .7 ACRE-FEET.

OPERATION ADDHYD XSECTION 145

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.79	624.8	(NULL)
13.00	552.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 2235 CFS-HRS; 184.7 ACRE-FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		
12.93	585.8	290.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 2234 CFS-HRS; 184.6 ACRE-FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.99	582.4	302.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.47 WATERSHED INCHES; 2232 CFS-HRS; 184.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	114.7	(RUNOFF)
23.09	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.00 WATERSHED INCHES; 154 CFS-HRS; 12.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	143.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.90 WATERSHED INCHES; 199 CFS-HRS; 16.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 47

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	257.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.94 WATERSHED INCHES; 352 CFS-HRS; 29.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	140.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.03	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.93 WATERSHED INCHES; 149 CFS-HRS; 12.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	589.3	(NULL)
12.98	603.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.50 WATERSHED INCHES; 2381 CFS-HRS; 196.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	793.7	(NULL)
12.96	671.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.55 WATERSHED INCHES; 2733 CFS-HRS; 225.9 ACRE-FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	776.4	285.50
13.02	667.9	285.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.54 WATERSHED INCHES; 2731 CFS-HRS; 225.7 ACRE-FEET.

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OPERATION RUNOFF XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	4.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.06 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	4.3	288.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.06 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
 AT XSECTION 54  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .47 WATERSHED INCHES; 2 CFS-HRS; .2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	91.3	(RUNOFF)
18.86	2.1	(RUNOFF)
24.03	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.65 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 56

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.53	809.5	(NULL)

13.02 681.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.55 WATERSHED INCHES; 2827 CFS-HRS; 233.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.27 4.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .79 WATERSHED INCHES; 8 CFS-HRS; .7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.53 812.5 (NULL)  
 13.01 683.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.49 WATERSHED INCHES; 2835 CFS-HRS; 234.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.21 61.6 (RUNOFF)  
 24.02 1.1 (RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
 SQ.MI.

HRS	9.48	9.96	10.44	10.92	11.40	11.88	12.36	12.84	13.32	13.80	14.28	14.76
CFS	.79	1.23	2.11	4.29	12.37	51.47	13.77	7.83	5.18	4.30	3.60	2.94
CFS	9.48	9.96	10.44	10.92	11.40	11.88	12.36	12.84	13.32	13.80	14.28	14.76
CFS	1.23	2.11	4.29	12.37	51.47	13.77	7.83	5.18	4.30	3.60	2.94	

15.24 CFS	2.86	2.80	2.76	2.74	2.72	2.72	2.70
2.67							
15.72 CFS	2.63	2.60	2.59	2.58	2.56	2.53	2.49
2.46							
16.20 CFS	2.45	2.43	2.41	2.38	2.36	2.33	2.30
2.27							

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16.68 CFS	2.25	2.24	2.22	2.20	2.17	2.15	2.14
2.13							
17.16 CFS	2.09	2.05	2.02	2.01	2.00	1.98	1.94
1.91							
17.64 CFS	1.88	1.86	1.84	1.82	1.79	1.77	1.76
1.74							
18.12 CFS	1.72	1.69	1.67	1.66	1.64	1.62	1.60
1.60							
18.60 CFS	1.61	1.62	1.61	1.60	1.60	1.60	1.59
1.57							
19.08 CFS	1.56	1.55	1.55	1.54	1.54	1.54	1.54
1.54							
19.56 CFS	1.54	1.52	1.51	1.50	1.50	1.49	1.47
1.47							
20.04 CFS	1.48	1.49	1.48	1.47	1.46	1.45	1.44
1.41							
20.52 CFS	1.41	1.42	1.43	1.42	1.41	1.40	1.40
1.40							
21.00 CFS	1.38	1.37	1.36	1.35	1.35	1.35	1.35
1.35							
21.48 CFS	1.35	1.35	1.33	1.31	1.31	1.31	1.30
1.30							
21.96 CFS	1.30	1.30	1.29	1.27	1.26	1.26	1.25
1.25							
22.44 CFS	1.25	1.25	1.24	1.23	1.21	1.21	1.21
1.19							
22.92 CFS	1.18	1.17	1.19	1.19	1.19	1.17	1.16
1.16							
23.40 CFS	1.15	1.15	1.13	1.11	1.11	1.12	1.13
1.12							
23.88 CFS	1.09	1.08	1.11	1.10	.94	.65	.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.86 WATERSHED INCHES; 66 CFS-HRS; 5.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.52	838.0	(NULL)
13.01	693.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.47 WATERSHED INCHES; 2902 CFS-HRS; 239.8 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	815.5	274.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.47 WATERSHED INCHES; 2899 CFS-HRS; 239.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	37.1	(RUNOFF)
18.66	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.78 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-FEET.

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OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	829.9	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02 SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	1.02
4.56 CFS	.50	.55	.62	.68	.75	.81	.88			
.96										
5.04 CFS	1.03	1.11	1.19	1.27	1.35	1.43	1.52			
1.61										
5.52 CFS	1.70	1.80	1.91	2.03	2.16	2.31	2.46			
2.62										
6.00 CFS	2.79	2.97	3.16	3.36	3.57	3.78	4.00			
4.23										
6.48 CFS	4.47	4.72	4.98	5.25	5.54	5.83	6.13			
6.44										
6.96 CFS	6.77	7.10	7.45	7.81	8.19	8.57	8.98			
9.39										
7.44 CFS	9.81	10.25	10.70	11.16	11.63	12.12	12.61			
13.12										
7.92 CFS	13.64	14.17	14.71	15.27	15.85	16.45	17.06			
17.68										
8.40 CFS	18.32	18.97	19.63	20.31	20.99	21.70	22.41			
23.14										
8.88 CFS	23.88	24.62	25.36	26.13	26.91	27.72	28.55			
29.41										
9.36 CFS	30.32	31.27	32.26	33.30	34.39	35.54	36.76			

38.06								
9.84 CFS	39.44	40.90	42.42	44.02	45.70	47.47	49.32	
51.24								
10.32 CFS	53.24	55.30	57.42	59.62	61.90	64.29	66.84	
69.59								
10.80 CFS	73	76	79	83	87	92	97	
102								
11.28 CFS	107	113	120	127	135	145	155	
167								
11.76 CFS	182	199	223	254	292	343	413	
504								
12.24 CFS	597	675	735	775	804	824	830	
823								
12.72 CFS	807	785	762	740	722	712	705	
697								
13.20 CFS	687	675	660	644	625	606	587	
568								
13.68 CFS	551	535	521	508	497	487	477	
468								
14.16 CFS	457	447	436	426	415	405	395	
386								
14.64 CFS	376	366	357	347	337	328	318	
309								
15.12 CFS	299	290	279	269	257	246	236	
225								
15.60 CFS	215	206	198	191	184	178	171	
166								
16.08 CFS	160	156	152	148	145	142	139	
136								
16.56 CFS	134	132	130	128	126	125	123	
122								
17.04 CFS	120	119	118	116	115	114	112	
111								
17.52 CFS	110	109	108	106	105	104	103	
102								
18.00 CFS	101	99	98	97	96	95	94	
93								
18.48 CFS	91.71	90.72	89.79	88.90	88.05	87.21	86.40	
85.63								
18.96 CFS	84.88	84.16	83.45	82.77	82.13	81.52	80.94	
80.40								
19.44 CFS	79.90	79.41	78.95	78.49	78.04	77.59	77.17	
76.77								
19.92 CFS	76.36	75.96	75.59	75.25	74.93	74.60	74.26	
73.91								
20.40 CFS	73.57	73.21	72.84	72.50	72.19	71.90	71.59	
71.28								
20.88 CFS	70.97	70.67	70.35	70.03	69.70	69.38	69.06	
68.76								
21.36 CFS	68.46	68.18	67.90	67.62	67.34	67.04	66.74	
66.44								
21.84 CFS	66.15	65.87	65.60	65.34	65.08	64.80	64.51	
64.22								
22.32 CFS	63.94	63.66	63.39	63.13	62.88	62.61	62.32	
62.03								
22.80 CFS	61.74	61.46	61.16	60.86	60.58	60.33	60.07	
59.81								
23.28 CFS	59.53	59.25	58.97	58.70	58.41	58.11	57.82	
57.54								
23.76 CFS	57.29	57.04	56.77	56.48	56.22	55.97	55.57	
54.81								
24.24 CFS	53.68	52.29	50.80	49.28	47.77	46.24	44.67	
43.04								



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24.72 CFS	41.34	39.57	37.76	35.94	34.12	32.35	30.63
28.99							
25.20 CFS	27.45	26.01					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.45 WATERSHED INCHES; 2941 CFS-HRS; 243.0 ACRE-  
FEET.

OPERATION DIVERT XSECTION 162  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	621.0 *	(DIVERT)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2805 CFS-HRS; 231.8 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	208.9	176.64

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.21 WATERSHED INCHES; 136 CFS-HRS; 11.3 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 73, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE

STARTS 20.00 FEET BELOW ASSUMED CREST ELEVATION AT 260.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 73

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
AT STRUCTURE 73  
\*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.50	.0	253.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 163

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 13.41 622.9 (NULL)

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HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50								
DRAINAGE AREA = 1.02								
HRS	MAIN	TIME	INCREMENT =					
SQ.MI.								
4.56 CFS	.50	.55	.62	.68	.75	.81	.88	
.96								
5.04 CFS	1.03	1.11	1.19	1.27	1.35	1.43	1.52	
1.61								
5.52 CFS	1.70	1.80	1.91	2.03	2.16	2.31	2.46	
2.62								
6.00 CFS	2.79	2.97	3.16	3.36	3.57	3.78	4.00	
4.23								
6.48 CFS	4.47	4.72	4.98	5.25	5.54	5.83	6.13	
6.44								
6.96 CFS	6.77	7.10	7.45	7.81	8.19	8.57	8.98	
9.39								
7.44 CFS	9.81	10.25	10.70	11.16	11.63	12.12	12.61	
13.12								
7.92 CFS	13.64	14.17	14.71	15.27	15.85	16.45	17.06	
17.68								
8.40 CFS	18.32	18.97	19.63	20.31	20.99	21.70	22.41	
23.14								
8.88 CFS	23.88	24.62	25.36	26.13	26.91	27.72	28.55	
29.41								
9.36 CFS	30.32	31.27	32.26	33.30	34.39	35.54	36.76	
38.06								
9.84 CFS	39.44	40.90	42.42	44.02	45.70	47.47	49.32	
51.24								
10.32 CFS	53.24	55.30	57.42	59.62	61.90	64.29	66.84	
69.59								
10.80 CFS	73	76	79	83	87	92	97	
102								
11.28 CFS	107	113	120	127	135	145	155	
167								
11.76 CFS	182	199	223	254	292	343	413	
504								
12.24 CFS	597	621	621	621	621	621	621	
621								
12.72 CFS	621	621	621	621	621	621	621	
621								
13.20 CFS	621	621	621	621	621	606	587	
568								
13.68 CFS	551	535	521	508	497	487	477	
468								
14.16 CFS	458	447	437	426	415	405	395	
386								
14.64 CFS	376	366	357	347	337	328	318	
309								
15.12 CFS	299	290	279	269	258	246	236	
225								
15.60 CFS	216	206	198	191	184	178	171	

166							
16.08 CFS	160	156	152	148	145	142	139
136							
16.56 CFS	134	132	130	128	126	125	123
122							
17.04 CFS	120	119	118	116	115	114	112
111							
17.52 CFS	110	109	108	106	105	104	103
102							
18.00 CFS	101	99	98	97	96	95	94
93							
18.48 CFS	91.74	90.75	89.81	88.93	88.08	87.24	86.43
85.66							
18.96 CFS	84.91	84.18	83.47	82.80	82.15	81.54	80.97
80.43							
19.44 CFS	79.92	79.44	78.98	78.52	78.06	77.62	77.20
76.79							
19.92 CFS	76.39	75.99	75.62	75.28	74.95	74.62	74.28
73.94							
20.40 CFS	73.59	73.23	72.87	72.53	72.22	71.92	71.62
71.31							
20.88 CFS	71.00	70.70	70.38	70.06	69.73	69.40	69.09
68.79							
21.36 CFS	68.49	68.21	67.93	67.65	67.37	67.07	66.77
66.47							
21.84 CFS	66.18	65.90	65.63	65.37	65.11	64.83	64.54
64.25							
22.32 CFS	63.96	63.69	63.42	63.16	62.90	62.63	62.35
62.05							
22.80 CFS	61.77	61.48	61.19	60.89	60.61	60.35	60.10
59.84							
23.28 CFS	59.56	59.28	59.00	58.72	58.44	58.14	57.84
57.57							
23.76 CFS	57.32	57.07	56.80	56.51	56.25	56.00	55.60
54.84							
24.24 CFS	53.70	52.31	50.82	49.31	47.79	46.26	44.70
43.07							
24.72 CFS	41.37	39.60	37.79	35.96	34.15	32.37	30.66
29.02							
25.20 CFS	27.48	26.04					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.25 WATERSHED INCHES; 2805 CFS-HRS; 231.8 ACRE-  
 FEET.

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04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

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OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.53	621.8	249.91

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.24 WATERSHED INCHES; 2801 CFS-HRS; 231.5 ACRE-

FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	25.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.41 WATERSHED INCHES;	38 CFS-HRS;	3.2 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	19.3	335.25
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.41 WATERSHED INCHES;	38 CFS-HRS;	3.2 ACRE-
FEET.		

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.67	19.0	300.92
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.41 WATERSHED INCHES;	38 CFS-HRS;	3.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	109.3	(RUNOFF)
23.10	2.1	(RUNOFF)
24.03	2.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.83 WATERSHED INCHES;	113 CFS-HRS;	9.4 ACRE-
FEET.		

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.

\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	52.1	296.06
23.12	2.0	287.56
24.04	1.9	287.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.83 WATERSHED INCHES; 113 CFS-HRS; 9.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	67.2	(NULL)
20.86	3.1	(NULL)
24.04	2.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.13 WATERSHED INCHES; 151 CFS-HRS; 12.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	205.6	(RUNOFF)
21.45	4.1	(RUNOFF)
24.03	3.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.15 WATERSHED INCHES; 208 CFS-HRS; 17.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	234.2	(NULL)
18.87	8.4	(NULL)
20.87	7.3	(NULL)
23.10	6.2	(NULL)
24.03	5.9	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.14 WATERSHED INCHES; 360 CFS-HRS; 29.7 ACRE-

FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	171.3	248.99
24.15	5.8	247.73

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.14 WATERSHED INCHES; 360 CFS-HRS; 29.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	45.5	(RUNOFF)
15.83	1.3	(RUNOFF)
17.33	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.90 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	27.4	267.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.90 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	25.6	248.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.91 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 73

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.18	237.2	(RUNOFF)
15.84	9.7	(RUNOFF)
17.34	7.6	(RUNOFF)
18.86	6.1	(RUNOFF)
21.45	5.1	(RUNOFF)
24.01	4.3	(RUNOFF)

		HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50						
		MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = .11		
HRS	SQ.MI.							
9.60 CFS	1.43	.49	.61	.73	.86	1.00	1.13	1.27
10.08 CFS	2.94	1.60	1.78	1.96	2.13	2.32	2.51	2.72
10.56 CFS	6.54	3.20	3.51	3.89	4.33	4.82	5.35	5.93
11.04 CFS	15.50	7.19	8.00	8.96	10.08	11.28	12.57	14.01
11.52 CFS	70.81	17.15	20.19	25.09	30.06	35.22	43.00	54.20
12.00 CFS	104	99	145	208	237	207	161	128
12.48 CFS	39.91	87.51	77.29	67.40	57.39	50.08	45.64	42.48
12.96 CFS	25.25	37.67	35.43	33.20	31.06	29.25	27.85	26.52
13.44 CFS	17.71	24.00	22.74	21.53	20.36	19.41	18.71	18.15
13.92 CFS	15.19	17.37	17.10	16.86	16.56	16.22	15.83	15.47
14.40 CFS	12.73	14.94	14.69	14.36	13.99	13.60	13.25	12.98
14.88 CFS	10.36	12.44	12.11	11.79	11.50	11.15	10.81	10.53
15.36 CFS	9.72	10.28	10.24	10.23	10.21	10.13	9.99	9.81
15.84 CFS	9.15	9.74	9.72	9.61	9.45	9.31	9.23	9.19
16.32 CFS	8.45	9.04	8.93	8.85	8.74	8.60	8.52	8.48
16.80 CFS	7.66	8.36	8.24	8.15	8.12	8.08	7.99	7.84
17.28 CFS	7.00	7.56	7.58	7.56	7.44	7.27	7.12	7.04
17.76 CFS	6.35	6.95	6.84	6.72	6.66	6.62	6.58	6.47
18.24 CFS	6.16	6.28	6.25	6.20	6.09	6.04	6.09	6.16
18.72 CFS	5.88	6.08	6.03	6.08	6.07	5.99	5.92	5.89
19.20 CFS	5.74	5.87	5.87	5.87	5.87	5.87	5.87	5.84
19.68 CFS	5.70	5.68	5.72	5.71	5.63	5.56	5.59	5.68
20.16 CFS	5.42	5.63	5.56	5.54	5.51	5.42	5.33	5.35
20.64 CFS	5.17	5.46	5.40	5.32	5.34	5.37	5.29	5.22
21.12 CFS	5.13	5.16	5.15	5.14	5.14	5.14	5.14	5.15
21.60 CFS	4.95	5.05	4.96	4.98	5.00	4.94	4.94	4.99
22.08 CFS	4.77	4.87	4.81	4.79	4.78	4.77	4.77	4.77

22.56 CFS	4.74	4.64	4.58	4.62	4.60	4.52	4.45
4.48							
23.04 CFS	4.57	4.58	4.51	4.45	4.42	4.40	4.40
4.36							
23.52 CFS	4.26	4.19	4.25	4.32	4.33	4.24	4.13
4.11							
24.00 CFS	4.33	4.25	3.08	1.66	.80	.39	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.26 WATERSHED INCHES; 232 CFS-HRS; 19.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.60	670.6	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.15 WATERSHED INCHES; 3033 CFS-HRS; 250.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.44	190.7	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .15 SQ.MI.

HRS	7.62 CFS	8.10 CFS	8.58 CFS	9.06 CFS	9.54 CFS	10.02 CFS	10.50 CFS	10.98 CFS	11.46 CFS	11.94 CFS	12.42 CFS
.85	.50	.53	.58	.62	.68	.73	.78				
1.45	.91	.97	1.04	1.12	1.19	1.27	1.36				
2.28	1.54	1.64	1.74	1.85	1.95	2.06	2.17				
3.39	2.39	2.50	2.63	2.76	2.89	3.04	3.21				
5.20	3.58	3.77	3.98	4.19	4.42	4.67	4.93				
7.67	5.47	5.74	6.04	6.34	6.66	6.99	7.33				
11.26	8.01	8.37	8.75	9.16	9.59	10.07	10.62				
19.48	11.99	12.79	13.65	14.58	15.61	16.79	18.08				
39.88	20.99	22.65	24.47	26.47	28.83	31.84	35.53				
184	45	51	60	75	99	133	165				
	190	189	185	179	172	164	154				



144								
12.90	CFS	134	124	116	109	101	93	86
80								
13.38	CFS	74.29	69.57	65.43	61.77	58.52	55.69	53.21
51.04								
13.86	CFS	49.16	47.53	46.11	44.88	43.81	42.87	42.02
41.23								
14.34	CFS	40.48	39.77	39.09	38.46	37.85	37.20	36.52
35.81								
14.82	CFS	35.08	34.35	33.60	32.81	32.00	31.18	30.36
29.43								
15.30	CFS	28.40	27.34	26.13	24.86	23.65	22.56	21.49
20.62								
15.78	CFS	19.90	19.27	18.72	18.28	17.91	17.58	17.21
16.84								
16.26	CFS	16.51	16.19	15.89	15.61	15.32	15.04	14.78
14.52								
16.74	CFS	14.28	14.06	13.88	13.72	13.55	13.39	13.23
13.10								
17.22	CFS	12.96	12.81	12.64	12.47	12.31	12.18	12.05
11.85								
17.70	CFS	11.63	11.42	11.24	11.08	10.92	10.77	10.62
10.49								
18.18	CFS	10.37	10.25	10.12	9.99	9.87	9.76	9.65
9.54								
18.66	CFS	9.46	9.41	9.38	9.34	9.29	9.25	9.22
9.18								
19.14	CFS	9.13	9.07	9.02	8.98	8.95	8.92	8.90
8.88								
19.62	CFS	8.86	8.84	8.80	8.75	8.71	8.68	8.64
8.58								
20.10	CFS	8.54	8.53	8.53	8.51	8.48	8.44	8.40
8.35								
20.58	CFS	8.28	8.23	8.20	8.19	8.17	8.13	8.10
8.08								
21.06	CFS	8.05	8.01	7.95	7.91	7.86	7.83	7.80
7.78								
21.54	CFS	7.76	7.74	7.72	7.69	7.64	7.60	7.56
7.53								
22.02	CFS	7.50	7.49	7.47	7.43	7.38	7.34	7.30
7.26								
22.50	CFS	7.23	7.21	7.19	7.16	7.12	7.07	7.02
6.99								
22.98	CFS	6.94	6.89	6.85	6.83	6.82	6.81	6.77
6.73								
23.46	CFS	6.70	6.67	6.63	6.58	6.52	6.48	6.46
6.45								
23.94	CFS	6.43	6.38	6.33	6.33	6.29	5.99	5.38
4.60								
24.42	CFS	3.83	3.14	2.56	2.07	1.66	1.33	1.06
.85								
24.90	CFS	.67	.52	.42				

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

4.20 WATERSHED INCHES; 397 CFS-HRS; 32.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
ELEVATION (FEET)  
12.55 853.1 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 50  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28  
SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	1.28
4.74 CFS	.47	.53	.59	.65	.72	.78	.85			
.93										
5.22 CFS	1.01	1.09	1.17	1.26	1.34	1.43	1.52			
1.61										
5.70 CFS	1.71	1.83	1.94	2.07	2.21	2.35	2.51			
2.68										
6.18 CFS	2.85	3.04	3.23	3.44	3.65	3.87	4.10			
4.34										
6.66 CFS	4.59	4.85	5.12	5.39	5.68	5.98	6.30			
6.62										
7.14 CFS	6.95	7.30	7.66	8.03	8.42	8.82	9.23			
9.67										
7.62 CFS	10.12	10.59	11.08	11.58	12.10	12.63	13.17			
13.73										
8.10 CFS	14.31	14.90	15.51	16.14	16.79	17.46	18.15			
18.85										
8.58 CFS	19.57	20.31	21.07	21.84	22.63	23.44	24.26			
25.09										
9.06 CFS	25.92	26.77	27.65	28.56	29.51	30.52	31.59			
32.72										
9.54 CFS	33.90	35.14	36.43	37.79	39.23	40.74	42.34			
44.02										
10.02 CFS	45.79	47.66	49.62	51.67	53.82	56.06	58.39			
60.82										
10.50 CFS	63.35	65.98	68.77	71.72	74.85	78.20	81.81			
85.75										
10.98 CFS	90	95	100	105	112	118	126			
133										
11.46 CFS	142	151	162	176	192	209	231			
258										
11.94 CFS	294	347	424	531	623	677	730			
794										
12.42 CFS	832	847	853	849	840	828	817			
805										
12.90 CFS	793	782	772	763	753	744	735			
727										
13.38 CFS	721	715	709	704	694	679	661			
643										
13.86 CFS	625	608	592	578	565	553	541			
530										
14.34 CFS	518	507	495	484	472	461	450			
439										
14.82 CFS	429	418	407	396	386	375	364			
354										
15.30 CFS	343	332	320	308	296	284	273			
261										
15.78 CFS	250	241	232	224	216	208	202			
195										
16.26 CFS	189	184	179	175	171	167	164			
161										
16.74 CFS	158	156	153	151	149	147	145			

144							
17.22 CFS	142	140	139	137	135	134	132
131							
17.70 CFS	129	128	126	125	123	122	121
119							
18.18 CFS	118	116	115	114	112	111	110
109							
18.66 CFS	108	107	106	105	104	103	102
101							
19.14 CFS	100	100	99	98	97	97	96
95							
19.62 CFS	94.83	94.25	93.76	93.23	92.65	92.10	91.66
91.28							
20.10 CFS	90.84	90.36	89.92	89.52	89.12	88.65	88.18
87.80							
20.58 CFS	87.46	87.08	86.64	86.22	85.91	85.58	85.17
84.76							
21.06 CFS	84.38	84.00	83.62	83.25	82.89	82.53	82.19
81.87							
21.54 CFS	81.54	81.15	80.76	80.46	80.14	79.74	79.41
79.14							
22.02 CFS	78.78	78.40	78.05	77.72	77.39	77.06	76.73
76.42							
22.50 CFS	76.11	75.77	75.38	75.03	74.76	74.42	74.01
73.63							
22.98 CFS	73.32	73.07	72.75	72.37	72.03	71.72	71.41
71.09							

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23.46 CFS	70.74	70.33	69.96	69.68	69.40	69.08	68.69
68.30							
23.94 CFS	67.99	67.90	67.50	66.06	64.34	62.86	61.34
59.61							
24.42 CFS	57.73	55.79	53.85	51.94	50.09	48.26	46.44
44.61							
24.90 CFS	42.76	40.88	39.01	37.13	35.28	33.47	31.72
30.04							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.15 WATERSHED INCHES; 3430 CFS-HRS; 283.5 ACRE-  
FEET.

OPERATION DIVERT XSECTION 176  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 691.0 \* (DIVERT)  
\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3315 CFS-HRS; 274.0 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	162.1	176.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.14 WATERSHED INCHES; 115 CFS-HRS; 9.5 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 72, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
STARTS 20.00 FEET BELOW ASSUMED CREST ELEVATION AT 240.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 72

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
AT STRUCTURE 72  
\*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.68	.0	224.64

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 177

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.59	692.6	(NULL)

```

              HYDROGRAPH POINTS FOR  ALTERNATE = 1,  STORM =50
HRS     MAIN TIME INCREMENT = .060 hr,  DRAINAGE AREA = 1.28
SQ.MI.
4.74 CFS     .47    .53    .59    .65    .72    .78    .85
.93
5.22 CFS     1.01  1.09  1.17  1.26  1.34  1.43  1.52
1.61
5.70 CFS     1.71  1.83  1.94  2.07  2.21  2.35  2.51
2.68
6.18 CFS     2.85  3.04  3.23  3.44  3.65  3.87  4.10
4.34
6.66 CFS     4.59  4.85  5.12  5.39  5.68  5.98  6.30
6.62
7.14 CFS     6.95  7.30  7.66  8.03  8.42  8.82  9.23
9.67
7.62 CFS     10.12 10.59 11.08 11.58 12.10 12.63 13.17
13.73
```

8.10 CFS	14.31	14.90	15.51	16.14	16.79	17.46	18.15
18.85							
8.58 CFS	19.57	20.31	21.07	21.84	22.63	23.44	24.26
25.09							
9.06 CFS	25.92	26.77	27.65	28.56	29.51	30.52	31.59
32.72							
9.54 CFS	33.90	35.14	36.43	37.79	39.23	40.74	42.34
44.02							
10.02 CFS	45.79	47.66	49.62	51.67	53.82	56.06	58.39
60.82							
10.50 CFS	63.35	65.98	68.77	71.72	74.85	78.20	81.81
85.75							
10.98 CFS	90	95	100	105	112	118	126
133							
11.46 CFS	142	151	162	176	192	209	231
258							
11.94 CFS	294	347	424	531	623	677	691
691							
12.42 CFS	691	691	691	691	691	691	691
691							
12.90 CFS	691	691	691	691	691	691	691
691							
13.38 CFS	691	691	691	691	691	679	661
643							
13.86 CFS	625	608	592	578	565	553	541
530							
14.34 CFS	518	507	495	484	472	461	450
439							
14.82 CFS	429	418	407	396	386	375	364
354							
15.30 CFS	343	332	320	308	296	284	273
261							
15.78 CFS	250	241	232	224	216	208	202
195							
16.26 CFS	189	184	179	175	171	167	164
161							
16.74 CFS	158	156	153	151	149	147	145
144							
17.22 CFS	142	140	139	137	135	134	132
131							
17.70 CFS	129	128	126	125	123	122	121
119							
18.18 CFS	118	116	115	114	112	111	110
109							
18.66 CFS	108	107	106	105	104	103	102
101							
19.14 CFS	100	100	99	98	97	97	96
95							
19.62 CFS	94.84	94.26	93.77	93.24	92.66	92.11	91.66
91.28							
20.10 CFS	90.85	90.37	89.93	89.53	89.13	88.66	88.19
87.81							
20.58 CFS	87.47	87.09	86.65	86.23	85.91	85.59	85.18
84.76							
21.06 CFS	84.38	84.01	83.63	83.26	82.90	82.54	82.20
81.88							
21.54 CFS	81.55	81.16	80.77	80.47	80.15	79.75	79.42
79.14							
22.02 CFS	78.79	78.41	78.06	77.73	77.40	77.07	76.74
76.42							
22.50 CFS	76.12	75.78	75.39	75.04	74.77	74.43	74.02
73.64							
22.98 CFS	73.33	73.08	72.76	72.38	72.04	71.73	71.42
71.10							

23.46	CFS	70.75	70.34	69.97	69.69	69.41	69.09	68.70
68.31								
23.94	CFS	68.00	67.90	67.51	66.07	64.35	62.87	61.35
59.62								
24.42	CFS	57.74	55.80	53.86	51.95	50.10	48.27	46.44
44.62								
24.90	CFS	42.77	40.89	39.01	37.14	35.29	33.48	31.73
30.04								

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.02 WATERSHED INCHES; 3315 CFS-HRS; 274.0 ACRE-  
FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.62	691.0 *	229.78

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.01 WATERSHED INCHES; 3313 CFS-HRS; 273.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	133.1	(RUNOFF)
15.84	5.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.01	2.2	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05 SQ.MI.

HRS	8.82	9.30	9.78	10.26	10.74	11.22	11.70	12.18
CFS	.48	.86	1.48	2.31	3.75	7.47	20	133
	.51	.93	1.57	2.42	4.09	8.22	23	112
	.55	1.00	1.66	2.53	4.44	9.01	27	85
	.59	1.07	1.75	2.67	4.82	9.88	34	67
	.64	1.13	1.86	2.81	5.21	10.77	44	54
	.69	1.21	1.97	2.97	5.63	11.74	60	45
	.73	1.30	2.09	3.19	6.15	13.66	86	40

12.66	CFS	29.53	25.82	23.63	22.02	20.68	19.50	18.32
17.15								
13.14	CFS	16.02	15.09	14.36	13.67	13.01	12.36	11.69
11.06								
13.62	CFS	10.46	9.97	9.61	9.33	9.10	8.93	8.79
8.67								
14.10	CFS	8.51	8.32	8.12	7.94	7.79	7.66	7.53
7.36								
14.58	CFS	7.16	6.95	6.78	6.64	6.51	6.36	6.19
6.02								
15.06	CFS	5.87	5.69	5.51	5.37	5.29	5.25	5.23
5.23								
15.54	CFS	5.22	5.17	5.09	5.00	4.96	4.97	4.96
4.90								
16.02	CFS	4.81	4.74	4.70	4.68	4.66	4.60	4.54
4.50								
16.50	CFS	4.44	4.38	4.33	4.31	4.30	4.25	4.19
4.14								
16.98	CFS	4.13	4.11	4.06	3.98	3.88	3.84	3.85
3.84								
17.46	CFS	3.77	3.68	3.61	3.57	3.55	3.53	3.47
3.41								
17.94	CFS	3.37	3.36	3.33	3.27	3.21	3.18	3.17
3.14								
18.42	CFS	3.09	3.06	3.09	3.12	3.12	3.08	3.06
3.08								
18.90	CFS	3.07	3.03	3.00	2.98	2.97	2.97	2.97
2.97								
19.38	CFS	2.97	2.97	2.97	2.95	2.90	2.87	2.90
2.89								
19.86	CFS	2.84	2.81	2.83	2.88	2.88	2.84	2.81
2.80								
20.34	CFS	2.78	2.73	2.69	2.70	2.74	2.76	2.72
2.68								

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20.82	CFS	2.70	2.71	2.67	2.63	2.61	2.60	2.60
2.60								
21.30	CFS	2.59	2.59	2.60	2.60	2.59	2.54	2.50
2.51								
21.78	CFS	2.52	2.49	2.49	2.52	2.49	2.45	2.42
2.41								
22.26	CFS	2.41	2.40	2.40	2.40	2.40	2.39	2.33
2.30								
22.74	CFS	2.33	2.32	2.27	2.24	2.26	2.31	2.31
2.27								
23.22	CFS	2.24	2.22	2.22	2.21	2.19	2.14	2.11
2.14								
23.70	CFS	2.18	2.18	2.13	2.07	2.07	2.18	2.13
1.50								
24.18	CFS	.78	.36					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.89 WATERSHED INCHES; 128 CFS-HRS; 10.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	743.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.01 WATERSHED INCHES;	3441 CFS-HRS;	284.4 ACRE-
FEET.		

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	743.2	214.54
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.01 WATERSHED INCHES;	3439 CFS-HRS;	284.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	76.0	(RUNOFF)
17.34	2.3	(RUNOFF)
24.01	1.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.55 WATERSHED INCHES;	72 CFS-HRS;	5.9 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	769.4	178.52
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.00 WATERSHED INCHES;	3511 CFS-HRS;	290.2 ACRE-
FEET.		

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OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	148.3	(RUNOFF)
15.84	5.1	(RUNOFF)
19.47	3.1	(RUNOFF)



24.00 2.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.06 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 84

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	156.7	(RUNOFF)
20.12	4.1	(RUNOFF)
24.01	3.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.96 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 184  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	118.0 *	(DIVERT)
20.12	4.1	(DIVERT)
24.01	3.0	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 178 CFS-HRS; 14.7 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	38.7	175.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .14 WATERSHED INCHES; 7 CFS-HRS; .6 ACRE-  
 FEET.

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\*\*\* MESSAGE - STRUCTURE 81, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 200.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 81

\*\*\* MESSAGE - STRUCTURE 81, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).

\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .14 WATERSHED INCHES; 291 CFS-HRS; .6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 185

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	118.0 *	(NULL)
20.12	4.1	(NULL)
24.01	3.0	(NULL)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.81 WATERSHED INCHES; 178 CFS-HRS; 14.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 186

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	77.3	(RUNOFF)
21.94	2.0	(RUNOFF)
24.01	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.09 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 187

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	195.3	(NULL)
20.68	6.1	(NULL)
23.12	5.1	(NULL)
24.01	4.8	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.53 WATERSHED INCHES; 271 CFS-HRS; 22.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 85

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	331.9	(NULL)
18.83	10.1	(NULL)

20.07	9.4	(NULL)
21.95	8.2	(NULL)
23.74	7.1	(NULL)
24.00	7.1	(NULL)

		HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50						
HRS		MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .17						
SQ.MI.								
8.10 CFS	.44	.51	.58	.65	.74	.82	.89	
.97								
8.58 CFS	1.06	1.16	1.25	1.34	1.42	1.50	1.59	
1.70								
9.06 CFS	1.81	1.92	2.05	2.19	2.36	2.53	2.70	
2.87								
9.54 CFS	3.04	3.25	3.47	3.72	3.98	4.24	4.51	
4.79								
10.02 CFS	5.09	5.42	5.77	6.12	6.46	6.80	7.16	
7.55								
10.50 CFS	7.98	8.46	9.06	9.77	10.60	11.55	12.57	
13.67								
10.98 CFS	14.82	16.05	17.55	19.28	21.26	23.41	25.73	
28.30								
11.46 CFS	30.95	33.84	38.93	46.63	54.46	63.54	76.10	
93.20								
11.94 CFS	119	161	226	314	331	301	271	
245								
12.42 CFS	213	180	157	135	116	102	90	
82								
12.90 CFS	75.05	69.60	64.75	60.23	56.16	52.69	49.75	
47.14								
13.38 CFS	44.73	42.45	40.21	38.08	36.05	34.29	32.85	
31.65								
13.86 CFS	30.69	29.92	29.30	28.77	28.22	27.64	27.02	
26.42								
14.34 CFS	25.90	25.42	24.95	24.43	23.85	23.23	22.66	
22.15								
14.82 CFS	21.68	21.19	20.65	20.13	19.62	19.05	18.50	
18.02								
15.30 CFS	17.65	17.41	17.25	17.16	17.09	16.96	16.76	
16.52								
15.78 CFS	16.36	16.31	16.22	16.07	15.86	15.66	15.50	
15.40								
16.26 CFS	15.29	15.13	14.97	14.83	14.65	14.45	14.30	
14.20								
16.74 CFS	14.11	13.97	13.80	13.67	13.57	13.49	13.35	
13.15								
17.22 CFS	12.90	12.73	12.68	12.58	12.43	12.21	12.00	
11.84								
17.70 CFS	11.72	11.61	11.45	11.29	11.16	11.07	10.97	
10.81								
18.18 CFS	10.65	10.53	10.44	10.34	10.19	10.11	10.12	
10.16								
18.66 CFS	10.17	10.09	10.05	10.07	10.03	9.94	9.87	
9.80								
19.14 CFS	9.76	9.74	9.72	9.71	9.71	9.71	9.71	
9.67								
19.62 CFS	9.55	9.48	9.49	9.44	9.34	9.27	9.28	
9.36								
20.10 CFS	9.36	9.30	9.24	9.19	9.13	9.01	8.90	
8.89								
20.58 CFS	8.94	8.96	8.91	8.84	8.85	8.84	8.76	
8.68								
21.06 CFS	8.61	8.56	8.52	8.51	8.50	8.49	8.49	
8.49								

21.54 CFS	8.46	8.36	8.26	8.26	8.23	8.17	8.19
8.21							
22.02 CFS	8.16	8.07	8.00	7.95	7.91	7.89	7.88
7.87							
22.50 CFS	7.86	7.82	7.70	7.63	7.64	7.58	7.49
7.41							
22.98 CFS	7.42	7.49	7.50	7.44	7.38	7.32	7.28
7.26							
23.46 CFS	7.20	7.07	7.00	7.03	7.07	7.08	7.00
6.88							
23.94 CFS	6.84	7.06	6.89	5.57	3.97	2.65	1.65
1.02							

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24.42 CFS .63 .39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.69 WATERSHED INCHES; 405 CFS-HRS; 33.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	984.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.96 WATERSHED INCHES; 3916 CFS-HRS; 323.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	64.3	(RUNOFF)
20.04	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.67 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	1003.9	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55  
SQ.MI.

4.74 CFS	.46	.52	.58	.64	.70	.77	.84
.91							
5.22 CFS	.99	1.07	1.15	1.23	1.32	1.42	1.51

1.61								
5.70	CFS	1.70	1.79	1.89	1.99	2.12	2.25	2.39
2.53								
6.18	CFS	2.68	2.85	3.03	3.22	3.42	3.63	3.84
4.07								
6.66	CFS	4.30	4.53	4.79	5.06	5.33	5.60	5.89
6.21								
7.14	CFS	6.53	6.85	7.18	7.53	7.89	8.27	8.67
9.07								
7.62	CFS	9.50	9.97	10.45	10.95	11.48	12.06	12.65
13.26								
8.10	CFS	13.91	14.57	15.23	15.93	16.67	17.39	18.14
18.92								
8.58	CFS	19.74	20.59	21.45	22.32	23.21	24.11	25.03
26.03								
9.06	CFS	27.05	28.07	29.13	30.24	31.40	32.60	33.82
35.09								
9.54	CFS	36.41	37.84	39.37	40.99	42.68	44.41	46.22
48.11								
10.02	CFS	50.14	52.29	54.55	56.90	59.31	61.82	64.46
67.24								
10.50	CFS	70.18	73.32	76.77	80.54	84.61	89.02	93.70
98.69								
10.98	CFS	104	110	116	123	131	140	149
160								
11.46	CFS	171	183	199	221	244	270	305
349								
11.94	CFS	408	501	638	823	926	950	978
1002								
12.42	CFS	998	964	930	898	868	846	829
817								
12.90	CFS	807	800	792	786	779	774	769
765								
13.38	CFS	762	758	755	751	748	745	743
741								

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13.86	CFS	728	711	692	673	655	638	623
609								
14.34	CFS	595	583	571	558	546	534	521
509								
14.82	CFS	497	485	473	462	450	439	427
415								
15.30	CFS	404	393	382	371	360	349	336
324								
15.78	CFS	312	300	288	277	267	258	249
241								
16.26	CFS	234	226	220	214	208	203	198
194								
16.74	CFS	190	187	183	180	178	175	173
170								
17.22	CFS	168	166	164	162	160	158	156
154								
17.70	CFS	153	151	149	147	146	144	142
141								
18.18	CFS	139	138	136	135	133	131	130

129							
18.66 CFS	128	126	125	124	123	122	121
120							
19.14 CFS	119	118	117	116	115	114	114
113							
19.62 CFS	112	111	111	110	109	109	108
108							
20.10 CFS	107	107	106	106	105	104	104
103							
20.58 CFS	103	103	102	102	101	101	100
100							
21.06 CFS	99.33	98.84	98.39	97.98	97.59	97.21	96.84
96.47							
21.54 CFS	96.09	95.58	95.06	94.72	94.32	93.84	93.54
93.27							
22.02 CFS	92.81	92.33	91.91	91.47	91.04	90.67	90.32
89.98							
22.50 CFS	89.65	89.25	88.73	88.28	87.97	87.52	87.01
86.59							
22.98 CFS	86.27	86.01	85.66	85.24	84.86	84.45	84.02
83.64							
23.46 CFS	83.24	82.71	82.26	81.96	81.66	81.32	80.88
80.39							
23.94 CFS	79.99	79.98	79.39	76.90	73.90	71.20	68.32
65.75							
24.42 CFS	63.75	61.95	60.07	58.10	56.11	54.13	52.19
50.32							
24.90 CFS	48.47	46.64	44.81	42.96	41.09	39.22	37.34
35.49							
25.38 CFS	33.67						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.98 WATERSHED INCHES; 3974 CFS-HRS; 328.4 ACRE-FEET.

OPERATION DIVERT XSECTION 81  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.12	730.0 *	178.42

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3798 CFS-HRS; 313.9 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	273.9	176.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .18 WATERSHED INCHES; 176 CFS-HRS; 14.5 ACRE-FEET.

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\*\*\* MESSAGE - STRUCTURE 71, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
STARTS 25.00 FEET BELOW ASSUMED CREST ELEVATION AT 174.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 71

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
AT STRUCTURE 71  
\*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.86	.0	163.54
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
	.00 WATERSHED INCHES;	0 CFS-HRS; .0 ACRE-
	FEET.	

OPERATION ADDHYD XSECTION 89

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.77	730.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55  
SQ.MI.

HRS								
4.74 CFS	.46	.52	.58	.64	.70	.77	.84	
.91								
5.22 CFS	.99	1.07	1.15	1.23	1.32	1.42	1.51	
1.61								
5.70 CFS	1.70	1.79	1.89	1.99	2.12	2.25	2.39	
2.53								
6.18 CFS	2.68	2.85	3.03	3.22	3.42	3.63	3.84	
4.07								
6.66 CFS	4.30	4.53	4.79	5.06	5.33	5.60	5.89	
6.21								
7.14 CFS	6.53	6.85	7.18	7.53	7.89	8.27	8.67	
9.07								
7.62 CFS	9.50	9.97	10.45	10.95	11.48	12.06	12.65	
13.26								
8.10 CFS	13.91	14.57	15.23	15.93	16.67	17.39	18.14	
18.92								
8.58 CFS	19.74	20.59	21.45	22.32	23.21	24.11	25.03	
26.03								
9.06 CFS	27.05	28.07	29.13	30.24	31.40	32.60	33.82	
35.09								
9.54 CFS	36.41	37.84	39.37	40.99	42.68	44.41	46.22	
48.11								
10.02 CFS	50.14	52.29	54.55	56.90	59.31	61.82	64.46	
67.24								
10.50 CFS	70.18	73.32	76.77	80.54	84.61	89.02	93.70	
98.69								
10.98 CFS	104	110	116	123	131	140	149	
160								
11.46 CFS	171	183	199	221	244	270	305	

349							
11.94 CFS	408	501	638	730	730	730	730
730							
12.42 CFS	730	730	730	730	730	730	730
730							
12.90 CFS	730	730	730	730	730	730	730
730							
13.38 CFS	730	730	730	730	730	730	730
730							
13.86 CFS	728	711	692	673	655	638	623
609							
14.34 CFS	595	583	571	558	546	534	521
509							
14.82 CFS	497	485	473	462	450	439	427
415							
15.30 CFS	404	393	382	371	360	349	336
324							
15.78 CFS	312	300	288	277	267	258	249
241							
16.26 CFS	234	227	220	214	208	203	198
194							
16.74 CFS	190	187	183	180	178	175	173
170							

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17.22 CFS	168	166	164	162	160	158	156
154							
17.70 CFS	153	151	149	147	146	144	143
141							
18.18 CFS	139	138	136	135	133	131	130
129							
18.66 CFS	128	126	125	124	123	122	121
120							
19.14 CFS	119	118	117	116	115	114	114
113							
19.62 CFS	112	111	111	110	109	109	108
108							
20.10 CFS	107	107	106	106	105	104	104
103							
20.58 CFS	103	103	102	102	101	101	100
100							
21.06 CFS	99.36	98.87	98.42	98.01	97.62	97.24	96.87
96.50							
21.54 CFS	96.11	95.61	95.09	94.75	94.35	93.86	93.56
93.30							
22.02 CFS	92.84	92.36	91.94	91.50	91.07	90.70	90.35
90.01							
22.50 CFS	89.68	89.28	88.75	88.31	88.00	87.55	87.04
86.62							
22.98 CFS	86.30	86.04	85.68	85.27	84.89	84.48	84.05
83.67							
23.46 CFS	83.27	82.74	82.29	81.99	81.69	81.35	80.91
80.42							
23.94 CFS	80.01	80.01	79.42	76.92	73.93	71.23	68.35
65.78							
24.42 CFS	63.78	61.98	60.10	58.13	56.13	54.16	52.22



50.35  
 24.90 CFS      48.50    46.67    44.84    42.99    41.12    39.24    37.37  
 35.52  
 25.38 CFS      33.70

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.80 WATERSHED INCHES;      3799 CFS-HRS;      313.9 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP      COMPUTATIONS COMPLETED FOR PASS    5

EXECUTIVE CONTROL COMPUT      FROM XSECTION    1    TO XSECTION    89  
 STARTING TIME = .00      RAIN DEPTH = 8.47      RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2      MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1      STORM NO. =99      RAIN TABLE NO. = 9

OPERATION RUNOFF    XSECTION    1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	99.6	(RUNOFF)
20.13	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.18 WATERSHED INCHES;      134 CFS-HRS;      11.1 ACRE-  
 FEET.

OPERATION REACH    XSECTION    2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	99.4	390.78
20.19	2.5	389.30

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.18 WATERSHED INCHES;      134 CFS-HRS;      11.1 ACRE-  
 FEET.

OPERATION RUNOFF    XSECTION    3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	175.5	(RUNOFF)
20.68	4.1	(RUNOFF)
23.97	3.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.00 WATERSHED INCHES;      225 CFS-HRS;      18.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	270.3	(NULL)
20.14	6.8	(NULL)
23.12	5.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.07 WATERSHED INCHES; 359 CFS-HRS; 29.6 ACRE-  
FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,  
VALUE EXTRAPOLATED.  
\*\*\*

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	268.8	384.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.04 WATERSHED INCHES; 357 CFS-HRS; 29.5 ACRE-  
FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	268.4	369.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.05 WATERSHED INCHES; 357 CFS-HRS; 29.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 6

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	226.3	(RUNOFF)
20.13	5.8	(RUNOFF)
23.74	4.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.74 WATERSHED INCHES; 295 CFS-HRS; 24.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	479.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.90 WATERSHED INCHES; 653 CFS-HRS; 54.0 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 107  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.06	213.0 *	(DIVERT)
	* FIRST POINT OF FLAT	PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 555 CFS-HRS; 45.8 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	266.2	176.94

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .89 WATERSHED INCHES; 98 CFS-HRS; 8.1 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 84, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 358.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 84, TRUNCATED AT 400 POINTS  
 WITH 7.91 AC-FT ( .07 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 354.73.  
 \*\*\*

OPERATION RESVOR STRUCTURE 84

1

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\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
 AT STRUCTURE 84  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.78	.0	354.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 1 CFS-HRS; .0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	215.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 555 CFS-HRS; 45.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.75	215.3	357.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 555 CFS-HRS; 45.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	242.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.38 WATERSHED INCHES; 350 CFS-HRS; 28.9 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 21, TRUNCATED AT 400 POINTS  
 WITH 2.68 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 370.65.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.54 153.9 378.71

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.69 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	38.4	(RUNOFF)
15.83	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.11 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.91	127.4	360.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	184.3	(RUNOFF)
18.87	4.1	(RUNOFF)
22.76	3.1	(RUNOFF)
23.09	3.1	(RUNOFF)
24.03	2.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.26 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	396.8	(NULL)
24.01	12.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.08 WATERSHED INCHES; 740 CFS-HRS; 61.1 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	69.3	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.95 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	448.4	(NULL)
24.00	20.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.46 WATERSHED INCHES; 1054 CFS-HRS; 87.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	515.9	(NULL)
24.00	21.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.49 WATERSHED INCHES; 1128 CFS-HRS; 93.2 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .006 HOURS.  
\*\*\*

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.86	358.7	346.82
15.17	56.0	335.26
15.28	52.8	335.13
15.40	50.2	335.03
24.01	21.4	333.91

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32 SQ.MI.

3.00 CFS	.00	.01	.01	.01	.01	.01	.02
.02							
3.00 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
3.48 CFS	.02	.02	.03	.03	.03	.04	.04
.04							
3.48 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							

3.96 CFS	.05	.05	.05	.06	.06	.07	.07
.07							

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3.96 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
4.44 CFS	.08	.08	.09	.09	.10	.10	.11
.12							
4.44 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
4.92 CFS	.12	.13	.13	.14	.15	.17	.19
.21							
4.92 ELEV	333.08	333.08	333.09	333.09	333.09	333.09	333.09
333.09							
5.40 CFS	.23	.25	.27	.30	.33	.37	.42
.47							
5.40 ELEV	333.09	333.09	333.09	333.09	333.09	333.09	333.10
333.10							
5.88 CFS	.52	.58	.64	.71	.78	.85	.92
1.00							
5.88 ELEV	333.10	333.10	333.10	333.11	333.11	333.11	333.12
333.12							
6.36 CFS	1.08	1.16	1.24	1.33	1.44	1.55	1.66
1.78							
6.36 ELEV	333.12	333.12	333.13	333.13	333.14	333.14	333.14
333.15							
6.84 CFS	1.91	2.04	2.17	2.30	2.45	2.60	2.75
2.91							
6.84 ELEV	333.15	333.16	333.16	333.17	333.18	333.18	333.19
333.19							
7.32 CFS	3.07	3.22	3.39	3.56	3.73	3.90	4.07
4.25							
7.32 ELEV	333.20	333.21	333.21	333.22	333.23	333.23	333.24
333.25							
7.80 CFS	4.43	4.62	4.81	5.02	5.22	5.44	5.65
5.85							
7.80 ELEV	333.25	333.26	333.27	333.28	333.28	333.29	333.30
333.31							
8.28 CFS	6.06	6.31	6.62	6.94	7.29	7.67	8.06
8.46							
8.28 ELEV	333.32	333.33	333.34	333.35	333.36	333.38	333.39
333.41							
8.76 CFS	8.86	9.25	9.63	10.01	10.41	10.84	11.28
11.73							
8.76 ELEV	333.42	333.44	333.45	333.47	333.49	333.50	333.52
333.54							
9.24 CFS	12.22	12.76	13.33	13.90	14.49	15.88	17.36
18.54							
9.24 ELEV	333.56	333.58	333.60	333.62	333.64	333.70	333.76
333.80							
9.72 CFS	19.71	20.73	21.75	22.69	23.66	24.61	25.60
26.61							
9.72 ELEV	333.85	333.89	333.93	333.96	334.00	334.04	334.08
334.11							
10.20 CFS	27.63	28.62	29.60	30.58	31.60	32.64	33.75
35.00							

10.20 ELEV	334.15	334.19	334.23	334.27	334.31	334.35	334.39
334.44							
10.68 CFS	36.42	38.06	39.91	41.97	44.28	46.78	49.47
52.50							
10.68 ELEV	334.50	334.56	334.63	334.71	334.80	334.90	335.00
335.12							
11.16 CFS	55.94	59.81	64.04	68.65	73.65	79.00	84.73
92.11							
11.16 ELEV	335.26	335.41	335.57	335.75	335.95	336.15	336.38
336.66							
11.64 CFS	100	102	105	111	119	128	135
148							
11.64 ELEV	336.98	337.05	337.22	337.47	337.85	338.25	338.65
339.30							
12.12 CFS	162	179	197	210	221	229	237
244							
12.12 ELEV	340.16	341.23	342.34	343.22	343.96	344.60	345.15
345.65							
12.60 CFS	254	291	324	348	358	356	345
330							
12.60 ELEV	346.09	346.42	346.63	346.76	346.82	346.81	346.75
346.66							
13.08 CFS	313	297	286	275	263	251	248
246							
13.08 ELEV	346.57	346.48	346.38	346.27	346.17	346.06	345.94
345.77							
13.56 CFS	243	239	235	230	226	221	217
212							
13.56 ELEV	345.53	345.26	344.97	344.66	344.34	344.01	343.68
343.36							
14.04 CFS	207	203	197	191	185	180	174
169							
14.04 ELEV	343.03	342.70	342.35	341.98	341.61	341.25	340.91
340.58							
14.52 CFS	164	159	154	149	142	136	130
125							
14.52 ELEV	340.26	339.95	339.65	339.35	339.01	338.69	338.39
338.10							
15.00 CFS	113	104	54	56	52	53	50
50							
15.00 ELEV	337.58	337.14	335.18	335.26	335.10	335.13	335.02
335.03							
15.48 CFS	48.02	47.98	46.56	46.31	45.20	44.87	44.13
43.85							
15.48 ELEV	334.95	334.95	334.89	334.88	334.84	334.83	334.80
334.79							

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15.96 CFS	43.20	42.80	42.20	41.82	41.35	41.01	40.59
40.25							
15.96 ELEV	334.76	334.74	334.72	334.71	334.69	334.68	334.66
334.65							
16.44 CFS	39.91	39.61	39.25	38.94	38.65	38.39	38.10
37.80							
16.44 ELEV	334.63	334.62	334.61	334.59	334.58	334.57	334.56
334.55							



16.92 CFS	37.51	37.26	37.02	36.76	36.45	36.10	35.78
35.53							
16.92 ELEV	334.54	334.53	334.52	334.51	334.50	334.48	334.47
334.46							
17.40 CFS	35.29	35.00	34.64	34.29	33.98	33.69	33.41
33.10							
17.40 ELEV	334.45	334.44	334.43	334.41	334.40	334.39	334.38
334.37							
17.88 CFS	32.77	32.47	32.21	31.96	31.67	31.37	31.10
30.86							
17.88 ELEV	334.35	334.34	334.33	334.32	334.31	334.30	334.29
334.28							
18.36 CFS	30.62	30.34	30.09	29.93	29.83	29.71	29.56
29.42							
18.36 ELEV	334.27	334.26	334.25	334.24	334.24	334.24	334.23
334.22							
18.84 CFS	29.36	29.29	29.17	29.03	28.92	28.82	28.72
28.63							
18.84 ELEV	334.22	334.22	334.21	334.21	334.20	334.20	334.20
334.19							
19.32 CFS	28.54	28.47	28.41	28.36	28.29	28.17	28.05
27.99							
19.32 ELEV	334.19	334.19	334.19	334.18	334.18	334.18	334.17
334.17							
19.80 CFS	27.92	27.78	27.64	27.55	27.53	27.49	27.39
27.28							
19.80 ELEV	334.17	334.16	334.16	334.15	334.15	334.15	334.15
334.14							
20.28 CFS	27.20	27.11	26.97	26.80	26.69	26.63	26.58
26.47							
20.28 ELEV	334.14	334.13	334.13	334.12	334.12	334.12	334.11
334.11							
20.76 CFS	26.34	26.28	26.23	26.13	26.00	25.88	25.77
25.67							
20.76 ELEV	334.10	334.10	334.10	334.10	334.09	334.09	334.08
334.08							
21.24 CFS	25.57	25.48	25.40	25.33	25.27	25.21	25.10
24.96							
21.24 ELEV	334.07	334.07	334.07	334.07	334.06	334.06	334.06
334.05							
21.72 CFS	24.88	24.81	24.70	24.61	24.57	24.49	24.37
24.25							
21.72 ELEV	334.05	334.05	334.04	334.04	334.04	334.03	334.03
334.02							
22.20 CFS	24.14	24.05	23.95	23.87	23.79	23.72	23.64
23.50							
22.20 ELEV	334.02	334.02	334.01	334.01	334.01	334.00	334.00
333.99							
22.68 CFS	23.36	23.29	23.20	23.06	22.91	22.82	22.79
22.74							
22.68 ELEV	333.99	333.99	333.98	333.98	333.97	333.97	333.97
333.96							
23.16 CFS	22.64	22.53	22.44	22.36	22.28	22.18	22.03
21.88							
23.16 ELEV	333.96	333.96	333.95	333.95	333.95	333.94	333.94
333.93							
23.64 CFS	21.80	21.77	21.71	21.59	21.44	21.33	21.39
21.35							
23.64 ELEV	333.93	333.93	333.92	333.92	333.91	333.91	333.91
333.91							
24.12 CFS	20.49	19.07	17.65	16.35	15.09	13.83	12.67
11.64							
24.12 ELEV	333.88	333.82	333.77	333.72	333.67	333.62	333.57
333.53							

24.60 CFS	11.04	10.74	10.49	10.30	10.10	9.94	9.77
9.63							
24.60 ELEV	333.51	333.50	333.49	333.48	333.47	333.47	333.46
333.45							
25.08 CFS	9.48	9.34	9.20	9.07	8.94	8.82	8.69
8.57							
25.08 ELEV	333.45	333.44	333.44	333.43	333.43	333.42	333.42
333.41							
25.56 CFS	8.46	8.34	8.22	8.11	8.00	7.89	7.78
25.56 ELEV	333.41	333.40	333.40	333.40	333.39	333.39	333.38

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.48 WATERSHED INCHES; 1127 CFS-HRS; 93.1 ACRE-  
 FEET.

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DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	189	55	38	31	27	24	22	10
DURATION(HRS)	17							
FLOW(CFS)	8 TRUNCATED							

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.86	358.7	333.85
15.17	56.0	331.78
15.28	52.8	331.74
15.40	50.2	331.71
24.01	21.4	331.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.48 WATERSHED INCHES; 1127 CFS-HRS; 93.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	98.2	(RUNOFF)
17.34	2.2	(RUNOFF)
24.00	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.01 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	111.9	(RUNOFF)
18.86	2.1	(RUNOFF)
19.75	2.0	(RUNOFF)
24.02	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.65 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 24

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.75	19.8	351.23

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	.03
1.86 CFS	.00	.01	.01	.02	.02	.03	.04			
.05										
1.86 ELEV	345.00	345.00	345.00	345.00	345.00	345.01	345.01			
345.01										
2.34 CFS	.05	.06	.08	.09	.10	.11	.12			
.14										
2.34 ELEV	345.01	345.01	345.01	345.02	345.02	345.02	345.02			
345.02										
2.82 CFS	.15	.16	.18	.19	.21	.22	.24			
.25										
2.82 ELEV	345.03	345.03	345.03	345.04	345.04	345.04	345.04			
345.05										
3.30 CFS	.27	.29	.30	.32	.34	.35	.37			
.39										
3.30 ELEV	345.05	345.05	345.05	345.06	345.06	345.06	345.07			
345.07										
3.78 CFS	.40	.42	.44	.46	.47	.49	.51			
.53										
3.78 ELEV	345.07	345.08	345.08	345.08	345.09	345.09	345.09			
345.10										
4.26 CFS	.55	.57	.58	.60	.62	.64	.66			
.67										
4.26 ELEV	345.10	345.10	345.11	345.11	345.11	345.12	345.12			
345.12										
4.74 CFS	.69	.71	.73	.75	.76	.78	.80			
.82										
4.74 ELEV	345.13	345.13	345.13	345.14	345.14	345.14	345.15			
345.15										
5.22 CFS	.84	.85	.87	.89	.91	.92	.94			
.96										
5.22 ELEV	345.15	345.16	345.16	345.16	345.16	345.17	345.17			

345.17							
5.70 CFS	.98	1.00	1.01	1.03	1.04	1.06	1.08
1.10							
5.70 ELEV	345.18	345.18	345.18	345.19	345.19	345.19	345.20
345.20							
6.18 CFS	1.12	1.13	1.15	1.17	1.19	1.21	1.23
1.25							
6.18 ELEV	345.20	345.21	345.21	345.21	345.22	345.22	345.22
345.23							
6.66 CFS	1.28	1.30	1.32	1.34	1.37	1.39	1.42
1.44							
6.66 ELEV	345.23	345.24	345.24	345.24	345.25	345.25	345.26
345.26							
7.14 CFS	1.47	1.49	1.52	1.55	1.58	1.60	1.63
1.66							
7.14 ELEV	345.27	345.27	345.28	345.28	345.29	345.29	345.30
345.30							
7.62 CFS	1.69	1.72	1.75	1.77	1.80	1.83	1.87
1.90							
7.62 ELEV	345.31	345.31	345.32	345.32	345.33	345.33	345.34
345.35							
8.10 CFS	1.93	1.96	1.99	2.02	2.06	2.09	2.12
2.15							
8.10 ELEV	345.35	345.36	345.36	345.37	345.37	345.38	345.39
345.39							
8.58 CFS	2.18	2.22	2.25	2.29	2.32	2.36	2.39
2.42							
8.58 ELEV	345.40	345.40	345.41	345.42	345.42	345.43	345.43
345.44							
9.06 CFS	2.46	2.49	2.53	2.57	2.61	2.66	2.71
2.76							
9.06 ELEV	345.45	345.45	345.46	345.47	345.48	345.48	345.49
345.50							
9.54 CFS	2.82	2.87	2.93	3.00	3.06	3.13	3.20
3.28							
9.54 ELEV	345.51	345.52	345.53	345.55	345.56	345.57	345.58
345.60							
10.02 CFS	3.35	3.43	3.51	3.59	3.67	3.76	3.85
3.93							
10.02 ELEV	345.61	345.62	345.64	345.65	345.67	345.68	345.70
345.72							
10.50 CFS	4.02	4.12	4.22	4.32	4.44	4.58	4.72
4.88							
10.50 ELEV	345.73	345.75	345.77	345.79	345.81	345.83	345.86
345.89							
10.98 CFS	5.06	5.24	5.45	5.67	5.91	6.18	6.47
6.79							
10.98 ELEV	345.92	345.95	345.99	346.03	346.08	346.12	346.18
346.24							
11.46 CFS	7.13	7.50	7.91	8.41	9.02	9.73	10.19
10.54							
11.46 ELEV	346.30	346.37	346.44	346.53	346.64	346.77	346.91
347.06							
11.94 CFS	10.99	11.59	12.42	13.57	14.99	16.38	17.48
18.26							
11.94 ELEV	347.27	347.54	347.91	348.43	349.07	349.70	350.20
350.55							
12.42 CFS	18.80	19.17	19.43	19.61	19.71	19.76	19.75
19.72							

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12.42	ELEV	350.79	350.96	351.08	351.16	351.20	351.22	351.22
351.21								
12.90	CFS	19.67	19.61	19.53	19.44	19.33	19.21	19.09
18.96								
12.90	ELEV	351.19	351.16	351.12	351.08	351.03	350.98	350.92
350.86								
13.38	CFS	18.82	18.68	18.53	18.37	18.21	18.05	17.88
17.72								
13.38	ELEV	350.80	350.74	350.67	350.60	350.53	350.45	350.38
350.30								
13.86	CFS	17.55	17.38	17.21	17.05	16.88	16.71	16.55
16.38								
13.86	ELEV	350.23	350.15	350.07	350.00	349.92	349.85	349.78
349.70								
14.34	CFS	16.22	16.06	15.89	15.73	15.57	15.41	15.25
15.09								
14.34	ELEV	349.63	349.55	349.48	349.41	349.33	349.26	349.19
349.12								
14.82	CFS	14.93	14.77	14.62	14.46	14.30	14.15	13.99
13.84								
14.82	ELEV	349.05	348.97	348.90	348.83	348.76	348.69	348.62
348.55								
15.30	CFS	13.68	13.53	13.38	13.23	13.09	12.94	12.80
12.66								
15.30	ELEV	348.48	348.41	348.35	348.28	348.21	348.15	348.08
348.02								
15.78	CFS	12.52	12.38	12.24	12.11	11.98	11.84	11.71
11.59								
15.78	ELEV	347.96	347.89	347.83	347.77	347.71	347.65	347.59
347.54								
16.26	CFS	11.46	11.33	11.21	11.09	10.96	10.84	10.72
10.61								
16.26	ELEV	347.48	347.42	347.37	347.31	347.26	347.20	347.15
347.09								
16.74	CFS	10.49	10.38	10.26	10.15	10.04	9.79	9.48
9.18								
16.74	ELEV	347.04	346.99	346.94	346.89	346.84	346.78	346.73
346.67								
17.22	CFS	8.89	8.62	8.35	8.10	7.85	7.62	7.39
7.17								
17.22	ELEV	346.62	346.57	346.52	346.47	346.43	346.39	346.35
346.31								
17.70	CFS	6.96	6.76	6.57	6.38	6.20	6.03	5.86
5.70								
17.70	ELEV	346.27	346.23	346.20	346.16	346.13	346.10	346.07
346.04								
18.18	CFS	5.55	5.40	5.26	5.12	4.99	4.86	4.74
4.62								
18.18	ELEV	346.01	345.98	345.96	345.93	345.91	345.88	345.86
345.84								
18.66	CFS	4.51	4.41	4.30	4.21	4.11	4.02	3.94
3.85								
18.66	ELEV	345.82	345.80	345.78	345.77	345.75	345.73	345.72
345.70								
19.14	CFS	3.77	3.70	3.62	3.55	3.49	3.42	3.36
3.30								
19.14	ELEV	345.69	345.67	345.66	345.65	345.63	345.62	345.61
345.60								
19.62	CFS	3.25	3.19	3.14	3.09	3.04	2.99	2.94

2.90								
19.62 ELEV	345.59	345.58	345.57	345.56	345.55	345.54	345.54	
345.53								
20.10 CFS	2.86	2.82	2.78	2.74	2.70	2.67	2.63	
2.60								
20.10 ELEV	345.52	345.51	345.51	345.50	345.49	345.49	345.48	
345.47								
20.58 CFS	2.57	2.54	2.51	2.48	2.45	2.42	2.40	
2.37								
20.58 ELEV	345.47	345.46	345.46	345.45	345.45	345.44	345.44	
345.43								
21.06 CFS	2.35	2.32	2.30	2.28	2.25	2.23	2.21	
2.19								
21.06 ELEV	345.43	345.42	345.42	345.41	345.41	345.41	345.40	
345.40								
21.54 CFS	2.18	2.16	2.14	2.12	2.10	2.08	2.07	
2.05								
21.54 ELEV	345.40	345.39	345.39	345.39	345.38	345.38	345.38	
345.37								
22.02 CFS	2.04	2.02	2.01	1.99	1.98	1.96	1.95	
1.93								
22.02 ELEV	345.37	345.37	345.37	345.36	345.36	345.36	345.35	
345.35								
22.50 CFS	1.92	1.91	1.90	1.88	1.87	1.86	1.84	
1.83								
22.50 ELEV	345.35	345.35	345.35	345.34	345.34	345.34	345.34	
345.33								
22.98 CFS	1.82	1.81	1.80	1.79	1.77	1.76	1.75	
1.74								
22.98 ELEV	345.33	345.33	345.33	345.32	345.32	345.32	345.32	
345.32								
23.46 CFS	1.73	1.72	1.71	1.70	1.69	1.68	1.67	
1.66								
23.46 ELEV	345.32	345.31	345.31	345.31	345.31	345.31	345.30	
345.30								
23.94 CFS	1.65	1.64	1.63	1.62	1.58	1.54	1.48	
1.42								
23.94 ELEV	345.30	345.30	345.30	345.29	345.29	345.28	345.27	
345.26								

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24.42 CFS	1.36	1.30	1.24	1.18	1.13	1.08	1.03	
.99								
24.42 ELEV	345.25	345.24	345.23	345.22	345.21	345.20	345.19	
345.18								
24.90 CFS	.94	.90	.86	.82	.78	.75	.71	
.68								
24.90 ELEV	345.17	345.16	345.16	345.15	345.14	345.14	345.13	
345.12								
25.38 CFS	.65	.62						
25.38 ELEV	345.12	345.11						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.60 WATERSHED INCHES; 124 CFS-HRS; 10.3 ACRE-  
FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	16	12	8	4	3	2	2	2
DURATION(HRS)	18	20	21					
FLOW(CFS)	1	1	1	TRUNCATED				

OPERATION RUNOFF XSECTION 119

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.13		28.9		(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)				
	6.81 WATERSHED INCHES;	26 CFS-HRS;		2.1 ACRE-
	FEET.			

OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.14		42.7		(NULL)
23.99		2.0		(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)				
	7.45 WATERSHED INCHES;	150 CFS-HRS;		12.4 ACRE-
	FEET.			

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.14		140.8		(NULL)
20.01		5.0		(NULL)
20.80		4.4		(NULL)
24.00		3.3		(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)				
	7.27 WATERSHED INCHES;	245 CFS-HRS;		20.3 ACRE-
	FEET.			

OPERATION RUNOFF XSECTION 19

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 TR20 ----- SCS  
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 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.15		179.0		(RUNOFF)
15.84		5.4		(RUNOFF)
17.34		4.2		(RUNOFF)
19.75		3.1		(RUNOFF)
20.05		3.1		(RUNOFF)
24.00		2.4		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.60 WATERSHED INCHES; 172 CFS-HRS; 14.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	319.7	(NULL)
20.04	8.1	(NULL)
20.83	7.3	(NULL)
21.94	6.6	(NULL)
22.74	6.0	(NULL)
24.00	5.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.98 WATERSHED INCHES; 418 CFS-HRS; 34.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	489.9	(NULL)
12.85	418.7	(NULL)
15.17	80.1	(NULL)
15.28	76.2	(NULL)
15.39	73.2	(NULL)
20.03	35.6	(NULL)
23.03	28.7	(NULL)
23.68	27.3	(NULL)
24.00	27.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.81 WATERSHED INCHES; 1541 CFS-HRS; 127.3 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 122  
 OUTPUT #1 HYDROGRAPH

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
11.70	168.0 *	(DIVERT)
15.17	80.1	(DIVERT)
15.28	76.2	(DIVERT)
15.39	73.2	(DIVERT)
20.03	35.6	(DIVERT)
23.03	28.7	(DIVERT)
23.68	27.3	(DIVERT)
24.00	27.0	(DIVERT)



\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1146 CFS-HRS; 94.7 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	321.9	177.15
12.85	250.7	176.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 394 CFS-HRS; 32.6 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 83, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 322.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 83

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.55	228.8	322.74
12.67	248.0	322.80
12.78	292.2	322.94
12.90	292.1	322.94
13.01	259.7	322.84
13.13	220.6	322.71
13.26	192.2	322.62
13.38	164.0	322.53
13.50	153.6	322.50
13.62	142.2	322.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .90 WATERSHED INCHES; 238 CFS-HRS; 19.7 ACRE-FEET.

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OPERATION ADDHYD XSECTION 123

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.55	396.8	(NULL)
12.67	416.0	(NULL)
12.78	460.2	(NULL)
12.90	460.1	(NULL)
13.01	427.7	(NULL)
13.13	388.6	(NULL)

13.26	360.2	(NULL)
13.38	332.0	(NULL)
13.50	321.6	(NULL)
13.62	310.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.22 WATERSHED INCHES; 1384 CFS-HRS; 114.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.92	396.2	316.17
13.02	417.2	316.22
13.13	407.3	316.19
13.24	379.4	316.12
13.36	350.6	316.05
13.48	322.9	315.96
13.61	305.1	315.91
13.73	293.1	315.88
13.85	281.9	315.84
13.97	271.1	315.81

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.35 WATERSHED INCHES; 1419 CFS-HRS; 117.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	165.8	(RUNOFF)
18.66	4.1	(RUNOFF)
20.68	3.6	(RUNOFF)
23.12	3.0	(RUNOFF)
24.00	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.34 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-  
 FEET.

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 TR20 ----- SCS  
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\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	160.7	365.43
18.69	4.1	356.71
20.69	3.6	356.67
23.15	3.0	356.62
24.03	2.8	356.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.35 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	237.1	(RUNOFF)
18.65	6.1	(RUNOFF)
20.67	5.3	(RUNOFF)
23.98	4.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.26 WATERSHED INCHES; 302 CFS-HRS; 25.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	395.1	(NULL)
18.66	10.2	(NULL)
20.14	9.4	(NULL)
20.68	8.9	(NULL)
23.14	7.4	(NULL)
23.78	7.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.30 WATERSHED INCHES; 509 CFS-HRS; 42.1 ACRE-  
FEET.

OPERATION REACH XSECTION 27

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	384.2	319.84
20.20	9.4	316.93
20.74	8.9	316.91
23.20	7.4	316.81
23.83	7.0	316.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.29 WATERSHED INCHES; 509 CFS-HRS; 42.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	190.4	(RUNOFF)
20.67	4.2	(RUNOFF)
24.01	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.89 WATERSHED INCHES; 228 CFS-HRS; 18.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	358.2	(NULL)
12.69	344.0	(NULL)
12.81	391.7	(NULL)
12.92	434.8	(NULL)
13.02	450.8	(NULL)
13.13	436.7	(NULL)
13.24	405.3	(NULL)
13.36	373.6	(NULL)
13.48	343.6	(NULL)
13.61	323.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.42 WATERSHED INCHES; 1646 CFS-HRS; 136.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	715.0	(NULL)
12.67	541.3	(NULL)
12.78	540.5	(NULL)
12.90	547.0	(NULL)
13.01	542.6	(NULL)
13.12	514.4	(NULL)
13.23	473.7	(NULL)
13.36	435.7	(NULL)
13.48	400.6	(NULL)
13.61	375.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

5.60 WATERSHED INCHES; 2155 CFS-HRS; 178.1 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.48	613.3	316.91
12.98	532.2	316.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.57 WATERSHED INCHES; 2142 CFS-HRS; 177.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.21	264.7	(RUNOFF)
20.66	5.1	(RUNOFF)
23.11	4.2	(RUNOFF)
24.02	3.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-  
FEET.

OPERATION REACH XSECTION 32

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.31	244.6	314.09
20.73	5.1	310.41
23.19	4.2	310.34
24.09	3.9	310.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 33

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.16	39.4	(RUNOFF)
15.84	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.86 WATERSHED INCHES; 43 CFS-HRS; 3.5 ACRE-  
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .53 AC-FT ( .10 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 378.24.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	32.9	380.81
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.68 WATERSHED INCHES;	36 CFS-HRS;	3.0 ACRE-
FEET.		

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
 \*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	32.9	338.30
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.68 WATERSHED INCHES;	36 CFS-HRS;	3.0 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	118.2	(RUNOFF)
20.86	2.0	(RUNOFF)
24.02	1.6	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
7.86 WATERSHED INCHES;	139 CFS-HRS;	11.5 ACRE-
FEET.		

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\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
 WITH 1.05 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 354.18.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)
12.29 96.1 357.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.15 WATERSHED INCHES; 127 CFS-HRS; 10.5 ACRE-
FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.27 128.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.27 128.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.
\*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.27 128.6 330.88

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 138

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.14 135.6 (RUNOFF)
15.84 3.9 (RUNOFF)
20.84 2.1 (RUNOFF)
24.00 1.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.24 WATERSHED INCHES; 131 CFS-HRS; 10.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.17	245.1	(NULL)
20.83	5.1	(NULL)
24.00	4.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.13 WATERSHED INCHES; 294 CFS-HRS; 24.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.50	109.4	333.51

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06 SQ.MI.

HRS	DISCHARGE (CFS)	ELEVATION (FEET)	DISCHARGE (CFS)	ELEVATION (FEET)	DISCHARGE (CFS)	ELEVATION (FEET)	DISCHARGE (CFS)	ELEVATION (FEET)
2.58	.02	326.01	.01	326.00	.01	326.00	.01	326.01
3.06	.06	326.01	.03	326.01	.04	326.02	.05	326.02
3.54	.11	326.03	.07	326.03	.08	326.04	.10	326.04
4.02	.18	326.05	.13	326.05	.15	326.06	.17	326.07
4.50	.27	326.08	.20	326.09	.23	326.09	.25	326.10
4.98	.37	326.12	.29	326.12	.32	326.13	.34	326.14
5.46	.48	326.16	.40	326.17	.44	326.18	.45	326.19
5.94	.61	326.21	.51	326.21	.54	326.23	.57	326.24
6.42	.75	326.26	.64	326.27	.68	326.28	.72	326.30
6.90	.90	326.32	.79	326.28	.84	326.29	.88	326.31



.92								
6.90 ELEV	326.33	326.33	326.34	326.35	326.36	326.37	326.38	
326.39								
7.38 CFS	.95	.97	.99	1.02	1.04	1.07	1.09	
1.12								
7.38 ELEV	326.40	326.41	326.42	326.43	326.44	326.45	326.46	
326.47								

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7.86 CFS	1.14	1.17	1.20	1.23	1.25	1.28	1.31	
1.34								
7.86 ELEV	326.48	326.49	326.50	326.51	326.53	326.54	326.55	
326.56								
8.34 CFS	1.37	1.40	1.43	1.46	1.49	1.52	1.55	
1.58								
8.34 ELEV	326.57	326.59	326.60	326.61	326.62	326.64	326.65	
326.66								
8.82 CFS	1.61	1.65	1.68	1.71	1.75	1.78	1.82	
1.85								
8.82 ELEV	326.68	326.69	326.70	326.72	326.73	326.75	326.76	
326.78								
9.30 CFS	1.89	1.93	1.97	2.01	2.06	2.10	2.15	
2.20								
9.30 ELEV	326.79	326.81	326.83	326.85	326.86	326.88	326.90	
326.92								
9.78 CFS	2.25	2.31	2.37	2.43	2.51	2.58	2.66	
2.75								
9.78 ELEV	326.95	326.97	326.99	327.02	327.05	327.08	327.12	
327.15								
10.26 CFS	2.84	2.93	3.03	3.13	3.24	3.35	3.47	
3.59								
10.26 ELEV	327.19	327.23	327.27	327.32	327.36	327.41	327.46	
327.51								
10.74 CFS	3.72	3.86	4.01	4.17	4.33	4.51	4.70	
4.90								
10.74 ELEV	327.56	327.62	327.68	327.75	327.82	327.89	327.97	
328.06								
11.22 CFS	5.12	5.35	5.60	5.87	6.16	6.46	6.80	
7.20								
11.22 ELEV	328.15	328.25	328.35	328.47	328.59	328.71	328.86	
329.02								
11.70 CFS	7.65	8.16	8.76	9.48	15.53	37.13	73.75	
85.47								
11.70 ELEV	329.21	329.43	329.68	329.98	330.32	330.67	331.04	
331.51								
12.18 CFS	93	100	104	107	109	109	109	
109								
12.18 ELEV	332.10	332.64	333.00	333.26	333.43	333.50	333.49	
333.43								
12.66 CFS	107	106	104	103	101	98	95	
93								
12.66 ELEV	333.32	333.19	333.03	332.86	332.69	332.48	332.27	
332.05								
13.14 CFS	89.67	86.89	84.17	81.52	71.45	54.38	45.63	
40.30								
13.14 ELEV	331.83	331.62	331.41	331.21	331.02	330.87	330.78	

330.71							
13.62 CFS	36.11	32.76	30.06	28.17	26.54	25.12	23.88
22.80							
13.62 ELEV	330.66	330.61	330.57	330.54	330.51	330.49	330.47
330.45							
14.10 CFS	21.84	20.99	20.21	19.54	18.94	18.38	17.85
17.35							
14.10 ELEV	330.43	330.42	330.40	330.39	330.38	330.37	330.36
330.35							
14.58 CFS	16.87	16.40	15.95	15.51	15.10	14.75	14.42
14.08							
14.58 ELEV	330.34	330.34	330.33	330.32	330.31	330.30	330.30
330.29							
15.06 CFS	13.74	13.41	13.07	12.74	12.42	12.12	11.85
11.60							
15.06 ELEV	330.28	330.27	330.27	330.26	330.25	330.25	330.24
330.24							
15.54 CFS	11.37	11.16	10.95	10.76	10.57	10.40	10.25
10.11							
15.54 ELEV	330.23	330.23	330.22	330.22	330.21	330.21	330.21
330.20							
16.02 CFS	10.00	9.99	9.97	9.96	9.95	9.93	9.92
9.90							
16.02 ELEV	330.20	330.19	330.19	330.18	330.18	330.17	330.16
330.16							
16.50 CFS	9.88	9.86	9.84	9.82	9.79	9.77	9.75
9.72							
16.50 ELEV	330.15	330.14	330.13	330.12	330.11	330.10	330.09
330.08							
16.98 CFS	9.70	9.67	9.64	9.62	9.59	9.56	9.53
9.50							
16.98 ELEV	330.07	330.06	330.05	330.04	330.03	330.01	330.00
329.99							
17.46 CFS	9.46	9.43	9.40	9.37	9.33	9.30	9.26
9.23							
17.46 ELEV	329.97	329.96	329.95	329.93	329.92	329.90	329.89
329.88							
17.94 CFS	9.19	9.16	9.12	9.08	9.04	9.01	8.97
8.93							
17.94 ELEV	329.86	329.85	329.83	329.81	329.80	329.78	329.77
329.75							
18.42 CFS	8.89	8.85	8.81	8.78	8.74	8.70	8.66
8.62							
18.42 ELEV	329.73	329.72	329.70	329.69	329.67	329.65	329.64
329.62							
18.90 CFS	8.59	8.55	8.51	8.47	8.44	8.40	8.36
8.32							
18.90 ELEV	329.61	329.59	329.57	329.56	329.54	329.53	329.51
329.50							
19.38 CFS	8.29	8.25	8.21	8.18	8.14	8.11	8.07
8.04							

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19.38 ELEV	329.48	329.47	329.45	329.44	329.42	329.40	329.39
329.38							
19.86 CFS	8.00	7.96	7.93	7.90	7.86	7.83	7.79

7.76								
19.86 ELEV	329.36	329.35	329.33	329.32	329.30	329.29	329.27	
329.26								
20.34 CFS	7.73	7.69	7.66	7.62	7.59	7.56	7.52	
7.49								
20.34 ELEV	329.24	329.23	329.22	329.20	329.19	329.17	329.16	
329.15								
20.82 CFS	7.46	7.43	7.40	7.36	7.33	7.30	7.27	
7.24								
20.82 ELEV	329.13	329.12	329.11	329.09	329.08	329.07	329.05	
329.04								
21.30 CFS	7.20	7.17	7.14	7.11	7.08	7.05	7.02	
6.99								
21.30 ELEV	329.03	329.01	329.00	328.99	328.97	328.96	328.95	
328.94								
21.78 CFS	6.96	6.93	6.90	6.87	6.84	6.81	6.78	
6.76								
21.78 ELEV	328.92	328.91	328.90	328.89	328.87	328.86	328.85	
328.84								
22.26 CFS	6.73	6.70	6.67	6.64	6.61	6.59	6.56	
6.53								
22.26 ELEV	328.83	328.81	328.80	328.79	328.78	328.77	328.75	
328.74								
22.74 CFS	6.50	6.47	6.45	6.42	6.39	6.36	6.34	
6.31								
22.74 ELEV	328.73	328.72	328.71	328.70	328.68	328.67	328.66	
328.65								
23.22 CFS	6.28	6.26	6.23	6.20	6.18	6.15	6.12	
6.10								
23.22 ELEV	328.64	328.63	328.62	328.61	328.59	328.58	328.57	
328.56								
23.70 CFS	6.07	6.05	6.02	5.99	5.97	5.94	5.92	
5.89								
23.70 ELEV	328.55	328.54	328.53	328.52	328.51	328.50	328.49	
328.47								
24.18 CFS	5.85	5.81	5.76	5.71	5.67	5.62	5.57	
5.52								
24.18 ELEV	328.46	328.44	328.42	328.40	328.38	328.36	328.34	
328.32								
24.66 CFS	5.47	5.42	5.37	5.32	5.27	5.22	5.18	
24.66 ELEV	328.30	328.28	328.25	328.23	328.21	328.19	328.17	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.57 WATERSHED INCHES; 271 CFS-HRS; 22.4 ACRE-  
 FEET.

DURATION (HRS)	2	4	6	8	10	12	13	
FLOW (CFS)	24	10	9	8	7	6	5	TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET)  
 12.13 15.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.98 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK

ELEVATION(FEET)  
 12.48 113.2 (NULL)  
 23.97 6.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.39 WATERSHED INCHES; 283 CFS-HRS; 23.4 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	121.2	(RUNOFF)
18.64	3.2	(RUNOFF)
23.76	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.46	693.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.60 WATERSHED INCHES; 2297 CFS-HRS; 189.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	890.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.73 WATERSHED INCHES; 2605 CFS-HRS; 215.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	1003.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.77 WATERSHED INCHES; 2881 CFS-HRS; 238.1 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 144  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	543.0 *	(DIVERT)
	* FIRST POINT OF FLAT PEAK	

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2584 CFS-HRS; 213.5 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.41	460.4	177.63

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.60 WATERSHED INCHES; 297 CFS-HRS; 24.6 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 82, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 318.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 82

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.52	429.2	319.21
12.65	309.8	319.00
12.77	252.0	318.81
12.90	216.8	318.70
13.02	194.9	318.63
13.13	165.9	318.53
13.25	123.5	318.40
13.37	67.9	318.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.39 WATERSHED INCHES; 192 CFS-HRS; 15.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 145

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.52	972.2	(NULL)
12.65	852.8	(NULL)

12.77	795.0	(NULL)
12.90	759.8	(NULL)
13.02	737.9	(NULL)
13.13	708.9	(NULL)
13.25	666.5	(NULL)
13.37	610.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.56 WATERSHED INCHES; 2776 CFS-HRS; 229.4 ACRE-  
 FEET.

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OPERATION REACH XSECTION 44

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.62	871.6	291.07
12.70	846.0	291.03
12.82	792.3	290.95
12.94	750.2	290.89
13.07	723.9	290.85
13.18	698.4	290.80
13.30	663.2	290.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.53 WATERSHED INCHES; 2761 CFS-HRS; 228.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.68	850.7	303.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.53 WATERSHED INCHES; 2761 CFS-HRS; 228.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	140.0	(RUNOFF)
20.10	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.16 WATERSHED INCHES; 190 CFS-HRS; 15.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	175.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.06 WATERSHED INCHES; 245 CFS-HRS; 20.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	315.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 435 CFS-HRS; 36.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	171.6	(RUNOFF)
21.97	3.0	(RUNOFF)
24.03	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.09 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	664.0	(NULL)
12.67	893.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.56 WATERSHED INCHES; 2946 CFS-HRS; 243.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	979.4	(NULL)
12.64	1051.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.63 WATERSHED INCHES; 3381 CFS-HRS; 279.4 ACRE-

FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	941.7	285.86
12.74	1024.5	286.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.62 WATERSHED INCHES; 3377 CFS-HRS; 279.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 52

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	8.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.63 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	8.0	288.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.63 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-FEET.

OPERATION RUNOFF XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .85 WATERSHED INCHES; 4 CFS-HRS; .3 ACRE-FEET.

OPERATION RUNOFF XSECTION 55



PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	112.9	(RUNOFF)
21.97	2.0	(RUNOFF)
24.03	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.79 WATERSHED INCHES; 120 CFS-HRS; 9.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	1006.4	(NULL)
12.74	1048.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.63 WATERSHED INCHES; 3498 CFS-HRS; 289.1 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	9.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.28 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	1013.4	(NULL)
12.74	1052.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.56 WATERSHED INCHES; 3511 CFS-HRS; 290.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	78.5	(RUNOFF)
24.02	1.3	(RUNOFF)

		HYDROGRAPH POINTS FOR				ALTERNATE = 1,	STORM =99	
HRS		MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = .03		
SQ.MI.								
8.76	CFS	.49	.52	.54	.56	.59	.62	.65
.69								
9.24	CFS	.73	.77	.82	.87	.92	.97	1.02
1.08								
9.72	CFS	1.15	1.21	1.28	1.34	1.40	1.47	1.54
1.62								
10.20	CFS	1.70	1.78	1.85	1.93	2.02	2.11	2.21
2.34								
10.68	CFS	2.50	2.69	2.91	3.14	3.39	3.65	3.93
4.24								
11.16	CFS	4.63	5.07	5.55	6.07	6.62	7.19	7.81
8.79								
11.64	CFS	10.36	12.19	14.15	16.65	20.13	25.27	33.50
46.51								
12.12	CFS	64.00	77.27	76.01	65.16	52.39	42.68	35.46
30.29								
12.60	CFS	26.22	22.48	19.36	17.08	15.51	14.30	13.32
12.47								
13.08	CFS	11.67	10.91	10.23	9.66	9.16	8.71	8.27
7.84								
13.56	CFS	7.42	7.02	6.66	6.37	6.15	5.96	5.82
5.71								
14.04	CFS	5.61	5.51	5.40	5.28	5.16	5.05	4.96
4.87								
14.52	CFS	4.77	4.66	4.53	4.41	4.31	4.22	4.13
4.02								
15.00	CFS	3.92	3.82	3.71	3.60	3.50	3.42	3.38
3.35								
15.48	CFS	3.34	3.32	3.31	3.27	3.22	3.18	3.17
3.16								
15.96	CFS	3.14	3.09	3.05	3.01	2.99	2.97	2.95
2.91								
16.44	CFS	2.88	2.85	2.81	2.78	2.75	2.74	2.72
2.68								
16.92	CFS	2.65	2.63	2.62	2.60	2.56	2.51	2.47
2.45								
17.40	CFS	2.44	2.42	2.37	2.33	2.29	2.27	2.25
2.22								
17.88	CFS	2.19	2.16	2.14	2.13	2.10	2.07	2.04
2.02								
18.36	CFS	2.00	1.98	1.96	1.95	1.97	1.97	1.96
1.95								
18.84	CFS	1.95	1.95	1.93	1.91	1.90	1.89	1.89
1.88								

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19.32	CFS	1.88	1.88	1.88	1.88	1.88	1.85	1.83
1.83								
19.80	CFS	1.83	1.81	1.80	1.79	1.80	1.82	1.81
1.79								
20.28	CFS	1.78	1.77	1.75	1.72	1.71	1.72	1.74
1.73								
20.76	CFS	1.71	1.71	1.71	1.70	1.68	1.66	1.65

1.65								
21.24 CFS	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.62
1.60								
21.72 CFS	1.59	1.59	1.58	1.58	1.58	1.58	1.58	1.56
1.55								
22.20 CFS	1.53	1.53	1.52	1.52	1.52	1.52	1.52	1.51
1.49								
22.68 CFS	1.47	1.47	1.47	1.45	1.43	1.43	1.43	1.44
1.45								
23.16 CFS	1.44	1.43	1.41	1.40	1.40	1.39	1.39	1.37
1.35								
23.64 CFS	1.35	1.36	1.37	1.36	1.33	1.32	1.32	1.34
1.34								
24.12 CFS	1.15	.80	.47					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.92 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	1062.5	(NULL)
12.73	1070.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.54 WATERSHED INCHES; 3595 CFS-HRS; 297.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.49	1000.9	275.81
12.81	1041.2	276.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.53 WATERSHED INCHES; 3592 CFS-HRS; 296.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	47.3	(RUNOFF)
21.96	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 62

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.48	1025.4	(NULL)
12.81	1052.4	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02 SQ.MI.

HRS	MAIN	TIME	INCREMENT	ALTERNATE	STORM	DRAINAGE	AREA
3.96 CFS	.46	.53	.60	.68	.76	.84	.92
1.01							
4.44 CFS	1.10	1.19	1.29	1.38	1.48	1.59	1.70
1.81							
4.92 CFS	1.94	2.07	2.23	2.39	2.57	2.76	2.97
3.19							
5.40 CFS	3.42	3.66	3.91	4.17	4.45	4.73	5.01
5.31							
5.88 CFS	5.61	5.91	6.22	6.54	6.86	7.19	7.52
7.87							
6.36 CFS	8.22	8.58	8.95	9.34	9.74	10.16	10.59
11.03							
6.84 CFS	11.49	11.96	12.45	12.96	13.47	14.00	14.55
15.12							
7.32 CFS	15.71	16.31	16.94	17.59	18.25	18.94	19.63
20.34							
7.80 CFS	21.06	21.79	22.54	23.30	24.08	24.88	25.69
26.51							
8.28 CFS	27.35	28.19	29.05	29.92	30.81	31.70	32.61
33.53							
8.76 CFS	34.47	35.43	36.39	37.37	38.36	39.38	40.43
41.52							
9.24 CFS	42.65	43.84	45.10	46.44	47.85	49.34	50.91
52.57							
9.72 CFS	54.32	56.18	58.13	60.18	62.33	64.59	66.96
69.46							
10.20 CFS	72.09	74.83	77.68	80.61	83.63	86.73	89.94
93.27							
10.68 CFS	97	101	104	108	112	117	122
128							
11.16 CFS	134	141	148	156	165	175	186
198							
11.64 CFS	213	234	257	282	313	350	400
469							
12.12 CFS	564	681	799	898	970	1013	1025
1013							
12.60 CFS	997	1004	1028	1050	1050	1031	1006
975							
13.08 CFS	944	913	885	858	834	811	786
761							
13.56 CFS	735	708	679	651	625	601	580
560							
14.04 CFS	542	525	511	499	488	477	466
455							
14.52 CFS	444	433	422	412	401	392	382
372							
15.00 CFS	363	353	343	334	324	315	305
296							
15.48 CFS	286	276	265	254	244	234	224
215							
15.96 CFS	207	200	194	188	182	177	172
168							

16.44 CFS	164	160	157	154	152	149	147
145							
16.92 CFS	143	141	140	138	137	135	134
132							
17.40 CFS	131	130	128	127	126	124	123
122							
17.88 CFS	120	119	118	116	115	114	112
111							
18.36 CFS	110	109	108	106	105	104	103
102							
18.84 CFS	101	100	99	98	97	96	96
95							
19.32 CFS	94.27	93.63	93.02	92.45	91.91	91.37	90.84
90.32							
19.80 CFS	89.83	89.35	88.87	88.40	87.96	87.56	87.17
86.78							
20.28 CFS	86.39	85.99	85.59	85.17	84.74	84.34	83.97
83.62							
20.76 CFS	83.26	82.89	82.53	82.17	81.81	81.43	81.05
80.67							
21.24 CFS	80.31	79.95	79.60	79.26	78.93	78.61	78.29
77.94							
21.72 CFS	77.59	77.25	76.92	76.59	76.28	75.98	75.67
75.34							
22.20 CFS	75.00	74.67	74.34	74.02	73.70	73.40	73.10
72.78							
22.68 CFS	72.45	72.11	71.78	71.45	71.10	70.75	70.42
70.12							
23.16 CFS	69.83	69.52	69.19	68.87	68.55	68.24	67.91
67.56							
23.64 CFS	67.22	66.90	66.60	66.31	65.99	65.65	65.35
65.07							
24.12 CFS	64.61	63.71	62.34	60.63	58.77	56.82	54.80
52.73							
24.60 CFS	50.61	48.44	46.23	44.01	41.81	39.63	37.51
35.47							

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.52 WATERSHED INCHES; 3646 CFS-HRS; 301.3 ACRE-  
FEET.

OPERATION DIVERT XSECTION 162  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.18 621.0 \* (DIVERT)  
\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3205 CFS-HRS; 264.9 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.48	404.4	177.44
12.81	431.4	177.53

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .67 WATERSHED INCHES; 440 CFS-HRS; 36.4 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 73, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 20.00 FEET BELOW ASSUMED CREST ELEVATION AT 260.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.86	480.7	261.30

\*\*\* WARNING - STRUCTURE 73, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK ( 480.69) EXCEEDS ADJACENT COORDINATE ( 449.68) BY 6 %.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .36 WATERSHED INCHES; 238 CFS-HRS; 19.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 163

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.86	1101.7	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02 SQ.MI.  
 3.96 CFS .46 .53 .60 .68 .76 .84 .92  
 1.01

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4.44 CFS	1.10	1.19	1.29	1.38	1.48	1.59	1.70
1.81							
4.92 CFS	1.94	2.07	2.23	2.39	2.57	2.76	2.97
3.19							
5.40 CFS	3.42	3.66	3.91	4.17	4.45	4.73	5.01
5.31							
5.88 CFS	5.61	5.91	6.22	6.54	6.86	7.19	7.52
7.87							
6.36 CFS	8.22	8.58	8.95	9.34	9.74	10.16	10.59
11.03							

6.84 CFS	11.49	11.96	12.45	12.96	13.47	14.00	14.55
15.12							
7.32 CFS	15.71	16.31	16.94	17.59	18.25	18.94	19.63
20.34							
7.80 CFS	21.06	21.79	22.54	23.30	24.08	24.88	25.69
26.51							
8.28 CFS	27.35	28.19	29.05	29.92	30.81	31.70	32.61
33.53							
8.76 CFS	34.47	35.43	36.39	37.37	38.36	39.38	40.43
41.52							
9.24 CFS	42.65	43.84	45.10	46.44	47.85	49.34	50.91
52.57							
9.72 CFS	54.32	56.18	58.13	60.18	62.33	64.59	66.96
69.46							
10.20 CFS	72.09	74.83	77.68	80.61	83.63	86.73	89.94
93.27							
10.68 CFS	97	101	104	108	112	117	122
128							
11.16 CFS	134	141	148	156	165	175	186
198							
11.64 CFS	213	234	257	282	313	350	400
469							
12.12 CFS	564	621	621	621	621	621	621
621							
12.60 CFS	621	621	621	723	1071	1032	1014
984							
13.08 CFS	953	924	900	872	847	823	799
774							
13.56 CFS	749	722	694	666	639	604	580
560							
14.04 CFS	542	525	511	499	488	477	466
455							
14.52 CFS	444	433	422	412	401	392	382
372							
15.00 CFS	363	353	343	334	324	315	305
296							
15.48 CFS	286	276	265	254	244	234	224
215							
15.96 CFS	207	200	194	188	182	177	172
168							
16.44 CFS	164	160	157	154	152	149	147
145							
16.92 CFS	143	141	140	138	137	135	134
132							
17.40 CFS	131	130	128	127	126	124	123
122							
17.88 CFS	120	119	118	116	115	114	113
111							
18.36 CFS	110	109	108	106	105	104	103
102							
18.84 CFS	101	100	99	98	97	96	96
95							
19.32 CFS	94.31	93.67	93.06	92.49	91.95	91.41	90.88
90.36							
19.80 CFS	89.87	89.39	88.91	88.44	88.00	87.60	87.21
86.82							
20.28 CFS	86.43	86.03	85.63	85.21	84.78	84.38	84.01
83.66							
20.76 CFS	83.30	82.93	82.57	82.21	81.85	81.47	81.09
80.71							
21.24 CFS	80.35	79.99	79.64	79.30	78.97	78.65	78.33
77.98							
21.72 CFS	77.63	77.29	76.96	76.63	76.32	76.02	75.71
75.38							

22.20	CFS	75.04	74.71	74.38	74.06	73.74	73.44	73.14
72.82								
22.68	CFS	72.49	72.15	71.82	71.49	71.14	70.79	70.46
70.16								
23.16	CFS	69.87	69.56	69.23	68.91	68.59	68.28	67.95
67.60								
23.64	CFS	67.26	66.94	66.64	66.35	66.03	65.69	65.39
65.11								
24.12	CFS	64.65	63.75	62.38	60.67	58.81	56.86	54.84
52.77								
24.60	CFS	50.65	48.48	46.27	44.05	41.85	39.67	37.55
35.51								

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.22 WATERSHED INCHES; 3443 CFS-HRS; 284.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 63

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.06	981.9	250.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.21 WATERSHED INCHES; 3442 CFS-HRS; 284.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	30.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	24.7	335.67

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------



ELEVATION(FEET)  
 12.63   24.4   301.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.61 WATERSHED INCHES;                 47 CFS-HRS;                 3.9 ACRE-FEET.

OPERATION RUNOFF      XSECTION   66

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	139.6	(RUNOFF)
20.10	3.1	(RUNOFF)
24.02	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES;                 145 CFS-HRS;                 11.9 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
 \*\*\*

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\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS                 0 CFS.  
 \*\*\*

OPERATION RESVOR      STRUCTURE 62

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.42	70.1	297.03
20.12	3.1	287.70
24.04	2.3	287.60

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES;                 145 CFS-HRS;                 11.9 ACRE-FEET.

OPERATION ADDHYD      XSECTION   67

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.51	90.2	(NULL)
18.87	4.3	(NULL)
23.11	3.2	(NULL)
24.04	3.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.22 WATERSHED INCHES;                 191 CFS-HRS;                 15.8 ACRE-FEET.

## OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	258.6	(RUNOFF)
20.87	5.1	(RUNOFF)
23.74	4.1	(RUNOFF)
24.03	4.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.24 WATERSHED INCHES; 263 CFS-HRS; 21.8 ACRE-  
FEET.

## OPERATION ADDHYD XSECTION 69

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	309.1	(NULL)
18.87	10.1	(NULL)
20.10	9.4	(NULL)
20.65	9.0	(NULL)
21.97	8.2	(NULL)
23.10	7.5	(NULL)
23.75	7.1	(NULL)
24.03	7.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.24 WATERSHED INCHES; 455 CFS-HRS; 37.6 ACRE-  
FEET.

## OPERATION REACH XSECTION 70

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.39	230.4	249.15
20.14	9.4	247.79
24.09	7.0	247.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.23 WATERSHED INCHES; 455 CFS-HRS; 37.6 ACRE-  
FEET.

## OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	54.7	(RUNOFF)
17.33	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	44.5	267.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.07 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	40.6	248.21

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	312.6	(RUNOFF)
15.84	12.1	(RUNOFF)
17.34	9.4	(RUNOFF)
19.75	7.1	(RUNOFF)
20.08	7.0	(RUNOFF)
21.96	6.2	(RUNOFF)
24.01	5.3	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .11  
 SQ.MI.

8.82 CFS	.43	.51	.59	.68	.78	.88	.98
1.10							
9.30 CFS	1.24	1.38	1.53	1.67	1.82	1.98	2.17
2.36							
9.78 CFS	2.56	2.76	2.95	3.16	3.39	3.63	3.89
4.15							
10.26 CFS	4.40	4.65	4.91	5.20	5.52	5.89	6.35
6.91							
10.74 CFS	7.57	8.30	9.08	9.92	10.78	11.71	12.86
14.23							
11.22 CFS	15.80	17.48	19.28	21.25	23.29	25.46	29.59
36.52							

11.70 CFS	43	50	61	75	98	135	195
276							
12.18 CFS	313	268	207	164	133	112	98
86							
12.66 CFS	72.72	63.35	57.67	53.61	50.33	47.44	44.61
41.80							
13.14 CFS	39.05	36.77	34.96	33.30	31.70	30.10	28.51
26.97							
13.62 CFS	25.51	24.32	23.42	22.72	22.16	21.73	21.39
21.08							
14.10 CFS	20.70	20.26	19.77	19.33	18.96	18.65	18.33
17.93							
14.58 CFS	17.45	16.96	16.53	16.19	15.87	15.52	15.09
14.69							
15.06 CFS	14.32	13.89	13.46	13.12	12.90	12.80	12.75
12.73							
15.54 CFS	12.71	12.61	12.43	12.21	12.09	12.11	12.09
11.95							
16.02 CFS	11.74	11.57	11.47	11.42	11.37	11.23	11.09
10.99							
16.50 CFS	10.85	10.69	10.58	10.53	10.49	10.38	10.22
10.12							
16.98 CFS	10.07	10.03	9.92	9.73	9.50	9.38	9.40
9.37							
17.46 CFS	9.23	9.01	8.83	8.73	8.68	8.62	8.48
8.33							
17.94 CFS	8.25	8.21	8.15	8.01	7.87	7.78	7.74
7.68							
18.42 CFS	7.55	7.48	7.54	7.62	7.63	7.53	7.47
7.52							
18.90 CFS	7.51	7.41	7.33	7.29	7.27	7.26	7.26
7.26							
19.38 CFS	7.26	7.26	7.26	7.23	7.10	7.03	7.08
7.06							
19.86 CFS	6.96	6.88	6.91	7.03	7.04	6.95	6.88
6.84							
20.34 CFS	6.81	6.70	6.58	6.60	6.70	6.74	6.67
6.57							
20.82 CFS	6.60	6.62	6.54	6.44	6.39	6.37	6.36
6.35							
21.30 CFS	6.35	6.35	6.35	6.35	6.34	6.23	6.12
6.14							
21.78 CFS	6.16	6.10	6.10	6.16	6.11	6.01	5.94
5.91							
22.26 CFS	5.90	5.89	5.89	5.89	5.89	5.84	5.72
5.65							
22.74 CFS	5.69	5.68	5.57	5.49	5.52	5.63	5.65
5.56							
23.22 CFS	5.48	5.45	5.43	5.42	5.37	5.24	5.17
5.24							
23.70 CFS	5.32	5.33	5.22	5.09	5.06	5.32	5.21
3.80							
24.18 CFS	2.04	.99	.48				

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.26 WATERSHED INCHES; 302 CFS-HRS; 25.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.24	818.8	(NULL)
13.05	1024.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.12 WATERSHED INCHES; 3745 CFS-HRS; 309.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.35	260.5	(NULL)
20.14	10.3	(NULL)
23.13	8.2	(NULL)
24.09	7.7	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .15 SQ.MI.

HRS	6.78	7.26	7.74	8.22	8.70	9.18	9.66	10.14	10.62	11.10	11.58	12.06	12.54	13.02	13.50	13.98	14.46	14.94
CFS	.49	.92	1.60	2.53	3.59	4.81	6.83	9.79	13.30	20.50	35.80	99	231	133	71.93	49.09	42.16	37.14
	.52	.99	1.70	2.65	3.74	5.00	7.15	10.21	13.85	21.82	38.67	129	220	123	67.34	47.87	41.53	36.44
	.57	1.06	1.81	2.78	3.89	5.20	7.49	10.63	14.49	23.30	42.69	174	209	114	63.36	46.82	40.92	35.72
	.62	1.14	1.92	2.91	4.04	5.43	7.86	11.05	15.25	24.99	47.52	229	197	107	59.86	45.90	40.30	34.96
	.67	1.22	2.04	3.04	4.18	5.69	8.23	11.48	16.13	26.90	52.98	257	183	99	56.88	45.06	39.67	34.15
	.73	1.31	2.16	3.17	4.32	5.96	8.61	11.90	17.12	29.01	59.58	260	170	91	54.37	44.27	39.04	33.31
	.79	1.40	2.28	3.31	4.47	6.24	8.99	12.35	18.18	31.22	67.97	255	157	84	52.29	43.52	38.43	32.44
	.85																	
	1.50																	
	2.40																	
	3.44																	
	4.64																	
	6.53																	
	9.38																	
	12.81																	
	19.30																	
	33.45																	
	79.25																	
	244																	
	145																	
	77																	
	50.55																	
	42.82																	
	37.80																	

31.61								
15.42	CFS	30.82	30.09	29.29	28.45	27.60	26.68	25.63
24.58								
15.90	CFS	23.64	22.83	22.11	21.48	20.92	20.40	19.96
19.60								
16.38	CFS	19.28	18.99	18.72	18.43	18.11	17.81	17.53
17.28								
16.86	CFS	17.03	16.77	16.51	16.26	16.04	15.83	15.61
15.36								
17.34	CFS	15.11	14.91	14.75	14.58	14.39	14.18	13.97
13.78								
17.82	CFS	13.62	13.44	13.26	13.08	12.93	12.78	12.63
12.46								
18.30	CFS	12.25	12.06	11.88	11.72	11.56	11.44	11.38
11.34								
18.78	CFS	11.29	11.22	11.18	11.15	11.10	11.03	10.96
10.90								

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19.26	CFS	10.85	10.80	10.77	10.75	10.73	10.71	10.69
10.64								
19.74	CFS	10.57	10.52	10.49	10.43	10.36	10.31	10.30
10.30								
20.22	CFS	10.28	10.24	10.20	10.15	10.08	9.99	9.92
9.89								
20.70	CFS	9.88	9.86	9.82	9.78	9.76	9.72	9.66
9.60								
21.18	CFS	9.54	9.48	9.44	9.41	9.38	9.36	9.34
9.32								
21.66	CFS	9.28	9.22	9.16	9.12	9.08	9.04	9.03
9.01								
22.14	CFS	8.97	8.91	8.85	8.80	8.75	8.72	8.69
8.67								
22.62	CFS	8.64	8.58	8.51	8.46	8.42	8.36	8.29
8.24								
23.10	CFS	8.22	8.23	8.21	8.17	8.12	8.07	8.03
7.99								
23.58	CFS	7.93	7.85	7.79	7.78	7.77	7.75	7.68
7.62								
24.06	CFS	7.62	7.63	7.29	6.48	5.44	4.43	3.54
2.81								
24.54	CFS	2.21	1.73	1.36	1.05	.82	.63	.49

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.30 WATERSHED INCHES; 501 CFS-HRS; 41.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.27	1051.1	(NULL)
13.03	1156.4	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99

HRS SQ.MI.	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	1.28
4.08 CFS	.46	.53	.60	.68	.75	.83	.92			
1.01										
4.56 CFS	1.11	1.21	1.31	1.41	1.52	1.63	1.75			
1.87										
5.04 CFS	2.00	2.16	2.32	2.49	2.68	2.89	3.11			
3.33										
5.52 CFS	3.58	3.83	4.09	4.36	4.65	4.94	5.24			
5.54										
6.00 CFS	5.85	6.17	6.49	6.82	7.15	7.50	7.85			
8.20										
6.48 CFS	8.57	8.94	9.34	9.75	10.18	10.62	11.09			
11.58										
6.96 CFS	12.09	12.61	13.16	13.72	14.30	14.90	15.52			
16.16										
7.44 CFS	16.82	17.51	18.23	18.96	19.72	20.50	21.29			
22.11										
7.92 CFS	22.94	23.78	24.65	25.54	26.44	27.36	28.29			
29.24										
8.40 CFS	30.21	31.21	32.24	33.31	34.39	35.51	36.65			
37.80										
8.88 CFS	38.97	40.14	41.34	42.56	43.82	45.12	46.48			
47.91										
9.36 CFS	49.42	51.02	52.70	54.47	56.33	58.30	60.39			
62.59										
9.84 CFS	64.90	67.32	69.85	72.50	75.28	78.21	81.27			
84.43										
10.32 CFS	88	91	95	98	102	106	111			
115										
10.80 CFS	120	125	131	137	143	150	158			
167										
11.28 CFS	176	187	198	211	224	240	261			
285										
11.76 CFS	314	349	393	450	531	650	816			
971										
12.24 CFS	1048	1048	1026	998	971	948	925			
902										
12.72 CFS	881	862	893	1070	1137	1156	1146			
1121										
13.20 CFS	1090	1058	1024	990	957	926	895			
865										
13.68 CFS	834	804	773	743	710	680	655			
632										
14.16 CFS	612	594	578	564	551	539	527			
514										
14.64 CFS	502	490	478	467	456	445	434			
423										
15.12 CFS	412	401	391	380	369	359	349			
338										
15.60 CFS	327	316	305	293	282	271	260			
250										
16.08 CFS	242	234	227	220	214	208	203			
198										

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16.56 CFS	194	190	186	183	180	177	174
172							
17.04 CFS	170	168	166	164	162	160	158
156							
17.52 CFS	155	153	151	150	148	146	145
143							
18.00 CFS	142	140	139	137	135	134	132
131							
18.48 CFS	129	128	127	126	124	123	122
121							
18.96 CFS	120	119	118	117	116	115	114
113							
19.44 CFS	112	112	111	110	110	109	109
108							
19.92 CFS	107	107	106	106	105	105	104
104							
20.40 CFS	103	103	102	102	101	101	100
100							
20.88 CFS	99.73	99.26	98.76	98.29	97.84	97.39	96.95
96.54							
21.36 CFS	96.14	95.76	95.39	95.02	94.57	94.09	93.70
93.33							
21.84 CFS	92.88	92.50	92.19	91.80	91.37	90.95	90.54
90.14							
22.32 CFS	89.75	89.37	89.01	88.66	88.29	87.83	87.39
87.04							
22.80 CFS	86.64	86.17	85.70	85.32	85.03	84.70	84.29
83.89							
23.28 CFS	83.50	83.12	82.74	82.34	81.86	81.39	81.04
80.74							
23.76 CFS	80.40	79.97	79.51	79.11	78.98	78.56	76.86
74.38							
24.24 CFS	71.90	69.37	66.77	64.17	61.61	59.10	56.64
54.21							
24.72 CFS	51.80	49.41	47.04	44.70	42.39	40.16	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.14 WATERSHED INCHES; 4246 CFS-HRS; 350.9 ACRE-FEET.

OPERATION DIVERT XSECTION 176  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	691.0 *	(DIVERT)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3755 CFS-HRS; 310.3 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	360.1	177.28
13.03	465.4	177.65

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .59 WATERSHED INCHES; 491 CFS-HRS; 40.5 ACRE-FEET.



\*\*\* MESSAGE - STRUCTURE 72, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 20.00 FEET BELOW ASSUMED CREST ELEVATION AT 240.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

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OPERATION RESVOR STRUCTURE 72

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
 AT STRUCTURE 72  
 \*\*\*

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
13.98	.0	239.81
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-		
FEET.		

OPERATION ADDHYD XSECTION 177

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
13.89	692.4	(NULL)

		HYDROGRAPH POINTS FOR		ALTERNATE = 1,		STORM =99	
HRS	MAIN	TIME	INCREMENT = .060 hr,	DRAINAGE AREA =		1.28	
SQ.MI.							
4.08 CFS	.46	.53	.60	.68	.75	.83	.92
1.01							
4.56 CFS	1.11	1.21	1.31	1.41	1.52	1.63	1.75
1.87							
5.04 CFS	2.00	2.16	2.32	2.49	2.68	2.89	3.11
3.33							
5.52 CFS	3.58	3.83	4.09	4.36	4.65	4.94	5.24
5.54							
6.00 CFS	5.85	6.17	6.49	6.82	7.15	7.50	7.85
8.20							
6.48 CFS	8.57	8.94	9.34	9.75	10.18	10.62	11.09
11.58							
6.96 CFS	12.09	12.61	13.16	13.72	14.30	14.90	15.52
16.16							
7.44 CFS	16.82	17.51	18.23	18.96	19.72	20.50	21.29
22.11							
7.92 CFS	22.94	23.78	24.65	25.54	26.44	27.36	28.29
29.24							
8.40 CFS	30.21	31.21	32.24	33.31	34.39	35.51	36.65
37.80							
8.88 CFS	38.97	40.14	41.34	42.56	43.82	45.12	46.48
47.91							
9.36 CFS	49.42	51.02	52.70	54.47	56.33	58.30	60.39

62.59								
9.84 CFS	64.90	67.32	69.85	72.50	75.28	78.21	81.27	
84.43								
10.32 CFS	88	91	95	98	102	106	111	
115								
10.80 CFS	120	125	131	137	143	150	158	
167								
11.28 CFS	176	187	198	211	224	240	261	
285								
11.76 CFS	314	349	393	450	531	650	691	
691								
12.24 CFS	691	691	691	691	691	691	691	
691								
12.72 CFS	691	691	691	691	691	691	691	
691								
13.20 CFS	691	691	691	691	691	691	691	
691								
13.68 CFS	691	691	691	691	691	680	655	
632								
14.16 CFS	612	594	578	564	551	539	527	
514								
14.64 CFS	502	490	479	467	456	445	434	
423								
15.12 CFS	412	401	391	380	369	359	349	
338								
15.60 CFS	328	316	305	293	282	271	260	
250								
16.08 CFS	242	234	227	220	214	208	203	
198								
16.56 CFS	194	190	186	183	180	177	175	
172								
17.04 CFS	170	168	166	164	162	160	158	
156								
17.52 CFS	155	153	151	150	148	146	145	
143								
18.00 CFS	142	140	139	137	135	134	132	
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18.48 CFS	129	128	127	126	124	123	122	
121								
18.96 CFS	120	119	118	117	116	115	114	
113								
19.44 CFS	112	112	111	110	110	109	109	
108								
19.92 CFS	107	107	106	106	105	105	104	
104								
20.40 CFS	103	103	102	102	101	101	101	
100								
20.88 CFS	99.77	99.30	98.80	98.33	97.87	97.43	96.99	
96.58								
21.36 CFS	96.18	95.80	95.43	95.05	94.61	94.13	93.74	
93.37								
21.84 CFS	92.92	92.54	92.23	91.84	91.41	90.99	90.58	
90.18								
22.32 CFS	89.79	89.41	89.05	88.70	88.33	87.86	87.43	

87.08								
22.80	CFS	86.68	86.21	85.74	85.36	85.07	84.74	84.33
83.93								
23.28	CFS	83.54	83.16	82.78	82.38	81.90	81.43	81.08
80.78								
23.76	CFS	80.44	80.01	79.55	79.15	79.02	78.60	76.90
74.42								
24.24	CFS	71.94	69.41	66.81	64.21	61.65	59.14	56.68
54.25								
24.72	CFS	51.84	49.45	47.08	44.74	42.43	40.20	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.55 WATERSHED INCHES; 3756 CFS-HRS; 310.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
14.01	691.0	229.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.54 WATERSHED INCHES; 3752 CFS-HRS; 310.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	171.1	(RUNOFF)
15.84	6.1	(RUNOFF)
17.34	4.7	(RUNOFF)
21.96	3.1	(RUNOFF)
24.01	2.7	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05 SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	.05	SQ.MI.
7.98	CFS	.47	.51	.55	.59	.62	.66	.71			
.76											
8.46	CFS	.79	.84	.89	.94	1.00	1.04	1.08			
1.12											
8.94	CFS	1.17	1.23	1.30	1.36	1.43	1.52	1.62			
1.72											
9.42	CFS	1.82	1.91	2.01	2.12	2.24	2.38	2.51			
2.63											
9.90	CFS	2.75	2.87	3.01	3.17	3.33	3.49	3.63			
3.77											
10.38	CFS	3.92	4.10	4.29	4.51	4.80	5.17	5.59			
6.05											
10.86	CFS	6.54	7.05	7.58	8.12	8.82	9.66	10.62			
11.62											
11.34	CFS	12.66	13.80	14.95	16.16	18.71	22.84	26.72			
30.55											
11.82	CFS	37	45	57	78	111	154	171			
141											
12.30	CFS	107	84	67	57	50	43	37			
32											
12.78	CFS	29.22	27.20	25.54	24.07	22.61	21.15	19.76			
18.60											
13.26	CFS	17.69	16.83	16.01	15.20	14.38	13.60	12.86			
12.26											

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13.74 CFS	11.82	11.46	11.18	10.96	10.79	10.64	10.44
10.21							
14.22 CFS	9.96	9.73	9.55	9.39	9.23	9.02	8.77
8.52							
14.70 CFS	8.31	8.13	7.97	7.79	7.57	7.37	7.18
6.96							
15.18 CFS	6.75	6.58	6.47	6.42	6.40	6.39	6.38
6.33							
15.66 CFS	6.23	6.11	6.06	6.08	6.06	5.99	5.88
5.79							
16.14 CFS	5.74	5.72	5.69	5.62	5.55	5.50	5.43
5.34							
16.62 CFS	5.29	5.27	5.25	5.19	5.11	5.06	5.04
5.02							
17.10 CFS	4.95	4.85	4.74	4.68	4.70	4.68	4.60
4.49							
17.58 CFS	4.40	4.35	4.33	4.30	4.23	4.15	4.11
4.09							
18.06 CFS	4.06	3.99	3.92	3.88	3.86	3.83	3.76
3.72							
18.54 CFS	3.76	3.80	3.81	3.75	3.72	3.75	3.74
3.69							
19.02 CFS	3.65	3.63	3.62	3.62	3.62	3.62	3.62
3.62							
19.50 CFS	3.62	3.60	3.53	3.50	3.53	3.51	3.46
3.42							
19.98 CFS	3.44	3.50	3.50	3.46	3.42	3.40	3.38
3.33							
20.46 CFS	3.27	3.29	3.34	3.35	3.31	3.26	3.28
3.29							
20.94 CFS	3.25	3.20	3.17	3.16	3.16	3.16	3.16
3.16							
21.42 CFS	3.16	3.16	3.15	3.09	3.03	3.05	3.06
3.02							
21.90 CFS	3.03	3.06	3.03	2.98	2.95	2.93	2.93
2.92							
22.38 CFS	2.92	2.92	2.92	2.90	2.83	2.80	2.83
2.81							
22.86 CFS	2.76	2.72	2.74	2.80	2.80	2.75	2.72
2.70							
23.34 CFS	2.69	2.69	2.66	2.59	2.56	2.60	2.64
2.64							
23.82 CFS	2.58	2.51	2.51	2.66	2.60	1.82	.92
.43							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.96 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
ELEVATION (FEET)

12.23 827.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.56 WATERSHED INCHES; 3916 CFS-HRS; 323.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	825.1	215.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.56 WATERSHED INCHES; 3913 CFS-HRS; 323.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 81

1 TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
 14:07:42 PASS 6 JOB NO. 1 PAGE  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	97.7	(RUNOFF)
15.84	3.6	(RUNOFF)
20.07	2.1	(RUNOFF)
24.01	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	886.9	178.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.56 WATERSHED INCHES; 4006 CFS-HRS; 331.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	187.0	(RUNOFF)
15.84	6.2	(RUNOFF)
17.34	4.8	(RUNOFF)
21.95	3.1	(RUNOFF)
24.00	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

5.14 WATERSHED INCHES; 170 CFS-HRS; 14.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 84

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.24	200.3	(RUNOFF)
18.67	5.4	(RUNOFF)
20.68	4.8	(RUNOFF)
24.01	3.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.03 WATERSHED INCHES; 235 CFS-HRS; 19.5 ACRE-FEET.

OPERATION DIVERT XSECTION 184  
OUTPUT #1 HYDROGRAPH

1 TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION  
04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
Dist;H1&H8UG;GHC2.04TEST  
14:07:42 PASS 6 JOB NO. 1 PAGE  
274

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.12	118.0 *	(DIVERT)
18.67	5.4	(DIVERT)
20.68	4.8	(DIVERT)
24.01	3.7	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
217 CFS-HRS; 17.9 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.24	82.3	175.97

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.40 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 81, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 200.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 81

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS, AT STRUCTURE 81

\*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	.0	192.37

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 185

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	118.6	(NULL)
18.67	5.4	(NULL)
20.68	4.8	(NULL)
24.01	3.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.64 WATERSHED INCHES; 217 CFS-HRS; 17.9 ACRE-FEET.

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
 14:07:42 PASS 6 JOB NO. 1 PAGE  
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OPERATION RUNOFF XSECTION 186

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	103.1	(RUNOFF)
18.67	3.1	(RUNOFF)
24.01	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.06 WATERSHED INCHES; 121 CFS-HRS; 10.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 187

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	221.1	(NULL)
18.67	8.6	(NULL)
20.68	7.5	(NULL)
23.12	6.3	(NULL)
24.01	5.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.41 WATERSHED INCHES; 338 CFS-HRS; 27.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 85

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.17	392.3	(NULL)
18.83	12.3	(NULL)
20.07	11.4	(NULL)
20.82	10.8	(NULL)
21.95	10.0	(NULL)
23.07	9.2	(NULL)
24.00	8.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .17  
 SQ.MI.

HRS	CFS	7.32	8.76	9.24	9.72	10.20	10.68	11.16	11.64	12.12	12.60
7.32	CFS	.43	.51	.59	.67	.75	.83	.91			
1.00											
7.80	CFS	1.09	1.19	1.29	1.39	1.48	1.59	1.70			
1.78											
8.28	CFS	1.89	2.01	2.11	2.21	2.32	2.44	2.57			
2.70											
8.76	CFS	2.82	2.93	3.04	3.17	3.34	3.53	3.71			
3.92											
9.24	CFS	4.16	4.44	4.74	5.03	5.32	5.62	5.95			
6.31											
9.72	CFS	6.69	7.08	7.46	7.84	8.23	8.65	9.11			
9.59											
10.20	CFS	10.07	10.53	10.99	11.47	11.99	12.56	13.21			
14.03											
10.68	CFS	15.03	16.17	17.49	18.91	20.43	22.00	23.66			
25.69											
11.16	CFS	28.04	30.72	33.63	36.73	40.12	43.62	47.42			
54.29											
11.64	CFS	64	75	86	103	125	157	212			
293											
12.12	CFS	373	391	354	314	280	252	228			
197											
12.60	CFS	169	145	127	113	102	93	86			
80											

1  
 TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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13.08	CFS	74.70	69.60	65.30	61.59	58.32	55.33	52.50
49.72								
13.56	CFS	47.04	44.53	42.35	40.56	39.08	37.86	36.92
36.14								
14.04	CFS	35.48	34.79	34.06	33.29	32.56	31.90	31.31
30.73								
14.52	CFS	30.08	29.36	28.60	27.89	27.25	26.67	26.06
25.40								
15.00	CFS	24.76	24.12	23.42	22.75	22.15	21.70	21.39
21.20								
15.48	CFS	21.09	20.99	20.83	20.59	20.29	20.09	20.03
19.92								
15.96	CFS	19.73	19.47	19.22	19.03	18.90	18.76	18.56
18.37								
16.44	CFS	18.20	17.97	17.73	17.54	17.41	17.30	17.12
16.92								



16.92	CFS	16.76	16.64	16.53	16.36	16.11	15.80	15.60
15.53								
17.40	CFS	15.42	15.23	14.96	14.70	14.50	14.36	14.23
14.02								
17.88	CFS	13.82	13.67	13.55	13.43	13.24	13.04	12.89
12.78								
18.36	CFS	12.66	12.48	12.37	12.39	12.44	12.44	12.35
12.29								
18.84	CFS	12.32	12.27	12.17	12.08	12.00	11.94	11.91
11.89								
19.32	CFS	11.88	11.88	11.87	11.87	11.82	11.67	11.59
11.60								
19.80	CFS	11.54	11.43	11.34	11.34	11.44	11.44	11.37
11.30								
20.28	CFS	11.23	11.16	11.01	10.87	10.87	10.92	10.96
10.89								
20.76	CFS	10.80	10.82	10.80	10.70	10.60	10.52	10.45
10.41								
21.24	CFS	10.39	10.38	10.37	10.37	10.36	10.34	10.21
10.09								
21.72	CFS	10.09	10.06	9.97	9.99	10.03	9.95	9.86
9.77								
22.20	CFS	9.70	9.66	9.63	9.62	9.61	9.60	9.54
9.40								
22.68	CFS	9.31	9.32	9.25	9.14	9.05	9.05	9.14
9.15								
23.16	CFS	9.08	9.00	8.94	8.89	8.86	8.79	8.63
8.54								
23.64	CFS	8.57	8.63	8.64	8.53	8.39	8.35	8.61
8.38								
24.12	CFS	6.78	4.86	3.26	2.02	1.25	.79	.49

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.63 WATERSHED INCHES; 508 CFS-HRS; 42.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	1232.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 4514 CFS-HRS; 373.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	76.9	(RUNOFF)
15.84	2.2	(RUNOFF)
22.42	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.87 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-  
 FEET.

1  
 TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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OPERATION ADDHYD XSECTION 88

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)								PEAK
12.24	1276.8								(NULL)
23.97	93.8								(NULL)
HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99									
HRS	MAIN	TIME	INCREMENT =	.060 hr,				DRAINAGE AREA = 1.55	
SQ.MI.									
4.08 CFS	.44	.50	.57	.63	.71	.79	.88		
.97									
4.56 CFS	1.05	1.14	1.25	1.36	1.47	1.58	1.69		
1.80									
5.04 CFS	1.92	2.05	2.18	2.33	2.49	2.65	2.83		
3.02									
5.52 CFS	3.25	3.47	3.71	3.96	4.21	4.47	4.75		
5.05									
6.00 CFS	5.37	5.68	5.98	6.30	6.63	6.97	7.31		
7.67									
6.48 CFS	8.03	8.39	8.77	9.15	9.53	9.96	10.42		
10.87									
6.96 CFS	11.35	11.88	12.44	13.03	13.65	14.29	14.95		
15.65									
7.44 CFS	16.39	17.13	17.89	18.67	19.50	20.36	21.24		
22.15									
7.92 CFS	23.11	24.08	25.06	26.09	27.11	28.13	29.20		
30.33									
8.40 CFS	31.42	32.52	33.67	34.87	36.11	37.36	38.63		
39.90									
8.88 CFS	41.21	42.55	44.00	45.49	46.98	48.53	50.17		
51.91									
9.36 CFS	53.71	55.57	57.48	59.47	61.60	63.88	66.29		
68.79									
9.84 CFS	71.37	74.05	76.87	79.87	83.04	86.34	89.76		
93.28									
10.32 CFS	97	101	105	109	113	118	124		
129									
10.80 CFS	136	142	150	157	165	174	184		
194									
11.28 CFS	206	219	233	248	265	288	317		
348									
11.76 CFS	384	430	491	573	697	877	1087		
1223									
12.24 CFS	1277	1232	1153	1087	1038	991	950		
913									
12.72 CFS	884	863	847	835	825	817	808		
800									
13.20 CFS	793	788	783	778	774	769	765		
761									
13.68 CFS	758	755	753	751	749	748	747		
746									
14.16 CFS	736	712	688	666	647	630	615		
600									
14.64 CFS	587	573	560	547	534	521	508		
496									
15.12 CFS	484	472	460	449	437	426	415		

405							
15.60 CFS	394	384	373	361	350	338	327
315							
16.08 CFS	303	293	282	273	265	257	251
244							
16.56 CFS	238	232	227	222	218	214	210
207							
17.04 CFS	204	201	198	195	193	191	188
186							
17.52 CFS	184	182	180	178	176	174	172
170							
18.00 CFS	168	167	165	163	161	159	157
156							
18.48 CFS	154	152	151	149	148	147	145
144							
18.96 CFS	143	141	140	139	138	137	136
135							
19.44 CFS	134	133	132	131	130	130	129
128							
19.92 CFS	127	127	126	126	125	124	124
123							
20.40 CFS	122	122	121	121	120	120	119
119							
20.88 CFS	118	118	117	117	116	115	115
114							
21.36 CFS	114	114	113	113	112	112	111
111							
21.84 CFS	110	110	109	109	108	108	107
107							
22.32 CFS	106	106	106	105	105	104	104
103							
22.80 CFS	103	102	102	101	101	100	100
99							
23.28 CFS	98.98	98.52	98.07	97.58	96.94	96.39	96.05
95.70							

1  
 TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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23.76 CFS	95.27	94.73	94.16	93.72	93.76	93.04	90.02
86.42							
24.24 CFS	83.20	79.80	76.39	73.32	70.43	67.63	64.91
62.27							
24.72 CFS	59.70	57.20	54.74	52.32	49.91	47.54	45.19

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.59 WATERSHED INCHES; 4585 CFS-HRS; 378.9 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 81  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.06	730.0 *	178.42
23.97	93.8	176.05

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4274 CFS-HRS; 353.2 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	546.8	177.93

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .31 WATERSHED INCHES; 311 CFS-HRS; 25.7 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 71, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 25.00 FEET BELOW ASSUMED CREST ELEVATION AT 174.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.85	21.7	174.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .01 WATERSHED INCHES; 9 CFS-HRS; .7 ACRE-FEET.

OPERATION ADDHYD XSECTION 89

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.85	751.7	(NULL)
23.97	93.9	(NULL)

1

TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99							
	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = 1.55			
HRS								
SQ.MI.								
4.08 CFS	.44	.50	.57	.63	.71	.79	.88	
.97								
4.56 CFS	1.05	1.14	1.25	1.36	1.47	1.58	1.69	
1.80								
5.04 CFS	1.92	2.05	2.18	2.33	2.49	2.65	2.83	
3.02								
5.52 CFS	3.25	3.47	3.71	3.96	4.21	4.47	4.75	
5.05								
6.00 CFS	5.37	5.68	5.98	6.30	6.63	6.97	7.31	
7.67								
6.48 CFS	8.03	8.39	8.77	9.15	9.53	9.96	10.42	

10.87							
6.96 CFS	11.35	11.88	12.44	13.03	13.65	14.29	14.95
15.65							
7.44 CFS	16.39	17.13	17.89	18.67	19.50	20.36	21.24
22.15							
7.92 CFS	23.11	24.08	25.06	26.09	27.11	28.13	29.20
30.33							
8.40 CFS	31.42	32.52	33.67	34.87	36.11	37.36	38.63
39.90							
8.88 CFS	41.21	42.55	44.00	45.49	46.98	48.53	50.17
51.91							
9.36 CFS	53.71	55.57	57.48	59.47	61.60	63.88	66.29
68.79							
9.84 CFS	71.37	74.05	76.87	79.87	83.04	86.34	89.76
93.28							
10.32 CFS	97	101	105	109	113	118	124
129							
10.80 CFS	136	142	150	157	165	174	184
194							
11.28 CFS	206	219	233	248	265	288	317
348							
11.76 CFS	384	430	491	573	697	730	730
730							
12.24 CFS	730	730	730	730	730	730	730
730							
12.72 CFS	730	730	730	730	730	730	730
730							
13.20 CFS	730	730	730	730	730	730	730
730							
13.68 CFS	730	732	751	752	750	749	748
747							
14.16 CFS	742	716	689	666	647	630	615
600							
14.64 CFS	587	573	560	547	534	521	509
496							
15.12 CFS	484	472	460	449	437	426	415
405							
15.60 CFS	394	384	373	362	350	339	327
315							
16.08 CFS	303	293	282	273	265	257	251
244							
16.56 CFS	238	232	227	222	218	214	210
207							
17.04 CFS	204	201	198	195	193	191	189
186							
17.52 CFS	184	182	180	178	176	174	172
170							
18.00 CFS	168	167	165	163	161	159	157
156							
18.48 CFS	154	152	151	150	148	147	145
144							
18.96 CFS	143	141	140	139	138	137	136
135							
19.44 CFS	134	133	132	131	130	130	129
128							
19.92 CFS	127	127	126	126	125	124	124
123							
20.40 CFS	123	122	121	121	120	120	119
119							
20.88 CFS	118	118	117	117	116	115	115
115							
21.36 CFS	114	114	113	113	112	112	111
111							
21.84 CFS	110	110	109	109	108	108	107

107	22.32 CFS	106	106	106	105	105	104	104
103	22.80 CFS	103	102	102	101	101	100	100
99	23.28 CFS	99.03	98.57	98.12	97.63	96.99	96.44	96.10
95.75	23.76 CFS	95.32	94.78	94.21	93.77	93.81	93.09	90.07
86.47	24.24 CFS	83.25	79.85	76.44	73.36	70.48	67.68	64.96
62.32	24.72 CFS	59.75	57.25	54.79	52.37	49.96	47.59	45.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.29 WATERSHED INCHES; 4283 CFS-HRS; 353.9 ACRE-FEET.

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EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 6  
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SUMMARY TABLE 1

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 SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE AREA	RUNOFF AMOUNT	PEAK DISCHARGE ELEVATION	PEAK DISCHARGE		
					TIME	RATE	RATE
ID	OPERATION	(SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)
RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT					.0 hrs.		
RAINTABLE NUMBER 9, ARC 2							
MAIN TIME INCREMENT .060 HOURS							
ALTERNATE	1	STORM	2				
STRUCTURE 11	RESVOR	.09	1.39	382.15	12.47	51	566.7
XSECTION 7	ADDHYD	.17	1.31	---	12.44	85	500.0
XSECTION 107	DIVERT	.00	1.31	---	12.44	85	*****
XSECTION 82	DIVERT	.17	.00	---	.00	0	.0
STRUCTURE 84	RESVOR	.17	.00	---	.00	0	.0

XSECTION	108	ADDHYD	.17	1.31	---	12.44	85	500.0
XSECTION	8	REACH	.17	1.31	357.10	12.52	84	494.1
STRUCTURE	21	RESVOR	.07	1.91	374.07	13.56F	10F	142.9
STRUCTURE	22	RESVOR	.07	1.91	353.09	13.68F	10F	142.9
STRUCTURE	23	RESVOR	.32	1.40	337.25	12.61	106	331.3
XSECTION	16	REACH	.32	1.40	332.26	12.61	106	331.3
STRUCTURE	24	RESVOR	.03	2.45	347.01	12.59	10	333.3
XSECTION	20	ADDHYD	.05	2.19	---	12.15	44	880.0
XSECTION	21	ADDHYD	.41	1.52	---	12.19	172	419.5
XSECTION	122	DIVERT	.00	1.52	---	12.20	169	*****
XSECTION	82	DIVERT	.41	.00	175.03	12.18	3	7.3
STRUCTURE	83	RESVOR	.41	.00	---	.00	0	.0
XSECTION	123	ADDHYD	.41	1.52	---	12.20	169	412.2
XSECTION	23	REACH	.41	1.52	315.31	12.44	143	348.8
STRUCTURE	31	RESVOR	.05	1.55	362.31	12.46	28	560.0
STRUCTURE	1	RESVOR	.60	1.50	312.16	12.78	201	335.0
STRUCTURE	32	RESVOR	.01	2.01	379.28	13.56R	1R	100.0
STRUCTURE	33	RESVOR	.03	2.08	355.98	12.47	18	600.0
STRUCTURE	34	RESVOR	.04	2.06	---	12.48	18	450.0
STRUCTURE	35	RESVOR	.06	1.85	329.42	13.93T	8T	133.3
XSECTION	141	ADDHYD	.07	1.75	---	13.90T	8T	114.3
XSECTION	43	ADDHYD	.77	1.55	---	12.55	258	335.1
XSECTION	144	DIVERT	.00	1.55	---	12.55	258	*****

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SUMMARY TABLE 1

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
	ALTERNATE	1	STORM	2				
XSECTION	82	DIVERT	.77	.00	---	.00	0	.0
STRUCTURE	82	RESVOR	.77	.00	---	.00	0	.0
XSECTION	145	ADDHYD	.77	1.55	---	12.55	258	335.1
XSECTION	44	REACH	.77	1.55	289.87	12.80	248	322.1
STRUCTURE	2	RESVOR	.77	1.55	299.43	12.92	244	316.9
XSECTION	49	ADDHYD	.82	1.54	---	12.90	252	307.3
XSECTION	51	REACH	.93	1.52	284.03	12.99	274	294.6

XSECTION	60	ADDHYD	1.01	1.47	---	12.98	281	278.2
STRUCTURE	3	RESVOR	1.01	1.47	269.51	13.08	278	275.2
XSECTION	62	ADDHYD	1.02	1.46	---	13.08	280	274.5
XSECTION	162	DIVERT	.00	1.46	---	13.08	280	*****
XSECTION	82	DIVERT	1.02	.00	---	.00	0	.0
STRUCTURE	73	RESVOR	1.02	.00	---	.00	0	.0
XSECTION	163	ADDHYD	1.02	1.46	---	13.08	280	274.5
XSECTION	63	REACH	1.02	1.46	249.25	13.29	271	265.7
STRUCTURE	61	RESVOR	.01	1.71	332.36	12.74	5	500.0
STRUCTURE	62	RESVOR	.05	.83	290.42	12.43	12	240.0
STRUCTURE	63	RESVOR	.01	1.40	263.40	12.49	3	300.0
XSECTION	76	ADDHYD	1.28	1.33	---	13.23	298	232.8
XSECTION	176	DIVERT	.00	1.33	---	13.23	298	*****
XSECTION	82	DIVERT	1.28	.00	---	.00	0	.0
STRUCTURE	72	RESVOR	1.28	.00	---	.00	0	.0
XSECTION	177	ADDHYD	1.28	1.33	---	13.23	298	232.8
XSECTION	77	REACH	1.28	1.33	228.65	13.30	297	232.0
XSECTION	84	RUNOFF	.07	.89	---	12.27	33	471.4
XSECTION	184	DIVERT	.00	.89	---	12.27	33	*****
XSECTION	82	DIVERT	.07	.00	---	.00	0	.0
STRUCTURE	81	RESVOR	.07	.00	---	.00	0	.0
XSECTION	185	ADDHYD	.07	.89	---	12.27	33	471.4
XSECTION	187	ADDHYD	.12	.75	---	12.28	42	350.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)					
ALTERNATE	1	STORM	2					
XSECTION	85	ADDHYD	.17	.80	---	12.20	68	400.0
XSECTION	88	ADDHYD	1.55	1.25	---	13.33	317	204.5
XSECTION	81	DIVERT	.00	1.25	177.13	13.33	317	*****
XSECTION	82	DIVERT	1.55	.00	---	.00	0	.0
STRUCTURE	71	RESVOR	1.55	.00	---	.00	0	.0
XSECTION	89	ADDHYD	1.55	1.25	---	13.33	317	204.5
RAINFALL OF		4.10 inches AND		24.00 hr DURATION,		BEGINS AT		.0 hrs.



ALTERNATE	1	STORM	5					
STRUCTURE 11	RESVOR	.09	2.13	382.73	12.33	97	1077.8	
XSECTION 7	ADDHYD	.17	2.02	---	12.38	161	947.1	
XSECTION 107	DIVERT	.00	2.02	---	12.38	161	*****	
XSECTION 82	DIVERT	.17	.00	---	.00	0	.0	
STRUCTURE 84	RESVOR	.17	.00	---	.00	0	.0	
XSECTION 108	ADDHYD	.17	2.02	---	12.38	161	947.1	
XSECTION 8	REACH	.17	2.02	357.55	12.45	156	917.6	
STRUCTURE 21	RESVOR	.07	2.74	375.57	12.90	30	428.6	
STRUCTURE 22	RESVOR	.07	2.74	354.29	13.04	29	414.3	
STRUCTURE 23	RESVOR	.32	2.12	339.31	12.68	148	462.5	
XSECTION 16	REACH	.32	2.12	332.55	12.68	148	462.5	
STRUCTURE 24	RESVOR	.03	3.33	347.70	12.64	12	400.0	
XSECTION 20	ADDHYD	.05	3.04	---	12.15	62	1240.0	
XSECTION 21	ADDHYD	.41	2.26	---	12.16	238	580.5	
XSECTION 122	DIVERT	.00	2.26	---	12.06F	168F	*****	
XSECTION 82	DIVERT	.41	.08	175.83	12.16	70	170.7	
STRUCTURE 83	RESVOR	.41	.00	---	13.67	0	.0	
XSECTION 123	ADDHYD	.41	2.18	---	12.93	168	409.8	
XSECTION 23	REACH	.41	2.18	315.43	13.11	168	409.8	
STRUCTURE 31	RESVOR	.05	2.31	363.56	12.36	55	1100.0	

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE	1	STORM	5				
STRUCTURE 1	RESVOR	.60	2.18	313.06	12.75	264	440.0
STRUCTURE 32	RESVOR	.01	2.77	379.83	12.63T	4T	400.0
STRUCTURE 33	RESVOR	.03	2.91	356.65	12.37	33	1100.0
STRUCTURE 34	RESVOR	.04	2.87	---	12.39	35	875.0
STRUCTURE 35	RESVOR	.06	2.61	330.48	12.99T	25T	416.7
XSECTION 141	ADDHYD	.07	2.50	---	12.99T	25T	357.1
XSECTION 43	ADDHYD	.77	2.25	---	12.55	341	442.9
XSECTION 144	DIVERT	.00	2.25	---	12.55	341	*****
XSECTION 82	DIVERT	.77	.00	---	.00	0	.0

STRUCTURE	82	RESVOR	.77	.00	---	.00	0	.0
XSECTION	145	ADDHYD	.77	2.25	---	12.55	341	442.9
XSECTION	44	REACH	.77	2.24	290.10	12.79	334	433.8
STRUCTURE	2	RESVOR	.77	2.24	300.53	12.92	330	428.6
XSECTION	49	ADDHYD	.82	2.24	---	12.90	341	415.9
XSECTION	51	REACH	.93	2.22	284.42	12.88	380	408.6
XSECTION	60	ADDHYD	1.01	2.16	---	12.85	393	389.1
STRUCTURE	3	RESVOR	1.01	2.16	270.70	12.97	390	386.1
XSECTION	62	ADDHYD	1.02	2.14	---	12.96	393	385.3
XSECTION	162	DIVERT	.00	2.14	---	12.96	393	*****
XSECTION	82	DIVERT	1.02	.00	---	.00	0	.0
STRUCTURE	73	RESVOR	1.02	.00	---	.00	0	.0
XSECTION	163	ADDHYD	1.02	2.14	---	12.96	393	385.3
XSECTION	63	REACH	1.02	2.14	249.50	13.16	386	378.4
STRUCTURE	61	RESVOR	.01	2.50	333.50	12.82	6	600.0
STRUCTURE	62	RESVOR	.05	1.41	292.31	12.54	16	320.0
STRUCTURE	63	RESVOR	.01	2.13	265.07	12.59	4	400.0
XSECTION	76	ADDHYD	1.28	1.99	---	13.09	438	342.2
XSECTION	176	DIVERT	.00	1.99	---	13.09	438	*****
XSECTION	82	DIVERT	1.28	.00	---	.00	0	.0
STRUCTURE	72	RESVOR	1.28	.00	---	.00	0	.0

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SUMMARY TABLE 1

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION	TIME	RATE	RATE	
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	5					
XSECTION	177	ADDHYD	1.28	1.99	---	13.09	438	342.2
XSECTION	77	REACH	1.28	1.99	229.15	13.16	437	341.4
XSECTION	84	RUNOFF	.07	1.49	---	12.26	57	814.3
XSECTION	184	DIVERT	.00	1.49	---	12.26	57	*****
XSECTION	82	DIVERT	.07	.00	---	.00	0	.0
STRUCTURE	81	RESVOR	.07	.00	---	.00	0	.0
XSECTION	185	ADDHYD	.07	1.49	---	12.26	57	814.3
XSECTION	187	ADDHYD	.12	1.29	---	12.26	79	658.3
XSECTION	85	ADDHYD	.17	1.37	---	12.20	125	735.3
XSECTION	88	ADDHYD	1.55	1.90	---	13.08	475	306.5

XSECTION	81	DIVERT	.00	1.90	177.68	13.08	475	*****
XSECTION	82	DIVERT	1.55	.00	---	.00	0	.0
STRUCTURE	71	RESVOR	1.55	.00	---	.00	0	.0
XSECTION	89	ADDHYD	1.55	1.90	---	13.08	475	306.5

RAINFALL OF 4.91 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE		1	STORM	10				
STRUCTURE	11	RESVOR	.09	2.81	383.02	12.34	121	1344.4
XSECTION	7	ADDHYD	.17	2.70	---	12.36	213	1252.9
XSECTION	107	DIVERT	.00	2.70	---	12.36	213	*****
XSECTION	82	DIVERT	.17	2.70	---	.00	0	.0
STRUCTURE	84	RESVOR	.17	2.70	---	.00	0	.0
XSECTION	108	ADDHYD	.17	2.70	---	12.36	213	1252.9
XSECTION	8	REACH	.17	2.70	357.82	12.43	212	1247.1
STRUCTURE	21	RESVOR	.07	3.49	376.27	12.68	61	871.4
STRUCTURE	22	RESVOR	.07	3.49	355.97	12.81	57	814.3
STRUCTURE	23	RESVOR	.32	2.79	341.39	12.83	182	568.8
XSECTION	16	REACH	.32	2.79	332.78	12.83	182	568.8
STRUCTURE	24	RESVOR	.03	4.12	348.34	12.67	13	433.3

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE AREA	RUNOFF AMOUNT	PEAK DISCHARGE ELEVATION	PEAK DISCHARGE			
					TIME	RATE	RATE	
ID	OPERATION	(SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE		1	STORM	10				
XSECTION	20	ADDHYD	.05	3.82	---	12.14	77	1540.0
XSECTION	21	ADDHYD	.41	2.96	---	12.17	288	702.4
XSECTION	122	DIVERT	.00	2.96	---	12.00F	168F	*****
XSECTION	82	DIVERT	.41	.29	176.18	12.17	120	292.7
STRUCTURE	83	RESVOR	.41	.00	---	14.26	0	.0
XSECTION	123	ADDHYD	.41	2.68	---	13.53	168	409.8
XSECTION	23	REACH	.41	2.67	315.43	13.71	168	409.8
STRUCTURE	31	RESVOR	.05	3.02	363.94	12.32	78	1560.0
STRUCTURE	1	RESVOR	.60	2.73	313.84	12.65	318	530.0
STRUCTURE	32	RESVOR	.01	3.48	380.16	12.40	9	900.0

STRUCTURE	33	RESVOR	.03	3.67	357.05	12.32	49	1633.3
STRUCTURE	34	RESVOR	.04	3.62	---	12.35	54	1350.0
STRUCTURE	35	RESVOR	.06	3.33	330.85	12.61	53	883.3
XSECTION	141	ADDHYD	.07	3.20	---	12.61	54	771.4
XSECTION	43	ADDHYD	.77	2.84	---	12.50	475	616.9
XSECTION	144	DIVERT	.00	2.84	---	12.50	475	*****
XSECTION	82	DIVERT	.77	.00	---	.00	0	.0
STRUCTURE	82	RESVOR	.77	.00	---	.00	0	.0
XSECTION	145	ADDHYD	.77	2.84	---	12.50	475	616.9
XSECTION	44	REACH	.77	2.83	290.36	12.66	460	597.4
STRUCTURE	2	RESVOR	.77	2.83	302.04	12.78	450	584.4
XSECTION	49	ADDHYD	.82	2.83	---	12.77	468	570.7
XSECTION	51	REACH	.93	2.83	284.87	12.82	526	565.6
XSECTION	60	ADDHYD	1.01	2.76	---	12.81	543	537.6
STRUCTURE	3	RESVOR	1.01	2.76	272.04	12.88	537	531.7
XSECTION	62	ADDHYD	1.02	2.74	---	12.87	542	531.4
XSECTION	162	DIVERT	.00	2.74	---	12.87	542	*****
XSECTION	82	DIVERT	1.02	.00	---	.00	0	.0
STRUCTURE	73	RESVOR	1.02	.00	---	.00	0	.0
XSECTION	163	ADDHYD	1.02	2.74	---	12.87	542	531.4

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)
ALTERNATE	1	STORM	10					
XSECTION	63	REACH	1.02	2.74	249.77	13.02	532	521.6
STRUCTURE	61	RESVOR	.01	3.24	334.33	12.74	8	800.0
STRUCTURE	62	RESVOR	.05	1.98	293.76	12.62	18	360.0
STRUCTURE	63	RESVOR	.01	2.82	265.90	12.33	10	1000.0
XSECTION	76	ADDHYD	1.28	2.59	---	12.97	612	478.1
XSECTION	176	DIVERT	.00	2.59	---	12.97	612	*****
XSECTION	82	DIVERT	1.28	.00	---	.00	0	.0
STRUCTURE	72	RESVOR	1.28	.00	---	.00	0	.0
XSECTION	177	ADDHYD	1.28	2.59	---	12.97	612	478.1
XSECTION	77	REACH	1.28	2.58	229.61	13.03	612	478.1
XSECTION	84	RUNOFF	.07	2.08	---	12.25	82	1171.4

XSECTION	184	DIVERT	.00	2.08	---	12.25	82	*****
XSECTION	82	DIVERT	.07	.00	---	.00	0	.0
STRUCTURE	81	RESVOR	.07	.00	---	.00	0	.0
XSECTION	185	ADDHYD	.07	2.08	---	12.25	82	1171.4
XSECTION	187	ADDHYD	.12	1.84	---	12.25	116	966.7
XSECTION	85	ADDHYD	.17	1.93	---	12.20	182	1070.6
XSECTION	88	ADDHYD	1.55	2.49	---	12.98	669	431.6
XSECTION	81	DIVERT	.00	2.49	178.26	12.98	669	*****
XSECTION	82	DIVERT	1.55	.00	---	.00	0	.0
STRUCTURE	71	RESVOR	1.55	.00	---	.00	0	.0
XSECTION	89	ADDHYD	1.55	2.49	---	12.98	669	431.6

RAINFALL OF 6.14 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 25

STRUCTURE	11	RESVOR	.09	3.89	383.65	12.33	175	1944.4
XSECTION	7	ADDHYD	.17	3.77	---	12.35	307	1805.9
XSECTION	107	DIVERT	.00	3.77	---	12.18F	213F	*****
XSECTION	82	DIVERT	.17	.21	176.05	12.35	94	552.9

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE AREA	RUNOFF AMOUNT	ELEVATION (FT)	PEAK DISCHARGE			
					TIME (HR)	RATE (CFS)	RATE (CSM)	
ALTERNATE 1 STORM 25								
STRUCTURE	84	RESVOR	.17	.00	---	23.11	0	.0
XSECTION	108	ADDHYD	.17	3.57	---	12.51	215	1264.7
XSECTION	8	REACH	.17	3.56	357.84	12.57	214	1258.8
STRUCTURE	21	RESVOR	.07	4.61	377.05	12.54	109	1557.1
STRUCTURE	22	RESVOR	.07	4.60	358.68	12.69	100	1428.6
STRUCTURE	23	RESVOR	.32	3.75	344.17	12.91	223	696.9
XSECTION	16	REACH	.32	3.75	333.07	12.91	223	696.9
STRUCTURE	24	RESVOR	.03	5.32	349.33	12.71	16	533.3
XSECTION	20	ADDHYD	.05	5.00	---	12.14	99	1980.0
XSECTION	21	ADDHYD	.41	3.96	---	12.16	357	870.7
XSECTION	122	DIVERT	.00	3.96	---	11.88F	168F	*****
XSECTION	82	DIVERT	.41	.65	176.54	12.16	189	461.0

STRUCTURE	83	RESVOR	.41	.21	322.42	13.20	131	319.5
XSECTION	123	ADDHYD	.41	3.51	---	13.20	299	729.3
XSECTION	23	REACH	.41	3.45	315.71	13.50	243	592.7
STRUCTURE	31	RESVOR	.05	4.16	364.70	12.32	107	2140.0
STRUCTURE	1	RESVOR	.60	3.62	315.20	12.57	408	680.0
STRUCTURE	32	RESVOR	.01	4.57	380.46	12.27	21	2100.0
STRUCTURE	33	RESVOR	.03	4.86	357.38	12.28	71	2366.7
STRUCTURE	34	RESVOR	.04	4.79	---	12.28	91	2275.0
STRUCTURE	35	RESVOR	.06	4.44	331.53	12.47	86	1433.3
XSECTION	141	ADDHYD	.07	4.29	---	12.45	88	1257.1
XSECTION	43	ADDHYD	.77	3.78	---	12.38	680	883.1
XSECTION	144	DIVERT	.00	3.78	---	12.24F	543F*****	
XSECTION	82	DIVERT	.77	.09	176.27	12.38	137	177.9
STRUCTURE	82	RESVOR	.77	.00	---	24.09	0	.0
XSECTION	145	ADDHYD	.77	3.69	---	12.69	544	706.5
XSECTION	44	REACH	.77	3.68	290.52	12.82	543	705.2
STRUCTURE	2	RESVOR	.77	3.68	302.33	12.83	542	703.9
XSECTION	49	ADDHYD	.82	3.69	---	12.63	568	692.7

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SUMMARY TABLE 1

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				TIME (HR)	RATE (CFS)	RATE (CSM)		
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)				
ALTERNATE	1	STORM	25					
XSECTION	51	REACH	.93	3.72	285.28	12.67	681	732.3
XSECTION	60	ADDHYD	1.01	3.64	---	12.64	716	708.9
STRUCTURE	3	RESVOR	1.01	3.64	273.42	12.75	701	694.1
XSECTION	62	ADDHYD	1.02	3.63	---	12.74	709	695.1
XSECTION	162	DIVERT	.00	3.63	---	12.48F	621F*****	
XSECTION	82	DIVERT	1.02	.06	176.01	12.74	88	86.3
STRUCTURE	73	RESVOR	1.02	.00	---	21.97	0	.0
XSECTION	163	ADDHYD	1.02	3.57	---	13.11	623	610.8
XSECTION	63	REACH	1.02	3.57	249.91	13.23	622	609.8
STRUCTURE	61	RESVOR	.01	4.38	334.86	12.62	14	1400.0
STRUCTURE	62	RESVOR	.05	2.94	295.13	12.47	37	740.0
STRUCTURE	63	RESVOR	.01	3.90	266.77	12.29	16	1600.0
XSECTION	76	ADDHYD	1.28	3.44	---	12.69	759	593.0

XSECTION	176	DIVERT	.00	3.44	---	12.54F	691F*****	
XSECTION	82	DIVERT	1.28	.04	175.80	12.69	68	53.1
STRUCTURE	72	RESVOR	1.28	.04	---	.00	0	.0
XSECTION	177	ADDHYD	1.28	3.39	---	12.54F	691F	539.8
XSECTION	77	REACH	1.28	3.39	229.78	12.78F	691F	539.8
XSECTION	84	RUNOFF	.07	3.05	---	12.25	121	1728.6
XSECTION	184	DIVERT	.00	3.05	---	12.25	118	*****
XSECTION	82	DIVERT	.07	.00	175.03	12.24	2	28.6
STRUCTURE	81	RESVOR	.07	.00	---	.00	0	.0
XSECTION	185	ADDHYD	.07	3.04	---	12.25	118	1685.7
XSECTION	187	ADDHYD	.12	2.75	---	12.25	175	1458.3
XSECTION	85	ADDHYD	.17	2.87	---	12.19	273	1605.9
XSECTION	88	ADDHYD	1.55	3.32	---	12.24	889	573.5
XSECTION	81	DIVERT	.00	3.32	178.42	12.12F	730F*****	
XSECTION	82	DIVERT	1.55	.10	176.38	12.24	159	102.6
STRUCTURE	71	RESVOR	1.55	.00	---	23.98	0	.0
XSECTION	89	ADDHYD	1.55	3.22	---	13.35	730	471.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)
RAINFALL OF 7.23 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.								
ALTERNATE	1	STORM	50					
STRUCTURE	11	RESVOR	.09	4.89	384.18	12.32	219	2433.3
XSECTION	7	ADDHYD	.17	4.75	---	12.35	387	2276.5
XSECTION	107	DIVERT	.00	4.75	---	12.12F	213F*****	
XSECTION	82	DIVERT	.17	.50	176.46	12.35	174	1023.5
STRUCTURE	84	RESVOR	.17	.00	---	22.72	0	.0
XSECTION	108	ADDHYD	.17	4.26	---	12.57	213	1252.9
XSECTION	8	REACH	.17	4.26	357.83	12.63	213	1252.9
STRUCTURE	21	RESVOR	.07	5.58	377.76	12.51	140	2000.0
STRUCTURE	22	RESVOR	.07	5.57	359.61	12.80	112	1600.0
STRUCTURE	23	RESVOR	.32	4.58	346.08	13.01	253	790.6
XSECTION	16	REACH	.32	4.58	333.24	13.01	253	790.6
STRUCTURE	24	RESVOR	.03	6.38	350.21	12.73	18	600.0
XSECTION	20	ADDHYD	.05	6.06	---	12.14	119	2380.0

XSECTION	21	ADDHYD	.41	4.83	---	12.16	418	1019.5
XSECTION	122	DIVERT	.00	4.83	---	11.82F	168F	*****
XSECTION	82	DIVERT	.41	1.01	176.86	12.16	250	609.8
STRUCTURE	83	RESVOR	.41	.44	322.61	12.84	190	463.4
XSECTION	123	ADDHYD	.41	4.26	---	12.84	358	873.2
XSECTION	23	REACH	.41	4.35	315.91	13.14	304	741.5
STRUCTURE	31	RESVOR	.05	5.15	365.04	12.30	132	2640.0
STRUCTURE	1	RESVOR	.60	4.53	316.20	12.53	488	813.3
STRUCTURE	32	RESVOR	.01	5.55	380.63	12.24	29	2900.0
STRUCTURE	33	RESVOR	.03	5.93	357.61	12.27	85	2833.3
STRUCTURE	34	RESVOR	.04	5.84	---	12.26	114	2850.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE	1	STORM	50				
STRUCTURE 35	RESVOR	.06	5.43	332.51	12.47	99	1650.0
XSECTION 141	ADDHYD	.07	5.26	---	12.45	102	1457.1
XSECTION 43	ADDHYD	.77	4.71	---	12.37	808	1049.4
XSECTION 144	DIVERT	.00	4.71	---	12.18F	543F	*****
XSECTION 82	DIVERT	.77	.25	176.93	12.37	265	344.2
STRUCTURE 82	RESVOR	.77	.02	318.26	12.79	82	106.5
XSECTION 145	ADDHYD	.77	4.48	---	12.79	625	811.7
XSECTION 44	REACH	.77	4.48	290.61	12.93	586	761.0
STRUCTURE 2	RESVOR	.77	4.47	302.46	12.99	582	755.8
XSECTION 49	ADDHYD	.82	4.50	---	12.98	604	736.6
XSECTION 51	REACH	.93	4.54	285.50	12.54	776	834.4
XSECTION 60	ADDHYD	1.01	4.47	---	12.52	838	829.7
STRUCTURE 3	RESVOR	1.01	4.47	274.33	12.61	815	806.9
XSECTION 62	ADDHYD	1.02	4.45	---	12.60	830	813.7
XSECTION 162	DIVERT	.00	4.45	---	12.30F	621F	*****
XSECTION 82	DIVERT	1.02	.21	176.64	12.60	209	204.9
STRUCTURE 73	RESVOR	1.02	.00	---	24.00	0	.0
XSECTION 163	ADDHYD	1.02	4.25	---	13.41	623	610.8
XSECTION 63	REACH	1.02	4.24	249.91	13.53	622	609.8
STRUCTURE 61	RESVOR	.01	5.41	335.25	12.57	19	1900.0



STRUCTURE 62	RESVOR	.05	3.83	296.06	12.44	52	1040.0
STRUCTURE 63	RESVOR	.01	4.90	267.40	12.24	27	2700.0
XSECTION 76	ADDHYD	1.28	4.15	---	12.55	853	666.4
XSECTION 176	DIVERT	.00	4.15	---	12.30F	691F*****	
XSECTION 82	DIVERT	1.28	.14	176.40	12.55	162	126.6
STRUCTURE 72	RESVOR	1.28	.00	---	15.84	0	.0
XSECTION 177	ADDHYD	1.28	4.02	---	13.59	693	541.4
XSECTION 77	REACH	1.28	4.01	229.78	13.62F	691F	539.8
XSECTION 84	RUNOFF	.07	3.96	---	12.24	157	2242.9
XSECTION 184	DIVERT	.00	3.96	---	12.18F	118F*****	

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE		RUNOFF	PEAK DISCHARGE		
		AREA (SQ MI)	AMOUNT (IN)		ELEVATION (FT)	TIME (HR)	RATE (CFS)
ALTERNATE 1		STORM	50				
XSECTION 82	DIVERT	.07	.14	175.46	12.24	39	557.1
STRUCTURE 81	RESVOR	.07	.14	---	.00	0	.0
XSECTION 185	ADDHYD	.07	3.81	---	12.18F	118F	1685.7
XSECTION 187	ADDHYD	.12	3.53	---	12.25	195	1625.0
XSECTION 85	ADDHYD	.17	3.69	---	12.17	332	1952.9
XSECTION 88	ADDHYD	1.55	3.98	---	12.38	1004	647.7
XSECTION 81	DIVERT	.00	3.98	178.42	12.12F	730F*****	
XSECTION 82	DIVERT	1.55	.18	176.98	12.38	274	176.8
STRUCTURE 71	RESVOR	1.55	.00	---	21.95	0	.0
XSECTION 89	ADDHYD	1.55	3.80	---	13.77	730	471.0

RAINFALL OF 8.47 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1		STORM	99				
STRUCTURE 11	RESVOR	.09	6.04	384.78	12.32	269	2988.9
XSECTION 7	ADDHYD	.17	5.90	---	12.34	479	2817.6
XSECTION 107	DIVERT	.00	5.90	---	12.06F	213F*****	
XSECTION 82	DIVERT	.17	.89	176.94	12.34	266	1564.7
STRUCTURE 84	RESVOR	.17	.00	---	23.74	0	.0
XSECTION 108	ADDHYD	.17	5.02	---	12.69	216	1270.6
XSECTION 8	REACH	.17	5.02	357.84	12.75	215	1264.7

STRUCTURE	21	RESVOR	.07	6.69	378.71	12.54	154	2200.0
STRUCTURE	22	RESVOR	.07	6.68	360.78	12.91	127	1814.3
STRUCTURE	23	RESVOR	.32	5.48	346.82	12.86	359	1121.9
XSECTION	16	REACH	.32	5.48	333.85	12.86	359	1121.9
STRUCTURE	24	RESVOR	.03	7.60	351.23	12.75	20	666.7
XSECTION	20	ADDHYD	.05	7.27	---	12.14	141	2820.0
XSECTION	21	ADDHYD	.41	5.81	---	12.16	490	1195.1
XSECTION	122	DIVERT	.00	5.81	---	11.70F	168F*****	
XSECTION	82	DIVERT	.41	1.49	177.15	12.16	322	785.4

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ALTERNATE	1	STORM	99					
STRUCTURE	83	RESVOR	.41	.90	322.94	12.78	292	712.2
XSECTION	123	ADDHYD	.41	5.22	---	12.78	460	1122.0
XSECTION	23	REACH	.41	5.35	316.22	13.02	417	1017.1
STRUCTURE	31	RESVOR	.05	6.35	365.43	12.30	161	3220.0
STRUCTURE	1	RESVOR	.60	5.57	316.91	12.48	613	1021.7
STRUCTURE	32	RESVOR	.01	6.68	380.81	12.23	33	3300.0
STRUCTURE	33	RESVOR	.03	7.15	357.96	12.29	96	3200.0
STRUCTURE	34	RESVOR	.04	7.04	---	12.27	129	3225.0
STRUCTURE	35	RESVOR	.06	6.57	333.51	12.50	109	1816.7
XSECTION	141	ADDHYD	.07	6.39	---	12.48	113	1614.3
XSECTION	43	ADDHYD	.77	5.77	---	12.41	1003	1302.6
XSECTION	144	DIVERT	.00	5.77	---	12.12F	543F*****	
XSECTION	82	DIVERT	.77	.60	177.63	12.41	460	597.4
STRUCTURE	82	RESVOR	.77	.39	319.21	12.52	429	557.1
XSECTION	145	ADDHYD	.77	5.56	---	12.52	972	1262.3
XSECTION	44	REACH	.77	5.53	291.07	12.62	872	1132.5
STRUCTURE	2	RESVOR	.77	5.53	303.30	12.68	851	1105.2
XSECTION	49	ADDHYD	.82	5.56	---	12.67	893	1089.0
XSECTION	51	REACH	.93	5.62	286.02	12.74	1024	1101.1
XSECTION	60	ADDHYD	1.01	5.54	---	12.73	1071	1060.4
STRUCTURE	3	RESVOR	1.01	5.53	276.08	12.81	1041	1030.7

XSECTION	62	ADDHYD	1.02	5.52	---	12.81	1052	1031.4
XSECTION	162	DIVERT	.00	5.52	---	12.18F	621F*****	
XSECTION	82	DIVERT	1.02	.67	177.53	12.81	431	422.5
STRUCTURE	73	RESVOR	1.02	.36	261.30	12.86	481	471.6
XSECTION	163	ADDHYD	1.02	5.22	---	12.86	1102	1080.4
XSECTION	63	REACH	1.02	5.21	250.40	13.06	982	962.7
STRUCTURE	61	RESVOR	.01	6.61	335.67	12.55	25	2500.0
STRUCTURE	62	RESVOR	.05	4.89	297.03	12.42	70	1400.0
STRUCTURE	63	RESVOR	.01	6.07	267.78	12.19	44	4400.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:

F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)					
ALTERNATE	1	STORM	99					
XSECTION	76	ADDHYD	1.28	5.14	---	13.03	1156	903.1
XSECTION	176	DIVERT	.00	5.14	---	12.12F	691F*****	
XSECTION	82	DIVERT	1.28	.59	177.65	13.03	465	363.3
STRUCTURE	72	RESVOR	1.28	.00	---	20.08	0	.0
XSECTION	177	ADDHYD	1.28	4.55	---	13.89	692	540.6
XSECTION	77	REACH	1.28	4.54	229.78	14.01	691	539.8
XSECTION	84	RUNOFF	.07	5.03	---	12.24	200	2857.1
XSECTION	184	DIVERT	.00	5.03	---	12.12F	118F*****	
XSECTION	82	DIVERT	.07	.40	175.97	12.24	82	1171.4
STRUCTURE	81	RESVOR	.07	.00	---	20.68	0	.0
XSECTION	185	ADDHYD	.07	4.64	---	12.39	119	1700.0
XSECTION	187	ADDHYD	.12	4.41	---	12.25	221	1841.7
XSECTION	85	ADDHYD	.17	4.63	---	12.17	392	2305.9
XSECTION	88	ADDHYD	1.55	4.59	---	12.24	1277	823.9
XSECTION	81	DIVERT	.00	4.59	178.42	12.06F	730F*****	
XSECTION	82	DIVERT	1.55	.31	177.93	12.24	547	352.9
STRUCTURE	71	RESVOR	1.55	.01	174.07	13.85	22	14.2
XSECTION	89	ADDHYD	1.55	4.29	---	13.85	752	485.2

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04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

		HYDROGRAPH INFORMATION				ROUTING PARAMETERS					
XSEC ID	REACH LENGTH COEFF	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT- KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
BASEFLOW IS		.0	CFS								
	ALTERNATE	1	STORM		2						
2	1170		24	12.3	23	12.4	1.55	1.37	.029	.952	
	.58										
5	797		51	12.5	50	12.5	2.26	1.19	.019	.989	
	.75?										
8	1221		85	12.4	84	12.5	1.15	1.48	.009	.990	
	.76?										
16	920		106	12.6	106	12.6	3.61	1.49	.001	1.000	
	1.00?										
23	1379		168	12.2	143	12.4	1.21	1.13	.052	.850	
	.32										
27	1021		84	12.3	77	12.4	1.10	1.18	.061	.910	
	.41										
32	1603		76	12.2	68	12.4	1.28	1.33	.055	.899	
	.48										
34	583		1	13.6	1	13.7	1.14	1.62	.001	.998	
	.49										
37	934		18	12.5	18	12.5	2.31	1.55	.002	.999	
	.92?										
44	1428		258	12.5	248	12.8	.66	1.25	.030	.960	
	.34										
51	1275		278	12.8	274	13.0	.78	1.24	.021	.983	
	.41										
53	652		0	.0	0	.0	.000	.00	.000	.000	
	.00										
63	1959		280	13.1	271	13.3	1.20	1.17	.037	.970	
	.29										
65	1283		5	12.7	5	12.8	2.47	1.43	.012	.996	
	.53										
70	2166		58	12.2	52	12.3	1.72	1.40	.032	.899	
	.49										
72	1081		3	12.5	3	12.7	1.50	1.61	.007	.994	
	.49										
77	884		297	13.2	297	13.3	1.75	1.25	.005	1.000	

.85?	80	1296	301	13.3	301	13.4	1.55	1.45	.002	1.000
.97?										
ALTERNATE	1	STORM	5							
2	1170		36	12.3	34	12.4	1.72	1.27	.038	.945
.55										
5	797		94	12.3	90	12.4	2.08	1.23	.018	.965
.83?										
8	1221		159	12.4	155	12.5	1.22	1.46	.010	.971
.84?										
16	920		148	12.7	148	12.7	3.61	1.49	.001	1.000
1.00?										
23	1379		168	13.0	168	13.1	1.15	1.15	.033	.999
.33										
27	1021		137	12.3	123	12.4	1.07	1.18	.060	.901
.44										
32	1603		107	12.2	98	12.3	1.33	1.32	.050	.915
.51										
34	583		4	12.6	4	12.7	1.14	1.62	.002	.994
.71?										

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH COEFF	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION				ROUTING PARAMETERS				ATT- KIN (C)
			INFLOW PEAK (CFS)	TIME (HR)	OUTFLOW PEAK (CFS)	TIME (HR)	Q-A EQ. COEFF	POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	
	ALTERNATE	1	STORM	5							
37	934		35	12.4	35	12.4	2.31	1.55	.003	1.000	
1.00?											
44	1428		341	12.5	334	12.8	.51	1.31	.020	.981	
.39											
51	1275		384	12.7	380	12.9	.63	1.29	.015	.991	
.46											
53	652		0	13.3	0	13.4	2.05	1.40	.007	.956	
.32											
63	1959		393	13.0	386	13.1	.87	1.25	.024	.984	
.34											

65	1283	6	12.8	6	13.0	2.47	1.43	.009	.997
.55									
70	2166	94	12.2	74	12.4	1.68	1.19	.086	.790
.32									
72	1081	4	12.6	4	12.7	1.50	1.61	.004	.998
.52									
77	884	438	13.1	437	13.1	1.92	1.22	.005	.999
.87?									
80	1296	444	13.1	444	13.1	1.59	1.44	.001	1.000
1.00?									

ALTERNATE		1	STORM	10						
2	1170		48	12.3	45	12.4	1.90	1.19	.047	.937
.52										
5	797		121	12.4	120	12.4	2.00	1.25	.016	.996
.87?										
8	1221		213	12.4	212	12.4	1.26	1.44	.009	.993
.88?										
16	920		182	12.8	182	12.8	3.61	1.49	.001	1.000
1.00?										
23	1379		168	13.6	168	13.7	1.15	1.15	.026	1.000
.33										
27	1021		191	12.3	174	12.4	.73	1.29	.043	.911
.52										
32	1603		136	12.2	125	12.3	1.35	1.31	.047	.925
.52										
34	583		9	12.4	9	12.5	1.14	1.62	.004	.994
.86?										
37	934		54	12.4	54	12.4	2.32	1.54	.003	1.000
1.00?										
44	1428		475	12.5	460	12.7	.40	1.37	.016	.969
.44										
51	1275		529	12.7	525	12.8	.54	1.33	.013	.994
.50										
53	652		0	12.5	0	12.7	2.05	1.40	.010	.932
.47										
63	1959		541	12.9	532	13.0	.66	1.31	.019	.983
.38										
65	1283		8	12.7	8	12.8	2.46	1.41	.010	.978
.59										
70	2166		127	12.2	88	12.4	1.90	1.05	.154	.692
.22										

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;  
 LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

		HYDROGRAPH INFORMATION				ROUTING PARAMETERS					
XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
ALTERNATE		1	STORM	10							
72	1081		9	12.4	9	12.4	1.48	1.55	.008	.934	
.61											
77	884		612	13.0	612	13.0	1.93	1.22	.005	.999	
.89?											
80	1296		622	13.0	622	13.0	1.63	1.43	.001	1.000	
1.00?											
ALTERNATE		1	STORM	25							
2	1170		65	12.3	65	12.4	.29	2.00	.003	.995	
.89?											
5	797		173	12.3	172	12.4	1.91	1.27	.014	.995	
.92?											
8	1221		213	12.5	213	12.6	1.26	1.44	.006	1.000	
.88?											
16	920		223	12.9	223	12.9	3.61	1.49	.000	1.000	
1.00?											
23	1379		299	13.2	243	13.5	.87	1.22	.025	.815	
.39											
27	1021		260	12.3	244	12.4	.48	1.40	.027	.939	
.60											
32	1603		180	12.2	168	12.3	1.37	1.30	.043	.930	
.55											
34	583		20	12.2	20	12.2	1.14	1.62	.005	1.000	
1.00?											
37	934		91	12.3	91	12.3	2.39	1.52	.004	1.000	
1.00?											
44	1428		543	12.7	542	12.8	.37	1.39	.012	.999	
.46											
51	1275		701	12.5	680	12.7	.49	1.35	.011	.970	
.54											
53	652		2	12.2	2	12.3	2.05	1.40	.014	.917	
.63											
63	1959		621	13.1	621	13.3	.60	1.34	.014	1.000	
.40											
65	1283		14	12.6	14	12.7	2.48	1.39	.012	.979	
.64											
70	2166		181	12.2	128	12.4	1.83	1.06	.150	.709	
.22											
72	1081		16	12.3	15	12.4	1.53	1.49	.011	.986	
.66											
77	884		691	12.5	691	12.8	1.91	1.22	.004	1.000	
.91?											
80	1296		718	12.6	718	12.6	1.88	1.37	.002	1.000	
1.00?											
ALTERNATE		1	STORM	50							
2	1170		81	12.3	81	12.4	.29	2.00	.003	.998	
.94?											

5 797 217 12.3 216 12.4 1.85 1.28 .012 .995  
 .95?

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.

QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;

ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION

ROUTING PARAMETERS

XSEC ID	REACH LENGTH COEFF	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT- KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
	ALTERNATE	1	STORM	50							
8	1221		213	12.6	213	12.7	1.26	1.44	.005	1.000	
	.88?										
16	920		253	13.0	253	13.0	3.66	1.49	.000	1.000	
	1.00?										
23	1379		358	12.8	304	13.1	.79	1.25	.021	.849	
	.41										
27	1021		323	12.3	312	12.4	.40	1.45	.021	.967	
	.65										
32	1603		216	12.2	204	12.3	1.38	1.30	.040	.944	
	.56										
34	583		29	12.2	29	12.2	1.14	1.61	.006	1.000	
	1.00?										
37	934		113	12.2	113	12.2	2.43	1.51	.004	1.000	
	1.00?										
44	1428		623	12.8	581	12.9	.34	1.41	.010	.932	
	.48										
51	1275		791	12.4	776	12.5	.47	1.36	.009	.981	
	.55										
53	652		5	12.2	4	12.2	2.05	1.40	.017	.927	
	.75?										
63	1959		621	13.4	621	13.6	.60	1.34	.011	1.000	
	.40										
65	1283		19	12.6	19	12.7	2.49	1.38	.012	.986	
	.67?										
70	2166		231	12.2	171	12.5	1.69	1.08	.138	.742	
	.23										
72	1081		27	12.2	25	12.3	1.66	1.42	.017	.927	
	.70?										
77	884		691	13.6	691	13.6	1.91	1.22	.003	1.000	
	.91?										



80	1296	743	12.4	743	12.5	2.01	1.34	.002	1.000
.99?									
ALTERNATE 1 STORM 99									
-----									
2	1170	99	12.3	99	12.4	.27	2.00	.002	.999
.97?									
5	797	267	12.3	267	12.4	1.81	1.28	.011	.998
.97?									
8	1221	213	12.7	213	12.8	1.26	1.44	.004	1.000
.88?									
16	920	358	12.8	358	12.8	3.84	1.46	.000	1.000
1.00?									
23	1379	460	12.9	417	13.0	.68	1.28	.019	.907
.44									
27	1021	392	12.3	384	12.4	.35	1.48	.017	.980
.70?									
32	1603	260	12.2	244	12.3	1.50	1.27	.043	.941
.55									
34	583	33	12.2	33	12.2	1.15	1.61	.005	1.000
1.00?									

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION				ROUTING PARAMETERS							
XSEC ID	REACH LENGTH COEFF	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT- KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
-----											
ALTERNATE 1 STORM 99											
-----											
37	934		127	12.3	127	12.3	2.45	1.51	.003	1.000	
1.00?											
44	1428		962	12.5	866	12.6	.28	1.44	.010	.900	
.54											
51	1275		1049	12.7	1021	12.7	.45	1.37	.008	.974	
.59											
53	652		8	12.2	8	12.2	2.05	1.40	.017	.971	
.83?											
63	1959		1071	12.8	981	13.1	.43	1.40	.011	.916	
.48											

65	1283	25	12.5	24	12.7	2.51	1.37	.012	.982
.70?									
70	2166	304	12.2	230	12.4	1.33	1.14	.117	.755
.26									
72	1081	44	12.2	39	12.2	1.69	1.41	.021	.888
.76?									
77	884	691	13.9	691	14.0	1.91	1.22	.003	1.000
.91?									
80	1296	828	12.2	825	12.3	2.45	1.26	.003	.997
.92?									

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
STRUCTURE 84	.17					
-----						
ALTERNATE 0	1	0	0	0	0	
STRUCTURE 83	.41					
-----						
ALTERNATE 190	1	0	0	0	131	
STRUCTURE 82	.77					
-----						
ALTERNATE 82	1	0	0	0	0	
STRUCTURE 81	.07					
-----						
ALTERNATE 0	1	0	0	0	0	
STRUCTURE 73	1.02					
-----						
ALTERNATE 0	1	0	0	0	0	
STRUCTURE 72	1.28					
-----						
ALTERNATE 0	1	0	0	0	0	
STRUCTURE 71	1.55					
-----						
ALTERNATE 1	1	0	0	0	0	

0					
STRUCTURE	63	.01			
-----					
ALTERNATE	1		3	4	10
27					16
STRUCTURE	62	.05			
-----					
ALTERNATE	1		12	16	18
52					37
STRUCTURE	61	.01			
-----					
ALTERNATE	1		5	6	8
19					14
STRUCTURE	35	.06			
-----					
ALTERNATE	1		8	25	53
99					86
STRUCTURE	34	.04			
-----					
ALTERNATE	1		18	35	54
114					91
STRUCTURE	33	.03			
-----					
ALTERNATE	1		18	33	49
85					71
STRUCTURE	32	.01			
-----					

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
STRUCTURE 32	.01					
-----						
ALTERNATE 29	1	1?	4	9	21	
STRUCTURE 31	.05					
-----						
ALTERNATE 132	1	28	55	78	107	

STRUCTURE	24		.03				
ALTERNATE	1			10	12	13	16
18							
STRUCTURE	23		.32				
ALTERNATE	1			106	148	182	223
253							
STRUCTURE	22		.07				
ALTERNATE	1			10	29	57	100
112							
STRUCTURE	21		.07				
ALTERNATE	1			10	30	61	109
140							
STRUCTURE	11		.09				
ALTERNATE	1			51	97	121	175
219							
STRUCTURE	3		1.01				
ALTERNATE	1			278	390	537	701
815							
STRUCTURE	2		.77				
ALTERNATE	1			244	330	450	542
582							
STRUCTURE	1		.60				
ALTERNATE	1			201	264	318	408
488							
XSECTION	7		.17				
ALTERNATE	1			85	161	213	307
387							
XSECTION	8		.17				
ALTERNATE	1			84	156	212	214
213							
XSECTION	16		.32				
ALTERNATE	1			106	148	182	223
253							
XSECTION	20		.05				
ALTERNATE	1			44	62	77	99
119							

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
XSECTION 21	.41					
----- ALTERNATE 1 418		172	238	288	357	
XSECTION 23	.41					
----- ALTERNATE 1 304		143	168	168	243	
XSECTION 43	.77					
----- ALTERNATE 1 808		258	341	475	680	
XSECTION 44	.77					
----- ALTERNATE 1 586		248	334	460	543	
XSECTION 49	.82					
----- ALTERNATE 1 604		252	341	468	568	
XSECTION 51	.93					
----- ALTERNATE 1 776		274	380	526	681	
XSECTION 60	1.01					
----- ALTERNATE 1 838		281	393	543	716	
XSECTION 62	1.02					
----- ALTERNATE 1 830		280	393	542	709	
XSECTION 63	1.02					
----- ALTERNATE 1 622		271	386	532	622	
XSECTION 76	1.28					
-----						

ALTERNATE 853	1		298	438	612	759
XSECTION	77	1.28				
ALTERNATE 691	1		297	437	612	691
XSECTION	81	.00				
ALTERNATE 730	1		317	475	669	730
XSECTION	82	1.55				
ALTERNATE 274	1		0	0	0	159
1 TR20	-----					SCS

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
XSECTION 84	.07					
ALTERNATE 157	1	33	57	82	121	
XSECTION 85	.17					
ALTERNATE 332	1	68	125	182	273	
XSECTION 88	1.55					
ALTERNATE 1004	1	317	475	669	889	
XSECTION 89	1.55					
ALTERNATE 730	1	317	475	669	730	
XSECTION 107	.00					
ALTERNATE 213	1	85	161	213	213	
XSECTION 108	.17					

ALTERNATE 213	1	85	161	213	215
XSECTION 122					.00
ALTERNATE 168	1	169	168	168	168
XSECTION 123					.41
ALTERNATE 358	1	169	168	168	299
XSECTION 141					.07
ALTERNATE 102	1	8	25	54	88
XSECTION 144					.00
ALTERNATE 543	1	258	341	475	543
XSECTION 145					.77
ALTERNATE 625	1	258	341	475	544
XSECTION 162					.00
ALTERNATE 621	1	280	393	542	621
XSECTION 163					1.02
ALTERNATE 623	1	280	393	542	623

1  
TR20 ----- SCS  
-

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION  
04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
Dist;H1&H8UG;GHC2.04TEST  
14:07:42 SUMMARY, JOB NO. 1 PAGE  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
XSECTION 176						.00
ALTERNATE 691	1	298	438	612	691	

XSECTION	177	1.28				
ALTERNATE	1		298	438	612	691
	693					
XSECTION	184	.00				
ALTERNATE	1		33	57	82	118
	118					
XSECTION	185	.07				
ALTERNATE	1		33	57	82	118
	118					
XSECTION	187	.12				
ALTERNATE	1		42	79	116	175
	195					

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
STRUCTURE 84	.17	
ALTERNATE 1		0
STRUCTURE 83	.41	
ALTERNATE 1		292
STRUCTURE 82	.77	
ALTERNATE 1		429
STRUCTURE 81	.07	
ALTERNATE 1		0
STRUCTURE 73	1.02	
ALTERNATE 1		481
STRUCTURE 72	1.28	
ALTERNATE 1		0
STRUCTURE 71	1.55	
ALTERNATE 1		22
STRUCTURE 63	.01	
ALTERNATE 1		44

1 TR20 ----- SCS



Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
 14:07:42 SUMMARY, JOB NO. 1  
 305 PAGE

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
STRUCTURE 62	.05	
-----		
ALTERNATE 1		70
STRUCTURE 61	.01	
-----		
ALTERNATE 1		25
STRUCTURE 35	.06	
-----		
ALTERNATE 1		109
STRUCTURE 34	.04	
-----		
ALTERNATE 1		129
STRUCTURE 33	.03	
-----		
ALTERNATE 1		96
STRUCTURE 32	.01	
-----		
ALTERNATE 1		33
STRUCTURE 31	.05	
-----		
ALTERNATE 1		161
STRUCTURE 24	.03	
-----		
ALTERNATE 1		20
STRUCTURE 23	.32	
-----		
ALTERNATE 1		359
STRUCTURE 22	.07	
-----		
ALTERNATE 1		127
STRUCTURE 21	.07	
-----		
ALTERNATE 1		154
STRUCTURE 11	.09	
-----		

ALTERNATE 1 269  
 STRUCTURE 3 1.01  
 -----  
 ALTERNATE 1 1041  
 1  
 TR20 ----- SCS  
 -  
 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
 14:07:42 SUMMARY, JOB NO. 1 PAGE  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
STRUCTURE 2	.77	
-----		
ALTERNATE 1		851
STRUCTURE 1	.60	
-----		
ALTERNATE 1		613
XSECTION 7	.17	
-----		
ALTERNATE 1		479
XSECTION 8	.17	
-----		
ALTERNATE 1		215
XSECTION 16	.32	
-----		
ALTERNATE 1		359
XSECTION 20	.05	
-----		
ALTERNATE 1		141
XSECTION 21	.41	
-----		
ALTERNATE 1		490
XSECTION 23	.41	
-----		
ALTERNATE 1		417
XSECTION 43	.77	
-----		
ALTERNATE 1		1003
XSECTION 44	.77	
-----		

ALTERNATE	1	872
XSECTION	49	.82
ALTERNATE	1	893
XSECTION	51	.93
ALTERNATE	1	1024
XSECTION	60	1.01
ALTERNATE	1	1071

1  
 TR20 ----- SCS  
 -

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
 14:07:42 SUMMARY, JOB NO. 1 PAGE  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
XSECTION 62	1.02	
ALTERNATE 1		1052
XSECTION 63	1.02	
ALTERNATE 1		982
XSECTION 76	1.28	
ALTERNATE 1		1156
XSECTION 77	1.28	
ALTERNATE 1		691
XSECTION 81	.00	
ALTERNATE 1		730
XSECTION 82	1.55	
ALTERNATE 1		547
XSECTION 84	.07	
ALTERNATE 1		200
XSECTION 85	.17	

ALTERNATE	1		392
XSECTION	88	1.55	
ALTERNATE	1		1277
XSECTION	89	1.55	
ALTERNATE	1		752
XSECTION	107	.00	
ALTERNATE	1		213
XSECTION	108	.17	
ALTERNATE	1		216
XSECTION	122	.00	
ALTERNATE	1		168

1  
 TR20 ----- SCS  
 -

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
 14:07:42 SUMMARY, JOB NO. 1 PAGE  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
XSECTION 123	.41	
ALTERNATE 1		460
XSECTION 141	.07	
ALTERNATE 1		113
XSECTION 144	.00	
ALTERNATE 1		543
XSECTION 145	.77	
ALTERNATE 1		972
XSECTION 162	.00	
ALTERNATE 1		621
XSECTION 163	1.02	

ALTERNATE	1		1102
XSECTION	176	.00	
-----			
ALTERNATE	1		691
XSECTION	177	1.28	
-----			
ALTERNATE	1		692
XSECTION	184	.00	
-----			
ALTERNATE	1		118
XSECTION	185	.07	
-----			
ALTERNATE	1		119
XSECTION	187	.12	
-----			
ALTERNATE	1		221

1

TR20 ----- SCS  
-

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION  
04/27/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
Dist;H1&H8UG;GHC2.04TEST

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST  
FILES

INPUT = comug3.dat , GIVEN DATA FILE  
OUTPUT = comug3.OUT , DATED  
04/27/\*\*,14:07:42

FILES GENERATED - DATED 04/27/\*\*,14:07:42

NONE!

TOTAL NUMBER OF WARNINGS = 83, MESSAGES = 130

\*\*\* TR-20 RUN COMPLETED \*\*\*

1

\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20  
HYDROLOGY\*\*\*\*\*

JOB TR-20		NOPLOTS		
TITLE Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,				
TITLE CN MGMT- PROP COND.- JULY 30 Storm;H1&H8UG;GHCHUG				
2	XSECTN 002	1.0	389.50	
8		389.00	0.00	0.00
8		389.25	1.65	1.06
8		389.50	6.25	2.75
8		389.75	14.40	5.06
8		390.00	26.75	8.00
8		390.25	45.54	14.33
8		390.50	68.67	15.00
8		390.75	96.11	18.88
8		391.00	127.89	23.00
8		391.25	164.08	27.38
8		391.50	204.77	32.00
8		391.75	250.06	36.88
9	ENDTBL			
2	XSECTN 005	1.0	367.00	
8		366.00	0.00	0.00
8		366.50	3.51	1.5
8		367.00	13.55	4.00
8		367.50	30.53	9.00
8		367.75	47.87	13.00
8		368.00	72.23	18.00
8		368.25	104.79	23.98
8		368.50	146.13	30.94
8		368.75	197.14	38.86
8		369.00	258.63	47.75
8		369.25	331.41	57.61
8		369.50	416.25	68.44
9	ENDTBL			
3	STRUCT 11			
8		380.00	0.00	0.00
8		381.00	2.70	0.53
8		382.20	53.00	1.16
8		383.80	186.80	1.40
9	ENDTBL			
2	XSECTN 008	1.0	330.00	
8		356.00	0.00	0.00
8		356.50	20.21	6.94
8		357.00	68.51	15.75
8		357.50	144.11	26.44
8		358.00	248.93	39.00
8		358.50	389.07	53.25
8		359.00	561.31	69.00
8		359.50	767.14	86.25
8		360.00	1008.16	105.00
8		361.00	1375.68	147.50
8		361.50	1604.19	171.38
9	ENDTBL			

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

2	XSECTN	016	1.0	333.08	
8			331.08	0.00	0.00
8			332.08	80.21	8.00
8			333.08	225.50	16.00
8			333.58	310.09	20.00
8			334.08	399.94	24.00
8			334.58	493.86	28.00
8			335.08	590.97	32.00
8			335.58	690.67	36.00
8			336.08	792.47	40.00
8			336.58	896.02	44.00
9	ENDTBL				
2	XSECTN	023	1.0	314.40	
8			313.22	0.00	0.00
8			313.51	1.10	0.89
8			313.81	3.51	1.84
8			314.10	16.22	5.61
8			314.40	34.66	9.74
8			314.68	48.28	24.71
8			314.96	79.66	42.09
8			315.24	126.64	61.87
8			315.52	189.07	84.06
8			315.80	267.27	108.64
8			316.08	361.75	135.63
8			316.36	473.14	165.02
8			316.64	602.11	196.81
8			316.92	749.37	231.00
8			317.20	878.70	277.25
8			317.48	1103.89	329.14
8			317.76	1358.10	382.70
8			318.04	1640.58	437.94
8			318.32	1950.87	494.86
8			318.60	2288.69	553.45
9	ENDTBL				
3	STRUCT	21			
8			364.00	0.00	0.00
8			366.00	0.30	0.55
8			368.00	0.50	1.31
8			369.00	3.20	1.80
8			370.00	5.20	2.29
8			372.00	7.80	3.48
8			374.00	9.60	5.00
8			375.00	10.40	5.86
8			376.00	45.30	6.79
8			376.50	74.10	7.31
8			377.00	106.80	7.83
8			378.00	149.80	8.90
8			379.00	155.60	10.06
8			380.00	162.00	11.29
9	ENDTBL				

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

3	STRUCT	22			
8			352.50	0.00	0.00
8			358.65	100.00	0.91
8			361.76	140.00	3.28
8			363.64	160.00	5.47
8			366.18	180.00	9.58
8			368.71	200.00	14.77

8			370.61	250.00	19.31
9	ENDTBL				
3	STRUCT	23			
8			333.08	0.00	0.00
8			336.97	100.00	0.03
8			338.11	125.00	0.68
8			339.41	150.00	2.19
8			342.51	200.00	6.68
8			346.05	250.00	12.84
8			346.50	300.00	13.70
8			347.05	400.00	14.76
8			347.50	500.00	15.64
8			347.91	600.00	16.47
8			348.31	700.00	17.30
8			349.01	850.00	18.76
8			350.42	900.00	21.84
8			352.03	1112.97	25.53
9	ENDTBL				
2	XSECTN	027	1.0	317.00	
8			316.00	0.00	0.00
8			316.50	2.68	2.59
8			317.00	10.37	6.88
8			317.50	24.26	12.84
8			318.00	45.55	20.50
8			318.50	70.64	34.75
8			319.00	137.01	60.50
8			319.25	200.57	76.25
8			319.50	273.06	92.00
8			319.75	353.76	107.75
8			320.00	442.13	123.50
8			320.50	640.03	155.00
8			321.00	863.72	186.50
9	ENDTBL				
2	XSECTN	032	1.0	313.00	
8			310.00	0.00	0.00
8			311.00	12.25	5.50
8			312.00	52.16	16.00
8			312.50	83.38	23.13
8			313.00	123.94	31.50
8			313.25	148.02	36.16
8			313.50	174.79	41.13
8			313.75	204.34	46.41
8			314.00	236.81	52.00

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			314.50	278.65	65.75
8			315.00	353.72	84.00
9	ENDTBL				
2	XSECTN	034	1.0	338.50	
8			338.00	0.00	0.00
8			338.10	4.87	2.46
8			338.25	22.73	6.38
8			338.50	73.99	13.53
8			338.75	149.34	21.45
8			339.00	247.95	30.13
8			339.50	515.65	49.78
9	ENDTBL				
2	XSECTN	037	1.0	331.00	
8			330.00	0.00	0.00



8			330.25	14.29	3.25
8			330.50	46.85	7.00
8			330.75	95.34	11.25
8			331.00	159.64	16.00
8			331.25	240.13	21.25
8			331.50	337.44	27.00
8			331.75	452.26	33.25
8			332.00	585.36	40.00
8			332.50	875.33	55.81
8			333.00	1272.05	75.25
9	ENDTBL				
2	XSECTN	044	1.0	288.90	
8			287.68	0.00	0.00
8			287.99	1.15	0.94
8			288.29	3.69	1.95
8			288.60	17.06	5.98
8			288.90	36.44	10.37
8			289.19	63.07	39.25
8			289.47	121.85	69.50
8			289.76	206.05	101.12
8			290.05	313.23	134.09
8			290.33	442.07	168.42
8			290.62	591.78	204.12
8			290.91	761.87	241.18
8			291.19	952.02	279.60
8			291.48	1162.04	319.38
8			291.77	1391.84	360.52
8			292.05	1641.40	403.02
8			292.34	1910.74	446.89
8			292.63	2199.92	492.11
8			292.91	2509.04	538.70
8			293.20	2838.22	586.65
9	ENDTBL				
3	STRUCT	31			
8			356.38	0.0	0.00
8			357.26	10.90	0.02

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			357.50	12.30	0.03
8			358.00	14.70	0.05
8			359.00	18.70	0.10
8			360.00	22.00	0.16
8			361.00	24.90	0.25
8			361.50	26.20	0.30
8			362.00	27.50	0.36
8			362.50	28.70	0.43
8			362.90	29.60	0.49
8			363.50	51.30	0.60
8			363.75	65.70	0.67
8			364.00	82.60	0.72
8			364.20	83.30	0.83
8			364.60	100.00	0.88
8			366.80	260.00	1.47
8			366.92	340.00	1.49
8			366.98	380.00	1.50
9	ENDTBL				
3	STRUCT	32			
8			375.40	0.00	0.00
8			379.36	1.00	0.74

8			380.00	5.00	0.89
8			380.20	10.00	0.94
8			380.33	15.00	0.98
8			380.45	20.00	1.01
8			380.55	25.00	1.04
8			380.65	30.00	1.06
8			381.19	40.00	1.21
8			381.78	44.00	1.39
8			382.59	66.00	1.66
8			382.79	88.00	1.75
8			382.89	110.00	1.79
8			382.97	132.00	1.83
9	ENDTBL				
3	STRUCT	33			
8			350.00	0.00	0.00
8			354.30	1.00	1.08
8			354.47	2.00	1.15
8			354.87	5.00	1.30
8			355.38	10.00	1.50
8			356.18	20.00	1.84
8			356.88	40.00	2.15
8			357.27	60.00	2.33
8			357.46	80.00	2.42
8			358.08	100.00	2.73
8			358.14	120.00	2.76
8			358.19	140.00	2.78
8			358.25	171.00	2.81
8			358.27	180.00	2.82
9	ENDTBL				

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

3	STRUCT	34			
9	ENDTBL				
3	STRUCT	02			
8			295.00	0.00	0.00
8			297.06	100.00	0.942
8			298.88	200.00	1.948
8			299.50	250.00	2.334
8			300.13	300.00	2.741
8			301.47	400.00	3.690
8			302.00	437.50	4.089
8			303.31	853.50	5.156
8			303.75	1069.10	5.534
8			304.20	1317.66	5.934
8			305.27	2019.83	6.939
9	ENDTBL				
2	XSECTN	051	1.0	282.40	
8			281.10	0.00	0.00
8			281.42	1.24	1.09
8			281.75	3.96	2.26
8			282.07	18.30	6.92
8			282.40	39.09	12.00
8			282.88	67.33	37.27
8			283.36	131.17	65.87
8			283.84	225.10	97.78
8			284.32	348.01	133.01
8			284.80	499.91	171.56
8			285.28	681.29	213.43
8			285.76	892.92	258.61

8			286.24	1135.70	307.11
8			286.72	1410.63	358.94
8			287.20	1718.74	414.08
8			287.68	2061.13	472.54
8			288.16	2438.87	534.31
8			288.64	2853.08	599.41
8			289.12	3301.76	667.84
8			289.60	3785.91	739.78
9	ENDTBL				
2	XSECTN	053	1.0	289.00	
8			288.00	0.00	0.00
8			288.50	9.00	2.88
8			289.00	34.26	7.50
8			289.50	79.27	13.88
8			290.00	147.75	22.00
8			290.50	227.49	31.94
8			291.00	332.02	43.75
8			291.50	463.75	57.44
8			291.75	540.56	64.98
8			292.00	625.07	73.00
9	ENDTBL				
2	XSECTN	063	1.0	248.40	

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			247.07	0.00	0.00
8			247.41	1.85	1.14
8			247.74	5.93	2.35
8			248.07	27.43	7.18
8			248.40	58.61	12.46
8			248.67	89.70	40.04
8			248.95	158.39	68.99
8			249.22	256.90	99.30
8			249.49	382.40	130.99
8			249.77	533.43	164.04
8			250.04	709.09	198.46
8			250.31	908.86	234.24
8			250.59	1132.40	271.40
8			250.86	1379.55	309.92
8			251.13	1650.25	349.81
8			251.41	1944.49	391.07
8			251.68	2262.35	433.69
8			251.95	2603.94	477.69
8			252.23	2969.40	523.05
8			252.50	3358.93	569.78
9	ENDTBL				
3	STRUCT	61			
8			329.75	0.00	0.00
8			330.00	1.56	0.01
8			332.00	4.37	0.13
8			334.00	5.96	0.39
8			334.10	6.01	0.40
8			334.50	10.20	0.47
8			335.00	16.10	0.56
8			336.00	28.91	0.75
8			337.00	40.10	0.97
9	ENDTBL				
3	STRUCT	62			
8			287.30	0.00	0.00
8			288.00	5.45	0.01

8		289.00	9.05	0.05
8		290.00	11.60	0.13
8		292.00	15.35	0.50
8		294.00	18.40	1.19
8		294.30	18.92	1.26
8		294.50	20.73	1.40
8		295.00	36.40	1.60
8		295.40	38.00	1.80
8		296.00	51.10	2.15
8		297.00	69.60	2.75
8		298.00	86.80	3.44
8		298.68	98.50	3.91
8		298.80	107.56	4.00
9	ENDTBL			
3	STRUCT	63		

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		259.43	0.00	0.00
8		260.00	1.30	0.026
8		260.50	1.70	0.050
8		261.00	2.10	0.075
8		261.50	2.40	0.095
8		262.00	2.70	0.119
8		262.50	2.90	0.160
8		263.00	3.20	0.205
8		263.50	3.40	0.245
8		264.00	3.60	0.285
8		264.50	3.80	0.360
8		265.00	3.90	0.415
8		265.50	4.10	0.480
8		266.00	11.00	0.537
8		266.50	15.40	0.620
8		267.00	16.00	0.709
8		267.50	30.30	0.798
8		268.00	56.00	0.887
8		268.50	145.68	0.976
9	ENDTBL			
2	XSECTN	065	1.0	300.50
8		300.00	0.00	0.00
8		300.10	0.29	0.23
8		300.25	1.47	0.69
8		300.40	3.55	1.28
8		300.50	5.48	1.75
8		300.60	7.88	2.28
8		300.75	12.45	3.19
8		300.90	18.28	4.23
8		301.00	22.91	5.00
8		301.10	28.18	5.83
8		301.25	37.36	7.19
8		301.40	48.14	8.68
8		301.50	56.26	9.75
9	ENDTBL			
2	XSECTN	070	1.0	248.40
8		247.07	0.00	0.00
8		247.41	1.85	1.14
8		247.74	5.93	2.35
8		248.07	27.43	7.18
8		248.40	58.61	12.46
8		248.67	89.70	40.04

8	248.95	158.39	68.99
8	249.22	256.90	99.30
8	249.49	382.40	130.99
8	249.77	533.43	164.04
8	250.04	709.09	198.46
8	250.31	908.86	234.24
8	250.59	1132.40	271.40
8	250.86	1379.55	309.92

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8	251.13	1650.25	349.81
8	251.41	1944.49	391.07
8	251.68	2262.35	433.69
8	251.95	2603.94	477.69
8	252.23	2969.40	523.05
8	252.50	3358.93	569.78
9	ENDTBL		
2	XSECTN 072	1.0	248.40
8		247.07	0.00
8		247.41	1.85
8		247.74	5.93
8		248.07	27.43
8		248.40	58.61
8		248.67	89.70
8		248.95	158.39
8		249.22	256.90
8		249.49	382.40
8		249.77	533.43
8		250.04	709.09
8		250.31	908.86
8		250.59	1132.40
8		250.86	1379.55
8		251.13	1650.25
8		251.41	1944.49
8		251.68	2262.35
8		251.95	2603.94
8		252.23	2969.40
8		252.50	3358.93
9	ENDTBL		
2	XSECTN 077	1.0	229.00
8		226.00	0.00
8		226.50	11.73
8		227.00	42.97
8		227.50	96.50
8		228.00	175.93
8		228.50	258.13
8		229.00	385.22
8		229.50	561.82
8		230.00	793.74
8		230.50	1079.38
8		231.00	1462.49
8		231.50	1953.75
8		232.00	2564.16
8		232.50	3408.70
8		233.00	4351.01
9	ENDTBL		
2	XSECTN 080	1.0	212.00
8		210.50	0.00
8		210.75	4.72

8		211.00	15.68	4.92
1				

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		211.25	32.36	8.06
8		211.50	54.93	11.67
8		211.75	83.70	15.73
8		212.00	119.05	20.25
8		212.25	163.87	25.14
8		212.50	215.35	30.31
8		212.75	273.55	35.77
8		213.00	338.57	41.50
8		214.00	669.42	67.25
8		215.00	806.07	99.00
8		216.00	1088.03	138.25
8		217.00	1451.30	187.50
8		218.00	1978.93	249.25
8		219.00	2262.06	340.00
8		220.00	3115.20	476.25
8		221.00	4892.67	639.25
9	ENDTBL			
3	STRUCT	03		
8		265.00	0.00	0.00
8		266.81	100.00	0.933
8		268.63	200.00	2.082
8		269.76	300.00	2.912
8		270.81	400.00	3.767
8		271.72	500.00	4.571
8		272.59	600.00	5.401
8		273.41	700.00	6.236
8		274.21	800.00	7.101
8		275.01	900.00	8.013
8		276.00	1025.00	9.223
8		276.61	1143.95	10.007
8		277.45	1373.75	11.134
8		278.33	1678.37	12.382
8		279.24	2056.25	13.758
9	ENDTBL			
3	STRUCT	24		
8		345.00	0.00	0.00
8		346.82	10.00	1.08
8		353.59	25.00	5.89
8		357.97	50.00	10.61
8		358.32	75.00	11.05
8		358.61	100.00	11.43
8		358.87	125.00	11.77
8		359.11	150.00	12.09
8		359.35	175.00	12.41
8		360.02	205.00	13.34
8		360.74	209.00	14.40
8		361.38	352.23	15.42
9	ENDTBL			
3	STRUCT	35		
8		326.00	0.00	0.00

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			330.20	10.00	3.69
8			330.31	15.00	3.81
8			330.40	20.00	3.91
8			330.57	30.00	4.09
8			330.71	40.00	4.24
8			330.83	50.00	4.39
8			331.09	80.00	4.68
8			332.62	100.00	6.56
8			334.97	125.00	9.87
8			335.52	135.00	10.75
8			336.10	157.48	11.70
8			336.22	166.53	11.89
8			336.45	252.42	12.28
9	ENDTBL				
3	STRUCT	71			
8			149.00	0.00	00.00
8			154.00	0.01	05.00
8			159.00	0.02	10.01
8			164.00	0.03	15.01
8			169.00	0.04	20.01
8			174.00	0.05	25.02
8			175.00	310.00	26.02
8			176.00	876.81	27.02
8			177.00	1610.81	28.02
8			178.00	2480.00	29.02
8			179.00	3465.91	30.02
9	ENDTBL				
2	XSECTN	081	1.0	180.00	
8			175.00	0.00	0.00
8			176.00	84.89	14.48
8			177.00	278.13	31.90
8			178.00	568.14	52.58
8			179.00	956.14	75.60
8			180.00	1449.15	101.88
9	ENDTBL				
2	XSECTN	082	1.0	180.00	
8			175.00	0.00	0.00
8			176.00	84.89	14.48
8			177.00	278.13	31.90
8			178.00	568.14	52.58
8			179.00	956.14	75.60
8			180.00	1449.15	101.88
9	ENDTBL				
3	STRUCT	01			
8			308.00	0.00	0.00
8			310.42	100.00	3.248
8			312.15	200.00	5.766
8			312.86	250.00	6.857
8			313.58	300.00	7.993
8			315.06	400.00	10.420

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8			316.00	454.00	12.045
8			316.85	597.18	13.542
8			317.89	897.54	15.453
8			318.81	1251.79	17.190
9	ENDTBL				
3	STRUCT	72			

8		220.00	0.00	0.00
8		225.00	0.01	10.22
8		230.00	0.02	20.44
8		235.00	0.03	30.66
8		240.00	0.04	40.88
8		241.00	310.00	42.92
8		242.00	876.81	44.97
8		243.00	1610.81	47.01
9	ENDTBL5			
3	STRUCT	73		
8		240.00	0.00	0.00
8		245.00	0.01	4.13
8		250.00	0.02	8.25
8		255.00	0.03	12.38
8		260.00	0.04	16.50
8		261.00	310.00	17.33
8		262.00	876.81	18.15
8		263.00	1610.81	18.98
9	ENDTBL			
3	STRUCT	81		
8		190.00	0.00	0.00
8		192.00	0.01	1.19
8		194.00	0.02	3.13
8		196.00	0.03	5.24
8		198.00	0.04	7.18
8		200.00	0.05	8.37
8		201.00	310.00	8.38
8		202.00	876.81	8.39
8		203.00	1610.81	8.40
9	ENDTBL			
3	STRUCT	82		
8		308.00	0.00	0.00
8		310.00	0.01	1.36
8		312.00	0.02	3.56
8		314.00	0.03	5.96
8		316.00	0.04	8.16
8		318.00	0.05	9.52
8		319.00	310.00	9.53
8		320.00	876.81	9.54
8		321.00	1610.81	9.55
9	ENDTBL			
3	STRUCT	83		
8		312.00	0.00	0.00
8		314.00	0.01	1.52

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		316.00	0.02	4.00
8		318.00	0.03	6.71
8		320.00	0.04	9.19
8		322.00	0.05	10.71
8		323.00	310.00	10.72
8		324.00	876.81	10.73
8		325.00	1610.81	10.74
9	ENDTBL			
3	STRUCT	84		
8		348.00	0.00	0.00
8		350.00	0.01	1.62
8		352.00	0.02	4.24
8		354.00	0.03	7.12



8				356.00	0.04	9.74	
8				358.00	0.05	11.36	
8				359.00	310.00	11.37	
8				360.00	876.81	11.38	
8				361.00	1610.81	11.39	
9	ENDTBL						
5	RAINFL 5			0.05			
8			0.0000	0.0000	0.0000	0.0000	0.0061
8			0.0061	0.0121	0.0242	0.0364	0.0424
8			0.0424	0.0424	0.0424	0.0485	0.0606
8			0.0667	0.0727	0.0727	0.0727	0.0727
8			0.0788	0.0848	0.1030	0.1212	0.1333
8			0.1576	0.1818	0.1879	0.2000	0.2182
8			0.2242	0.2303	0.2424	0.2606	0.2909
8			0.3212	0.3576	0.4061	0.4667	0.5394
8			0.6061	0.6606	0.7030	0.7394	0.7576
8			0.7758	0.7939	0.8182	0.8424	0.8788
8			0.9091	0.9212	0.9333	0.9455	0.9515
8			0.9576	0.9697	0.9758	0.9818	0.9818
8			0.9818	0.9818	0.9818	0.9879	0.9879
8			0.9879	0.9879	0.9939	0.9939	0.9939
8			0.9939	0.9939	1.0000	1.0000	1.0000
9	ENDTBL						
6	RUNOFF	1 001	1	0.0336	80.992	0.4051	DA1
6	REACH	3 002	1 2	1170.0		1	
6	RUNOFF	1 003	1	0.0580	79.488	0.3751	DA2
6	ADDHYD	4 004	1 2 3			1	DA1+2
6	RESVOR	2 11 3	1			1	1
SWMF10							
6	REACH	3 005	1 2	797.0		1	
6	RUNOFF	1 006	3	0.0798	77.284	0.3921	DA3
6	ADDHYD	4 007	2 3 4			1	1
DA12+3							
6	DIVERT	6 107	4 2 3	213	082	1	1 SA1-
UG4							
6	RESVOR	2 84 3	1			1	1 H8UG4
6	ADDHYD	4 108	1 2 3			1	1
UG4+SA1							
6	REACH	3 008	3 7	1221.0		1	1 SA1-
SA2							
6	RUNOFF	1 009	1	0.0734	90.928	0.4221	DA1
6	RESVOR	2 21 1	2			1	1
SWMF13							

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

6	RUNOFF	1 010	3	0.0097	72.007	0.1281	DA7
6	RESVOR	2 22 2 3 4				1	1 HWY
STOR							
6	RUNOFF	1 011	2	0.0544	73.278	0.2201	DA2
6	ADDHYD	4 012	7 2 3			1	
SA1+DA2							
6	RUNOFF	1 013	5	0.0193	79.062	0.2481	DA3
6	ADDHYD	4 014	4 3 6			1	
DA17+2							
6	ADDHYD	4 015	6 5 3			1	
DA172+3							
6	RESVOR	2 23 3	1			1 1 1 1	1 CNCPT
1							
6	REACH	3 016	1 2	920.0		1	1

6	RUNOFF	1	017		3	0.0211	87.900	0.1641		DA4
6	RUNOFF	1	118		1	0.0253	93.221	0.2231		DA5A
6	RESVOR	2		24	1				1	1
2					4					1
6	RUNOFF	1	119		5	0.0059	86.148	0.1361		DA5B
6	ADDHYD	4	120		4			1		
	DA5a+5b									
6	ADDHYD	4	020		3			1		1
6	RUNOFF	1	019		5	0.0404	84.467	0.1681		DA4+5
6	ADDHYD	4	022		4			1		DA6
	DA45+6									
6	ADDHYD	4	021		2			1		1
	DA123+6									
6	DIVERT	6	122		1	168	082	1		1
	UG3									SA2-
6	RESVOR	2		83	3			1		1
6	ADDHYD	4	123		1			1		H8UG3
	UG3+SA2									1
6	REACH	3	023		3	1379.0		1		1
	SA3									SA2-
6	RUNOFF	1	024		1	0.0505	82.333	0.3401		DA1
6	RESVOR	2		31	1			1		1
6	RUNOFF	1	025		3	0.0748	81.676	0.3581		SWMF3
6	ADDHYD	4	026		2			1		DA2
6	REACH	3	027		4	1021.0		1		DA1+2
6	RUNOFF	1	028		2	0.0599	78.523	0.3231		DA3
6	ADDHYD	4	029		7			1		
	SA2+DA3									
6	ADDHYD	4	030		1			1		
	DA12+3									
6	RESVOR	2		01	2			1		1
6	RUNOFF	1	031		1	0.0692	86.978	0.2761		PROP1
6	REACH	3	032		1	1603.0		1		DA4
6	RUNOFF	1	033		2	0.0084	95.000	0.1921		DA5
6	RESVOR	2		32	2			1		1
	SWMF11									
6	REACH	3	034		3	583.0		1		
6	RUNOFF	1	035		1	0.0275	94.960	0.2481		DA6
6	RESVOR	2		33	1			1		1
6	ADDHYD	4	036		7			1		SWMF8
6	RESVOR	2		34	1			1		DA5+6
	HWYSTOR3									1
6	REACH	3	037		2	934.0		1		
6	RUNOFF	1	138		1	0.0280	89.879	0.1551		DA7a
6	ADDHYD	4	139		4			1		
	DA56+7a									
6	RESVOR	2		35	3			1	1	1
4					2					1
6	RUNOFF	1	140		3	0.0048	62.603	0.1261		DA7b
6	ADDHYD	4	141		2			1		1
	DA7a+7b									
6	RUNOFF	1	040		2	0.0393	80.311	0.3671		DA8
6	ADDHYD	4	041		5			1		DA3+8
6	ADDHYD	4	042		6			1		DA4+8
6	ADDHYD	4	043		4			1		1
										DA7+8

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

6	DIVERT	6	144		1	543	082	1		1
	UG2									SA3-

6 RESVOR	2	82	3	1				1	1	H8UG2
6 ADDHYD	4	145	1	2	3			1	1	
UG2+SA3										
6 REACH	3	044	3	2		1428.0		1	1	SA3-
SA4										
6 RESVOR	2	02	2	7				1	1	PROP2
6 RUNOFF	1	045		1		0.0477	80.798	0.4121		DA1
6 RUNOFF	1	046		2		0.0628	79.968	0.4401		DA2
6 ADDHYD	4	047	1	2	3			1		DA1+2
6 RUNOFF	1	048		1		0.0469	80.250	0.2491		DA3
6 ADDHYD	4	049	7	1	2			1	1	
SA3+DA3										
6 ADDHYD	4	050	2	3	4			1		
DA12+3										
6 REACH	3	051	4	7		1275.0		1	1	SA4-
SA5										
6 RUNOFF	1	052		1		0.0087	41.639	0.1631		DA1
6 REACH	3	053	1	5		652.0		1		
6 RUNOFF	1	054		1		0.0072	33.729	0.2561		DA2
6 RUNOFF	1	055		2		0.0322	77.752	0.2491		DA3
6 ADDHYD	4	056	7	2	4			1		
SA4+DA3										
6 ADDHYD	4	057	5	1	3			1		DA1+2
6 ADDHYD	4	058	4	3	5			1		
DA12+3										
6 RUNOFF	1	059		1		0.0266	70.478	0.2611	1	DA4
6 ADDHYD	4	060	5	1	2			1	1	
DA123+4										
6 RESVOR	2	03	2	1				1	1	PROP3
6 RUNOFF	1	061		3		0.0173	69.728	0.2971		DA5
6 ADDHYD	4	062	1	3	6			1	1	
DA1234+5										
6 DIVERT	6	162	6	2	3	621	082	1	1	SA5-
UG3										
6 RESVOR	2	73	3	1				1	1	H1UG3
6 ADDHYD	4	163	1	2	3			1	1	
UG1+SA5										
6 REACH	3	063	3	7		1959.0		1	1	SA5-
SA6										
6 RUNOFF	1	064		1		0.0110	84.520	0.5211		DA1
6 RESVOR	2	61	1	2				1	1	
SWMF19										
6 REACH	3	065	2	3		1283.0		1		
6 RUNOFF	1	066		1		0.0458	70.198	0.2391		DA2
6 RESVOR	2	62	1	2				1	1	
SWMF18										
6 ADDHYD	4	067	3	2	4			1		DA1+2
6 RUNOFF	1	068		5		0.0778	73.165	0.2281		DA3
6 ADDHYD	4	069	4	5	1			1		
DA12+3										
6 REACH	3	070	1	2		2166.0		1		
6 RUNOFF	1	071		1		0.0119	80.036	0.1221		DA4
6 RESVOR	2	63	1	3				1	1	SWMF2
6 REACH	3	072	3	4		1081.0		1		
6 RUNOFF	1	073		5		0.1100	64.864	0.2051	1	DA5
6 ADDHYD	4	074	7	5	1			1		
SA5+DA5										
6 ADDHYD	4	075	2	4	6			1	1	
DA123+4										
6 ADDHYD	4	076	1	6	4			1	1	1
DA12345										
6 DIVERT	6	176	4	2	3	691	082	1	1	SA6-
UG2										
6 RESVOR	2	72	3	1				1	1	H1UG2

6 ADDHYD	4 177	1 2 3				1 1	1
UG1+SA6							
6 REACH	3 077	3 7	884.0			1	1 SA6-
SA7							
6 RUNOFF	1 078	2	0.0510	70.802		0.1971 1	DA1
6 ADDHYD	4 079	7 2 1				1	
SA6+DA1							

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

6 REACH	3 080	1 2	1296.0			1	
6 RUNOFF	1 081	3	0.0313	67.555		0.1861	DA2
6 ADDHYD	4 082	2 3 4				1	DA1+2
6 RUNOFF	1 083	3	0.0513	72.309		0.1621	DA3
6 RUNOFF	1 084	7	0.0725	71.389		0.3211	1 DA4a
6 DIVERT	6 184	7 6 5	118		082	1	1 DA4a-
UG1							
6 RESVOR	2 81	5 1				1	1 H8UG1
6 ADDHYD	4 185	1 6 5				1	1
UG1+DA4a							
6 RUNOFF	1 186	2	0.0463	63.182		0.3211	DA4
6 ADDHYD	4 187	2 5 6				1	1
DA4+DA4a							
6 ADDHYD	4 085	3 6 1				1 1	1 DA3+4
6 ADDHYD	4 086	1 4 2				1	
DA123+4							
6 RUNOFF	1 087	4	0.0159	86.785		0.1421	DA5
6 ADDHYD	4 088	2 4 7				1 1	1
DA1234+5							
6 DIVERT	6 081	7 2 3	730		082	1	1 SA7-
UG1							
6 RESVOR	2 71	3 1				1	1 H1UG1
6 ADDHYD	4 089	1 2 4				1 1	1
UG1+SA7							
ENDATA							
7 INCREM	6		.06				
7 COMPUT	7 001	089	0.0	6.60		1.05 2 1	01
ENDCMP 1							
ENDJOB 2							

\*\*\*\*\*END OF 80-80  
 LIST\*\*\*\*\*

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EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .060 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 89  
 STARTING TIME = .00 RAIN DEPTH = 6.60 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS

ALTERNATE NO. = 1

STORM NO. = 1

RAIN TABLE NO. = 5

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.23	109.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.43 WATERSHED INCHES; 96 CFS-HRS; 7.9 ACRE-FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.29	109.1	390.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.43 WATERSHED INCHES; 96 CFS-HRS; 7.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.21	188.7	(RUNOFF)
3.71	6.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.27 WATERSHED INCHES; 160 CFS-HRS; 13.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.24	293.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.33 WATERSHED INCHES; 256 CFS-HRS; 21.2 ACRE-FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,  
 VALUE EXTRAPOLATED.  
 \*\*\*

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OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.26	291.6	385.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.33 WATERSHED INCHES; 256 CFS-HRS; 21.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.32	291.5	369.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.32 WATERSHED INCHES; 256 CFS-HRS; 21.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.22	241.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.03 WATERSHED INCHES; 208 CFS-HRS; 17.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.28	520.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.19 WATERSHED INCHES; 463 CFS-HRS; 38.3 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 107  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.04	213.0 *	(DIVERT)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 312 CFS-HRS; 25.8 ACRE-FEET.

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OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.28	307.2	177.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.37 WATERSHED INCHES; 152 CFS-HRS; 12.5 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 84, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 358.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 84, TRUNCATED AT 400 POINTS WITH 11.00 AC-FT ( .10 WATERSHED INCHES) FLOOD STORAGE REMAINING IN RESERVOIR AT ELEV. 357.75.  
 \*\*\*

OPERATION RESVOR STRUCTURE 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.75	150.7	358.49
2.88	62.9	358.20

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .12 WATERSHED INCHES; 14 CFS-HRS; 1.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.75	363.7	(NULL)
2.88	276.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.94 WATERSHED INCHES; 325 CFS-HRS; 26.9 ACRE-FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.81	358.6	358.39
2.93	273.7	358.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.00 WATERSHED INCHES; 331 CFS-HRS; 27.4 ACRE-FEET.

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OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
1.58	59.6	(RUNOFF)
2.23	281.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.53 WATERSHED INCHES; 262 CFS-HRS; 21.7 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.68	156.9	379.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.29 WATERSHED INCHES; 250 CFS-HRS; 20.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.05	34.8	(RUNOFF)
2.51	20.1	(RUNOFF)
3.20	1.6	(RUNOFF)
3.41	1.7	(RUNOFF)
3.66	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.49 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
3.10	135.3	361.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.29 WATERSHED INCHES; 250 CFS-HRS; 20.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 11

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.12	180.9	(RUNOFF)
2.55	102.6	(RUNOFF)
3.24	7.7	(RUNOFF)
3.45	6.9	(RUNOFF)
3.71	6.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.62 WATERSHED INCHES; 127 CFS-HRS; 10.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.13	395.9	(NULL)
2.55	315.6	(NULL)
2.81	400.9	(NULL)
2.93	306.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.15 WATERSHED INCHES; 458 CFS-HRS; 37.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.13	71.4	(RUNOFF)
2.56	39.0	(RUNOFF)
3.45	2.5	(RUNOFF)
3.72	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.22 WATERSHED INCHES; 53 CFS-HRS; 4.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.27	419.5	(NULL)
2.56	431.4	(NULL)
2.81	529.0	(NULL)
2.93	439.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.64 WATERSHED INCHES; 703 CFS-HRS; 58.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 15

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
2.18	480.8	(NULL)
2.56	470.3	(NULL)
2.81	546.7	(NULL)
2.93	452.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.68 WATERSHED INCHES; 756 CFS-HRS; 62.5 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .006 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 23, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS -10 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 23

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
2.88	460.2	347.32
4.68	31.2	334.30
4.80	23.8	334.01
4.92	19.2	333.83
5.04	16.3	333.71
5.16	14.4	333.64
5.28	13.2	333.59
5.40	12.4	333.56
5.52	11.8	333.54
5.64	11.4	333.52

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32  
 SQ.MI.

	.00	.01	.01	.02	.03	.04	.10
.72 CFS							
.44							
.72 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.10							
1.20 CFS	1.71	5.20	12.78	22.32	30.17	37.73	43.46
47.02							
1.20 ELEV	333.15	333.28	333.58	333.95	334.25	334.55	334.77
334.91							
1.68 CFS	54	77	101	107	122	135	152
167							
1.68 ELEV	335.18	336.09	337.02	337.30	337.95	338.61	339.52
340.49							
2.16 CFS	184	200	211	221	230	238	247
286							
2.16 ELEV	341.52	342.51	343.28	343.98	344.62	345.22	345.84
346.38							

2.64 CFS	346	382	407	450	460	446	429
393							
2.64 ELEV	346.75	346.95	347.08	347.27	347.32	347.25	347.18
347.01							
3.12 CFS	359	326	296	277	258	248	246
242							
3.12 ELEV	346.83	346.64	346.47	346.29	346.12	345.94	345.73
345.49							
3.60 CFS	238	234	229	223	216	210	203
196							
3.60 ELEV	345.23	344.91	344.53	344.11	343.67	343.21	342.75
342.24							
4.08 CFS	187	178	170	162	154	145	134
125							
4.08 ELEV	341.70	341.16	340.64	340.14	339.65	339.14	338.60
338.10							
4.56 CFS	105	-10	31	-1	24	3	19
7							
4.56 ELEV	337.21	332.66	334.29	333.00	334.00	333.21	333.82
333.34							

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5.04 CFS	16.24	8.48	14.39	9.59	13.19	10.19	12.36
10.48							
5.04 ELEV	333.71	333.41	333.64	333.45	333.59	333.48	333.56
333.49							
5.52 CFS	11.78	10.59	11.35	10.58	11.02	10.51	10.74
10.40							
5.52 ELEV	333.54	333.49	333.52	333.49	333.51	333.49	333.50
333.48							
6.00 CFS	10.51	10.27	10.30	10.12	10.11	9.97	9.94
9.82							
6.00 ELEV	333.49	333.48	333.48	333.47	333.47	333.47	333.47
333.46							
6.48 CFS	9.77	9.67	9.61	9.52	9.45	9.37	9.30
9.22							
6.48 ELEV	333.46	333.46	333.45	333.45	333.45	333.44	333.44
333.44							
6.96 CFS	9.16	9.08	9.01	8.94	8.87	8.81	8.74
8.67							
6.96 ELEV	333.44	333.43	333.43	333.43	333.43	333.42	333.42
333.42							
7.44 CFS	8.58	8.49	8.39	8.30	8.20	8.10	8.01
7.91							
7.44 ELEV	333.41	333.41	333.41	333.40	333.40	333.40	333.39
333.39							
7.92 CFS	7.82	7.73	7.63	7.54	7.46	7.37	7.28
7.20							
7.92 ELEV	333.38	333.38	333.38	333.37	333.37	333.37	333.36
333.36							
8.40 CFS	7.11	7.03	6.95	6.86	6.78	6.71	6.63
6.55							
8.40 ELEV	333.36	333.35	333.35	333.35	333.34	333.34	333.34
333.33							
8.88 CFS	6.47	6.40	6.32	6.25	6.18	6.11	6.04
5.97							

8.88 ELEV 333.31	333.33	333.33	333.33	333.32	333.32	333.32	333.31
9.36 CFS 5.35	5.90	5.83	5.76	5.70	5.63	5.54	5.45
9.36 ELEV 333.29	333.31	333.31	333.30	333.30	333.30	333.30	333.29
9.84 CFS 4.56	5.25	5.15	5.05	4.94	4.85	4.75	4.65
9.84 ELEV 333.26	333.28	333.28	333.28	333.27	333.27	333.26	333.26
10.32 CFS 3.88	4.47	4.38	4.29	4.21	4.12	4.04	3.96
10.32 ELEV 333.23	333.25	333.25	333.25	333.24	333.24	333.24	333.23
10.80 CFS 3.26	3.80	3.72	3.65	3.58	3.50	3.42	3.34
10.80 ELEV 333.21	333.23	333.22	333.22	333.22	333.22	333.21	333.21
11.28 CFS 2.64	3.17	3.09	3.01	2.93	2.86	2.78	2.71
11.28 ELEV 333.18	333.20	333.20	333.20	333.19	333.19	333.19	333.19
11.76 CFS 2.13	2.57	2.50	2.43	2.37	2.31	2.25	2.19
11.76 ELEV 333.16	333.18	333.18	333.17	333.17	333.17	333.17	333.17
12.24 CFS 1.72	2.07	2.02	1.97	1.91	1.86	1.82	1.77
12.24 ELEV 333.15	333.16	333.16	333.16	333.15	333.15	333.15	333.15
12.72 CFS 1.39	1.68	1.63	1.59	1.55	1.51	1.47	1.43
12.72 ELEV 333.13	333.15	333.14	333.14	333.14	333.14	333.14	333.14
13.20 CFS 1.13	1.36	1.32	1.29	1.26	1.22	1.19	1.16
13.20 ELEV 333.12	333.13	333.13	333.13	333.13	333.13	333.13	333.13
13.68 CFS .92	1.10	1.07	1.05	1.02	.99	.97	.94
13.68 ELEV 333.12	333.12	333.12	333.12	333.12	333.12	333.12	333.12
14.16 CFS .75	.90	.87	.85	.83	.81	.79	.77
14.16 ELEV 333.11	333.11	333.11	333.11	333.11	333.11	333.11	333.11
14.64 CFS .61	.73	.71	.69	.68	.66	.64	.63
14.64 ELEV 333.10	333.11	333.11	333.11	333.11	333.11	333.11	333.10
15.12 CFS .57	.60	.59	.58	.58	.58	.57	.57
15.12 ELEV 333.10	333.10	333.10	333.10	333.10	333.10	333.10	333.10
15.60 CFS .56	.57	.57	.57	.56	.56	.56	.56
15.60 ELEV 333.10	333.10	333.10	333.10	333.10	333.10	333.10	333.10
16.08 CFS .55	.56	.56	.56	.55	.55	.55	.55
16.08 ELEV 333.10	333.10	333.10	333.10	333.10	333.10	333.10	333.10
16.56 CFS .54	.55	.55	.55	.55	.54	.54	.54

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16.56 ELEV	333.10	333.10	333.10	333.10	333.10	333.10	333.10	333.10
333.10								
17.04 CFS	.54	.54	.54	.54	.54	.54	.54	.54
.54								
17.04 ELEV	333.10	333.10	333.10	333.10	333.10	333.10	333.10	333.10
333.10								
17.52 CFS	.53	.53	.53	.53	.52	.52	.52	.52
.52								
17.52 ELEV	333.10	333.10	333.10	333.10	333.10	333.10	333.10	333.10
333.10								
18.00 CFS	.52	.52	.52	.52	.52	.52	.52	.51
.51								
18.00 ELEV	333.10	333.10	333.10	333.10	333.10	333.10	333.10	333.10
333.10								
18.48 CFS	.51	.51	.51	.51	.51	.51	.51	.51
.51								
18.48 ELEV	333.10	333.10	333.10	333.10	333.10	333.10	333.10	333.10
333.10								
18.96 CFS	.51	.51	.51	.51	.51	.51	.51	.51
.50								
18.96 ELEV	333.10	333.10	333.10	333.10	333.10	333.10	333.10	333.10
333.10								
19.44 CFS	.50	.50	.50	.50	.50	.50	.50	.50
.50								
19.44 ELEV	333.10	333.10	333.10	333.10	333.10	333.10	333.10	333.10
333.10								
19.92 CFS	.50	.50	.50	.50	.50	.50	.50	.50
.50								
19.92 ELEV	333.10	333.10	333.10	333.10	333.10	333.10	333.10	333.10
333.10								
20.40 CFS	.49	.49	.49	.49	.49	.49	.49	.49
.49								
20.40 ELEV	333.10	333.10	333.10	333.10	333.10	333.10	333.10	333.10
333.10								
20.88 CFS	.49	.49	.49	.49	.49	.49	.49	.49
.49								
20.88 ELEV	333.10	333.10	333.10	333.10	333.10	333.10	333.10	333.10
333.10								
21.36 CFS	.49	.48	.48	.48	.48	.48	.48	.48
.48								
21.36 ELEV	333.10	333.10	333.10	333.10	333.10	333.10	333.10	333.10
333.10								
21.84 CFS	.48	.48	.48	.48	.48	.48	.48	.48
.48								
21.84 ELEV	333.10	333.10	333.10	333.10	333.10	333.10	333.10	333.10
333.10								
22.32 CFS	.48	.48	.48	.47	.47	.47	.47	.47
.47								
22.32 ELEV	333.10	333.10	333.10	333.10	333.10	333.10	333.10	333.10
333.10								
22.80 CFS	.47	.47	.47	.47	.47	.47	.47	.47
.47								
22.80 ELEV	333.10	333.10	333.10	333.10	333.10	333.10	333.10	333.10
333.10								

23.28 CFS	.47	.47	.47	.47	.47	.46	.46
.46							
23.28 ELEV	333.10	333.10	333.10	333.10	333.10	333.10	333.10
333.10							
23.76 CFS	.46	.46	.46	.46	.46	.46	.46
.46							
23.76 ELEV	333.10	333.10	333.10	333.10	333.10	333.10	333.10
333.10							
24.24 CFS	.46						
24.24 ELEV	333.10						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.70 WATERSHED INCHES; 761 CFS-HRS; 62.9 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	175	11	8	6	3	1	1	1
DURATION(HRS)	18	19						
FLOW(CFS)	1	0						

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.88	460.2	334.40
4.68	31.2	331.47
4.80	23.8	331.38
4.92	19.2	331.32
5.04	16.3	331.28
5.16	14.4	331.26
5.28	13.2	331.24
5.40	12.4	331.23
5.52	11.8	331.23
5.64	11.4	331.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.70 WATERSHED INCHES; 761 CFS-HRS; 62.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
.84	1.8	(RUNOFF)
1.36	18.5	(RUNOFF)
1.48	16.4	(RUNOFF)
2.06	101.5	(RUNOFF)

2.52	49.4	(RUNOFF)
3.23	3.6	(RUNOFF)
3.42	3.7	(RUNOFF)
3.67	3.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.19 WATERSHED INCHES; 71 CFS-HRS; 5.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
.54	1.6	(RUNOFF)
.85	5.5	(RUNOFF)
1.39	28.7	(RUNOFF)
2.10	121.4	(RUNOFF)
2.55	57.6	(RUNOFF)
3.24	4.2	(RUNOFF)
3.45	3.7	(RUNOFF)
3.70	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.80 WATERSHED INCHES; 95 CFS-HRS; 7.8 ACRE-  
 FEET.

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OPERATION RESVOR STRUCTURE 24

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
2.83	23.4	352.86

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
 SQ.MI.

HRS	.36 CFS	.00	.01	.04	.10	.16	.20	.26
	.40							
	.36 ELEV	345.00	345.00	345.01	345.02	345.03	345.04	345.05
	345.07							
	.84 CFS	.60	.81	.95	1.03	1.12	1.34	1.78
	2.47							
	.84 ELEV	345.11	345.15	345.17	345.19	345.20	345.24	345.32
	345.45							
	1.32 CFS	3.38	4.45	5.49	6.41	7.20	7.84	8.43
	9.21							
	1.32 ELEV	345.61	345.81	346.00	346.17	346.31	346.43	346.53
	346.68							
	1.80 CFS	10.14	10.73	11.55	12.66	14.08	15.67	17.23
	18.58							
	1.80 ELEV	346.88	347.15	347.52	348.02	348.66	349.38	350.08
	350.69							
	2.28 CFS	19.62	20.37	20.91	21.39	21.90	22.44	22.90

23.20								
2.28 ELEV	351.16	351.50	351.74	351.96	352.19	352.44	352.64	
352.78								
2.76 CFS	23.35	23.39	23.36	23.30	23.18	22.98	22.72	
22.43								
2.76 ELEV	352.85	352.86	352.85	352.82	352.77	352.68	352.56	
352.43								
3.24 CFS	22.15	21.87	21.58	21.30	21.02	20.75	20.46	
20.18								
3.24 ELEV	352.30	352.18	352.05	351.92	351.80	351.67	351.54	
351.42								
3.72 CFS	19.92	19.66	19.39	19.10	18.82	18.53	18.25	
17.97								
3.72 ELEV	351.30	351.18	351.06	350.93	350.80	350.67	350.54	
350.42								
4.20 CFS	17.70	17.42	17.16	16.89	16.63	16.38	16.13	
15.88								
4.20 ELEV	350.29	350.17	350.05	349.93	349.81	349.70	349.59	
349.47								
4.68 CFS	15.64	15.40	15.16	14.93	14.70	14.47	14.25	
14.03								
4.68 ELEV	349.36	349.26	349.15	349.04	348.94	348.84	348.74	
348.64								
5.16 CFS	13.82	13.61	13.40	13.19	12.99	12.79	12.59	
12.40								
5.16 ELEV	348.54	348.45	348.35	348.26	348.17	348.08	347.99	
347.90								
5.64 CFS	12.21	12.02	11.84	11.66	11.48	11.30	11.13	
10.96								
5.64 ELEV	347.82	347.73	347.65	347.57	347.49	347.41	347.33	
347.25								
6.12 CFS	10.79	10.62	10.46	10.30	10.14	9.96	9.51	
9.08								
6.12 ELEV	347.18	347.10	347.03	346.96	346.88	346.81	346.73	
346.65								
6.60 CFS	8.68	8.29	7.92	7.56	7.22	6.90	6.59	
6.29								
6.60 ELEV	346.58	346.51	346.44	346.38	346.31	346.26	346.20	
346.15								
7.08 CFS	6.01	5.74	5.48	5.24	5.00	4.78	4.56	
4.36								
7.08 ELEV	346.09	346.04	346.00	345.95	345.91	345.87	345.83	
345.79								
7.56 CFS	4.16	3.98	3.80	3.63	3.46	3.31	3.16	
3.02								
7.56 ELEV	345.76	345.72	345.69	345.66	345.63	345.60	345.58	
345.55								
8.04 CFS	2.88	2.75	2.63	2.51	2.40	2.29	2.19	
2.09								
8.04 ELEV	345.52	345.50	345.48	345.46	345.44	345.42	345.40	
345.38								
8.52 CFS	2.00	1.91	1.82	1.74	1.66	1.59	1.52	
1.45								
8.52 ELEV	345.36	345.35	345.33	345.32	345.30	345.29	345.28	
345.26								
9.00 CFS	1.38	1.32	1.26	1.20	1.15	1.10	1.05	
1.00								
9.00 ELEV	345.25	345.24	345.23	345.22	345.21	345.20	345.19	
345.18								
9.48 CFS	.96	.91	.87	.83	.80	.76	.73	
.69								
9.48 ELEV	345.17	345.17	345.16	345.15	345.15	345.14	345.13	
345.13								
9.96 CFS	.66	.63	.60	.58	.55	.53	.50	



.48								
9.96 ELEV	345.12	345.12	345.11	345.11	345.10	345.10	345.09	
345.09								

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10.44 CFS	.46	.44	.42	.40	.38	.36	.35
.33							
10.44 ELEV	345.08	345.08	345.08	345.07	345.07	345.07	345.06
345.06							
10.92 CFS	.32	.30	.29	.28	.26	.25	.24
.23							
10.92 ELEV	345.06	345.06	345.05	345.05	345.05	345.05	345.04
345.04							
11.40 CFS	.22	.21	.20	.19	.18	.18	.17
.16							
11.40 ELEV	345.04	345.04	345.04	345.03	345.03	345.03	345.03
345.03							
11.88 CFS	.15	.15	.14	.13	.13	.12	.12
.11							
11.88 ELEV	345.03	345.03	345.03	345.02	345.02	345.02	345.02
345.02							
12.36 CFS	.11	.10	.10	.09	.09	.08	.08
.08							
12.36 ELEV	345.02	345.02	345.02	345.02	345.02	345.02	345.01
345.01							
12.84 CFS	.07	.07	.07	.06	.06	.06	.06
.05							
12.84 ELEV	345.01	345.01	345.01	345.01	345.01	345.01	345.01
345.01							
13.32 CFS	.05	.05	.05	.04	.04	.04	.04
.04							
13.32 ELEV	345.01	345.01	345.01	345.01	345.01	345.01	345.01
345.01							
13.80 CFS	.04	.03	.03	.03	.03	.03	.03
.03							
13.80 ELEV	345.01	345.01	345.01	345.01	345.01	345.01	345.00
345.00							
14.28 CFS	.02	.02	.02	.02	.02	.02	.02
.02							
14.28 ELEV	345.00	345.00	345.00	345.00	345.00	345.00	345.00
345.00							
14.76 CFS	.02	.02	.02	.01	.01	.01	.01
.01							
14.76 ELEV	345.00	345.00	345.00	345.00	345.00	345.00	345.00
345.00							
15.24 CFS	.01	.01	.01	.01			
.01							
15.24 ELEV	345.00	345.00	345.00	345.00			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.79 WATERSHED INCHES; 95 CFS-HRS; 7.8 ACRE-  
FEET.

DURATION (HRS)	2	4	6	8	10
FLOW (CFS)	18	11	5	1	0

OPERATION RUNOFF XSECTION 119

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
1.34	5.0	(RUNOFF)
1.49	4.3	(RUNOFF)
2.04	28.5	(RUNOFF)
2.51	14.2	(RUNOFF)
3.41	1.1	(RUNOFF)
3.66	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.00 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 120

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.06	42.9	(NULL)
2.52	36.1	(NULL)
3.19	23.4	(NULL)
3.40	22.5	(NULL)
3.65	21.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.64 WATERSHED INCHES; 114 CFS-HRS; 9.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
.85	2.7	(NULL)
1.37	27.3	(NULL)
1.50	26.9	(NULL)
2.06	144.4	(NULL)
2.52	85.5	(NULL)
3.22	26.9	(NULL)
3.42	26.1	(NULL)
3.67	24.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.46 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
1.37	27.6	(RUNOFF)

1.49	25.7	(RUNOFF)
2.07	182.7	(RUNOFF)
2.53	91.0	(RUNOFF)
3.23	6.7	(RUNOFF)
3.43	6.7	(RUNOFF)
3.68	6.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.81 WATERSHED INCHES; 125 CFS-HRS; 10.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
.85	3.6	(NULL)
1.37	54.9	(NULL)
1.49	52.5	(NULL)
2.06	327.1	(NULL)
2.52	176.5	(NULL)
3.22	33.5	(NULL)
3.42	32.9	(NULL)
3.67	31.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.18 WATERSHED INCHES; 310 CFS-HRS; 25.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
1.53	91.4	(NULL)
2.09	485.6	(NULL)
2.87	532.2	(NULL)
3.64	265.5	(NULL)
4.68	46.9	(NULL)
4.80	39.0	(NULL)
4.92	33.9	(NULL)
5.04	30.5	(NULL)
5.16	28.2	(NULL)
5.28	26.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.04 WATERSHED INCHES; 1071 CFS-HRS; 88.5 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 122  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION (FEET)		
1.53	91.4	(DIVERT)
1.80	168.0 *	(DIVERT)
4.68	46.9	(DIVERT)
4.80	39.0	(DIVERT)
4.92	33.9	(DIVERT)
5.04	30.5	(DIVERT)
5.16	28.2	(DIVERT)
5.28	26.6	(DIVERT)
5.40	25.4	(DIVERT)
5.52	24.4	(DIVERT)

\* FIRST POINT OF FLAT PEAK

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
621 CFS-HRS; 51.3 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
2.09	317.6	177.14
2.87	364.2	177.30
3.64	97.5	176.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.70 WATERSHED INCHES; 450 CFS-HRS; 37.2 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 83, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE

STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 322.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.

\*\*\*

OPERATION RESVOR STRUCTURE 83

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
2.47	269.6	322.87
2.59	320.7	323.02
2.70	352.7	323.08
2.83	391.8	323.14
2.93	377.8	323.12
3.04	300.2	322.97
3.17	224.6	322.72
3.29	169.5	322.55
3.42	142.5	322.46
3.54	125.7	322.41

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.14 WATERSHED INCHES; 304 CFS-HRS; 25.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 123

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
2.47	437.6	(NULL)
2.59	488.7	(NULL)
2.70	520.7	(NULL)
2.83	559.8	(NULL)
2.93	545.8	(NULL)
3.04	468.2	(NULL)
3.17	392.6	(NULL)
3.29	337.5	(NULL)
3.42	310.5	(NULL)
3.54	293.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 925 CFS-HRS; 76.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
2.78	471.9	316.36
2.90	510.2	316.44
2.99	521.5	316.47
3.46	309.7	315.93
3.58	286.6	315.86
3.71	276.2	315.83
3.82	263.5	315.79
3.94	246.9	315.73
4.06	231.2	315.67
4.18	213.9	315.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.56 WATERSHED INCHES; 944 CFS-HRS; 78.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
2.18	180.8	(RUNOFF)
3.73	5.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 149 CFS-HRS; 12.3 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE

TIME INCREMENT OF .043 HOURS.  
\*\*\*

OPERATION RESVOR STRUCTURE 31

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.23	176.4	365.65
3.76	5.5	356.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.56 WATERSHED INCHES; 149 CFS-HRS; 12.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.20	258.9	(RUNOFF)
3.72	8.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.50 WATERSHED INCHES; 217 CFS-HRS; 18.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.21	434.0	(NULL)
3.74	13.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.53 WATERSHED INCHES; 366 CFS-HRS; 30.2 ACRE-  
FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.29	424.8	319.95

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.54 WATERSHED INCHES; 367 CFS-HRS; 30.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		
2.18	201.7	(RUNOFF)
2.56	119.4	(RUNOFF)
3.73	6.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.17 WATERSHED INCHES; 161 CFS-HRS; 13.3 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.18	368.9	(NULL)
2.66	534.8	(NULL)
2.76	551.7	(NULL)
2.89	564.2	(NULL)
2.98	563.6	(NULL)
3.45	317.6	(NULL)
3.58	292.5	(NULL)
3.71	282.4	(NULL)
3.82	268.8	(NULL)
3.94	249.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.64 WATERSHED INCHES; 1105 CFS-HRS; 91.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.26	771.3	(NULL)
2.65	797.6	(NULL)
2.74	793.2	(NULL)
2.86	753.1	(NULL)
3.57	318.7	(NULL)
3.71	296.7	(NULL)
3.82	282.2	(NULL)
3.94	259.6	(NULL)
4.06	237.3	(NULL)
4.18	216.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.83 WATERSHED INCHES; 1472 CFS-HRS; 121.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

2.76 779.5 317.48

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.81 WATERSHED INCHES; 1467 CFS-HRS; 121.3 ACRE-
FEET.

OPERATION RUNOFF XSECTION 31

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Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like .91, 1.47, 2.14, 2.56, 3.45, 3.73 and corresponding discharge and runoff values.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.09 WATERSHED INCHES; 227 CFS-HRS; 18.8 ACRE-
FEET.

OPERATION REACH XSECTION 32

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like 1.60, 2.24, 3.80 and corresponding discharge and peak values.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.09 WATERSHED INCHES; 227 CFS-HRS; 18.8 ACRE-
FEET.

OPERATION RUNOFF XSECTION 33

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows include values like .51, .83, 1.36, 2.07, 2.53, 3.24, 3.43, 3.69 and corresponding discharge and runoff values.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.00 WATERSHED INCHES; 33 CFS-HRS; 2.7 ACRE-
FEET.



OPERATION RESVOR STRUCTURE 32

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
2.19	34.4	380.89
2.57	19.0	380.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.84 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-  
FEET.

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\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
\*\*\*

OPERATION REACH XSECTION 34

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
2.19	34.4	338.31
2.57	19.0	338.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.84 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
.55	3.1	(RUNOFF)
.86	7.5	(RUNOFF)
1.40	33.1	(RUNOFF)
2.11	130.5	(RUNOFF)
2.55	63.1	(RUNOFF)
3.22	4.7	(RUNOFF)
3.45	3.9	(RUNOFF)
3.72	3.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.00 WATERSHED INCHES; 106 CFS-HRS; 8.8 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 33

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
2.20	120.5	358.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.83 WATERSHED INCHES; 103 CFS-HRS; 8.5 ACRE-

FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.20	154.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.83 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-  
 FEET.

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OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.20	154.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.83 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
 \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.20	154.8	330.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.83 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
.82	3.8	(RUNOFF)
1.34	29.2	(RUNOFF)
1.48	24.0	(RUNOFF)
2.05	139.9	(RUNOFF)
2.52	67.3	(RUNOFF)
3.22	4.9	(RUNOFF)
3.42	5.1	(RUNOFF)
3.67	5.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

5.41 WATERSHED INCHES; 98 CFS-HRS; 8.1 ACRE- FEET.

OPERATION ADDHYD XSECTION 139

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows show data points from 0.82 to 3.66 hours.

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 5.65 WATERSHED INCHES; 233 CFS-HRS; 19.2 ACRE- FEET.

OPERATION RESVOR STRUCTURE 35

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Row shows data for 2.66 hours.

Hydrograph points table with columns for HRS, MAIN TIME INCREMENT, and various discharge and elevation values. Includes parameters like ALTERNATE = 1, STORM = 1, DRAINAGE AREA = .06 SQ.MI.

24.45								
3.36 ELEV	331.63	331.37	331.11	330.88	330.73	330.62	330.55	
330.48								
3.84 CFS	20.82	17.94	15.55	13.74	12.22	10.90	9.98	
9.91								
3.84 ELEV	330.41	330.36	330.32	330.28	330.25	330.22	330.19	
330.16								
4.32 CFS	9.83	9.75	9.67	9.58	9.49	9.40	9.31	
9.22								
4.32 ELEV	330.13	330.09	330.06	330.02	329.99	329.95	329.91	
329.87								
4.80 CFS	9.13	9.04	8.95	8.86	8.77	8.68	8.59	
8.50								
4.80 ELEV	329.84	329.80	329.76	329.72	329.68	329.65	329.61	
329.57								
5.28 CFS	8.41	8.33	8.24	8.15	8.07	7.99	7.90	
7.82								
5.28 ELEV	329.53	329.50	329.46	329.42	329.39	329.35	329.32	
329.29								
5.76 CFS	7.74	7.66	7.58	7.51	7.43	7.35	7.28	
7.20								
5.76 ELEV	329.25	329.22	329.18	329.15	329.12	329.09	329.06	
329.03								
6.24 CFS	7.13	7.06	6.99	6.91	6.84	6.78	6.71	
6.64								
6.24 ELEV	328.99	328.96	328.93	328.90	328.87	328.85	328.82	
328.79								
6.72 CFS	6.57	6.51	6.44	6.38	6.31	6.25	6.19	
6.13								
6.72 ELEV	328.76	328.73	328.71	328.68	328.65	328.63	328.60	
328.57								
7.20 CFS	6.07	6.01	5.95	5.89	5.83	5.77	5.71	
5.66								
7.20 ELEV	328.55	328.52	328.50	328.47	328.45	328.42	328.40	
328.38								
7.68 CFS	5.60	5.55	5.49	5.44	5.39	5.33	5.28	
5.23								
7.68 ELEV	328.35	328.33	328.31	328.28	328.26	328.24	328.22	
328.20								
8.16 CFS	5.18	5.13	5.08	5.03	4.98	4.94	4.89	
4.84								
8.16 ELEV	328.18	328.15	328.13	328.11	328.09	328.07	328.05	
328.03								
8.64 CFS	4.79	4.75	4.70	4.66	4.61	4.57	4.53	
4.48								
8.64 ELEV	328.01	327.99	327.98	327.96	327.94	327.92	327.90	
327.88								
9.12 CFS	4.44	4.40	4.36	4.32	4.28	4.24	4.20	
4.16								
9.12 ELEV	327.87	327.85	327.83	327.81	327.80	327.78	327.76	
327.75								
9.60 CFS	4.12	4.08	4.04	4.01	3.97	3.93	3.90	
3.86								

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9.60 ELEV	327.73	327.71	327.70	327.68	327.67	327.65	327.64	
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327.62								
10.08 CFS	3.82	3.79	3.75	3.72	3.69	3.65	3.62	
3.59								
10.08 ELEV	327.61	327.59	327.58	327.56	327.55	327.53	327.52	
327.51								
10.56 CFS	3.55	3.52	3.49	3.46	3.43	3.40	3.37	
3.34								
10.56 ELEV	327.49	327.48	327.47	327.45	327.44	327.43	327.41	
327.40								
11.04 CFS	3.31	3.28	3.25	3.22	3.19	3.16	3.13	
3.11								
11.04 ELEV	327.39	327.38	327.36	327.35	327.34	327.33	327.32	
327.30								
11.52 CFS	3.08	3.05	3.02	3.00	2.97	2.95	2.92	
2.89								
11.52 ELEV	327.29	327.28	327.27	327.26	327.25	327.24	327.23	
327.22								
12.00 CFS	2.87	2.84	2.82	2.80	2.77	2.75	2.72	
2.70								
12.00 ELEV	327.20	327.19	327.18	327.17	327.16	327.15	327.14	
327.13								
12.48 CFS	2.68	2.65	2.63	2.61	2.59	2.56	2.54	
2.52								
12.48 ELEV	327.12	327.11	327.11	327.10	327.09	327.08	327.07	
327.06								
12.96 CFS	2.50	2.48	2.46	2.44	2.42	2.40	2.38	
2.36								
12.96 ELEV	327.05	327.04	327.03	327.02	327.01	327.01	327.00	
326.99								
13.44 CFS	2.34	2.32	2.30	2.28	2.26	2.24	2.22	
2.20								
13.44 ELEV	326.98	326.97	326.97	326.96	326.95	326.94	326.93	
326.93								
13.92 CFS	2.19	2.17	2.15	2.13	2.12	2.10	2.08	
2.06								
13.92 ELEV	326.92	326.91	326.90	326.90	326.89	326.88	326.87	
326.87								
14.40 CFS	2.05	2.03	2.01	2.00	1.98	1.97	1.95	
1.94								
14.40 ELEV	326.86	326.85	326.85	326.84	326.83	326.83	326.82	
326.81								
14.88 CFS	1.92	1.90	1.89	1.87	1.86	1.84	1.83	
1.82								
14.88 ELEV	326.81	326.80	326.79	326.79	326.78	326.77	326.77	
326.76								
15.36 CFS	1.80	1.79	1.77	1.76	1.75	1.73	1.72	
1.70								
15.36 ELEV	326.76	326.75	326.74	326.74	326.73	326.73	326.72	
326.72								
15.84 CFS	1.69	1.68	1.67	1.65	1.64	1.63	1.61	
1.60								
15.84 ELEV	326.71	326.70	326.70	326.69	326.69	326.68	326.68	
326.67								
16.32 CFS	1.59	1.58	1.57	1.55	1.54	1.53	1.52	
1.51								
16.32 ELEV	326.67	326.66	326.66	326.65	326.65	326.64	326.64	
326.63								
16.80 CFS	1.50	1.48	1.47	1.46	1.45	1.44	1.43	
1.42								
16.80 ELEV	326.63	326.62	326.62	326.61	326.61	326.60	326.60	
326.60								
17.28 CFS	1.41	1.40	1.39	1.38	1.37	1.36	1.35	
1.34								
17.28 ELEV	326.59	326.59	326.58	326.58	326.57	326.57	326.57	

326.56								
17.76 CFS	1.33	1.32	1.31	1.30	1.29	1.28	1.27	
1.26								
17.76 ELEV	326.56	326.55	326.55	326.55	326.54	326.54	326.53	
326.53								
18.24 CFS	1.25	1.24	1.23	1.22	1.22	1.21	1.20	
1.19								
18.24 ELEV	326.53	326.52	326.52	326.51	326.51	326.51	326.50	
326.50								
18.72 CFS	1.18	1.17	1.16	1.16	1.15	1.14	1.13	
1.12								
18.72 ELEV	326.50	326.49	326.49	326.49	326.48	326.48	326.48	
326.47								
19.20 CFS	1.12	1.11	1.10	1.09	1.08	1.08	1.07	
1.06								
19.20 ELEV	326.47	326.47	326.46	326.46	326.46	326.45	326.45	
326.45								
19.68 CFS	1.05	1.05	1.04	1.03	1.02	1.02	1.01	
1.00								
19.68 ELEV	326.44	326.44	326.44	326.43	326.43	326.43	326.42	
326.42								
20.16 CFS	1.00	.99	.98	.98	.97	.96	.96	
.95								
20.16 ELEV	326.42	326.42	326.41	326.41	326.41	326.40	326.40	
326.40								
20.64 CFS	.94	.94	.93	.92	.92	.91	.91	
.90								
20.64 ELEV	326.40	326.39	326.39	326.39	326.39	326.38	326.38	
326.38								
21.12 CFS	.89	.89	.88	.88	.87	.86	.86	
.85								
21.12 ELEV	326.38	326.37	326.37	326.37	326.37	326.36	326.36	
326.36								

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21.60 CFS	.85	.84	.84	.83	.82	.82	.81	
.81								
21.60 ELEV	326.36	326.35	326.35	326.35	326.35	326.34	326.34	
326.34								
22.08 CFS	.80	.80	.79	.79	.78	.78	.77	
.77								
22.08 ELEV	326.34	326.33	326.33	326.33	326.33	326.33	326.32	
326.32								
22.56 CFS	.76	.76	.75	.75	.74	.74	.73	
.73								
22.56 ELEV	326.32	326.32	326.32	326.31	326.31	326.31	326.31	
326.31								
23.04 CFS	.72	.72	.71	.71	.70	.70	.70	
.69								
23.04 ELEV	326.30	326.30	326.30	326.30	326.30	326.29	326.29	
326.29								
23.52 CFS	.69	.68	.68	.67	.67	.66	.66	
.66								
23.52 ELEV	326.29	326.29	326.28	326.28	326.28	326.28	326.28	
326.28								
24.00 CFS	.65	.65	.64	.64	.64			

24.00 ELEV 326.27 326.27 326.27 326.27 326.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.57 WATERSHED INCHES; 230 CFS-HRS; 19.0 ACRE-
FEET.

DURATION (HRS) 2 4 6 8 10 12 14 16
FLOW (CFS) 13 7 5 4 3 2 2 1

DURATION (HRS) 18 20 22 23
FLOW (CFS) 1 1 1 1 TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK
ELEVATION (FEET)
2.06 12.7 (RUNOFF)
2.51 8.3 (RUNOFF)
2.82 2.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.57 WATERSHED INCHES; 8 CFS-HRS; .7 ACRE-
FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK
ELEVATION (FEET)
2.54 121.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.36 WATERSHED INCHES; 238 CFS-HRS; 19.6 ACRE-
FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK
ELEVATION (FEET)
2.21 131.0 (RUNOFF)
3.71 4.2 (RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.36 WATERSHED INCHES; 110 CFS-HRS; 9.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK
ELEVATION (FEET)
2.43 772.4 (NULL)

2.72 844.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.85 WATERSHED INCHES; 1578 CFS-HRS; 130.4 ACRE-
FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
2.37 989.5 (NULL)
2.68 988.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.97 WATERSHED INCHES; 1805 CFS-HRS; 149.2 ACRE-
FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
2.37 1103.5 (NULL)
2.68 1107.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.09 WATERSHED INCHES; 2043 CFS-HRS; 168.8 ACRE-
FEET.

OPERATION DIVERT XSECTION 144
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
2.04 543.0 \* (DIVERT)
\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1530 CFS-HRS; 126.4 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
2.37 560.5 177.97
2.68 564.1 177.99

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.03 WATERSHED INCHES; 513 CFS-HRS; 42.4 ACRE-
FEET.



\*\*\* MESSAGE - STRUCTURE 82, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 318.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 82

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.42	664.2	319.62
2.52	606.2	319.52
2.64	637.0	319.58
2.75	618.7	319.54
2.87	535.5	319.40
2.99	452.6	319.25
3.11	334.5	319.04
3.23	204.3	318.66
3.36	96.8	318.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .86 WATERSHED INCHES; 432 CFS-HRS; 35.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 145

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.42	1207.2	(NULL)
2.52	1149.2	(NULL)
2.64	1180.0	(NULL)
2.75	1161.7	(NULL)
2.87	1078.5	(NULL)
2.99	995.6	(NULL)
3.11	877.5	(NULL)
3.23	747.3	(NULL)
3.36	639.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.93 WATERSHED INCHES; 1961 CFS-HRS; 162.1 ACRE-FEET.

OPERATION REACH XSECTION 44

1 TR20 ----- SCS

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.60	1070.5	291.35
2.71	1117.8	291.42
2.81	1121.3	291.42
2.92	1064.0	291.34
3.04	987.7	291.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.84 WATERSHED INCHES; 1917 CFS-HRS; 158.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.79	1096.2	303.80

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.87 WATERSHED INCHES; 1931 CFS-HRS; 159.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.23	153.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.41 WATERSHED INCHES; 136 CFS-HRS; 11.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.25	193.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.32 WATERSHED INCHES; 175 CFS-HRS; 14.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.24	346.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.36 WATERSHED INCHES; 311 CFS-HRS; 25.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

1.52	21.1	(RUNOFF)
2.13	177.7	(RUNOFF)
2.56	96.2	(RUNOFF)
3.22	7.3	(RUNOFF)
3.46	6.1	(RUNOFF)
3.72	5.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.35 WATERSHED INCHES; 132 CFS-HRS; 10.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.30	663.5	(NULL)
2.74	1149.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.89 WATERSHED INCHES; 2062 CFS-HRS; 170.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.28	1003.4	(NULL)
2.65	1362.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.95 WATERSHED INCHES; 2373 CFS-HRS; 196.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.37	971.6	285.92
2.77	1347.3	286.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.95 WATERSHED INCHES; 2372 CFS-HRS; 196.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.17	6.0	(RUNOFF)
2.53	6.5	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .81 WATERSHED INCHES; 5 CFS-HRS; .4 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.25	5.8	288.32
2.60	6.3	288.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .81 WATERSHED INCHES; 5 CFS-HRS; .4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.60	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .32 WATERSHED INCHES; 1 CFS-HRS; .1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.13	115.1	(RUNOFF)
2.56	64.0	(RUNOFF)
3.22	4.9	(RUNOFF)
3.46	4.1	(RUNOFF)
3.72	3.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.08 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.36	1035.7	(NULL)
2.74	1383.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.95 WATERSHED INCHES; 2456 CFS-HRS; 203.0 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.26	6.7	(NULL)
2.60	8.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .59 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.36	1041.5	(NULL)
2.74	1389.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.90 WATERSHED INCHES; 2463 CFS-HRS; 203.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.15	78.0	(RUNOFF)
2.56	47.2	(RUNOFF)
3.46	3.1	(RUNOFF)
3.72	2.8	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
 SQ.MI.

1.26 CFS	.20	.92	2.04	3.05	4.02	4.62	4.92
5.91							
1.74 CFS	8.85	14.09	21.34	31.71	46.58	62.92	74.64
77.92							
2.22 CFS	72.30	61.61	50.74	43.88	42.90	45.64	46.97
42.51							
2.70 CFS	35.10	27.72	22.21	19.15	16.64	13.30	9.01
5.53							
3.18 CFS	3.89	3.77	3.31	2.84	2.99	3.06	2.38
1.79							
3.66 CFS	2.26	2.79	2.39	1.52	.83	.48	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.33 WATERSHED INCHES; 57 CFS-HRS; 4.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

2.35 1090.2 (NULL)
2.72 1422.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.88 WATERSHED INCHES; 2520 CFS-HRS; 208.2 ACRE-
FEET.

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OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
2.79 1407.0 277.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.88 WATERSHED INCHES; 2520 CFS-HRS; 208.3 ACRE-
FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
2.18 47.5 (RUNOFF)
2.57 30.0 (RUNOFF)
3.73 1.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.26 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
2.79 1426.9 (NULL)

Table with 9 columns: HRS, MAIN, TIME, INCREMENT, ALTERNATE, STORM, DRAINAGE AREA, and 2 unlabeled columns. It contains hydrograph data points for various flow rates (1.08 CFS to 3.96 CFS) and time intervals (.40 to 3.96 hours).

338								
4.44 CFS	321	305	290	275	262	249	237	
226								
4.92 CFS	214	201	191	179	167	153	141	
128								
5.40 CFS	117	106	96	87	79	72	66	
61								
5.88 CFS	57.21	53.63	50.52	47.81	45.44	43.36	41.52	
39.90								
6.36 CFS	38.45	37.17	36.01	34.98	34.04	33.19	32.42	
31.70								
6.84 CFS	31.04	30.41	29.82	29.24	28.68	28.14	27.60	
27.07								
7.32 CFS	26.55	26.04	25.53	25.04	24.55	24.07	23.60	
23.14								
7.80 CFS	22.70	22.26	21.83	21.41	21.00	20.61	20.21	
19.83								
8.28 CFS	19.46	19.09	18.74	18.39	18.05	17.72	17.40	
17.08								
8.76 CFS	16.77	16.48	16.18	15.90	15.62	15.36	15.09	
14.84								
9.24 CFS	14.59	14.35	14.11	13.88	13.66	13.44	13.23	
13.03								
9.72 CFS	12.82	12.63	12.44	12.25	12.07	11.89	11.71	
11.54								
10.20 CFS	11.37	11.20	11.03	10.86	10.70	10.53	10.36	
10.20								
10.68 CFS	10.04	9.88	9.71	9.56	9.40	9.25	9.09	
8.94								
11.16 CFS	8.79	8.65	8.51	8.37	8.23	8.09	7.96	
7.83								

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11.64 CFS	7.70	7.57	7.44	7.32	7.19	7.07	6.95
6.83							
12.12 CFS	6.71	6.59	6.47	6.36	6.25	6.14	6.03
5.92							
12.60 CFS	5.82	5.72	5.62	5.52	5.42	5.33	5.24
5.15							
13.08 CFS	5.06	4.98	4.89	4.81	4.73	4.65	4.57
4.50							
13.56 CFS	4.43	4.36	4.29	4.22	4.15	4.09	4.02
3.96							
14.04 CFS	3.90	3.84	3.78	3.72	3.67	3.61	3.56
3.51							
14.52 CFS	3.46	3.41	3.36	3.31	3.26	3.22	3.17
3.13							
15.00 CFS	3.09	3.04	3.00	2.96	2.92	2.89	2.85
2.81							
15.48 CFS	2.78	2.74	2.71	2.67	2.64	2.61	2.58
2.55							
15.96 CFS	2.53	2.50	2.47	2.45	2.43	2.41	2.39
2.37							
16.44 CFS	2.35	2.33	2.31	2.30	2.28	2.26	2.25
2.24							
16.92 CFS	2.22	2.21	2.19	2.18	2.17	2.15	2.14

2.13							
17.40 CFS	2.11	2.10	2.09	2.08	2.07	2.05	2.04
2.03							
17.88 CFS	2.02	2.01	2.00	1.98	1.97	1.96	1.95
1.94							
18.36 CFS	1.93	1.92	1.91	1.90	1.88	1.87	1.86
1.85							
18.84 CFS	1.84	1.83	1.82	1.81	1.80	1.80	1.79
1.78							
19.32 CFS	1.77	1.76	1.75	1.74	1.73	1.72	1.72
1.71							
19.80 CFS	1.70	1.69	1.68	1.67	1.67	1.66	1.65
1.64							
20.28 CFS	1.63	1.63	1.62	1.61	1.60	1.59	1.59
1.58							
20.76 CFS	1.57	1.57	1.56	1.55	1.54	1.54	1.53
1.52							
21.24 CFS	1.52	1.51	1.50	1.50	1.49	1.48	1.48
1.47							
21.72 CFS	1.46	1.46	1.45	1.44	1.44	1.43	1.43
1.42							
22.20 CFS	1.41	1.41	1.40	1.40	1.39	1.38	1.38
1.37							
22.68 CFS	1.37	1.36	1.35	1.35	1.34	1.34	1.33
1.33							
23.16 CFS	1.32	1.31	1.31	1.30	1.30	1.29	1.29
1.28							
23.64 CFS	1.28	1.27	1.27	1.26	1.26	1.25	1.25
1.24							
24.12 CFS	1.24	1.23	1.23				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.87 WATERSHED INCHES; 2557 CFS-HRS; 211.3 ACRE-FEET.

OPERATION DIVERT XSECTION 162  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.16	621.0 *	(DIVERT)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1849 CFS-HRS; 152.8 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.79	805.9	178.61

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.07 WATERSHED INCHES; 707 CFS-HRS; 58.4 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 73, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 20.00 FEET BELOW ASSUMED CREST ELEVATION AT 260.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.79	820.7	261.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .76 WATERSHED INCHES; 503 CFS-HRS; 41.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 163

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.79	1441.7	(NULL)

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1							
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02							
HRS								
SQ.MI.								
1.08 CFS	.40	.91	2.06	4.69	10.09	19.28	32.12	
47.89								
1.56 CFS	66	85	105	125	153	191	250	
335								
2.04 CFS	441	573	621	621	621	621	621	
621								
2.52 CFS	621	621	621	1313	1431	1420	1407	
1375								
3.00 CFS	1332	1276	1209	1142	1080	1022	967	
915								
3.48 CFS	863	802	744	692	643	579	540	
506								
3.96 CFS	478	455	433	412	393	374	356	
338								
4.44 CFS	321	305	290	275	262	249	237	
226								
4.92 CFS	214	201	191	179	167	153	141	
128								
5.40 CFS	117	106	96	87	79	72	66	
61								
5.88 CFS	57.25	53.67	50.56	47.85	45.48	43.40	41.56	
39.94								
6.36 CFS	38.49	37.21	36.05	35.02	34.08	33.23	32.46	
31.74								
6.84 CFS	31.08	30.45	29.86	29.28	28.72	28.18	27.64	
27.11								
7.32 CFS	26.59	26.08	25.57	25.08	24.59	24.11	23.64	
23.18								
7.80 CFS	22.74	22.30	21.87	21.45	21.04	20.65	20.25	
19.87								
8.28 CFS	19.50	19.13	18.78	18.43	18.09	17.76	17.44	
17.12								
8.76 CFS	16.81	16.52	16.22	15.94	15.66	15.40	15.13	

14.88								
9.24 CFS	14.63	14.39	14.15	13.92	13.70	13.48	13.27	
13.07								
9.72 CFS	12.86	12.67	12.48	12.29	12.11	11.93	11.75	
11.58								
10.20 CFS	11.41	11.24	11.07	10.90	10.74	10.57	10.40	
10.24								
10.68 CFS	10.08	9.92	9.75	9.60	9.44	9.29	9.13	
8.98								
11.16 CFS	8.83	8.69	8.55	8.41	8.27	8.13	8.00	
7.87								
11.64 CFS	7.74	7.61	7.48	7.36	7.23	7.11	6.99	
6.87								
12.12 CFS	6.75	6.63	6.51	6.40	6.29	6.18	6.07	
5.96								
12.60 CFS	5.86	5.76	5.66	5.56	5.46	5.37	5.28	
5.19								
13.08 CFS	5.10	5.02	4.93	4.85	4.77	4.69	4.61	
4.54								

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13.56 CFS	4.47	4.40	4.33	4.26	4.19	4.12	4.06	
4.00								
14.04 CFS	3.94	3.88	3.82	3.76	3.71	3.65	3.60	
3.55								
14.52 CFS	3.50	3.45	3.40	3.35	3.30	3.26	3.21	
3.17								
15.00 CFS	3.13	3.08	3.04	3.00	2.96	2.93	2.89	
2.85								
15.48 CFS	2.82	2.78	2.75	2.71	2.68	2.65	2.62	
2.59								
15.96 CFS	2.56	2.54	2.51	2.49	2.47	2.45	2.43	
2.41								
16.44 CFS	2.39	2.37	2.35	2.34	2.32	2.30	2.29	
2.28								
16.92 CFS	2.26	2.25	2.23	2.22	2.21	2.19	2.18	
2.17								
17.40 CFS	2.15	2.14	2.13	2.12	2.11	2.09	2.08	
2.07								
17.88 CFS	2.06	2.05	2.04	2.02	2.01	2.00	1.99	
1.98								
18.36 CFS	1.97	1.96	1.95	1.94	1.92	1.91	1.90	
1.89								
18.84 CFS	1.88	1.87	1.86	1.85	1.84	1.84	1.83	
1.82								
19.32 CFS	1.81	1.80	1.79	1.78	1.77	1.76	1.76	
1.75								
19.80 CFS	1.74	1.73	1.72	1.71	1.71	1.70	1.69	
1.68								
20.28 CFS	1.67	1.67	1.66	1.65	1.64	1.63	1.63	
1.62								
20.76 CFS	1.61	1.61	1.60	1.59	1.58	1.58	1.57	
1.56								
21.24 CFS	1.56	1.55	1.54	1.54	1.53	1.52	1.52	
1.51								
21.72 CFS	1.50	1.50	1.49	1.48	1.48	1.47	1.47	

1.46								
22.20 CFS	1.45	1.45	1.44	1.44	1.43	1.42	1.42	
1.41								
22.68 CFS	1.41	1.40	1.39	1.39	1.38	1.38	1.37	
1.36								
23.16 CFS	1.36	1.35	1.35	1.34	1.34	1.33	1.33	
1.32								
23.64 CFS	1.32	1.31	1.31	1.30	1.30	1.29	1.29	
1.28								
24.12 CFS	1.28	1.27	1.27					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.56 WATERSHED INCHES; 2352 CFS-HRS; 194.4 ACRE-FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.98	1372.4	250.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.57 WATERSHED INCHES; 2359 CFS-HRS; 195.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.29	34.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.81 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-FEET.

OPERATION RESVOR STRUCTURE 61

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.51	28.4	335.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.82 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.60	28.1	301.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.81 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.14	136.0	(RUNOFF)
2.56	81.5	(RUNOFF)
3.23	6.2	(RUNOFF)
3.45	5.4	(RUNOFF)
3.71	5.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.31 WATERSHED INCHES; 98 CFS-HRS; 8.1 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.62	73.0	297.20

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.30 WATERSHED INCHES; 98 CFS-HRS; 8.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.62	101.1	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.60 WATERSHED INCHES; 132 CFS-HRS; 10.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION (FEET)		
2.12	255.5	(RUNOFF)
2.55	146.1	(RUNOFF)
3.24	10.7	(RUNOFF)
3.44	9.7	(RUNOFF)
3.71	9.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.61 WATERSHED INCHES; 181 CFS-HRS; 15.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
2.15	301.9	(NULL)
2.56	246.4	(NULL)
3.70	32.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.60 WATERSHED INCHES; 313 CFS-HRS; 25.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 70

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
2.36	240.5	249.18
2.64	237.1	249.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.60 WATERSHED INCHES; 313 CFS-HRS; 25.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
1.34	6.4	(RUNOFF)
1.49	6.0	(RUNOFF)
2.04	52.1	(RUNOFF)
2.51	27.6	(RUNOFF)
2.82	8.0	(RUNOFF)
3.20	2.3	(RUNOFF)
3.41	2.2	(RUNOFF)
3.66	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.32 WATERSHED INCHES; 33 CFS-HRS; 2.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.13	43.9	267.77
2.55	24.4	267.29

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.31 WATERSHED INCHES; 33 CFS-HRS; 2.7 ACRE-FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.22	41.8	248.22
2.62	24.0	248.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.34 WATERSHED INCHES; 33 CFS-HRS; 2.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.12	288.2	(RUNOFF)
2.55	178.8	(RUNOFF)
3.24	13.6	(RUNOFF)
3.44	12.8	(RUNOFF)
3.70	12.1	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .11 SQ.MI.

HRS	1.32	1.80	2.28	2.76	3.24	3.72
CFS	28.32	245	111	10.92	11.15	
	.40	48	195	85.63	13.58	
	1.45	77	157	69.58	10.34	
	3.48	121	145	63.96	8.31	
	6.84	186	155	55.77	12.58	
	8.78	252	177	39.27	11.55	
	9.97	286	175	22.01	6.45	
	15.19	279	144	11.30	5.36	

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3.72 CFS	11.70	7.04	3.33	1.63	.79	.37
----------	-------	------	------	------	-----	-----

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.78 WATERSHED INCHES; 197 CFS-HRS; 16.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.24	797.0	(NULL)
2.55	798.6	(NULL)
2.95	1424.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.50 WATERSHED INCHES; 2557 CFS-HRS; 211.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.31	272.4	(NULL)
2.63	261.0	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .15  
SQ.MI.

HRS	1.20 CFS	20.55	1.68 CFS	2.16 CFS	2.64 CFS	3.12 CFS	3.60 CFS	4.08 CFS	4.56 CFS	5.04 CFS	5.52 CFS
	.20	.69	1.99	4.47	8.36	12.68	16.90				
	23	27	33	44	59	81	119				
	221	256	271	270	263	255	253				
	261	255	241	226	210	195	179				
	141	122	107	94	82	72	64				
	51.21	46.24	43.26	41.27	39.02	36.42	33.95				
	29.87	28.26	26.81	25.48	24.24	23.07	21.95				
	19.36	17.44	14.48	11.81	9.77	8.16	6.85				
	4.75	3.92	3.24	2.69	2.10	1.57	1.15				
	.61	.44									

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.66 WATERSHED INCHES; 346 CFS-HRS; 28.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.25	1055.0	(NULL)
2.56	1055.3	(NULL)
2.93	1617.4	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28  
SQ.MI.

HRS	1.14 CFS	1.62 CFS	2.07	5.49	12.67	25.14	42.65
	.30	.80	2.07	5.49	12.67	25.14	42.65
	82	107	143	189	252	343	475

2.10 CFS	813	972	1051	1053	1032	1021	1027
1049							
2.58 CFS	1053	1025	987	1309	1513	1597	1617
1589							

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3.06 CFS	1534	1464	1391	1318	1241	1167	1103
1040							
3.54 CFS	975	911	854	797	738	674	622
578							
4.02 CFS	541	511	484	460	437	416	396
377							
4.50 CFS	358	340	322	304	287	271	257
244							
4.98 CFS	230	217	205	193	180	167	154
141							
5.46 CFS	129	117	106	96	87	79	72
67							
5.94 CFS	61.79	57.56	53.92	50.75	48.00	45.59	43.48
41.63							
6.42 CFS	39.99	38.54	37.24	36.08	35.03	34.09	33.24
32.45							
6.90 CFS	31.73	31.06	30.43	29.83	29.25	28.69	28.14
27.60							
7.38 CFS	27.08	26.55	26.04	25.54	25.04	24.55	24.08
23.61							
7.86 CFS	23.15	22.71	22.27	21.84	21.42	21.02	20.62
20.23							
8.34 CFS	19.85	19.47	19.11	18.75	18.41	18.07	17.74
17.42							
8.82 CFS	17.10	16.79	16.50	16.20	15.92	15.65	15.38
15.12							
9.30 CFS	14.86	14.61	14.37	14.14	13.91	13.69	13.47
13.26							
9.78 CFS	13.05	12.85	12.65	12.46	12.28	12.09	11.91
11.74							
10.26 CFS	11.57	11.39	11.22	11.06	10.89	10.72	10.56
10.39							
10.74 CFS	10.23	10.06	9.90	9.74	9.58	9.43	9.27
9.12							
11.22 CFS	8.97	8.82	8.68	8.54	8.40	8.26	8.12
7.99							
11.70 CFS	7.86	7.73	7.60	7.47	7.35	7.22	7.10
6.98							
12.18 CFS	6.86	6.74	6.62	6.50	6.39	6.28	6.17
6.06							
12.66 CFS	5.95	5.85	5.75	5.65	5.55	5.46	5.36
5.27							
13.14 CFS	5.18	5.09	5.01	4.93	4.84	4.76	4.68
4.61							
13.62 CFS	4.53	4.46	4.39	4.32	4.25	4.18	4.12
4.06							
14.10 CFS	3.99	3.93	3.87	3.82	3.76	3.70	3.65
3.60							
14.58 CFS	3.55	3.49	3.44	3.39	3.35	3.30	3.25
3.21							



15.06 CFS	3.16	3.12	3.08	3.04	3.00	2.96	2.92
2.88							
15.54 CFS	2.85	2.81	2.78	2.74	2.71	2.68	2.65
2.62							
16.02 CFS	2.59	2.56	2.54	2.51	2.49	2.47	2.44
2.42							
16.50 CFS	2.40	2.39	2.37	2.35	2.34	2.32	2.30
2.29							
16.98 CFS	2.27	2.26	2.24	2.23	2.22	2.20	2.19
2.18							
17.46 CFS	2.16	2.15	2.14	2.13	2.12	2.10	2.09
2.08							
17.94 CFS	2.07	2.06	2.05	2.03	2.02	2.01	2.00
1.99							
18.42 CFS	1.98	1.97	1.96	1.95	1.93	1.92	1.91
1.90							
18.90 CFS	1.89	1.88	1.87	1.86	1.85	1.84	1.83
1.83							
19.38 CFS	1.82	1.81	1.80	1.79	1.78	1.77	1.76
1.75							
19.86 CFS	1.75	1.74	1.73	1.72	1.71	1.71	1.70
1.69							
20.34 CFS	1.68	1.67	1.66	1.66	1.65	1.64	1.63
1.63							
20.82 CFS	1.62	1.61	1.60	1.60	1.59	1.58	1.58
1.57							
21.30 CFS	1.56	1.55	1.55	1.54	1.53	1.53	1.52
1.51							
21.78 CFS	1.51	1.50	1.50	1.49	1.48	1.48	1.47
1.46							
22.26 CFS	1.46	1.45	1.45	1.44	1.43	1.43	1.42
1.42							
22.74 CFS	1.41	1.40	1.40	1.39	1.39	1.38	1.38
1.37							
23.22 CFS	1.36	1.36	1.35	1.35	1.34	1.34	1.33
1.33							
23.70 CFS	1.32	1.32	1.31	1.31	1.30	1.30	1.29
1.29							
24.18 CFS	1.28	1.28					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.52 WATERSHED INCHES; 2903 CFS-HRS; 239.9 ACRE-  
 FEET.

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OPERATION DIVERT XSECTION 176  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 2.10 691.0 \* (DIVERT)  
 \* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2109 CFS-HRS; 174.3 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
2.25	364.0	177.30
2.56	364.3	177.30
2.93	926.4	178.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .96 WATERSHED INCHES; 794 CFS-HRS; 65.6 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 72, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 20.00 FEET BELOW ASSUMED CREST ELEVATION AT 240.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 72

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
3.21	703.5	241.69

\*\*\* WARNING - STRUCTURE 72, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK ( 703.51) EXCEEDS ADJACENT COORDINATE ( 667.39) BY 5 %.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .36 WATERSHED INCHES; 299 CFS-HRS; 24.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 177

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
3.21	1394.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28 SQ.MI.

HRS	1.14 CFS	1.62 CFS	2.10 CFS	691	691	691	691	691	691
.30	.80	2.07	5.49	12.67	25.14	42.65			
82	107	143	189	252	343	475			
691	691	691	691	691	691	691	691	691	691

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2.58 CFS	691	691	691	691	691	691	691	691
691								

3.06 CFS 1086	691	1059	1358	1355	1293	1221	1151
3.54 CFS 592	1022	972	923	869	814	743	653
4.02 CFS 377	548	514	485	460	438	416	396
4.50 CFS 244	358	340	322	304	287	271	257
4.98 CFS 141	230	217	205	193	180	167	154
5.46 CFS 67	129	117	106	96	87	79	72
5.94 CFS 41.67	61.83	57.60	53.95	50.79	48.04	45.63	43.52
6.42 CFS 32.49	40.03	38.58	37.28	36.12	35.07	34.13	33.28
6.90 CFS 27.64	31.77	31.10	30.47	29.87	29.29	28.73	28.18
7.38 CFS 23.65	27.11	26.59	26.08	25.58	25.08	24.59	24.12
7.86 CFS 20.27	23.19	22.75	22.31	21.88	21.46	21.06	20.66
8.34 CFS 17.45	19.89	19.51	19.15	18.79	18.45	18.11	17.78
8.82 CFS 15.16	17.14	16.83	16.54	16.24	15.96	15.69	15.42
9.30 CFS 13.30	14.90	14.65	14.41	14.18	13.95	13.73	13.51
9.78 CFS 11.78	13.09	12.89	12.69	12.50	12.32	12.13	11.95
10.26 CFS 10.43	11.61	11.43	11.26	11.10	10.93	10.76	10.59
10.74 CFS 9.16	10.27	10.10	9.94	9.78	9.62	9.47	9.31
11.22 CFS 8.03	9.01	8.86	8.72	8.58	8.44	8.30	8.16
11.70 CFS 7.02	7.90	7.77	7.64	7.51	7.39	7.26	7.14
12.18 CFS 6.10	6.90	6.78	6.66	6.54	6.43	6.32	6.21
12.66 CFS 5.31	5.99	5.89	5.79	5.69	5.59	5.50	5.40
13.14 CFS 4.65	5.22	5.13	5.05	4.96	4.88	4.80	4.72
13.62 CFS 4.10	4.57	4.50	4.43	4.36	4.29	4.22	4.16
14.10 CFS 3.64	4.03	3.97	3.91	3.86	3.80	3.74	3.69
14.58 CFS 3.25	3.58	3.53	3.48	3.43	3.39	3.34	3.29
15.06 CFS 2.92	3.20	3.16	3.12	3.08	3.04	3.00	2.96
15.54 CFS 2.66	2.89	2.85	2.82	2.78	2.75	2.72	2.69
16.02 CFS 2.46	2.63	2.60	2.58	2.55	2.53	2.51	2.48
16.50 CFS 2.33	2.44	2.43	2.41	2.39	2.37	2.36	2.34
16.98 CFS 2.22	2.31	2.30	2.28	2.27	2.26	2.24	2.23
17.46 CFS 2.12	2.20	2.19	2.18	2.17	2.16	2.14	2.13
17.94 CFS 2.03	2.11	2.10	2.08	2.07	2.06	2.05	2.04

18.42 CFS	2.02	2.01	2.00	1.98	1.97	1.96	1.95
1.94							
18.90 CFS	1.93	1.92	1.91	1.90	1.89	1.88	1.87
1.86							
19.38 CFS	1.86	1.85	1.84	1.83	1.82	1.81	1.80
1.79							
19.86 CFS	1.78	1.78	1.77	1.76	1.75	1.74	1.74
1.73							
20.34 CFS	1.72	1.71	1.70	1.70	1.69	1.68	1.67
1.67							
20.82 CFS	1.66	1.65	1.64	1.64	1.63	1.62	1.62
1.61							
21.30 CFS	1.60	1.59	1.59	1.58	1.57	1.57	1.56
1.55							
21.78 CFS	1.55	1.54	1.53	1.53	1.52	1.52	1.51
1.50							
22.26 CFS	1.50	1.49	1.49	1.48	1.47	1.47	1.46
1.46							
22.74 CFS	1.45	1.44	1.44	1.43	1.43	1.42	1.41
1.41							
23.22 CFS	1.40	1.40	1.39	1.39	1.38	1.38	1.37
1.37							
23.70 CFS	1.36	1.36	1.35	1.35	1.34	1.34	1.33
1.33							
24.18 CFS	1.32	1.32					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.92 WATERSHED INCHES; 2409 CFS-HRS; 199.1 ACRE-  
 FEET.

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OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
3.28	1359.9	230.87

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.91 WATERSHED INCHES; 2406 CFS-HRS; 198.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
1.57	10.2	(RUNOFF)
2.11	162.5	(RUNOFF)
2.54	93.5	(RUNOFF)
3.24	7.0	(RUNOFF)
3.44	6.6	(RUNOFF)
3.69	6.2	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1

HRS	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = .05			
SQ.MI.								
1.20 CFS	.04	.75	3.42	6.21	7.70	9.68	10.17	
9.92								
1.68 CFS	13	23	36	53	79	115	149	
162								
2.16 CFS	154	131	102	81	76	81	93	
90								
2.64 CFS	72.62	55.76	42.64	34.70	32.34	27.93	19.15	
10.30								
3.12 CFS	4.99	5.49	6.98	5.04	4.15	6.54	5.77	
2.99								
3.60 CFS	2.80	5.79	5.95	3.36	1.57	.75	.34	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.37 WATERSHED INCHES; 111 CFS-HRS; 9.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.17	843.9	(NULL)
2.54	784.5	(NULL)
3.27	1365.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 2516 CFS-HRS; 208.0 ACRE-FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.24	836.9	215.11
2.61	783.0	214.83
3.36	1350.4	216.72

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 2519 CFS-HRS; 208.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.10	91.5	(RUNOFF)
2.54	54.8	(RUNOFF)
3.23	4.1	(RUNOFF)
3.43	4.0	(RUNOFF)
3.69	3.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.04 WATERSHED INCHES; 61 CFS-HRS; 5.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.23	905.4	178.87
2.57	834.2	178.69
3.36	1352.8	179.80

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.94 WATERSHED INCHES; 2580 CFS-HRS; 213.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
1.51	13.0	(RUNOFF)
2.08	176.8	(RUNOFF)
2.53	100.7	(RUNOFF)
3.23	7.7	(RUNOFF)
3.42	7.8	(RUNOFF)
3.67	7.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.52 WATERSHED INCHES; 117 CFS-HRS; 9.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.19	203.3	(RUNOFF)
2.56	128.5	(RUNOFF)
3.73	7.1	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.42 WATERSHED INCHES; 160 CFS-HRS; 13.2 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 184  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.04	118.0 *	(DIVERT)

3.73 7.1 (DIVERT)  
\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
135 CFS-HRS; 11.2 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.19	85.3	176.00
2.56	10.5	175.12

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.53 WATERSHED INCHES; 25 CFS-HRS; 2.1 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 81, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 200.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 81

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
AT STRUCTURE 81  
\*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.70	.0	192.89

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.01 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 185

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.61	119.2	(NULL)
3.73	7.1	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.90 WATERSHED INCHES; 136 CFS-HRS; 11.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 186

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.20	99.1	(RUNOFF)
2.57	69.3	(RUNOFF)
3.73	4.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.62 WATERSHED INCHES; 78 CFS-HRS; 6.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 187

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.20	217.1	(NULL)
2.57	187.3	(NULL)
3.73	11.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 214 CFS-HRS; 17.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 85

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
2.12	378.9	(NULL)
2.53	286.3	(NULL)
3.42	21.9	(NULL)
3.68	17.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .17 SQ.MI.

HRS	1.20 CFS	1.68 CFS	2.16 CFS	2.64 CFS	3.12 CFS	3.60 CFS	4.08 CFS
27.19	.33	2.75	9.07	14.58	18.33	24.13	25.88
378	37	58	89	132	199	291	355
278	371	343	303	274	264	271	286
59	251	218	178	147	129	109	84
13.69	39.62	31.90	28.21	21.30	19.50	21.92	18.58
2.27	12.90	17.23	16.74	12.84	9.36	5.96	3.61
	1.42	.88	.55	.36			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.01 WATERSHED INCHES; 331 CFS-HRS; 27.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 86

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
2.20	1249.9	(NULL)
2.55	1115.3	(NULL)
3.36	1372.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.94 WATERSHED INCHES; 2911 CFS-HRS; 240.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
.83	1.0	(RUNOFF)
1.34	13.9	(RUNOFF)
1.49	11.8	(RUNOFF)
2.05	77.2	(RUNOFF)
2.52	38.0	(RUNOFF)
3.22	2.8	(RUNOFF)
3.42	3.0	(RUNOFF)
3.67	3.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.06 WATERSHED INCHES; 52 CFS-HRS; 4.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
.83	1.0	(NULL)
2.19	1300.7	(NULL)
2.54	1152.1	(NULL)
3.36	1374.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55 SQ.MI.

HRS								
.72 CFS	.30	.79	1.01	.62	.24	.54	1.59	
4.31								
1.20 CFS	7.51	12.47	24.76	33.70	42.05	58.30	71.14	
88.99								
1.68 CFS	123	181	259	367	523	738	950	
1132								
2.16 CFS	1287	1293	1215	1144	1112	1119	1150	
1143								
2.64 CFS	1095	1033	963	914	886	857	819	
777								
3.12 CFS	746	735	1032	1324	1374	1336	1265	
1188								
3.60 CFS	1120	1063	1011	955	895	834	763	
675								
4.08 CFS	608	559	522	492	466	443	421	
401								
4.56 CFS	381	362	344	326	308	291	275	
260								
5.04 CFS	247	233	220	208	196	183	170	
157								

5.52 CFS	144	131	120	109	98	89	81
74							
6.00 CFS	68.06	62.95	58.57	54.79	51.52	48.67	46.18
44.01							
6.48 CFS	42.10	40.41	38.92	37.58	36.39	35.32	34.36
33.48							
6.96 CFS	32.68	31.95	31.26	30.62	30.02	29.43	28.87
28.32							
7.44 CFS	27.78	27.24	26.72	26.21	25.70	25.20	24.71
24.24							

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7.92 CFS	23.77	23.31	22.86	22.42	21.99	21.57	21.16
20.76							
8.40 CFS	20.37	19.98	19.61	19.24	18.89	18.54	18.20
17.86							
8.88 CFS	17.54	17.22	16.91	16.62	16.32	16.04	15.76
15.49							
9.36 CFS	15.23	14.97	14.72	14.48	14.24	14.01	13.79
13.57							
9.84 CFS	13.36	13.15	12.95	12.75	12.56	12.37	12.19
12.01							
10.32 CFS	11.83	11.66	11.48	11.31	11.15	10.98	10.81
10.64							
10.80 CFS	10.48	10.32	10.15	9.99	9.83	9.67	9.51
9.36							
11.28 CFS	9.21	9.06	8.91	8.76	8.62	8.48	8.34
8.21							
11.76 CFS	8.07	7.94	7.81	7.68	7.55	7.43	7.30
7.18							
12.24 CFS	7.06	6.94	6.82	6.70	6.58	6.47	6.36
6.25							
12.72 CFS	6.14	6.03	5.93	5.83	5.73	5.63	5.53
5.44							
13.20 CFS	5.35	5.26	5.17	5.08	5.00	4.91	4.83
4.76							
13.68 CFS	4.68	4.60	4.53	4.46	4.39	4.32	4.25
4.19							
14.16 CFS	4.12	4.06	4.00	3.94	3.88	3.82	3.77
3.71							
14.64 CFS	3.66	3.61	3.56	3.51	3.46	3.41	3.36
3.32							
15.12 CFS	3.27	3.23	3.19	3.14	3.10	3.06	3.02
2.98							
15.60 CFS	2.95	2.91	2.87	2.84	2.80	2.77	2.74
2.71							
16.08 CFS	2.68	2.65	2.62	2.60	2.57	2.55	2.53
2.50							
16.56 CFS	2.48	2.46	2.44	2.43	2.41	2.39	2.38
2.36							
17.04 CFS	2.34	2.33	2.32	2.30	2.29	2.27	2.26
2.25							
17.52 CFS	2.23	2.22	2.21	2.20	2.18	2.17	2.16
2.15							
18.00 CFS	2.14	2.12	2.11	2.10	2.09	2.08	2.07
2.06							

18.48 CFS	2.05	2.03	2.02	2.01	2.00	1.99	1.98
1.97							
18.96 CFS	1.96	1.95	1.94	1.93	1.92	1.91	1.90
1.89							
19.44 CFS	1.88	1.87	1.86	1.85	1.84	1.84	1.83
1.82							
19.92 CFS	1.81	1.80	1.79	1.78	1.78	1.77	1.76
1.75							
20.40 CFS	1.74	1.74	1.73	1.72	1.71	1.70	1.70
1.69							
20.88 CFS	1.68	1.67	1.67	1.66	1.65	1.65	1.64
1.63							
21.36 CFS	1.62	1.62	1.61	1.60	1.60	1.59	1.58
1.58							
21.84 CFS	1.57	1.56	1.56	1.55	1.54	1.54	1.53
1.53							
22.32 CFS	1.52	1.51	1.51	1.50	1.50	1.49	1.48
1.48							
22.80 CFS	1.47	1.47	1.46	1.45	1.45	1.44	1.44
1.43							
23.28 CFS	1.42	1.42	1.41	1.41	1.40	1.40	1.39
1.39							
23.76 CFS	1.38	1.38	1.37	1.37	1.36	1.36	1.35
1.35							
24.24 CFS	1.34						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.97 WATERSHED INCHES; 2963 CFS-HRS; 244.8 ACRE-FEET.

OPERATION DIVERT XSECTION 81  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
.83	1.0	175.01
1.98	730.0 *	178.42

\* FIRST POINT OF FLAT PEAK

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2334 CFS-HRS; 192.9 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.19	570.7	178.01
2.54	422.1	177.50
3.36	644.2	178.20

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .63 WATERSHED INCHES; 629 CFS-HRS; 52.0 ACRE-FEET.

FEET.

\*\*\* MESSAGE - STRUCTURE 71, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 25.00 FEET BELOW ASSUMED CREST ELEVATION AT 174.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 71

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
2.85	194.7	174.63
3.38	666.5	175.63

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .32 WATERSHED INCHES; 324 CFS-HRS; 26.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 89

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
.83	1.0	(NULL)
2.85	924.7	(NULL)
3.38	1396.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55 SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	ALTERNATE	=	1,	STORM	=	1
.72 CFS	.30	.79	1.01	.62	.24	.54	1.59					
4.31												
1.20 CFS	7.51	12.47	24.76	33.70	42.05	58.30	71.14					
88.99												
1.68 CFS	123	181	259	367	523	730	730					
730												
2.16 CFS	730	730	730	730	730	730	730					
730												
2.64 CFS	730	730	730	904	900	875	843					
804												
3.12 CFS	767	744	865	1171	1379	1351	1292					
1215												
3.60 CFS	1144	1083	1032	989	933	874	808					
699												
4.08 CFS	611	560	522	492	466	443	421					
401												
4.56 CFS	381	362	344	326	308	291	275					
260												
5.04 CFS	247	233	220	208	196	183	170					
157												
5.52 CFS	144	131	120	109	99	89	81					
74												
6.00 CFS	68.11	63.00	58.62	54.84	51.57	48.72	46.23					
44.06												

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6.48 CFS	42.15	40.46	38.97	37.63	36.44	35.37	34.41
33.53							
6.96 CFS	32.73	32.00	31.31	30.67	30.07	29.48	28.92
28.37							
7.44 CFS	27.83	27.29	26.77	26.26	25.75	25.25	24.76
24.29							
7.92 CFS	23.82	23.36	22.91	22.47	22.04	21.62	21.21
20.81							
8.40 CFS	20.42	20.03	19.66	19.29	18.94	18.59	18.25
17.91							
8.88 CFS	17.59	17.27	16.96	16.67	16.37	16.09	15.81
15.54							
9.36 CFS	15.28	15.02	14.77	14.53	14.29	14.06	13.84
13.62							
9.84 CFS	13.41	13.20	13.00	12.80	12.61	12.42	12.24
12.06							
10.32 CFS	11.88	11.71	11.53	11.36	11.20	11.03	10.86
10.69							
10.80 CFS	10.53	10.37	10.20	10.04	9.88	9.72	9.56
9.41							
11.28 CFS	9.26	9.11	8.96	8.81	8.67	8.53	8.39
8.26							
11.76 CFS	8.12	7.99	7.86	7.73	7.60	7.48	7.35
7.23							
12.24 CFS	7.11	6.99	6.87	6.75	6.63	6.52	6.41
6.30							
12.72 CFS	6.19	6.08	5.98	5.88	5.78	5.68	5.58
5.49							
13.20 CFS	5.40	5.31	5.22	5.13	5.05	4.96	4.88
4.81							
13.68 CFS	4.73	4.65	4.58	4.51	4.44	4.37	4.30
4.24							
14.16 CFS	4.17	4.11	4.05	3.99	3.93	3.87	3.82
3.76							
14.64 CFS	3.71	3.66	3.61	3.56	3.51	3.46	3.41
3.37							
15.12 CFS	3.32	3.28	3.24	3.19	3.15	3.11	3.07
3.03							
15.60 CFS	3.00	2.96	2.92	2.89	2.85	2.82	2.79
2.76							
16.08 CFS	2.73	2.70	2.67	2.65	2.62	2.60	2.58
2.55							
16.56 CFS	2.53	2.51	2.49	2.48	2.46	2.44	2.43
2.41							
17.04 CFS	2.39	2.38	2.37	2.35	2.34	2.32	2.31
2.30							
17.52 CFS	2.28	2.27	2.26	2.25	2.23	2.22	2.21
2.20							
18.00 CFS	2.19	2.17	2.16	2.15	2.14	2.13	2.12
2.11							
18.48 CFS	2.10	2.08	2.07	2.06	2.05	2.04	2.03
2.02							
18.96 CFS	2.01	2.00	1.99	1.98	1.97	1.96	1.95
1.94							
19.44 CFS	1.93	1.92	1.91	1.90	1.89	1.89	1.88
1.87							
19.92 CFS	1.86	1.85	1.84	1.83	1.83	1.82	1.81
1.80							
20.40 CFS	1.79	1.79	1.78	1.77	1.76	1.75	1.75
1.74							
20.88 CFS	1.73	1.72	1.72	1.71	1.70	1.70	1.69
1.68							

21.36 CFS	1.67	1.67	1.66	1.65	1.65	1.64	1.63
1.63							
21.84 CFS	1.62	1.61	1.61	1.60	1.59	1.59	1.58
1.58							
22.32 CFS	1.57	1.56	1.56	1.55	1.55	1.54	1.53
1.53							
22.80 CFS	1.52	1.52	1.51	1.50	1.50	1.49	1.49
1.48							
23.28 CFS	1.47	1.47	1.46	1.46	1.45	1.45	1.44
1.44							
23.76 CFS	1.43	1.43	1.42	1.42	1.41	1.41	1.40
1.40							
24.24 CFS	1.39						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.66 WATERSHED INCHES; 2658 CFS-HRS; 219.6 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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05/03/\*\* CN MGMT- PROP COND.- JULY 30 Storm;H1&H8UG;GHCHUG

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE		
					TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 6.60 inches AND 3.60 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 5, ARC 2							
MAIN TIME INCREMENT .060 HOURS							
ALTERNATE	1	STORM	1				
STRUCTURE 11	RESVOR	.09	4.33	385.05	2.26	292	3244.4
XSECTION 7	ADDHYD	.17	4.19	---	2.28	520	3058.8
XSECTION 107	DIVERT	.00	4.19	---	2.04F	213F*****	
XSECTION 82	DIVERT	.17	1.37	177.10	2.28	307	1805.9
STRUCTURE 84	RESVOR	.17	.12	358.49	2.75	151	888.2
XSECTION 108	ADDHYD	.17	2.94	---	2.75	364	2141.2
XSECTION 8	REACH	.17	3.00	358.39	2.81	359	2111.8
STRUCTURE 21	RESVOR	.07	5.29	379.21	2.68	157	2242.9
STRUCTURE 22	RESVOR	.07	5.29	361.40	3.10	135	1928.6
STRUCTURE 23	RESVOR	.32	3.70	347.32	2.88	460	1437.5
XSECTION 16	REACH	.32	3.70	334.40	2.88	460	1437.5
STRUCTURE 24	RESVOR	.03	5.79	352.86	2.83	23	766.7

XSECTION	20	ADDHYD	.05	5.46	---	2.06	144	2880.0
XSECTION	21	ADDHYD	.41	4.04	---	2.87	532	1297.6
XSECTION	122	DIVERT	.00	4.04	---	1.80F	168F*****	
XSECTION	82	DIVERT	.41	1.70	177.30	2.87	364	887.8
STRUCTURE	83	RESVOR	.41	1.14	323.14	2.83	392	956.1
XSECTION	123	ADDHYD	.41	3.48	---	2.83	560	1365.9
XSECTION	23	REACH	.41	3.56	316.47	2.99	522	1273.2
STRUCTURE	31	RESVOR	.05	4.56	365.65	2.23	176	3520.0
STRUCTURE	1	RESVOR	.60	3.81	317.48	2.76	780	1300.0
STRUCTURE	32	RESVOR	.01	5.84	380.89	2.19	34	3400.0
STRUCTURE	33	RESVOR	.03	5.83	358.14	2.20	120	4000.0
STRUCTURE	34	RESVOR	.04	5.83	---	2.20	155	3875.0
STRUCTURE	35	RESVOR	.06	5.57	334.00	2.66	115	1916.7
XSECTION	141	ADDHYD	.07	5.36	---	2.54	121	1728.6
XSECTION	43	ADDHYD	.77	4.09	---	2.68	1107	1437.7
XSECTION	144	DIVERT	.00	4.09	---	2.04F	543F*****	

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TR20 ----- SCS

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)					
ALTERNATE	1	STORM	1					
XSECTION	82	DIVERT	.77	1.03	177.99	2.68	564	732.5
STRUCTURE	82	RESVOR	.77	.86	319.62	2.42	664	862.3
XSECTION	145	ADDHYD	.77	3.93	---	2.42	1207	1567.5
XSECTION	44	REACH	.77	3.84	291.42	2.81	1121	1455.8
STRUCTURE	2	RESVOR	.77	3.87	303.80	2.79	1096	1423.4
XSECTION	49	ADDHYD	.82	3.89	---	2.74	1149	1401.2
XSECTION	51	REACH	.93	3.95	286.61	2.77	1347	1448.4
XSECTION	60	ADDHYD	1.01	3.88	---	2.72	1422	1407.9
STRUCTURE	3	RESVOR	1.01	3.88	277.55	2.79	1407	1393.1
XSECTION	62	ADDHYD	1.02	3.87	---	2.79	1427	1399.0
XSECTION	162	DIVERT	.00	3.87	---	2.16F	621F*****	
XSECTION	82	DIVERT	1.02	1.07	178.61	2.79	806	790.2
STRUCTURE	73	RESVOR	1.02	.76	261.90	2.79	821	804.9
XSECTION	163	ADDHYD	1.02	3.56	---	2.79	1442	1413.7
XSECTION	63	REACH	1.02	3.57	250.85	2.98	1372	1345.1

STRUCTURE 61	RESVOR	.01	4.82	335.96	2.51	28	2800.0
STRUCTURE 62	RESVOR	.05	3.30	297.20	2.62	73	1460.0
STRUCTURE 63	RESVOR	.01	4.31	267.77	2.13	44	4400.0
XSECTION 76	ADDHYD	1.28	3.52	---	2.93	1617	1263.3
XSECTION 176	DIVERT	.00	3.52	---	2.10F	691F*****	
XSECTION 82	DIVERT	1.28	.96	178.92	2.93	926	723.4
STRUCTURE 72	RESVOR	1.28	.36	241.69	3.21	704	550.0
XSECTION 177	ADDHYD	1.28	2.92	---	3.21	1395	1089.8
XSECTION 77	REACH	1.28	2.91	230.87	3.28	1360	1062.5
XSECTION 84	RUNOFF	.07	3.42	---	2.19	203	2900.0
XSECTION 184	DIVERT	.00	3.42	---	2.04F	118F*****	
XSECTION 82	DIVERT	.07	.53	176.00	2.19	85	1214.3
STRUCTURE 81	RESVOR	.07	.01	---	3.73	0	.0
XSECTION 185	ADDHYD	.07	2.90	---	2.61	119	1700.0
XSECTION 187	ADDHYD	.12	2.79	---	2.20	217	1808.3

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:

F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				ELEVATION	TIME	RATE	RATE
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	(FT)	(HR)	(CFS)	(CSM)
ALTERNATE	1	STORM	1				
XSECTION 85	ADDHYD	.17	3.01	---	2.12	379	2229.4
XSECTION 88	ADDHYD	1.55	2.97	---	3.36	1374	886.5
XSECTION 81	DIVERT	.00	2.97	178.42	1.98F	730F*****	
XSECTION 82	DIVERT	1.55	.63	178.20	3.36	644	415.5
STRUCTURE 71	RESVOR	1.55	.32	175.63	3.38	666	429.7
XSECTION 89	ADDHYD	1.55	2.66	---	3.38	1396	900.6

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TR20 ----- SCS  
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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.

QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC REACH ID COEFF	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION				ROUTING PARAMETERS				ATT-KIN (C)
			INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	Q-A COEFF (X)	EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	
BASEFLOW IS		.0 CFS									
ALTERNATE		1	STORM	1							
2	1170		109	2.2	109	2.3	.26	2.00	.005	.999	
	.99?										
5	797		291	2.3	291	2.3	1.79	1.29	.019	1.000	
	.99?										
8	1221		362	2.8	358	2.8	1.29	1.44	.015	.987	
	.95?										
16	920		460	2.9	460	2.9	4.02	1.45	.001	1.000	
	1.00?										
23	1379		558	2.8	521	3.0	.63	1.30	.036	.933	
	.47										
27	1021		434	2.2	424	2.3	.33	1.50	.029	.977	
	.72?										
32	1603		286	2.2	267	2.2	1.71	1.22	.083	.934	
	.52										
34	583		34	2.2	34	2.2	1.15	1.61	.006	1.000	
	1.00?										
37	934		154	2.2	154	2.2	2.49	1.50	.005	1.000	
	1.00?										
44	1428		1180	2.6	1120	2.8	.27	1.45	.019	.950	
	.57										
51	1275		1362	2.6	1347	2.8	.44	1.37	.017	.989	
	.62										
53	652		6	2.5	6	2.6	2.05	1.40	.035	.955	
	.79?										
63	1959		1431	2.8	1371	3.0	.39	1.42	.024	.958	
	.52										
65	1283		28	2.5	28	2.6	2.51	1.37	.022	.991	
	.72?										
70	2166		302	2.2	240	2.3	1.29	1.15	.175	.796	
	.26										
72	1081		43	2.2	42	2.2	1.69	1.41	.034	.968	
	.76?										
77	884		1358	3.2	1355	3.3	1.91	1.22	.009	.997	
	.97?										
80	1296		1360	3.3	1350	3.4	4.01	1.13	.016	.993	
	.84?										

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
STRUCTURE 84	.17	
-----		
ALTERNATE 1		151
STRUCTURE 83	.41	
-----		
ALTERNATE 1		392
STRUCTURE 82	.77	
-----		
ALTERNATE 1		664
STRUCTURE 81	.07	
-----		
ALTERNATE 1		0
STRUCTURE 73	1.02	
-----		
ALTERNATE 1		821
STRUCTURE 72	1.28	
-----		
ALTERNATE 1		704
STRUCTURE 71	1.55	
-----		
ALTERNATE 1		666
STRUCTURE 63	.01	
-----		
ALTERNATE 1		44
STRUCTURE 62	.05	
-----		
ALTERNATE 1		73
STRUCTURE 61	.01	
-----		
ALTERNATE 1		28
STRUCTURE 35	.06	
-----		
ALTERNATE 1		115
STRUCTURE 34	.04	
-----		

ALTERNATE	1	155
STRUCTURE	33	.03
-----		
ALTERNATE	1	120
STRUCTURE	32	.01
-----		

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
STRUCTURE 32	.01	
-----		
ALTERNATE 1		34
STRUCTURE 31	.05	
-----		
ALTERNATE 1		176
STRUCTURE 24	.03	
-----		
ALTERNATE 1		23
STRUCTURE 23	.32	
-----		
ALTERNATE 1		460
STRUCTURE 22	.07	
-----		
ALTERNATE 1		135
STRUCTURE 21	.07	
-----		
ALTERNATE 1		157
STRUCTURE 11	.09	
-----		
ALTERNATE 1		292
STRUCTURE 3	1.01	
-----		
ALTERNATE 1		1407
STRUCTURE 2	.77	
-----		
ALTERNATE 1		1096

STRUCTURE	1	.60	
-----			
ALTERNATE	1		780
XSECTION	7	.17	
-----			
ALTERNATE	1		520
XSECTION	8	.17	
-----			
ALTERNATE	1		359
XSECTION	16	.32	
-----			
ALTERNATE	1		460
XSECTION	20	.05	
-----			
ALTERNATE	1		144

1  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION 21	.41	
-----		
ALTERNATE 1		532
XSECTION 23	.41	
-----		
ALTERNATE 1		522
XSECTION 43	.77	
-----		
ALTERNATE 1		1107
XSECTION 44	.77	
-----		
ALTERNATE 1		1121
XSECTION 49	.82	
-----		
ALTERNATE 1		1149
XSECTION 51	.93	
-----		
ALTERNATE 1		1347

XSECTION	60	1.01	
-----			
ALTERNATE	1		1422
XSECTION	62	1.02	
-----			
ALTERNATE	1		1427
XSECTION	63	1.02	
-----			
ALTERNATE	1		1372
XSECTION	76	1.28	
-----			
ALTERNATE	1		1617
XSECTION	77	1.28	
-----			
ALTERNATE	1		1360
XSECTION	81	.00	
-----			
ALTERNATE	1		730
XSECTION	82	1.55	
-----			
ALTERNATE	1		644

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION	84	.07
-----		
ALTERNATE	1	203
XSECTION	85	.17
-----		
ALTERNATE	1	379
XSECTION	88	1.55
-----		
ALTERNATE	1	1374
XSECTION	89	1.55
-----		
ALTERNATE	1	1396

XSECTION	107	.00	
-----			
ALTERNATE	1		213
XSECTION	108	.17	
-----			
ALTERNATE	1		364
XSECTION	122	.00	
-----			
ALTERNATE	1		168
XSECTION	123	.41	
-----			
ALTERNATE	1		560
XSECTION	141	.07	
-----			
ALTERNATE	1		121
XSECTION	144	.00	
-----			
ALTERNATE	1		543
XSECTION	145	.77	
-----			
ALTERNATE	1		1207
XSECTION	162	.00	
-----			
ALTERNATE	1		621
XSECTION	163	1.02	
-----			
ALTERNATE	1		1442

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TR20 ----- SCS

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION	176	.00
-----		
ALTERNATE	1	691
XSECTION	177	1.28
-----		
ALTERNATE	1	1395

```

XSECTION  184          .00
-----
  ALTERNATE    1          118

XSECTION  185          .07
-----
  ALTERNATE    1          119

XSECTION  187          .12
-----
  ALTERNATE    1          217
    
```

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          Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,
          VERSION
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```

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST  
 FILES

```

INPUT  = ncojul1.dat          , GIVEN DATA FILE
OUTPUT = ncojul1.OUT          , DATED
05/03/**,09:07:00
    
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FILES GENERATED - DATED 05/03/\*\*,09:07:00

NONE!

TOTAL NUMBER OF WARNINGS = 11, MESSAGES = 10

\*\*\* TR-20 RUN COMPLETED \*\*\*

1

\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20  
HYDROLOGY\*\*\*\*\*

JOB TR-20		NOPLOTS			
TITLE Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,					
TITLE CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist;H1&H8UG;GHCHUG					
2	XSECTN	002	1.0	389.50	
8			389.00	0.00	0.00
8			389.25	1.65	1.06
8			389.50	6.25	2.75
8			389.75	14.40	5.06
8			390.00	26.75	8.00
8			390.25	45.54	14.33
8			390.50	68.67	15.00
8			390.75	96.11	18.88
8			391.00	127.89	23.00
8			391.25	164.08	27.38
8			391.50	204.77	32.00
8			391.75	250.06	36.88
9	ENDTBL				
2	XSECTN	005	1.0	367.00	
8			366.00	0.00	0.00
8			366.50	3.51	1.5
8			367.00	13.55	4.00
8			367.50	30.53	9.00
8			367.75	47.87	13.00
8			368.00	72.23	18.00
8			368.25	104.79	23.98
8			368.50	146.13	30.94
8			368.75	197.14	38.86
8			369.00	258.63	47.75
8			369.25	331.41	57.61
8			369.50	416.25	68.44
9	ENDTBL				
3	STRUCT	11			
8			380.00	0.00	0.00
8			381.00	2.70	0.53
8			382.20	53.00	1.16
8			383.80	186.80	1.40
9	ENDTBL				
2	XSECTN	008	1.0	330.00	
8			356.00	0.00	0.00
8			356.50	20.21	6.94
8			357.00	68.51	15.75
8			357.50	144.11	26.44
8			358.00	248.93	39.00
8			358.50	389.07	53.25
8			359.00	561.31	69.00
8			359.50	767.14	86.25
8			360.00	1008.16	105.00
8			361.00	1375.68	147.50
8			361.50	1604.19	171.38
9	ENDTBL				

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*



2	XSECTN	016	1.0	333.08		
8			331.08	0.00	0.00	
8			332.08	80.21	8.00	
8			333.08	225.50	16.00	
8			333.58	310.09	20.00	
8			334.08	399.94	24.00	
8			334.58	493.86	28.00	
8			335.08	590.97	32.00	
8			335.58	690.67	36.00	
8			336.08	792.47	40.00	
8			336.58	896.02	44.00	
9	ENDTBL					
2	XSECTN	023	1.0	314.40		
8			313.22	0.00	0.00	
8			313.51	1.10	0.89	
8			313.81	3.51	1.84	
8			314.10	16.22	5.61	
8			314.40	34.66	9.74	
8			314.68	48.28	24.71	
8			314.96	79.66	42.09	
8			315.24	126.64	61.87	
8			315.52	189.07	84.06	
8			315.80	267.27	108.64	
8			316.08	361.75	135.63	
8			316.36	473.14	165.02	
8			316.64	602.11	196.81	
8			316.92	749.37	231.00	
8			317.20	878.70	277.25	
8			317.48	1103.89	329.14	
8			317.76	1358.10	382.70	
8			318.04	1640.58	437.94	
8			318.32	1950.87	494.86	
8			318.60	2288.69	553.45	
9	ENDTBL					
3	STRUCT	21				
8			364.00	0.00	0.00	
8			366.00	0.30	0.55	
8			368.00	0.50	1.31	
8			369.00	3.20	1.80	
8			370.00	5.20	2.29	
8			372.00	7.80	3.48	
8			374.00	9.60	5.00	
8			375.00	10.40	5.86	
8			376.00	45.30	6.79	
8			376.50	74.10	7.31	
8			377.00	106.80	7.83	
8			378.00	149.80	8.90	
8			379.00	155.60	10.06	
8			380.00	162.00	11.29	
9	ENDTBL					

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

3	STRUCT	22				
8			352.50	0.00	0.00	
8			358.65	100.00	0.91	
8			361.76	140.00	3.28	
8			363.64	160.00	5.47	
8			366.18	180.00	9.58	
8			368.71	200.00	14.77	

8			370.61	250.00	19.31
9	ENDTBL				
3	STRUCT	23			
8			333.08	0.00	0.00
8			336.97	100.00	0.03
8			338.11	125.00	0.68
8			339.41	150.00	2.19
8			342.51	200.00	6.68
8			346.05	250.00	12.84
8			346.50	300.00	13.70
8			347.05	400.00	14.76
8			347.50	500.00	15.64
8			347.91	600.00	16.47
8			348.31	700.00	17.30
8			349.01	850.00	18.76
8			350.42	900.00	21.84
8			352.03	1112.97	25.53
9	ENDTBL				
2	XSECTN	027	1.0	317.00	
8			316.00	0.00	0.00
8			316.50	2.68	2.59
8			317.00	10.37	6.88
8			317.50	24.26	12.84
8			318.00	45.55	20.50
8			318.50	70.64	34.75
8			319.00	137.01	60.50
8			319.25	200.57	76.25
8			319.50	273.06	92.00
8			319.75	353.76	107.75
8			320.00	442.13	123.50
8			320.50	640.03	155.00
8			321.00	863.72	186.50
9	ENDTBL				
2	XSECTN	032	1.0	313.00	
8			310.00	0.00	0.00
8			311.00	12.25	5.50
8			312.00	52.16	16.00
8			312.50	83.38	23.13
8			313.00	123.94	31.50
8			313.25	148.02	36.16
8			313.50	174.79	41.13
8			313.75	204.34	46.41
8			314.00	236.81	52.00

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8			314.50	278.65	65.75
8			315.00	353.72	84.00
9	ENDTBL				
2	XSECTN	034	1.0	338.50	
8			338.00	0.00	0.00
8			338.10	4.87	2.46
8			338.25	22.73	6.38
8			338.50	73.99	13.53
8			338.75	149.34	21.45
8			339.00	247.95	30.13
8			339.50	515.65	49.78
9	ENDTBL				
2	XSECTN	037	1.0	331.00	
8			330.00	0.00	0.00

8		330.25	14.29	3.25
8		330.50	46.85	7.00
8		330.75	95.34	11.25
8		331.00	159.64	16.00
8		331.25	240.13	21.25
8		331.50	337.44	27.00
8		331.75	452.26	33.25
8		332.00	585.36	40.00
8		332.50	875.33	55.81
8		333.00	1272.05	75.25
9	ENDTBL			
2	XSECTN	044	1.0	288.90
8			287.68	0.00
8			287.99	1.15
8			288.29	3.69
8			288.60	17.06
8			288.90	36.44
8			289.19	63.07
8			289.47	121.85
8			289.76	206.05
8			290.05	313.23
8			290.33	442.07
8			290.62	591.78
8			290.91	761.87
8			291.19	952.02
8			291.48	1162.04
8			291.77	1391.84
8			292.05	1641.40
8			292.34	1910.74
8			292.63	2199.92
8			292.91	2509.04
8			293.20	2838.22
9	ENDTBL			
3	STRUCT	31		
8			356.38	0.0
8			357.26	10.90

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8		357.50	12.30	0.03
8		358.00	14.70	0.05
8		359.00	18.70	0.10
8		360.00	22.00	0.16
8		361.00	24.90	0.25
8		361.50	26.20	0.30
8		362.00	27.50	0.36
8		362.50	28.70	0.43
8		362.90	29.60	0.49
8		363.50	51.30	0.60
8		363.75	65.70	0.67
8		364.00	82.60	0.72
8		364.20	83.30	0.83
8		364.60	100.00	0.88
8		366.80	260.00	1.47
8		366.92	340.00	1.49
8		366.98	380.00	1.50
9	ENDTBL			
3	STRUCT	32		
8			375.40	0.00
8			379.36	1.00

8		380.00	5.00	0.89
8		380.20	10.00	0.94
8		380.33	15.00	0.98
8		380.45	20.00	1.01
8		380.55	25.00	1.04
8		380.65	30.00	1.06
8		381.19	40.00	1.21
8		381.78	44.00	1.39
8		382.59	66.00	1.66
8		382.79	88.00	1.75
8		382.89	110.00	1.79
8		382.97	132.00	1.83
9	ENDTBL			
3	STRUCT	33		
8		350.00	0.00	0.00
8		354.30	1.00	1.08
8		354.47	2.00	1.15
8		354.87	5.00	1.30
8		355.38	10.00	1.50
8		356.18	20.00	1.84
8		356.88	40.00	2.15
8		357.27	60.00	2.33
8		357.46	80.00	2.42
8		358.08	100.00	2.73
8		358.14	120.00	2.76
8		358.19	140.00	2.78
8		358.25	171.00	2.81
8		358.27	180.00	2.82
9	ENDTBL			

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

3	STRUCT	34		
9	ENDTBL			
3	STRUCT	02		
9	ENDTBL			
2	XSECTN	051	1.0	282.40
8			281.10	0.00
8			281.42	1.24
8			281.75	3.96
8			282.07	18.30
8			282.40	39.09
8			282.88	67.33
8			283.36	131.17
8			283.84	225.10
8			284.32	348.01
8			284.80	499.91
8			285.28	681.29
8			285.76	892.92
8			286.24	1135.70
8			286.72	1410.63
8			287.20	1718.74
8			287.68	2061.13
8			288.16	2438.87
8			288.64	2853.08
8			289.12	3301.76
8			289.60	3785.91
9	ENDTBL			
2	XSECTN	053	1.0	289.00
8			288.00	0.00

8		288.50	9.00	2.88
8		289.00	34.26	7.50
8		289.50	79.27	13.88
8		290.00	147.75	22.00
8		290.50	227.49	31.94
8		291.00	332.02	43.75
8		291.50	463.75	57.44
8		291.75	540.56	64.98
8		292.00	625.07	73.00
9	ENDTBL			
2	XSECTN	063	1.0	248.40
8		247.07	0.00	0.00
8		247.41	1.85	1.14
8		247.74	5.93	2.35
8		248.07	27.43	7.18
8		248.40	58.61	12.46
8		248.67	89.70	40.04
8		248.95	158.39	68.99
8		249.22	256.90	99.30
8		249.49	382.40	130.99
8		249.77	533.43	164.04
8		250.04	709.09	198.46

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		250.31	908.86	234.24
8		250.59	1132.40	271.40
8		250.86	1379.55	309.92
8		251.13	1650.25	349.81
8		251.41	1944.49	391.07
8		251.68	2262.35	433.69
8		251.95	2603.94	477.69
8		252.23	2969.40	523.05
8		252.50	3358.93	569.78
9	ENDTBL			
3	STRUCT	61		
8		329.75	0.00	0.00
8		330.00	1.56	0.01
8		332.00	4.37	0.13
8		334.00	5.96	0.39
8		334.10	6.01	0.40
8		334.50	10.20	0.47
8		335.00	16.10	0.56
8		336.00	28.91	0.75
8		337.00	40.10	0.97
9	ENDTBL			
3	STRUCT	62		
8		287.30	0.00	0.00
8		288.00	5.45	0.01
8		289.00	9.05	0.05
8		290.00	11.60	0.13
8		292.00	15.35	0.50
8		294.00	18.40	1.19
8		294.30	18.92	1.26
8		294.50	20.73	1.40
8		295.00	36.40	1.60
8		295.40	38.00	1.80
8		296.00	51.10	2.15
8		297.00	69.60	2.75
8		298.00	86.80	3.44

8		298.68	98.50	3.91
8		298.80	107.56	4.00
9	ENDTBL			
3	STRUCT	63		
8		259.43	0.00	0.00
8		260.00	1.30	0.026
8		260.50	1.70	0.050
8		261.00	2.10	0.075
8		261.50	2.40	0.095
8		262.00	2.70	0.119
8		262.50	2.90	0.160
8		263.00	3.20	0.205
8		263.50	3.40	0.245
8		264.00	3.60	0.285
8		264.50	3.80	0.360

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		265.00	3.90	0.415
8		265.50	4.10	0.480
8		266.00	11.00	0.537
8		266.50	15.40	0.620
8		267.00	16.00	0.709
8		267.50	30.30	0.798
8		268.00	56.00	0.887
8		268.50	145.68	0.976
9	ENDTBL			
2	XSECTN	065	1.0	300.50
8		300.00	0.00	0.00
8		300.10	0.29	0.23
8		300.25	1.47	0.69
8		300.40	3.55	1.28
8		300.50	5.48	1.75
8		300.60	7.88	2.28
8		300.75	12.45	3.19
8		300.90	18.28	4.23
8		301.00	22.91	5.00
8		301.10	28.18	5.83
8		301.25	37.36	7.19
8		301.40	48.14	8.68
8		301.50	56.26	9.75
9	ENDTBL			
2	XSECTN	070	1.0	248.40
8		247.07	0.00	0.00
8		247.41	1.85	1.14
8		247.74	5.93	2.35
8		248.07	27.43	7.18
8		248.40	58.61	12.46
8		248.67	89.70	40.04
8		248.95	158.39	68.99
8		249.22	256.90	99.30
8		249.49	382.40	130.99
8		249.77	533.43	164.04
8		250.04	709.09	198.46
8		250.31	908.86	234.24
8		250.59	1132.40	271.40
8		250.86	1379.55	309.92
8		251.13	1650.25	349.81
8		251.41	1944.49	391.07
8		251.68	2262.35	433.69

8		251.95	2603.94	477.69
8		252.23	2969.40	523.05
8		252.50	3358.93	569.78
9	ENDTBL			
2	XSECTN 072	1.0	248.40	
8		247.07	0.00	0.00
8		247.41	1.85	1.14
8		247.74	5.93	2.35

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		248.07	27.43	7.18
8		248.40	58.61	12.46
8		248.67	89.70	40.04
8		248.95	158.39	68.99
8		249.22	256.90	99.30
8		249.49	382.40	130.99
8		249.77	533.43	164.04
8		250.04	709.09	198.46
8		250.31	908.86	234.24
8		250.59	1132.40	271.40
8		250.86	1379.55	309.92
8		251.13	1650.25	349.81
8		251.41	1944.49	391.07
8		251.68	2262.35	433.69
8		251.95	2603.94	477.69
8		252.23	2969.40	523.05
8		252.50	3358.93	569.78
9	ENDTBL			
2	XSECTN 077	1.0	229.00	
8		226.00	0.00	0.00
8		226.50	11.73	5.31
8		227.00	42.97	13.25
8		227.50	96.50	23.81
8		228.00	175.93	37.00
8		228.50	258.13	54.25
8		229.00	385.22	77.00
8		229.50	561.82	105.25
8		230.00	793.74	139.00
8		230.50	1079.38	179.94
8		231.00	1462.49	229.75
8		231.50	1953.75	288.44
8		232.00	2564.16	356.00
8		232.50	3408.70	429.13
8		233.00	4351.01	504.50
9	ENDTBL			
2	XSECTN 080	1.0	212.00	
8		210.50	0.00	0.00
8		210.75	4.72	2.23
8		211.00	15.68	4.92
8		211.25	32.36	8.06
8		211.50	54.93	11.67
8		211.75	83.70	15.73
8		212.00	119.05	20.25
8		212.25	163.87	25.14
8		212.50	215.35	30.31
8		212.75	273.55	35.77
8		213.00	338.57	41.50
8		214.00	669.42	67.25
8		215.00	806.07	99.00

8		216.00	1088.03	138.25
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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

8		217.00	1451.30	187.50
8		218.00	1978.93	249.25
8		219.00	2262.06	340.00
8		220.00	3115.20	476.25
8		221.00	4892.67	639.25
9	ENDTBL			
3	STRUCT	03		
9	ENDTBL			
3	STRUCT	24		
9	ENDTBL			
3	STRUCT	35		
9	ENDTBL			
3	STRUCT	71		
9	ENDTBL			
2	XSECTN	081	1.0	180.00
8		175.00	0.00	0.00
8		176.00	84.89	14.48
8		177.00	278.13	31.90
8		178.00	568.14	52.58
8		179.00	956.14	75.60
8		180.00	1449.15	101.88
9	ENDTBL			
2	XSECTN	082	1.0	180.00
8		175.00	0.00	0.00
8		176.00	84.89	14.48
8		177.00	278.13	31.90
8		178.00	568.14	52.58
8		179.00	956.14	75.60
8		180.00	1449.15	101.88
9	ENDTBL			
3	STRUCT	01		
9	ENDTBL			
3	STRUCT	72		
9	ENDTBL5			
3	STRUCT	73		
9	ENDTBL			
3	STRUCT	81		
8		190.00	0.00	0.00
8		192.00	0.01	1.19
8		194.00	0.02	3.13
8		196.00	0.03	5.24
8		198.00	0.04	7.18
8		200.00	0.05	8.37
8		201.00	310.00	8.38
8		202.00	876.81	8.39
8		203.00	1610.81	8.40
9	ENDTBL			
3	STRUCT	82		
8		308.00	0.00	0.00
8		310.00	0.01	1.36

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*



8		312.00	0.02	3.56
8		314.00	0.03	5.96
8		316.00	0.04	8.16
8		318.00	0.05	9.52
8		319.00	310.00	9.53
8		320.00	876.81	9.54
8		321.00	1610.81	9.55

9 ENDTBL  
3 STRUCT 83

8		312.00	0.00	0.00
8		314.00	0.01	1.52
8		316.00	0.02	4.00
8		318.00	0.03	6.71
8		320.00	0.04	9.19
8		322.00	0.05	10.71
8		323.00	310.00	10.72
8		324.00	876.81	10.73
8		325.00	1610.81	10.74

9 ENDTBL  
3 STRUCT 84

8		348.00	0.00	0.00
8		350.00	0.01	1.62
8		352.00	0.02	4.24
8		354.00	0.03	7.12
8		356.00	0.04	9.74
8		358.00	0.05	11.36
8		359.00	310.00	11.37
8		360.00	876.81	11.38
8		361.00	1610.81	11.39

9 ENDTBL  
5 RAINFL 9

		.1			
8	0.0000	0.0013	0.0023	0.0034	0.0044
8	0.0055	0.0065	0.0076	0.0087	0.0098
8	0.0109	0.0121	0.0132	0.0143	0.0155
8	0.0167	0.0178	0.0190	0.0202	0.0214
8	0.0226	0.0238	0.0251	0.0263	0.0276
8	0.0288	0.0301	0.0314	0.0327	0.0340
8	0.0353	0.0366	0.0379	0.0393	0.0406
8	0.0420	0.0434	0.0447	0.0461	0.0475
8	0.0489	0.0504	0.0518	0.0532	0.0547
8	0.0562	0.0576	0.0591	0.0606	0.0621
8	0.0636	0.0651	0.0667	0.0682	0.0697
8	0.0713	0.0729	0.0745	0.0760	0.0776
8	0.0793	0.0809	0.0826	0.0843	0.0861
8	0.0879	0.0898	0.0916	0.0936	0.0955
8	0.0975	0.0996	0.1017	0.1038	0.1060
8	0.1082	0.1104	0.1127	0.1150	0.1174
8	0.1198	0.1223	0.1247	0.1273	0.1298
8	0.1324	0.1351	0.1378	0.1405	0.1432
8	0.1461	0.1490	0.1521	0.1554	0.1588

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\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

8	0.1623	0.1660	0.1699	0.1739	0.1780
8	0.1823	0.1868	0.1914	0.1961	0.2010
8	0.2061	0.2117	0.2179	0.2247	0.2321
8	0.2400	0.2490	0.2591	0.2702	0.2825
8	0.2955	0.3157	0.3370	0.3662	0.4067
8	0.4766	0.5933	0.6338	0.6630	0.6843

8	0.7045	0.7176	0.7298	0.7409	0.7510
8	0.7600	0.7679	0.7753	0.7821	0.7883
8	0.7939	0.7990	0.8039	0.8086	0.8132
8	0.8177	0.8220	0.8261	0.8301	0.8340
8	0.8377	0.8412	0.8446	0.8479	0.8510
8	0.8540	0.8568	0.8595	0.8622	0.8649
8	0.8676	0.8702	0.8727	0.8753	0.8778
8	0.8802	0.8826	0.8850	0.8873	0.8896
8	0.8918	0.8940	0.8962	0.8983	0.9004
8	0.9025	0.9045	0.9064	0.9084	0.9103
8	0.9121	0.9139	0.9157	0.9174	0.9191
8	0.9208	0.9224	0.9240	0.9256	0.9271
8	0.9287	0.9303	0.9318	0.9334	0.9349
8	0.9364	0.9379	0.9394	0.9409	0.9424
8	0.9439	0.9453	0.9468	0.9482	0.9496
8	0.9511	0.9525	0.9539	0.9553	0.9566
8	0.9580	0.9594	0.9607	0.9621	0.9634
8	0.9647	0.9660	0.9673	0.9686	0.9699
8	0.9712	0.9724	0.9737	0.9749	0.9762
8	0.9774	0.9786	0.9798	0.9810	0.9822
8	0.9834	0.9845	0.9857	0.9868	0.9879
8	0.9891	0.9902	0.9913	0.9924	0.9935
8	0.9945	0.9956	0.9967	0.9977	0.9987
8	1.0000	1.0000	1.0000	1.0000	1.0000

9 ENDTBL

6	RUNOFF	1	001		1	0.0336	80.992	0.4051	DA1
6	REACH	3	002	1	2	1170.0		1	
6	RUNOFF	1	003		1	0.0580	79.488	0.3751	DA2
6	ADDHYD	4	004	1	2	3		1	DA1+2
6	RESVOR	2		11	3	1		1	1
SWMF10									
6	REACH	3	005	1	2	797.0		1	
6	RUNOFF	1	006		3	0.0798	77.284	0.3921	DA3
6	ADDHYD	4	007	2	3	4		1	1
DA12+3									
6	DIVERT	6	107	4	2	3	213	082	1 SA1-
UG4									
6	RESVOR	2		84	3	1		1	1 H8UG4
6	ADDHYD	4	108	1	2	3		1	1
UG4+SA1									
6	REACH	3	008	3	7	1221.0		1	1 SA1-
SA2									
6	RUNOFF	1	009		1	0.0734	90.928	0.4221	DA1
6	RESVOR	2		21	1	2		1	1
SWMF13									
6	RUNOFF	1	010		3	0.0097	72.007	0.1281	DA7
6	RESVOR	2		22	2	3	4	1	1 HWY
STOR									
6	RUNOFF	1	011		2	0.0544	73.278	0.2201	DA2
6	ADDHYD	4	012	7	2	3		1	
SA1+DA2									
6	RUNOFF	1	013		5	0.0193	79.062	0.2481	DA3

1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

6	ADDHYD	4	014	4	3	6		1	
DA17+2									
6	ADDHYD	4	015	6	5	3		1	
DA172+3									
6	RESVOR	2		23	3	1		1	1 1 1 1 1 CNCPT

1									
6 REACH	3	016	1	2	920.0			1	1
6 RUNOFF	1	017		3	0.0211	87.900	0.1641		DA4
6 RUNOFF	1	118		1	0.0253	93.221	0.2231		DA5A
6 RESVOR	2	24	1	4				1 1 1 1	1 CNCPT
2									
6 RUNOFF	1	119		5	0.0059	86.148	0.1361		DA5B
6 ADDHYD	4	120	4	5 6			1		
DA5a+5b									
6 ADDHYD	4	020	3	6 4			1		1 DA4+5
6 RUNOFF	1	019		5	0.0404	84.467	0.1681		DA6
6 ADDHYD	4	022	4	5 3			1		
DA45+6									
6 ADDHYD	4	021	2	3 1			1		1
DA123+6									
6 DIVERT	6	122	1	2 3	168	082	1		1 SA2-
UG3									
6 RESVOR	2	83	3	1			1		1 H8UG3
6 ADDHYD	4	123	1	2 3			1		1
UG3+SA2									
6 REACH	3	023	3	7	1379.0		1		1 SA2-
SA3									
6 RUNOFF	1	024		1	0.0505	82.333	0.3401		DA1
6 RESVOR	2	31	1	2			1		1 SWMF3
6 RUNOFF	1	025		3	0.0748	81.676	0.3581		DA2
6 ADDHYD	4	026	2	3 4			1		DA1+2
6 REACH	3	027	4	1	1021.0		1		
6 RUNOFF	1	028		2	0.0599	78.523	0.3231		DA3
6 ADDHYD	4	029	7	2 3			1		
SA2+DA3									
6 ADDHYD	4	030	1	3 2			1		
DA12+3									
6 RESVOR	2	01	2	5			1		1 PROP1
6 RUNOFF	1	031		1	0.0692	86.978	0.2761		DA4
6 REACH	3	032	1	6	1603.0		1		
6 RUNOFF	1	033		2	0.0084	95.000	0.1921		DA5
6 RESVOR	2	32	2	3			1		1
SWMF11									
6 REACH	3	034	3	7	583.0		1		
6 RUNOFF	1	035		1	0.0275	94.960	0.2481		DA6
6 RESVOR	2	33	1	2			1		1 SWMF8
6 ADDHYD	4	036	7	2 1			1		DA5+6
6 RESVOR	2	34	1	2			1		1
HWYSTOR3									
6 REACH	3	037	2	4	934.0		1		
6 RUNOFF	1	138		1	0.0280	89.879	0.1551		DA7a
6 ADDHYD	4	139	4	1 3			1		
DA56+7a									
6 RESVOR	2	35	3	2			1 1 1 1		1 CNCPT
4									
6 RUNOFF	1	140		3	0.0048	62.603	0.1261		DA7b
6 ADDHYD	4	141	2	3 4			1		1
DA7a+7b									
6 RUNOFF	1	040		2	0.0393	80.311	0.3671		DA8
6 ADDHYD	4	041	5	2 1			1		DA3+8
6 ADDHYD	4	042	6	1 2			1		DA4+8
6 ADDHYD	4	043	4	2 1			1		1 DA7+8
6 DIVERT	6	144	1	2 3	543	082	1		1 SA3-
UG2									
6 RESVOR	2	82	3	1			1		1 H8UG2
6 ADDHYD	4	145	1	2 3			1		1
UG2+SA3									
6 REACH	3	044	3	2	1428.0		1		1 SA3-
SA4									

6 RESVOR 2 02 2 7 1 1 PROP2  
1

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
\*\*\*\*\*

6	RUNOFF	1	045		1	0.0477	80.798	0.4121		DA1
6	RUNOFF	1	046		2	0.0628	79.968	0.4401		DA2
6	ADDHYD	4	047	1	2	3		1		DA1+2
6	RUNOFF	1	048		1	0.0469	80.250	0.2491		DA3
6	ADDHYD	4	049	7	1	2		1		1
SA3+DA3										
6	ADDHYD	4	050	2	3	4		1		
DA12+3										
6	REACH	3	051	4	7	1275.0		1		1 SA4-
SA5										
6	RUNOFF	1	052		1	0.0087	41.639	0.1631		DA1
6	REACH	3	053	1	5	652.0		1		
6	RUNOFF	1	054		1	0.0072	33.729	0.2561		DA2
6	RUNOFF	1	055		2	0.0322	77.752	0.2491		DA3
6	ADDHYD	4	056	7	2	4		1		
SA4+DA3										
6	ADDHYD	4	057	5	1	3		1		DA1+2
6	ADDHYD	4	058	4	3	5		1		
DA12+3										
6	RUNOFF	1	059		1	0.0266	70.478	0.2611	1	DA4
6	ADDHYD	4	060	5	1	2		1		1
DA123+4										
6	RESVOR	2	03	2	1			1		1 PROP3
6	RUNOFF	1	061		3	0.0173	69.728	0.2971		DA5
6	ADDHYD	4	062	1	3	6		1	1	1
DA1234+5										
6	DIVERT	6	162	6	2	3	621	082	1	1 SA5-
UG3										
6	RESVOR	2	73	3	1			1		1 H1UG3
6	ADDHYD	4	163	1	2	3		1	1	1
UG1+SA5										
6	REACH	3	063	3	7	1959.0		1		1 SA5-
SA6										
6	RUNOFF	1	064		1	0.0110	84.520	0.5211		DA1
6	RESVOR	2	61	1	2			1		1
SWMF19										
6	REACH	3	065	2	3	1283.0		1		
6	RUNOFF	1	066		1	0.0458	70.198	0.2391		DA2
6	RESVOR	2	62	1	2			1		1
SWMF18										
6	ADDHYD	4	067	3	2	4		1		DA1+2
6	RUNOFF	1	068		5	0.0778	73.165	0.2281		DA3
6	ADDHYD	4	069	4	5	1		1		
DA12+3										
6	REACH	3	070	1	2	2166.0		1		
6	RUNOFF	1	071		1	0.0119	80.036	0.1221		DA4
6	RESVOR	2	63	1	3			1		1 SWMF2
6	REACH	3	072	3	4	1081.0		1		
6	RUNOFF	1	073		5	0.1100	64.864	0.2051	1	DA5
6	ADDHYD	4	074	7	5	1		1		
SA5+DA5										
6	ADDHYD	4	075	2	4	6		1	1	
DA123+4										
6	ADDHYD	4	076	1	6	4		1	1	1
DA12345										
6	DIVERT	6	176	4	2	3	691	082	1	1 SA6-

UG2													
6	RESVOR	2		72	3	1		1	1	H1UG2			
6	ADDHYD	4	177		1	2	3	1	1	1			
UG1+SA6													
6	REACH	3	077		3	7		884.0	1	1	SA6-		
SA7													
6	RUNOFF	1	078			2		0.0510	70.802	0.1971	1	DA1	
6	ADDHYD	4	079		7	2	1			1			
SA6+DA1													
6	REACH	3	080		1	2		1296.0		1			
6	RUNOFF	1	081			3		0.0313	67.555	0.1861		DA2	
6	ADDHYD	4	082		2	3	4			1		DA1+2	
6	RUNOFF	1	083			3		0.0513	72.309	0.1621		DA3	
6	RUNOFF	1	084			7		0.0725	71.389	0.3211		1	DA4a

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)  
 \*\*\*\*\*

6	DIVERT	6	184		7	6	5	118		082	1	1	DA4a-	
UG1														
6	RESVOR	2		81	5	1					1	1	H8UG1	
6	ADDHYD	4	185		1	6	5				1		1	
UG1+DA4a														
6	RUNOFF	1	186			2		0.0463	63.182	0.3211			DA4	
6	ADDHYD	4	187		2	5	6				1		1	
DA4+DA4a														
6	ADDHYD	4	085		3	6	1				1	1	1	DA3+4
6	ADDHYD	4	086		1	4	2				1			
DA123+4														
6	RUNOFF	1	087			4		0.0159	86.785	0.1421			DA5	
6	ADDHYD	4	088		2	4	7				1	1	1	
DA1234+5														
6	DIVERT	6	081		7	2	3	730		082	1		1	SA7-
UG1														
6	RESVOR	2		71	3	1					1		1	H1UG1
6	ADDHYD	4	089		1	2	4				1	1	1	
UG1+SA7														
ENDATA														
7	INCREM	6						.06						
7	COMPUT	7	001		089			0.0	3.19		1.09	2	1	2
ENDCMP														
7	COMPUT	7	001		089			0.0	4.10		1.09	2	1	5
ENDCMP														
7	COMPUT	7	001		089			0.0	4.91		1.09	2	1	10
ENDCMP														
7	COMPUT	7	001		089			0.0	6.14		1.09	2	1	25
ENDCMP														
7	COMPUT	7	001		089			0.0	7.23		1.09	2	1	50
ENDCMP														
7	COMPUT	7	001		089			0.0	8.47		1.09	2	1	99
ENDCMP														
ENDJOB														

\*\*\*\*\*END OF 80-80  
 LIST\*\*\*\*\*

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

Dist;H1&H8UG;GHC2.04TEST  
18:28:10  
1

PASS 1 JOB NO. 1

PAGE

EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .060 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 89  
STARTING TIME = .00 RAIN DEPTH = 3.19 RAIN DURATION = 1.00  
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. = 2 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 23.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.46 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-  
FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.41 22.7 389.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.46 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.29 39.9 (RUNOFF)  
23.14 1.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.36 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.32 60.4 (NULL)  
23.10 1.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.40 WATERSHED INCHES; 83 CFS-HRS; 6.8 ACRE-  
FEET.

1  
TR20 ----- SCS  
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05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
 18:28:10 PASS 1 JOB NO. 1  
 2

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	50.9	382.15
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.39 WATERSHED INCHES;	82 CFS-HRS;	6.8 ACRE-
FEET.		

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.56	50.4	367.78
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.39 WATERSHED INCHES;	82 CFS-HRS;	6.8 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	47.5	(RUNOFF)
23.75	1.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.22 WATERSHED INCHES;	63 CFS-HRS;	5.2 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	85.2	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.31 WATERSHED INCHES;	145 CFS-HRS;	12.0 ACRE-
FEET.		

OPERATION DIVERT XSECTION 107  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	85.2	(DIVERT)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
145 CFS-HRS;	12.0 ACRE-FEET.	

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
 18:28:10 PASS 1 JOB NO. 1 PAGE  
 3

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 84, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 358.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 84

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 108  
 NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	85.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	84.4	357.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.31 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------



```

      ELEVATION(FEET)
      12.30                77.8                (RUNOFF)
1
TR20 ----- SCS
-
      Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,
      VERSION
05/04/** CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA
Dist;H1&H8UG;GHC2.04TEST
18:28:10                PASS 1 JOB NO. 1                PAGE
4

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      RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
      2.24 WATERSHED INCHES; 106 CFS-HRS; 8.8 ACRE-
      FEET.

```

```

*** MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
      STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.
      THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
***

```

OPERATION RESVOR STRUCTURE 21

```

      PEAK TIME(HRS)                PEAK DISCHARGE(CFS)                PEAK
      ELEVATION(FEET)
      13.56                9.7 *                374.07
      * FIRST POINT OF FLAT PEAK

```

```

      RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
      1.91 WATERSHED INCHES; 91 CFS-HRS; 7.5 ACRE-
      FEET.

```

OPERATION RUNOFF XSECTION 10

```

      PEAK TIME(HRS)                PEAK DISCHARGE(CFS)                PEAK
      ELEVATION(FEET)
      12.13                6.6                (RUNOFF)

```

```

      RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
      .92 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-
      FEET.

```

OPERATION RESVOR STRUCTURE 22

```

      PEAK TIME(HRS)                PEAK DISCHARGE(CFS)                PEAK
      ELEVATION(FEET)
      13.68                9.6 *                353.09
      * FIRST POINT OF FLAT PEAK

```

```

      RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
      1.91 WATERSHED INCHES; 90 CFS-HRS; 7.5 ACRE-
      FEET.

```

OPERATION RUNOFF XSECTION 11

```

      PEAK TIME(HRS)                PEAK DISCHARGE(CFS)                PEAK
      ELEVATION(FEET)
      12.19                33.2                (RUNOFF)

```

19.76	1.0	(RUNOFF)
20.09	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .99 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
 FEET.

1

TR20 ----- SCS  
 -

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
 18:28:10 PASS 1 JOB NO. 1 PAGE  
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OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	98.2	(NULL)
24.00	3.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.24 WATERSHED INCHES; 180 CFS-HRS; 14.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	15.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.33 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	105.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 270 CFS-HRS; 22.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	112.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.39 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .006 HOURS.

\*\*\*

OPERATION RESVOR STRUCTURE 23

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.61	106.1	337.25
12.95	74.1	335.96
13.06	62.1	335.50
13.17	53.0	335.14

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
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HRS	MAIN	TIME	INCREMENT	ALTERNATE = 1,	STORM = 2	DRAINAGE AREA =	SQ.MI.
6.42	.00	.01	.01	.01	.01	.01	.01
6.42	333.08	333.08	333.08	333.08	333.08	333.08	333.08
6.90	.01	.01	.01	.02	.02	.02	.02
6.90	333.08	333.08	333.08	333.08	333.08	333.08	333.08
7.38	.02	.02	.03	.03	.03	.03	.03
7.38	333.08	333.08	333.08	333.08	333.08	333.08	333.08
7.86	.04	.04	.04	.04	.04	.05	.05
7.86	333.08	333.08	333.08	333.08	333.08	333.08	333.08
8.34	.05	.06	.06	.06	.06	.07	.07
8.34	333.08	333.08	333.08	333.08	333.08	333.08	333.08
8.82	.08	.08	.08	.09	.09	.09	.10
8.82	333.08	333.08	333.08	333.08	333.08	333.08	333.08
9.30	.10	.11	.11	.12	.12	.13	.13
9.30	333.08	333.08	333.08	333.08	333.08	333.08	333.09
9.78	.15	.16	.17	.18	.20	.23	.25
9.78	333.09	333.09	333.09	333.09	333.09	333.09	333.09
10.26	.30	.34	.38	.44	.50	.58	.66
10.26	333.09	333.09	333.09	333.10	333.10	333.10	333.11
10.74	.86	.98	1.12	1.27	1.45	1.67	1.93
10.74	333.11	333.12	333.12	333.13	333.14	333.14	333.16

333.17								
11.22 CFS	2.60	3.02	3.50	4.04	4.64	5.32	6.21	7.46
11.22 ELEV	333.18	333.20	333.22	333.24	333.26	333.29	333.32	333.37
11.70 CFS	9.00	10.83	13.24	16.56	21.46	29.40	42.13	61.35
11.70 ELEV	333.43	333.50	333.60	333.72	333.91	334.22	334.72	335.47
12.18 CFS	80	93	100	101	102	104	105	106
12.18 ELEV	336.20	336.70	336.98	337.01	337.08	337.16	337.22	337.25
12.66 CFS	106	104	102	89	69	73	60	61
12.66 ELEV	337.23	337.17	337.06	336.53	335.76	335.94	335.41	335.47
13.14 CFS	52.02	52.24	45.85	45.46	41.03	40.32	37.17	36.34
13.14 ELEV	335.10	335.11	334.86	334.85	334.68	334.65	334.53	334.49
13.62 CFS	34.01	33.15	31.44	30.67	29.41	28.75	27.82	27.29
13.62 ELEV	334.40	334.37	334.30	334.27	334.22	334.20	334.16	334.14
14.10 CFS	26.59	26.14	25.58	25.18	24.73	24.39	24.02	23.70
14.10 ELEV	334.11	334.10	334.07	334.06	334.04	334.03	334.01	334.00
14.58 CFS	23.35	23.03	22.69	22.39	22.08	21.78	21.47	21.16
14.58 ELEV	333.99	333.98	333.96	333.95	333.94	333.93	333.92	333.90
15.06 CFS	20.86	20.55	20.24	19.94	19.65	19.40	19.18	18.98
15.06 ELEV	333.89	333.88	333.87	333.86	333.84	333.83	333.83	333.82
15.54 CFS	18.80	18.63	18.46	18.30	18.15	18.03	17.93	17.81
15.54 ELEV	333.81	333.80	333.80	333.79	333.79	333.78	333.78	333.77
16.02 CFS	17.69	17.56	17.45	17.34	17.24	17.13	17.02	16.91
16.02 ELEV	333.77	333.76	333.76	333.75	333.75	333.75	333.74	333.74
16.50 CFS	16.80	16.68	16.57	16.46	16.36	16.26	16.15	16.04
16.50 ELEV	333.73	333.73	333.72	333.72	333.72	333.71	333.71	333.70
16.98 CFS	15.94	15.85	15.75	15.64	15.52	15.40	15.31	15.22
16.98 ELEV	333.70	333.70	333.69	333.69	333.68	333.68	333.68	333.67
17.46 CFS	15.11	14.98	14.86	14.75	14.64	14.54	14.42	14.31
17.46 ELEV	333.67	333.66	333.66	333.65	333.65	333.65	333.64	333.64

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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17.94 CFS	14.22	14.13	14.04	13.94	13.83	13.73	13.63
13.54							
17.94 ELEV	333.63	333.63	333.63	333.62	333.62	333.61	333.61
333.61							
18.42 CFS	13.43	13.33	13.26	13.19	13.13	13.05	12.97
12.91							
18.42 ELEV	333.60	333.60	333.60	333.59	333.59	333.59	333.58
333.58							
18.90 CFS	12.85	12.77	12.68	12.61	12.53	12.46	12.39
12.33							
18.90 ELEV	333.58	333.58	333.57	333.57	333.57	333.56	333.56
333.56							
19.38 CFS	12.27	12.21	12.15	12.09	12.01	11.93	11.87
11.81							
19.38 ELEV	333.56	333.55	333.55	333.55	333.55	333.54	333.54
333.54							
19.86 CFS	11.73	11.66	11.60	11.55	11.50	11.44	11.38
11.31							
19.86 ELEV	333.54	333.53	333.53	333.53	333.53	333.53	333.52
333.52							
20.34 CFS	11.25	11.18	11.09	11.03	10.98	10.93	10.87
10.81							
20.34 ELEV	333.52	333.51	333.51	333.51	333.51	333.51	333.50
333.50							
20.82 CFS	10.76	10.71	10.65	10.58	10.51	10.45	10.39
10.33							
20.82 ELEV	333.50	333.50	333.49	333.49	333.49	333.49	333.48
333.48							
21.30 CFS	10.27	10.20	10.13	10.06	9.99	9.90	9.80
9.72							
21.30 ELEV	333.48	333.48	333.47	333.47	333.47	333.47	333.46
333.46							
21.78 CFS	9.65	9.57	9.49	9.43	9.36	9.28	9.20
9.12							
21.78 ELEV	333.46	333.45	333.45	333.45	333.44	333.44	333.44
333.43							
22.26 CFS	9.04	8.97	8.91	8.84	8.78	8.72	8.64
8.56							
22.26 ELEV	333.43	333.43	333.43	333.42	333.42	333.42	333.42
333.41							
22.74 CFS	8.50	8.44	8.36	8.28	8.22	8.18	8.13
8.07							
22.74 ELEV	333.41	333.41	333.41	333.40	333.40	333.40	333.40
333.39							
23.22 CFS	8.01	7.95	7.89	7.84	7.77	7.70	7.63
7.58							
23.22 ELEV	333.39	333.39	333.39	333.38	333.38	333.38	333.38
333.37							
23.70 CFS	7.54	7.50	7.43	7.36	7.29	7.27	7.22
6.95							
23.70 ELEV	333.37	333.37	333.37	333.37	333.36	333.36	333.36
333.35							
24.18 CFS	6.52	6.10	5.72	5.39	5.09	4.84	4.63
4.46							
24.18 ELEV	333.33	333.32	333.30	333.29	333.28	333.27	333.26
333.25							
24.66 CFS	4.31	4.18	4.06	3.94	3.83	3.73	3.63
3.53							
24.66 ELEV	333.25	333.24	333.24	333.23	333.23	333.23	333.22
333.22							
25.14 CFS	3.43	3.34	3.26	3.17	3.09	3.01	2.93

2.85								
25.14 ELEV	333.21	333.21	333.21	333.20	333.20	333.20	333.19	
333.19								
25.62 CFS	2.78	2.71	2.64	2.57	2.50	2.43	2.37	
2.31								
25.62 ELEV	333.19	333.19	333.18	333.18	333.18	333.17	333.17	
333.17								
26.10 CFS	2.25	2.19	2.13	2.08	2.02	1.97	1.92	
1.87								
26.10 ELEV	333.17	333.17	333.16	333.16	333.16	333.16	333.15	
333.15								
26.58 CFS	1.82	1.77	1.72	1.68	1.64	1.59	1.55	
1.51								
26.58 ELEV	333.15	333.15	333.15	333.15	333.14	333.14	333.14	
333.14								
27.06 CFS	1.47	1.43	1.40	1.36	1.32	1.29	1.26	
1.22								
27.06 ELEV	333.14	333.14	333.13	333.13	333.13	333.13	333.13	
333.13								
27.54 CFS	1.19	1.16	1.13	1.10	1.07	1.04	1.02	
.99								
27.54 ELEV	333.13	333.13	333.12	333.12	333.12	333.12	333.12	
333.12								
28.02 CFS	.96	.94	.92	.90	.88	.87	.86	
.84								
28.02 ELEV	333.12	333.12	333.12	333.11	333.11	333.11	333.11	
333.11								
28.50 CFS	.84	.83	.82	.81	.80	.79		
28.50 ELEV	333.11	333.11	333.11	333.11	333.11	333.11		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
 FEET.

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	28	18	14	12	10	8	3	1

DURATION(HRS)	18	18
FLOW(CFS)	1	1 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	106.1	332.26
12.95	74.1	332.00
13.06	62.1	331.85
13.17	53.0	331.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.40 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.15 29.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 27 CFS-HRS; 2.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.18 38.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.46 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.18 38.3 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03

HRS	0.00	0.01	0.01	0.02	0.02	0.03	0.03
3.96 CFS	.00	.01	.01	.02	.02	.03	.03
.04							
4.44 CFS	.04	.05	.06	.06	.07	.07	.08
.08							
4.92 CFS	.09	.09	.10	.10	.11	.12	.12
.13							

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5.40 CFS	.13	.13	.14	.15	.16	.16	.17
.17							
5.88 CFS	.17	.18	.19	.20	.20	.21	.21
.22							
6.36 CFS	.23	.24	.25	.26	.27	.27	.28
.29							
6.84 CFS	.30	.31	.32	.33	.34	.35	.36
.37							
7.32 CFS	.38	.39	.40	.41	.42	.43	.44
.45							
7.80 CFS	.47	.48	.49	.51	.52	.53	.54
.55							

8.28 CFS	.56	.58	.59	.60	.61	.63	.64
.66							
8.76 CFS	.67	.68	.69	.70	.72	.74	.76
.78							
9.24 CFS	.81	.85	.88	.92	.95	.98	1.01
1.05							
9.72 CFS	1.09	1.13	1.17	1.20	1.24	1.28	1.32
1.37							
10.20 CFS	1.41	1.45	1.49	1.52	1.57	1.62	1.68
1.76							
10.68 CFS	1.86	1.98	2.11	2.25	2.40	2.54	2.70
2.88							
11.16 CFS	3.10	3.35	3.61	3.89	4.17	4.46	4.76
5.33							
11.64 CFS	6.31	7.30	8.24	9.57	11.45	14.16	18.49
25.13							
12.12 CFS	33.95	38.32	34.22	26.78	20.79	16.56	13.66
11.76							
12.60 CFS	10.15	8.59	7.39	6.62	6.09	5.67	5.32
4.98							
13.08 CFS	4.66	4.35	4.08	3.86	3.67	3.49	3.31
3.13							
13.56 CFS	2.95	2.79	2.65	2.55	2.46	2.40	2.34
2.30							
14.04 CFS	2.27	2.22	2.18	2.12	2.07	2.03	2.00
1.96							
14.52 CFS	1.92	1.87	1.81	1.77	1.73	1.69	1.65
1.61							
15.00 CFS	1.56	1.52	1.48	1.43	1.39	1.37	1.35
1.35							
15.48 CFS	1.34	1.34	1.33	1.31	1.29	1.27	1.27
1.27							
15.96 CFS	1.26	1.24	1.22	1.20	1.20	1.19	1.18
1.16							
16.44 CFS	1.15	1.14	1.12	1.11	1.10	1.10	1.08
1.07							
16.92 CFS	1.06	1.05	1.05	1.04	1.02	.99	.98
.98							
17.40 CFS	.98	.96	.94	.92	.91	.90	.90
.88							
17.88 CFS	.87	.86	.85	.85	.83	.82	.81
.80							
18.36 CFS	.80	.78	.77	.78	.79	.79	.78
.77							
18.84 CFS	.78	.78	.77	.76	.75	.75	.75
.75							
19.32 CFS	.75	.75	.75	.75	.74	.73	.73
.73							
19.80 CFS	.73	.72	.71	.71	.72	.72	.72
.71							
20.28 CFS	.70	.70	.69	.68	.68	.69	.69
.69							
20.76 CFS	.68	.68	.68	.67	.66	.66	.65
.65							
21.24 CFS	.65	.65	.65	.65	.65	.65	.64
.63							
21.72 CFS	.63	.63	.62	.62	.63	.63	.62
.61							
22.20 CFS	.60	.60	.60	.60	.60	.60	.60
.59							
22.68 CFS	.58	.58	.58	.57	.56	.56	.57
.57							
23.16 CFS	.57	.56	.56	.55	.55	.55	.54
.53							



23.64 CFS	.53	.54	.54	.53	.52	.52	.54
.53							
24.12 CFS	.41	.25	.13	.07	.03	.02	.01
.00							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.46 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4	2	1	1	1	1	1	1

DURATION(HRS) 16  
 FLOW(CFS) 0

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OPERATION RUNOFF XSECTION 119

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.13	8.3	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.83 WATERSHED INCHES; 7 CFS-HRS; .6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(NULL)
12.17	45.6	(NULL)
17.32	1.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.34 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(NULL)
12.16	74.7	(NULL)
15.84	2.5	(NULL)
24.00	1.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.19 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	48.6	(RUNOFF)
19.47	1.0	(RUNOFF)
19.75	1.0	(RUNOFF)
20.06	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.71 WATERSHED INCHES; 44 CFS-HRS; 3.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	123.2	(NULL)
15.84	4.2	(NULL)
17.34	3.3	(NULL)
21.95	2.1	(NULL)
24.00	1.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 119 CFS-HRS; 9.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	201.8	(NULL)
12.94	91.0	(NULL)
13.05	77.2	(NULL)
20.01	14.0	(NULL)
23.01	10.1	(NULL)
24.00	9.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 405 CFS-HRS; 33.4 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 122  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	168.0 *	(DIVERT)
12.94	91.0	(DIVERT)
13.05	77.2	(DIVERT)
20.01	14.0	(DIVERT)
23.01	10.1	(DIVERT)
24.00	9.1	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
400 CFS-HRS; 33.1 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	33.8	175.40

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.02 WATERSHED INCHES; 4 CFS-HRS; .3 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 83, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 322.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 83

\*\*\* MESSAGE - STRUCTURE 83, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.02 WATERSHED INCHES; 398 CFS-HRS; .3 ACRE-FEET.

OPERATION ADDHYD XSECTION 123

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.12	168.0 *	(NULL)
12.94	91.0	(NULL)
13.05	77.2	(NULL)
20.01	14.0	(NULL)
23.01	10.1	(NULL)
24.00	9.1	(NULL)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.51 WATERSHED INCHES; 400 CFS-HRS; 33.1 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
----------------	---------------------	----------------------

12.43 153.1 315.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.50 WATERSHED INCHES; 399 CFS-HRS; 33.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.26 41.6 (RUNOFF)
20.68 1.1 (RUNOFF)

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,
VERSION
05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA
Dist;H1&H8UG;GHC2.04TEST
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-
FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE
TIME INCREMENT OF .043 HOURS.
\*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES
FIRST NEGATIVE VALUE IS 0 CFS.
\*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.46 28.2 362.31
20.70 1.1 356.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.55 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-
FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.27 58.7 (RUNOFF)
23.97 1.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.51 WATERSHED INCHES; 73 CFS-HRS; 6.0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION(FEET)		
12.29	84.2	(NULL)
18.68	3.2	(NULL)
23.78	2.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	76.6	318.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 123 CFS-HRS; 10.2 ACRE-  
 FEET.

1  
 TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
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 Dist;H1&H8UG;GHC2.04TEST  
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OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	42.0	(RUNOFF)
23.12	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.30 WATERSHED INCHES; 50 CFS-HRS; 4.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	186.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.48 WATERSHED INCHES; 450 CFS-HRS; 37.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	261.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 573 CFS-HRS; 47.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	261.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.49 WATERSHED INCHES; 573 CFS-HRS; 47.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	76.8	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-FEET.

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	68.8	312.27
24.15	1.3	310.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.90 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	14.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.63 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .28 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 376.89.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
AT STRUCTURE 32  
\*\*\*

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
13.56 1.0 379.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.01 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 34, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 34

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,  
AT XSECTION 34  
\*\*\*

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
13.68 1.0 338.02

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TR20 ----- SCS  
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05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.00 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.19 41.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.63 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.47 17.5 355.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.08 WATERSHED INCHES; 37 CFS-HRS; 3.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	18.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	18.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	18.2	330.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.06 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
 FEET.

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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 Dist;H1&H8UG;GHC2.04TEST

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OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	42.9	(RUNOFF)
17.34	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.15 WATERSHED INCHES; 39 CFS-HRS; 3.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	44.6	(NULL)
23.69	2.0	(NULL)
24.00	2.0	(NULL)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.10 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.15	44.6	(NULL)
23.69	2.0	(NULL)
24.00	2.0	(NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2							
	MAIN	TIME	INCREMENT = .060 hr,	DRAINAGE AREA = .06				
4.32 CFS	.00	.01	.01	.01	.01	.01	.01	.01
.01								
4.80 CFS	.01	.01	.01	.01	.01	.01	.02	.02
.02								
5.28 CFS	.02	.02	.02	.02	.02	.02	.02	.03
.04								
5.76 CFS	.04	.05	.06	.07	.08	.09	.09	.09
.10								
6.24 CFS	.11	.12	.13	.13	.14	.15	.16	.16
.17								
6.72 CFS	.18	.19	.20	.21	.22	.23	.24	.24
.26								
7.20 CFS	.27	.28	.29	.30	.31	.33	.34	.34
.35								
7.68 CFS	.36	.38	.39	.40	.42	.44	.45	.45
.47								
8.16 CFS	.48	.49	.51	.53	.54	.55	.57	.57
.59								
8.64 CFS	.61	.63	.64	.66	.67	.69	.71	.71
.74								
9.12 CFS	.76	.79	.82	.86	.89	.93	.96	.96
.99								
9.60 CFS	1.03	1.08	1.12	1.16	1.20	1.24	1.28	1.28
1.33								
10.08 CFS	1.38	1.43	1.48	1.52	1.57	1.62	1.67	1.67
1.73								
10.56 CFS	1.81	1.91	2.03	2.16	2.30	2.45	2.60	2.60
2.75								
11.04 CFS	2.90	3.13	3.38	3.65	3.93	4.22	4.54	4.54
4.85								
11.52 CFS	5.17	6.08	7.32	8.20	9.23	10.98	13.42	13.42
16.89								
12.00 CFS	23.15	32.13	43.42	43.83	36.16	32.51	31.33	31.33
30.26								
12.48 CFS	29.47	28.63	26.82	24.94	23.51	22.21	20.95	20.95
19.72								
12.96 CFS	18.54	17.40	16.31	15.30	14.48	13.76	13.06	13.06
12.40								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

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 Dist;H1&H8UG;GHC2.04TEST

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13.44 CFS	11.77	11.16	10.59	10.06	9.59	9.17	8.79
8.45							
13.92 CFS	8.19	7.95	7.73	7.50	7.28	7.07	6.88
6.71							
14.40 CFS	6.55	6.39	6.22	6.05	5.90	5.75	5.63
5.50							
14.88 CFS	5.37	5.24	5.12	5.00	4.87	4.75	4.65
4.57							
15.36 CFS	4.49	4.43	4.37	4.32	4.26	4.20	4.14
4.10							
15.84 CFS	4.08	4.04	3.99	3.93	3.89	3.85	3.82
3.79							
16.32 CFS	3.74	3.70	3.67	3.63	3.58	3.55	3.53
3.50							
16.80 CFS	3.46	3.42	3.39	3.37	3.34	3.31	3.26
3.22							
17.28 CFS	3.19	3.19	3.16	3.11	3.07	3.03	3.01
2.99							
17.76 CFS	2.96	2.92	2.89	2.86	2.85	2.82	2.78
2.75							
18.24 CFS	2.73	2.71	2.68	2.65	2.63	2.63	2.62
2.60							
18.72 CFS	2.57	2.56	2.57	2.56	2.54	2.53	2.52
2.52							
19.20 CFS	2.51	2.51	2.51	2.50	2.50	2.49	2.48
2.46							
19.68 CFS	2.46	2.46	2.45	2.43	2.42	2.43	2.44
2.43							
20.16 CFS	2.41	2.40	2.39	2.39	2.36	2.35	2.36
2.37							
20.64 CFS	2.36	2.34	2.33	2.34	2.33	2.31	2.30
2.29							
21.12 CFS	2.29	2.28	2.28	2.28	2.27	2.27	2.27
2.26							
21.60 CFS	2.23	2.22	2.23	2.23	2.21	2.21	2.22
2.20							
22.08 CFS	2.18	2.17	2.17	2.16	2.16	2.16	2.15
2.15							
22.56 CFS	2.14	2.11	2.11	2.12	2.10	2.08	2.08
2.08							
23.04 CFS	2.10	2.08	2.07	2.06	2.05	2.05	2.04
2.03							
23.52 CFS	2.01	2.00	2.01	2.02	2.01	1.98	1.97
1.97							
24.00 CFS	2.02	1.97	1.70	1.52	1.45	1.41	1.40
1.38							
24.48 CFS	1.38	1.37	1.36	1.36	1.35	1.34	1.34
1.33							
24.96 CFS	1.32	1.32	1.31	1.30	1.29	1.29	1.28
1.27							
25.44 CFS	1.27	1.26	1.25	1.25	1.24	1.23	1.23
1.22							
25.92 CFS	1.21	1.21	1.20	1.19	1.19	1.18	1.17
1.17							
26.40 CFS	1.16	1.16	1.15	1.14	1.14	1.13	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.10 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-FEET.

DURATION (HRS)	2	4	6	8	10	12	14	
FLOW (CFS)	9	4	3	3	2	2	1	TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .50 WATERSHED INCHES; 2 CFS-HRS; .1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 141

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TR20 ----- SCS

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 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	46.0	(NULL)
24.00	2.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	28.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.41 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	286.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.48 WATERSHED INCHES; 609 CFS-HRS; 50.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	355.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.52 WATERSHED INCHES; 694 CFS-HRS; 57.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	386.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.56 WATERSHED INCHES; 780 CFS-HRS; 64.5 ACRE-FEET.

OPERATION DIVERT XSECTION 144  
OUTPUT #1 HYDROGRAPH

1  
TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	386.7	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 780 CFS-HRS; 64.5 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 82, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 318.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 82

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* WARNING - XSECTION 145  
 NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 145

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	386.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.56 WATERSHED INCHES;	780 CFS-HRS;	64.5 ACRE-
FEET.		

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	359.9	290.15
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.56 WATERSHED INCHES;	780 CFS-HRS;	64.4 ACRE-
FEET.		

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	359.9	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.56 WATERSHED INCHES;	780 CFS-HRS;	64.4 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	33.3	(RUNOFF)
20.10	1.1 *	(RUNOFF)
	* FIRST POINT OF FLAT PEAK	
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.45 WATERSHED INCHES;	45 CFS-HRS;	3.7 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	40.7	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.39 WATERSHED INCHES;	56 CFS-HRS;	4.7 ACRE-

FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	74.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.42 WATERSHED INCHES; 101 CFS-HRS; 8.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	40.1	(RUNOFF)
20.10	1.1	(RUNOFF)
20.65	1.0	(RUNOFF)

1

TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.41 WATERSHED INCHES; 43 CFS-HRS; 3.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	376.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.55 WATERSHED INCHES; 822 CFS-HRS; 68.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	435.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.54 WATERSHED INCHES; 923 CFS-HRS; 76.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	420.5	284.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.54 WATERSHED INCHES; 923 CFS-HRS; 76.3 ACRE-
FEET.

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.54 WATERSHED INCHES; 145 CFS-HRS; 76.3 ACRE-
FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,
UNLESS NEW RATING TABLE VALUES ARE INSERTED.
\*\*\*

OPERATION REACH XSECTION 53

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.
\*\*\*

1

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VERSION

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.21 24.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.25 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	429.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.53 WATERSHED INCHES; 949 CFS-HRS; 78.4 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 57  
 NO HYDROGRAPH IN INPUT LOCATION 5 OR 1 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.60	429.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.50 WATERSHED INCHES; 949 CFS-HRS; 78.4 ACRE-  
 FEET.

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TR20 ----- SCS  
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OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	12.3	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
 SQ.MI.

HRS	11.64 CFS	5.60	12.12 CFS	5.84	12.60 CFS	2.68	13.08 CFS	1.74	13.56 CFS	1.29	14.04 CFS																																				
	.36	.53	.75	1.07	1.53	2.25	3.44	5.60	8.86	11.72	12.23	10.90	9.15	7.73	6.64	5.84	5.17	4.51	3.95	3.54	3.25	3.02	2.84	2.68	2.52	2.37	2.23	2.11	2.01	1.92	1.83	1.74	1.65	1.57	1.49	1.43	1.38	1.35	1.32	1.29	1.27	1.25	1.23	1.21	1.18	1.16	1.14



1.12								
14.52 CFS	1.10	1.08	1.05	1.02	1.00	.98	.96	
.94								
15.00 CFS	.91	.89	.87	.84	.82	.80	.79	
.79								
15.48 CFS	.79	.78	.78	.77	.76	.75	.75	
.75								
15.96 CFS	.74	.73	.72	.72	.71	.71	.70	
.70								
16.44 CFS	.69	.68	.67	.67	.66	.66	.65	
.65								
16.92 CFS	.64	.63	.63	.63	.62	.61	.60	
.59								
17.40 CFS	.59	.59	.57	.56	.56	.55	.55	
.54								
17.88 CFS	.53	.53	.52	.52	.51	.50	.50	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .85 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.60 434.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.48 WATERSHED INCHES; 963 CFS-HRS; 79.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.60 434.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.48 WATERSHED INCHES; 963 CFS-HRS; 79.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.25 7.1 (RUNOFF)

1

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .81 WATERSHED INCHES; 9 CFS-HRS; .7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)								PEAK
12.59	437.6								(NULL)
HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02									
HRS	SQ.MI.								
7.14 CFS	.50	.52	.55	.57	.61	.64	.67		
.71									
7.62 CFS	.75	.79	.84	.88	.93	.98	1.02		
1.07									
8.10 CFS	1.13	1.18	1.24	1.29	1.36	1.42	1.48		
1.55									
8.58 CFS	1.61	1.68	1.75	1.83	1.90	1.98	2.05		
2.13									
9.06 CFS	2.21	2.29	2.38	2.47	2.57	2.68	2.81		
2.95									
9.54 CFS	3.11	3.30	3.51	3.74	3.98	4.26	4.55		
4.86									
10.02 CFS	5.19	5.54	5.92	6.32	6.75	7.20	7.68		
8.17									
10.50 CFS	8.69	9.23	9.80	10.40	11.07	11.81	12.64		
13.59									
10.98 CFS	14.66	15.87	17.22	18.72	20.41	22.30	24.45		
26.87									
11.46 CFS	29.60	32.68	36.21	40.39	45.43	51.58	59.22		
68.94									
11.94 CFS	82	99	125	162	208	258	307		
352									
12.42 CFS	389	417	433	438	431	418	399		
379									
12.90 CFS	357	336	315	293	272	252	233		
215									
13.38 CFS	199	184	170	158	147	138	130		
122									
13.86 CFS	115	109	104	99	95	91	88		
85									
14.34 CFS	82.71	80.42	78.34	76.44	74.66	73.00	71.42		
69.92									
14.82 CFS	68.48	67.09	65.72	64.40	63.10	61.82	60.55		
59.31									
15.30 CFS	58.09	56.91	55.78	54.72	53.73	52.83	52.01		
51.27									
15.78 CFS	50.59	49.99	49.44	48.92	48.43	47.95	47.51		
47.08									
16.26 CFS	46.67	46.26	45.86	45.47	45.08	44.70	44.31		
43.93									
16.74 CFS	43.56	43.18	42.81	42.44	42.09	41.75	41.41		
41.06									
17.22 CFS	40.71	40.35	40.00	39.66	39.30	38.94	38.56		
38.19									
17.70 CFS	37.82	37.46	37.09	36.71	36.33	35.97	35.62		
35.26									
18.18 CFS	34.92	34.57	34.24	33.92	33.60	33.28	32.98		
32.71									
18.66 CFS	32.46	32.22	32.00	31.81	31.64	31.48	31.32		
31.17									
19.14 CFS	31.02	30.87	30.72	30.57	30.43	30.30	30.18		
30.06									
19.62 CFS	29.94	29.82	29.70	29.58	29.45	29.30	29.16		
29.03									

20.10	CFS	28.91	28.79	28.66	28.55	28.43	28.31	28.17
28.03								
20.58	CFS	27.90	27.77	27.63	27.49	27.36	27.25	27.14
27.02								
21.06	CFS	26.89	26.77	26.64	26.51	26.38	26.25	26.13
26.01								
21.54	CFS	25.90	25.79	25.67	25.55	25.43	25.30	25.16
25.03								
22.02	CFS	24.89	24.76	24.62	24.47	24.34	24.20	24.05
23.91								
22.50	CFS	23.78	23.64	23.50	23.36	23.23	23.10	22.95
22.80								
22.98	CFS	22.65	22.51	22.38	22.25	22.13	22.01	21.89
21.78								
23.46	CFS	21.67	21.54	21.40	21.26	21.14	21.01	20.89
20.75								
23.94	CFS	20.62	20.53	20.43	20.17	19.70	19.04	18.22
17.22								
24.42	CFS	16.04	14.75	13.41	12.11	10.92	9.87	8.96
8.19								
24.90	CFS	7.56	7.04	6.61	6.26	5.97	5.73	5.53
5.35								
25.38	CFS	5.20	5.06	4.93	4.82	4.71	4.61	4.51
4.41								

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25.86	CFS	4.32	4.24	4.15	4.07	3.98	3.91	3.83
3.75								
26.34	CFS	3.68	3.61	3.54	3.47	3.40	3.34	3.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 1.47 WATERSHED INCHES; 973 CFS-HRS; 80.4 ACRE-FEET.

OPERATION DIVERT XSECTION 162 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) 12.59 PEAK DISCHARGE(CFS) 437.6 PEAK ELEVATION(FEET) (DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 973 CFS-HRS; 80.4 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW. \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 73

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW. \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 163

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 437.6 (NULL)
12.59

Table with 9 columns: HRS, SQ.MI., CFS, and 7 numerical columns. It contains hydrograph data points for various times and discharges.

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Table with 9 columns: CFS, and 8 numerical columns. It contains additional hydrograph data points.

51.27								
15.78	CFS	50.59	49.99	49.44	48.92	48.43	47.95	47.51
47.08								
16.26	CFS	46.67	46.26	45.86	45.47	45.08	44.70	44.31
43.93								
16.74	CFS	43.56	43.18	42.81	42.44	42.09	41.75	41.41
41.06								
17.22	CFS	40.71	40.35	40.00	39.66	39.30	38.94	38.56
38.19								
17.70	CFS	37.82	37.46	37.09	36.71	36.33	35.97	35.62
35.26								
18.18	CFS	34.92	34.57	34.24	33.92	33.60	33.28	32.98
32.71								
18.66	CFS	32.46	32.22	32.00	31.81	31.64	31.48	31.32
31.17								
19.14	CFS	31.02	30.87	30.72	30.57	30.43	30.30	30.18
30.06								
19.62	CFS	29.94	29.82	29.70	29.58	29.45	29.30	29.16
29.03								
20.10	CFS	28.91	28.79	28.66	28.55	28.43	28.31	28.17
28.03								
20.58	CFS	27.90	27.77	27.63	27.49	27.36	27.25	27.14
27.02								
21.06	CFS	26.89	26.77	26.64	26.51	26.38	26.25	26.13
26.01								
21.54	CFS	25.90	25.79	25.67	25.55	25.43	25.30	25.16
25.03								
22.02	CFS	24.89	24.76	24.62	24.47	24.34	24.20	24.05
23.91								
22.50	CFS	23.78	23.64	23.50	23.36	23.23	23.10	22.95
22.80								
22.98	CFS	22.65	22.51	22.38	22.25	22.13	22.01	21.89
21.78								
23.46	CFS	21.67	21.54	21.40	21.26	21.14	21.01	20.89
20.75								
23.94	CFS	20.62	20.53	20.43	20.17	19.70	19.04	18.22
17.22								
24.42	CFS	16.04	14.75	13.41	12.11	10.92	9.87	8.96
8.19								
24.90	CFS	7.56	7.04	6.61	6.26	5.97	5.73	5.53
5.35								
25.38	CFS	5.20	5.06	4.93	4.82	4.71	4.61	4.51
4.41								
25.86	CFS	4.32	4.24	4.15	4.07	3.98	3.91	3.83
3.75								
26.34	CFS	3.68	3.61	3.54	3.47	3.40	3.34	3.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 973 CFS-HRS; 80.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.77	413.5	249.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.47 WATERSHED INCHES; 972 CFS-HRS; 80.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.37	8.2	

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	4.7	332.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.86	4.6	300.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.71 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.21	21.6	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.83 WATERSHED INCHES; 25 CFS-HRS; 2.0 ACRE-  
FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)	12.43	12.4	290.42
RUNOFF ABOVE BASEFLOW (BASEFLOW =	.00 CFS)		
.83 WATERSHED INCHES;	25 CFS-HRS;		2.0 ACRE-
FEET.			

OPERATION ADDHYD XSECTION 67

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TR20 ----- SCS

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PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.58		16.5		(NULL)
20.11		1.0		(NULL)
20.66		1.0		(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW =	.00 CFS)			
1.00 WATERSHED INCHES;	37 CFS-HRS;			3.0 ACRE-
FEET.				

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.20		46.1		(RUNOFF)
24.02		1.1		(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW =	.00 CFS)			
.98 WATERSHED INCHES;	49 CFS-HRS;			4.1 ACRE-
FEET.				

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.21		59.0		(NULL)
21.97		2.2		(NULL)
23.10		2.0		(NULL)
24.03		1.9		(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW =	.00 CFS)			
.99 WATERSHED INCHES;	86 CFS-HRS;			7.1 ACRE-
FEET.				

OPERATION REACH XSECTION 70

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.32		52.5		248.34
22.02		2.2		247.44
23.17		2.0		247.42

24.09 1.9 247.41

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.99 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 12.13 13.2 (RUNOFF)

1

TR20 ----- SCS
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.40 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 12.49 3.4 263.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.40 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-
FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 12.64 3.3 247.53

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.39 WATERSHED INCHES; 11 CFS-HRS; .9 ACRE-
FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.20 34.3 (RUNOFF)
15.86 2.4 (RUNOFF)
24.02 1.2 (RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .11
SQ.MI.
11.82 CFS .39 1.24 3.08 6.90 14.15 26.24 33.87
32.06
12.30 CFS 26.87 22.73 19.37 17.02 15.52 13.85 12.00



10.64								
12.78	CFS	9.83	9.24	8.76	8.33	7.90	7.45	7.01
6.64								
13.26	CFS	6.35	6.08	5.81	5.55	5.28	5.01	4.76
4.55								
13.74	CFS	4.40	4.28	4.19	4.12	4.06	4.02	3.96
3.88								
14.22	CFS	3.80	3.72	3.66	3.61	3.56	3.48	3.40
3.31								
14.70	CFS	3.23	3.17	3.11	3.05	2.97	2.90	2.83
2.75								
15.18	CFS	2.67	2.61	2.57	2.55	2.54	2.54	2.54
2.53								
15.66	CFS	2.49	2.45	2.43	2.44	2.44	2.41	2.37
2.34								
16.14	CFS	2.32	2.32	2.31	2.28	2.26	2.24	2.21
2.18								
16.62	CFS	2.16	2.15	2.15	2.13	2.10	2.08	2.07
2.07								
17.10	CFS	2.05	2.01	1.96	1.94	1.95	1.94	1.91
1.87								
17.58	CFS	1.83	1.81	1.81	1.79	1.77	1.74	1.72
1.71								
18.06	CFS	1.70	1.68	1.65	1.63	1.62	1.61	1.58
1.57								
18.54	CFS	1.58	1.60	1.61	1.59	1.57	1.59	1.59
1.57								
19.02	CFS	1.55	1.54	1.54	1.54	1.54	1.54	1.54
1.54								
19.50	CFS	1.54	1.54	1.51	1.50	1.51	1.51	1.48
1.47								
19.98	CFS	1.48	1.50	1.51	1.49	1.47	1.47	1.46
1.44								
20.46	CFS	1.41	1.42	1.44	1.45	1.43	1.41	1.42
1.43								

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

Dist;H1&H8UG;GHC2.04TEST

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20.94	CFS	1.41	1.39	1.38	1.37	1.37	1.37	1.37
1.37								
21.42	CFS	1.37	1.38	1.37	1.35	1.33	1.33	1.34
1.32								
21.90	CFS	1.33	1.34	1.33	1.31	1.29	1.29	1.28
1.28								
22.38	CFS	1.28	1.28	1.29	1.28	1.25	1.23	1.24
1.24								
22.86	CFS	1.22	1.20	1.21	1.24	1.24	1.22	1.20
1.20								
23.34	CFS	1.19	1.19	1.18	1.15	1.14	1.15	1.17
1.17								
23.82	CFS	1.15	1.12	1.12	1.18	1.16	.84	.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.59 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.76	423.5	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.39 WATERSHED INCHES;	1014 CFS-HRS;	83.8 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	55.6	(NULL)
24.09	2.1	(NULL)

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2						
	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = .15		
HRS							
SQ.MI.							
11.04 CFS	.49	.56	.65	.78	.95	1.16	1.40
1.69							
11.52 CFS	2.03	2.44	3.01	3.84	4.91	6.23	7.89
10.15							
12.00 CFS	13.48	18.88	26.76	38.51	49.56	55.03	54.55
51.34							
12.48 CFS	47.52	44.02	41.15	38.63	36.19	33.98	31.91
30.07							
12.96 CFS	28.46	26.76	24.95	23.27	21.59	19.88	18.73
17.79							
13.44 CFS	16.98	16.22	15.50	14.80	14.08	13.38	12.74
12.18							
13.92 CFS	11.68	11.23	10.83	10.47	10.14	9.83	9.53
9.22							
14.40 CFS	8.87	8.52	8.21	7.93	7.65	7.34	7.04
6.78							
14.88 CFS	6.55	6.35	6.17	5.99	5.82	5.65	5.49
5.34							
15.36 CFS	5.20	5.10	5.03	4.98	4.94	4.90	4.85
4.79							
15.84 CFS	4.74	4.70	4.67	4.64	4.60	4.54	4.49
4.45							
16.32 CFS	4.42	4.39	4.35	4.30	4.26	4.21	4.16
4.13							
16.80 CFS	4.10	4.07	4.03	3.99	3.95	3.92	3.89
3.85							
17.28 CFS	3.79	3.74	3.70	3.68	3.64	3.60	3.54
3.49							
17.76 CFS	3.44	3.41	3.37	3.33	3.29	3.25	3.22
3.19							
18.24 CFS	3.15	3.11	3.07	3.05	3.01	2.98	2.96
2.96							
18.72 CFS	2.96	2.95	2.94	2.93	2.93	2.92	2.89
2.88							
19.20 CFS	2.86	2.85	2.84	2.84	2.84	2.84	2.84
2.83							
19.68 CFS	2.81	2.79	2.78	2.77	2.76	2.74	2.72
2.73							
20.16 CFS	2.74	2.74	2.72	2.71	2.69	2.67	2.64
2.62							
20.64 CFS	2.62	2.63	2.63	2.61	2.60	2.60	2.59
2.57							
21.12 CFS	2.55	2.53	2.52	2.51	2.51	2.50	2.50

2.50  
 1  
 TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

Dist;H1&H8UG;GHC2.04TEST

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21.60 CFS	2.50	2.48	2.46	2.44	2.44	2.43	2.42
2.42							
22.08 CFS	2.42	2.40	2.38	2.36	2.35	2.34	2.34
2.33							
22.56 CFS	2.33	2.32	2.30	2.28	2.27	2.26	2.24
2.22							
23.04 CFS	2.21	2.21	2.22	2.22	2.20	2.18	2.17
2.16							
23.52 CFS	2.15	2.13	2.10	2.09	2.10	2.10	2.09
2.07							
24.00 CFS	2.05	2.06	2.07	1.92	1.58	1.19	.86
.62							
24.48 CFS	.44						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.02 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET)  
 12.74 458.5 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28  
 SQ.MI.

HRS	7.26 CFS	.48	.50	.53	.55	.58	.61	.65
	.68							
	7.74 CFS	.72	.76	.80	.85	.89	.94	.99
	1.03							
	8.22 CFS	1.09	1.14	1.19	1.25	1.31	1.37	1.43
	1.50							
	8.70 CFS	1.56	1.63	1.71	1.78	1.86	1.94	2.02
	2.09							
	9.18 CFS	2.17	2.26	2.35	2.44	2.54	2.66	2.78
	2.92							
	9.66 CFS	3.08	3.25	3.45	3.68	3.92	4.19	4.48
	4.78							
	10.14 CFS	5.11	5.46	5.84	6.24	6.66	7.11	7.58
	8.07							
	10.62 CFS	8.59	9.13	9.71	10.33	11.00	11.74	12.57
	13.51							
	11.10 CFS	14.58	15.80	17.19	18.77	20.55	22.57	24.87
	27.48							
	11.58 CFS	30.43	33.89	38.07	43.17	49.52	57.78	69.02
	85.31							
	12.06 CFS	110	147	190	231	270	307	344
	378							
	12.54 CFS	410	434	451	458	457	450	437
	420							
	13.02 CFS	401	381	359	337	315	294	274

255								
13.50	CFS	236	220	204	190	178	166	156
147								
13.98	CFS	139	131	125	119	114	109	105
101								
14.46	CFS	97.94	94.90	92.15	89.61	87.23	85.02	82.98
81.07								
14.94	CFS	79.25	77.51	75.84	74.21	72.61	71.07	69.58
68.17								
15.42	CFS	66.82	65.55	64.35	63.20	62.11	61.07	60.11
59.25								
15.90	CFS	58.47	57.75	57.07	56.42	55.81	55.25	54.72
54.21								
16.38	CFS	53.71	53.23	52.75	52.27	51.80	51.35	50.92
50.48								
16.86	CFS	50.05	49.61	49.19	48.78	48.37	47.95	47.52
47.08								
17.34	CFS	46.68	46.29	45.89	45.46	45.02	44.58	44.15
43.74								
17.82	CFS	43.31	42.87	42.44	42.02	41.60	41.18	40.76
40.35								
18.30	CFS	39.95	39.56	39.17	38.79	38.44	38.13	37.83
37.53								
18.78	CFS	37.24	36.99	36.75	36.51	36.30	36.09	35.90
35.72								
19.26	CFS	35.55	35.39	35.23	35.08	34.94	34.80	34.64
34.48								
19.74	CFS	34.34	34.21	34.06	33.90	33.75	33.63	33.51
33.37								
20.22	CFS	33.23	33.08	32.93	32.78	32.61	32.46	32.33
32.21								
20.70	CFS	32.07	31.92	31.77	31.63	31.49	31.34	31.19
31.04								
21.18	CFS	30.90	30.76	30.63	30.49	30.36	30.23	30.11
29.97								
21.66	CFS	29.81	29.68	29.55	29.41	29.27	29.15	29.01
28.86								
22.14	CFS	28.70	28.53	28.37	28.22	28.08	27.93	27.79
27.64								

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TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
Dist;H1&H8UG;GHC2.04TEST

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22.62	CFS	27.47	27.29	27.14	26.99	26.82	26.65	26.49
26.36								
23.10	CFS	26.22	26.08	25.92	25.77	25.62	25.48	25.34
25.19								
23.58	CFS	25.03	24.89	24.76	24.64	24.50	24.33	24.18
24.09								
24.06	CFS	23.97	23.54	22.83	21.99	21.08	20.14	19.16
18.11								
24.54	CFS	16.95	15.73	14.47	13.24	12.06	10.97	10.00
9.15								
25.02	CFS	8.41	7.78	7.25	6.80	6.41	6.10	5.84
5.61								
25.50	CFS	5.42	5.25	5.09	4.96	4.84	4.72	4.61
4.51								
25.98	CFS	4.41	4.32	4.23	4.14	4.06	3.98	3.90

3.82  
 26.46 CFS            3.75      3.67      3.60      3.53      3.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.34 WATERSHED INCHES;      1111 CFS-HRS;      91.8 ACRE-FEET.

OPERATION DIVERT      XSECTION 176  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(DIVERT)
12.74	458.5	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1111 CFS-HRS;      91.8 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES;      0 CFS-HRS;      .0 ACRE-FEET.

OPERATION RESVOR      STRUCTURE 72

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES;      0 CFS-HRS;      .0 ACRE-FEET.

OPERATION ADDHYD      XSECTION 177

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(NULL)
12.74	458.5	

	HYDROGRAPH POINTS FOR		ALTERNATE = 1,	STORM = 2			
HRS	MAIN	TIME INCREMENT = .060 hr,	DRAINAGE AREA =	1.28			
SQ.MI.							
7.26 CFS	.48	.50	.53	.55	.58	.61	.65
.68							
7.74 CFS	.72	.76	.80	.85	.89	.94	.99
1.03							
8.22 CFS	1.09	1.14	1.19	1.25	1.31	1.37	1.43
1.50							
8.70 CFS	1.56	1.63	1.71	1.78	1.86	1.94	2.02
2.09							

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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9.18	CFS	2.17	2.26	2.35	2.44	2.54	2.66	2.78
2.92								
9.66	CFS	3.08	3.25	3.45	3.68	3.92	4.19	4.48
4.78								
10.14	CFS	5.11	5.46	5.84	6.24	6.66	7.11	7.58
8.07								
10.62	CFS	8.59	9.13	9.71	10.33	11.00	11.74	12.57
13.51								
11.10	CFS	14.58	15.80	17.19	18.77	20.55	22.57	24.87
27.48								
11.58	CFS	30.43	33.89	38.07	43.17	49.52	57.78	69.02
85.31								
12.06	CFS	110	147	190	231	270	307	344
378								
12.54	CFS	410	434	451	458	457	450	437
420								
13.02	CFS	401	381	359	337	315	294	274
255								
13.50	CFS	236	220	204	190	178	166	156
147								
13.98	CFS	139	131	125	119	114	109	105
101								
14.46	CFS	97.94	94.90	92.15	89.61	87.23	85.02	82.98
81.07								
14.94	CFS	79.25	77.51	75.84	74.21	72.61	71.07	69.58
68.17								
15.42	CFS	66.82	65.55	64.35	63.20	62.11	61.07	60.11
59.25								
15.90	CFS	58.47	57.75	57.07	56.42	55.81	55.25	54.72
54.21								
16.38	CFS	53.71	53.23	52.75	52.27	51.80	51.35	50.92
50.48								
16.86	CFS	50.05	49.61	49.19	48.78	48.37	47.95	47.52
47.08								
17.34	CFS	46.68	46.29	45.89	45.46	45.02	44.58	44.15
43.74								
17.82	CFS	43.31	42.87	42.44	42.02	41.60	41.18	40.76
40.35								
18.30	CFS	39.95	39.56	39.17	38.79	38.44	38.13	37.83
37.53								
18.78	CFS	37.24	36.99	36.75	36.51	36.30	36.09	35.90
35.72								
19.26	CFS	35.55	35.39	35.23	35.08	34.94	34.80	34.64
34.48								
19.74	CFS	34.34	34.21	34.06	33.90	33.75	33.63	33.51
33.37								
20.22	CFS	33.23	33.08	32.93	32.78	32.61	32.46	32.33
32.21								
20.70	CFS	32.07	31.92	31.77	31.63	31.49	31.34	31.19
31.04								
21.18	CFS	30.90	30.76	30.63	30.49	30.36	30.23	30.11
29.97								
21.66	CFS	29.81	29.68	29.55	29.41	29.27	29.15	29.01
28.86								
22.14	CFS	28.70	28.53	28.37	28.22	28.08	27.93	27.79
27.64								
22.62	CFS	27.47	27.29	27.14	26.99	26.82	26.65	26.49
26.36								
23.10	CFS	26.22	26.08	25.92	25.77	25.62	25.48	25.34
25.19								
23.58	CFS	25.03	24.89	24.76	24.64	24.50	24.33	24.18
24.09								

24.06	CFS	23.97	23.54	22.83	21.99	21.08	20.14	19.16
18.11								
24.54	CFS	16.95	15.73	14.47	13.24	12.06	10.97	10.00
9.15								
25.02	CFS	8.41	7.78	7.25	6.80	6.41	6.10	5.84
5.61								
25.50	CFS	5.42	5.25	5.09	4.96	4.84	4.72	4.61
4.51								
25.98	CFS	4.41	4.32	4.23	4.14	4.06	3.98	3.90
3.82								
26.46	CFS	3.75	3.67	3.60	3.53	3.46		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.34 WATERSHED INCHES; 1111 CFS-HRS; 91.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.81	457.7	229.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.34 WATERSHED INCHES; 1110 CFS-HRS; 91.8 ACRE-  
 FEET.

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	27.4	(RUNOFF)
17.35	1.1	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05  
 SQ.MI.

11.52	CFS	.41	.66	1.01	1.43	1.94	2.73	3.90
5.71								
12.00	CFS	9.08	14.77	23.27	27.41	23.98	19.09	15.59
12.97								
12.48	CFS	11.21	10.12	8.90	7.63	6.74	6.21	5.83
5.51								
12.96	CFS	5.22	4.93	4.64	4.35	4.11	3.93	3.75
3.58								
13.44	CFS	3.41	3.23	3.07	2.91	2.78	2.69	2.61
2.55								
13.92	CFS	2.51	2.47	2.44	2.40	2.35	2.30	2.25
2.21								
14.40	CFS	2.18	2.15	2.10	2.05	1.99	1.94	1.91
1.87								
14.88	CFS	1.83	1.78	1.74	1.69	1.64	1.59	1.56
1.53								

15.36 CFS	1.52	1.52	1.52	1.52	1.51	1.48	1.46
1.45							
15.84 CFS	1.45	1.45	1.43	1.41	1.39	1.38	1.38
1.37							
16.32 CFS	1.35	1.34	1.33	1.31	1.29	1.28	1.27
1.27							
16.80 CFS	1.26	1.24	1.23	1.22	1.22	1.21	1.18
1.15							
17.28 CFS	1.14	1.15	1.14	1.12	1.10	1.08	1.07
1.06							
17.76 CFS	1.05	1.04	1.02	1.01	1.01	1.00	.98
.96							
18.24 CFS	.95	.95	.94	.93	.92	.93	.94
.94							
18.72 CFS	.93	.92	.93	.93	.91	.90	.90
.90							
19.20 CFS	.90	.90	.90	.90	.90	.90	.90
.88							
19.68 CFS	.87	.88	.88	.86	.85	.86	.87
.88							
20.16 CFS	.86	.85	.85	.85	.83	.82	.82
.84							
20.64 CFS	.84	.83	.82	.82	.83	.82	.80
.80							
21.12 CFS	.80	.79	.79	.79	.79	.80	.80
.79							
21.60 CFS	.78	.77	.77	.77	.76	.77	.77
.77							
22.08 CFS	.75	.75	.74	.74	.74	.74	.74
.74							
22.56 CFS	.74	.72	.71	.72	.72	.70	.69
.70							
23.04 CFS	.71	.71	.70	.69	.69	.69	.68
.68							
23.52 CFS	.66	.65	.66	.67	.68	.66	.64
.64							
24.00 CFS	.68	.66	.46				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.86 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.81	463.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.33 WATERSHED INCHES; 1139 CFS-HRS; 94.1 ACRE-FEET.

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist;H1&H8UG;GHC2.04TEST

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\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,



CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 80.  
\*\*\*

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.81	463.7	213.38

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.33 WATERSHED INCHES; 1139 CFS-HRS; 94.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	13.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.71 WATERSHED INCHES; 14 CFS-HRS; 1.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.81	466.9	177.65

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.31 WATERSHED INCHES; 1153 CFS-HRS; 95.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	32.4	(RUNOFF)
17.34	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.94 WATERSHED INCHES; 31 CFS-HRS; 2.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	32.5	(RUNOFF)
23.12	1.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.89 WATERSHED INCHES; 42 CFS-HRS; 3.4 ACRE-
FEET.

OPERATION DIVERT XSECTION 184
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.27 32.5 (DIVERT)
23.12 1.0 (DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
42 CFS-HRS; 3.4 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 81, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 200.00.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 81

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

\*\*\* WARNING - XSECTION 185
NO HYDROGRAPH IN INPUT LOCATION 1 OR 6 FOR ADDHYD OPERATION.
\*\*\*

OPERATION ADDHYD XSECTION 185

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.27 32.5 (NULL)
23.12 1.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.89 WATERSHED INCHES; 42 CFS-HRS; 3.4 ACRE-
FEET.

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TR20 ----- SCS
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OPERATION RUNOFF XSECTION 186

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	9.7	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.52 WATERSHED INCHES;		16 CFS-HRS;
FEET.		1.3 ACRE-

OPERATION ADDHYD XSECTION 187

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	42.0	(NULL)
24.02	1.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.75 WATERSHED INCHES;		57 CFS-HRS;
FEET.		4.7 ACRE-

OPERATION ADDHYD XSECTION 85

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	68.1	(NULL)
24.00	2.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .17 SQ.MI.

HRS	CFS	.49	.74	1.04	1.40	2.02	2.88	3.85
11.34								
5.10								
11.82	CFS	6.91	9.68	14.06	21.82	35.47	55.61	67.12
65.85								
12.30	CFS	60.68	53.25	45.81	40.10	35.81	31.52	27.61
24.55								
12.78	CFS	22.17	20.33	18.90	17.71	16.60	15.55	14.59
13.76								
13.26	CFS	13.06	12.42	11.83	11.27	10.71	10.17	9.65
9.21								
13.74	CFS	8.85	8.54	8.31	8.12	7.97	7.84	7.71
7.56								
14.22	CFS	7.40	7.25	7.12	7.00	6.89	6.75	6.60
6.44								
14.70	CFS	6.29	6.15	6.03	5.90	5.76	5.62	5.49
5.33								
15.18	CFS	5.18	5.06	4.96	4.90	4.86	4.84	4.82
4.79								
15.66	CFS	4.74	4.67	4.63	4.63	4.60	4.57	4.51
4.45								
16.14	CFS	4.41	4.39	4.36	4.32	4.28	4.24	4.19
4.14								
16.62	CFS	4.10	4.07	4.05	4.01	3.97	3.93	3.91
3.89								

17.10 CFS	3.85	3.79	3.72	3.68	3.66	3.64	3.60
3.53							
17.58 CFS	3.47	3.43	3.40	3.37	3.32	3.28	3.24
3.22							
18.06 CFS	3.19	3.15	3.10	3.07	3.04	3.02	2.97
2.95							
18.54 CFS	2.96	2.97	2.98	2.95	2.94	2.95	2.94
2.92							
19.02 CFS	2.89	2.88	2.87	2.86	2.86	2.86	2.86
2.86							
19.50 CFS	2.86	2.85	2.81	2.80	2.80	2.79	2.76
2.74							
19.98 CFS	2.74	2.77	2.77	2.75	2.74	2.72	2.71
2.67							
20.46 CFS	2.64	2.64	2.65	2.66	2.65	2.62	2.63
2.63							
20.94 CFS	2.60	2.58	2.56	2.55	2.54	2.53	2.53
2.53							
21.42 CFS	2.53	2.53	2.53	2.50	2.47	2.47	2.46
2.44							

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21.90 CFS	2.45	2.46	2.44	2.42	2.40	2.38	2.37
2.37							
22.38 CFS	2.36	2.36	2.36	2.35	2.31	2.29	2.30
2.28							
22.86 CFS	2.25	2.23	2.23	2.26	2.26	2.24	2.22
2.21							
23.34 CFS	2.20	2.19	2.17	2.13	2.11	2.12	2.14
2.14							
23.82 CFS	2.11	2.08	2.07	2.14	2.08	1.66	1.18
.79							
24.30 CFS	.49						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.80 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.79 488.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.26 WATERSHED INCHES; 1241 CFS-HRS; 102.6 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.13 22.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.89 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.79	491.5	(NULL)
23.97	27.7	(NULL)

	HYDROGRAPH POINTS FOR		ALTERNATE = 1,	STORM = 2			
HRS	MAIN	TIME INCREMENT = .060 hr,	DRAINAGE AREA =	1.55			
SQ.MI.							
7.32 CFS	.49	.52	.55	.58	.61	.65	.68
.72							
7.80 CFS	.77	.81	.86	.90	.95	1.01	1.06
1.11							
8.28 CFS	1.17	1.23	1.28	1.34	1.41	1.47	1.54
1.61							
8.76 CFS	1.68	1.76	1.84	1.92	2.00	2.09	2.18
2.27							
9.24 CFS	2.36	2.46	2.55	2.66	2.77	2.89	3.03
3.18							
9.72 CFS	3.36	3.55	3.75	3.99	4.25	4.53	4.83
5.15							
10.20 CFS	5.50	5.86	6.25	6.66	7.11	7.58	8.07
8.61							
10.68 CFS	9.17	9.76	10.39	11.06	11.79	12.59	13.47
14.52							
11.16 CFS	15.73	17.15	18.79	20.69	22.93	25.46	28.37
32.29							
11.64 CFS	37	42	49	58	70	86	113
156							
12.12 CFS	219	269	299	324	349	373	401
429							
12.60 CFS	454	473	486	491	489	481	467
449							
13.08 CFS	429	407	385	362	339	316	295
275							
13.56 CFS	256	238	221	207	193	181	171
161							

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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14.04 CFS	153	145	138	132	126	122	117
113							
14.52 CFS	109	106	103	100	98	95	93
91							
15.00 CFS	88.67	86.69	84.75	82.86	81.06	79.37	77.80
76.33							
15.48 CFS	74.96	73.65	72.38	71.12	69.90	68.80	67.84
66.93							
15.96 CFS	66.06	65.22	64.44	63.73	63.08	62.47	61.86
61.27							
16.44 CFS	60.71	60.14	59.57	59.03	58.53	58.04	57.54

57.02								
16.92	CFS	56.53	56.06	55.60	55.12	54.61	54.06	53.57
53.14								
17.40	CFS	52.69	52.21	51.69	51.17	50.67	50.19	49.72
49.21								
17.88	CFS	48.71	48.22	47.76	47.29	46.79	46.29	45.82
45.37								
18.36	CFS	44.93	44.46	44.03	43.69	43.37	43.05	42.69
42.37								
18.84	CFS	42.11	41.83	41.54	41.27	41.02	40.80	40.60
40.42								
19.32	CFS	40.24	40.08	39.93	39.78	39.61	39.40	39.21
39.08								
19.80	CFS	38.91	38.72	38.54	38.40	38.31	38.18	38.02
37.85								
20.28	CFS	37.68	37.51	37.30	37.08	36.94	36.83	36.71
36.54								
20.76	CFS	36.36	36.24	36.09	35.90	35.71	35.53	35.36
35.20								
21.24	CFS	35.05	34.92	34.78	34.65	34.52	34.38	34.19
33.99								
21.72	CFS	33.86	33.71	33.54	33.42	33.31	33.15	32.96
32.78								
22.20	CFS	32.59	32.42	32.25	32.10	31.95	31.80	31.63
31.41								
22.68	CFS	31.21	31.06	30.88	30.67	30.47	30.32	30.21
30.07								
23.16	CFS	29.89	29.71	29.53	29.36	29.21	29.04	28.82
28.64								
23.64	CFS	28.51	28.41	28.28	28.09	27.88	27.71	27.72
27.49								
24.12	CFS	26.49	25.18	23.90	22.69	21.55	20.48	19.43
18.34								
24.60	CFS	17.17	15.94	14.68	13.43	12.24	11.14	10.15
9.28								
25.08	CFS	8.52	7.88	7.33	6.86	6.47	6.15	5.88
5.65								
25.56	CFS	5.45	5.27	5.12	4.98	4.85	4.74	4.63
4.53								
26.04	CFS	4.43	4.33	4.24	4.16	4.07	3.99	3.91
3.83								
26.52	CFS	3.76	3.68	3.61	3.54			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.26 WATERSHED INCHES; 1261 CFS-HRS; 104.2 ACRE-FEET.

OPERATION DIVERT XSECTION 81  
 OUTPUT #1 HYDROGRAPH

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.79	491.5	177.74
23.97	27.7	175.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1261 CFS-HRS; 104.2 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

1

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OPERATION RESVOR STRUCTURE 71

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 89

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.79	491.5	(NULL)
23.97	27.7	(NULL)

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2						
HRS	MAIN TIME INCREMENT = .060 hr,			DRAINAGE AREA = 1.55			
SQ.MI.							
7.32 CFS	.49	.52	.55	.58	.61	.65	.68
.72							
7.80 CFS	.77	.81	.86	.90	.95	1.01	1.06
1.11							
8.28 CFS	1.17	1.23	1.28	1.34	1.41	1.47	1.54
1.61							
8.76 CFS	1.68	1.76	1.84	1.92	2.00	2.09	2.18
2.27							
9.24 CFS	2.36	2.46	2.55	2.66	2.77	2.89	3.03
3.18							
9.72 CFS	3.36	3.55	3.75	3.99	4.25	4.53	4.83
5.15							
10.20 CFS	5.50	5.86	6.25	6.66	7.11	7.58	8.07
8.61							
10.68 CFS	9.17	9.76	10.39	11.06	11.79	12.59	13.47
14.52							
11.16 CFS	15.73	17.15	18.79	20.69	22.93	25.46	28.37
32.29							
11.64 CFS	37	42	49	58	70	86	113
156							
12.12 CFS	219	269	299	324	349	373	401
429							
12.60 CFS	454	473	486	491	489	481	467
449							
13.08 CFS	429	407	385	362	339	316	295
275							
13.56 CFS	256	238	221	207	193	181	171
161							

14.04	CFS	153	145	138	132	126	122	117
113								
14.52	CFS	109	106	103	100	98	95	93
91								
15.00	CFS	88.67	86.69	84.75	82.86	81.06	79.37	77.80
76.33								
15.48	CFS	74.96	73.65	72.38	71.12	69.90	68.80	67.84
66.93								
15.96	CFS	66.06	65.22	64.44	63.73	63.08	62.47	61.86
61.27								
16.44	CFS	60.71	60.14	59.57	59.03	58.53	58.04	57.54
57.02								
16.92	CFS	56.53	56.06	55.60	55.12	54.61	54.06	53.57
53.14								
17.40	CFS	52.69	52.21	51.69	51.17	50.67	50.19	49.72
49.21								
17.88	CFS	48.71	48.22	47.76	47.29	46.79	46.29	45.82
45.37								
18.36	CFS	44.93	44.46	44.03	43.69	43.37	43.05	42.69
42.37								
18.84	CFS	42.11	41.83	41.54	41.27	41.02	40.80	40.60
40.42								
19.32	CFS	40.24	40.08	39.93	39.78	39.61	39.40	39.21
39.08								
19.80	CFS	38.91	38.72	38.54	38.40	38.31	38.18	38.02
37.85								
20.28	CFS	37.68	37.51	37.30	37.08	36.94	36.83	36.71
36.54								
20.76	CFS	36.36	36.24	36.09	35.90	35.71	35.53	35.36
35.20								
21.24	CFS	35.05	34.92	34.78	34.65	34.52	34.38	34.19
33.99								
21.72	CFS	33.86	33.71	33.54	33.42	33.31	33.15	32.96
32.78								
22.20	CFS	32.59	32.42	32.25	32.10	31.95	31.80	31.63
31.41								
22.68	CFS	31.21	31.06	30.88	30.67	30.47	30.32	30.21
30.07								

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23.16	CFS	29.89	29.71	29.53	29.36	29.21	29.04	28.82
28.64								
23.64	CFS	28.51	28.41	28.28	28.09	27.88	27.71	27.72
27.49								
24.12	CFS	26.49	25.18	23.90	22.69	21.55	20.48	19.43
18.34								
24.60	CFS	17.17	15.94	14.68	13.43	12.24	11.14	10.15
9.28								
25.08	CFS	8.52	7.88	7.33	6.86	6.47	6.15	5.88
5.65								
25.56	CFS	5.45	5.27	5.12	4.98	4.85	4.74	4.63
4.53								
26.04	CFS	4.43	4.33	4.24	4.16	4.07	3.99	3.91
3.83								
26.52	CFS	3.76	3.68	3.61	3.54			



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.26 WATERSHED INCHES; 1261 CFS-HRS; 104.2 ACRE-  
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 89  
STARTING TIME = .00 RAIN DEPTH = 4.10 RAIN DURATION = 1.00  
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
ALTERNATE NO. = 1 STORM NO. = 5 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.30 36.2 (RUNOFF)  
20.13 1.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.20 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.40 34.3 390.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.20 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.28 61.8 (RUNOFF)  
23.98 1.3 (RUNOFF)

1 TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.08 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.32 92.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.13 WATERSHED INCHES; 126 CFS-HRS; 10.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	97.1	382.73

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.13 WATERSHED INCHES; 126 CFS-HRS; 10.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	90.5	368.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.12 WATERSHED INCHES; 125 CFS-HRS; 10.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	75.6	(RUNOFF)
20.13	2.4	(RUNOFF)
23.74	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.91 WATERSHED INCHES; 98 CFS-HRS; 8.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	161.2	(NULL)

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05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.02 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 107  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	161.2	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 224 CFS-HRS; 18.5 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 84, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 358.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 84

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* WARNING - XSECTION 108  
 NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.  
 \*\*\*

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	161.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.02 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-FEET.

OPERATION REACH XSECTION 8

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.45 155.6 357.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.02 WATERSHED INCHES; 224 CFS-HRS; 18.5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 12.30 106.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.10 WATERSHED INCHES; 147 CFS-HRS; 12.1 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 12.90 30.4 375.57

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.74 WATERSHED INCHES; 130 CFS-HRS; 10.7 ACRE-
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 12.13 11.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.53 WATERSHED INCHES; 10 CFS-HRS; .8 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 13.04 29.1 354.29

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.74 WATERSHED INCHES; 130 CFS-HRS; 10.7 ACRE-
FEET.

OPERATION RUNOFF XSECTION 11

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	56.1	(RUNOFF)
15.83	2.5	(RUNOFF)
24.02	1.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.62 WATERSHED INCHES;	57 CFS-HRS;	4.7 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	182.5	(NULL)
24.01	5.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.93 WATERSHED INCHES;	281 CFS-HRS;	23.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	24.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.05 WATERSHED INCHES;	26 CFS-HRS;	2.1 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	191.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.12 WATERSHED INCHES;	409 CFS-HRS;	33.8 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	203.3	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.11 WATERSHED INCHES;	435 CFS-HRS;	35.9 ACRE-
FEET.		

\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
TIME INCREMENT OF .006 HOURS.  
\*\*\*

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OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.68	148.0	339.31
13.55	64.5	335.59
13.67	55.8	335.25
13.79	49.1	334.99
13.90	43.9	334.79
14.01	39.9	334.63

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32 SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	.32
5.28 CFS	.00	.01	.01	.01	.01	.01	.01	.01	.01	.01
5.28 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
5.76 CFS	.01	.01	.02	.02	.02	.02	.02	.02	.02	.02
5.76 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
6.24 CFS	.02	.03	.03	.03	.03	.03	.03	.03	.03	.03
6.24 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
6.72 CFS	.04	.04	.04	.04	.05	.05	.05	.05	.05	.05
6.72 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
7.20 CFS	.06	.06	.06	.07	.07	.07	.07	.07	.08	.08
7.20 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
7.68 CFS	.08	.09	.09	.09	.10	.10	.10	.10	.10	.10
7.68 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
8.16 CFS	.11	.12	.12	.13	.13	.13	.13	.13	.14	.14
8.16 ELEV	333.08	333.08	333.08	333.08	333.08	333.09	333.09	333.09	333.09	333.09
8.64 CFS	.16	.17	.18	.20	.22	.23	.23	.23	.25	.25
8.64 ELEV	333.09	333.09	333.09	333.09	333.09	333.09	333.09	333.09	333.09	333.09
9.12 CFS	.29	.32	.36	.40	.45	.50	.50	.50	.56	.56
9.12 ELEV	333.09	333.09	333.09	333.10	333.10	333.10	333.10	333.10	333.10	333.10
9.60 CFS	.70	.77	.85	.94	1.03	1.13	1.13	1.13	1.23	1.23
9.60 ELEV	333.11	333.11	333.11	333.12	333.12	333.12	333.12	333.12	333.13	333.13

333.13							
10.08 CFS	1.46	1.60	1.76	1.92	2.09	2.26	2.45
2.64							
10.08 ELEV	333.14	333.14	333.15	333.15	333.16	333.17	333.18
333.18							
10.56 CFS	2.85	3.08	3.34	3.64	3.98	4.36	4.78
5.24							
10.56 ELEV	333.19	333.20	333.21	333.22	333.23	333.25	333.27
333.28							
11.04 CFS	5.74	6.30	6.95	7.69	8.52	9.44	10.51
11.75							
11.04 ELEV	333.30	333.33	333.35	333.38	333.41	333.45	333.49
333.54							
11.52 CFS	13.19	15.09	17.77	20.96	24.61	29.28	36.49
47.74							
11.52 ELEV	333.59	333.67	333.77	333.90	334.04	334.22	334.50
334.94							
12.00 CFS	64	87	102	108	118	126	131
136							
12.00 ELEV	335.57	336.48	337.06	337.36	337.79	338.17	338.40
338.66							
12.48 CFS	141	145	147	148	148	147	145
143							
12.48 ELEV	338.92	339.13	339.25	339.30	339.30	339.24	339.15
339.05							
12.96 CFS	141	138	135	132	129	125	117
109							
12.96 ELEV	338.93	338.80	338.64	338.48	338.30	338.12	337.75
337.40							
13.44 CFS	102	55	64	51	56	47	49
43							
13.44 ELEV	337.07	335.23	335.58	335.06	335.24	334.89	334.98
334.74							
13.92 CFS	43.60	39.41	39.58	36.66	36.44	34.33	33.95
32.54							

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13.92 ELEV	334.78	334.61	334.62	334.51	334.50	334.42	334.40
334.35							
14.40 CFS	32.27	31.36	31.09	30.38	30.04	29.45	29.10
28.59							
14.40 ELEV	334.34	334.30	334.29	334.26	334.25	334.23	334.21
334.19							
14.88 CFS	28.23	27.75	27.36	26.90	26.50	26.04	25.63
25.24							
14.88 ELEV	334.18	334.16	334.14	334.13	334.11	334.09	334.08
334.06							
15.36 CFS	24.90	24.59	24.33	24.09	23.87	23.65	23.44
23.25							
15.36 ELEV	334.05	334.04	334.03	334.02	334.01	334.00	333.99
333.98							
15.84 CFS	23.10	22.97	22.82	22.66	22.50	22.35	22.22
22.09							
15.84 ELEV	333.98	333.97	333.97	333.96	333.96	333.95	333.94
333.94							
16.32 CFS	21.95	21.80	21.66	21.52	21.37	21.22	21.09

20.96								
16.32 ELEV	333.93	333.93	333.92	333.92	333.91	333.91	333.90	
333.90								
16.80 CFS	20.82	20.67	20.53	20.40	20.28	20.15	20.00	
19.84								
16.80 ELEV	333.89	333.88	333.88	333.87	333.87	333.86	333.86	
333.85								
17.28 CFS	19.68	19.55	19.43	19.29	19.12	18.96	18.80	
18.66								
17.28 ELEV	333.85	333.84	333.84	333.83	333.82	333.82	333.81	
333.81								
17.76 CFS	18.52	18.37	18.21	18.06	17.93	17.80	17.66	
17.51								
17.76 ELEV	333.80	333.79	333.79	333.78	333.78	333.77	333.77	
333.76								
18.24 CFS	17.37	17.25	17.13	16.99	16.86	16.77	16.70	
16.63								
18.24 ELEV	333.76	333.75	333.75	333.74	333.74	333.73	333.73	
333.73								
18.72 CFS	16.54	16.46	16.41	16.35	16.28	16.20	16.13	
16.06								
18.72 ELEV	333.72	333.72	333.72	333.72	333.71	333.71	333.71	
333.70								
19.20 CFS	16.00	15.94	15.88	15.83	15.78	15.73	15.68	
15.61								
19.20 ELEV	333.70	333.70	333.70	333.70	333.69	333.69	333.69	
333.69								
19.68 CFS	15.54	15.49	15.44	15.37	15.29	15.23	15.20	
15.15								
19.68 ELEV	333.68	333.68	333.68	333.68	333.67	333.67	333.67	
333.67								
20.16 CFS	15.07	14.99	14.91	14.83	14.74	14.63	14.54	
14.47								
20.16 ELEV	333.67	333.66	333.66	333.66	333.65	333.65	333.65	
333.64								
20.64 CFS	14.41	14.33	14.23	14.17	14.11	14.02	13.93	
13.84								
20.64 ELEV	333.64	333.64	333.63	333.63	333.63	333.63	333.62	
333.62								
21.12 CFS	13.76	13.68	13.61	13.54	13.49	13.44	13.39	
13.33								
21.12 ELEV	333.62	333.61	333.61	333.61	333.60	333.60	333.60	
333.60								
21.60 CFS	13.26	13.18	13.11	13.05	12.98	12.92	12.88	
12.83								
21.60 ELEV	333.60	333.59	333.59	333.59	333.59	333.58	333.58	
333.58								
22.08 CFS	12.75	12.68	12.61	12.54	12.48	12.42	12.37	
12.32								
22.08 ELEV	333.58	333.57	333.57	333.57	333.57	333.56	333.56	
333.56								
22.56 CFS	12.26	12.18	12.10	12.04	11.99	11.91	11.83	
11.77								
22.56 ELEV	333.56	333.55	333.55	333.55	333.55	333.54	333.54	
333.54								
23.04 CFS	11.74	11.70	11.63	11.57	11.51	11.45	11.39	
11.33								
23.04 ELEV	333.54	333.53	333.53	333.53	333.53	333.53	333.52	
333.52								
23.52 CFS	11.24	11.16	11.10	11.05	10.99	10.90	10.79	
10.70								
23.52 ELEV	333.52	333.51	333.51	333.51	333.51	333.50	333.50	
333.50								
24.00 CFS	10.67	10.61	10.23	9.61	9.00	8.46	7.98	



7.56								
24.00 ELEV	333.50	333.49	333.48	333.45	333.43	333.41	333.39	
333.37								
24.48 CFS	7.22	6.96	6.73	6.54	6.37	6.21	6.06	
5.92								
24.48 ELEV	333.36	333.35	333.34	333.33	333.33	333.32	333.32	
333.31								
24.96 CFS	5.78	5.65	5.53	5.40	5.28	5.17	5.06	
4.94								
24.96 ELEV	333.30	333.30	333.30	333.29	333.29	333.28	333.28	
333.27								
25.44 CFS	4.83	4.71	4.59	4.47	4.35	4.24	4.13	
4.02								
25.44 ELEV	333.27	333.26	333.26	333.25	333.25	333.24	333.24	
333.24								

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25.92 CFS	3.92	3.81	3.71	3.61	3.52	3.43	3.34	
3.25								
25.92 ELEV	333.23	333.23	333.22	333.22	333.22	333.21	333.21	
333.21								
26.40 CFS	3.16	3.08	3.00	2.92	2.84	2.77	2.70	
2.63								
26.40 ELEV	333.20	333.20	333.20	333.19	333.19	333.19	333.18	
333.18								
26.88 CFS	2.56	2.49	2.42	2.36	2.30	2.24	2.18	
2.12								
26.88 ELEV	333.18	333.18	333.17	333.17	333.17	333.17	333.16	
333.16								
27.36 CFS	2.07	2.01	1.96	1.91	1.86	1.81	1.76	
1.71								
27.36 ELEV	333.16	333.16	333.16	333.15	333.15	333.15	333.15	
333.15								
27.84 CFS	1.67							
27.84 ELEV	333.14							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.12 WATERSHED INCHES; 436 CFS-HRS; 36.0 ACRE-  
FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	42	23	19	16	13	11	6	3

DURATION(HRS) 18  
FLOW(CFS) 2 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
\*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.68		148.0		332.55

13.55	64.5	331.88
13.67	55.8	331.78
13.79	49.1	331.69
13.90	43.9	331.63
14.01	39.9	331.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.12 WATERSHED INCHES; 436 CFS-HRS; 36.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	41.3	(RUNOFF)
15.84	1.3	(RUNOFF)
17.34	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	51.3	(RUNOFF)
18.86	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.34 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	51.3	(NULL)
18.86	1.0	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
 SQ.MI.

HRS	0.00	0.01	0.02	0.02	0.03	0.04	0.05
3.18 CFS	.00	.01	.02	.02	.03	.04	.05
.05							
3.66 CFS	.06	.07	.08	.08	.09	.10	.11
.12							
4.14 CFS	.13	.13	.14	.15	.15	.16	.17
.18							
4.62 CFS	.19	.19	.20	.21	.22	.23	.23
.24							

5.10 CFS	.25	.26	.27	.28	.28	.28	.29
.30							
5.58 CFS	.31	.32	.33	.34	.34	.34	.35
.36							
6.06 CFS	.38	.39	.39	.40	.41	.42	.44
.45							
6.54 CFS	.47	.48	.50	.50	.51	.53	.55
.56							
7.02 CFS	.57	.59	.61	.62	.64	.65	.66
.68							
7.50 CFS	.70	.71	.72	.73	.75	.77	.79
.81							
7.98 CFS	.82	.84	.86	.88	.89	.90	.92
.94							
8.46 CFS	.95	.97	.99	1.02	1.04	1.05	1.07
1.08							
8.94 CFS	1.09	1.11	1.15	1.18	1.20	1.24	1.30
1.35							
9.42 CFS	1.40	1.44	1.48	1.53	1.58	1.64	1.70
1.75							
9.90 CFS	1.80	1.84	1.90	1.96	2.02	2.08	2.13
2.18							
10.38 CFS	2.24	2.30	2.36	2.44	2.56	2.70	2.86
3.05							
10.86 CFS	3.25	3.45	3.65	3.85	4.10	4.41	4.75
5.11							
11.34 CFS	5.48	5.87	6.27	6.67	7.44	8.77	10.13
11.42							
11.82 CFS	13.16	15.66	19.33	25.20	34.03	45.64	51.30
45.48							
12.30 CFS	35.39	27.49	21.88	18.02	15.49	13.36	11.31
9.73							
12.78 CFS	8.71	8.00	7.45	6.99	6.54	6.12	5.70
5.35							
13.26 CFS	5.07	4.81	4.57	4.33	4.10	3.87	3.66
3.48							
13.74 CFS	3.34	3.23	3.14	3.07	3.02	2.97	2.91
2.85							
14.22 CFS	2.78	2.72	2.66	2.61	2.56	2.51	2.44
2.37							
14.70 CFS	2.31	2.26	2.21	2.16	2.10	2.05	1.99
1.93							
15.18 CFS	1.87	1.82	1.79	1.77	1.76	1.75	1.75
1.74							
15.66 CFS	1.71	1.68	1.66	1.66	1.66	1.64	1.62
1.59							
16.14 CFS	1.57	1.57	1.56	1.54	1.52	1.50	1.49
1.46							
16.62 CFS	1.45	1.44	1.43	1.42	1.40	1.38	1.37
1.37							
17.10 CFS	1.35	1.33	1.30	1.28	1.28	1.27	1.26
1.23							
17.58 CFS	1.20	1.19	1.18	1.17	1.15	1.13	1.12
1.11							

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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18.06 CFS	1.10	1.09	1.07	1.05	1.05	1.04	1.02
1.01							
18.54 CFS	1.02	1.03	1.03	1.02	1.01	1.01	1.01
1.00							
19.02 CFS	.99	.98	.98	.98	.98	.98	.98
.98							
19.50 CFS	.98	.97	.96	.95	.95	.95	.94
.93							
19.98 CFS	.93	.94	.94	.93	.92	.92	.91
.90							
20.46 CFS	.88	.88	.89	.90	.89	.88	.88
.88							
20.94 CFS	.88	.86	.86	.85	.85	.85	.85
.85							
21.42 CFS	.85	.85	.85	.83	.82	.82	.82
.81							
21.90 CFS	.81	.82	.81	.80	.79	.79	.79
.78							
22.38 CFS	.78	.78	.78	.78	.76	.75	.76
.75							
22.86 CFS	.74	.73	.73	.75	.75	.74	.73
.72							
23.34 CFS	.72	.72	.71	.70	.69	.69	.70
.71							
23.82 CFS	.69	.68	.67	.70	.69	.54	.32
.17							
24.30 CFS	.09	.04	.02	.01	.01	.00	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.34 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	5	2	2	1	1	1	1	1
DURATION(HRS)	17							
FLOW(CFS)	0							

OPERATION RUNOFF XSECTION 119

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.13 11.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.64 WATERSHED INCHES; 10 CFS-HRS; .8 ACRE-FEET.

OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.17 61.7 (NULL)  
 15.82 2.0 (NULL)  
 20.85 1.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.21 WATERSHED INCHES; 65 CFS-HRS; 5.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 20

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	102.5	(NULL)
15.84	3.3	(NULL)
18.85	2.0	(NULL)
24.00	1.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.05 WATERSHED INCHES; 103 CFS-HRS; 8.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	70.7	(RUNOFF)
15.84	2.4	(RUNOFF)
23.06	1.1	(RUNOFF)
23.71	1.0	(RUNOFF)
24.00	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.50 WATERSHED INCHES; 65 CFS-HRS; 5.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	173.1	(NULL)
15.84	5.7	(NULL)
17.34	4.4	(NULL)
20.85	3.1	(NULL)
24.00	2.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.81 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	279.3	(NULL)
13.55	77.3	(NULL)
13.67	67.4	(NULL)
13.78	59.9	(NULL)
13.90	54.3	(NULL)
14.01	50.0	(NULL)
20.03	18.5	(NULL)

23.03 14.3 (NULL)  
24.00 13.2 (NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.26 WATERSHED INCHES; 600 CFS-HRS; 49.6 ACRE-  
FEET.

OPERATION DIVERT XSECTION 122  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.06	168.0 *	(DIVERT)
13.55	77.3	(DIVERT)
13.67	67.4	(DIVERT)
13.78	59.9	(DIVERT)
13.90	54.3	(DIVERT)
14.01	50.0	(DIVERT)
20.03	18.5	(DIVERT)
23.03	14.3	(DIVERT)
24.00	13.2	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
566 CFS-HRS; 46.8 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	111.3	176.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.13 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 83, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE

STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 322.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.

\*\*\*

OPERATION RESVOR STRUCTURE 83

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
AT STRUCTURE 83

\*\*\*

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.90	.0	315.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 123

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.81	168.1	(NULL)
13.55	77.3	(NULL)
13.67	67.4	(NULL)
13.78	59.9	(NULL)
13.90	54.3	(NULL)
14.01	50.0	(NULL)
20.03	18.5	(NULL)
23.03	14.4	(NULL)
24.00	13.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.13 WATERSHED INCHES; 566 CFS-HRS; 46.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
13.01	167.8	315.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.14 WATERSHED INCHES; 567 CFS-HRS; 46.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	62.7	(RUNOFF)
23.99	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.31 WATERSHED INCHES; 75 CFS-HRS; 6.2 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	54.8	363.56
23.79	1.2	356.48

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.31 WATERSHED INCHES; 75 CFS-HRS; 6.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.27	87.7	(RUNOFF)
20.68	2.3	(RUNOFF)
23.97	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.26 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	138.3	(NULL)
20.14	4.0	(NULL)
23.78	3.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.28 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.44	123.7	318.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.28 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------



ELEVATION(FEET)			
12.25	65.5		(RUNOFF)
24.01	1.4		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.01 WATERSHED INCHES; 78 CFS-HRS; 6.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 29

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	203.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.12 WATERSHED INCHES; 644 CFS-HRS; 53.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	324.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.15 WATERSHED INCHES; 829 CFS-HRS; 68.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	324.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.15 WATERSHED INCHES; 829 CFS-HRS; 68.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	108.7	(RUNOFF)
21.97	2.1	(RUNOFF)
24.03	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.72 WATERSHED INCHES; 122 CFS-HRS; 10.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	98.7	312.69
20.73	2.3	310.19
24.09	1.8	310.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.72 WATERSHED INCHES; 122 CFS-HRS; 10.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	18.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.53 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .34 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 377.21.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.63	3.9	379.83

\*\*\* WARNING - STRUCTURE 32, HYDROGRAPH VOLUME TRUNCATED AT 0 CFS  
 RESVOR ( 12. % OF MAX. HYDROGRAPH COORDINATE)  
 MAIN TIME INCREMENT TOO SMALL.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.77 WATERSHED INCHES; 15 CFS-HRS; 1.2 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 34, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------



2.87 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-  
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
\*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.39 35.1 330.41

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.87 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.14 58.9 (RUNOFF)  
19.74 1.0 (RUNOFF)  
20.05 1.0 (RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.00 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.16 74.3 (NULL)  
18.81 3.2 (NULL)  
24.00 2.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.93 WATERSHED INCHES; 121 CFS-HRS; 10.0 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.16 74.3 (NULL)  
18.81 3.2 (NULL)  
24.00 2.3 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5

HRS SQ.MI.	MAIN	TIME	INCREMENT = .060 hr,				DRAINAGE AREA = .06		
3.30	CFS	.00	.01	.01	.01	.01	.01	.01	.01
.01									
3.78	CFS	.01	.01	.01	.01	.02	.02	.02	.02
.02									
4.26	CFS	.03	.03	.03	.03	.04	.04	.05	.05
.06									
4.74	CFS	.07	.08	.09	.10	.10	.11	.12	.12
.13									
5.22	CFS	.14	.15	.16	.17	.18	.19	.20	.20
.21									
5.70	CFS	.22	.23	.24	.25	.26	.28	.29	.29
.30									
6.18	CFS	.31	.32	.33	.35	.36	.38	.39	.39
.41									
6.66	CFS	.42	.43	.45	.47	.49	.50	.51	.51
.54									
7.14	CFS	.56	.58	.59	.61	.63	.65	.67	.67
.68									
7.62	CFS	.70	.72	.75	.77	.79	.81	.84	.84
.86									
8.10	CFS	.88	.90	.91	.94	.97	.99	1.01	1.01
1.03									
8.58	CFS	1.06	1.10	1.12	1.14	1.16	1.18	1.20	1.20
1.24									
9.06	CFS	1.28	1.31	1.35	1.40	1.46	1.52	1.57	1.57
1.62									
9.54	CFS	1.66	1.72	1.79	1.86	1.92	1.98	2.03	2.03
2.09									
10.02	CFS	2.16	2.24	2.31	2.38	2.44	2.51	2.58	2.58
2.66									
10.50	CFS	2.74	2.85	3.00	3.18	3.37	3.58	3.79	3.79
4.02									
10.98	CFS	4.23	4.46	4.78	5.15	5.54	5.95	6.35	6.35
6.81									
11.46	CFS	7.24	7.70	9.00	10.77	12.01	13.45	15.92	15.92
20.31									
11.94	CFS	26.55	37.24	52.37	71.49	73.95	66.36	61.45	61.45
57.21									
12.42	CFS	52.70	48.61	44.82	40.06	35.60	32.46	30.59	30.59
28.81									
12.90	CFS	27.11	25.49	23.92	22.41	21.00	19.74	18.61	18.61
17.54									
13.38	CFS	16.62	15.74	14.89	14.09	13.33	12.66	12.07	12.07
11.53									
13.86	CFS	11.04	10.60	10.20	9.84	9.48	9.18	8.90	8.90
8.63									
14.34	CFS	8.40	8.17	7.95	7.73	7.50	7.28	7.08	7.08
6.91									
14.82	CFS	6.76	6.60	6.44	6.29	6.14	5.99	5.84	5.84
5.71									
15.30	CFS	5.61	5.53	5.46	5.39	5.33	5.25	5.16	5.16
5.07									

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15.78 CFS	5.02	4.99	4.93	4.86	4.79	4.73	4.69
4.65							
16.26 CFS	4.60	4.55	4.51	4.47	4.42	4.38	4.34
4.32							
16.74 CFS	4.29	4.24	4.20	4.16	4.14	4.11	4.07
4.01							
17.22 CFS	3.95	3.93	3.92	3.89	3.84	3.78	3.74
3.71							
17.70 CFS	3.68	3.65	3.60	3.56	3.53	3.51	3.48
3.43							
18.18 CFS	3.39	3.36	3.34	3.31	3.26	3.24	3.24
3.24							
18.66 CFS	3.22	3.18	3.16	3.16	3.14	3.11	3.08
3.07							
19.14 CFS	3.05	3.04	3.03	3.02	3.01	3.00	2.99
2.97							
19.62 CFS	2.93	2.92	2.93	2.90	2.87	2.86	2.86
2.88							
20.10 CFS	2.86	2.83	2.81	2.80	2.79	2.76	2.73
2.74							
20.58 CFS	2.75	2.74	2.71	2.69	2.70	2.69	2.66
2.64							
21.06 CFS	2.63	2.62	2.61	2.61	2.60	2.60	2.59
2.59							
21.54 CFS	2.58	2.55	2.54	2.55	2.55	2.53	2.54
2.54							
22.02 CFS	2.52	2.50	2.49	2.49	2.48	2.48	2.48
2.47							
22.50 CFS	2.47	2.46	2.43	2.42	2.43	2.42	2.39
2.38							
22.98 CFS	2.40	2.41	2.40	2.38	2.37	2.36	2.36
2.35							
23.46 CFS	2.34	2.31	2.30	2.32	2.33	2.32	2.29
2.27							
23.94 CFS	2.27	2.34	2.26	1.92	1.68	1.59	1.54
1.52							
24.42 CFS	1.51	1.50	1.49	1.48	1.47	1.47	1.46
1.45							
24.90 CFS	1.44	1.44	1.43	1.42	1.41	1.41	1.40
1.39							
25.38 CFS	1.38	1.38	1.37	1.36	1.35	1.35	1.34
1.33							
25.86 CFS	1.32	1.32	1.31	1.30	1.30		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 121 CFS-HRS; 10.0 ACRE-  
 FEET.

DURATION (HRS)	2	4	6	8	10	12	14	15
FLOW (CFS)	12	6	4	3	3	2	2	1
TRUNCATED								

OPERATION RUNOFF XSECTION 140

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET) 12.14 3.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .95 WATERSHED INCHES; 3 CFS-HRS; .2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	77.2	(NULL)
19.72	3.0	(NULL)
24.00	2.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 124 CFS-HRS; 10.2 ACRE-  
 FEET.

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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 Dist;H1&H8UG;GHC2.04TEST

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OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	43.4	(RUNOFF)
20.67	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.15 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	359.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.15 WATERSHED INCHES; 883 CFS-HRS; 73.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	454.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.21 WATERSHED INCHES; 1005 CFS-HRS; 83.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	512.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.25 WATERSHED INCHES; 1125 CFS-HRS; 93.0 ACRE-FEET.

OPERATION DIVERT XSECTION 144  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.35 512.8 (DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1125 CFS-HRS; 93.0 ACRE-FEET.

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OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 82, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 318.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 82

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* WARNING - XSECTION 145  
NO HYDROGRAPH IN INPUT LOCATION 1 OR 2 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 145

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.35 512.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.25 WATERSHED INCHES; 1125 CFS-HRS; 93.0 ACRE-FEET.



OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	485.4	290.41

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.25 WATERSHED INCHES; 1124 CFS-HRS; 92.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.49	485.4	(NULL)

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.25 WATERSHED INCHES; 1124 CFS-HRS; 92.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	50.8	(RUNOFF)
20.13	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.19 WATERSHED INCHES; 67 CFS-HRS; 5.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	62.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.12 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	113.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.15 WATERSHED INCHES; 153 CFS-HRS; 12.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	61.6	(RUNOFF)
24.03	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.14 WATERSHED INCHES; 65 CFS-HRS; 5.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	512.2	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.25 WATERSHED INCHES; 1189 CFS-HRS; 98.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.43	608.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.23 WATERSHED INCHES; 1343 CFS-HRS; 111.0 ACRE-  
FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	590.8	285.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.23 WATERSHED INCHES; 1342 CFS-HRS; 110.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.23 WATERSHED INCHES; 205 CFS-HRS; 110.9 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 53

\*\*\* MESSAGE - XSECTION 53, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.23 WATERSHED INCHES; 203 CFS-HRS; 110.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - XSECTION 54, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
 \*\*\*

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.23 WATERSHED INCHES; 74 CFS-HRS; 110.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	38.2	(RUNOFF)
18.87	1.0	(RUNOFF)
19.44	1.0 *	(RUNOFF)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.95 WATERSHED INCHES; 40 CFS-HRS; 3.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	605.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.22 WATERSHED INCHES; 1382 CFS-HRS; 114.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - XSECTION 57, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.22 WATERSHED INCHES; 209 CFS-HRS; 114.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.55 605.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.19 WATERSHED INCHES; 1383 CFS-HRS; 114.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 59

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.22 22.0 (RUNOFF)

		HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5						
		MAIN TIME INCREMENT = .060 hr,					DRAINAGE AREA = .03	
SQ.MI.								
11.22 CFS	1.58	.44	.53	.63	.75	.88	1.03	1.24
11.70 CFS	16.76	1.98	2.45	3.07	3.96	5.32	7.49	11.28
12.18 CFS	8.45	21.35	21.74	19.02	15.70	13.05	11.07	9.63
12.66 CFS	3.98	7.33	6.38	5.69	5.20	4.82	4.51	4.24
13.14 CFS	2.58	3.73	3.51	3.32	3.16	3.01	2.87	2.72
13.62 CFS	1.98	2.45	2.33	2.23	2.16	2.09	2.05	2.01
14.10 CFS	1.70	1.94	1.91	1.87	1.83	1.79	1.76	1.73
14.58 CFS	1.41	1.66	1.62	1.58	1.54	1.51	1.48	1.44
15.06 CFS	1.20	1.37	1.33	1.29	1.26	1.23	1.22	1.21
15.54 CFS	1.14	1.20	1.19	1.18	1.16	1.15	1.15	1.14
16.02 CFS	1.05	1.12	1.11	1.09	1.09	1.08	1.07	1.06
16.50 CFS		1.04	1.02	1.01	1.00	1.00	.99	.98

.97							
16.98 CFS	.96	.96	.95	.94	.92	.90	.90
.90							
17.46 CFS	.89	.87	.85	.84	.83	.83	.82
.81							
17.94 CFS	.80	.79	.78	.77	.76	.75	.75
.74							
18.42 CFS	.73	.72	.72	.73	.73	.73	.72
.72							
18.90 CFS	.72	.72	.71	.70	.70	.70	.70
.70							
19.38 CFS	.70	.70	.70	.70	.69	.68	.68
.68							
19.86 CFS	.68	.67	.67	.67	.68	.67	.67
.66							
20.34 CFS	.66	.65	.64	.64	.64	.65	.65
.64							
20.82 CFS	.64	.64	.64	.63	.62	.62	.62
.62							
21.30 CFS	.62	.61	.61	.62	.61	.61	.60
.60							
21.78 CFS	.60	.59	.59	.59	.59	.59	.58
.58							
22.26 CFS	.57	.57	.57	.57	.57	.57	.56
.55							
22.74 CFS	.55	.55	.55	.54	.54	.54	.55
.54							
23.22 CFS	.54	.53	.53	.53	.53	.52	.51
.51							
23.70 CFS	.51	.52	.51	.50	.50	.51	.51
.43							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 24 CFS-HRS; 2.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	614.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.17 WATERSHED INCHES; 1407 CFS-HRS; 116.3 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	614.8	(NULL)

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.17 WATERSHED INCHES; 1407 CFS-HRS; 116.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.24 12.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.38 WATERSHED INCHES; 15 CFS-HRS; 1.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.54 621.3 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02 SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	1.02	SQ.MI.
5.88	CFS	.49	.51	.54	.56	.59	.62	.65			
.69											
6.36	CFS	.73	.77	.81	.85	.90	.95	1.00			
1.05											
6.84	CFS	1.10	1.16	1.22	1.27	1.33	1.39	1.46			
1.53											
7.32	CFS	1.60	1.67	1.75	1.83	1.91	2.00	2.08			
2.17											
7.80	CFS	2.25	2.34	2.44	2.53	2.64	2.75	2.87			
3.01											
8.28	CFS	3.15	3.30	3.47	3.65	3.84	4.03	4.23			
4.44											
8.76	CFS	4.66	4.89	5.12	5.37	5.62	5.88	6.16			
6.44											
9.24	CFS	6.74	7.06	7.40	7.77	8.18	8.61	9.08			
9.59											
9.72	CFS	10.13	10.71	11.32	11.95	12.62	13.32	14.05			
14.81											
10.20	CFS	15.59	16.41	17.25	18.12	19.02	19.95	20.92			
21.94											
10.68	CFS	23.04	24.25	25.61	27.13	28.85	30.79	32.97			
35.40											
11.16	CFS	38.12	41.17	44.57	48.36	52.56	57.22	62.37			
68.25											
11.64	CFS	75	84	94	106	122	143	171			
212											
12.12	CFS	271	343	417	486	544	588	614			
621											
12.60	CFS	612	591	561	528	494	461	432			
407											
13.08	CFS	385	366	350	335	322	309	296			
284											
13.56	CFS	273	261	249	237	223	207	192			
178											
14.04	CFS	165	154	145	137	130	124	119			
114											
14.52	CFS	110	107	103	100	97	95	93			
90											
15.00	CFS	88.15	86.15	84.22	82.36	80.55	78.80	77.12			

75.54								
15.48	CFS	74.06	72.69	71.43	70.27	69.21	68.24	67.38
66.61								
15.96	CFS	65.88	65.17	64.49	63.84	63.24	62.67	62.11
61.55								
16.44	CFS	61.00	60.46	59.93	59.41	58.89	58.39	57.89
57.39								
16.92	CFS	56.89	56.41	55.95	55.50	55.03	54.54	54.05
53.58								
17.40	CFS	53.11	52.64	52.14	51.62	51.10	50.60	50.11
49.60								
17.88	CFS	49.08	48.56	48.06	47.58	47.10	46.62	46.14
45.68								
18.36	CFS	45.23	44.79	44.34	43.93	43.55	43.22	42.90
42.59								
18.84	CFS	42.32	42.09	41.88	41.67	41.46	41.25	41.06
40.87								
19.32	CFS	40.69	40.51	40.35	40.20	40.06	39.91	39.76
39.62								
19.80	CFS	39.48	39.33	39.16	38.99	38.84	38.71	38.57
38.42								

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20.28	CFS	38.28	38.14	38.00	37.83	37.65	37.48	37.32
37.15								
20.76	CFS	36.96	36.78	36.63	36.48	36.32	36.14	35.96
35.78								
21.24	CFS	35.61	35.43	35.25	35.08	34.92	34.77	34.63
34.47								
21.72	CFS	34.32	34.18	34.04	33.89	33.74	33.60	33.46
33.30								
22.20	CFS	33.15	33.00	32.85	32.70	32.55	32.40	32.26
32.10								
22.68	CFS	31.94	31.79	31.64	31.48	31.31	31.13	30.97
30.83								
23.16	CFS	30.69	30.54	30.39	30.26	30.13	30.00	29.85
29.68								
23.64	CFS	29.51	29.37	29.23	29.08	28.91	28.74	28.62
28.51								
24.12	CFS	28.17	27.49	26.50	25.33	24.02	22.51	20.81
19.02								
24.60	CFS	17.27	15.62	14.16	12.89	11.82	10.94	10.21
9.61								
25.08	CFS	9.12	8.72	8.38	8.10	7.86	7.65	7.47
7.30								
25.56	CFS	7.14	6.99	6.85	6.72	6.59	6.46	6.33
6.20								
26.04	CFS	6.08	5.95					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.16 WATERSHED INCHES; 1423 CFS-HRS; 117.6 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 162  
 OUTPUT #1 HYDROGRAPH





4.44								
8.76	CFS	4.66	4.89	5.12	5.37	5.62	5.88	6.16
6.44								
9.24	CFS	6.74	7.06	7.40	7.77	8.18	8.61	9.08
9.59								
9.72	CFS	10.13	10.71	11.32	11.95	12.62	13.32	14.05
14.81								
10.20	CFS	15.59	16.41	17.25	18.12	19.02	19.95	20.92
21.94								
10.68	CFS	23.04	24.25	25.61	27.13	28.85	30.79	32.97
35.40								
11.16	CFS	38.12	41.17	44.57	48.36	52.56	57.22	62.37
68.25								
11.64	CFS	75	84	94	106	122	143	171
212								
12.12	CFS	271	343	417	486	544	588	614
621								
12.60	CFS	612	591	561	528	494	461	432
407								
13.08	CFS	385	366	350	335	322	309	296
284								
13.56	CFS	273	261	249	237	223	207	192
178								
14.04	CFS	165	154	145	137	130	124	119
114								
14.52	CFS	110	107	103	100	97	95	93
90								
15.00	CFS	88.15	86.15	84.22	82.36	80.55	78.80	77.12
75.54								
15.48	CFS	74.06	72.69	71.43	70.27	69.21	68.24	67.38
66.61								
15.96	CFS	65.88	65.17	64.49	63.84	63.24	62.67	62.11
61.55								
16.44	CFS	61.00	60.46	59.93	59.41	58.89	58.39	57.89
57.39								
16.92	CFS	56.89	56.41	55.95	55.50	55.03	54.54	54.05
53.58								
17.40	CFS	53.11	52.64	52.14	51.62	51.10	50.60	50.11
49.60								
17.88	CFS	49.08	48.56	48.06	47.58	47.10	46.62	46.14
45.68								
18.36	CFS	45.23	44.79	44.34	43.93	43.55	43.22	42.90
42.59								
18.84	CFS	42.32	42.09	41.88	41.67	41.46	41.25	41.06
40.87								
19.32	CFS	40.69	40.51	40.35	40.20	40.06	39.91	39.76
39.62								
19.80	CFS	39.48	39.33	39.16	38.99	38.84	38.71	38.57
38.42								
20.28	CFS	38.28	38.14	38.00	37.83	37.65	37.48	37.32
37.15								
20.76	CFS	36.96	36.78	36.63	36.48	36.32	36.14	35.96
35.78								
21.24	CFS	35.61	35.43	35.25	35.08	34.92	34.77	34.63
34.47								
21.72	CFS	34.32	34.18	34.04	33.89	33.74	33.60	33.46
33.30								
22.20	CFS	33.15	33.00	32.85	32.70	32.55	32.40	32.26
32.10								
22.68	CFS	31.94	31.79	31.64	31.48	31.31	31.13	30.97
30.83								
23.16	CFS	30.69	30.54	30.39	30.26	30.13	30.00	29.85
29.68								
23.64	CFS	29.51	29.37	29.23	29.08	28.91	28.74	28.62

28.51								
24.12	CFS	28.17	27.49	26.50	25.33	24.02	22.51	20.81
19.02								
24.60	CFS	17.27	15.62	14.16	12.89	11.82	10.94	10.21
9.61								
25.08	CFS	9.12	8.72	8.38	8.10	7.86	7.65	7.47
7.30								
25.56	CFS	7.14	6.99	6.85	6.72	6.59	6.46	6.33
6.20								

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

Dist;H1&H8UG;GHC2.04TEST

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PASS 2 JOB NO. 1

PAGE

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26.04	CFS	6.08	5.95
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.16 WATERSHED INCHES; 1423 CFS-HRS; 117.6 ACRE-  
FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	593.7	249.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.15 WATERSHED INCHES; 1422 CFS-HRS; 117.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	12.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.50 WATERSHED INCHES; 18 CFS-HRS; 1.5 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.82	5.6	333.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.50 WATERSHED INCHES; 18 CFS-HRS; 1.5 ACRE-  
FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.94	5.5	300.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.50 WATERSHED INCHES; 18 CFS-HRS; 1.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	38.8	(RUNOFF)
21.97	1.0	(RUNOFF)

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.41 WATERSHED INCHES; 42 CFS-HRS; 3.4 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.54	15.8	292.31
13.93	3.5	287.75
22.00	1.0	287.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.41 WATERSHED INCHES; 42 CFS-HRS; 3.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.71	21.0	(NULL)
13.90	8.0	(NULL)
24.03	1.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.62 WATERSHED INCHES; 59 CFS-HRS; 4.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	78.8	(RUNOFF)
20.09	2.1	(RUNOFF)
20.64	2.0	(RUNOFF)
24.02	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.61 WATERSHED INCHES; 81 CFS-HRS; 6.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 69

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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 72

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	94.7	(NULL)
21.97	3.2	(NULL)
24.03	2.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.61 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	74.2	248.54
20.68	3.5	247.54
24.09	2.7	247.48

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.61 WATERSHED INCHES; 140 CFS-HRS; 11.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	20.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.13 WATERSHED INCHES; 16 CFS-HRS; 1.4 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.59	3.9	265.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.13 WATERSHED INCHES; 16 CFS-HRS; 1.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.71	3.9	247.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.12 WATERSHED INCHES; 16 CFS-HRS; 1.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 73

1  
 TR20 ----- SCS  
 -

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	72.3	(RUNOFF)
17.34	3.1	(RUNOFF)
22.47	2.0	(RUNOFF)
24.01	1.8	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .11 SQ.MI.

HRS								
11.46 CFS	.45	.81	1.39	2.30	3.37	4.71	6.70	
9.67								
11.94 CFS	14.42	23.06	37.77	59.83	72.15	65.02	52.35	
42.97								
12.42 CFS	35.80	30.87	27.76	24.51	21.08	18.56	17.03	
15.94								
12.90 CFS	15.05	14.26	13.48	12.68	11.89	11.24	10.73	
10.25								
13.38 CFS	9.78	9.32	8.85	8.39	7.95	7.60	7.33	
7.13								
13.86 CFS	6.96	6.84	6.74	6.66	6.55	6.42	6.28	
6.14								
14.34 CFS	6.04	5.95	5.85	5.73	5.59	5.44	5.31	
5.20								
14.82 CFS	5.10	5.00	4.87	4.74	4.63	4.49	4.36	
4.25								
15.30 CFS	4.18	4.15	4.14	4.14	4.14	4.11	4.05	
3.98								
15.78 CFS	3.95	3.96	3.96	3.91	3.85	3.79	3.76	
3.75								
16.26 CFS	3.74	3.69	3.65	3.62	3.58	3.52	3.49	
3.48								
16.74 CFS	3.46	3.43	3.38	3.35	3.34	3.32	3.29	
3.23								
17.22 CFS	3.15	3.12	3.12	3.12	3.07	3.00	2.94	

2.91								
17.70	CFS	2.89	2.88	2.83	2.78	2.76	2.74	2.73
2.68								
18.18	CFS	2.63	2.61	2.59	2.58	2.53	2.51	2.53
2.56								
18.66	CFS	2.56	2.53	2.51	2.53	2.53	2.49	2.47
2.46								
19.14	CFS	2.45	2.45	2.45	2.45	2.45	2.45	2.45
2.44								
19.62	CFS	2.40	2.38	2.40	2.39	2.36	2.33	2.34
2.38								
20.10	CFS	2.39	2.36	2.33	2.32	2.31	2.28	2.24
2.25								
20.58	CFS	2.28	2.29	2.27	2.24	2.25	2.26	2.23
2.20								
21.06	CFS	2.18	2.17	2.17	2.17	2.17	2.17	2.17
2.17								
21.54	CFS	2.17	2.13	2.10	2.10	2.11	2.09	2.09
2.11								
22.02	CFS	2.10	2.06	2.04	2.03	2.02	2.02	2.02
2.02								
22.50	CFS	2.02	2.01	1.97	1.94	1.96	1.95	1.92
1.89								
22.98	CFS	1.90	1.94	1.95	1.92	1.89	1.88	1.87
1.87								
23.46	CFS	1.86	1.81	1.79	1.81	1.84	1.84	1.81
1.76								
23.94	CFS	1.75	1.84	1.80	1.31	.71	.34	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.08 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	613.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.05 WATERSHED INCHES; 1498 CFS-HRS; 123.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 75

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	77.9	(NULL)
20.16	4.0	(NULL)
23.80	3.1	(NULL)
24.09	3.0	(NULL)

		HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5						
		MAIN TIME INCREMENT = .060 hr,		DRAINAGE AREA = .15				
HRS	SQ.MI.							
10.20	CFS	.48	.53	.59	.66	.73	.81	.90
.99								
10.68	CFS	1.10	1.22	1.37	1.54	1.74	1.97	2.23
2.53								
11.16	CFS	2.86	3.25	3.70	4.22	4.80	5.45	6.18
6.98								
11.64	CFS	7.97	9.30	10.97	12.98	15.49	18.70	22.97
29.41								
12.12	CFS	38.90	52.87	67.14	75.80	77.89	75.90	71.96
67.42								
12.60	CFS	63.09	59.05	55.17	51.62	48.58	46.05	43.90
42.04								
13.08	CFS	40.39	38.87	37.45	36.12	34.90	33.76	32.69
31.67								
13.56	CFS	30.58	29.34	28.06	26.51	24.87	23.25	21.51
20.27								
14.04	CFS	19.27	18.45	17.73	17.07	16.46	15.89	15.37
14.91								
14.52	CFS	14.49	14.09	13.70	13.31	12.88	12.46	12.06
11.68								
15.00	CFS	11.28	10.83	10.39	9.96	9.57	9.22	8.91
8.66								
15.48	CFS	8.45	8.29	8.15	8.02	7.83	7.63	7.44
7.29								
15.96	CFS	7.17	7.07	6.97	6.87	6.77	6.70	6.63
6.57								
16.44	CFS	6.50	6.44	6.37	6.30	6.23	6.16	6.11
6.06								
16.92	CFS	6.00	5.94	5.89	5.84	5.79	5.73	5.66
5.58								
17.40	CFS	5.52	5.47	5.42	5.36	5.28	5.20	5.14
5.08								
17.88	CFS	5.02	4.96	4.90	4.84	4.79	4.74	4.68
4.62								
18.36	CFS	4.57	4.52	4.47	4.42	4.39	4.38	4.37
4.36								
18.84	CFS	4.33	4.32	4.31	4.30	4.27	4.24	4.22
4.20								
19.32	CFS	4.19	4.18	4.17	4.16	4.16	4.15	4.13
4.11								
19.80	CFS	4.09	4.07	4.05	4.03	4.01	4.01	4.01
4.01								
20.28	CFS	3.99	3.97	3.95	3.93	3.89	3.86	3.85
3.85								
20.76	CFS	3.85	3.83	3.82	3.81	3.80	3.77	3.75
3.72								
21.24	CFS	3.70	3.69	3.68	3.67	3.66	3.66	3.65
3.63								
21.72	CFS	3.61	3.59	3.57	3.56	3.54	3.54	3.53
3.51								
22.20	CFS	3.49	3.47	3.45	3.43	3.42	3.41	3.40
3.39								
22.68	CFS	3.37	3.34	3.32	3.31	3.28	3.26	3.23
3.23								
23.16	CFS	3.24	3.23	3.21	3.19	3.17	3.16	3.14
3.12								
23.64	CFS	3.09	3.06	3.06	3.06	3.05	3.03	3.00
3.00								
24.12	CFS	3.01	2.86	2.50	2.05	1.62	1.26	.97
.74								
24.60	CFS	.57	.43					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.66 WATERSHED INCHES; 157 CFS-HRS; 12.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.66 672.3 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28  
 SQ.MI.  
 6.00 CFS .48 .50 .53 .55 .58 .61 .64  
 .67

1  
 TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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6.48 CFS	.71	.75	.79	.83	.88	.93	.98
1.03							
6.96 CFS	1.08	1.13	1.19	1.25	1.30	1.37	1.43
1.50							
7.44 CFS	1.57	1.64	1.72	1.80	1.89	1.97	2.06
2.15							
7.92 CFS	2.24	2.33	2.43	2.53	2.64	2.75	2.88
3.01							
8.40 CFS	3.15	3.31	3.48	3.66	3.85	4.05	4.25
4.47							
8.88 CFS	4.69	4.92	5.16	5.41	5.67	5.94	6.22
6.51							
9.36 CFS	6.82	7.14	7.50	7.87	8.28	8.72	9.20
9.70							
9.84 CFS	10.25	10.83	11.44	12.08	12.76	13.47	14.23
15.02							
10.32 CFS	15.85	16.72	17.62	18.55	19.53	20.54	21.61
22.75							
10.80 CFS	23.99	25.36	26.89	28.61	30.54	32.71	35.15
37.88							
11.28 CFS	40.97	44.48	48.48	53.04	58.17	64.06	71.01
79.25							
11.76 CFS	89	101	117	137	165	207	268
335							
12.24 CFS	396	454	511	564	609	645	666
672							
12.72 CFS	665	648	623	594	562	531	501
473							
13.20 CFS	448	426	407	389	373	358	343
329							
13.68 CFS	315	301	287	272	256	240	225
210							
14.16 CFS	197	185	174	165	156	149	143
137							
14.64 CFS	132	128	124	120	116	113	110
107							
15.12 CFS	104	102	99	97	95	93	91



89								
15.60	CFS	87.20	85.60	84.03	82.58	81.29	80.12	79.05
78.04								
16.08	CFS	77.10	76.22	75.41	74.66	73.92	73.21	72.53
71.85								
16.56	CFS	71.18	70.53	69.90	69.30	68.70	68.09	67.49
66.91								
17.04	CFS	66.35	65.79	65.21	64.61	64.02	63.47	62.92
62.36								
17.52	CFS	61.76	61.15	60.55	59.95	59.36	58.76	58.15
57.55								
18.00	CFS	56.96	56.39	55.79	55.21	54.63	54.08	53.53
52.98								
18.48	CFS	52.45	51.97	51.52	51.10	50.68	50.29	49.95
49.63								
18.96	CFS	49.31	49.02	48.74	48.48	48.24	48.02	47.81
47.60								
19.44	CFS	47.41	47.23	47.05	46.84	46.65	46.49	46.32
46.13								
19.92	CFS	45.94	45.76	45.62	45.46	45.29	45.12	44.95
44.77								
20.40	CFS	44.58	44.37	44.19	44.03	43.87	43.69	43.49
43.30								
20.88	CFS	43.12	42.92	42.71	42.51	42.31	42.11	41.91
41.72								
21.36	CFS	41.53	41.35	41.17	40.99	40.79	40.59	40.41
40.24								
21.84	CFS	40.06	39.90	39.76	39.59	39.41	39.22	39.04
38.86								
22.32	CFS	38.69	38.52	38.36	38.20	38.03	37.83	37.64
37.47								
22.80	CFS	37.29	37.09	36.89	36.70	36.55	36.39	36.21
36.03								
23.28	CFS	35.85	35.68	35.51	35.35	35.16	34.96	34.80
34.65								
23.76	CFS	34.49	34.31	34.11	33.92	33.82	33.64	33.02
32.05								
24.24	CFS	30.93	29.67	28.30	26.85	25.31	23.66	21.91
20.14								
24.72	CFS	18.39	16.74	15.23	13.88	12.72	11.72	10.88
10.18								
25.20	CFS	9.60	9.11	8.71	8.37	8.08	7.83	7.61
7.42								
25.68	CFS	7.25	7.09	6.94	6.80	6.66	6.53	6.40
6.27								

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.00 WATERSHED INCHES; 1655 CFS-HRS; 136.8 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 176  
 OUTPUT #1 HYDROGRAPH

1  
 TR20 ----- SCS  
 -  
 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
 18:28:10 PASS 2 JOB NO. 1 PAGE  
 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.66	672.3	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1655 CFS-HRS; 136.8 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 72

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 177

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.66	672.3	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5								
HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA = 1.28
SQ.MI.								
6.00 CFS	.48	.50	.53	.55	.58	.61	.64	
.67								
6.48 CFS	.71	.75	.79	.83	.88	.93	.98	
1.03								
6.96 CFS	1.08	1.13	1.19	1.25	1.30	1.37	1.43	
1.50								
7.44 CFS	1.57	1.64	1.72	1.80	1.89	1.97	2.06	
2.15								
7.92 CFS	2.24	2.33	2.43	2.53	2.64	2.75	2.88	
3.01								
8.40 CFS	3.15	3.31	3.48	3.66	3.85	4.05	4.25	
4.47								
8.88 CFS	4.69	4.92	5.16	5.41	5.67	5.94	6.22	
6.51								
9.36 CFS	6.82	7.14	7.50	7.87	8.28	8.72	9.20	
9.70								
9.84 CFS	10.25	10.83	11.44	12.08	12.76	13.47	14.23	
15.02								
10.32 CFS	15.85	16.72	17.62	18.55	19.53	20.54	21.61	
22.75								
10.80 CFS	23.99	25.36	26.89	28.61	30.54	32.71	35.15	
37.88								
11.28 CFS	40.97	44.48	48.48	53.04	58.17	64.06	71.01	
79.25								
11.76 CFS	89	101	117	137	165	207	268	
335								
12.24 CFS	396	454	511	564	609	645	666	

672								
12.72	CFS	665	648	623	594	562	531	501
473								
13.20	CFS	448	426	407	389	373	358	343
329								
13.68	CFS	315	301	287	272	256	240	225
210								
14.16	CFS	197	185	174	165	156	149	143
137								
14.64	CFS	132	128	124	120	116	113	110
107								
15.12	CFS	104	102	99	97	95	93	91
89								

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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15.60	CFS	87.20	85.60	84.03	82.58	81.29	80.12	79.05
78.04								
16.08	CFS	77.10	76.22	75.41	74.66	73.92	73.21	72.53
71.85								
16.56	CFS	71.18	70.53	69.90	69.30	68.70	68.09	67.49
66.91								
17.04	CFS	66.35	65.79	65.21	64.61	64.02	63.47	62.92
62.36								
17.52	CFS	61.76	61.15	60.55	59.95	59.36	58.76	58.15
57.55								
18.00	CFS	56.96	56.39	55.79	55.21	54.63	54.08	53.53
52.98								
18.48	CFS	52.45	51.97	51.52	51.10	50.68	50.29	49.95
49.63								
18.96	CFS	49.31	49.02	48.74	48.48	48.24	48.02	47.81
47.60								
19.44	CFS	47.41	47.23	47.05	46.84	46.65	46.49	46.32
46.13								
19.92	CFS	45.94	45.76	45.62	45.46	45.29	45.12	44.95
44.77								
20.40	CFS	44.58	44.37	44.19	44.03	43.87	43.69	43.49
43.30								
20.88	CFS	43.12	42.92	42.71	42.51	42.31	42.11	41.91
41.72								
21.36	CFS	41.53	41.35	41.17	40.99	40.79	40.59	40.41
40.24								
21.84	CFS	40.06	39.90	39.76	39.59	39.41	39.22	39.04
38.86								
22.32	CFS	38.69	38.52	38.36	38.20	38.03	37.83	37.64
37.47								
22.80	CFS	37.29	37.09	36.89	36.70	36.55	36.39	36.21
36.03								
23.28	CFS	35.85	35.68	35.51	35.35	35.16	34.96	34.80
34.65								
23.76	CFS	34.49	34.31	34.11	33.92	33.82	33.64	33.02
32.05								
24.24	CFS	30.93	29.67	28.30	26.85	25.31	23.66	21.91
20.14								
24.72	CFS	18.39	16.74	15.23	13.88	12.72	11.72	10.88
10.18								
25.20	CFS	9.60	9.11	8.71	8.37	8.08	7.83	7.61

7.42								
25.68 CFS	7.25	7.09	6.94	6.80	6.66	6.53	6.40	
6.27								

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.00 WATERSHED INCHES; 1655 CFS-HRS; 136.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.73		671.5		229.74

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.00 WATERSHED INCHES; 1655 CFS-HRS; 136.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.18		48.4		(RUNOFF)
15.85		2.2		(RUNOFF)
23.07		1.1		(RUNOFF)
23.73		1.0		(RUNOFF)
24.02		1.0		(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05  
 SQ.MI.

HRS								
10.98 CFS	.48	.59	.72	.87	1.05	1.26	1.48	
1.74								
11.46 CFS	2.01	2.32	2.87	3.73	4.63	5.62	7.12	
9.35								
11.94 CFS	12.68	18.63	28.32	42.26	48.42	41.74	32.58	
26.16								
12.42 CFS	21.43	18.33	16.41	14.35	12.20	10.74	9.87	
9.24								

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12.90 CFS	8.71	8.24	7.77	7.29	6.83	6.44	6.14
5.86							
13.38 CFS	5.59	5.32	5.04	4.77	4.52	4.31	4.17
4.05							
13.86 CFS	3.95	3.88	3.83	3.78	3.71	3.63	3.55
3.47							
14.34 CFS	3.41	3.36	3.30	3.23	3.15	3.06	2.98
2.92							
14.82 CFS	2.87	2.81	2.73	2.66	2.59	2.52	2.44
2.38							
15.30 CFS	2.34	2.33	2.32	2.32	2.32	2.30	2.26
2.22							
15.78 CFS	2.21	2.21	2.21	2.18	2.14	2.11	2.10

2.09								
16.26	CFS	2.08	2.06	2.03	2.01	1.99	1.96	1.94
1.93								
16.74	CFS	1.93	1.90	1.88	1.86	1.85	1.85	1.82
1.79								
17.22	CFS	1.75	1.73	1.73	1.73	1.70	1.66	1.63
1.61								
17.70	CFS	1.60	1.59	1.56	1.54	1.52	1.52	1.51
1.48								
18.18	CFS	1.45	1.44	1.43	1.42	1.40	1.38	1.40
1.41								
18.66	CFS	1.41	1.39	1.38	1.40	1.39	1.37	1.36
1.35								
19.14	CFS	1.35	1.35	1.35	1.35	1.35	1.35	1.35
1.34								
19.62	CFS	1.32	1.31	1.32	1.31	1.29	1.28	1.29
1.31								
20.10	CFS	1.31	1.29	1.28	1.28	1.27	1.25	1.23
1.23								
20.58	CFS	1.25	1.26	1.24	1.23	1.23	1.24	1.22
1.20								
21.06	CFS	1.19	1.19	1.19	1.19	1.19	1.19	1.19
1.19								
21.54	CFS	1.19	1.17	1.14	1.15	1.15	1.14	1.14
1.16								
22.02	CFS	1.14	1.12	1.11	1.11	1.11	1.10	1.10
1.10								
22.50	CFS	1.10	1.10	1.07	1.06	1.07	1.07	1.04
1.03								
22.98	CFS	1.04	1.06	1.06	1.04	1.03	1.02	1.02
1.02								
23.46	CFS	1.01	.98	.97	.99	1.00	1.00	.98
.96								
23.94	CFS	.95	1.01	.99	.69	.36		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.45 WATERSHED INCHES; 48 CFS-HRS; 3.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.72 682.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 1702 CFS-HRS; 140.7 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 80.  
 \*\*\*

OPERATION REACH XSECTION 80

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.72 682.2 214.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.98 WATERSHED INCHES; 1702 CFS-HRS; 140.7 ACRE-FEET.

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OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	25.2	(RUNOFF)
15.85	1.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.24 WATERSHED INCHES;		2.1 ACRE-
FEET.		25 CFS-HRS;

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.72	687.9	178.31
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.97 WATERSHED INCHES;		142.7 ACRE-
FEET.		1727 CFS-HRS;

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.16	55.6	(RUNOFF)
15.84	2.3	(RUNOFF)
23.71	1.1	(RUNOFF)
24.00	1.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.55 WATERSHED INCHES;		4.2 ACRE-
FEET.		51 CFS-HRS;

OPERATION RUNOFF XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	57.2	(RUNOFF)
18.67	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.49 WATERSHED INCHES;		5.8 ACRE-
FEET.		70 CFS-HRS;

OPERATION DIVERT XSECTION 184  
OUTPUT #1 HYDROGRAPH

1

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Dist;H1&H8UG;GHC2.04TEST

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PASS 2 JOB NO. 1

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	57.2	(DIVERT)
18.67	2.0	(DIVERT)
24.02	1.4	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
70 CFS-HRS; 5.8 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 81, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 200.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 81

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* WARNING - XSECTION 185  
NO HYDROGRAPH IN INPUT LOCATION 1 OR 6 FOR ADDHYD OPERATION.  
\*\*\*

OPERATION ADDHYD XSECTION 185

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	57.2	(NULL)
18.67	2.0	(NULL)
24.02	1.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.49 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 186

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.28	21.8	(RUNOFF)
18.68	1.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .98 WATERSHED INCHES; 29 CFS-HRS; 2.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 187

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.26	79.0	(NULL)
18.68	3.0	(NULL)
24.02	2.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.29 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 85

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.20	124.9	(NULL)
20.07	4.2	(NULL)
20.63	4.0	(NULL)
24.00	3.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .17 SQ.MI.

HRS	10.62	11.10	11.58	12.06	12.54	13.02	13.50	13.98	14.46
CFS	1.76	6.00	47.03	68.49	28.53	17.83	12.74	10.92	
CFS	11.10	11.58	12.06	12.54	13.02	13.50	13.98	14.46	
CFS	1.76	6.00	47.03	68.49	28.53	17.83	12.74	10.92	
CFS	1.76	6.00	47.03	68.49	28.53	17.83	12.74	10.92	
CFS	1.76	6.00	47.03	68.49	28.53	17.83	12.74	10.92	



9.16								
14.94	CFS	8.94	8.72	8.50	8.26	8.03	7.82	7.67
7.57								
15.42	CFS	7.51	7.47	7.45	7.39	7.31	7.21	7.14
7.13								
15.90	CFS	7.09	7.03	6.94	6.86	6.79	6.75	6.71
6.64								
16.38	CFS	6.57	6.51	6.43	6.35	6.29	6.25	6.21
6.15								
16.86	CFS	6.08	6.02	5.98	5.95	5.89	5.80	5.69
5.62								
17.34	CFS	5.60	5.56	5.50	5.40	5.31	5.24	5.19
5.15								
17.82	CFS	5.07	5.00	4.95	4.91	4.87	4.80	4.73
4.68								
18.30	CFS	4.64	4.60	4.53	4.49	4.50	4.52	4.53
4.49								
18.78	CFS	4.48	4.49	4.47	4.43	4.40	4.37	4.35
4.35								
19.26	CFS	4.34	4.34	4.34	4.34	4.34	4.32	4.27
4.24								
19.74	CFS	4.25	4.22	4.18	4.15	4.16	4.19	4.19
4.17								
20.22	CFS	4.14	4.12	4.10	4.04	3.99	3.99	4.01
4.03								
20.70	CFS	4.00	3.97	3.98	3.97	3.94	3.90	3.87
3.85								
21.18	CFS	3.84	3.83	3.82	3.82	3.82	3.82	3.81
3.77								
21.66	CFS	3.72	3.72	3.71	3.68	3.69	3.71	3.68
3.64								
22.14	CFS	3.61	3.59	3.57	3.56	3.56	3.56	3.56
3.54								

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22.62	CFS	3.48	3.45	3.46	3.43	3.39	3.36	3.36
3.39								
23.10	CFS	3.40	3.37	3.34	3.32	3.30	3.29	3.27
3.21								
23.58	CFS	3.17	3.19	3.21	3.21	3.17	3.12	3.10
3.20								
24.06	CFS	3.12	2.51	1.78	1.19	.75	.46	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.37 WATERSHED INCHES; 150 CFS-HRS; 12.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET) 729.6 (NULL)  
12.69

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.90 WATERSHED INCHES; 1877 CFS-HRS; 155.2 ACRE-

FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.13 31.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.71 WATERSHED INCHES; 28 CFS-HRS; 2.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.69 734.7 (NULL)  
 23.98 39.2 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55  
 SQ.MI.

HRS	6.06	6.54	7.02	7.50	7.98	8.46	8.94	9.42	9.90	10.38	10.86	11.34	11.82	12.30	12.78	13.26
CFS	.49	.75	1.16	1.70	2.42	3.39	4.99	7.24	10.83	16.72	26.58	49	124	561	722	484
	.52	.80	1.22	1.78	2.52	3.56	5.23	7.59	11.43	17.67	28.34	54	147	592	701	460
	.55	.84	1.28	1.86	2.63	3.73	5.49	7.95	12.07	18.67	30.29	59	178	626	674	439
	.57	.89	1.35	1.95	2.74	3.93	5.75	8.36	12.74	19.75	32.48	65	226	663	642	419
	.61	.94	1.41	2.04	2.85	4.12	6.02	8.79	13.44	20.92	35.03	73	300	697	607	402
	.64	.99	1.48	2.14	2.97	4.33	6.31	9.25	14.19	22.18	37.93	83	404	722	573	385
	.68	1.05	1.55	2.23	3.11	4.54	6.61	9.74	14.98	23.53	41.21	94	487	733	541	369
	.71	1.10	1.62	2.33	3.25	4.76	6.92	10.27	15.82	24.99	44.88	107	530	733	511	353

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13.74 CFS	338	324	309	294	278	262	246
231							
14.22 CFS	217	204	193	183	175	167	160
154							
14.70 CFS	149	144	139	135	131	127	124
121							
15.18 CFS	117	114	112	109	107	105	103
101							
15.66 CFS	99.19	97.40	95.74	94.28	92.92	91.62	90.37
89.21							
16.14 CFS	88.17	87.23	86.35	85.46	84.61	83.81	82.99
82.17							
16.62 CFS	81.40	80.69	80.01	79.30	78.57	77.87	77.22
76.60							
17.10 CFS	75.93	75.20	74.42	73.73	73.14	72.53	71.85
71.10							
17.58 CFS	70.36	69.65	68.99	68.32	67.60	66.87	66.19
65.54							
18.06 CFS	64.88	64.18	63.47	62.80	62.18	61.55	60.88
60.28							
18.54 CFS	59.79	59.36	58.91	58.40	57.96	57.60	57.22
56.82							
19.02 CFS	56.44	56.11	55.81	55.54	55.29	55.06	54.85
54.64							
19.50 CFS	54.45	54.23	53.94	53.70	53.54	53.33	53.08
52.84							
19.98 CFS	52.68	52.58	52.43	52.21	51.99	51.79	51.58
51.30							
20.46 CFS	51.01	50.84	50.71	50.58	50.35	50.10	49.94
49.75							
20.94 CFS	49.49	49.22	48.97	48.74	48.52	48.31	48.11
47.92							
21.42 CFS	47.73	47.55	47.35	47.08	46.80	46.62	46.43
46.20							
21.90 CFS	46.04	45.92	45.72	45.48	45.24	45.03	44.82
44.63							
22.38 CFS	44.46	44.29	44.12	43.92	43.64	43.40	43.24
43.02							
22.86 CFS	42.76	42.50	42.33	42.23	42.06	41.84	41.61
41.39							
23.34 CFS	41.19	41.00	40.79	40.51	40.27	40.13	40.02
39.86							
23.82 CFS	39.62	39.34	39.12	39.16	38.88	37.41	35.47
33.61							
24.30 CFS	31.92	30.31	28.74	27.19	25.58	23.90	22.14
20.35							
24.78 CFS	18.59	16.92	15.39	14.03	12.84	11.83	10.98
10.26							
25.26 CFS	9.66	9.16	8.75	8.40	8.11	7.86	7.64
7.44							
25.74 CFS	7.27	7.11	6.95	6.81	6.67	6.54	6.41

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.91 WATERSHED INCHES; 1905 CFS-HRS; 157.4 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 81  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)

12.69	731.0	178.42
23.98	39.2	175.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1905 CFS-HRS; 157.4 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	3.6	175.04

\*\*\* WARNING - XSECTION 82, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK  
 ( 3.63) EXCEEDS ADJACENT COORDINATE ( 3.31) BY 9 %.  
 \*\*\*

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 71

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	3.6	(NULL)

\*\*\* WARNING - STRUCTURE 71, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK  
 ( 3.63) EXCEEDS ADJACENT COORDINATE ( 3.31) BY 9 %.  
 \*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 89

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	734.7	(NULL)
23.98	39.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 5  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55  
 SQ.MI.

6.06 CFS	.49	.52	.55	.57	.61	.64	.68
.71							
6.54 CFS	.75	.80	.84	.89	.94	.99	1.05
1.10							
7.02 CFS	1.16	1.22	1.28	1.35	1.41	1.48	1.55
1.62							
7.50 CFS	1.70	1.78	1.86	1.95	2.04	2.14	2.23

2.33								
7.98	CFS	2.42	2.52	2.63	2.74	2.85	2.97	3.11
3.25								
8.46	CFS	3.39	3.56	3.73	3.93	4.12	4.33	4.54
4.76								
8.94	CFS	4.99	5.23	5.49	5.75	6.02	6.31	6.61
6.92								
9.42	CFS	7.24	7.59	7.95	8.36	8.79	9.25	9.74
10.27								
9.90	CFS	10.83	11.43	12.07	12.74	13.44	14.19	14.98
15.82								
10.38	CFS	16.72	17.67	18.67	19.75	20.92	22.18	23.53
24.99								
10.86	CFS	26.58	28.34	30.29	32.48	35.03	37.93	41.21
44.88								
11.34	CFS	49	54	59	65	73	83	94
107								
11.82	CFS	124	147	178	226	300	404	487
530								
12.30	CFS	561	592	626	663	697	722	733
733								
12.78	CFS	722	701	674	642	607	573	541
511								
13.26	CFS	484	460	439	419	402	385	369
353								
13.74	CFS	338	324	309	294	278	262	246
231								
14.22	CFS	217	204	193	183	175	167	160
154								
14.70	CFS	149	144	139	135	131	127	124
121								
15.18	CFS	117	114	112	109	107	105	103
101								
15.66	CFS	99.19	97.40	95.74	94.28	92.92	91.62	90.37
89.21								
16.14	CFS	88.17	87.23	86.35	85.46	84.61	83.81	82.99
82.17								
16.62	CFS	81.40	80.69	80.01	79.30	78.57	77.87	77.22
76.60								
17.10	CFS	75.93	75.20	74.42	73.73	73.14	72.53	71.85
71.10								
17.58	CFS	70.36	69.65	68.99	68.32	67.60	66.87	66.19
65.54								
18.06	CFS	64.88	64.18	63.47	62.80	62.18	61.55	60.88
60.28								

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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18.54	CFS	59.79	59.36	58.91	58.40	57.96	57.60	57.22
56.82								
19.02	CFS	56.44	56.11	55.81	55.54	55.29	55.06	54.85
54.64								
19.50	CFS	54.45	54.23	53.94	53.70	53.54	53.33	53.08
52.84								
19.98	CFS	52.68	52.58	52.43	52.21	51.99	51.79	51.58
51.30								
20.46	CFS	51.01	50.84	50.71	50.58	50.35	50.10	49.94

49.75								
20.94	CFS	49.49	49.22	48.97	48.74	48.52	48.31	48.11
47.92								
21.42	CFS	47.73	47.55	47.35	47.08	46.80	46.62	46.43
46.20								
21.90	CFS	46.04	45.92	45.72	45.48	45.24	45.03	44.82
44.63								
22.38	CFS	44.46	44.29	44.12	43.92	43.64	43.40	43.24
43.02								
22.86	CFS	42.76	42.50	42.33	42.23	42.06	41.84	41.61
41.39								
23.34	CFS	41.19	41.00	40.79	40.51	40.27	40.13	40.02
39.86								
23.82	CFS	39.62	39.34	39.12	39.16	38.88	37.41	35.47
33.61								
24.30	CFS	31.92	30.31	28.74	27.19	25.58	23.90	22.14
20.35								
24.78	CFS	18.59	16.92	15.39	14.03	12.84	11.83	10.98
10.26								
25.26	CFS	9.66	9.16	8.75	8.40	8.11	7.86	7.64
7.44								
25.74	CFS	7.27	7.11	6.95	6.81	6.67	6.54	6.41

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.91 WATERSHED INCHES; 1905 CFS-HRS; 157.4 ACRE-FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 89  
 STARTING TIME = .00 RAIN DEPTH = 4.91 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =10 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	48.0	(RUNOFF)
23.10	1.1 *	(RUNOFF)
* FIRST POINT OF FLAT PEAK		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.90 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.41	45.0	390.24

1 TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist;H1&H8UG;GHC2.04TEST

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.90 WATERSHED INCHES; 63 CFS-HRS; 5.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	82.2	(RUNOFF)
20.68	2.2	(RUNOFF)
23.98	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.77 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	122.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.82 WATERSHED INCHES; 166 CFS-HRS; 13.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	121.3	383.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 166 CFS-HRS; 13.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	120.5	368.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 166 CFS-HRS; 13.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	101.9	(RUNOFF)
23.73	2.3	(RUNOFF)

1 TR20 ----- SCS  
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05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
Dist;H1&H8UG;GHC2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.57 WATERSHED INCHES; 132 CFS-HRS; 10.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.36 213.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.70 WATERSHED INCHES; 298 CFS-HRS; 24.7 ACRE-  
FEET.

OPERATION DIVERT XSECTION 107  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.36 213.0 (DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
298 CFS-HRS; 24.7 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - XSECTION 82, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.70 WATERSHED INCHES; 399 CFS-HRS; 24.7 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 84, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 358.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 84

\*\*\* MESSAGE - STRUCTURE 84, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.70 WATERSHED INCHES; 398 CFS-HRS; 24.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 108

1  
TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,



VERSION  
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 Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.36 213.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.70 WATERSHED INCHES; 298 CFS-HRS; 24.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.43 211.8 357.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.70 WATERSHED INCHES; 299 CFS-HRS; 24.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.30 132.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.88 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.68 60.8 376.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.49 WATERSHED INCHES; 165 CFS-HRS; 13.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.13 16.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.13 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 22

1  
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 VERSION  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.81	56.5	355.97

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.49 WATERSHED INCHES; 165 CFS-HRS; 13.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	77.9	(RUNOFF)
15.82	3.3	(RUNOFF)
18.86	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.23 WATERSHED INCHES; 78 CFS-HRS; 6.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	249.0	(NULL)
24.00	6.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.59 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	32.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.44 261.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.80 WATERSHED INCHES; 540 CFS-HRS; 44.7 ACRE-
FEET.

OPERATION ADDHYD XSECTION 15

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,
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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.41 278.4 (NULL)
23.98 12.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.79 WATERSHED INCHES; 574 CFS-HRS; 47.5 ACRE-
FEET.

\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE
TIME INCREMENT OF .006 HOURS.
\*\*\*

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.83 181.9 341.39
14.03 52.9 335.14
14.15 47.8 334.94
14.27 44.0 334.79
14.38 41.0 334.68
14.49 38.7 334.58
23.97 12.6 333.57

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32
SQ.MI.
4.62 CFS .00 .01 .01 .01 .01 .01 .01
.01
4.62 ELEV 333.08 333.08 333.08 333.08 333.08 333.08 333.08
333.08
5.10 CFS .02 .02 .02 .02 .02 .02 .02
.03
5.10 ELEV 333.08 333.08 333.08 333.08 333.08 333.08 333.08
333.08
5.58 CFS .03 .03 .03 .03 .04 .04 .04
.04
5.58 ELEV 333.08 333.08 333.08 333.08 333.08 333.08 333.08
333.08
6.06 CFS .05 .05 .05 .05 .06 .06 .06
.06
6.06 ELEV 333.08 333.08 333.08 333.08 333.08 333.08 333.08
333.08

6.54 CFS	.07	.07	.07	.08	.08	.08	.09
.09							
6.54 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
7.02 CFS	.09	.10	.10	.11	.11	.11	.12
.12							
7.02 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
7.50 CFS	.13	.13	.14	.14	.16	.17	.19
.20							
7.50 ELEV	333.08	333.09	333.09	333.09	333.09	333.09	333.09
333.09							
7.98 CFS	.22	.24	.26	.28	.30	.33	.36
.41							
7.98 ELEV	333.09	333.09	333.09	333.09	333.09	333.09	333.09
333.10							
8.46 CFS	.45	.50	.56	.62	.68	.74	.80
.87							
8.46 ELEV	333.10	333.10	333.10	333.10	333.11	333.11	333.11
333.11							
8.94 CFS	.94	1.01	1.08	1.15	1.23	1.33	1.43
1.55							
8.94 ELEV	333.12	333.12	333.12	333.12	333.13	333.13	333.14
333.14							
9.42 CFS	1.68	1.81	1.96	2.11	2.27	2.44	2.62
2.81							
9.42 ELEV	333.15	333.15	333.16	333.16	333.17	333.17	333.18
333.19							
9.90 CFS	3.01	3.21	3.42	3.64	3.88	4.12	4.37
4.63							
9.90 ELEV	333.20	333.20	333.21	333.22	333.23	333.24	333.25
333.26							
10.38 CFS	4.89	5.17	5.46	5.78	6.13	6.54	7.01
7.55							
10.38 ELEV	333.27	333.28	333.29	333.30	333.32	333.33	333.35
333.37							

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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10.86 CFS	8.19	8.97	9.84	10.79	11.86	13.08	14.44
15.94							
10.86 ELEV	333.40	333.43	333.46	333.50	333.54	333.59	333.64
333.70							
11.34 CFS	17.58	19.38	21.28	24.30	28.79	34.24	40.12
46.41							
11.34 ELEV	333.76	333.83	333.91	334.03	334.20	334.41	334.64
334.89							
11.82 CFS	54	64	78	98	103	112	126
133							
11.82 ELEV	335.19	335.58	336.10	336.89	337.10	337.50	338.14
338.55							
12.30 CFS	142	151	158	164	170	175	178
180							
12.30 ELEV	339.01	339.49	339.91	340.31	340.65	340.94	341.15
341.29							
12.78 CFS	182	182	181	180	178	176	174
171							

12.78 ELEV	341.37	341.39	341.35	341.27	341.16	341.03	340.87
340.69							
13.26 CFS	167	164	160	157	153	148	142
136							
13.26 ELEV	340.49	340.27	340.05	339.81	339.57	339.31	339.00
338.70							
13.74 CFS	131	125	114	104	47	53	45
48							
13.74 ELEV	338.41	338.13	337.61	337.14	334.91	335.13	334.82
334.94							
14.22 CFS	42.34	43.88	40.24	40.90	38.37	38.47	36.60
36.35							
14.22 ELEV	334.73	334.79	334.65	334.67	334.57	334.58	334.50
334.49							
14.70 CFS	34.97	34.70	33.74	33.43	32.65	32.25	31.58
31.13							
14.70 ELEV	334.44	334.43	334.39	334.38	334.35	334.33	334.31
334.29							
15.18 CFS	30.50	30.03	29.50	29.10	28.69	28.38	28.08
27.82							
15.18 ELEV	334.27	334.25	334.23	334.21	334.20	334.18	334.17
334.16							
15.66 CFS	27.55	27.29	27.05	26.88	26.72	26.54	26.34
26.14							
15.66 ELEV	334.15	334.14	334.13	334.13	334.12	334.11	334.10
334.10							
16.14 CFS	25.96	25.80	25.64	25.47	25.30	25.13	24.96
24.77							
16.14 ELEV	334.09	334.08	334.08	334.07	334.06	334.06	334.05
334.04							
16.62 CFS	24.59	24.43	24.28	24.12	23.95	23.78	23.64
23.50							
16.62 ELEV	334.04	334.03	334.02	334.02	334.01	334.01	334.00
333.99							
17.10 CFS	23.35	23.18	22.98	22.80	22.65	22.51	22.33
22.13							
17.10 ELEV	333.99	333.98	333.97	333.97	333.96	333.96	333.95
333.94							
17.58 CFS	21.93	21.75	21.58	21.41	21.22	21.03	20.86
20.70							
17.58 ELEV	333.93	333.93	333.92	333.91	333.91	333.90	333.89
333.89							
18.06 CFS	20.55	20.38	20.20	20.04	19.89	19.75	19.58
19.43							
18.06 ELEV	333.88	333.87	333.87	333.86	333.85	333.85	333.84
333.84							
18.54 CFS	19.32	19.24	19.16	19.06	18.97	18.91	18.85
18.76							
18.54 ELEV	333.83	333.83	333.83	333.82	333.82	333.82	333.81
333.81							
19.02 CFS	18.67	18.59	18.52	18.45	18.38	18.32	18.26
18.21							
19.02 ELEV	333.81	333.80	333.80	333.80	333.80	333.79	333.79
333.79							
19.50 CFS	18.16	18.11	18.03	17.94	17.89	17.83	17.75
17.65							
19.50 ELEV	333.79	333.78	333.78	333.78	333.78	333.77	333.77
333.77							
19.98 CFS	17.59	17.56	17.52	17.46	17.38	17.32	17.26
17.17							
19.98 ELEV	333.76	333.76	333.76	333.76	333.76	333.75	333.75
333.75							
20.46 CFS	17.07	16.99	16.95	16.91	16.84	16.76	16.71
16.66							

20.46	ELEV	333.74	333.74	333.74	333.74	333.74	333.73	333.73
333.73								
20.94	CFS	16.58	16.48	16.39	16.30	16.21	16.12	16.04
15.96								
20.94	ELEV	333.73	333.72	333.72	333.71	333.71	333.71	333.70
333.70								
21.42	CFS	15.89	15.82	15.76	15.67	15.56	15.48	15.41
15.32								
21.42	ELEV	333.70	333.70	333.69	333.69	333.69	333.68	333.68
333.68								
21.90	CFS	15.24	15.19	15.12	15.02	14.92	14.84	14.76
14.68								
21.90	ELEV	333.67	333.67	333.67	333.66	333.66	333.66	333.65
333.65								
22.38	CFS	14.60	14.53	14.47	14.39	14.30	14.20	14.13
14.06								

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22.38	ELEV	333.65	333.65	333.64	333.64	333.64	333.63	333.63
333.63								
22.86	CFS	13.96	13.85	13.77	13.73	13.68	13.60	13.52
13.44								
22.86	ELEV	333.62	333.62	333.62	333.61	333.61	333.61	333.61
333.60								
23.34	CFS	13.37	13.31	13.23	13.13	13.02	12.96	12.92
12.86								
23.34	ELEV	333.60	333.60	333.59	333.59	333.59	333.58	333.58
333.58								
23.82	CFS	12.78	12.68	12.59	12.59	12.54	12.10	11.36
10.62								
23.82	ELEV	333.58	333.57	333.57	333.57	333.57	333.55	333.52
333.49								
24.30	CFS	9.97	9.41	8.93	8.56	8.28	8.04	7.83
7.64								
24.30	ELEV	333.47	333.45	333.43	333.41	333.40	333.39	333.38
333.38								
24.78	CFS	7.45	7.28	7.11	6.95	6.79	6.64	6.50
6.35								
24.78	ELEV	333.37	333.36	333.36	333.35	333.34	333.34	333.33
333.33								
25.26	CFS	6.22	6.08	5.95	5.82	5.70	5.57	5.45
5.34								
25.26	ELEV	333.32	333.32	333.31	333.31	333.30	333.30	333.29
333.29								
25.74	CFS	5.22	5.11	5.00	4.89	4.79	4.68	4.57
4.45								
25.74	ELEV	333.28	333.28	333.27	333.27	333.27	333.26	333.26
333.25								
26.22	CFS	4.34	4.23	4.12	4.01	3.90	3.80	3.70
3.60								
26.22	ELEV	333.25	333.24	333.24	333.24	333.23	333.23	333.22
333.22								
26.70	CFS	3.51	3.42	3.33	3.24	3.15	3.07	2.99
2.91								
26.70	ELEV	333.22	333.21	333.21	333.21	333.20	333.20	333.20
333.19								

27.18 CFS 2.83 2.76 2.69  
27.18 ELEV 333.19 333.19 333.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.79 WATERSHED INCHES; 573 CFS-HRS; 47.4 ACRE-  
FEET.

DURATION(HRS) 2 4 6 8 10 12 14 16  
FLOW(CFS) 73 28 22 18 16 14 7 4

DURATION(HRS) 18  
FLOW(CFS) 3 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
\*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.83	181.9	332.78
14.03	52.9	331.74
14.15	47.8	331.68
14.27	44.0	331.63
14.38	41.0	331.59
14.49	38.7	331.56
23.97	12.6	331.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.79 WATERSHED INCHES; 573 CFS-HRS; 47.4 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	52.0	(RUNOFF)
17.34	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.57 WATERSHED INCHES; 49 CFS-HRS; 4.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	62.5	(RUNOFF)
20.87	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.13 WATERSHED INCHES; 67 CFS-HRS; 5.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.18	62.5	(NULL)
20.87	1.1	(NULL)

		HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 10						
		MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03						
HRS	SQ.MI.							
2.70	CFS	.00	.01	.02	.03	.04	.05	.06
.07								
3.18	CFS	.08	.09	.10	.11	.12	.13	.14
.15								
3.66	CFS	.16	.17	.18	.19	.20	.21	.22
.23								
4.14	CFS	.24	.26	.26	.27	.28	.29	.30
.32								
4.62	CFS	.32	.33	.34	.35	.36	.37	.38
.39								
5.10	CFS	.40	.41	.42	.43	.44	.44	.45
.46								
5.58	CFS	.48	.49	.50	.51	.51	.51	.52
.54								
6.06	CFS	.56	.57	.58	.59	.60	.62	.64
.66								
6.54	CFS	.67	.69	.71	.72	.73	.76	.78
.79								
7.02	CFS	.80	.83	.85	.88	.89	.91	.92
.95								
7.50	CFS	.97	.98	1.00	1.01	1.04	1.06	1.08
1.10								
7.98	CFS	1.13	1.15	1.17	1.20	1.21	1.22	1.25
1.27								
8.46	CFS	1.29	1.30	1.33	1.36	1.39	1.41	1.43
1.44								
8.94	CFS	1.45	1.48	1.52	1.56	1.60	1.65	1.71
1.78								
9.42	CFS	1.84	1.89	1.94	2.00	2.07	2.15	2.22
2.28								
9.90	CFS	2.34	2.40	2.46	2.54	2.62	2.69	2.76
2.82								
10.38	CFS	2.88	2.96	3.04	3.14	3.28	3.45	3.66
3.89								
10.86	CFS	4.14	4.39	4.64	4.89	5.20	5.58	6.01
6.46								
11.34	CFS	6.91	7.39	7.87	8.38	9.33	10.96	12.62
14.21								
11.82	CFS	16.37	19.43	23.86	31.02	41.88	55.81	62.53
55.51								
12.30	CFS	43.24	33.49	26.63	21.92	18.82	16.21	13.72
11.81								

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12.78	CFS	10.56	9.69	9.03	8.46	7.93	7.41	6.90
6.47								
13.26	CFS	6.13	5.82	5.53	5.24	4.96	4.69	4.43
4.21								
13.74	CFS	4.04	3.90	3.80	3.71	3.65	3.59	3.52
3.45								
14.22	CFS	3.36	3.28	3.21	3.16	3.10	3.03	2.95
2.87								
14.70	CFS	2.79	2.73	2.67	2.61	2.54	2.47	2.41
2.33								
15.18	CFS	2.26	2.20	2.16	2.14	2.13	2.12	2.11
2.10								
15.66	CFS	2.07	2.03	2.01	2.01	2.00	1.98	1.95
1.92								
16.14	CFS	1.90	1.89	1.88	1.86	1.84	1.82	1.79
1.77								
16.62	CFS	1.75	1.74	1.73	1.71	1.69	1.67	1.66
1.65								
17.10	CFS	1.63	1.60	1.57	1.54	1.54	1.54	1.52
1.48								
17.58	CFS	1.45	1.43	1.42	1.41	1.39	1.37	1.35
1.34								
18.06	CFS	1.33	1.31	1.29	1.27	1.26	1.25	1.23
1.22								
18.54	CFS	1.23	1.24	1.24	1.23	1.22	1.22	1.22
1.21								
19.02	CFS	1.19	1.19	1.18	1.18	1.18	1.18	1.18
1.18								
19.50	CFS	1.18	1.17	1.15	1.14	1.15	1.14	1.13
1.12								
19.98	CFS	1.12	1.13	1.14	1.13	1.11	1.11	1.10
1.09								
20.46	CFS	1.07	1.07	1.08	1.09	1.08	1.06	1.06
1.07								
20.94	CFS	1.06	1.04	1.03	1.03	1.02	1.02	1.02
1.02								
21.42	CFS	1.02	1.02	1.02	1.01	.99	.99	.99
.98								
21.90	CFS	.98	.99	.98	.97	.96	.95	.95
.95								
22.38	CFS	.94	.94	.94	.94	.92	.91	.91
.91								
22.86	CFS	.90	.88	.88	.90	.90	.89	.88
.87								
23.34	CFS	.87	.87	.86	.84	.83	.84	.85
.85								
23.82	CFS	.84	.82	.81	.84	.84	.65	.38
.20								
24.30	CFS	.10	.05	.03	.01	.01	.00	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.13 WATERSHED INCHES; 67 CFS-HRS; 5.6 ACRE-  
FEET.

DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	6	3	2	2	1	1	1	1
DURATION (HRS)	18	18						
FLOW (CFS)	1	0						

OPERATION RUNOFF XSECTION 119

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.13	15.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.40 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE- FEET.		

OPERATION ADDHYD XSECTION 120

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	75.8	(NULL)
15.82	2.4	(NULL)
23.73	1.0	(NULL)
24.01	1.0	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.99 WATERSHED INCHES; 80 CFS-HRS; 6.6 ACRE- FEET.		

OPERATION ADDHYD XSECTION 20

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	127.1	(NULL)
15.83	4.1	(NULL)
17.33	3.1	(NULL)
21.45	2.1	(NULL)
21.75	2.0	(NULL)
21.95	2.0	(NULL)
24.01	1.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.82 WATERSHED INCHES; 129 CFS-HRS; 10.7 ACRE- FEET.		

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	90.5	(RUNOFF)
17.34	2.3	(RUNOFF)
24.00	1.3	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.23 WATERSHED INCHES; 84 CFS-HRS; 7.0 ACRE- FEET.		

OPERATION ADDHYD XSECTION 22

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.16	217.5	(NULL)
15.84	7.0	(NULL)
17.34	5.4	(NULL)
19.43	4.1	(NULL)
19.74	4.0	(NULL)
20.06	4.0	(NULL)
23.06	3.2	(NULL)
23.72	3.0	(NULL)
24.00	3.1	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.56 WATERSHED INCHES; 213 CFS-HRS; 17.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.17	339.6	(NULL)
14.03	65.2	(NULL)
14.15	59.7	(NULL)
14.26	55.3	(NULL)
14.38	51.9	(NULL)
20.04	21.6	(NULL)
20.57	20.8	(NULL)
23.03	16.9	(NULL)
24.00	15.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.96 WATERSHED INCHES; 786 CFS-HRS; 64.9 ACRE-  
FEET.

OPERATION DIVERT XSECTION 122  
OUTPUT #1 HYDROGRAPH

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.00	168.0 *	(DIVERT)
14.03	65.2	(DIVERT)
14.15	59.7	(DIVERT)
14.26	55.3	(DIVERT)
14.38	51.9	(DIVERT)
20.04	21.6	(DIVERT)
20.57	20.8	(DIVERT)
23.03	16.9	(DIVERT)
24.00	15.6	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 697 CFS-HRS; 57.6 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	171.6	176.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .33 WATERSHED INCHES; 88 CFS-HRS; 7.3 ACRE-FEET.

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\*\*\* MESSAGE - STRUCTURE 83, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 322.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 83

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
 AT STRUCTURE 83  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.56	.0	318.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 123

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.47	168.6	(NULL)
14.03	65.2	(NULL)
14.15	59.7	(NULL)
14.26	55.3	(NULL)
14.38	52.0	(NULL)
20.04	21.6	(NULL)
20.57	20.8	(NULL)
23.03	17.0	(NULL)
24.00	15.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.63 WATERSHED INCHES; 698 CFS-HRS; 57.7 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.65	168.2	315.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.62 WATERSHED INCHES; 696 CFS-HRS; 57.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 24

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	81.4	(RUNOFF)
20.13	2.0	(RUNOFF)
23.99	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.03 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	78.5	363.94
20.15	2.0	356.54
23.79	1.5	356.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.02 WATERSHED INCHES; 99 CFS-HRS; 8.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	115.6	(RUNOFF)
18.66	3.3	(RUNOFF)
23.77	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.97 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	190.6	(NULL)
20.14	5.0	(NULL)
23.14	4.0	(NULL)
23.78	3.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-  
 FEET.

1 TR20 ----- SCS  
 -

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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OPERATION REACH XSECTION 27

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.40	174.0	319.15
20.20	5.0	316.65
23.20	4.0	316.59

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.99 WATERSHED INCHES; 242 CFS-HRS; 20.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.25	87.6	(RUNOFF)
21.94	2.0	(RUNOFF)
24.01	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.68 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.29	236.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.63 WATERSHED INCHES; 800 CFS-HRS; 66.1 ACRE-

FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	401.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.71 WATERSHED INCHES; 1041 CFS-HRS; 86.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	401.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.71 WATERSHED INCHES; 1041 CFS-HRS; 86.1 ACRE-  
 FEET.

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 Dist;H1&H8UG;GHC2.04TEST  
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OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	137.5	(RUNOFF)
18.66	3.2	(RUNOFF)
24.02	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	125.9	313.02
18.72	3.2	310.26
24.09	2.2	310.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 155 CFS-HRS; 12.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)			
12.16	22.3	(RUNOFF)	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.33 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS WITH .38 AC-FT ( .07 WATERSHED INCHES) FLOOD STORAGE REMAINING IN RESERVOIR AT ELEV. 377.43.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.40	9.1	380.16

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.48 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-FEET.

OPERATION REACH XSECTION 34

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.47	9.0	338.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.47 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	66.9	(RUNOFF)
21.97	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.32 WATERSHED INCHES; 77 CFS-HRS; 6.3 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS WITH .95 AC-FT ( .05 WATERSHED INCHES) FLOOD STORAGE REMAINING IN RESERVOIR AT ELEV. 353.79.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33



PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	48.7	357.05
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.67 WATERSHED INCHES;	65 CFS-HRS;	5.4 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.62 WATERSHED INCHES;	84 CFS-HRS;	6.9 ACRE-
FEET.		

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.62 WATERSHED INCHES;	84 CFS-HRS;	6.9 ACRE-
FEET.		

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\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
 \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	53.8	330.54
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.62 WATERSHED INCHES;	84 CFS-HRS;	6.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	73.1	(RUNOFF)
15.84	2.2	(RUNOFF)
22.41	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.77 WATERSHED INCHES; 68 CFS-HRS; 5.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.18	101.1	(NULL)
20.82	3.2	(NULL)
24.00	2.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.69 WATERSHED INCHES; 152 CFS-HRS; 12.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.18	101.1	(NULL)
20.82	3.2	(NULL)
24.00	2.6	(NULL)

HRS	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10							
	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = .06 SQ.MI.			
2.82 CFS	.00	.01	.01	.01	.01	.01	.01	.01
.01								
3.30 CFS	.01	.01	.01	.02	.02	.03	.03	
.03								
3.78 CFS	.03	.03	.04	.05	.06	.07	.08	
.10								
4.26 CFS	.11	.12	.13	.14	.16	.17	.18	
.19								
4.74 CFS	.20	.22	.23	.24	.25	.27	.28	
.29								
5.22 CFS	.31	.32	.33	.34	.35	.37	.39	
.40								

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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5.70 CFS	.41	.42	.43	.44	.46	.48	.50
.51							
6.18 CFS	.52	.54	.56	.58	.60	.62	.64
.67							
6.66 CFS	.69	.70	.72	.75	.77	.78	.81
.84							
7.14 CFS	.87	.89	.91	.93	.96	.99	1.01
1.03							
7.62 CFS	1.05	1.08	1.11	1.14	1.16	1.20	1.23
1.25							
8.10 CFS	1.29	1.32	1.33	1.36	1.41	1.43	1.45
1.48							
8.58 CFS	1.52	1.56	1.60	1.62	1.64	1.67	1.70

1.75								
9.06	CFS	1.80	1.84	1.89	1.96	2.04	2.11	2.18
2.24								
9.54	CFS	2.30	2.38	2.46	2.55	2.63	2.70	2.77
2.85								
10.02	CFS	2.94	3.04	3.13	3.22	3.30	3.37	3.47
3.57								
10.50	CFS	3.68	3.81	4.01	4.23	4.49	4.76	5.03
5.31								
10.98	CFS	5.59	5.88	6.29	6.75	7.26	7.76	8.28
8.85								
11.46	CFS	9.39	9.98	12.20	15.17	17.65	20.45	24.74
30.51								
11.94	CFS	38.21	51.44	70.01	93.17	101.14	92.25	87.52
81.28								
12.42	CFS	73.06	65.85	59.74	52.57	45.94	40.64	36.17
33.61								
12.90	CFS	31.69	29.88	28.10	26.39	24.77	23.33	22.03
20.80								
13.38	CFS	19.63	18.53	17.53	16.61	15.74	14.97	14.29
13.67								
13.86	CFS	13.11	12.61	12.15	11.73	11.32	10.93	10.55
10.22								
14.34	CFS	9.91	9.66	9.42	9.16	8.90	8.65	8.43
8.22								
14.82	CFS	8.02	7.81	7.59	7.40	7.20	6.99	6.81
6.67								
15.30	CFS	6.55	6.46	6.37	6.30	6.22	6.13	6.03
5.93								
15.78	CFS	5.87	5.83	5.77	5.69	5.60	5.53	5.48
5.44								
16.26	CFS	5.39	5.32	5.26	5.21	5.15	5.08	5.04
5.00								
16.74	CFS	4.97	4.91	4.85	4.81	4.78	4.75	4.69
4.62								
17.22	CFS	4.56	4.53	4.53	4.49	4.44	4.37	4.32
4.29								
17.70	CFS	4.27	4.23	4.17	4.13	4.10	4.07	4.04
3.98								
18.18	CFS	3.94	3.91	3.88	3.85	3.79	3.77	3.78
3.77								
18.66	CFS	3.75	3.70	3.68	3.69	3.66	3.62	3.59
3.57								
19.14	CFS	3.56	3.55	3.53	3.52	3.51	3.50	3.49
3.46								
19.62	CFS	3.42	3.41	3.42	3.39	3.36	3.34	3.34
3.36								
20.10	CFS	3.34	3.31	3.29	3.28	3.26	3.22	3.19
3.21								
20.58	CFS	3.21	3.21	3.17	3.15	3.16	3.15	3.11
3.09								
21.06	CFS	3.08	3.07	3.06	3.05	3.04	3.03	3.02
3.02								
21.54	CFS	3.00	2.97	2.94	2.96	2.94	2.91	2.92
2.93								
22.02	CFS	2.89	2.87	2.85	2.84	2.83	2.83	2.82
2.81								
22.50	CFS	2.80	2.78	2.74	2.73	2.74	2.72	2.69
2.67								
22.98	CFS	2.68	2.70	2.68	2.65	2.63	2.62	2.61
2.60								
23.46	CFS	2.58	2.54	2.53	2.55	2.56	2.55	2.52
2.49								
23.94	CFS	2.50	2.58	2.49	2.08	1.79	1.67	1.62

1.60								
24.42 CFS	1.58	1.57	1.56	1.56	1.55	1.54	1.53	
1.52								
24.90 CFS	1.52	1.51	1.50	1.49	1.48	1.47	1.47	
1.46								
25.38 CFS	1.45	1.44	1.44	1.43	1.42	1.41	1.41	
1.40								

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.69 WATERSHED INCHES; 152 CFS-HRS; 12.6 ACRE-  
 FEET.

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	15	7	5	4	3	3	3	2
DURATION(HRS)	16							
FLOW(CFS)	1 TRUNCATED							

OPERATION RUNOFF XSECTION 140

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.13		5.1		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.43 WATERSHED INCHES; 4 CFS-HRS; .4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.18		105.5		(NULL)
21.93		3.0		(NULL)
24.00		2.7		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.53 WATERSHED INCHES; 157 CFS-HRS; 12.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.27		57.7		(RUNOFF)
23.76		1.2		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.84 WATERSHED INCHES; 72 CFS-HRS; 6.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	452.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.71 WATERSHED INCHES; 1114 CFS-HRS; 92.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 42

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	575.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.79 WATERSHED INCHES; 1269 CFS-HRS; 104.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	661.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.85 WATERSHED INCHES; 1422 CFS-HRS; 117.5 ACRE-FEET.

OPERATION DIVERT XSECTION 144  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	543.0 *	(DIVERT)
	* FIRST POINT OF FLAT	PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1396 CFS-HRS; 115.4 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	118.6	176.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .05 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-FEET.

FEET.

\*\*\* MESSAGE - STRUCTURE 82, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 318.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 82

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
 AT STRUCTURE 82  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.54	.0	310.68

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 145

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.45	545.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.80 WATERSHED INCHES; 1396 CFS-HRS; 115.4 ACRE-FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.59	538.5	290.52

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.80 WATERSHED INCHES; 1396 CFS-HRS; 115.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.59	538.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.80 WATERSHED INCHES; 1396 CFS-HRS; 115.3 ACRE-

FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	66.8	(RUNOFF)
23.09	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.88 WATERSHED INCHES; 89 CFS-HRS; 7.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	83.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.81 WATERSHED INCHES; 114 CFS-HRS; 9.4 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	150.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.84 WATERSHED INCHES; 203 CFS-HRS; 16.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	81.7	(RUNOFF)
18.65	2.0	(RUNOFF)
24.03	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.84 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.56 564.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.80 WATERSHED INCHES; 1482 CFS-HRS; 122.4 ACRE-
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.40 691.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.80 WATERSHED INCHES; 1684 CFS-HRS; 139.2 ACRE-
FEET.

OPERATION REACH XSECTION 51

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.54 675.3 285.26

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.80 WATERSHED INCHES; 1683 CFS-HRS; 139.1 ACRE-
FEET.

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OPERATION RUNOFF XSECTION 52

\*\*\* MESSAGE - XSECTION 52, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.80 WATERSHED INCHES; 210 CFS-HRS; 139.1 ACRE-
FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,
UNLESS NEW RATING TABLE VALUES ARE INSERTED.
\*\*\*

OPERATION REACH XSECTION 53

\*\*\* MESSAGE - XSECTION 53, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.80 WATERSHED INCHES; 207 CFS-HRS; 139.1 ACRE-
FEET.



OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - XSECTION 54, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.80 WATERSHED INCHES; 189 CFS-HRS; 139.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	51.6	(RUNOFF)
21.97	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.61 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.53	694.8	(NULL)

1

TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION  
05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
Dist;H1&H8UG;GHC2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.80 WATERSHED INCHES; 1738 CFS-HRS; 143.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 57

\*\*\* MESSAGE - XSECTION 57, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.80 WATERSHED INCHES; 214 CFS-HRS; 143.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.53	695.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.75 WATERSHED INCHES; 1739 CFS-HRS; 143.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		(RUNOFF)
12.21	31.6	

	HYDROGRAPH POINTS FOR		ALTERNATE = 1,	STORM =10
HRS	MAIN TIME	INCREMENT =	.060 hr,	DRAINAGE AREA =
SQ.MI.				.03
10.80 CFS	.45	.52	.59	.67
1.10				.75
11.28 CFS	1.25	1.42	1.61	1.81
3.54				2.04
11.76 CFS	4.26	5.18	6.51	8.52
30.82				11.69
12.24 CFS	31.12	26.88	21.99	18.16
10.00				15.28
12.72 CFS	8.68	7.72	7.03	6.51
5.02				6.09
13.20 CFS	4.71	4.46	4.24	4.03
3.27				3.84
13.68 CFS	3.11	2.98	2.87	2.79
2.59				2.73
14.16 CFS	2.54	2.48	2.43	2.38
2.20				2.34
14.64 CFS	2.14	2.09	2.04	2.00
1.81				1.96
15.12 CFS	1.76	1.71	1.66	1.63
1.58				1.61
15.60 CFS	1.58	1.56	1.54	1.52
1.48				1.51
16.08 CFS	1.46	1.44	1.43	1.42
1.37				1.41
16.56 CFS	1.35	1.33	1.32	1.32
1.27				1.31
17.04 CFS	1.26	1.25	1.23	1.21
1.17				1.19
17.52 CFS	1.14	1.12	1.11	1.10
1.04				1.09
18.00 CFS	1.04	1.03	1.02	1.00
.96				.99
18.48 CFS	.95	.95	.95	.96
.94				.95
18.96 CFS	.94	.93	.92	.92
.91				.92
19.44 CFS	.91	.91	.91	.90
.88				.89
19.92 CFS	.87	.87	.88	.88
.86				.88

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist;H1&H8UG;GHC2.04TEST

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20.40 CFS	.85	.84	.84	.84	.85	.84	.84
.83							
20.88 CFS	.83	.83	.82	.81	.81	.80	.80
.80							
21.36 CFS	.80	.80	.80	.80	.79	.78	.78

.78							
21.84 CFS	.78	.77	.78	.77	.77	.76	.75
.75							
22.32 CFS	.75	.75	.75	.75	.74	.73	.72
.72							
22.80 CFS	.72	.71	.70	.70	.71	.71	.71
.70							
23.28 CFS	.69	.69	.69	.68	.67	.66	.66
.67							
23.76 CFS	.67	.67	.65	.65	.66	.66	.56
.39							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.01 WATERSHED INCHES; 34 CFS-HRS; 2.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	709.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 1774 CFS-HRS; 146.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.52	709.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.73 WATERSHED INCHES; 1774 CFS-HRS; 146.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	18.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.95 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	719.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02  
 SQ.MI.

HRS							
5.04 CFS	.49	.52	.54	.57	.60	.63	.67
.71							
5.52 CFS	.75	.79	.83	.88	.93	.98	1.03
1.08							
6.00 CFS	1.13	1.18	1.24	1.29	1.35	1.40	1.46

1.52								
6.48	CFS	1.59	1.65	1.73	1.80	1.88	1.96	2.05
2.13								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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6.96	CFS	2.22	2.32	2.42	2.52	2.63	2.75	2.88
3.02								
7.44	CFS	3.17	3.34	3.53	3.72	3.93	4.14	4.36
4.59								
7.92	CFS	4.82	5.07	5.32	5.58	5.87	6.16	6.46
6.78								
8.40	CFS	7.10	7.43	7.77	8.11	8.45	8.80	9.16
9.54								
8.88	CFS	9.92	10.31	10.71	11.12	11.55	11.98	12.43
12.91								
9.36	CFS	13.41	13.96	14.56	15.20	15.88	16.62	17.42
18.26								
9.84	CFS	19.15	20.10	21.08	22.11	23.19	24.32	25.49
26.70								
10.32	CFS	27.94	29.21	30.53	31.88	33.29	34.77	36.34
38.03								
10.80	CFS	39.89	41.95	44.24	46.82	49.70	52.93	56.58
60.66								
11.28	CFS	65	70	76	82	89	97	106
118								
11.76	CFS	131	147	168	194	231	283	355
440								
12.24	CFS	521	597	662	702	718	717	707
693								
12.72	CFS	674	644	606	566	525	488	455
428								
13.20	CFS	404	385	368	353	341	329	319
309								
13.68	CFS	300	292	284	277	271	264	258
251								
14.16	CFS	244	236	227	214	199	184	170
158								
14.64	CFS	148	140	133	127	122	117	114
110								
15.12	CFS	107	104	101	99	96	94	92
90								
15.60	CFS	88.39	86.78	85.31	83.98	82.81	81.78	80.82
79.89								
16.08	CFS	79.00	78.16	77.38	76.65	75.94	75.23	74.53
73.85								
16.56	CFS	73.17	72.50	71.86	71.23	70.61	69.97	69.34
68.72								
17.04	CFS	68.14	67.57	66.98	66.37	65.76	65.18	64.62
64.05								
17.52	CFS	63.44	62.81	62.17	61.55	60.96	60.35	59.72
59.09								
18.00	CFS	58.47	57.87	57.28	56.67	56.08	55.51	54.95
54.40								
18.48	CFS	53.85	53.34	52.87	52.44	52.02	51.62	51.27
50.96								
18.96	CFS	50.68	50.41	50.15	49.90	49.67	49.45	49.23

49.01								
19.44	CFS	48.81	48.62	48.44	48.25	48.06	47.90	47.74
47.56								
19.92	CFS	47.37	47.17	47.00	46.84	46.66	46.48	46.30
46.12								
20.40	CFS	45.95	45.76	45.57	45.39	45.22	45.03	44.82
44.62								
20.88	CFS	44.45	44.27	44.10	43.92	43.74	43.55	43.38
43.19								
21.36	CFS	43.01	42.82	42.64	42.46	42.28	42.08	41.90
41.73								
21.84	CFS	41.55	41.38	41.21	41.02	40.82	40.62	40.42
40.22								
22.32	CFS	40.04	39.86	39.67	39.48	39.29	39.08	38.87
38.68								
22.80	CFS	38.49	38.29	38.07	37.85	37.65	37.47	37.28
37.08								
23.28	CFS	36.88	36.69	36.52	36.36	36.17	35.96	35.76
35.58								
23.76	CFS	35.41	35.22	35.00	34.78	34.64	34.49	34.05
33.21								
24.24	CFS	32.10	30.82	29.45	27.92	26.15	24.15	22.03
19.93								
24.72	CFS	18.00	16.28	14.80	13.58	12.57	11.76	11.10
10.56								
25.20	CFS	10.12	9.76	9.45	9.18	8.95	8.74	8.55
8.37								
25.68	CFS	8.20	8.03	7.88	7.73			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.72 WATERSHED INCHES; 1795 CFS-HRS; 148.4 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 162  
 OUTPUT #1 HYDROGRAPH

1  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	621.0 *	(DIVERT)
	* FIRST POINT OF FLAT	PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1763 CFS-HRS; 145.7 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	98.6	176.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .05 WATERSHED INCHES; 33 CFS-HRS; 2.7 ACRE-

FEET.

OPERATION RESVOR STRUCTURE 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	98.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .05 WATERSHED INCHES; 33 CFS-HRS; 2.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 163

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	719.6	(NULL)

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10							
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02							
HRS								
SQ.MI.								
5.04 CFS	.49	.52	.54	.57	.60	.63	.67	
.71								
5.52 CFS	.75	.79	.83	.88	.93	.98	1.03	
1.08								
6.00 CFS	1.13	1.18	1.24	1.29	1.35	1.40	1.46	
1.52								
6.48 CFS	1.59	1.65	1.73	1.80	1.88	1.96	2.05	
2.13								
6.96 CFS	2.22	2.32	2.42	2.52	2.63	2.75	2.88	
3.02								
7.44 CFS	3.17	3.34	3.53	3.72	3.93	4.14	4.36	
4.59								
7.92 CFS	4.82	5.07	5.32	5.58	5.87	6.16	6.46	
6.78								
8.40 CFS	7.10	7.43	7.77	8.11	8.45	8.80	9.16	
9.54								
8.88 CFS	9.92	10.31	10.71	11.12	11.55	11.98	12.43	
12.91								
9.36 CFS	13.41	13.96	14.56	15.20	15.88	16.62	17.42	
18.26								
9.84 CFS	19.15	20.10	21.08	22.11	23.19	24.32	25.49	
26.70								
10.32 CFS	27.94	29.21	30.53	31.88	33.29	34.77	36.34	
38.03								
10.80 CFS	39.89	41.95	44.24	46.82	49.70	52.93	56.58	
60.66								
11.28 CFS	65	70	76	82	89	97	106	
118								
11.76 CFS	131	147	168	194	231	283	355	
440								
12.24 CFS	521	597	662	702	718	717	707	
693								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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12.72 CFS 428	674	644	606	566	525	488	455
13.20 CFS 309	404	385	368	353	341	329	319
13.68 CFS 251	300	292	284	277	271	264	258
14.16 CFS 158	244	236	227	214	199	184	170
14.64 CFS 110	148	140	133	127	122	117	114
15.12 CFS 90	107	104	101	99	96	94	92
15.60 CFS 79.89	88.39	86.78	85.31	83.98	82.81	81.78	80.82
16.08 CFS 73.85	79.00	78.16	77.38	76.65	75.94	75.23	74.53
16.56 CFS 68.72	73.17	72.50	71.86	71.23	70.61	69.97	69.34
17.04 CFS 64.05	68.14	67.57	66.98	66.37	65.76	65.18	64.62
17.52 CFS 59.09	63.44	62.81	62.17	61.55	60.96	60.35	59.72
18.00 CFS 54.40	58.47	57.87	57.28	56.67	56.08	55.51	54.95
18.48 CFS 50.96	53.85	53.34	52.87	52.44	52.02	51.62	51.27
18.96 CFS 49.01	50.68	50.41	50.15	49.90	49.67	49.45	49.23
19.44 CFS 47.56	48.81	48.62	48.44	48.25	48.06	47.90	47.74
19.92 CFS 46.12	47.37	47.17	47.00	46.84	46.66	46.48	46.30
20.40 CFS 44.62	45.95	45.76	45.57	45.39	45.22	45.03	44.82
20.88 CFS 43.19	44.45	44.27	44.10	43.92	43.74	43.55	43.38
21.36 CFS 41.73	43.01	42.82	42.64	42.46	42.28	42.08	41.90
21.84 CFS 40.22	41.55	41.38	41.21	41.02	40.82	40.62	40.42
22.32 CFS 38.68	40.04	39.86	39.67	39.48	39.29	39.08	38.87
22.80 CFS 37.08	38.49	38.29	38.07	37.85	37.65	37.47	37.28
23.28 CFS 35.58	36.88	36.69	36.52	36.36	36.17	35.96	35.76
23.76 CFS 33.21	35.41	35.22	35.00	34.78	34.64	34.49	34.05
24.24 CFS 19.93	32.10	30.82	29.45	27.92	26.15	24.15	22.03
24.72 CFS 10.56	18.00	16.28	14.80	13.58	12.57	11.76	11.10
25.20 CFS 8.37	10.12	9.76	9.45	9.18	8.95	8.74	8.55
25.68 CFS	8.20	8.03	7.88	7.73			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.72 WATERSHED INCHES; 1795 CFS-HRS; 148.4 ACRE-  
 FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	696.1	250.02
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.72 WATERSHED INCHES;	1794 CFS-HRS;	148.3 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.37	15.5	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.24 WATERSHED INCHES;	23 CFS-HRS;	1.9 ACRE-
FEET.		

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 TR20 ----- SCS  
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 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	8.4	334.33
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.24 WATERSHED INCHES;	23 CFS-HRS;	1.9 ACRE-
FEET.		

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.85	8.2	300.61
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.23 WATERSHED INCHES;	23 CFS-HRS;	1.9 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	55.9	(RUNOFF)
24.02	1.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
1.98 WATERSHED INCHES;	59 CFS-HRS;	4.8 ACRE-
FEET.		

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE



TIME INCREMENT OF .043 HOURS.  
\*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.62	18.0	293.76
14.58	3.8	287.79
24.04	1.1	287.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.98 WATERSHED INCHES; 59 CFS-HRS; 4.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 67

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TR20 ----- SCS  
-  
Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION  
05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.82	25.9	(NULL)
18.87	2.1	(NULL)
24.04	1.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.23 WATERSHED INCHES; 82 CFS-HRS; 6.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	109.3	(RUNOFF)
23.74	2.1	(RUNOFF)
24.03	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.22 WATERSHED INCHES; 112 CFS-HRS; 9.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	128.2	(NULL)
18.87	5.0	(NULL)
21.97	4.1	(NULL)

24.03 3.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.22 WATERSHED INCHES; 193 CFS-HRS; 16.0 ACRE-
FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.45 88.5 248.66
24.15 3.5 247.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.22 WATERSHED INCHES; 193 CFS-HRS; 16.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.12 26.5 (RUNOFF)

1

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,
VERSION
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.33 9.6 265.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.82 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-
FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.44 8.9 247.79

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 22 CFS-HRS; 1.8 ACRE-
FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	110.8	(RUNOFF)
15.85	5.4	(RUNOFF)
17.34	4.2	(RUNOFF)
20.86	3.0	(RUNOFF)
24.01	2.5	(RUNOFF)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10						
	MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .11						
10.98 CFS 2.88	.31	.51	.76	1.07	1.44	1.85	2.33
11.46 CFS 19.46	3.49	4.17	5.33	7.10	9.05	11.28	14.56
11.94 CFS 63.21	26.93	40.30	62.41	94.61	110.76	98.35	78.24
12.42 CFS 22.44	52.04	44.53	39.78	34.95	29.90	26.21	24.01
12.90 CFS 14.26	21.14	20.00	18.86	17.73	16.61	15.68	14.94
13.38 CFS 9.85	13.60	12.94	12.27	11.63	11.02	10.52	10.14
13.86 CFS 8.46	9.62	9.44	9.31	9.18	9.03	8.85	8.64
14.34 CFS 7.13	8.31	8.18	8.04	7.87	7.67	7.46	7.28
14.82 CFS 5.81	7.00	6.85	6.67	6.49	6.33	6.15	5.96
15.30 CFS 5.43	5.72	5.68	5.66	5.66	5.65	5.61	5.53
15.78 CFS 5.11	5.39	5.40	5.39	5.33	5.24	5.17	5.13
16.26 CFS 4.72	5.08	5.03	4.97	4.92	4.86	4.79	4.75
16.74 CFS 4.38	4.71	4.66	4.60	4.55	4.53	4.51	4.47
17.22 CFS 3.94	4.28	4.23	4.24	4.23	4.16	4.07	3.99
17.70 CFS 3.63	3.92	3.90	3.83	3.77	3.73	3.72	3.69
18.18 CFS 3.46	3.56	3.53	3.51	3.48	3.43	3.39	3.42
18.66 CFS 3.32	3.47	3.42	3.40	3.42	3.42	3.37	3.33

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19.14 CFS 3.30	3.31	3.31	3.31	3.31	3.31	3.31	3.31
19.62 CFS 3.21	3.24	3.21	3.23	3.22	3.18	3.14	3.16
20.10 CFS 3.03	3.22	3.18	3.15	3.13	3.11	3.06	3.01
20.58 CFS 2.96	3.07	3.09	3.06	3.01	3.03	3.04	3.00
21.06 CFS	2.93	2.92	2.92	2.92	2.92	2.92	2.92

2.92							
21.54 CFS	2.91	2.87	2.81	2.82	2.84	2.81	2.81
2.84							
22.02 CFS	2.81	2.77	2.74	2.72	2.72	2.72	2.71
2.71							
22.50 CFS	2.71	2.70	2.64	2.61	2.63	2.62	2.57
2.54							
22.98 CFS	2.55	2.60	2.61	2.57	2.53	2.52	2.51
2.51							
23.46 CFS	2.49	2.43	2.39	2.42	2.46	2.47	2.42
2.36							
23.94 CFS	2.35	2.46	2.42	1.76	.95	.46	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.58 WATERSHED INCHES; 112 CFS-HRS; 9.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.66	725.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.61 WATERSHED INCHES; 1907 CFS-HRS; 157.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.45	97.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .15  
 SQ.MI.

HRS	.48	.52	.57	.63	.69	.76	.83
9.54 CFS							
.91							
10.02 CFS	.99	1.08	1.18	1.29	1.42	1.54	1.68
1.83							
10.50 CFS	1.98	2.14	2.31	2.49	2.70	2.93	3.19
3.49							
10.98 CFS	3.83	4.20	4.61	5.06	5.56	6.13	6.79
7.49							
11.46 CFS	8.24	9.07	9.99	11.00	12.24	13.95	16.08
18.47							
11.94 CFS	21.39	25.07	29.93	36.93	47.23	61.67	78.48
91.58							
12.42 CFS	96.90	96.63	93.34	88.79	83.89	78.83	73.90
69.37							
12.90 CFS	65.57	62.32	59.46	56.88	54.50	52.26	50.13
48.15							
13.38 CFS	46.37	44.76	43.30	41.96	40.71	39.54	38.40
37.28							
13.86 CFS	36.20	35.16	34.17	33.24	32.36	31.54	30.75
29.89							
14.34 CFS	28.92	27.91	26.66	25.31	23.94	22.46	21.21
20.10							
14.82 CFS	19.12	18.25	17.49	16.83	16.22	15.66	15.15
14.63							
15.30 CFS	14.10	13.59	13.11	12.67	12.24	11.84	11.48
11.16							

15.78 CFS	10.87	10.61	10.38	10.19	10.03	9.88	9.73
9.58							
16.26 CFS	9.44	9.26	9.07	8.90	8.73	8.59	8.46
8.34							
16.74 CFS	8.22	8.13	8.04	7.96	7.87	7.79	7.71
7.65							
17.22 CFS	7.58	7.50	7.40	7.31	7.23	7.16	7.09
7.01							
17.70 CFS	6.91	6.82	6.74	6.66	6.58	6.50	6.42
6.35							
18.18 CFS	6.28	6.21	6.13	6.05	5.98	5.92	5.85
5.79							

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18.66 CFS	5.74	5.71	5.69	5.66	5.63	5.61	5.59
5.57							
19.14 CFS	5.54	5.50	5.47	5.45	5.43	5.41	5.40
5.39							
19.62 CFS	5.38	5.37	5.34	5.32	5.29	5.27	5.25
5.22							
20.10 CFS	5.19	5.18	5.18	5.17	5.15	5.13	5.11
5.08							
20.58 CFS	5.04	5.01	4.99	4.98	4.97	4.95	4.93
4.92							
21.06 CFS	4.90	4.88	4.85	4.82	4.79	4.77	4.75
4.74							
21.54 CFS	4.73	4.72	4.71	4.69	4.66	4.63	4.61
4.59							
22.02 CFS	4.58	4.57	4.56	4.53	4.51	4.48	4.45
4.43							
22.50 CFS	4.41	4.40	4.39	4.37	4.35	4.32	4.29
4.27							
22.98 CFS	4.24	4.21	4.18	4.18	4.17	4.16	4.14
4.12							
23.46 CFS	4.10	4.08	4.05	4.02	3.99	3.96	3.95
3.95							
23.94 CFS	3.93	3.90	3.88	3.87	3.85	3.68	3.32
2.86							
24.42 CFS	2.40	1.99	1.63	1.34	1.09	.88	.71
.57							
24.90 CFS	.45						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.27 WATERSHED INCHES; 215 CFS-HRS; 17.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET)  
 12.63 811.4 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 10  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28  
 SQ.MI.

5.16 CFS	.48	.51	.53	.56	.59	.62	.66
.69							
5.64 CFS	.73	.78	.82	.87	.92	.96	1.01
1.06							
6.12 CFS	1.12	1.17	1.22	1.27	1.33	1.38	1.44
1.50							
6.60 CFS	1.56	1.63	1.70	1.78	1.85	1.93	2.02
2.12							
7.08 CFS	2.21	2.31	2.41	2.52	2.63	2.75	2.88
3.03							
7.56 CFS	3.18	3.36	3.55	3.75	3.96	4.17	4.40
4.63							
8.04 CFS	4.87	5.12	5.39	5.66	5.95	6.24	6.55
6.87							
8.52 CFS	7.20	7.54	7.88	8.23	8.59	8.95	9.32
9.70							
9.00 CFS	10.10	10.50	10.91	11.33	11.77	12.22	12.69
13.18							
9.48 CFS	13.72	14.30	14.92	15.60	16.33	17.12	17.96
18.86							
9.96 CFS	19.82	20.82	21.88	22.99	24.17	25.40	26.68
28.00							
10.44 CFS	29.37	30.78	32.25	33.76	35.35	37.03	38.84
40.84							
10.92 CFS	43.08	45.61	48.44	51.63	55.21	59.26	63.81
68.92							
11.40 CFS	75	81	88	96	106	117	130
147							
11.88 CFS	167	194	232	286	363	442	510
579							
12.36 CFS	651	716	765	797	810	809	799
784							
12.84 CFS	760	728	692	652	612	574	539
508							
13.32 CFS	480	457	436	418	402	387	374
363							
13.80 CFS	352	342	333	324	316	308	300
292							
14.28 CFS	284	275	264	250	236	220	206
193							
14.76 CFS	181	171	162	155	148	143	138
133							
15.24 CFS	129	125	122	119	116	113	110
108							
15.72 CFS	106	104	102	100	99	98	96
95							
16.20 CFS	94.09	93.07	92.03	91.01	90.05	89.11	88.19
87.32							
16.68 CFS	86.49	85.70	84.90	84.11	83.34	82.60	81.88
81.15							

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17.16 CFS	80.40	79.64	78.91	78.22	77.53	76.80	76.06
75.32							
17.64 CFS	74.58	73.85	73.11	72.36	71.61	70.88	70.15
69.43							

18.12	CFS	68.68	67.94	67.23	66.54	65.85	65.14	64.48
63.88								
18.60	CFS	63.32	62.77	62.22	61.72	61.29	60.86	60.43
60.05								
19.08	CFS	59.71	59.38	59.08	58.79	58.53	58.28	58.04
57.81								
19.56	CFS	57.58	57.32	57.08	56.89	56.68	56.44	56.21
56.02								
20.04	CFS	55.85	55.66	55.43	55.23	55.02	54.81	54.56
54.31								
20.52	CFS	54.11	53.93	53.73	53.51	53.27	53.08	52.88
52.64								
21.00	CFS	52.40	52.18	51.96	51.75	51.54	51.33	51.13
50.93								
21.48	CFS	50.73	50.52	50.29	50.05	49.85	49.65	49.41
49.22								
21.96	CFS	49.05	48.84	48.60	48.37	48.14	47.91	47.68
47.47								
22.44	CFS	47.26	47.05	46.83	46.57	46.33	46.12	45.88
45.61								
22.92	CFS	45.36	45.14	44.95	44.73	44.48	44.25	44.02
43.80								
23.40	CFS	43.58	43.35	43.10	42.86	42.67	42.48	42.27
42.02								
23.88	CFS	41.77	41.54	41.42	41.17	40.35	39.24	38.05
36.69								
24.36	CFS	35.13	33.46	31.71	29.84	27.82	25.68	23.50
21.38								
24.84	CFS	19.37	17.56	15.98	14.62	13.47	12.52	11.73
11.08								
25.32	CFS	10.55	10.10	9.72	9.41	9.13	8.89	8.67
8.47								
25.80	CFS	8.29	8.11					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.57 WATERSHED INCHES; 2121 CFS-HRS; 175.3 ACRE-FEET.

OPERATION DIVERT XSECTION 176  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	691.0 *	(DIVERT)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2076 CFS-HRS; 171.6 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	120.4	176.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .05 WATERSHED INCHES; 45 CFS-HRS; 3.7 ACRE-FEET.

OPERATION RESVOR STRUCTURE 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	120.4	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .05 WATERSHED INCHES; 45 CFS-HRS; 3.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 177

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	811.4	(NULL)

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10							
HRS	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = 1.28			
SQ.MI.								
5.16 CFS	.48	.51	.53	.56	.59	.62	.66	
.69								
5.64 CFS	.73	.78	.82	.87	.92	.96	1.01	
1.06								
6.12 CFS	1.12	1.17	1.22	1.27	1.33	1.38	1.44	
1.50								
6.60 CFS	1.56	1.63	1.70	1.78	1.85	1.93	2.02	
2.12								
7.08 CFS	2.21	2.31	2.41	2.52	2.63	2.75	2.88	
3.03								
7.56 CFS	3.18	3.36	3.55	3.75	3.96	4.17	4.40	
4.63								
8.04 CFS	4.87	5.12	5.39	5.66	5.95	6.24	6.55	
6.87								
8.52 CFS	7.20	7.54	7.88	8.23	8.59	8.95	9.32	
9.70								
9.00 CFS	10.10	10.50	10.91	11.33	11.77	12.22	12.69	
13.18								
9.48 CFS	13.72	14.30	14.92	15.60	16.33	17.12	17.96	
18.86								
9.96 CFS	19.82	20.82	21.88	22.99	24.17	25.40	26.68	
28.00								
10.44 CFS	29.37	30.78	32.25	33.76	35.35	37.03	38.84	
40.84								
10.92 CFS	43.08	45.61	48.44	51.63	55.21	59.26	63.81	
68.92								
11.40 CFS	75	81	88	96	106	117	130	
147								
11.88 CFS	167	194	232	286	363	442	510	
579								
12.36 CFS	651	716	765	797	810	809	799	
784								
12.84 CFS	760	728	692	652	612	574	539	
508								
13.32 CFS	480	457	436	418	402	387	374	
363								



13.80	CFS	352	342	333	324	316	308	300
292								
14.28	CFS	284	275	264	250	236	220	206
193								
14.76	CFS	181	171	162	155	148	143	138
133								
15.24	CFS	129	125	122	119	116	113	110
108								
15.72	CFS	106	104	102	100	99	98	96
95								
16.20	CFS	94.09	93.07	92.03	91.01	90.05	89.11	88.19
87.32								
16.68	CFS	86.49	85.70	84.90	84.11	83.34	82.60	81.88
81.15								
17.16	CFS	80.40	79.64	78.91	78.22	77.53	76.80	76.06
75.32								
17.64	CFS	74.58	73.85	73.11	72.36	71.61	70.88	70.15
69.43								
18.12	CFS	68.68	67.94	67.23	66.54	65.85	65.14	64.48
63.88								
18.60	CFS	63.32	62.77	62.22	61.72	61.29	60.86	60.43
60.05								
19.08	CFS	59.71	59.38	59.08	58.79	58.53	58.28	58.04
57.81								
19.56	CFS	57.58	57.32	57.08	56.89	56.68	56.44	56.21
56.02								
20.04	CFS	55.85	55.66	55.43	55.23	55.02	54.81	54.56
54.31								
20.52	CFS	54.11	53.93	53.73	53.51	53.27	53.08	52.88
52.64								
21.00	CFS	52.40	52.18	51.96	51.75	51.54	51.33	51.13
50.93								
21.48	CFS	50.73	50.52	50.29	50.05	49.85	49.65	49.41
49.22								
21.96	CFS	49.05	48.84	48.60	48.37	48.14	47.91	47.68
47.47								
22.44	CFS	47.26	47.05	46.83	46.57	46.33	46.12	45.88
45.61								
22.92	CFS	45.36	45.14	44.95	44.73	44.48	44.25	44.02
43.80								
23.40	CFS	43.58	43.35	43.10	42.86	42.67	42.48	42.27
42.02								

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23.88	CFS	41.77	41.54	41.42	41.17	40.35	39.24	38.05
36.69								
24.36	CFS	35.13	33.46	31.71	29.84	27.82	25.68	23.50
21.38								
24.84	CFS	19.37	17.56	15.98	14.62	13.47	12.52	11.73
11.08								
25.32	CFS	10.55	10.10	9.72	9.41	9.13	8.89	8.67
8.47								
25.80	CFS	8.29	8.11					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.57 WATERSHED INCHES; 2121 CFS-HRS; 175.3 ACRE-

FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	810.1	230.03
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
2.57 WATERSHED INCHES;		2121 CFS-HRS;
FEET.		175.3 ACRE-

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	69.0	(RUNOFF)
17.34	2.3	(RUNOFF)
24.01	1.3	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10								
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05								
SQ.MI.								
10.44 CFS	.48	.54	.61	.69	.79	.90	1.03	
1.17								
10.92 CFS	1.32	1.48	1.66	1.88	2.14	2.44	2.77	
3.12								
11.40 CFS	3.52	3.94	4.40	5.28	6.65	8.02	9.48	
11.75								
11.88 CFS	15.02	19.88	28.51	42.20	61.40	68.99	58.81	
45.47								
12.36 CFS	36.20	29.51	25.09	22.34	19.48	16.56	14.53	
13.33								
12.84 CFS	12.45	11.72	11.07	10.42	9.77	9.14	8.62	
8.22								
13.32 CFS	7.83	7.46	7.09	6.72	6.36	6.02	5.75	
5.55								
13.80 CFS	5.39	5.26	5.16	5.08	5.01	4.93	4.82	
4.71								
14.28 CFS	4.60	4.52	4.45	4.37	4.28	4.16	4.05	
3.95								
14.76 CFS	3.87	3.79	3.71	3.61	3.51	3.42	3.32	
3.22								
15.24 CFS	3.14	3.09	3.07	3.06	3.06	3.05	3.03	
2.98								
15.72 CFS	2.93	2.91	2.92	2.91	2.87	2.82	2.78	
2.76								
16.20 CFS	2.75	2.74	2.70	2.67	2.65	2.61	2.57	
2.55								
16.68 CFS	2.54	2.53	2.50	2.47	2.44	2.43	2.42	
2.39								
17.16 CFS	2.35	2.29	2.26	2.27	2.27	2.23	2.18	
2.13								
17.64 CFS	2.11	2.10	2.08	2.05	2.01	2.00	1.99	
1.97								
18.12 CFS	1.94	1.90	1.88	1.87	1.86	1.83	1.81	
1.83								
18.60 CFS	1.85	1.85	1.83	1.81	1.83	1.82	1.80	
1.78								
19.08 CFS	1.77	1.77	1.76	1.76	1.76	1.76	1.76	
1.77								
19.56 CFS	1.76	1.72	1.71	1.72	1.72	1.69	1.67	

1.68								
20.04 CFS	1.71	1.71	1.69	1.67	1.66	1.66	1.63	
1.60								
20.52 CFS	1.61	1.63	1.64	1.62	1.60	1.61	1.61	
1.59								
21.00 CFS	1.57	1.56	1.55	1.55	1.55	1.55	1.55	
1.55								

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21.48 CFS	1.55	1.54	1.52	1.49	1.50	1.50	1.49	
1.49								
21.96 CFS	1.50	1.49	1.46	1.45	1.44	1.44	1.44	
1.44								
22.44 CFS	1.44	1.44	1.43	1.39	1.38	1.39	1.39	
1.36								
22.92 CFS	1.34	1.35	1.38	1.38	1.36	1.34	1.33	
1.33								
23.40 CFS	1.32	1.31	1.28	1.26	1.28	1.30	1.30	
1.27								
23.88 CFS	1.24	1.24	1.31	1.28	.90	.46		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.03 WATERSHED INCHES; 67 CFS-HRS; 5.5 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.68	826.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.55 WATERSHED INCHES; 2188 CFS-HRS; 180.8 ACRE-  
FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.75	825.8	215.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.55 WATERSHED INCHES; 2187 CFS-HRS; 180.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	37.3	(RUNOFF)
19.47	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.78 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.74	833.4	178.68

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.53 WATERSHED INCHES; 2223 CFS-HRS; 183.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 83

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.15	78.1	(RUNOFF)
15.84	3.0	(RUNOFF)
17.34	2.4	(RUNOFF)
24.00	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.15 WATERSHED INCHES; 71 CFS-HRS; 5.9 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	81.9	(RUNOFF)
21.93	2.2	(RUNOFF)
24.01	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.08 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-  
FEET.

OPERATION DIVERT XSECTION 184  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	81.9	(DIVERT)
21.93	2.2	(DIVERT)
24.01	1.8	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
97 CFS-HRS; 8.0 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 81, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 200.00.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 81

\*\*\* MESSAGE - HYDROGRAPH CONTAINS NO FLOW.
\*\*\*

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-

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

\*\*\* WARNING - XSECTION 185
NO HYDROGRAPH IN INPUT LOCATION 1 OR 6 FOR ADDHYD OPERATION.
\*\*\*

OPERATION ADDHYD XSECTION 185

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows show values for 12.25, 21.93, and 24.01 hours, with discharges of 81.9, 2.2, and 1.8 CFS, and peaks of (NULL).

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.08 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 186

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows show values for 12.26 and 23.12 hours, with discharges of 34.6 and 1.0 CFS, and peaks of (RUNOFF).

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.46 WATERSHED INCHES; 44 CFS-HRS; 3.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 187

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	116.5	(NULL)
18.67	4.0	(NULL)
21.94	3.3	(NULL)
23.12	3.0	(NULL)
24.01	2.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.84 WATERSHED INCHES; 141 CFS-HRS; 11.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 85

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	181.6	(NULL)
20.83	5.2	(NULL)
24.00	4.2	(NULL)

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HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10							
	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = .17			
9.96 CFS 1.31	.48	.59	.69	.81	.93	1.05	1.18	
10.44 CFS 3.15	1.45	1.60	1.78	1.98	2.22	2.49	2.81	
10.92 CFS 8.21	3.53	3.93	4.36	4.92	5.57	6.35	7.23	
11.40 CFS 31.36	9.32	10.51	11.85	14.18	17.53	21.09	25.31	
11.88 CFS 155	40	52	74	108	155	180	174	
12.36 CFS 50	133	112	96	84	73	63	56	
12.84 CFS 28.02	45.11	41.66	38.75	36.16	33.73	31.52	29.64	
13.32 CFS 18.68	26.59	25.27	24.01	22.77	21.58	20.45	19.48	
13.80 CFS 15.46	18.02	17.48	17.06	16.72	16.43	16.13	15.81	
14.28 CFS 13.03	15.13	14.84	14.58	14.32	14.02	13.69	13.35	
14.76 CFS 10.67	12.74	12.47	12.20	11.90	11.60	11.31	10.99	
15.24 CFS 9.70	10.40	10.20	10.06	9.97	9.92	9.89	9.81	
15.72 CFS 9.00	9.56	9.48	9.45	9.40	9.32	9.20	9.08	

16.20 CFS	8.94	8.88	8.79	8.70	8.62	8.52	8.40
8.32							
16.68 CFS	8.26	8.21	8.13	8.04	7.96	7.91	7.86
7.78							
17.16 CFS	7.66	7.52	7.43	7.40	7.34	7.26	7.13
7.01							
17.64 CFS	6.91	6.85	6.79	6.69	6.60	6.53	6.47
6.42							
18.12 CFS	6.33	6.23	6.16	6.11	6.06	5.97	5.92
5.93							
18.60 CFS	5.96	5.96	5.91	5.89	5.91	5.88	5.83
5.79							
19.08 CFS	5.75	5.73	5.72	5.71	5.71	5.70	5.70
5.70							
19.56 CFS	5.68	5.61	5.57	5.58	5.55	5.50	5.46
5.46							
20.04 CFS	5.51	5.51	5.48	5.44	5.41	5.38	5.31
5.24							
20.52 CFS	5.24	5.27	5.28	5.25	5.21	5.22	5.21
5.16							
21.00 CFS	5.12	5.08	5.05	5.03	5.02	5.01	5.01
5.01							
21.48 CFS	5.01	5.00	4.94	4.88	4.88	4.87	4.83
4.84							
21.96 CFS	4.86	4.82	4.77	4.73	4.70	4.68	4.67
4.66							
22.44 CFS	4.66	4.65	4.63	4.56	4.52	4.52	4.49
4.43							
22.92 CFS	4.39	4.39	4.44	4.44	4.41	4.37	4.34
4.32							
23.40 CFS	4.30	4.27	4.19	4.15	4.17	4.20	4.20
4.15							
23.88 CFS	4.08	4.06	4.19	4.08	3.29	2.34	1.57
.97							
24.36 CFS	.60	.37					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.93 WATERSHED INCHES; 212 CFS-HRS; 17.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.71	887.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.46 WATERSHED INCHES; 2435 CFS-HRS; 201.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 87

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	40.2	(RUNOFF)
15.84	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.45 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.71	893.7	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55  
 SQ.MI.

HRS								
5.28 CFS	.50	.53	.55	.59	.62	.66	.70	
.74								
5.76 CFS	.78	.83	.88	.93	.98	1.04	1.09	
1.14								
6.24 CFS	1.20	1.26	1.32	1.38	1.44	1.50	1.57	
1.63								
6.72 CFS	1.70	1.78	1.86	1.93	2.02	2.11	2.20	
2.30								
7.20 CFS	2.41	2.51	2.62	2.73	2.86	2.98	3.12	
3.27								
7.68 CFS	3.44	3.62	3.81	4.02	4.24	4.47	4.70	
4.95								
8.16 CFS	5.20	5.45	5.72	6.01	6.30	6.60	6.92	
7.26								
8.64 CFS	7.60	7.95	8.30	8.65	9.01	9.39	9.78	
10.18								
9.12 CFS	10.58	11.00	11.44	11.90	12.36	12.84	13.35	
13.89								
9.60 CFS	14.48	15.13	15.84	16.60	17.43	18.34	19.33	
20.39								
10.08 CFS	21.53	22.72	23.97	25.27	26.64	28.09	29.61	
31.21								
10.56 CFS	32.89	34.69	36.61	38.65	40.83	43.14	45.65	
48.37								
11.04 CFS	51.39	54.90	58.89	63.43	68.53	74.22	80.63	
87.70								
11.52 CFS	96	106	119	133	150	171	199	
236								
12.00 CFS	293	377	495	590	648	685	711	
743								
12.48 CFS	788	835	870	889	894	886	871	
852								
12.96 CFS	825	791	752	709	666	625	587	
553								
13.44 CFS	523	497	474	454	436	420	405	
393								
13.92 CFS	381	370	361	352	343	335	326	
318								
14.40 CFS	309	300	288	275	259	244	229	
215								
14.88 CFS	203	192	182	174	167	161	155	
150								
15.36 CFS	146	142	138	135	132	129	126	
124								
15.84 CFS	121	119	117	116	114	112	111	



110								
16.32	CFS	108	107	106	105	104	103	102
101								
16.80	CFS	99.72	98.76	97.84	96.96	96.12	95.25	94.33
93.35								
17.28	CFS	92.44	91.65	90.85	90.01	89.10	88.17	87.28
86.45								
17.76	CFS	85.62	84.73	83.83	82.96	82.13	81.32	80.44
79.56								
18.24	CFS	78.70	77.88	77.08	76.24	75.47	74.79	74.18
73.59								
18.72	CFS	72.94	72.34	71.81	71.28	70.75	70.24	69.75
69.32								
19.20	CFS	68.95	68.62	68.31	68.02	67.75	67.50	67.22
66.87								
19.68	CFS	66.57	66.33	66.05	65.77	65.48	65.25	65.11
64.93								
20.16	CFS	64.70	64.44	64.16	63.90	63.58	63.25	63.01
62.81								
20.64	CFS	62.65	62.41	62.14	61.93	61.69	61.42	61.13
60.82								
21.12	CFS	60.54	60.29	60.06	59.84	59.63	59.42	59.22
59.00								
21.60	CFS	58.70	58.39	58.16	57.90	57.64	57.45	57.25
57.01								

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22.08	CFS	56.75	56.46	56.18	55.92	55.67	55.43	55.20
54.98								
22.56	CFS	54.73	54.40	54.11	53.86	53.58	53.27	52.96
52.70								
23.04	CFS	52.53	52.33	52.07	51.78	51.48	51.22	50.97
50.69								
23.52	CFS	50.34	50.04	49.82	49.64	49.46	49.18	48.85
48.56								
24.00	CFS	48.54	48.17	46.72	44.80	42.68	40.68	38.98
37.35								
24.48	CFS	35.64	33.90	32.10	30.21	28.19	26.06	23.88
21.74								
24.96	CFS	19.71	17.87	16.25	14.85	13.67	12.68	11.86
11.19								
25.44	CFS	10.64	10.17	9.79	9.46	9.18	8.93	8.71
8.51								

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.47 WATERSHED INCHES; 2471 CFS-HRS; 204.2 ACRE-FEET.

OPERATION DIVERT XSECTION 81  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.42 730.0 \* 178.42  
\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2397 CFS-HRS; 198.1 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.71 163.7 176.41

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.07 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 71

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.71 163.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.07 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-
FEET.

OPERATION ADDHYD XSECTION 89

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.71 893.7 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =10
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55
SQ.MI.
5.28 CFS .50 .53 .55 .59 .62 .66 .70
.74

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Table with 9 columns of hydrograph data points: 5.76 CFS, 1.14, 6.24 CFS, 1.63, 6.72 CFS, 2.30, 7.20 CFS, 3.27, 7.68 CFS, 4.95, 8.16 CFS, 7.26, 8.64 CFS, 10.18, 9.12 CFS, 13.89

9.60 CFS	14.48	15.13	15.84	16.60	17.43	18.34	19.33
20.39							
10.08 CFS	21.53	22.72	23.97	25.27	26.64	28.09	29.61
31.21							
10.56 CFS	32.89	34.69	36.61	38.65	40.83	43.14	45.65
48.37							
11.04 CFS	51.39	54.90	58.89	63.43	68.53	74.22	80.63
87.70							
11.52 CFS	96	106	119	133	150	171	199
236							
12.00 CFS	293	377	495	590	648	685	711
743							
12.48 CFS	788	835	870	889	894	886	871
852							
12.96 CFS	825	791	752	709	666	625	587
553							
13.44 CFS	523	497	474	454	436	420	405
393							
13.92 CFS	381	370	361	352	343	335	326
318							
14.40 CFS	309	300	288	275	259	244	229
215							
14.88 CFS	203	192	182	174	167	161	155
150							
15.36 CFS	146	142	138	135	132	129	126
124							
15.84 CFS	121	119	117	116	114	112	111
110							
16.32 CFS	108	107	106	105	104	103	102
101							
16.80 CFS	99.72	98.76	97.84	96.96	96.12	95.25	94.33
93.35							
17.28 CFS	92.44	91.65	90.85	90.01	89.10	88.17	87.28
86.45							
17.76 CFS	85.62	84.73	83.83	82.96	82.13	81.32	80.44
79.56							
18.24 CFS	78.70	77.88	77.08	76.24	75.47	74.79	74.18
73.59							
18.72 CFS	72.94	72.34	71.81	71.28	70.75	70.24	69.75
69.32							
19.20 CFS	68.95	68.62	68.31	68.02	67.75	67.50	67.22
66.87							
19.68 CFS	66.57	66.33	66.05	65.77	65.48	65.25	65.11
64.93							
20.16 CFS	64.70	64.44	64.16	63.90	63.58	63.25	63.01
62.81							
20.64 CFS	62.65	62.41	62.14	61.93	61.69	61.42	61.13
60.82							
21.12 CFS	60.54	60.29	60.06	59.84	59.63	59.42	59.22
59.00							
21.60 CFS	58.70	58.39	58.16	57.90	57.64	57.45	57.25
57.01							
22.08 CFS	56.75	56.46	56.18	55.92	55.67	55.43	55.20
54.98							
22.56 CFS	54.73	54.40	54.11	53.86	53.58	53.27	52.96
52.70							
23.04 CFS	52.53	52.33	52.07	51.78	51.48	51.22	50.97
50.69							
23.52 CFS	50.34	50.04	49.82	49.64	49.46	49.18	48.85
48.56							
24.00 CFS	48.54	48.17	46.72	44.80	42.68	40.68	38.98
37.35							
24.48 CFS	35.64	33.90	32.10	30.21	28.19	26.06	23.88
21.74							

24.96 CFS	19.71	17.87	16.25	14.85	13.67	12.68	11.86
11.19							
25.44 CFS	10.64	10.17	9.79	9.46	9.18	8.93	8.71
8.51							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.47 WATERSHED INCHES; 2471 CFS-HRS; 204.2 ACRE-  
 FEET.

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EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 89  
 STARTING TIME = .00 RAIN DEPTH = 6.14 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =25 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	65.5	(RUNOFF)
20.13	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.01 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	65.1	390.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.01 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	114.1	(RUNOFF)
18.64	3.2	(RUNOFF)
23.97	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.85 WATERSHED INCHES; 144 CFS-HRS; 11.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	175.6	(NULL)
20.13	4.7	(NULL)
23.11	3.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.91 WATERSHED INCHES; 231 CFS-HRS; 19.1 ACRE-  
 FEET.

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OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	174.6	383.65

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.89 WATERSHED INCHES; 230 CFS-HRS; 19.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.39	173.4	368.63

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.90 WATERSHED INCHES; 231 CFS-HRS; 19.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	143.4	(RUNOFF)
23.13	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.63 WATERSHED INCHES; 187 CFS-HRS; 15.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.35	306.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.77 WATERSHED INCHES; 417 CFS-HRS; 34.5 ACRE-
FEET.

OPERATION DIVERT XSECTION 107
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 12.18 213.0 \* (DIVERT)
\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
394 CFS-HRS; 32.6 ACRE-FEET.

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OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 12.35 93.7 176.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.21 WATERSHED INCHES; 23 CFS-HRS; 1.9 ACRE-
FEET.

\*\*\* MESSAGE - STRUCTURE 84, USER ENTERED STARTING ELEVATION OR STRUCTURE
TABLE
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 358.00.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.
\*\*\*

OPERATION RESVOR STRUCTURE 84

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,
AT STRUCTURE 84
\*\*\*

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 12.60 .0 350.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET) 12.51 214.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.57 WATERSHED INCHES; 394 CFS-HRS; 32.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	214.5	357.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.56 WATERSHED INCHES; 394 CFS-HRS; 32.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	169.9	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.08 WATERSHED INCHES; 241 CFS-HRS; 19.9 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	108.8	377.05

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.61 WATERSHED INCHES; 218 CFS-HRS; 18.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	23.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.10 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-  
 FEET.

OPERATION RESVOR      STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	100.4	358.68
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.60 WATERSHED INCHES;	218 CFS-HRS;	18.0 ACRE-
FEET.		

OPERATION RUNOFF      XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	113.8	(RUNOFF)
23.09	2.1	(RUNOFF)
24.02	1.9	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.23 WATERSHED INCHES;	113 CFS-HRS;	9.4 ACRE-
FEET.		

OPERATION ADDHYD      XSECTION 12

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	309.3	(NULL)
24.01	8.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.48 WATERSHED INCHES;	507 CFS-HRS;	41.9 ACRE-
FEET.		

OPERATION RUNOFF      XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	44.8	(RUNOFF)
18.87	1.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.81 WATERSHED INCHES;	47 CFS-HRS;	3.9 ACRE-
FEET.		

OPERATION ADDHYD      XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		



12.26	323.4	(NULL)
12.58	344.6	(NULL)
23.97	15.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.75 WATERSHED INCHES; 723 CFS-HRS; 59.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	364.1	(NULL)
12.57	359.4	(NULL)
23.99	15.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.75 WATERSHED INCHES; 771 CFS-HRS; 63.7 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .006 HOURS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 23

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.91	223.4	344.17
14.58	50.7	335.05
14.69	47.4	334.92
14.81	44.7	334.82
14.91	42.4	334.73
23.98	15.7	333.69

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32  
 SQ.MI.

3.84 CFS	.00	.01	.01	.01	.01	.01	.01
.01							
3.84 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
4.32 CFS	.02	.02	.02	.02	.02	.03	.03
.03							
4.32 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
4.80 CFS	.03	.04	.04	.04	.04	.05	.05
.05							
4.80 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
5.28 CFS	.05	.06	.06	.06	.07	.07	.07
.08							

5.28 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
5.76 CFS	.08	.09	.09	.09	.10	.10	.11
.11							
5.76 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
6.24 CFS	.12	.12	.12	.13	.13	.14	.14
.16							
6.24 ELEV	333.08	333.08	333.08	333.08	333.09	333.09	333.09
333.09							
6.72 CFS	.17	.19	.21	.22	.24	.26	.28
.31							
6.72 ELEV	333.09	333.09	333.09	333.09	333.09	333.09	333.09
333.09							
7.20 CFS	.34	.38	.42	.47	.53	.59	.65
.71							
7.20 ELEV	333.09	333.09	333.10	333.10	333.10	333.10	333.11
333.11							
7.68 CFS	.78	.85	.92	1.00	1.08	1.15	1.24
1.33							
7.68 ELEV	333.11	333.11	333.12	333.12	333.12	333.12	333.13
333.13							
8.16 CFS	1.42	1.53	1.63	1.75	1.87	1.98	2.10
2.23							
8.16 ELEV	333.14	333.14	333.14	333.15	333.15	333.16	333.16
333.17							
8.64 CFS	2.36	2.49	2.63	2.77	2.90	3.03	3.17
3.33							
8.64 ELEV	333.17	333.18	333.18	333.19	333.19	333.20	333.20
333.21							
9.12 CFS	3.49	3.66	3.84	4.04	4.26	4.50	4.74
4.98							
9.12 ELEV	333.22	333.22	333.23	333.24	333.25	333.25	333.26
333.27							
9.60 CFS	5.24	5.52	5.82	6.12	6.44	6.78	7.17
7.63							
9.60 ELEV	333.28	333.29	333.31	333.32	333.33	333.34	333.36
333.38							
10.08 CFS	8.13	8.67	9.23	9.81	10.39	10.98	11.59
12.23							
10.08 ELEV	333.40	333.42	333.44	333.46	333.48	333.51	333.53
333.56							
10.56 CFS	12.90	13.65	14.50	15.44	16.47	18.48	20.88
23.06							
10.56 ELEV	333.58	333.61	333.64	333.68	333.72	333.80	333.89
333.98							
11.04 CFS	25.24	27.40	29.75	32.25	34.97	37.83	40.94
44.25							
11.04 ELEV	334.06	334.15	334.24	334.33	334.44	334.55	334.67
334.80							
11.52 CFS	48	52	59	66	74	85	99
102							
11.52 ELEV	334.94	335.12	335.36	335.65	335.98	336.39	336.94
337.05							
12.00 CFS	108	119	131	143	156	166	176
185							
12.00 ELEV	337.32	337.83	338.40	339.04	339.76	340.42	341.02
341.58							
12.48 CFS	194	202	208	214	218	221	223
223							
12.48 ELEV	342.13	342.64	343.07	343.47	343.78	344.00	344.12
344.17							
12.96 CFS	223	222	220	218	215	213	209
206							

12.96 ELEV	344.14	344.06	343.94	343.79	343.61	343.40	343.18
342.94							

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13.44 CFS	202	198	193	188	182	177	172
167							
13.44 ELEV	342.68	342.40	342.08	341.75	341.42	341.09	340.77
340.45							
13.92 CFS	162	157	152	146	139	132	126
116							
13.92 ELEV	340.13	339.82	339.52	339.18	338.83	338.50	338.19
337.69							
14.40 CFS	105	55	47	51	45	47	44
45							
14.40 ELEV	337.19	335.21	334.90	335.05	334.85	334.92	334.78
334.82							
14.88 CFS	42.05	42.19	40.22	39.96	38.37	37.84	36.60
36.13							
14.88 ELEV	334.72	334.72	334.64	334.63	334.57	334.55	334.50
334.49							
15.36 CFS	35.29	34.93	34.35	34.07	33.65	33.37	32.99
32.74							
15.36 ELEV	334.45	334.44	334.42	334.41	334.39	334.38	334.36
334.35							
15.84 CFS	32.49	32.32	32.07	31.84	31.57	31.36	31.15
30.96							
15.84 ELEV	334.34	334.34	334.33	334.32	334.31	334.30	334.29
334.28							
16.32 CFS	30.74	30.52	30.30	30.09	29.85	29.62	29.42
29.23							
16.32 ELEV	334.28	334.27	334.26	334.25	334.24	334.23	334.22
334.22							
16.80 CFS	29.03	28.80	28.60	28.41	28.24	28.06	27.83
27.58							
16.80 ELEV	334.21	334.20	334.19	334.19	334.18	334.17	334.16
334.15							
17.28 CFS	27.35	27.18	27.00	26.79	26.54	26.29	26.06
25.86							
17.28 ELEV	334.14	334.14	334.13	334.12	334.11	334.10	334.09
334.09							
17.76 CFS	25.65	25.43	25.19	24.98	24.79	24.61	24.40
24.18							
17.76 ELEV	334.08	334.07	334.06	334.05	334.04	334.04	334.03
334.02							
18.24 CFS	23.98	23.80	23.62	23.42	23.23	23.10	23.01
22.92							
18.24 ELEV	334.01	334.01	334.00	333.99	333.98	333.98	333.98
333.97							
18.72 CFS	22.80	22.69	22.63	22.57	22.46	22.36	22.26
22.18							
18.72 ELEV	333.97	333.96	333.96	333.96	333.95	333.95	333.95
333.94							
19.20 CFS	22.10	22.02	21.95	21.88	21.83	21.77	21.71
21.62							
19.20 ELEV	333.94	333.94	333.93	333.93	333.93	333.93	333.92
333.92							

19.68	CFS	21.52	21.46	21.40	21.29	21.18	21.11	21.08
21.04								
19.68	ELEV	333.92	333.91	333.91	333.91	333.90	333.90	333.90
333.90								
20.16	CFS	20.96	20.87	20.80	20.73	20.63	20.50	20.41
20.37								
20.16	ELEV	333.90	333.89	333.89	333.89	333.88	333.88	333.87
333.87								
20.64	CFS	20.32	20.23	20.14	20.08	20.03	19.96	19.85
19.76								
20.64	ELEV	333.87	333.87	333.86	333.86	333.86	333.86	333.85
333.85								
21.12	CFS	19.68	19.60	19.52	19.45	19.39	19.33	19.28
19.22								
21.12	ELEV	333.85	333.84	333.84	333.84	333.83	333.83	333.83
333.83								
21.60	CFS	19.14	19.03	18.97	18.91	18.83	18.76	18.72
18.65								
21.60	ELEV	333.82	333.82	333.82	333.82	333.81	333.81	333.81
333.81								
22.08	CFS	18.56	18.47	18.39	18.30	18.21	18.12	18.04
17.97								
22.08	ELEV	333.80	333.80	333.80	333.79	333.79	333.78	333.78
333.78								
22.56	CFS	17.88	17.76	17.64	17.56	17.47	17.35	17.22
17.12								
22.56	ELEV	333.78	333.77	333.77	333.76	333.76	333.75	333.75
333.75								
23.04	CFS	17.08	17.02	16.92	16.82	16.74	16.66	16.57
16.48								
23.04	ELEV	333.74	333.74	333.74	333.73	333.73	333.73	333.72
333.72								
23.52	CFS	16.36	16.23	16.15	16.10	16.04	15.93	15.80
15.71								
23.52	ELEV	333.72	333.71	333.71	333.71	333.70	333.70	333.69
333.69								
24.00	CFS	15.72	15.67	15.07	14.06	13.07	12.16	11.27
10.39								
24.00	ELEV	333.69	333.69	333.67	333.63	333.59	333.55	333.52
333.48								
24.48	CFS	9.75	9.37	9.09	8.86	8.67	8.50	8.35
8.21								
24.48	ELEV	333.46	333.44	333.43	333.42	333.42	333.41	333.40
333.40								
24.96	CFS	8.07	7.95	7.82	7.70	7.58	7.47	7.36
7.26								

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24.96	ELEV	333.39	333.39	333.38	333.38	333.37	333.37	333.37
333.36								
25.44	CFS	7.14	7.02	6.89	6.75	6.61	6.48	6.34
6.21								
25.44	ELEV	333.36	333.35	333.35	333.34	333.34	333.33	333.33
333.32								
25.92	CFS	6.08	5.95	5.82	5.70	5.58	5.46	5.34
5.23								

25.92 ELEV	333.32	333.31	333.31	333.30	333.30	333.29	333.29
333.28							
26.40 CFS	5.12	5.01	4.90	4.80	4.70		
26.40 ELEV	333.28	333.27	333.27	333.27	333.26		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.75 WATERSHED INCHES; 771 CFS-HRS; 63.7 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	137	36	28	22	20	17	11	6

DURATION(HRS) 17  
 FLOW(CFS) 5 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.91	223.4	333.07
14.58	50.7	331.71
14.69	47.4	331.67
14.81	44.7	331.64
14.91	42.4	331.61
23.98	15.7	331.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.75 WATERSHED INCHES; 771 CFS-HRS; 63.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	68.1	(RUNOFF)
15.84	2.0	(RUNOFF)
21.45	1.0	(RUNOFF)
21.75	1.0	(RUNOFF)
21.95	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.75 WATERSHED INCHES; 65 CFS-HRS; 5.3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 118

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
 12.18 79.6 (RUNOFF)  
 24.03 1.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.34 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.18 79.6 (NULL)  
 24.03 1.1 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	.03
2.16 CFS	.00	.01	.01	.02	.04	.05	.06			
.08										
2.64 CFS	.09	.11	.13	.14	.15	.17	.18			
.20										
3.12 CFS	.21	.22	.24	.25	.27	.28	.29			
.31										
3.60 CFS	.33	.34	.35	.36	.37	.39	.40			
.42										
4.08 CFS	.43	.45	.47	.48	.48	.49	.51			
.53										
4.56 CFS	.55	.55	.56	.57	.59	.60	.62			
.63										
5.04 CFS	.64	.65	.66	.68	.70	.71	.71			
.71										
5.52 CFS	.73	.75	.77	.79	.79	.79	.79			
.81										
6.00 CFS	.83	.86	.87	.88	.90	.92	.94			
.96										
6.48 CFS	.99	1.01	1.04	1.06	1.08	1.09	1.12			
1.15										
6.96 CFS	1.16	1.18	1.21	1.25	1.28	1.31	1.32			
1.34										
7.44 CFS	1.37	1.40	1.42	1.44	1.46	1.49	1.52			
1.54										
7.92 CFS	1.58	1.61	1.64	1.67	1.69	1.71	1.73			
1.76										
8.40 CFS	1.79	1.81	1.83	1.86	1.91	1.94	1.97			
1.99										
8.88 CFS	2.00	2.02	2.05	2.11	2.16	2.20	2.27			
2.35										
9.36 CFS	2.44	2.52	2.59	2.66	2.74	2.83	2.93			
3.02										
9.84 CFS	3.10	3.18	3.25	3.34	3.43	3.54	3.63			
3.71										
10.32 CFS	3.79	3.87	3.96	4.07	4.20	4.38	4.61			
4.88										
10.80 CFS	5.18	5.50	5.83	6.15	6.48	6.87	7.35			
7.92										
11.28 CFS	8.49	9.08	9.69	10.30	10.95	12.17	14.27			
16.40										
11.76 CFS	18.41	21.19	25.12	30.70	39.75	53.56	71.18			
79.58										
12.24 CFS	70.72	55.11	42.57	33.78	27.78	23.84	20.52			
17.36										
12.72 CFS	14.92	13.34	12.25	11.40	10.68	10.01	9.36			

8.72								
13.20	CFS	8.17	7.74	7.35	6.98	6.62	6.26	5.91
5.58								
13.68	CFS	5.31	5.09	4.93	4.79	4.68	4.60	4.52
4.44								
14.16	CFS	4.35	4.24	4.14	4.05	3.98	3.91	3.82
3.72								
14.64	CFS	3.61	3.52	3.44	3.37	3.29	3.20	3.12
3.03								
15.12	CFS	2.94	2.85	2.77	2.72	2.69	2.68	2.67
2.66								
15.60	CFS	2.64	2.61	2.56	2.53	2.53	2.53	2.50
2.46								
16.08	CFS	2.42	2.39	2.38	2.37	2.34	2.31	2.29
2.26								
16.56	CFS	2.23	2.20	2.19	2.18	2.15	2.12	2.10
2.09								
17.04	CFS	2.08	2.06	2.02	1.97	1.94	1.94	1.94
1.91								
17.52	CFS	1.87	1.83	1.80	1.79	1.78	1.75	1.72
1.70								
18.00	CFS	1.69	1.68	1.65	1.62	1.60	1.59	1.58
1.55								

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18.48	CFS	1.54	1.54	1.56	1.56	1.55	1.53	1.54
1.54								
18.96	CFS	1.52	1.50	1.49	1.49	1.49	1.48	1.48
1.48								
19.44	CFS	1.48	1.48	1.48	1.45	1.44	1.44	1.44
1.42								
19.92	CFS	1.41	1.41	1.43	1.43	1.42	1.40	1.39
1.39								
20.40	CFS	1.37	1.34	1.34	1.36	1.37	1.36	1.34
1.34								
20.88	CFS	1.34	1.33	1.31	1.30	1.29	1.29	1.29
1.29								
21.36	CFS	1.29	1.29	1.29	1.28	1.27	1.24	1.24
1.25								
21.84	CFS	1.24	1.23	1.24	1.24	1.22	1.20	1.20
1.19								
22.32	CFS	1.19	1.19	1.19	1.19	1.18	1.16	1.14
1.15								
22.80	CFS	1.14	1.13	1.11	1.11	1.13	1.14	1.12
1.11								
23.28	CFS	1.10	1.09	1.09	1.08	1.06	1.04	1.05
1.07								
23.76	CFS	1.07	1.05	1.03	1.02	1.06	1.06	.82
.48								
24.24	CFS	.25	.13	.06	.03	.02	.01	.00

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.34 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-  
FEET.

DURATION (HRS) 2 4 6 8 10 12 14 16

FLOW(CFS)	8	4	3	2	2	1	1	1
DURATION(HRS)	18	20						
FLOW(CFS)	1	0						

OPERATION RUNOFF XSECTION 119

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.13		19.8		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.55 WATERSHED INCHES; 17 CFS-HRS; 1.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 120

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.17		97.1		(NULL)
15.82		3.1		(NULL)
17.32		2.4		(NULL)
24.01		1.3		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.19 WATERSHED INCHES; 105 CFS-HRS; 8.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

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PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.16		164.2		(NULL)
15.83		5.1		(NULL)
18.85		3.1		(NULL)
24.01		2.2		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.01 WATERSHED INCHES; 169 CFS-HRS; 14.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK
ELEVATION(FEET)				
12.15		121.1		(RUNOFF)
15.84		3.8		(RUNOFF)
20.85		2.0		(RUNOFF)
24.00		1.7		(RUNOFF)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.37 WATERSHED INCHES; 114 CFS-HRS; 9.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	285.3	(NULL)
15.84	9.0	(NULL)
17.34	6.9	(NULL)
19.74	5.1	(NULL)
20.06	5.1	(NULL)
22.74	4.1	(NULL)
23.06	4.1	(NULL)
24.00	3.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.74 WATERSHED INCHES; 283 CFS-HRS; 23.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	424.0	(NULL)
14.57	63.6	(NULL)
14.69	59.7	(NULL)
14.80	56.5	(NULL)
20.04	26.2	(NULL)
20.58	25.2	(NULL)
21.93	23.2	(NULL)
23.03	21.1	(NULL)
24.00	19.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.96 WATERSHED INCHES; 1050 CFS-HRS; 86.8 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 122  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
11.88	168.0 *	(DIVERT)
14.57	63.6	(DIVERT)
14.69	59.7	(DIVERT)
14.80	56.5	(DIVERT)
20.04	26.2	(DIVERT)
20.58	25.2	(DIVERT)
21.93	23.2	(DIVERT)

23.03 21.1 (DIVERT)  
24.00 19.6 (DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
862 CFS-HRS; 71.2 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.17 256.0 176.89

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.71 WATERSHED INCHES; 189 CFS-HRS; 15.6 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 83, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 322.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

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OPERATION RESVOR STRUCTURE 83

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.96 151.0 322.49  
13.08 140.6 322.45  
13.20 129.2 322.42  
13.32 117.8 322.38  
13.44 105.7 322.34  
13.56 91.4 322.29  
13.68 64.0 322.21  
13.80 43.0 322.14  
13.92 18.7 322.06

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.28 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 123

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.96 319.0 (NULL)  
13.08 308.6 (NULL)  
13.20 297.2 (NULL)  
13.32 285.8 (NULL)  
13.44 273.7 (NULL)  
13.56 259.4 (NULL)

13.68	232.0	(NULL)
13.80	211.0	(NULL)
13.92	186.7	(NULL)
14.01	169.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.53 WATERSHED INCHES; 936 CFS-HRS; 77.3 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
13.04	238.1	315.70
13.14	255.3	315.76
13.26	256.6	315.76
13.38	251.4	315.74
13.49	243.2	315.71
13.61	232.7	315.68
13.73	217.3	315.62
13.85	203.4	315.57
24.05	19.6	314.16

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.45 WATERSHED INCHES; 916 CFS-HRS; 75.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	110.9	(RUNOFF)
23.13	2.1	(RUNOFF)
23.99	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.15 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
-----------------------------------	---------------------	------

12.32	106.9	364.70
23.15	2.1	356.55
23.79	2.0	356.54

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.16 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	158.3	(RUNOFF)
18.66	4.2	(RUNOFF)
23.13	3.1	(RUNOFF)
23.97	2.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.08 WATERSHED INCHES; 197 CFS-HRS; 16.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 26

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	259.5	(NULL)
18.67	7.1	(NULL)
20.68	6.3	(NULL)
23.14	5.2	(NULL)
23.78	4.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.11 WATERSHED INCHES; 332 CFS-HRS; 27.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.39	246.0	319.41
20.21	6.5	316.75
23.20	5.2	316.66

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.10 WATERSHED INCHES; 332 CFS-HRS; 27.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		
12.24	122.5	(RUNOFF)
18.67	3.3	(RUNOFF)
20.13	3.0	(RUNOFF)
24.01	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.75 WATERSHED INCHES; 145 CFS-HRS; 12.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	288.9	(NULL)
13.04	260.4	(NULL)
13.14	274.8	(NULL)
13.26	273.8	(NULL)
13.38	266.8	(NULL)
13.49	257.1	(NULL)
13.61	245.2	(NULL)
13.73	228.6	(NULL)
13.85	213.8	(NULL)
24.04	21.8	(NULL)

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.49 WATERSHED INCHES; 1061 CFS-HRS; 87.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	511.7	(NULL)
13.03	326.3	(NULL)
13.14	333.9	(NULL)
13.25	326.8	(NULL)
13.37	314.1	(NULL)
13.49	298.8	(NULL)
13.61	281.0	(NULL)
13.72	259.3	(NULL)
13.84	240.3	(NULL)
24.03	26.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.62 WATERSHED INCHES; 1394 CFS-HRS; 115.2 ACRE-FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION (FEET)		
12.35	511.7	(NULL)
13.03	326.3	(NULL)
13.14	333.9	(NULL)
13.25	326.8	(NULL)
13.37	314.1	(NULL)
13.49	298.8	(NULL)
13.61	281.0	(NULL)
13.72	259.3	(NULL)
13.84	240.3	(NULL)
24.03	26.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.62 WATERSHED INCHES; 1394 CFS-HRS; 115.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.21	183.4	(RUNOFF)
18.66	4.1	(RUNOFF)
21.96	3.3	(RUNOFF)
23.11	3.0	(RUNOFF)
24.03	2.8	(RUNOFF)

1

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.64 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-FEET.

OPERATION REACH XSECTION 32

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	167.8	313.44
18.72	4.1	310.34
20.73	3.6	310.29
24.09	2.8	310.23

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.65 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.16	28.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-FEET.

FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS WITH .44 AC-FT ( .08 WATERSHED INCHES) FLOOD STORAGE REMAINING IN RESERVOIR AT ELEV. 377.74. \*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.27 20.6 380.46 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 4.57 WATERSHED INCHES; 25 CFS-HRS; 2.0 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0, CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34. \*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.27 20.6 338.23 RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 4.57 WATERSHED INCHES; 25 CFS-HRS; 2.0 ACRE-FEET.

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TR20 ----- SCS

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OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.19 84.9 (RUNOFF) 24.02 1.1 (RUNOFF) RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 5.54 WATERSHED INCHES; 98 CFS-HRS; 8.1 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS WITH .99 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE REMAINING IN RESERVOIR AT ELEV. 353.96. \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION(FEET)			
12.28	71.4		357.38

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.86 WATERSHED INCHES; 86 CFS-HRS; 7.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	91.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.79 WATERSHED INCHES; 111 CFS-HRS; 9.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	91.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.79 WATERSHED INCHES; 111 CFS-HRS; 9.2 ACRE-  
 FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
 \*\*\*

OPERATION REACH XSECTION 37

1 TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.28	91.4	330.73

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.79 WATERSHED INCHES; 111 CFS-HRS; 9.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	94.7	(RUNOFF)
17.34	2.1	(RUNOFF)
24.00	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)



4.97 WATERSHED INCHES; 90 CFS-HRS; 7.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.20	155.3	(NULL)
20.04	4.1	(NULL)
24.00	3.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.87 WATERSHED INCHES; 201 CFS-HRS; 16.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.20	155.3	(NULL)
20.04	4.1	(NULL)
24.00	3.1	(NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25						
	MAIN	TIME INCREMENT = .060 hr,	DRAINAGE AREA = .06				
2.34 CFS	.00	.01	.01	.01	.01	.01	.02
.02							
2.82 CFS	.02	.02	.03	.03	.03	.03	.04
.05							
3.30 CFS	.06	.07	.09	.10	.12	.14	.15
.17							
3.78 CFS	.18	.20	.22	.24	.25	.27	.29
.31							
4.26 CFS	.32	.33	.35	.38	.40	.41	.42
.44							
4.74 CFS	.46	.48	.50	.51	.53	.55	.56
.58							
5.22 CFS	.61	.63	.64	.65	.67	.69	.72
.74							
5.70 CFS	.76	.77	.77	.79	.82	.85	.88
.89							
6.18 CFS	.91	.93	.96	.98	1.02	1.05	1.08
1.11							
6.66 CFS	1.14	1.15	1.18	1.23	1.25	1.27	1.30
1.35							
7.14 CFS	1.39	1.43	1.45	1.48	1.51	1.56	1.59
1.62							
7.62 CFS	1.64	1.68	1.72	1.76	1.80	1.84	1.88
1.92							

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8.10 CFS	1.97	2.00	2.02	2.06	2.12	2.15	2.17
2.22							

8.58	CFS	2.27	2.33	2.37	2.40	2.43	2.46	2.50
2.57								
9.06	CFS	2.64	2.69	2.77	2.86	2.97	3.07	3.16
3.24								
9.54	CFS	3.32	3.43	3.54	3.67	3.77	3.87	3.96
4.06								
10.02	CFS	4.18	4.31	4.44	4.55	4.65	4.75	4.87
5.00								
10.50	CFS	5.15	5.33	5.59	5.90	6.23	6.59	6.96
7.34								
10.98	CFS	7.85	8.61	9.54	10.68	11.88	13.09	14.31
15.60								
11.46	CFS	16.95	18.39	21.26	25.04	28.01	31.43	36.85
44.08								
11.94	CFS	54	71	97	134	154	151	136
114								
12.42	CFS	96.26	82.67	71.70	63.24	55.36	49.12	43.95
39.62								
12.90	CFS	36.32	34.49	32.65	30.82	29.07	27.52	26.11
24.76								
13.38	CFS	23.46	22.22	21.02	19.89	18.82	17.93	17.18
16.48								
13.86	CFS	15.86	15.30	14.80	14.33	13.87	13.42	12.98
12.59								
14.34	CFS	12.24	11.91	11.60	11.26	10.93	10.61	10.32
10.07								
14.82	CFS	9.85	9.60	9.35	9.12	8.89	8.64	8.41
8.21								
15.30	CFS	8.04	7.91	7.79	7.68	7.58	7.45	7.31
7.19								
15.78	CFS	7.12	7.09	7.01	6.91	6.81	6.72	6.66
6.61								
16.26	CFS	6.55	6.47	6.40	6.34	6.26	6.18	6.13
6.09								
16.74	CFS	6.04	5.97	5.90	5.85	5.82	5.77	5.71
5.62								
17.22	CFS	5.54	5.50	5.49	5.44	5.36	5.27	5.21
5.17								
17.70	CFS	5.13	5.08	5.01	4.95	4.91	4.88	4.83
4.76								
18.18	CFS	4.70	4.66	4.63	4.60	4.53	4.51	4.52
4.52								
18.66	CFS	4.50	4.44	4.43	4.44	4.40	4.36	4.33
4.31								
19.14	CFS	4.29	4.28	4.27	4.25	4.24	4.23	4.22
4.19								
19.62	CFS	4.14	4.13	4.14	4.11	4.07	4.04	4.05
4.08								
20.10	CFS	4.05	4.01	3.99	3.98	3.96	3.91	3.88
3.89								
20.58	CFS	3.91	3.90	3.85	3.83	3.84	3.83	3.79
3.76								
21.06	CFS	3.74	3.73	3.72	3.71	3.70	3.69	3.68
3.67								
21.54	CFS	3.66	3.61	3.58	3.60	3.58	3.55	3.56
3.57								
22.02	CFS	3.53	3.49	3.48	3.46	3.45	3.44	3.43
3.43								
22.50	CFS	3.42	3.39	3.34	3.33	3.35	3.32	3.28
3.26								
22.98	CFS	3.27	3.29	3.27	3.23	3.21	3.20	3.19
3.18								
23.46	CFS	3.15	3.10	3.09	3.11	3.12	3.10	3.05
3.02								

23.94 CFS	3.02	3.12	3.00	2.47	2.08	1.89	1.77
1.68							
24.42 CFS	1.66	1.65	1.64	1.63	1.62	1.61	1.60
1.60							
24.90 CFS	1.59	1.58	1.57	1.56	1.55	1.54	1.54
1.53							
25.38 CFS	1.52	1.51					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.87 WATERSHED INCHES; 201 CFS-HRS; 16.6 ACRE-  
 FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	20	9	6	5	4	4	3	2

DURATION(HRS)	18	18
FLOW(CFS)	2	2 TRUNCATED

OPERATION RUNOFF XSECTION 140

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	8.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.23 WATERSHED INCHES; 7 CFS-HRS; .6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	161.7	(NULL)
20.82	4.0	(NULL)
24.00	3.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.69 WATERSHED INCHES; 208 CFS-HRS; 17.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	78.9	(RUNOFF)
20.13	2.0	(RUNOFF)
23.76	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.94 WATERSHED INCHES; 100 CFS-HRS; 8.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	585.4	(NULL)
13.03	342.5	(NULL)
13.14	348.0	(NULL)
13.25	339.0	(NULL)
13.37	324.9	(NULL)
13.49	308.5	(NULL)
13.61	289.7	(NULL)
13.72	267.1	(NULL)
13.84	247.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.64 WATERSHED INCHES; 1493 CFS-HRS; 123.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

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TR20 ----- SCS

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	751.2	(NULL)
13.03	374.2	(NULL)
13.14	375.5	(NULL)
13.25	363.1	(NULL)
13.37	346.1	(NULL)
13.49	327.5	(NULL)
13.61	306.8	(NULL)
13.72	282.5	(NULL)
13.84	261.5	(NULL)
24.03	30.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.74 WATERSHED INCHES; 1701 CFS-HRS; 140.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	887.8	(NULL)
13.03	407.7	(NULL)
13.14	405.6	(NULL)
13.25	390.2	(NULL)
13.37	370.6	(NULL)
13.49	349.5	(NULL)
13.61	326.4	(NULL)
13.72	300.5	(NULL)
13.83	278.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.82 WATERSHED INCHES; 1905 CFS-HRS; 157.4 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 144  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	543.0 *	(DIVERT)
13.03	407.7	(DIVERT)
13.14	405.6	(DIVERT)
13.25	390.2	(DIVERT)
13.37	370.6	(DIVERT)
13.49	349.5	(DIVERT)
13.61	326.4	(DIVERT)
13.72	300.5	(DIVERT)
13.83	278.2	(DIVERT)

\* FIRST POINT OF FLAT PEAK

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1792 CFS-HRS; 148.1 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	344.8	177.23

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .23 WATERSHED INCHES; 113 CFS-HRS; 9.3 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 82, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 318.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 82

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
 AT STRUCTURE 82  
 \*\*\*

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.66	.0	317.67

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

.00 WATERSHED INCHES; 1 CFS-HRS; .1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 145

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.57	545.8	(NULL)
13.03	407.8	(NULL)
13.14	405.6	(NULL)
13.25	390.3	(NULL)
13.37	370.6	(NULL)
13.49	349.5	(NULL)
13.61	326.5	(NULL)
13.72	300.6	(NULL)
13.83	278.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.59 WATERSHED INCHES; 1793 CFS-HRS; 148.2 ACRE-  
FEET.

OPERATION REACH XSECTION 44

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TR20 ----- SCS

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.69	543.7	290.53
13.14	397.7	290.23
13.25	397.2	290.23
13.36	388.6	290.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.60 WATERSHED INCHES; 1797 CFS-HRS; 148.5 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.69	543.7	(NULL)
13.14	397.7	(NULL)
13.25	397.2	(NULL)
13.36	388.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.60 WATERSHED INCHES; 1797 CFS-HRS; 148.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
-----------------	----------------------	------

ELEVATION(FEET)  
 12.30 91.8 (RUNOFF)  
 23.08 2.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.99 WATERSHED INCHES; 123 CFS-HRS; 10.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.32 114.6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.90 WATERSHED INCHES; 158 CFS-HRS; 13.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.31 206.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.94 WATERSHED INCHES; 281 CFS-HRS; 23.2 ACRE-  
 FEET.

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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OPERATION RUNOFF XSECTION 48

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.20 112.4 (RUNOFF)  
 21.97 2.1 (RUNOFF)  
 24.03 1.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.93 WATERSHED INCHES; 119 CFS-HRS; 9.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)  
 12.30 602.0 (NULL)  
 13.14 412.2 (NULL)  
 13.25 410.2 (NULL)  
 13.35 400.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

3.62 WATERSHED INCHES; 1916 CFS-HRS; 158.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	808.3	(NULL)
13.12	456.0	(NULL)
13.24	447.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.66 WATERSHED INCHES; 2197 CFS-HRS; 181.5 ACRE-  
FEET.

OPERATION REACH XSECTION 51

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.43	785.9	285.52

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.65 WATERSHED INCHES; 2194 CFS-HRS; 181.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 52

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.20	1.9	(RUNOFF)

1

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.64 WATERSHED INCHES; 4 CFS-HRS; .3 ACRE-  
FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
\*\*\*

OPERATION REACH XSECTION 53

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.32	1.7	288.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.64 WATERSHED INCHES; 4 CFS-HRS; .3 ACRE-  
FEET.



OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - XSECTION 54, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.64 WATERSHED INCHES; 212 CFS-HRS; .3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	72.5	(RUNOFF)
24.03	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.67 WATERSHED INCHES; 76 CFS-HRS; 6.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	822.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.65 WATERSHED INCHES; 2270 CFS-HRS; 187.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 57

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	1.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.45 WATERSHED INCHES; 5 CFS-HRS; .4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	824.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.60 WATERSHED INCHES; 2275 CFS-HRS; 188.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.21	47.1	(RUNOFF)
21.97	1.1	(RUNOFF)

	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25						
	MAIN TIME INCREMENT = .060 hr,				DRAINAGE AREA = .03		
HRS							
SQ.MI.							
10.08 CFS	.48	.52	.56	.60	.64	.69	.73
.78							
10.56 CFS	.84	.90	.98	1.08	1.18	1.30	1.43
1.57							
11.04 CFS	1.71	1.88	2.08	2.31	2.57	2.85	3.15
3.48							
11.52 CFS	3.83	4.38	5.24	6.26	7.38	8.82	10.85
13.87							
12.00 CFS	18.80	26.74	37.61	46.18	45.89	39.69	32.20
26.43							
12.48 CFS	22.12	19.01	16.54	14.23	12.30	10.89	9.91
9.16							
12.96 CFS	8.55	8.01	7.51	7.03	6.60	6.23	5.92
5.63							
13.44 CFS	5.35	5.08	4.81	4.55	4.32	4.14	3.99
3.88							
13.92 CFS	3.78	3.71	3.65	3.59	3.52	3.44	3.36
3.29							
14.40 CFS	3.23	3.18	3.11	3.04	2.96	2.89	2.82
2.76							
14.88 CFS	2.70	2.63	2.57	2.50	2.43	2.36	2.29
2.24							
15.36 CFS	2.21	2.20	2.19	2.18	2.17	2.15	2.11
2.09							
15.84 CFS	2.08	2.08	2.06	2.03	2.00	1.98	1.97
1.96							
16.32 CFS	1.94	1.92	1.90	1.88	1.85	1.83	1.81
1.80							
16.80 CFS	1.79	1.77	1.75	1.74	1.73	1.71	1.69
1.65							
17.28 CFS	1.63	1.62	1.61	1.60	1.57	1.54	1.51
1.50							
17.76 CFS	1.49	1.47	1.45	1.43	1.42	1.41	1.39
1.37							
18.24 CFS	1.35	1.34	1.33	1.31	1.29	1.29	1.30
1.31							
18.72 CFS	1.30	1.29	1.29	1.29	1.28	1.27	1.26
1.25							
19.20 CFS	1.25	1.25	1.25	1.25	1.25	1.25	1.24
1.23							
19.68 CFS	1.22	1.21	1.21	1.20	1.19	1.19	1.20
1.20							
20.16 CFS	1.20	1.19	1.18	1.17	1.16	1.14	1.14
1.14							
20.64 CFS	1.15	1.15	1.14	1.13	1.14	1.13	1.12
1.10							
21.12 CFS	1.10	1.09	1.09	1.09	1.09	1.09	1.09
1.09							
21.60 CFS	1.08	1.06	1.06	1.06	1.05	1.05	1.05
1.05							
22.08 CFS	1.04	1.03	1.02	1.02	1.01	1.01	1.01
1.01							

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

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22.56 CFS	1.01	.99	.98	.98	.98	.97	.95
.95							
23.04 CFS	.96	.97	.96	.95	.94	.94	.93
.93							
23.52 CFS	.91	.90	.90	.91	.91	.91	.89
.88							
24.00 CFS	.90	.89	.77	.53	.32		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.96 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	852.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.58 WATERSHED INCHES; 2326 CFS-HRS; 192.2 ACRE-FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	852.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.58 WATERSHED INCHES; 2326 CFS-HRS; 192.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	28.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.89 WATERSHED INCHES; 32 CFS-HRS; 2.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	874.1	(NULL)

HRS MAIN TIME INCREMENT = .060 hr, ALTERNATE = 1, STORM =25  
 DRAINAGE AREA = 1.02

SQ.MI.								
4.02 CFS	.48	.51	.54	.58	.61	.65	.69	
.73								
4.50 CFS	.78	.83	.88	.94	1.00	1.07	1.13	
1.20								
4.98 CFS	1.27	1.34	1.41	1.48	1.55	1.63	1.71	
1.79								
5.46 CFS	1.88	1.96	2.05	2.13	2.21	2.29	2.38	
2.47								
5.94 CFS	2.57	2.66	2.76	2.85	2.95	3.07	3.21	
3.35								
6.42 CFS	3.52	3.69	3.88	4.08	4.30	4.53	4.77	
5.03								
6.90 CFS	5.29	5.57	5.86	6.16	6.47	6.80	7.14	
7.49								
7.38 CFS	7.86	8.25	8.64	9.04	9.45	9.87	10.30	
10.73								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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7.86 CFS	11.17	11.62	12.08	12.55	13.04	13.55	14.07	
14.60								
8.34 CFS	15.14	15.69	16.24	16.79	17.35	17.92	18.51	
19.11								
8.82 CFS	19.72	20.36	21.01	21.67	22.35	23.02	23.71	
24.44								
9.30 CFS	25.23	26.08	27.02	28.03	29.14	30.34	31.62	
32.98								
9.78 CFS	34.41	35.89	37.43	39.03	40.69	42.41	44.18	
46.00								
10.26 CFS	47.86	49.80	51.81	53.91	56.07	58.30	60.64	
63.15								
10.74 CFS	65.87	68.88	72.25	76.06	80.36	85.18	90.65	
96.96								
11.22 CFS	104	112	121	131	142	154	167	
183								
11.70 CFS	201	222	247	279	320	375	452	
556								
12.18 CFS	675	782	848	872	869	849	820	
790								
12.66 CFS	760	733	709	684	650	610	569	
530								
13.14 CFS	498	485	473	468	458	452	439	
431								
13.62 CFS	417	407	392	382	367	356	343	
332								
14.10 CFS	320	310	300	291	283	274	266	
257								
14.58 CFS	248	239	224	207	191	176	164	
154								
15.06 CFS	146	140	134	130	126	122	119	
116								
15.54 CFS	113	110	108	106	105	103	102	
101								
16.02 CFS	99.92	98.85	97.88	96.97	96.10	95.22	94.33	
93.46								
16.50 CFS	92.62	91.77	90.93	90.11	89.31	88.49	87.66	

86.85								
16.98	CFS	86.08	85.34	84.61	83.86	83.07	82.30	81.57
80.85								
17.46	CFS	80.07	79.24	78.40	77.59	76.81	76.03	75.21
74.36								
17.94	CFS	73.53	72.74	71.98	71.21	70.44	69.69	68.97
68.28								
18.42	CFS	67.58	66.87	66.23	65.67	65.14	64.63	64.15
63.78								
18.90	CFS	63.47	63.17	62.87	62.59	62.32	62.05	61.78
61.51								
19.38	CFS	61.25	61.00	60.79	60.59	60.38	60.16	59.98
59.80								
19.86	CFS	59.58	59.31	59.05	58.84	58.64	58.41	58.17
57.96								
20.34	CFS	57.78	57.58	57.34	57.09	56.87	56.63	56.37
56.07								
20.82	CFS	55.83	55.64	55.45	55.24	55.01	54.79	54.57
54.33								
21.30	CFS	54.08	53.84	53.60	53.39	53.20	53.00	52.79
52.60								
21.78	CFS	52.43	52.23	52.01	51.81	51.60	51.37	51.14
50.93								
22.26	CFS	50.73	50.52	50.30	50.07	49.84	49.62	49.38
49.13								
22.74	CFS	48.92	48.71	48.44	48.15	47.86	47.62	47.40
47.14								
23.22	CFS	46.88	46.65	46.45	46.27	46.07	45.81	45.54
45.28								
23.70	CFS	45.06	44.83	44.56	44.27	44.01	43.86	43.71
43.10								
24.18	CFS	41.92	40.45	38.80	36.79	34.23	31.19	27.93
24.73								
24.66	CFS	21.78	19.20	17.06	15.33	13.98	12.93	12.13
11.52								
25.14	CFS	11.04	10.67	10.37	10.12	9.91	9.74	9.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.57 WATERSHED INCHES; 2358 CFS-HRS; 194.9 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 162  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	621.0 *	(DIVERT)
	* FIRST POINT OF FLAT PEAK	

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2240 CFS-HRS; 185.1 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	253.1	176.87

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .18 WATERSHED INCHES; 118 CFS-HRS; 9.8 ACRE-FEET.

OPERATION RESVOR STRUCTURE 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	253.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .18 WATERSHED INCHES; 118 CFS-HRS; 9.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 163

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.38	874.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02 SQ.MI.

HRS	CFS	.48	.51	.54	.58	.61	.65	.69
4.02								
.73								
4.50	CFS	.78	.83	.88	.94	1.00	1.07	1.13
1.20								
4.98	CFS	1.27	1.34	1.41	1.48	1.55	1.63	1.71
1.79								
5.46	CFS	1.88	1.96	2.05	2.13	2.21	2.29	2.38
2.47								
5.94	CFS	2.57	2.66	2.76	2.85	2.95	3.07	3.21
3.35								
6.42	CFS	3.52	3.69	3.88	4.08	4.30	4.53	4.77
5.03								
6.90	CFS	5.29	5.57	5.86	6.16	6.47	6.80	7.14
7.49								
7.38	CFS	7.86	8.25	8.64	9.04	9.45	9.87	10.30
10.73								
7.86	CFS	11.17	11.62	12.08	12.55	13.04	13.55	14.07
14.60								
8.34	CFS	15.14	15.69	16.24	16.79	17.35	17.92	18.51
19.11								
8.82	CFS	19.72	20.36	21.01	21.67	22.35	23.02	23.71
24.44								
9.30	CFS	25.23	26.08	27.02	28.03	29.14	30.34	31.62
32.98								
9.78	CFS	34.41	35.89	37.43	39.03	40.69	42.41	44.18
46.00								
10.26	CFS	47.86	49.80	51.81	53.91	56.07	58.30	60.64
63.15								
10.74	CFS	65.87	68.88	72.25	76.06	80.36	85.18	90.65
96.96								
11.22	CFS	104	112	121	131	142	154	167
183								
11.70	CFS	201	222	247	279	320	375	452

556								
12.18	CFS	675	782	848	872	869	849	820
790								
12.66	CFS	760	733	709	684	650	610	569
530								
13.14	CFS	498	485	473	468	458	452	439
431								
13.62	CFS	417	407	392	382	367	356	343
332								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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14.10	CFS	320	310	300	291	283	274	266
257								
14.58	CFS	248	239	224	207	191	176	164
154								
15.06	CFS	146	140	134	130	126	122	119
116								
15.54	CFS	113	110	108	106	105	103	102
101								
16.02	CFS	99.92	98.85	97.88	96.97	96.10	95.22	94.33
93.46								
16.50	CFS	92.62	91.77	90.93	90.11	89.31	88.49	87.66
86.85								
16.98	CFS	86.08	85.34	84.61	83.86	83.07	82.30	81.57
80.85								
17.46	CFS	80.07	79.24	78.40	77.59	76.81	76.03	75.21
74.36								
17.94	CFS	73.53	72.74	71.98	71.21	70.44	69.69	68.97
68.28								
18.42	CFS	67.58	66.87	66.23	65.67	65.14	64.63	64.15
63.78								
18.90	CFS	63.47	63.17	62.87	62.59	62.32	62.05	61.78
61.51								
19.38	CFS	61.25	61.00	60.79	60.59	60.38	60.16	59.98
59.80								
19.86	CFS	59.58	59.31	59.05	58.84	58.64	58.41	58.17
57.96								
20.34	CFS	57.78	57.58	57.34	57.09	56.87	56.63	56.37
56.07								
20.82	CFS	55.83	55.64	55.45	55.24	55.01	54.79	54.57
54.33								
21.30	CFS	54.08	53.84	53.60	53.39	53.20	53.00	52.79
52.60								
21.78	CFS	52.43	52.23	52.01	51.81	51.60	51.37	51.14
50.93								
22.26	CFS	50.73	50.52	50.30	50.07	49.84	49.62	49.38
49.13								
22.74	CFS	48.92	48.71	48.44	48.15	47.86	47.62	47.40
47.14								
23.22	CFS	46.88	46.65	46.45	46.27	46.07	45.81	45.54
45.28								
23.70	CFS	45.06	44.83	44.56	44.27	44.01	43.86	43.71
43.10								
24.18	CFS	41.92	40.45	38.80	36.79	34.23	31.19	27.93
24.73								
24.66	CFS	21.78	19.20	17.06	15.33	13.98	12.93	12.13

11.52  
 25.14 CFS      11.04    10.67    10.37    10.12    9.91    9.74    9.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.57 WATERSHED INCHES;      2358 CFS-HRS;      194.9 ACRE-  
 FEET.

OPERATION REACH      XSECTION    63

PEAK TIME(HRS)                      PEAK DISCHARGE(CFS)                      PEAK  
 ELEVATION(FEET)  
 12.54                                      839.7                                      250.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.57 WATERSHED INCHES;      2357 CFS-HRS;      194.8 ACRE-  
 FEET.

OPERATION RUNOFF      XSECTION    64

PEAK TIME(HRS)                      PEAK DISCHARGE(CFS)                      PEAK  
 ELEVATION(FEET)  
 12.36                                      20.7                                      (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.38 WATERSHED INCHES;      31 CFS-HRS;      2.6 ACRE-  
 FEET.

OPERATION RESVOR      STRUCTURE    61

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
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PEAK TIME(HRS)                      PEAK DISCHARGE(CFS)                      PEAK  
 ELEVATION(FEET)  
 12.62                                      14.5                                      334.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.38 WATERSHED INCHES;      31 CFS-HRS;      2.6 ACRE-  
 FEET.

OPERATION REACH      XSECTION    65

PEAK TIME(HRS)                      PEAK DISCHARGE(CFS)                      PEAK  
 ELEVATION(FEET)  
 12.72                                      14.1                                      300.79

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.38 WATERSHED INCHES;      31 CFS-HRS;      2.6 ACRE-  
 FEET.

OPERATION RUNOFF      XSECTION    66



PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	83.6	(RUNOFF)
20.10	2.1	(RUNOFF)
24.03	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.93 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.47	36.9	295.13
20.12	2.1	287.57
24.04	1.6	287.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.94 WATERSHED INCHES; 87 CFS-HRS; 7.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 67

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist;H1&H8UG;GHC2.04TEST

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.60	49.3	(NULL)
23.11	2.1	(NULL)
23.76	2.0	(NULL)
24.04	2.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.21 WATERSHED INCHES; 118 CFS-HRS; 9.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 68

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	159.6	(RUNOFF)
21.97	3.2	(RUNOFF)
24.02	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.22 WATERSHED INCHES; 162 CFS-HRS; 13.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.19	181.3	(NULL)
20.10	6.3	(NULL)
20.65	6.1	(NULL)
21.97	5.5	(NULL)
23.10	5.1	(NULL)
24.03	4.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.21 WATERSHED INCHES; 279 CFS-HRS; 23.1 ACRE-  
 FEET.

OPERATION REACH XSECTION 70

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.42	128.1	248.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.22 WATERSHED INCHES; 279 CFS-HRS; 23.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

1  
 TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.12	36.6	(RUNOFF)
15.83	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.92 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.29	15.7	266.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.90 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	15.5	247.89
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.91 WATERSHED INCHES;	30 CFS-HRS;	2.5 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	176.2	(RUNOFF)
15.85	7.7	(RUNOFF)
17.34	6.0	(RUNOFF)
21.46	4.1	(RUNOFF)
24.01	3.4	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .11 SQ.MI.

HRS	10.26	10.74	11.22	11.70	12.18	12.66	13.14	13.62	14.10	14.58	15.06	15.54	16.02
CFS	1.61	4.89	15.99	153	52	25.81	16.80	13.20	11.27	9.27	8.05	7.58	6.98
	.46	1.87	5.63	19	176	44.19	24.15	15.90	12.97	10.98	9.04	8.04	7.45
	.59	2.18	6.43	23	154	38.62	22.77	15.17	12.70	10.67	8.77	7.98	7.34
	.72	2.52	7.32	29	121	35.27	21.67	14.62	12.40	10.41	8.50	7.87	7.28
	.86	2.89	8.32	37	96	32.88	20.66	14.19	12.13	10.19	8.29	7.73	7.25
	1.01	3.28	9.38	49	79	30.92	19.69	13.85	11.91	10.00	8.15	7.66	7.22
	1.18	3.72	10.53	70	67	29.20	18.72	13.59	11.72	9.78	8.09	7.68	7.13
	1.37	4.25	12.63	105	59	27.50	17.74	13.38	11.52	9.52	8.06	7.66	7.04

1 TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist;H1&H8UG;GHC2.04TEST

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16.50 CFS	6.90	6.79	6.73	6.69	6.67	6.60	6.51
6.44							
16.98 CFS	6.41	6.39	6.32	6.20	6.05	5.98	5.99

5.98								
17.46	CFS	5.89	5.75	5.63	5.57	5.54	5.50	5.41
5.32								
17.94	CFS	5.27	5.24	5.21	5.12	5.03	4.97	4.95
4.91								
18.42	CFS	4.83	4.78	4.82	4.88	4.88	4.82	4.78
4.82								
18.90	CFS	4.81	4.74	4.69	4.67	4.66	4.65	4.65
4.65								
19.38	CFS	4.66	4.66	4.66	4.64	4.56	4.51	4.54
4.53								
19.86	CFS	4.47	4.42	4.44	4.51	4.52	4.46	4.42
4.40								
20.34	CFS	4.37	4.30	4.23	4.25	4.31	4.33	4.29
4.22								
20.82	CFS	4.24	4.26	4.21	4.15	4.11	4.10	4.09
4.09								
21.30	CFS	4.09	4.09	4.09	4.09	4.08	4.01	3.94
3.96								
21.78	CFS	3.97	3.93	3.93	3.97	3.94	3.87	3.83
3.81								
22.26	CFS	3.80	3.80	3.80	3.80	3.80	3.77	3.69
3.64								
22.74	CFS	3.67	3.66	3.59	3.54	3.57	3.64	3.65
3.59								
23.22	CFS	3.54	3.52	3.51	3.50	3.47	3.39	3.34
3.38								
23.70	CFS	3.44	3.44	3.37	3.29	3.27	3.44	3.37
2.46								
24.18	CFS	1.33	.64	.31				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.44 WATERSHED INCHES; 173 CFS-HRS; 14.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	900.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.46 WATERSHED INCHES; 2530 CFS-HRS; 209.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	143.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .15 SQ.MI.

HRS								
8.40	CFS	.50	.54	.58	.63	.67	.73	.78
.84								
8.88	CFS	.90	.95	1.02	1.09	1.16	1.24	1.33
1.42								
9.36	CFS	1.53	1.64	1.77	1.90	2.04	2.18	2.34
2.50								
9.84	CFS	2.68	2.87	3.05	3.25	3.45	3.67	3.89
4.13								

10.32 CFS	4.37	4.62	4.87	5.13	5.41	5.70	6.03
6.40							
10.80 CFS	6.84	7.33	7.88	8.50	9.14	9.80	10.54
11.38							
11.28 CFS	12.34	13.40	14.58	15.87	17.25	18.71	20.47
22.82							
11.76 CFS	25.79	29.20	33.18	38.24	44.97	54.51	68.57
91.09							
12.24 CFS	118	134	141	144	141	137	131
125							
12.72 CFS	118	110	102	94	87	82	76
72							
13.20 CFS	67.51	63.78	60.43	57.42	54.75	52.38	50.28
48.38							
13.68 CFS	46.66	45.10	43.70	42.46	41.34	40.35	39.46
38.65							
14.16 CFS	37.91	37.21	36.48	35.74	34.99	34.26	33.54
32.82							

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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14.64 CFS	32.07	31.29	30.49	29.60	28.60	27.55	26.34
25.01							
15.12 CFS	23.68	22.31	20.99	19.87	18.93	18.14	17.49
16.94							
15.60 CFS	16.49	16.10	15.70	15.30	14.92	14.56	14.23
13.92							
16.08 CFS	13.62	13.32	13.04	12.80	12.58	12.40	12.22
12.05							
16.56 CFS	11.89	11.73	11.57	11.42	11.29	11.17	11.04
10.90							
17.04 CFS	10.72	10.56	10.40	10.25	10.09	9.93	9.81
9.70							
17.52 CFS	9.60	9.47	9.34	9.21	9.09	8.99	8.88
8.76							
18.00 CFS	8.65	8.55	8.46	8.36	8.26	8.16	8.06
7.98							
18.48 CFS	7.89	7.79	7.73	7.68	7.66	7.62	7.58
7.55							
18.96 CFS	7.52	7.49	7.45	7.40	7.36	7.33	7.30
7.28							
19.44 CFS	7.26	7.24	7.23	7.21	7.18	7.14	7.11
7.09							
19.92 CFS	7.05	7.01	6.97	6.96	6.96	6.95	6.92
6.89							
20.40 CFS	6.86	6.82	6.77	6.72	6.69	6.68	6.67
6.64							
20.88 CFS	6.62	6.60	6.58	6.54	6.50	6.46	6.43
6.40							
21.36 CFS	6.37	6.35	6.34	6.32	6.31	6.29	6.25
6.21							
21.84 CFS	6.18	6.16	6.13	6.12	6.10	6.08	6.04
6.00							
22.32 CFS	5.97	5.94	5.91	5.89	5.88	5.86	5.82
5.78							
22.80 CFS	5.75	5.72	5.68	5.64	5.60	5.59	5.58
5.57							

23.28 CFS	5.54	5.51	5.48	5.46	5.43	5.39	5.34
5.30							
23.76 CFS	5.29	5.28	5.26	5.22	5.18	5.18	5.18
4.98							
24.24 CFS	4.51	3.89	3.26	2.69	2.21	1.80	1.46
1.18							
24.72 CFS	.95	.76	.61	.48			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.27 WATERSHED INCHES; 309 CFS-HRS; 25.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET)  
 12.50 1041.1 (NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 25  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28  
 SQ. MI.

4.14 CFS	.47	.50	.54	.57	.61	.64	.68
.73							
4.62 CFS	.77	.82	.88	.93	1.00	1.06	1.12
1.19							
5.10 CFS	1.25	1.32	1.39	1.47	1.54	1.62	1.69
1.77							
5.58 CFS	1.86	1.94	2.03	2.11	2.20	2.29	2.38
2.48							
6.06 CFS	2.58	2.67	2.77	2.87	2.98	3.11	3.24
3.39							
6.54 CFS	3.55	3.74	3.93	4.14	4.37	4.60	4.85
5.12							
7.02 CFS	5.39	5.67	5.97	6.28	6.60	6.94	7.29
7.65							
7.50 CFS	8.03	8.42	8.83	9.24	9.66	10.09	10.53
10.97							
7.98 CFS	11.42	11.89	12.36	12.86	13.37	13.90	14.44
15.00							
8.46 CFS	15.58	16.16	16.75	17.35	17.97	18.59	19.23
19.89							
8.94 CFS	20.57	21.26	21.97	22.71	23.45	24.22	25.01
25.86							
9.42 CFS	26.77	27.75	28.80	29.95	31.19	32.52	33.95
35.46							
9.90 CFS	37.05	38.72	40.49	42.35	44.31	46.35	48.46
50.63							
10.38 CFS	52.87	55.20	57.61	60.13	62.77	65.56	68.56
71.82							
10.86 CFS	75	79	84	89	94	100	107
115							
11.34 CFS	124	134	146	158	172	189	209
231							
11.82 CFS	258	291	334	395	482	603	728
829							

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION

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12.30 CFS 946	914	982	1024	1040	1036	1014	982
12.78 CFS 631	909	874	839	802	760	716	672
13.26 CFS 493	601	577	561	545	533	519	507
13.74 CFS 385	480	465	452	438	425	411	398
14.22 CFS 302	373	362	351	341	331	321	311
14.70 CFS 191	292	279	264	248	231	216	203
15.18 CFS 141	181	172	165	159	154	149	145
15.66 CFS 122	138	135	132	130	128	126	124
16.14 CFS 112	121	119	118	117	116	115	113
16.62 CFS 104	111	110	109	108	107	106	105
17.10 CFS 96	103	102	101	100	99	98	97
17.58 CFS 88.43	95.31	94.30	93.32	92.37	91.38	90.38	89.39
18.06 CFS 81.11	87.48	86.51	85.55	84.61	83.72	82.85	81.96
18.54 CFS 76.21	80.35	79.66	79.00	78.32	77.70	77.17	76.68
19.02 CFS 73.49	75.78	75.39	75.02	74.69	74.37	74.07	73.77
19.50 CFS 71.29	73.22	72.94	72.63	72.33	72.11	71.87	71.59
19.98 CFS 69.19	71.04	70.83	70.60	70.33	70.04	69.76	69.49
20.46 CFS 67.02	68.87	68.62	68.40	68.17	67.89	67.56	67.28
20.94 CFS 64.83	66.72	66.43	66.15	65.87	65.61	65.35	65.09
21.42 CFS 62.77	64.57	64.32	64.07	63.78	63.47	63.24	63.02
21.90 CFS 60.75	62.55	62.36	62.11	61.82	61.54	61.26	61.00
22.38 CFS 58.60	60.51	60.27	60.03	59.76	59.44	59.13	58.88
22.86 CFS 56.25	58.29	57.96	57.67	57.43	57.17	56.86	56.55
23.34 CFS 54.08	55.96	55.70	55.45	55.13	54.81	54.56	54.33
23.82 CFS 47.96	53.77	53.41	53.09	52.95	52.67	51.57	49.86
24.30 CFS 26.35	45.95	43.83	41.54	38.96	36.04	32.85	29.56
24.78 CFS 12.07	23.36	20.71	18.42	16.54	15.01	13.78	12.82
25.26 CFS	11.47	11.00	10.63	10.32	10.07		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.44 WATERSHED INCHES; 2840 CFS-HRS; 234.7 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 176

OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	691.0 *	(DIVERT)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2640 CFS-HRS; 218.1 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	350.1	177.25

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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Dist;H1&H8UG;GHC2.04TEST

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .24 WATERSHED INCHES; 200 CFS-HRS; 16.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	350.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .24 WATERSHED INCHES; 200 CFS-HRS; 16.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 177

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.50	1041.1	(NULL)

		HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25						
		MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28						
HRS	SQ.MI.							
4.14 CFS	.73	.47	.50	.54	.57	.61	.64	.68
4.62 CFS	1.19	.77	.82	.88	.93	1.00	1.06	1.12
5.10 CFS	1.77	1.25	1.32	1.39	1.47	1.54	1.62	1.69
5.58 CFS	2.48	1.86	1.94	2.03	2.11	2.20	2.29	2.38
6.06 CFS	3.39	2.58	2.67	2.77	2.87	2.98	3.11	3.24
6.54 CFS	5.12	3.55	3.74	3.93	4.14	4.37	4.60	4.85



7.02 CFS	5.39	5.67	5.97	6.28	6.60	6.94	7.29
7.65							
7.50 CFS	8.03	8.42	8.83	9.24	9.66	10.09	10.53
10.97							
7.98 CFS	11.42	11.89	12.36	12.86	13.37	13.90	14.44
15.00							
8.46 CFS	15.58	16.16	16.75	17.35	17.97	18.59	19.23
19.89							
8.94 CFS	20.57	21.26	21.97	22.71	23.45	24.22	25.01
25.86							
9.42 CFS	26.77	27.75	28.80	29.95	31.19	32.52	33.95
35.46							
9.90 CFS	37.05	38.72	40.49	42.35	44.31	46.35	48.46
50.63							
10.38 CFS	52.87	55.20	57.61	60.13	62.77	65.56	68.56
71.82							
10.86 CFS	75	79	84	89	94	100	107
115							
11.34 CFS	124	134	146	158	172	189	209
231							
11.82 CFS	258	291	334	395	482	603	728
829							
12.30 CFS	914	982	1024	1040	1036	1014	982
946							
12.78 CFS	909	874	839	802	760	716	672
631							
13.26 CFS	601	577	561	545	533	519	507
493							
13.74 CFS	480	465	452	438	425	411	398
385							
14.22 CFS	373	362	351	341	331	321	311
302							
14.70 CFS	292	279	264	248	231	216	203
191							
15.18 CFS	181	172	165	159	154	149	145
141							
15.66 CFS	138	135	132	130	128	126	124
122							
16.14 CFS	121	119	118	117	116	115	113
112							
16.62 CFS	111	110	109	108	107	106	105
104							
17.10 CFS	103	102	101	100	99	98	97
96							
17.58 CFS	95.31	94.30	93.32	92.37	91.38	90.38	89.39
88.43							
18.06 CFS	87.48	86.51	85.55	84.61	83.72	82.85	81.96
81.11							

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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18.54 CFS	80.35	79.66	79.00	78.32	77.70	77.17	76.68
76.21							
19.02 CFS	75.78	75.39	75.02	74.69	74.37	74.07	73.77
73.49							
19.50 CFS	73.22	72.94	72.63	72.33	72.11	71.87	71.59
71.29							

19.98	CFS	71.04	70.83	70.60	70.33	70.04	69.76	69.49
69.19								
20.46	CFS	68.87	68.62	68.40	68.17	67.89	67.56	67.28
67.02								
20.94	CFS	66.72	66.43	66.15	65.87	65.61	65.35	65.09
64.83								
21.42	CFS	64.57	64.32	64.07	63.78	63.47	63.24	63.02
62.77								
21.90	CFS	62.55	62.36	62.11	61.82	61.54	61.26	61.00
60.75								
22.38	CFS	60.51	60.27	60.03	59.76	59.44	59.13	58.88
58.60								
22.86	CFS	58.29	57.96	57.67	57.43	57.17	56.86	56.55
56.25								
23.34	CFS	55.96	55.70	55.45	55.13	54.81	54.56	54.33
54.08								
23.82	CFS	53.77	53.41	53.09	52.95	52.67	51.57	49.86
47.96								
24.30	CFS	45.95	43.83	41.54	38.96	36.04	32.85	29.56
26.35								
24.78	CFS	23.36	20.71	18.42	16.54	15.01	13.78	12.82
12.07								
25.26	CFS	11.47	11.00	10.63	10.32	10.07		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.44 WATERSHED INCHES; 2840 CFS-HRS; 234.7 ACRE-  
 FEET.

OPERATION REACH XSECTION 77

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.56	1040.4	230.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.44 WATERSHED INCHES; 2839 CFS-HRS; 234.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.17	103.0	(RUNOFF)
15.85	4.0	(RUNOFF)
17.34	3.1	(RUNOFF)
21.96	2.0	(RUNOFF)
24.01	1.8	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05 SQ.MI.

9.54	CFS	.47	.52	.58	.64	.70	.77	.83
.89								
10.02	CFS	.96	1.04	1.13	1.21	1.29	1.37	1.45
1.55								
10.50	CFS	1.65	1.76	1.91	2.09	2.30	2.54	2.78
3.05								
10.98	CFS	3.33	3.62	3.99	4.43	4.94	5.49	6.07
6.71								
11.46	CFS	7.36	8.07	9.49	11.74	13.93	16.18	19.66
24.66								
11.94	CFS	31.93	44.76	64.75	92.26	102.86	86.40	66.13

52.24								
12.42	CFS	42.31	35.81	31.74	27.58	23.38	20.48	18.73
17.47								
12.90	CFS	16.43	15.50	14.58	13.66	12.77	12.03	11.45
10.91								
13.38	CFS	10.38	9.86	9.34	8.83	8.36	7.97	7.69
7.47								
13.86	CFS	7.28	7.15	7.04	6.94	6.82	6.67	6.51
6.36								
14.34	CFS	6.24	6.14	6.04	5.90	5.74	5.58	5.44
5.33								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA Dist;H1&H8UG;GHC2.04TEST

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14.82	CFS	5.23	5.11	4.97	4.84	4.71	4.57	4.43
4.32								
15.30	CFS	4.25	4.22	4.21	4.20	4.20	4.16	4.10
4.02								
15.78	CFS	3.99	4.00	3.99	3.94	3.87	3.82	3.79
3.77								
16.26	CFS	3.75	3.71	3.66	3.63	3.58	3.53	3.49
3.48								
16.74	CFS	3.46	3.43	3.37	3.34	3.33	3.31	3.27
3.21								
17.22	CFS	3.13	3.10	3.11	3.10	3.05	2.97	2.91
2.88								
17.70	CFS	2.87	2.85	2.80	2.75	2.72	2.71	2.69
2.64								
18.18	CFS	2.60	2.57	2.56	2.54	2.49	2.47	2.49
2.52								
18.66	CFS	2.52	2.49	2.47	2.49	2.48	2.45	2.42
2.41								
19.14	CFS	2.40	2.40	2.40	2.40	2.40	2.40	2.40
2.39								
19.62	CFS	2.35	2.32	2.34	2.34	2.30	2.27	2.29
2.33								
20.10	CFS	2.33	2.30	2.27	2.26	2.25	2.21	2.17
2.19								
20.58	CFS	2.22	2.23	2.21	2.17	2.19	2.19	2.16
2.13								
21.06	CFS	2.11	2.11	2.10	2.10	2.10	2.10	2.10
2.10								
21.54	CFS	2.10	2.06	2.02	2.03	2.04	2.02	2.02
2.04								
22.02	CFS	2.02	1.99	1.96	1.96	1.95	1.95	1.95
1.95								
22.50	CFS	1.95	1.94	1.89	1.87	1.89	1.88	1.84
1.82								
22.98	CFS	1.83	1.87	1.87	1.84	1.81	1.80	1.80
1.79								
23.46	CFS	1.78	1.73	1.71	1.74	1.77	1.77	1.73
1.68								
23.94	CFS	1.68	1.77	1.73	1.21	.62	.29	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 2.99 WATERSHED INCHES; 98 CFS-HRS; 8.1 ACRE- FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.55	1071.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.42 WATERSHED INCHES; 2937 CFS-HRS; 242.7 ACRE-FEET.

OPERATION REACH XSECTION 80

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.62	1069.4	215.93

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.42 WATERSHED INCHES; 2937 CFS-HRS; 242.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 81

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 TR20 ----- SCS  
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 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	57.5	(RUNOFF)
15.85	2.3	(RUNOFF)
23.07	1.1	(RUNOFF)
23.73	1.0	(RUNOFF)
24.01	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.69 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.61	1084.0	179.26

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.40 WATERSHED INCHES; 2991 CFS-HRS; 247.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.15	114.2	(RUNOFF)
15.84	4.1	(RUNOFF)
17.34	3.2	(RUNOFF)
22.47	2.0	(RUNOFF)
24.00	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.13 WATERSHED INCHES; 104 CFS-HRS; 8.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 84

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	120.6	(RUNOFF)
20.68	3.2	(RUNOFF)
24.02	2.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.05 WATERSHED INCHES; 143 CFS-HRS; 11.8 ACRE-FEET.

OPERATION DIVERT XSECTION 184  
OUTPUT #1 HYDROGRAPH

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 TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	118.3	(DIVERT)
20.68	3.2	(DIVERT)
24.02	2.5	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 142 CFS-HRS; 11.8 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	2.3	175.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 81, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 200.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 81

\*\*\* MESSAGE - STRUCTURE 81, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 277 CFS-HRS; .0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 185

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.25	118.3	(NULL)
20.68	3.2	(NULL)
24.02	2.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.04 WATERSHED INCHES; 142 CFS-HRS; 11.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 186

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.25	56.8	(RUNOFF)
24.01	1.4	(RUNOFF)

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

Dist;H1&H8UG;GHC2.04TEST

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.29 WATERSHED INCHES; 68 CFS-HRS; 5.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 187

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.25	175.1	(NULL)
20.13	5.1	(NULL)
23.13	4.1	(NULL)
24.01	3.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2.75 WATERSHED INCHES; 211 CFS-HRS; 17.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 85

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.19	272.7	(NULL)

18.83	8.1	(NULL)
20.82	7.1	(NULL)
22.72	6.2	(NULL)
23.07	6.1	(NULL)
24.00	5.7	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .17  
 SQ.MI.

8.94 CFS	.44	.51	.59	.66	.75	.84	.94
1.05							
9.42 CFS	1.17	1.28	1.40	1.53	1.67	1.83	1.98
2.14							
9.90 CFS	2.30	2.46	2.64	2.84	3.04	3.24	3.44
3.66							
10.38 CFS	3.89	4.15	4.44	4.77	5.18	5.67	6.24
6.88							
10.86 CFS	7.58	8.34	9.15	10.02	11.06	12.29	13.69
15.24							
11.34 CFS	16.91	18.76	20.69	22.83	26.66	32.17	37.85
44.54							
11.82 CFS	54	67	86	118	168	236	272
258							
12.30 CFS	231	197	164	140	122	105	91
80							
12.78 CFS	70.91	64.25	59.16	54.94	51.15	47.63	44.44
41.74							
13.26 CFS	39.44	37.38	35.49	33.70	31.94	30.25	28.65
27.27							
13.74 CFS	26.13	25.19	24.43	23.83	23.34	22.92	22.49
22.03							
14.22 CFS	21.54	21.07	20.66	20.29	19.92	19.50	19.04
18.55							
14.70 CFS	18.10	17.69	17.32	16.93	16.51	16.10	15.69
15.24							
15.18 CFS	14.80	14.41	14.13	13.93	13.81	13.74	13.68
13.58							
15.66 CFS	13.42	13.23	13.11	13.07	13.00	12.88	12.71
12.55							
16.14 CFS	12.43	12.34	12.26	12.13	12.01	11.90	11.75
11.59							
16.62 CFS	11.48	11.39	11.32	11.21	11.08	10.97	10.90
10.83							
17.10 CFS	10.72	10.56	10.36	10.23	10.18	10.11	9.98
9.81							
17.58 CFS	9.64	9.51	9.42	9.33	9.20	9.07	8.97
8.90							
18.06 CFS	8.82	8.69	8.57	8.47	8.40	8.32	8.20
8.13							
18.54 CFS	8.14	8.18	8.18	8.12	8.09	8.11	8.07
8.00							
19.02 CFS	7.94	7.89	7.86	7.84	7.83	7.82	7.82
7.82							

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

Dist;H1&H8UG;GHC2.04TEST

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19.50 CFS	7.82	7.78	7.69	7.64	7.64	7.60	7.53
-----------	------	------	------	------	------	------	------

7.47								
19.98 CFS	7.48	7.54	7.54	7.50	7.45	7.41	7.36	
7.26								
20.46 CFS	7.17	7.17	7.20	7.23	7.18	7.13	7.14	
7.13								
20.94 CFS	7.06	7.00	6.94	6.90	6.88	6.86	6.85	
6.85								
21.42 CFS	6.85	6.85	6.83	6.75	6.67	6.67	6.65	
6.59								
21.90 CFS	6.60	6.63	6.58	6.52	6.46	6.42	6.39	
6.37								
22.38 CFS	6.36	6.35	6.35	6.31	6.22	6.16	6.17	
6.12								
22.86 CFS	6.05	5.99	5.99	6.05	6.05	6.01	5.96	
5.92								
23.34 CFS	5.88	5.87	5.82	5.72	5.66	5.68	5.72	
5.72								
23.82 CFS	5.65	5.56	5.53	5.70	5.56	4.47	3.20	
2.15								
24.30 CFS	1.34	.82	.51	.32				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2.87 WATERSHED INCHES; 315 CFS-HRS; 26.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.57	1192.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.34 WATERSHED INCHES; 3306 CFS-HRS; 273.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.13	53.1	(RUNOFF)
17.34	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.62 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.56	1204.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 25  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55 SQ.MI.

4.26 CFS	.48	.51	.55	.59	.63	.68	.72
.77							
4.74 CFS	.82	.88	.94	1.00	1.07	1.13	1.20
1.28							
5.22 CFS	1.35	1.43	1.50	1.58	1.66	1.74	1.83
1.91							



5.70 CFS	2.00	2.09	2.18	2.26	2.36	2.47	2.57
2.67							
6.18 CFS	2.77	2.88	2.98	3.09	3.21	3.35	3.49
3.65							
6.66 CFS	3.82	4.00	4.21	4.43	4.66	4.90	5.16
5.44							
7.14 CFS	5.72	6.01	6.32	6.64	6.97	7.32	7.68
8.05							
7.62 CFS	8.43	8.84	9.25	9.68	10.11	10.55	11.00
11.46							
8.10 CFS	11.93	12.40	12.88	13.40	13.94	14.49	15.06
15.66							

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

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8.58 CFS	16.29	16.93	17.59	18.26	18.95	19.66	20.40
21.18							
9.06 CFS	21.99	22.80	23.66	24.55	25.49	26.44	27.42
28.46							
9.54 CFS	29.57	30.78	32.08	33.50	35.01	36.61	38.31
40.11							
10.02 CFS	42.01	44.03	46.15	48.37	50.67	53.07	55.57
58.18							
10.50 CFS	60.91	63.79	66.91	70.28	73.89	77.78	81.96
86.49							
10.98 CFS	91	97	103	110	117	126	136
147							
11.46 CFS	159	172	190	211	235	263	298
342							
11.94 CFS	400	486	612	786	929	1016	1080
1120							
12.42 CFS	1152	1184	1203	1199	1176	1141	1098
1053							
12.90 CFS	1009	967	927	885	839	791	744
699							
13.38 CFS	664	636	615	597	581	565	551
536							
13.86 CFS	522	506	492	478	464	449	435
422							
14.34 CFS	409	397	385	374	363	353	342
332							
14.82 CFS	321	309	293	277	260	244	229
216							
15.30 CFS	206	196	189	182	177	172	167
163							
15.78 CFS	160	156	154	151	149	146	144
142							
16.26 CFS	141	139	138	136	135	133	132
131							
16.74 CFS	130	128	127	126	125	124	123
121							
17.22 CFS	120	119	118	116	115	114	113
112							
17.70 CFS	111	109	108	107	106	105	104
103							
18.18 CFS	101	100	99	98	97	96	95
94							

18.66	CFS	93.62	92.81	92.07	91.43	90.76	90.10	89.49
88.92								
19.14	CFS	88.43	88.01	87.62	87.28	86.95	86.65	86.35
86.01								
19.62	CFS	85.57	85.20	84.91	84.56	84.20	83.86	83.59
83.41								
20.10	CFS	83.17	82.88	82.56	82.22	81.87	81.43	81.00
80.70								
20.58	CFS	80.46	80.25	79.95	79.62	79.35	79.03	78.64
78.26								
21.06	CFS	77.87	77.51	77.19	76.90	76.62	76.36	76.10
75.84								
21.54	CFS	75.55	75.16	74.77	74.48	74.16	73.83	73.62
73.42								
22.02	CFS	73.13	72.82	72.48	72.13	71.80	71.50	71.22
70.96								
22.50	CFS	70.71	70.42	70.01	69.65	69.34	68.98	68.60
68.22								
22.98	CFS	67.91	67.70	67.43	67.10	66.75	66.37	66.01
65.68								
23.46	CFS	65.32	64.88	64.52	64.25	64.02	63.77	63.42
63.01								
23.94	CFS	62.64	62.60	62.08	60.14	57.62	54.80	51.96
49.37								
24.42	CFS	46.97	44.62	42.23	39.62	36.72	33.56	30.28
27.04								
24.90	CFS	24.01	21.28	18.92	16.95	15.34	14.05	13.03
12.23								
25.38	CFS	11.60	11.10	10.71				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.36 WATERSHED INCHES; 3353 CFS-HRS; 277.1 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 81  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.12	730.0 *	178.42
	* FIRST POINT OF FLAT PEAK	

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 TR20 ----- SCS  
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Ellicott City FloodStudy- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3011 CFS-HRS; 248.8 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.56	474.1	177.68

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

.34 WATERSHED INCHES; 342 CFS-HRS; 28.3 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 71

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.56 474.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.34 WATERSHED INCHES; 342 CFS-HRS; 28.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 89

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.56 1204.1 (NULL)

		HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =25						
		MAIN TIME INCREMENT = .060 hr,					DRAINAGE AREA = 1.55	
HRS	SQ.MI.							
4.26 CFS	.77	.48	.51	.55	.59	.63	.68	.72
4.74 CFS	1.28	.82	.88	.94	1.00	1.07	1.13	1.20
5.22 CFS	1.91	1.35	1.43	1.50	1.58	1.66	1.74	1.83
5.70 CFS	2.67	2.00	2.09	2.18	2.26	2.36	2.47	2.57
6.18 CFS	3.65	2.77	2.88	2.98	3.09	3.21	3.35	3.49
6.66 CFS	5.44	3.82	4.00	4.21	4.43	4.66	4.90	5.16
7.14 CFS	8.05	5.72	6.01	6.32	6.64	6.97	7.32	7.68
7.62 CFS	11.46	8.43	8.84	9.25	9.68	10.11	10.55	11.00
8.10 CFS	15.66	11.93	12.40	12.88	13.40	13.94	14.49	15.06
8.58 CFS	21.18	16.29	16.93	17.59	18.26	18.95	19.66	20.40
9.06 CFS	28.46	21.99	22.80	23.66	24.55	25.49	26.44	27.42
9.54 CFS	40.11	29.57	30.78	32.08	33.50	35.01	36.61	38.31
10.02 CFS	58.18	42.01	44.03	46.15	48.37	50.67	53.07	55.57
10.50 CFS	86.49	60.91	63.79	66.91	70.28	73.89	77.78	81.96
10.98 CFS	147	91	97	103	110	117	126	136
11.46 CFS	342	159	172	190	211	235	263	298
11.94 CFS	1120	400	486	612	786	929	1016	1080
12.42 CFS	1053	1152	1184	1203	1199	1176	1141	1098
12.90 CFS	699	1009	967	927	885	839	791	744
13.38 CFS	536	664	636	615	597	581	565	551

13.86 CFS	522	506	492	478	464	449	435
422							

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

Dist;H1&H8UG;GHC2.04TEST

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PASS 4 JOB NO. 1

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14.34 CFS	409	397	385	374	363	353	342
332							
14.82 CFS	321	309	293	277	260	244	229
216							
15.30 CFS	206	196	189	182	177	172	167
163							
15.78 CFS	160	156	154	151	149	146	144
142							
16.26 CFS	141	139	138	136	135	133	132
131							
16.74 CFS	130	128	127	126	125	124	123
121							
17.22 CFS	120	119	118	116	115	114	113
112							
17.70 CFS	111	109	108	107	106	105	104
103							
18.18 CFS	101	100	99	98	97	96	95
94							
18.66 CFS	93.62	92.81	92.07	91.43	90.76	90.10	89.49
88.92							
19.14 CFS	88.43	88.01	87.62	87.28	86.95	86.65	86.35
86.01							
19.62 CFS	85.57	85.20	84.91	84.56	84.20	83.86	83.59
83.41							
20.10 CFS	83.17	82.88	82.56	82.22	81.87	81.43	81.00
80.70							
20.58 CFS	80.46	80.25	79.95	79.62	79.35	79.03	78.64
78.26							
21.06 CFS	77.87	77.51	77.19	76.90	76.62	76.36	76.10
75.84							
21.54 CFS	75.55	75.16	74.77	74.48	74.16	73.83	73.62
73.42							
22.02 CFS	73.13	72.82	72.48	72.13	71.80	71.50	71.22
70.96							
22.50 CFS	70.71	70.42	70.01	69.65	69.34	68.98	68.60
68.22							
22.98 CFS	67.91	67.70	67.43	67.10	66.75	66.37	66.01
65.68							
23.46 CFS	65.32	64.88	64.52	64.25	64.02	63.77	63.42
63.01							
23.94 CFS	62.64	62.60	62.08	60.14	57.62	54.80	51.96
49.37							
24.42 CFS	46.97	44.62	42.23	39.62	36.72	33.56	30.28
27.04							
24.90 CFS	24.01	21.28	18.92	16.95	15.34	14.05	13.03
12.23							
25.38 CFS	11.60	11.10	10.71				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.36 WATERSHED INCHES; 3353 CFS-HRS; 277.1 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 89  
 STARTING TIME = .00 RAIN DEPTH = 7.23 RAIN DURATION = 1.00  
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS  
 ALTERNATE NO. = 1 STORM NO. =50 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	81.5	(RUNOFF)
20.13	2.1	(RUNOFF)
23.08	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-  
 FEET.

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	81.3	390.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.02 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	142.8	(RUNOFF)
20.68	3.4	(RUNOFF)
23.97	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.85 WATERSHED INCHES; 181 CFS-HRS; 15.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	220.1	(NULL)
20.13	5.7	(NULL)
23.12	4.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.91 WATERSHED INCHES; 290 CFS-HRS; 24.0 ACRE-  
 FEET.

\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,  
 VALUE EXTRAPOLATED.  
 \*\*\*

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	218.8	384.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	218.2	368.84

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 289 CFS-HRS; 23.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	181.7	(RUNOFF)
20.14	4.8	(RUNOFF)
23.74	3.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.60 WATERSHED INCHES; 237 CFS-HRS; 19.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	387.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.75 WATERSHED INCHES; 526 CFS-HRS; 43.5 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 107  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	213.0 *	(DIVERT)
	* FIRST POINT OF FLAT	PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 471 CFS-HRS; 38.9 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.35	174.5	176.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .50 WATERSHED INCHES; 55 CFS-HRS; 4.5 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 84, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 358.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

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OPERATION RESVOR STRUCTURE 84

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
 AT STRUCTURE 84  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.66	.0	352.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	213.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.26 WATERSHED INCHES; 471 CFS-HRS; 39.0 ACRE-FEET.

FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	213.1	357.83

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.26 WATERSHED INCHES; 471 CFS-HRS; 38.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	203.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.15 WATERSHED INCHES; 291 CFS-HRS; 24.1 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	139.6	377.76

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.58 WATERSHED INCHES; 264 CFS-HRS; 21.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	30.4	(RUNOFF)
15.46	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.03 WATERSHED INCHES; 25 CFS-HRS; 2.1 ACRE-  
 FEET.



OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.80	112.3	359.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.57 WATERSHED INCHES; 264 CFS-HRS; 21.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	146.1	(RUNOFF)
15.81	5.5	(RUNOFF)
20.09	3.2	(RUNOFF)
20.64	3.0	(RUNOFF)
24.02	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.16 WATERSHED INCHES; 146 CFS-HRS; 12.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	357.8	(NULL)
24.00	10.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.24 WATERSHED INCHES; 617 CFS-HRS; 51.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	56.4	(RUNOFF)
21.97	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.80 WATERSHED INCHES; 60 CFS-HRS; 4.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.25	376.1	(NULL)
12.41	378.9	(NULL)
23.98	17.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.55 WATERSHED INCHES; 879 CFS-HRS; 72.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	429.6	(NULL)
23.99	18.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.57 WATERSHED INCHES; 939 CFS-HRS; 77.6 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .006 HOURS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
13.01	252.8	346.08
14.94	68.7	335.75
15.06	59.1	335.38
15.18	52.4	335.12
15.30	47.5	334.93
15.42	43.9	334.79
15.54	41.4	334.69
15.66	39.6	334.62
15.78	38.4	334.57
15.89	37.6	334.54

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32  
 SQ.MI.  
 3.36 CFS .00 .01 .01 .01 .01 .01 .01  
 .02  
 3.36 ELEV 333.08 333.08 333.08 333.08 333.08 333.08 333.08  
 333.08

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3.84 CFS	.02	.02	.02	.02	.03	.03	.03
.03							
3.84 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
4.32 CFS	.04	.04	.04	.05	.05	.05	.06
.06							
4.32 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08

333.08							
4.80 CFS	.06	.07	.07	.08	.08	.08	.09
.09							
4.80 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08							
5.28 CFS	.10	.10	.11	.11	.12	.12	.13
.13							
5.28 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.09							
5.76 CFS	.14	.15	.16	.18	.19	.21	.23
.24							
5.76 ELEV	333.09	333.09	333.09	333.09	333.09	333.09	333.09
333.09							
6.24 CFS	.26	.28	.31	.35	.38	.43	.48
.54							
6.24 ELEV	333.09	333.09	333.09	333.09	333.09	333.10	333.10
333.10							
6.72 CFS	.60	.66	.73	.80	.87	.94	1.02
1.10							
6.72 ELEV	333.10	333.11	333.11	333.11	333.11	333.12	333.12
333.12							
7.20 CFS	1.18	1.27	1.36	1.47	1.58	1.70	1.81
1.94							
7.20 ELEV	333.13	333.13	333.13	333.14	333.14	333.15	333.15
333.16							
7.68 CFS	2.06	2.19	2.33	2.46	2.60	2.75	2.90
3.05							
7.68 ELEV	333.16	333.17	333.17	333.18	333.18	333.19	333.19
333.20							
8.16 CFS	3.21	3.36	3.52	3.68	3.85	4.01	4.17
4.35							
8.16 ELEV	333.20	333.21	333.22	333.22	333.23	333.24	333.24
333.25							
8.64 CFS	4.53	4.72	4.91	5.09	5.27	5.45	5.65
5.86							
8.64 ELEV	333.26	333.26	333.27	333.28	333.29	333.29	333.30
333.31							
9.12 CFS	6.10	6.39	6.76	7.17	7.62	8.10	8.58
9.08							
9.12 ELEV	333.32	333.33	333.34	333.36	333.38	333.39	333.41
333.43							
9.60 CFS	9.60	10.15	10.72	11.31	11.91	12.52	13.14
13.78							
9.60 ELEV	333.45	333.47	333.50	333.52	333.54	333.57	333.59
333.62							
10.08 CFS	14.43	15.10	16.19	17.87	19.44	20.76	21.97
23.08							
10.08 ELEV	333.64	333.67	333.71	333.78	333.84	333.89	333.93
333.98							
10.56 CFS	24.18	25.32	26.58	27.96	29.49	31.15	32.98
34.93							
10.56 ELEV	334.02	334.07	334.11	334.17	334.23	334.29	334.36
334.44							
11.04 CFS	37.05	39.41	42.09	45.10	48.39	51.99	55.95
60.20							
11.04 ELEV	334.52	334.61	334.72	334.83	334.96	335.10	335.26
335.42							
11.52 CFS	65	71	79	89	99	101	105
112							
11.52 ELEV	335.60	335.83	336.15	336.53	336.94	337.03	337.20
337.52							
12.00 CFS	123	132	145	159	174	187	199
208							
12.00 ELEV	338.03	338.48	339.14	339.98	340.87	341.70	342.46

343.05							
12.48 CFS	215	222	228	234	240	244	247
249							
12.48 ELEV	343.59	344.08	344.53	344.94	345.32	345.63	345.86
346.00							
12.96 CFS	252	253	250	249	247	245	242
238							
12.96 ELEV	346.07	346.07	346.04	345.97	345.85	345.67	345.45
345.20							
13.44 CFS	234	230	226	221	217	212	208
203							
13.44 ELEV	344.93	344.64	344.34	344.03	343.71	343.39	343.06
342.73							
13.92 CFS	198	192	186	180	174	169	163
158							
13.92 ELEV	342.39	342.00	341.63	341.26	340.90	340.56	340.22
339.90							
14.40 CFS	153	147	140	134	128	119	108
83							
14.40 ELEV	339.59	339.26	338.90	338.57	338.26	337.83	337.32
336.29							
14.88 CFS	28.47	68.60	34.88	59.12	37.94	52.37	38.93
47.45							
14.88 ELEV	334.19	335.75	334.44	335.38	334.56	335.12	334.59
334.93							
15.36 CFS	38.91	43.93	38.49	41.41	37.93	39.61	37.38
38.36							

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15.36 ELEV	334.59	334.79	334.58	334.69	334.56	334.62	334.53
334.57							
15.84 CFS	37.00	37.60	36.66	36.87	36.16	36.22	35.73
35.69							
15.84 ELEV	334.52	334.54	334.51	334.51	334.49	334.49	334.47
334.47							
16.32 CFS	35.28	35.13	34.79	34.60	34.26	34.04	33.76
33.57							
16.32 ELEV	334.45	334.45	334.43	334.43	334.41	334.40	334.39
334.39							
16.80 CFS	33.30	33.06	32.80	32.59	32.39	32.17	31.90
31.61							
16.80 ELEV	334.38	334.37	334.36	334.35	334.34	334.33	334.32
334.31							
17.28 CFS	31.33	31.12	30.92	30.67	30.37	30.07	29.80
29.56							
17.28 ELEV	334.30	334.29	334.28	334.27	334.26	334.25	334.24
334.23							
17.76 CFS	29.32	29.05	28.77	28.52	28.30	28.08	27.84
27.58							
17.76 ELEV	334.22	334.21	334.20	334.19	334.18	334.17	334.16
334.15							
18.24 CFS	27.35	27.14	26.94	26.70	26.49	26.35	26.25
26.16							
18.24 ELEV	334.14	334.14	334.13	334.12	334.11	334.10	334.10
334.10							
18.72 CFS	26.02	25.90	25.84	25.78	25.67	25.55	25.45

25.35								
18.72	ELEV	334.09	334.09	334.09	334.08	334.08	334.07	334.07
334.07								
19.20	CFS	25.26	25.17	25.10	25.03	24.96	24.91	24.84
24.73								
19.20	ELEV	334.06	334.06	334.06	334.05	334.05	334.05	334.05
334.04								
19.68	CFS	24.62	24.56	24.49	24.37	24.24	24.16	24.13
24.09								
19.68	ELEV	334.04	334.04	334.03	334.03	334.02	334.02	334.02
334.02								
20.16	CFS	24.00	23.91	23.83	23.75	23.63	23.48	23.38
23.33								
20.16	ELEV	334.01	334.01	334.01	334.00	334.00	333.99	333.99
333.99								
20.64	CFS	23.28	23.18	23.07	23.01	22.97	22.88	22.76
22.65								
20.64	ELEV	333.99	333.98	333.98	333.97	333.97	333.97	333.97
333.96								
21.12	CFS	22.56	22.47	22.38	22.30	22.23	22.17	22.11
22.05								
21.12	ELEV	333.96	333.95	333.95	333.95	333.94	333.94	333.94
333.94								
21.60	CFS	21.96	21.84	21.76	21.70	21.60	21.52	21.48
21.41								
21.60	ELEV	333.93	333.93	333.93	333.92	333.92	333.92	333.92
333.91								
22.08	CFS	21.31	21.20	21.11	21.02	20.94	20.86	20.79
20.73								
22.08	ELEV	333.91	333.90	333.90	333.90	333.89	333.89	333.89
333.89								
22.56	CFS	20.66	20.54	20.42	20.35	20.28	20.15	20.02
19.94								
22.56	ELEV	333.88	333.88	333.87	333.87	333.87	333.86	333.86
333.86								
23.04	CFS	19.91	19.87	19.78	19.68	19.60	19.53	19.45
19.36								
23.04	ELEV	333.85	333.85	333.85	333.85	333.84	333.84	333.84
333.83								
23.52	CFS	19.21	19.07	18.98	18.92	18.85	18.73	18.58
18.47								
23.52	ELEV	333.83	333.82	333.82	333.82	333.81	333.81	333.80
333.80								
24.00	CFS	18.49	18.42	17.70	16.49	15.29	14.19	13.11
12.05								
24.00	ELEV	333.80	333.80	333.77	333.72	333.67	333.63	333.59
333.55								
24.48	CFS	11.06	10.37	10.01	9.74	9.52	9.34	9.17
9.01								
24.48	ELEV	333.51	333.48	333.47	333.46	333.45	333.44	333.44
333.43								
24.96	CFS	8.87	8.73	8.59	8.46	8.34	8.21	8.10
7.98								
24.96	ELEV	333.42	333.42	333.41	333.41	333.40	333.40	333.39
333.39								
25.44	CFS	7.87	7.76	7.65	7.54	7.43	7.33	7.23
7.13								
25.44	ELEV	333.39	333.38	333.38	333.37	333.37	333.37	333.36
333.36								
25.92	CFS	7.03	6.93	6.83	6.73	6.62	6.50	
25.92	ELEV	333.35	333.35	333.35	333.34	333.34	333.33	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.58 WATERSHED INCHES; 941 CFS-HRS; 77.7 ACRE-

FEET.

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA

Dist;H1&H8UG;GHC2.04TEST

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DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	167	42	33	26	23	21	16	8

DURATION(HRS)	17
FLOW(CFS)	7 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
13.01	252.8	333.24
14.94	68.7	331.94
15.06	59.1	331.82
15.18	52.4	331.73
15.30	47.5	331.67
15.42	43.9	331.63
15.54	41.4	331.60
15.66	39.6	331.57
15.78	38.4	331.56
15.89	37.6	331.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.58 WATERSHED INCHES; 941 CFS-HRS; 77.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.14	82.4	(RUNOFF)
15.84	2.4	(RUNOFF)
23.05	1.1	(RUNOFF)
23.71	1.0	(RUNOFF)
24.00	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.80 WATERSHED INCHES; 79 CFS-HRS; 6.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	94.7	(RUNOFF)
24.03	1.3	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.42 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	94.7	(NULL)
24.03	1.3	(NULL)

HRS SQ.MI.	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50							
	MAIN	TIME	INCREMENT = .060 hr,	DRAINAGE AREA = .03				
1.86 CFS	.00	.01	.02	.03	.05	.06	.08	
.10								
2.34 CFS	.12	.14	.16	.18	.20	.22	.24	
.26								
2.82 CFS	.28	.29	.31	.33	.34	.36	.38	
.39								
3.30 CFS	.41	.44	.45	.47	.49	.51	.53	
.53								
3.78 CFS	.54	.56	.58	.60	.62	.64	.66	
.68								
4.26 CFS	.69	.69	.71	.73	.76	.77	.78	
.78								
4.74 CFS	.80	.82	.84	.86	.87	.88	.89	
.91								
5.22 CFS	.93	.95	.96	.96	.97	.99	1.02	
1.04								
5.70 CFS	1.06	1.06	1.06	1.06	1.08	1.11	1.14	
1.16								
6.18 CFS	1.17	1.19	1.21	1.24	1.27	1.30	1.33	
1.36								
6.66 CFS	1.39	1.40	1.42	1.46	1.50	1.51	1.53	
1.57								
7.14 CFS	1.62	1.66	1.68	1.70	1.73	1.76	1.80	
1.82								
7.62 CFS	1.84	1.87	1.90	1.93	1.97	2.00	2.04	
2.08								
8.10 CFS	2.11	2.15	2.16	2.18	2.23	2.26	2.28	
2.30								
8.58 CFS	2.35	2.40	2.44	2.47	2.49	2.50	2.52	
2.57								
9.06 CFS	2.63	2.69	2.75	2.83	2.93	3.04	3.14	
3.22								
9.54 CFS	3.30	3.40	3.50	3.62	3.74	3.84	3.92	
4.01								
10.02 CFS	4.11	4.23	4.35	4.47	4.56	4.65	4.75	
4.86								
10.50 CFS	4.98	5.13	5.35	5.63	5.96	6.32	6.70	
7.09								

10.98	CFS	7.48	7.87	8.34	8.93	9.60	10.28	10.98
11.71								
11.46	CFS	12.45	13.22	14.67	17.18	19.73	22.14	25.44
30.09								
11.94	CFS	36.74	47.54	63.94	84.78	94.66	83.99	65.37
50.49								
12.42	CFS	40.07	32.94	28.24	24.31	20.56	17.68	15.80
14.50								
12.90	CFS	13.50	12.65	11.85	11.07	10.32	9.67	9.16
8.69								
13.38	CFS	8.26	7.83	7.40	7.00	6.61	6.28	6.02
5.83								
13.86	CFS	5.67	5.54	5.44	5.35	5.25	5.14	5.01
4.89								
14.34	CFS	4.79	4.71	4.62	4.52	4.40	4.27	4.16
4.07								
14.82	CFS	3.98	3.89	3.79	3.68	3.59	3.48	3.37
3.28								
15.30	CFS	3.22	3.18	3.17	3.16	3.15	3.13	3.08
3.03								
15.78	CFS	2.99	2.99	2.99	2.95	2.91	2.86	2.83
2.82								
16.26	CFS	2.80	2.77	2.73	2.70	2.67	2.63	2.60
2.58								
16.74	CFS	2.57	2.55	2.51	2.48	2.47	2.46	2.43
2.39								
17.22	CFS	2.33	2.30	2.29	2.29	2.26	2.21	2.16
2.13								
17.70	CFS	2.12	2.10	2.07	2.03	2.01	2.00	1.98
1.95								
18.18	CFS	1.92	1.89	1.88	1.87	1.84	1.82	1.82
1.84								
18.66	CFS	1.85	1.83	1.81	1.82	1.82	1.80	1.78
1.76								
19.14	CFS	1.76	1.76	1.75	1.75	1.75	1.75	1.75
1.74								
19.62	CFS	1.72	1.70	1.70	1.70	1.68	1.66	1.66
1.69								

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TR20 ----- SCS

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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20.10	CFS	1.69	1.68	1.66	1.65	1.64	1.61	1.59
1.59								
20.58	CFS	1.60	1.62	1.60	1.58	1.58	1.59	1.57
1.55								
21.06	CFS	1.53	1.53	1.52	1.52	1.52	1.52	1.52
1.52								
21.54	CFS	1.52	1.49	1.47	1.47	1.47	1.46	1.46
1.47								
22.02	CFS	1.46	1.44	1.42	1.41	1.41	1.41	1.40
1.40								
22.50	CFS	1.40	1.39	1.37	1.35	1.35	1.35	1.33
1.31								
22.98	CFS	1.31	1.34	1.34	1.33	1.31	1.30	1.29
1.29								
23.46	CFS	1.28	1.25	1.23	1.24	1.26	1.27	1.24
1.21								



23.94 CFS      1.20      1.25      1.25      .97      .57      .29      .15  
 .08  
 24.42 CFS      .04      .02      .01      .00

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.42 WATERSHED INCHES;      105 CFS-HRS;      8.7 ACRE-  
 FEET.

DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	9	5	3	2	2	2	2	1

DURATION (HRS)	18	20	21
FLOW (CFS)	1	1	0

OPERATION RUNOFF      XSECTION 119

PEAK TIME (HRS)		PEAK DISCHARGE (CFS)		PEAK
ELEVATION (FEET)				
12.13		24.0		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.59 WATERSHED INCHES;      21 CFS-HRS;      1.8 ACRE-  
 FEET.

OPERATION ADDHYD      XSECTION 120

PEAK TIME (HRS)		PEAK DISCHARGE (CFS)		PEAK
ELEVATION (FEET)				
12.17		115.9		(NULL)
15.82		3.7		(NULL)
20.07		2.1		(NULL)
24.01		1.6		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.26 WATERSHED INCHES;      126 CFS-HRS;      10.4 ACRE-  
 FEET.

OPERATION ADDHYD      XSECTION 20

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
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PEAK TIME (HRS)		PEAK DISCHARGE (CFS)		PEAK
ELEVATION (FEET)				
12.16		197.1		(NULL)
15.83		6.1		(NULL)
17.33		4.7		(NULL)
20.85		3.3		(NULL)
21.75		3.0		(NULL)
21.95		3.0		(NULL)
24.01		2.6		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.08 WATERSHED INCHES;      205 CFS-HRS;      16.9 ACRE-

FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.15	148.6	(RUNOFF)
15.84	4.6	(RUNOFF)
17.34	3.5	(RUNOFF)
22.75	2.1	(RUNOFF)
23.06	2.1	(RUNOFF)
24.00	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.41 WATERSHED INCHES; 141 CFS-HRS; 11.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.15	345.1	(NULL)
15.84	10.7	(NULL)
17.34	8.2	(NULL)
19.74	6.1	(NULL)
20.06	6.1	(NULL)
21.95	5.3	(NULL)
24.01	4.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.78 WATERSHED INCHES; 346 CFS-HRS; 28.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

1  
 TR20 ----- SCS  
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 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.16	499.1	(NULL)
14.94	81.9	(NULL)
15.06	71.7	(NULL)
15.18	64.2	(NULL)
15.30	58.8	(NULL)
15.42	55.2	(NULL)
15.54	52.6	(NULL)
15.65	50.5	(NULL)
15.77	49.0	(NULL)
15.89	48.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 1283 CFS-HRS; 106.0 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 122  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
11.76	168.0 *	(DIVERT)
14.94	81.9	(DIVERT)
15.06	71.7	(DIVERT)
15.18	64.2	(DIVERT)
15.30	58.8	(DIVERT)
15.42	55.2	(DIVERT)
15.54	52.6	(DIVERT)
15.65	50.5	(DIVERT)
15.77	49.0	(DIVERT)
15.89	48.2	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
997 CFS-HRS; 82.4 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	331.1	177.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.08 WATERSHED INCHES; 286 CFS-HRS; 23.6 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 83, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 322.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

1

TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION  
05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
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OPERATION RESVOR STRUCTURE 83

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.60	224.0	322.72
12.72	211.0	322.68
12.84	206.0	322.66
12.96	200.8	322.65
13.08	189.8	322.61
13.20	179.0	322.58
13.32	166.9	322.54
13.44	153.3	322.49
13.56	139.0	322.45
13.68	124.9	322.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .46 WATERSHED INCHES; 123 CFS-HRS; 10.1 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 123

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.60	392.0	(NULL)
12.72	379.0	(NULL)
12.84	374.0	(NULL)
12.96	368.8	(NULL)
13.08	357.8	(NULL)
13.20	347.0	(NULL)
13.32	334.9	(NULL)
13.44	321.3	(NULL)
13.56	307.0	(NULL)
13.68	292.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.22 WATERSHED INCHES; 1120 CFS-HRS; 92.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 23

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 TR20 ----- SCS  
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 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.68	279.4	315.84
12.79	304.5	315.91
12.90	312.1	315.93
13.02	313.2	315.94
13.14	309.5	315.93
13.26	302.3	315.90
13.38	293.9	315.88
13.50	283.8	315.85
13.61	272.5	315.82
13.73	260.7	315.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.37 WATERSHED INCHES; 1159 CFS-HRS; 95.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	136.5	(RUNOFF)
20.68	3.0	(RUNOFF)
23.99	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.17 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-
FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE
TIME INCREMENT OF .043 HOURS.
\*\*\*

\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES
FIRST NEGATIVE VALUE IS 0 CFS.
\*\*\*

OPERATION RESVOR STRUCTURE 31

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows show values for 12.30, 20.69, and 23.79 hours.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.15 WATERSHED INCHES; 168 CFS-HRS; 13.9 ACRE-
FEET.

OPERATION RUNOFF XSECTION 25

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TR20 ----- SCS
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05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA
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Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows show values for 12.26, 18.66, 20.68, and 23.98 hours, with runoff values in parentheses.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.09 WATERSHED INCHES; 246 CFS-HRS; 20.3 ACRE-
FEET.

OPERATION ADDHYD XSECTION 26

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK ELEVATION (FEET). Rows show values for 12.28, 18.67, 20.68, 23.14, and 23.78 hours, with null values in parentheses.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.12 WATERSHED INCHES; 414 CFS-HRS; 34.2 ACRE-
FEET.

OPERATION REACH XSECTION 27

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.37	312.6	319.62
20.73	7.5	316.81
23.20	6.2	316.73
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.12 WATERSHED INCHES;		34.2 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	154.0	(RUNOFF)
21.94	3.2	(RUNOFF)
24.01	2.7	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.74 WATERSHED INCHES;		15.1 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 29

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 TR20 ----- SCS  
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 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	321.6	(NULL)
12.67	332.0	(NULL)
12.78	345.0	(NULL)
12.90	344.9	(NULL)
13.02	341.1	(NULL)
13.14	333.5	(NULL)
13.26	323.4	(NULL)
13.38	312.7	(NULL)
13.49	300.7	(NULL)
13.61	287.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.41 WATERSHED INCHES;		110.9 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 30

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	609.2	(NULL)
12.66	510.7	(NULL)
12.77	475.9	(NULL)

12.89	443.1	(NULL)
13.01	418.4	(NULL)
13.13	400.4	(NULL)
13.25	383.5	(NULL)
13.37	367.2	(NULL)
13.49	350.0	(NULL)
13.61	331.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.56 WATERSHED INCHES; 1756 CFS-HRS; 145.1 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	609.2	(NULL)
12.66	510.7	(NULL)
12.77	475.9	(NULL)
12.89	443.1	(NULL)
13.01	418.4	(NULL)
13.13	400.4	(NULL)
13.25	383.5	(NULL)
13.37	367.2	(NULL)
13.49	350.0	(NULL)
13.61	331.8	(NULL)

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.56 WATERSHED INCHES; 1756 CFS-HRS; 145.1 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	220.6	(RUNOFF)
20.86	4.2	(RUNOFF)
24.02	3.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 32

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	204.5	313.75
20.73	4.3	310.35
24.09	3.3	310.27

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.69 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.16	33.8	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.63 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .48 AC-FT ( .09 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 377.99.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	29.2	380.63

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-  
 FEET.

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\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.  
 \*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.24	29.2	338.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.55 WATERSHED INCHES; 30 CFS-HRS; 2.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 35

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.19	100.5	(RUNOFF)
18.65	2.0	(RUNOFF)
24.02	1.4	(RUNOFF)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.63 WATERSHED INCHES; 118 CFS-HRS; 9.7 ACRE-
FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS
WITH 1.02 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 354.08.
\*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.27 84.8 357.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.93 WATERSHED INCHES; 105 CFS-HRS; 8.7 ACRE-
FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.26 113.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.84 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 34

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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.26 113.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.84 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-
FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.
\*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.26 113.8 330.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.84 WATERSHED INCHES; 135 CFS-HRS; 11.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.14	113.8	(RUNOFF)
15.84	3.3	(RUNOFF)
17.34	2.5	(RUNOFF)
18.61	2.0	(RUNOFF)
18.84	2.0	(RUNOFF)
24.00	1.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.03 WATERSHED INCHES; 109 CFS-HRS; 9.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.19	206.2	(NULL)
18.82	5.1	(NULL)
21.94	4.1	(NULL)
24.00	3.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.92 WATERSHED INCHES; 244 CFS-HRS; 20.2 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 35

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.19	206.2	(NULL)
18.82	5.1	(NULL)
21.94	4.1	(NULL)
24.00	3.6	(NULL)

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	ALTERNATE = 1,	STORM =50	DRAINAGE AREA =	.06
2.04 CFS	.00	.01	.01	.01	.01	.01	.02	.02		
.02										
2.52 CFS	.02	.03	.03	.03	.04	.05	.07			
.08										
3.00 CFS	.10	.12	.14	.16	.18	.21	.23			
.25										
3.48 CFS	.27	.29	.31	.33	.35	.37	.39			

.42							
3.96 CFS	.44	.46	.49	.51	.53	.54	.56
.59							
4.44 CFS	.62	.65	.66	.67	.69	.72	.75
.77							
4.92 CFS	.79	.81	.83	.85	.88	.91	.94
.94							
5.40 CFS	.96	.98	1.02	1.05	1.07	1.10	1.11
1.11							
5.88 CFS	1.13	1.17	1.21	1.25	1.25	1.28	1.31
1.34							
6.36 CFS	1.38	1.42	1.46	1.49	1.54	1.57	1.58
1.63							
6.84 CFS	1.69	1.71	1.73	1.78	1.84	1.89	1.94
1.97							
7.32 CFS	2.00	2.04	2.10	2.14	2.17	2.20	2.24
2.30							
7.80 CFS	2.34	2.39	2.45	2.50	2.54	2.60	2.64
2.65							
8.28 CFS	2.71	2.79	2.82	2.84	2.90	2.97	3.04
3.09							
8.76 CFS	3.13	3.16	3.19	3.23	3.33	3.42	3.48
3.57							
9.24 CFS	3.68	3.82	3.94	4.05	4.15	4.25	4.38
4.53							
9.72 CFS	4.68	4.81	4.92	5.03	5.15	5.30	5.46
5.61							
10.20 CFS	5.75	5.87	5.99	6.20	6.65	7.09	7.57
8.22							
10.68 CFS	8.94	9.69	10.48	11.26	12.07	12.86	13.67
14.76							
11.16 CFS	15.97	17.25	18.56	19.89	21.34	22.74	24.21
27.49							
11.64 CFS	32	36	40	46	54	66	91
126							
12.12 CFS	178	206	189	164	142	112	96
84							
12.60 CFS	71.58	63.18	56.48	50.84	46.06	41.97	38.53
36.33							
13.08 CFS	34.48	32.67	31.07	29.60	28.17	26.78	25.45
24.14							
13.56 CFS	22.89	21.71	20.67	19.77	18.95	18.28	17.68
17.13							
14.04 CFS	16.62	16.11	15.61	15.13	14.69	14.30	13.94
13.58							
14.52 CFS	13.20	12.82	12.46	12.13	11.83	11.54	11.24
10.92							
15.00 CFS	10.64	10.36	10.06	9.80	9.58	9.40	9.25
9.12							
15.48 CFS	9.00	8.88	8.74	8.59	8.43	8.33	8.28
8.18							
15.96 CFS	8.05	7.92	7.81	7.73	7.66	7.58	7.47
7.39							
16.44 CFS	7.32	7.23	7.14	7.08	7.03	6.98	6.90
6.82							
16.92 CFS	6.76	6.72	6.67	6.59	6.49	6.39	6.35
6.34							
17.40 CFS	6.28	6.19	6.09	6.02	5.96	5.92	5.87
5.78							
17.88 CFS	5.71	5.67	5.63	5.57	5.49	5.43	5.38
5.34							
18.36 CFS	5.29	5.21	5.18	5.19	5.19	5.15	5.09
5.07							
18.84 CFS	5.08	5.04	4.98	4.95	4.93	4.91	4.89

4.88								
19.32 CFS	4.86	4.85	4.84	4.82	4.80	4.74	4.73	
4.74								
19.80 CFS	4.71	4.66	4.64	4.66	4.69	4.66	4.62	
4.59								
20.28 CFS	4.58	4.56	4.50	4.46	4.49	4.50	4.50	
4.44								
20.76 CFS	4.41	4.43	4.42	4.37	4.34	4.32	4.31	
4.29								
21.24 CFS	4.28	4.27	4.26	4.25	4.24	4.23	4.17	
4.14								
21.72 CFS	4.16	4.14	4.10	4.12	4.12	4.08	4.04	
4.02								

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22.20 CFS	4.01	3.99	3.98	3.97	3.96	3.96	3.93	
3.87								
22.68 CFS	3.86	3.87	3.84	3.79	3.77	3.79	3.82	
3.78								
23.16 CFS	3.74	3.72	3.70	3.69	3.68	3.65	3.59	
3.58								
23.64 CFS	3.61	3.62	3.60	3.54	3.49	3.50	3.61	
3.48								
24.12 CFS	2.85	2.38	2.16	2.02	1.92	1.82	1.75	
1.70								
24.60 CFS	1.69	1.68	1.67	1.67	1.66	1.65	1.64	
1.63								
25.08 CFS	1.62	1.61	1.60					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.92 WATERSHED INCHES; 244 CFS-HRS; 20.2 ACRE-  
 FEET.

DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	24	11	7	5	5	4	4	3

DURATION (HRS) 18 19  
 FLOW (CFS) 2 2 TRUNCATED

OPERATION RUNOFF XSECTION 140

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET)  
 12.13 11.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.03 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 141

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET)  
 12.18 215.5 (NULL)

18.82	5.3	(NULL)
22.73	4.1	(NULL)
23.04	4.0	(NULL)
24.00	3.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.72 WATERSHED INCHES; 254 CFS-HRS; 21.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	99.5	(RUNOFF)
20.67	2.3	(RUNOFF)
23.97	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.94 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	705.3	(NULL)
12.65	551.7	(NULL)
12.77	507.3	(NULL)
12.89	467.6	(NULL)
13.01	438.7	(NULL)
13.13	417.6	(NULL)
13.25	398.4	(NULL)
13.37	380.3	(NULL)
13.49	361.8	(NULL)
13.61	342.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.59 WATERSHED INCHES; 1881 CFS-HRS; 155.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.32	909.4	(NULL)
12.65	638.5	(NULL)
12.76	571.7	(NULL)
12.88	515.7	(NULL)
13.01	477.5	(NULL)
13.13	450.7	(NULL)
13.25	427.1	(NULL)

13.37	405.6	(NULL)
13.49	384.4	(NULL)
13.61	362.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.69 WATERSHED INCHES; 2136 CFS-HRS; 176.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 43

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.30	1075.4	(NULL)
12.64	705.8	(NULL)
12.75	626.5	(NULL)
12.88	560.4	(NULL)
13.01	515.7	(NULL)
13.13	484.9	(NULL)
13.25	458.0	(NULL)
13.37	433.6	(NULL)
13.49	409.7	(NULL)
13.61	385.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.74 WATERSHED INCHES; 2369 CFS-HRS; 195.8 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 144  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.06	543.0 *	(DIVERT)
12.87	549.1	(DIVERT)
13.01	515.7	(DIVERT)
13.13	484.9	(DIVERT)
13.25	458.0	(DIVERT)
13.37	433.6	(DIVERT)
13.49	409.7	(DIVERT)
13.61	385.4	(DIVERT)
13.73	361.2	(DIVERT)
13.85	339.5	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2155 CFS-HRS; 178.1 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		

12.30	532.4	177.88
12.64	162.8	176.40
12.75	83.4	175.98
12.90	13.4	175.16

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .43 WATERSHED INCHES; 214 CFS-HRS; 17.7 ACRE-  
 FEET.

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\*\*\* MESSAGE - STRUCTURE 82, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE

STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 318.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 82

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.41	666.3	319.63
12.54	452.3	319.25
12.67	175.8	318.57
12.77	93.4	318.30
12.96	12.9	318.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .16 WATERSHED INCHES; 81 CFS-HRS; 6.7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 145

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.41	1209.3	(NULL)
12.54	995.3	(NULL)
12.67	718.8	(NULL)
12.77	636.4	(NULL)
12.87	547.5	(NULL)
13.00	518.1	(NULL)
13.13	485.0	(NULL)
13.25	458.1	(NULL)
13.37	433.7	(NULL)
13.49	409.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.48 WATERSHED INCHES; 2236 CFS-HRS; 184.8 ACRE-  
 FEET.

OPERATION REACH XSECTION 44

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION (FEET)		
12.48	979.1	291.23
12.60	889.3	291.10
12.70	708.9	290.82
13.29	459.4	290.36
13.41	434.1	290.31
13.53	410.5	290.26
13.65	386.9	290.21
13.89	340.7	290.11
14.01	320.9	290.07

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.55 WATERSHED INCHES; 2273 CFS-HRS; 187.8 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.48	979.1	(NULL)
12.60	889.3	(NULL)
12.70	708.9	(NULL)
13.29	459.4	(NULL)
13.41	434.1	(NULL)
13.53	410.5	(NULL)
13.65	386.9	(NULL)
13.89	340.7	(NULL)
14.01	320.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.55 WATERSHED INCHES; 2273 CFS-HRS; 187.8 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.29	114.7	(RUNOFF)
23.09	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.00 WATERSHED INCHES; 154 CFS-HRS; 12.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.31	143.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)



4.90 WATERSHED INCHES; 199 CFS-HRS; 16.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.30	257.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.94 WATERSHED INCHES; 352 CFS-HRS; 29.1 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 48

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.20	140.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.03	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.93 WATERSHED INCHES; 149 CFS-HRS; 12.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.21	673.1	(NULL)
12.48	1036.2	(NULL)
12.59	932.4	(NULL)
12.70	741.5	(NULL)
13.29	474.6	(NULL)
13.41	447.9	(NULL)
13.53	422.8	(NULL)
13.89	350.3	(NULL)
14.01	330.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.57 WATERSHED INCHES; 2422 CFS-HRS; 200.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.26	919.0	(NULL)
12.48	1234.3	(NULL)
12.59	1083.7	(NULL)

14.01 353.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.62 WATERSHED INCHES; 2775 CFS-HRS; 229.3 ACRE-
FEET.

OPERATION REACH XSECTION 51

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Rows: 12.36, 12.55, 12.64.

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.59 WATERSHED INCHES; 2758 CFS-HRS; 227.9 ACRE-
FEET.

OPERATION RUNOFF XSECTION 52

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Row: 12.18.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.06 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-
FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,
UNLESS NEW RATING TABLE VALUES ARE INSERTED.
\*\*\*

OPERATION REACH XSECTION 53

Table with 3 columns: PEAK TIME (HRS) ELEVATION (FEET), PEAK DISCHARGE (CFS), PEAK. Row: 12.26.

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.06 WATERSHED INCHES; 6 CFS-HRS; .5 ACRE-
FEET.

OPERATION RUNOFF XSECTION 54

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 1 CFS,
AT XSECTION 54
\*\*\*

Table with 3 columns: PEAK TIME (HRS), PEAK DISCHARGE (CFS), PEAK

ELEVATION(FEET)  
 12.54 .6 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .47 WATERSHED INCHES; 2 CFS-HRS; .2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	91.3	(RUNOFF)
18.86	2.1	(RUNOFF)
24.03	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.65 WATERSHED INCHES; 97 CFS-HRS; 8.0 ACRE-  
 FEET.

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	957.4	(NULL)
12.55	1153.1	(NULL)
12.64	1089.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.59 WATERSHED INCHES; 2854 CFS-HRS; 235.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	4.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .79 WATERSHED INCHES; 8 CFS-HRS; .7 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	961.6	(NULL)
12.55	1156.1	(NULL)
12.64	1091.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

4.53 WATERSHED INCHES; 2862 CFS-HRS; 236.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK (RUNOFF)
12.21	61.6	(RUNOFF)
24.02	1.1	(RUNOFF)

HRS SQ.MI.	MAIN	HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50						
		TIME	INCREMENT = .060 hr,	DRAINAGE AREA = .03				
9.48 CFS .79	.50	.53	.57	.61	.66	.70	.75	
9.96 CFS 1.23	.84	.89	.94	1.00	1.06	1.12	1.17	
10.44 CFS 2.11	1.29	1.36	1.44	1.53	1.65	1.79	1.94	
10.92 CFS 4.29	2.30	2.49	2.69	2.93	3.21	3.54	3.90	
11.40 CFS 12.37	4.70	5.14	5.62	6.36	7.55	8.94	10.44	
11.88 CFS 51.47	15.06	19.06	25.51	35.80	49.74	60.51	59.80	
12.36 CFS 13.77	41.55	33.96	28.31	24.25	21.04	18.07	15.59	
12.84 CFS 7.83	12.52	11.55	10.77	10.09	9.45	8.84	8.29	
13.32 CFS 5.18	7.43	7.07	6.71	6.37	6.02	5.70	5.41	
13.80 CFS 4.30	5.00	4.85	4.73	4.64	4.56	4.49	4.40	

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14.28 CFS 3.60	4.20	4.11	4.04	3.97	3.89	3.79	3.69
14.76 CFS 2.94	3.51	3.44	3.37	3.28	3.20	3.11	3.03
15.24 CFS 2.67	2.86	2.80	2.76	2.74	2.72	2.72	2.70
15.72 CFS 2.46	2.63	2.60	2.59	2.58	2.56	2.53	2.49
16.20 CFS 2.27	2.45	2.43	2.41	2.38	2.36	2.33	2.30
16.68 CFS 2.13	2.25	2.24	2.22	2.20	2.17	2.15	2.14
17.16 CFS 1.91	2.09	2.05	2.02	2.01	2.00	1.98	1.94
17.64 CFS 1.74	1.88	1.86	1.84	1.82	1.79	1.77	1.76
18.12 CFS 1.60	1.72	1.69	1.67	1.66	1.64	1.62	1.60
18.60 CFS 1.57	1.61	1.62	1.61	1.60	1.60	1.60	1.59

19.08 CFS	1.56	1.55	1.55	1.54	1.54	1.54	1.54
1.54							
19.56 CFS	1.54	1.52	1.51	1.50	1.50	1.49	1.47
1.47							
20.04 CFS	1.48	1.49	1.48	1.47	1.46	1.45	1.44
1.41							
20.52 CFS	1.41	1.42	1.43	1.42	1.41	1.40	1.40
1.40							
21.00 CFS	1.38	1.37	1.36	1.35	1.35	1.35	1.35
1.35							
21.48 CFS	1.35	1.35	1.33	1.31	1.31	1.31	1.30
1.30							
21.96 CFS	1.30	1.30	1.29	1.27	1.26	1.26	1.25
1.25							
22.44 CFS	1.25	1.25	1.24	1.23	1.21	1.21	1.21
1.19							
22.92 CFS	1.18	1.17	1.19	1.19	1.19	1.17	1.16
1.16							
23.40 CFS	1.15	1.15	1.13	1.11	1.11	1.12	1.13
1.12							
23.88 CFS	1.09	1.08	1.11	1.10	.94	.65	.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.86 WATERSHED INCHES; 66 CFS-HRS; 5.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	1011.1	(NULL)
12.55	1179.9	(NULL)
12.64	1110.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.51 WATERSHED INCHES; 2929 CFS-HRS; 242.0 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	1011.1	(NULL)
12.55	1179.9	(NULL)
12.64	1110.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.51 WATERSHED INCHES; 2929 CFS-HRS; 242.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 61

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	37.1	(RUNOFF)
18.66	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.78 WATERSHED INCHES; 42 CFS-HRS; 3.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	1044.0	(NULL)
12.55	1196.5	(NULL)
12.64	1124.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02 SQ.MI.

HRS	3.36	3.84	4.32	4.80	5.28	5.76	6.24	6.72	7.20	7.68	8.16	8.64	9.12	9.60	10.08	10.56	11.04	11.52	12.00	12.48	12.96	
CFS	.48	.79	1.36	2.12	2.98	4.22	6.07	8.77	12.41	16.94	22.11	28.24	35.04	44.99	62.35	84.49	124	211	468	993	811	544
	.48	.84	1.45	2.23	3.10	4.43	6.36	9.19	12.92	17.54	22.85	29.04	35.92	46.85	64.84	88	132	227	544	1024	752	
	.52	.89	1.54	2.33	3.23	4.66	6.66	9.63	13.46	18.15	23.62	29.85	36.85	48.81	67.36	92	140	245	646	1194	709	
	.56	.96	1.63	2.43	3.38	4.90	6.98	10.07	14.02	18.76	24.39	30.70	37.87	50.85	69.95	96	150	266	787	1090	667	
	.60	1.03	1.72	2.54	3.53	5.12	7.30	10.51	14.59	19.39	25.16	31.56	38.99	52.98	72.61	100	160	291	925	1115	640	
	.64	1.10	1.81	2.65	3.68	5.34	7.63	10.97	15.17	20.03	25.92	32.45	40.26	55.21	75.34	105	171	322	1014	983	604	
	.69	1.18	1.91	2.76	3.84	5.56	7.99	11.44	15.75	20.69	26.69	33.32	41.68	57.52	78.17	111	183	360	1043	926	586	
	.74	1.26	2.02	2.87	4.02	5.80	8.37	11.92	16.34	21.39	27.46	34.19	43.26	59.91	81.21	117	196	408	1029	853	557	

13.44 CFS	519	508	487	477	456	446	427
418							
13.92 CFS	399	392	375	369	355	349	337
329							
14.40 CFS	318	311	302	293	285	277	268
259							
14.88 CFS	250	240	227	206	189	173	162
153							
15.36 CFS	146	140	136	132	130	127	125
123							
15.84 CFS	121	120	118	117	116	115	114
113							
16.32 CFS	112	110	109	108	107	106	105
104							
16.80 CFS	103	102	102	101	100	99	98
97							
17.28 CFS	96.22	95.29	94.35	93.38	92.40	91.43	90.47
89.50							
17.76 CFS	88.51	87.49	86.48	85.51	84.59	83.69	82.79
81.90							
18.24 CFS	81.03	80.20	79.37	78.53	77.71	76.98	76.33
75.77							
18.72 CFS	75.26	74.84	74.53	74.25	73.95	73.64	73.32
73.00							

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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19.20 CFS	72.67	72.33	72.00	71.72	71.48	71.27	71.09
70.89							
19.68 CFS	70.66	70.43	70.18	69.87	69.54	69.22	68.96
68.71							
20.16 CFS	68.48	68.27	68.09	67.90	67.64	67.31	66.96
66.63							
20.64 CFS	66.31	66.00	65.72	65.50	65.32	65.11	64.86
64.59							
21.12 CFS	64.31	64.00	63.68	63.37	63.08	62.83	62.62
62.44							
21.60 CFS	62.25	62.03	61.80	61.56	61.28	60.99	60.74
60.52							
22.08 CFS	60.29	60.05	59.81	59.54	59.26	58.96	58.68
58.43							
22.56 CFS	58.21	57.97	57.71	57.46	57.18	56.85	56.50
56.17							
23.04 CFS	55.89	55.64	55.40	55.18	54.99	54.81	54.59
54.35							
23.52 CFS	54.05	53.72	53.40	53.11	52.83	52.54	52.27
52.02							
24.00 CFS	51.85	51.64	50.92	49.47	47.30	44.34	40.52
36.08							
24.48 CFS	31.50	27.24	23.52	20.41	17.91	15.99	14.54
13.47							
24.96 CFS	12.69	12.10	11.66	11.31	11.04		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 4.50 WATERSHED INCHES; 2971 CFS-HRS; 245.5 ACRE-FEET.

OPERATION DIVERT XSECTION 162  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.06	621.0 *	(DIVERT)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
2650 CFS-HRS; 219.0 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	423.0	177.50
12.55	575.5	178.02
12.64	503.1	177.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.49 WATERSHED INCHES; 321 CFS-HRS; 26.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	423.0	(NULL)
12.55	575.5	(NULL)
12.64	503.1	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.49 WATERSHED INCHES; 321 CFS-HRS; 26.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 163

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	1044.0	(NULL)
12.55	1196.5	(NULL)
12.64	1124.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02  
SQ.MI.

3.36 CFS	.48	.52	.56	.60	.64	.69	.74
.79							
3.84 CFS	.84	.89	.96	1.03	1.10	1.18	1.26
1.36							



4.32 CFS	1.45	1.54	1.63	1.72	1.81	1.91	2.02
2.12							
4.80 CFS	2.23	2.33	2.43	2.54	2.65	2.76	2.87
2.98							
5.28 CFS	3.10	3.23	3.38	3.53	3.68	3.84	4.02
4.22							
5.76 CFS	4.43	4.66	4.90	5.12	5.34	5.56	5.80
6.07							
6.24 CFS	6.36	6.66	6.98	7.30	7.63	7.99	8.37
8.77							
6.72 CFS	9.19	9.63	10.07	10.51	10.97	11.44	11.92
12.41							
7.20 CFS	12.92	13.46	14.02	14.59	15.17	15.75	16.34
16.94							
7.68 CFS	17.54	18.15	18.76	19.39	20.03	20.69	21.39
22.11							
8.16 CFS	22.85	23.62	24.39	25.16	25.92	26.69	27.46
28.24							
8.64 CFS	29.04	29.85	30.70	31.56	32.45	33.32	34.19
35.04							
9.12 CFS	35.92	36.85	37.87	38.99	40.26	41.68	43.26
44.99							
9.60 CFS	46.85	48.81	50.85	52.98	55.21	57.52	59.91
62.35							
10.08 CFS	64.84	67.36	69.95	72.61	75.34	78.17	81.21
84.49							
10.56 CFS	88	92	96	100	105	111	117
124							
11.04 CFS	132	140	150	160	171	183	196
211							
11.52 CFS	227	245	266	291	322	360	408
468							
12.00 CFS	544	646	787	925	1014	1043	1029
993							
12.48 CFS	1024	1194	1090	1115	983	926	853
811							
12.96 CFS	752	709	667	640	604	586	557
544							
13.44 CFS	519	508	487	477	456	446	427
418							
13.92 CFS	399	392	375	369	355	349	337
329							
14.40 CFS	318	311	302	293	285	277	268
259							
14.88 CFS	250	240	227	206	189	173	162
153							
15.36 CFS	146	140	136	132	130	127	125
123							
15.84 CFS	121	120	118	117	116	115	114
113							
16.32 CFS	112	110	109	108	107	106	105
104							
16.80 CFS	103	102	102	101	100	99	98
97							
17.28 CFS	96.22	95.29	94.35	93.38	92.40	91.43	90.47
89.50							
17.76 CFS	88.51	87.49	86.48	85.51	84.59	83.69	82.79
81.90							
18.24 CFS	81.03	80.20	79.37	78.53	77.71	76.98	76.33
75.77							
18.72 CFS	75.26	74.84	74.53	74.25	73.95	73.64	73.32
73.00							
19.20 CFS	72.67	72.33	72.00	71.72	71.48	71.27	71.09
70.89							

19.68	CFS	70.66	70.43	70.18	69.87	69.54	69.22	68.96
68.71								
20.16	CFS	68.48	68.27	68.09	67.90	67.64	67.31	66.96
66.63								
20.64	CFS	66.31	66.00	65.72	65.50	65.32	65.11	64.86
64.59								

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21.12	CFS	64.31	64.00	63.68	63.37	63.08	62.83	62.62
62.44								
21.60	CFS	62.25	62.03	61.80	61.56	61.28	60.99	60.74
60.52								
22.08	CFS	60.29	60.05	59.81	59.54	59.26	58.96	58.68
58.43								
22.56	CFS	58.21	57.97	57.71	57.46	57.18	56.85	56.50
56.17								
23.04	CFS	55.89	55.64	55.40	55.18	54.99	54.81	54.59
54.35								
23.52	CFS	54.05	53.72	53.40	53.11	52.83	52.54	52.27
52.02								
24.00	CFS	51.85	51.64	50.92	49.47	47.30	44.34	40.52
36.08								
24.48	CFS	31.50	27.24	23.52	20.41	17.91	15.99	14.54
13.47								
24.96	CFS	12.69	12.10	11.66	11.31	11.04		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 4.50 WATERSHED INCHES; 2971 CFS-HRS; 245.5 ACRE-FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.44	1003.7	250.43
12.63	1111.4	250.56
12.70	1110.2	250.56

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 4.51 WATERSHED INCHES; 2976 CFS-HRS; 245.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	25.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 5.41 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.57	19.3	335.25

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.41 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-  
 FEET.

OPERATION REACH XSECTION 65

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.67	19.0	300.92

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.41 WATERSHED INCHES; 38 CFS-HRS; 3.2 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.20	109.3	(RUNOFF)
23.10	2.1	(RUNOFF)
24.03	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.83 WATERSHED INCHES; 113 CFS-HRS; 9.4 ACRE-  
 FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
 FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.44	52.1	296.06
23.12	2.0	287.56
24.04	1.9	287.55

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.83 WATERSHED INCHES; 113 CFS-HRS; 9.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.55	67.2	(NULL)
20.86	3.1	(NULL)
24.04	2.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.13 WATERSHED INCHES; 151 CFS-HRS; 12.5 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 68

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	205.6	(RUNOFF)
21.45	4.1	(RUNOFF)
24.03	3.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.15 WATERSHED INCHES; 208 CFS-HRS; 17.2 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.21	234.2	(NULL)
18.87	8.4	(NULL)
20.87	7.3	(NULL)
23.10	6.2	(NULL)
24.03	5.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.14 WATERSHED INCHES; 360 CFS-HRS; 29.7 ACRE-  
FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.47	171.3	248.99
24.15	5.8	247.73

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.14 WATERSHED INCHES; 360 CFS-HRS; 29.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.12	45.5	(RUNOFF)
15.83	1.3	(RUNOFF)
17.33	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.90 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 63

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.24	27.4	267.40

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.90 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
FEET.

OPERATION REACH XSECTION 72

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.32	25.6	248.04

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.91 WATERSHED INCHES; 38 CFS-HRS; 3.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 73

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.18	237.2	(RUNOFF)
15.84	9.7	(RUNOFF)
17.34	7.6	(RUNOFF)
18.86	6.1	(RUNOFF)
21.45	5.1	(RUNOFF)
24.01	4.3	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .11  
SQ.MI.

9.60 CFS	.49	.61	.73	.86	1.00	1.13	1.27
1.43							
10.08 CFS	1.60	1.78	1.96	2.13	2.32	2.51	2.72
2.94							
10.56 CFS	3.20	3.51	3.89	4.33	4.82	5.35	5.93

6.54								
11.04	CFS	7.19	8.00	8.96	10.08	11.28	12.57	14.01
15.50								
11.52	CFS	17.15	20.19	25.09	30.06	35.22	43.00	54.20
70.81								
12.00	CFS	99	145	208	237	207	161	128
104								
12.48	CFS	87.51	77.29	67.40	57.39	50.08	45.64	42.48
39.91								
12.96	CFS	37.67	35.43	33.20	31.06	29.25	27.85	26.52
25.25								
13.44	CFS	24.00	22.74	21.53	20.36	19.41	18.71	18.15
17.71								
13.92	CFS	17.37	17.10	16.86	16.56	16.22	15.83	15.47
15.19								
14.40	CFS	14.94	14.69	14.36	13.99	13.60	13.25	12.98
12.73								
14.88	CFS	12.44	12.11	11.79	11.50	11.15	10.81	10.53
10.36								
15.36	CFS	10.28	10.24	10.23	10.21	10.13	9.99	9.81
9.72								
15.84	CFS	9.74	9.72	9.61	9.45	9.31	9.23	9.19
9.15								
16.32	CFS	9.04	8.93	8.85	8.74	8.60	8.52	8.48
8.45								
16.80	CFS	8.36	8.24	8.15	8.12	8.08	7.99	7.84
7.66								
17.28	CFS	7.56	7.58	7.56	7.44	7.27	7.12	7.04
7.00								
17.76	CFS	6.95	6.84	6.72	6.66	6.62	6.58	6.47
6.35								
18.24	CFS	6.28	6.25	6.20	6.09	6.04	6.09	6.16
6.16								
18.72	CFS	6.08	6.03	6.08	6.07	5.99	5.92	5.89
5.88								
19.20	CFS	5.87	5.87	5.87	5.87	5.87	5.87	5.84
5.74								
19.68	CFS	5.68	5.72	5.71	5.63	5.56	5.59	5.68
5.70								
20.16	CFS	5.63	5.56	5.54	5.51	5.42	5.33	5.35
5.42								
20.64	CFS	5.46	5.40	5.32	5.34	5.37	5.29	5.22
5.17								
21.12	CFS	5.16	5.15	5.14	5.14	5.14	5.14	5.15
5.13								

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21.60	CFS	5.05	4.96	4.98	5.00	4.94	4.94	4.99
4.95								
22.08	CFS	4.87	4.81	4.79	4.78	4.77	4.77	4.77
4.77								
22.56	CFS	4.74	4.64	4.58	4.62	4.60	4.52	4.45
4.48								
23.04	CFS	4.57	4.58	4.51	4.45	4.42	4.40	4.40
4.36								
23.52	CFS	4.26	4.19	4.25	4.32	4.33	4.24	4.13

4.11  
 24.00 CFS      4.33      4.25      3.08      1.66      .80      .39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.26 WATERSHED INCHES;      232 CFS-HRS;      19.1 ACRE-FEET.

OPERATION ADDHYD      XSECTION      74

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.40	1106.7	(NULL)
12.62	1174.9	(NULL)
12.69	1163.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.39 WATERSHED INCHES;      3208 CFS-HRS;      265.1 ACRE-FEET.

OPERATION ADDHYD      XSECTION      75

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.44	190.7	(NULL)

HYDROGRAPH POINTS FOR      ALTERNATE = 1,      STORM =50  
 MAIN TIME INCREMENT = .060 hr,      DRAINAGE AREA = .15 SQ.MI.

HRS	7.62 CFS	.85	8.10 CFS	1.45	8.58 CFS	2.28	9.06 CFS	3.39	9.54 CFS	5.20	10.02 CFS	7.67	10.50 CFS	11.26	10.98 CFS	19.48	11.46 CFS	39.88	11.94 CFS	184	12.42 CFS	144	12.90 CFS	80	13.38 CFS	51.04	13.86 CFS	41.23	14.34 CFS	35.81	14.82 CFS	29.43	15.30 CFS	20.62						
	.50	.53	.58	.62	.68	.73	.78																																	
	.91	.97	1.04	1.12	1.19	1.27	1.36																																	
	1.54	1.64	1.74	1.85	1.95	2.06	2.17																																	
	2.39	2.50	2.63	2.76	2.89	3.04	3.21																																	
	3.58	3.77	3.98	4.19	4.42	4.67	4.93																																	
	5.47	5.74	6.04	6.34	6.66	6.99	7.33																																	
	8.01	8.37	8.75	9.16	9.59	10.07	10.62																																	
	11.99	12.79	13.65	14.58	15.61	16.79	18.08																																	
	20.99	22.65	24.47	26.47	28.83	31.84	35.53																																	
	45	51	60	75	99	133	165																																	
	190	189	185	179	172	164	154																																	
	134	124	116	109	101	93	86																																	
	74.29	69.57	65.43	61.77	58.52	55.69	53.21																																	
	49.16	47.53	46.11	44.88	43.81	42.87	42.02																																	
	40.48	39.77	39.09	38.46	37.85	37.20	36.52																																	
	35.08	34.35	33.60	32.81	32.00	31.18	30.36																																	
	28.40	27.34	26.13	24.86	23.65	22.56	21.49																																	

15.78	CFS	19.90	19.27	18.72	18.28	17.91	17.58	17.21
16.84								
16.26	CFS	16.51	16.19	15.89	15.61	15.32	15.04	14.78
14.52								
16.74	CFS	14.28	14.06	13.88	13.72	13.55	13.39	13.23
13.10								
17.22	CFS	12.96	12.81	12.64	12.47	12.31	12.18	12.05
11.85								
17.70	CFS	11.63	11.42	11.24	11.08	10.92	10.77	10.62
10.49								

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18.18	CFS	10.37	10.25	10.12	9.99	9.87	9.76	9.65
9.54								
18.66	CFS	9.46	9.41	9.38	9.34	9.29	9.25	9.22
9.18								
19.14	CFS	9.13	9.07	9.02	8.98	8.95	8.92	8.90
8.88								
19.62	CFS	8.86	8.84	8.80	8.75	8.71	8.68	8.64
8.58								
20.10	CFS	8.54	8.53	8.53	8.51	8.48	8.44	8.40
8.35								
20.58	CFS	8.28	8.23	8.20	8.19	8.17	8.13	8.10
8.08								
21.06	CFS	8.05	8.01	7.95	7.91	7.86	7.83	7.80
7.78								
21.54	CFS	7.76	7.74	7.72	7.69	7.64	7.60	7.56
7.53								
22.02	CFS	7.50	7.49	7.47	7.43	7.38	7.34	7.30
7.26								
22.50	CFS	7.23	7.21	7.19	7.16	7.12	7.07	7.02
6.99								
22.98	CFS	6.94	6.89	6.85	6.83	6.82	6.81	6.77
6.73								
23.46	CFS	6.70	6.67	6.63	6.58	6.52	6.48	6.46
6.45								
23.94	CFS	6.43	6.38	6.33	6.33	6.29	5.99	5.38
4.60								
24.42	CFS	3.83	3.14	2.56	2.07	1.66	1.33	1.06
.85								
24.90	CFS	.67	.52	.42				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.20 WATERSHED INCHES; 397 CFS-HRS; 32.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.41	1296.3	(NULL)
12.62	1351.8	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 50  
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28



SQ.MI.							
3.48 CFS	.48	.52	.56	.60	.64	.69	.74
.79							
3.96 CFS	.84	.90	.96	1.03	1.10	1.18	1.27
1.36							
4.44 CFS	1.45	1.54	1.63	1.72	1.81	1.91	2.02
2.12							
4.92 CFS	2.22	2.33	2.43	2.54	2.65	2.77	2.89
3.01							
5.40 CFS	3.14	3.28	3.42	3.58	3.74	3.91	4.10
4.30							
5.88 CFS	4.53	4.76	4.99	5.22	5.46	5.70	5.96
6.24							
6.36 CFS	6.53	6.84	7.16	7.50	7.85	8.22	8.61
9.03							
6.84 CFS	9.46	9.90	10.35	10.81	11.29	11.77	12.27
12.78							
7.32 CFS	13.31	13.86	14.44	15.03	15.63	16.25	16.88
17.51							
7.80 CFS	18.16	18.82	19.49	20.18	20.88	21.62	22.38
23.17							
8.28 CFS	23.98	24.81	25.66	26.51	27.36	28.23	29.10
29.98							
8.76 CFS	30.89	31.81	32.77	33.74	34.72	35.69	36.67
37.67							
9.24 CFS	38.72	39.85	41.10	42.50	44.05	45.77	47.65
49.69							
9.72 CFS	51.87	54.17	56.59	59.11	61.74	64.48	67.29
70.19							
10.20 CFS	73.16	76.19	79.29	82.48	85.77	89.24	92.93
96.95							
10.68 CFS	101	106	111	117	123	130	138
147							
11.16 CFS	156	167	178	191	205	220	237
257							
11.64 CFS	280	306	336	374	421	483	568
685							
12.12 CFS	846	1011	1138	1231	1286	1296	1273
1273							
12.60 CFS	1348	1326	1319	1245	1172	1093	1027
961							
13.08 CFS	901	846	800	755	720	685	658
630							
13.56 CFS	609	585	567	546	529	510	495
478							
14.04 CFS	465	450	438	425	415	403	393
382							

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14.52 CFS	372	363	353	343	334	324	315
305							
15.00 CFS	294	282	265	247	230	215	202
192							
15.48 CFS	183	176	170	165	161	157	154
152							
15.96 CFS	150	147	145	144	142	141	139

137								
16.44	CFS	136	135	133	132	130	129	128
127								
16.92	CFS	125	124	123	122	121	120	118
117								
17.40	CFS	116	115	114	113	111	110	109
108								
17.88	CFS	106	105	104	103	102	100	99
98								
18.36	CFS	97.26	96.19	95.18	94.29	93.47	92.68	91.91
91.26								
18.84	CFS	90.76	90.29	89.83	89.42	89.03	88.65	88.27
87.89								
19.32	CFS	87.51	87.15	86.82	86.52	86.23	85.91	85.62
85.40								
19.80	CFS	85.12	84.76	84.39	84.07	83.80	83.49	83.14
82.82								
20.28	CFS	82.55	82.28	81.96	81.60	81.29	80.98	80.64
80.23								
20.76	CFS	79.83	79.53	79.26	78.94	78.62	78.32	78.01
77.68								
21.24	CFS	77.34	77.00	76.65	76.33	76.03	75.76	75.44
75.14								
21.72	CFS	74.91	74.66	74.33	74.05	73.79	73.46	73.12
72.81								
22.20	CFS	72.51	72.21	71.91	71.59	71.28	70.97	70.65
70.28								
22.68	CFS	69.95	69.69	69.38	68.99	68.59	68.25	67.96
67.63								
23.16	CFS	67.26	66.93	66.65	66.38	66.14	65.86	65.50
65.14								
23.64	CFS	64.84	64.55	64.21	63.82	63.41	63.08	62.99
62.65								
24.12	CFS	61.26	59.34	57.23	54.65	51.41	47.51	43.04
38.28								
24.60	CFS	33.56	29.19	25.33	22.03	19.34	17.20	15.53
14.27								
25.08	CFS	13.31	12.59	12.03				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.37 WATERSHED INCHES; 3605 CFS-HRS; 297.9 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 176  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.12	691.0 *	(DIVERT)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3102 CFS-HRS; 256.3 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.41	605.3	178.10
12.62	660.8	178.24

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

.61 WATERSHED INCHES; 503 CFS-HRS; 41.6 ACRE-  
FEET.

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OPERATION RESVOR STRUCTURE 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.41	605.3	(NULL)
12.62	660.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.61 WATERSHED INCHES; 503 CFS-HRS; 41.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 177

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.41	1296.3	(NULL)
12.62	1351.8	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28 SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	1.28	SQ.MI.
3.48	CFS	.48	.52	.56	.60	.64	.69	.74			
.79											
3.96	CFS	.84	.90	.96	1.03	1.10	1.18	1.27			
1.36											
4.44	CFS	1.45	1.54	1.63	1.72	1.81	1.91	2.02			
2.12											
4.92	CFS	2.22	2.33	2.43	2.54	2.65	2.77	2.89			
3.01											
5.40	CFS	3.14	3.28	3.42	3.58	3.74	3.91	4.10			
4.30											
5.88	CFS	4.53	4.76	4.99	5.22	5.46	5.70	5.96			
6.24											
6.36	CFS	6.53	6.84	7.16	7.50	7.85	8.22	8.61			
9.03											
6.84	CFS	9.46	9.90	10.35	10.81	11.29	11.77	12.27			
12.78											
7.32	CFS	13.31	13.86	14.44	15.03	15.63	16.25	16.88			
17.51											
7.80	CFS	18.16	18.82	19.49	20.18	20.88	21.62	22.38			
23.17											
8.28	CFS	23.98	24.81	25.66	26.51	27.36	28.23	29.10			
29.98											
8.76	CFS	30.89	31.81	32.77	33.74	34.72	35.69	36.67			
37.67											
9.24	CFS	38.72	39.85	41.10	42.50	44.05	45.77	47.65			
49.69											
9.72	CFS	51.87	54.17	56.59	59.11	61.74	64.48	67.29			
70.19											

10.20 CFS	73.16	76.19	79.29	82.48	85.77	89.24	92.93
96.95							
10.68 CFS	101	106	111	117	123	130	138
147							
11.16 CFS	156	167	178	191	205	220	237
257							
11.64 CFS	280	306	336	374	421	483	568
685							
12.12 CFS	846	1011	1138	1231	1286	1296	1273
1273							
12.60 CFS	1348	1326	1319	1245	1172	1093	1027
961							
13.08 CFS	901	846	800	755	720	685	658
630							
13.56 CFS	609	585	567	546	529	510	495
478							
14.04 CFS	465	450	438	425	415	403	393
382							
14.52 CFS	372	363	353	343	334	324	315
305							
15.00 CFS	294	282	265	247	230	215	202
192							
15.48 CFS	183	176	170	165	161	157	154
152							
15.96 CFS	150	147	145	144	142	141	139
137							
16.44 CFS	136	135	133	132	130	129	128
127							
16.92 CFS	125	124	123	122	121	120	118
117							
17.40 CFS	116	115	114	113	111	110	109
108							
17.88 CFS	106	105	104	103	102	100	99
98							

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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18.36 CFS	97.26	96.19	95.18	94.29	93.47	92.68	91.91
91.26							
18.84 CFS	90.76	90.29	89.83	89.42	89.03	88.65	88.27
87.89							
19.32 CFS	87.51	87.15	86.82	86.52	86.23	85.91	85.62
85.40							
19.80 CFS	85.12	84.76	84.39	84.07	83.80	83.49	83.14
82.82							
20.28 CFS	82.55	82.28	81.96	81.60	81.29	80.98	80.64
80.23							
20.76 CFS	79.83	79.53	79.26	78.94	78.62	78.32	78.01
77.68							
21.24 CFS	77.34	77.00	76.65	76.33	76.03	75.76	75.44
75.14							
21.72 CFS	74.91	74.66	74.33	74.05	73.79	73.46	73.12
72.81							
22.20 CFS	72.51	72.21	71.91	71.59	71.28	70.97	70.65
70.28							
22.68 CFS	69.95	69.69	69.38	68.99	68.59	68.25	67.96
67.63							

23.16	CFS	67.26	66.93	66.65	66.38	66.14	65.86	65.50
65.14								
23.64	CFS	64.84	64.55	64.21	63.82	63.41	63.08	62.99
62.65								
24.12	CFS	61.26	59.34	57.23	54.65	51.41	47.51	43.04
38.28								
24.60	CFS	33.56	29.19	25.33	22.03	19.34	17.20	15.53
14.27								
25.08	CFS	13.31	12.59	12.03				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.37 WATERSHED INCHES; 3605 CFS-HRS; 297.9 ACRE-  
 FEET.

OPERATION REACH XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.47	1295.7	230.78
12.68	1349.6	230.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.36 WATERSHED INCHES; 3601 CFS-HRS; 297.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 78

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	133.1	(RUNOFF)
15.84	5.0	(RUNOFF)
18.86	3.1	(RUNOFF)
24.01	2.2	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05 SQ.MI.

HRS	8.82	9.30	9.78	10.26	10.74	11.22	11.70	12.18	12.66	13.14	13.62
CFS	.48	.86	1.48	2.31	3.75	7.47	20	133	29.53	16.02	10.46
	.51	.93	1.57	2.42	4.09	8.22	23	112	25.82	15.09	9.97
	.55	1.00	1.66	2.53	4.44	9.01	27	85	23.63	14.36	9.61
	.59	1.07	1.75	2.67	4.82	9.88	34	67	22.02	13.67	9.33
	.64	1.13	1.86	2.81	5.21	10.77	44	54	20.68	13.01	9.10
	.69	1.21	1.97	2.97	5.63	11.74	60	45	19.50	12.36	8.93
	.73	1.30	2.09	3.19	6.15	13.66	86	40	18.32	11.69	8.79
	.79	1.39	2.20	3.45	6.77	16.76	120	35	17.15	11.06	8.67

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14.10 CFS	8.51	8.32	8.12	7.94	7.79	7.66	7.53
7.36							
14.58 CFS	7.16	6.95	6.78	6.64	6.51	6.36	6.19
6.02							
15.06 CFS	5.87	5.69	5.51	5.37	5.29	5.25	5.23
5.23							
15.54 CFS	5.22	5.17	5.09	5.00	4.96	4.97	4.96
4.90							
16.02 CFS	4.81	4.74	4.70	4.68	4.66	4.60	4.54
4.50							
16.50 CFS	4.44	4.38	4.33	4.31	4.30	4.25	4.19
4.14							
16.98 CFS	4.13	4.11	4.06	3.98	3.88	3.84	3.85
3.84							
17.46 CFS	3.77	3.68	3.61	3.57	3.55	3.53	3.47
3.41							
17.94 CFS	3.37	3.36	3.33	3.27	3.21	3.18	3.17
3.14							
18.42 CFS	3.09	3.06	3.09	3.12	3.12	3.08	3.06
3.08							
18.90 CFS	3.07	3.03	3.00	2.98	2.97	2.97	2.97
2.97							
19.38 CFS	2.97	2.97	2.97	2.95	2.90	2.87	2.90
2.89							
19.86 CFS	2.84	2.81	2.83	2.88	2.88	2.84	2.81
2.80							
20.34 CFS	2.78	2.73	2.69	2.70	2.74	2.76	2.72
2.68							
20.82 CFS	2.70	2.71	2.67	2.63	2.61	2.60	2.60
2.60							
21.30 CFS	2.59	2.59	2.60	2.60	2.59	2.54	2.50
2.51							
21.78 CFS	2.52	2.49	2.49	2.52	2.49	2.45	2.42
2.41							
22.26 CFS	2.41	2.40	2.40	2.40	2.40	2.39	2.33
2.30							
22.74 CFS	2.33	2.32	2.27	2.24	2.26	2.31	2.31
2.27							
23.22 CFS	2.24	2.22	2.22	2.21	2.19	2.14	2.11
2.14							
23.70 CFS	2.18	2.18	2.13	2.07	2.07	2.18	2.13
1.50							
24.18 CFS	.78	.36					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.89 WATERSHED INCHES; 128 CFS-HRS; 10.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 79

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.45	1343.3	(NULL)
12.67	1378.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

4.34 WATERSHED INCHES; 3729 CFS-HRS; 308.2 ACRE-  
FEET.

OPERATION REACH XSECTION 80

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.53	1339.4	216.69
12.74	1368.6	216.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.34 WATERSHED INCHES; 3731 CFS-HRS; 308.3 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 81

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.17	76.0	(RUNOFF)
17.34	2.3	(RUNOFF)
24.01	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.55 WATERSHED INCHES; 72 CFS-HRS; 5.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.52	1362.6	179.82
12.74	1382.7	179.87

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.33 WATERSHED INCHES; 3803 CFS-HRS; 314.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 83

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.15	148.3	(RUNOFF)
15.84	5.1	(RUNOFF)
19.47	3.1	(RUNOFF)
24.00	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.06 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 84

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	156.7	(RUNOFF)
20.12	4.1	(RUNOFF)
24.01	3.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.96 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-  
FEET.

OPERATION DIVERT XSECTION 184  
OUTPUT #1 HYDROGRAPH

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	118.0 *	(DIVERT)
20.12	4.1	(DIVERT)
24.01	3.0	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
178 CFS-HRS; 14.7 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	38.7	175.46

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.14 WATERSHED INCHES; 7 CFS-HRS; .6 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 81, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 200.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

OPERATION RESVOR STRUCTURE 81

\*\*\* MESSAGE - STRUCTURE 81, NO PEAK COMPUTED (ONLY 1 HYDROGRAPH POINT(S)).  
\*\*\*

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.14 WATERSHED INCHES; 291 CFS-HRS; .6 ACRE-  
FEET.



OPERATION ADDHYD XSECTION 185

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	118.0 *	(NULL)
20.12	4.1	(NULL)
24.01	3.0	(NULL)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.81 WATERSHED INCHES; 178 CFS-HRS; 14.7 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 186

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	77.3	(RUNOFF)
21.94	2.0	(RUNOFF)
24.01	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.09 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 187

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	195.3	(NULL)
20.68	6.1	(NULL)
23.12	5.1	(NULL)
24.01	4.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
3.53 WATERSHED INCHES; 271 CFS-HRS; 22.4 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 85

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	331.9	(NULL)
18.83	10.1	(NULL)
20.07	9.4	(NULL)
21.95	8.2	(NULL)
23.74	7.1	(NULL)
24.00	7.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50

HRS SQ.MI.	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	.17
8.10	CFS	.44	.51	.58	.65	.74	.82	.89		
.97										
8.58	CFS	1.06	1.16	1.25	1.34	1.42	1.50	1.59		
1.70										
9.06	CFS	1.81	1.92	2.05	2.19	2.36	2.53	2.70		
2.87										
9.54	CFS	3.04	3.25	3.47	3.72	3.98	4.24	4.51		
4.79										
10.02	CFS	5.09	5.42	5.77	6.12	6.46	6.80	7.16		
7.55										
10.50	CFS	7.98	8.46	9.06	9.77	10.60	11.55	12.57		
13.67										
10.98	CFS	14.82	16.05	17.55	19.28	21.26	23.41	25.73		
28.30										
11.46	CFS	30.95	33.84	38.93	46.63	54.46	63.54	76.10		
93.20										
11.94	CFS	119	161	226	314	331	301	271		
245										
12.42	CFS	213	180	157	135	116	102	90		
82										
12.90	CFS	75.05	69.60	64.75	60.23	56.16	52.69	49.75		
47.14										
13.38	CFS	44.73	42.45	40.21	38.08	36.05	34.29	32.85		
31.65										
13.86	CFS	30.69	29.92	29.30	28.77	28.22	27.64	27.02		
26.42										
14.34	CFS	25.90	25.42	24.95	24.43	23.85	23.23	22.66		
22.15										
14.82	CFS	21.68	21.19	20.65	20.13	19.62	19.05	18.50		
18.02										
15.30	CFS	17.65	17.41	17.25	17.16	17.09	16.96	16.76		
16.52										
15.78	CFS	16.36	16.31	16.22	16.07	15.86	15.66	15.50		
15.40										

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16.26	CFS	15.29	15.13	14.97	14.83	14.65	14.45	14.30		
14.20										
16.74	CFS	14.11	13.97	13.80	13.67	13.57	13.49	13.35		
13.15										
17.22	CFS	12.90	12.73	12.68	12.58	12.43	12.21	12.00		
11.84										
17.70	CFS	11.72	11.61	11.45	11.29	11.16	11.07	10.97		
10.81										
18.18	CFS	10.65	10.53	10.44	10.34	10.19	10.11	10.12		
10.16										
18.66	CFS	10.17	10.09	10.05	10.07	10.03	9.94	9.87		
9.80										
19.14	CFS	9.76	9.74	9.72	9.71	9.71	9.71	9.71		
9.67										
19.62	CFS	9.55	9.48	9.49	9.44	9.34	9.27	9.28		
9.36										
20.10	CFS	9.36	9.30	9.24	9.19	9.13	9.01	8.90		
8.89										

20.58 CFS	8.94	8.96	8.91	8.84	8.85	8.84	8.76
8.68							
21.06 CFS	8.61	8.56	8.52	8.51	8.50	8.49	8.49
8.49							
21.54 CFS	8.46	8.36	8.26	8.26	8.23	8.17	8.19
8.21							
22.02 CFS	8.16	8.07	8.00	7.95	7.91	7.89	7.88
7.87							
22.50 CFS	7.86	7.82	7.70	7.63	7.64	7.58	7.49
7.41							
22.98 CFS	7.42	7.49	7.50	7.44	7.38	7.32	7.28
7.26							
23.46 CFS	7.20	7.07	7.00	7.03	7.07	7.08	7.00
6.88							
23.94 CFS	6.84	7.06	6.89	5.57	3.97	2.65	1.65
1.02							
24.42 CFS	.63	.39					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3.69 WATERSHED INCHES; 405 CFS-HRS; 33.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.48	1534.8	(NULL)
12.73	1481.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.26 WATERSHED INCHES; 4208 CFS-HRS; 347.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.13	64.3	(RUNOFF)
20.04	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.67 WATERSHED INCHES; 58 CFS-HRS; 4.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.47	1550.6	(NULL)
12.73	1490.5	(NULL)

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		HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =50						
		MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55						
HRS	SQ.MI.							
3.60 CFS	.83	.47	.52	.56	.61	.66	.72	.77
4.08 CFS	1.46	.89	.96	1.02	1.10	1.18	1.27	1.36
4.56 CFS	2.28	1.55	1.64	1.74	1.84	1.95	2.06	2.17
5.04 CFS	3.22	2.39	2.50	2.61	2.73	2.85	2.97	3.09
5.52 CFS	4.56	3.36	3.51	3.66	3.82	3.98	4.15	4.35
6.00 CFS	6.57	4.80	5.04	5.28	5.52	5.76	6.01	6.28
6.48 CFS	9.44	6.88	7.20	7.54	7.88	8.23	8.61	9.03
6.96 CFS	13.29	9.87	10.33	10.81	11.29	11.77	12.26	12.77
7.44 CFS	18.32	13.84	14.41	15.01	15.63	16.27	16.94	17.62
7.92 CFS	24.82	19.05	19.80	20.56	21.36	22.18	23.00	23.89
8.40 CFS	32.75	25.75	26.69	27.67	28.67	29.69	30.70	31.72
8.88 CFS	42.16	33.80	34.88	36.03	37.22	38.39	39.60	40.85
9.36 CFS	56.91	43.52	44.95	46.50	48.18	50.07	52.16	54.45
9.84 CFS	81.39	59.50	62.22	65.08	68.10	71.27	74.56	77.95
10.32 CFS	115	85	89	92	96	100	105	110
10.80 CFS	182	121	127	134	142	150	159	170
11.28 CFS	346	195	209	225	241	260	284	313
11.76 CFS	1239	383	429	488	566	683	850	1079
12.24 CFS	1452	1343	1435	1502	1540	1550	1532	1485
12.72 CFS	1064	1490	1466	1447	1375	1297	1212	1137
13.20 CFS	694	998	937	885	836	795	756	725
13.68 CFS	527	668	642	621	599	581	561	545
14.16 CFS	423	512	496	483	469	458	445	434
14.64 CFS	338	412	401	390	380	370	359	349
15.12 CFS	221	327	314	297	279	261	246	232
15.60 CFS	178	212	204	198	192	188	184	181
16.08 CFS	161	175	173	170	169	167	165	163
16.56 CFS	148	159	158	156	155	153	151	150
17.04 CFS	137	147	146	144	143	141	140	139
17.52 CFS	126	136	134	133	131	130	129	127
18.00 CFS		124	123	121	120	119	117	116

115							
18.48	CFS	114	113	112	111	110	109
107							
18.96	CFS	107	106	106	105	105	104
103							
19.44	CFS	103	103	102	102	101	101
100							
19.92	CFS	99.96	99.62	99.40	99.09	98.72	98.30
97.45							
20.40	CFS	96.97	96.51	96.18	95.92	95.67	95.28
94.42							
20.88	CFS	94.01	93.57	93.15	92.72	92.32	91.97
91.30							
21.36	CFS	90.95	90.61	90.26	89.90	89.43	88.98
88.33							
21.84	CFS	87.99	87.76	87.50	87.12	86.72	86.28
85.48							
22.32	CFS	85.15	84.83	84.52	84.20	83.81	83.30
82.51							
22.80	CFS	82.11	81.69	81.25	80.88	80.62	80.29
79.45							
23.28	CFS	79.00	78.61	78.28	77.92	77.46	77.06
76.49							
23.76	CFS	76.21	75.77	75.24	74.78	74.75	74.18
68.79							
24.24	CFS	65.31	61.93	58.95	55.94	52.55	48.61
39.41							
24.72	CFS	34.66	30.21	26.22	22.79	19.96	17.70
14.57							
25.20	CFS	13.54					

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 4.27 WATERSHED INCHES; 4266 CFS-HRS; 352.6 ACRE-FEET.

OPERATION DIVERT XSECTION 81 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.06 730.0 \* 178.42 \* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS) 3518 CFS-HRS; 290.7 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET) 12.47 820.6 178.65 12.73 760.5 178.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.75 WATERSHED INCHES; 748 CFS-HRS; 61.8 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 71

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.47 820.6 (NULL)
12.73 760.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.75 WATERSHED INCHES; 748 CFS-HRS; 61.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 89

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.47 1550.6 (NULL)
12.73 1490.5 (NULL)

Table with 9 columns: HRS, SQ.MI., CFS, and 7 unlabeled columns. It contains hydrograph data points for various flow rates and times.

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Table with 9 columns: CFS, and 8 unlabeled columns. It contains hydrograph data points for various flow rates and times.

9.84 CFS	59.50	62.22	65.08	68.10	71.27	74.56	77.95
81.39							
10.32 CFS	85	89	92	96	100	105	110
115							
10.80 CFS	121	127	134	142	150	159	170
182							
11.28 CFS	195	209	225	241	260	284	313
346							
11.76 CFS	383	429	488	566	683	850	1079
1239							
12.24 CFS	1343	1435	1502	1540	1550	1532	1485
1452							
12.72 CFS	1490	1466	1447	1375	1297	1212	1137
1064							
13.20 CFS	998	937	885	836	795	756	725
694							
13.68 CFS	668	642	621	599	581	561	545
527							
14.16 CFS	512	496	483	469	458	445	434
423							
14.64 CFS	412	401	390	380	370	359	349
338							
15.12 CFS	327	314	297	279	261	246	232
221							
15.60 CFS	212	204	198	192	188	184	181
178							
16.08 CFS	175	173	170	169	167	165	163
161							
16.56 CFS	159	158	156	155	153	151	150
148							
17.04 CFS	147	146	144	143	141	140	139
137							
17.52 CFS	136	134	133	131	130	129	127
126							
18.00 CFS	124	123	121	120	119	117	116
115							
18.48 CFS	114	113	112	111	110	109	108
107							
18.96 CFS	107	106	106	105	105	104	104
103							
19.44 CFS	103	103	102	102	101	101	101
100							
19.92 CFS	99.96	99.62	99.40	99.09	98.72	98.30	97.86
97.45							
20.40 CFS	96.97	96.51	96.18	95.92	95.67	95.28	94.81
94.42							
20.88 CFS	94.01	93.57	93.15	92.72	92.32	91.97	91.63
91.30							
21.36 CFS	90.95	90.61	90.26	89.90	89.43	88.98	88.66
88.33							
21.84 CFS	87.99	87.76	87.50	87.12	86.72	86.28	85.84
85.48							
22.32 CFS	85.15	84.83	84.52	84.20	83.81	83.30	82.86
82.51							
22.80 CFS	82.11	81.69	81.25	80.88	80.62	80.29	79.89
79.45							
23.28 CFS	79.00	78.61	78.28	77.92	77.46	77.06	76.75
76.49							
23.76 CFS	76.21	75.77	75.24	74.78	74.75	74.18	71.88
68.79							
24.24 CFS	65.31	61.93	58.95	55.94	52.55	48.61	44.17
39.41							
24.72 CFS	34.66	30.21	26.22	22.79	19.96	17.70	15.92
14.57							

25.20 CFS 13.54

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.27 WATERSHED INCHES; 4266 CFS-HRS; 352.6 ACRE-
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 5

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EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 89
STARTING TIME = .00 RAIN DEPTH = 8.47 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .060 HOURS
ALTERNATE NO. = 1 STORM NO. =99 RAIN TABLE NO. = 9

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.29 99.6 (RUNOFF)
20.13 2.5 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.18 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-
FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.35 99.4 390.78
20.19 2.5 389.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.18 WATERSHED INCHES; 134 CFS-HRS; 11.1 ACRE-
FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.27 175.5 (RUNOFF)
20.68 4.1 (RUNOFF)
23.97 3.1 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.00 WATERSHED INCHES; 225 CFS-HRS; 18.6 ACRE-
FEET.

OPERATION ADDHYD XSECTION 4



PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	270.3	(NULL)
20.14	6.8	(NULL)
23.12	5.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.07 WATERSHED INCHES; 359 CFS-HRS; 29.6 ACRE-  
 FEET.

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\*\*\* WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 11,  
 VALUE EXTRAPOLATED.  
 \*\*\*

OPERATION RESVOR STRUCTURE 11

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	268.8	384.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.04 WATERSHED INCHES; 357 CFS-HRS; 29.5 ACRE-  
 FEET.

OPERATION REACH XSECTION 5

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.38	268.4	369.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.05 WATERSHED INCHES; 357 CFS-HRS; 29.5 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	226.3	(RUNOFF)
20.13	5.8	(RUNOFF)
23.74	4.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.74 WATERSHED INCHES; 295 CFS-HRS; 24.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)  
12.34 479.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.90 WATERSHED INCHES; 653 CFS-HRS; 54.0 ACRE-  
FEET.

OPERATION DIVERT XSECTION 107  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.06 213.0 \* (DIVERT)

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\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
555 CFS-HRS; 45.8 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.34 266.2 176.94

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.89 WATERSHED INCHES; 98 CFS-HRS; 8.1 ACRE-  
FEET.

\*\*\* MESSAGE - STRUCTURE 84, USER ENTERED STARTING ELEVATION OR STRUCTURE  
TABLE  
STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 358.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 84, TRUNCATED AT 400 POINTS  
WITH 7.91 AC-FT ( .07 WATERSHED INCHES) FLOOD STORAGE  
REMAINING IN RESERVOIR AT ELEV. 354.73.  
\*\*\*

OPERATION RESVOR STRUCTURE 84

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
AT STRUCTURE 84  
\*\*\*

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
ELEVATION(FEET)  
12.78 .0 354.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.00 WATERSHED INCHES; 1 CFS-HRS; .0 ACRE-

FEET.

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.69	215.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.02 WATERSHED INCHES; 555 CFS-HRS; 45.9 ACRE-FEET.

OPERATION REACH XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.75	215.3	357.84

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.02 WATERSHED INCHES; 555 CFS-HRS; 45.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	242.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
7.38 WATERSHED INCHES; 350 CFS-HRS; 28.9 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 21, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
STARTS 4.00 FEET BELOW ASSUMED CREST ELEVATION AT 368.00.  
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
\*\*\*

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 21, TRUNCATED AT 400 POINTS WITH  
2.68 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE REMAINING IN RESERVOIR AT ELEV. 370.65.  
\*\*\*

OPERATION RESVOR STRUCTURE 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.54	153.9	378.71

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

6.69 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	38.4	(RUNOFF)
15.83	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.11 WATERSHED INCHES; 32 CFS-HRS; 2.6 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.91	127.4	360.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.68 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-  
FEET.

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OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	184.3	(RUNOFF)
18.87	4.1	(RUNOFF)
22.76	3.1	(RUNOFF)
23.09	3.1	(RUNOFF)
24.03	2.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.26 WATERSHED INCHES; 185 CFS-HRS; 15.3 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	396.8	(NULL)
24.01	12.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.08 WATERSHED INCHES; 740 CFS-HRS; 61.1 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.20	69.3	(RUNOFF)
24.02	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.95 WATERSHED INCHES; 74 CFS-HRS; 6.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 14

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.23	448.4	(NULL)
24.00	20.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.46 WATERSHED INCHES; 1054 CFS-HRS; 87.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 15

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.21	515.9	(NULL)
24.00	21.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.49 WATERSHED INCHES; 1128 CFS-HRS; 93.2 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 23, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE  
 TIME INCREMENT OF .006 HOURS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 23

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.86	358.7	346.82
15.17	56.0	335.26
15.28	52.8	335.13
15.40	50.2	335.03
24.01	21.4	333.91

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .32  
 SQ.MI.  
 3.00 CFS .00 .01 .01 .01 .01 .01 .02

.02								
3.00 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
3.48 CFS	.02	.02	.03	.03	.03	.04	.04	
.04								
3.48 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
3.96 CFS	.05	.05	.05	.06	.06	.07	.07	
.07								
3.96 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
4.44 CFS	.08	.08	.09	.09	.10	.10	.11	
.12								
4.44 ELEV	333.08	333.08	333.08	333.08	333.08	333.08	333.08	333.08
333.08								
4.92 CFS	.12	.13	.13	.14	.15	.17	.19	
.21								
4.92 ELEV	333.08	333.08	333.09	333.09	333.09	333.09	333.09	333.09
333.09								
5.40 CFS	.23	.25	.27	.30	.33	.37	.42	
.47								
5.40 ELEV	333.09	333.09	333.09	333.09	333.09	333.09	333.09	333.10
333.10								
5.88 CFS	.52	.58	.64	.71	.78	.85	.92	
1.00								
5.88 ELEV	333.10	333.10	333.10	333.11	333.11	333.11	333.12	
333.12								
6.36 CFS	1.08	1.16	1.24	1.33	1.44	1.55	1.66	
1.78								
6.36 ELEV	333.12	333.12	333.13	333.13	333.14	333.14	333.14	
333.15								
6.84 CFS	1.91	2.04	2.17	2.30	2.45	2.60	2.75	
2.91								
6.84 ELEV	333.15	333.16	333.16	333.17	333.18	333.18	333.19	
333.19								
7.32 CFS	3.07	3.22	3.39	3.56	3.73	3.90	4.07	
4.25								
7.32 ELEV	333.20	333.21	333.21	333.22	333.23	333.23	333.24	
333.25								
7.80 CFS	4.43	4.62	4.81	5.02	5.22	5.44	5.65	
5.85								
7.80 ELEV	333.25	333.26	333.27	333.28	333.28	333.29	333.30	
333.31								
8.28 CFS	6.06	6.31	6.62	6.94	7.29	7.67	8.06	
8.46								
8.28 ELEV	333.32	333.33	333.34	333.35	333.36	333.38	333.39	
333.41								
8.76 CFS	8.86	9.25	9.63	10.01	10.41	10.84	11.28	
11.73								
8.76 ELEV	333.42	333.44	333.45	333.47	333.49	333.50	333.52	
333.54								
9.24 CFS	12.22	12.76	13.33	13.90	14.49	15.88	17.36	
18.54								
9.24 ELEV	333.56	333.58	333.60	333.62	333.64	333.70	333.76	
333.80								

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9.72 CFS	19.71	20.73	21.75	22.69	23.66	24.61	25.60
26.61							
9.72 ELEV	333.85	333.89	333.93	333.96	334.00	334.04	334.08
334.11							
10.20 CFS	27.63	28.62	29.60	30.58	31.60	32.64	33.75
35.00							
10.20 ELEV	334.15	334.19	334.23	334.27	334.31	334.35	334.39
334.44							
10.68 CFS	36.42	38.06	39.91	41.97	44.28	46.78	49.47
52.50							
10.68 ELEV	334.50	334.56	334.63	334.71	334.80	334.90	335.00
335.12							
11.16 CFS	55.94	59.81	64.04	68.65	73.65	79.00	84.73
92.11							
11.16 ELEV	335.26	335.41	335.57	335.75	335.95	336.15	336.38
336.66							
11.64 CFS	100	102	105	111	119	128	135
148							
11.64 ELEV	336.98	337.05	337.22	337.47	337.85	338.25	338.65
339.30							
12.12 CFS	162	179	197	210	221	229	237
244							
12.12 ELEV	340.16	341.23	342.34	343.22	343.96	344.60	345.15
345.65							
12.60 CFS	254	291	324	348	358	356	345
330							
12.60 ELEV	346.09	346.42	346.63	346.76	346.82	346.81	346.75
346.66							
13.08 CFS	313	297	286	275	263	251	248
246							
13.08 ELEV	346.57	346.48	346.38	346.27	346.17	346.06	345.94
345.77							
13.56 CFS	243	239	235	230	226	221	217
212							
13.56 ELEV	345.53	345.26	344.97	344.66	344.34	344.01	343.68
343.36							
14.04 CFS	207	203	197	191	185	180	174
169							
14.04 ELEV	343.03	342.70	342.35	341.98	341.61	341.25	340.91
340.58							
14.52 CFS	164	159	154	149	142	136	130
125							
14.52 ELEV	340.26	339.95	339.65	339.35	339.01	338.69	338.39
338.10							
15.00 CFS	113	104	54	56	52	53	50
50							
15.00 ELEV	337.58	337.14	335.18	335.26	335.10	335.13	335.02
335.03							
15.48 CFS	48.02	47.98	46.56	46.31	45.20	44.87	44.13
43.85							
15.48 ELEV	334.95	334.95	334.89	334.88	334.84	334.83	334.80
334.79							
15.96 CFS	43.20	42.80	42.20	41.82	41.35	41.01	40.59
40.25							
15.96 ELEV	334.76	334.74	334.72	334.71	334.69	334.68	334.66
334.65							
16.44 CFS	39.91	39.61	39.25	38.94	38.65	38.39	38.10
37.80							
16.44 ELEV	334.63	334.62	334.61	334.59	334.58	334.57	334.56
334.55							
16.92 CFS	37.51	37.26	37.02	36.76	36.45	36.10	35.78
35.53							
16.92 ELEV	334.54	334.53	334.52	334.51	334.50	334.48	334.47

334.46							
17.40	CFS	35.29	35.00	34.64	34.29	33.98	33.41
33.10							
17.40	ELEV	334.45	334.44	334.43	334.41	334.40	334.38
334.37							
17.88	CFS	32.77	32.47	32.21	31.96	31.67	31.10
30.86							
17.88	ELEV	334.35	334.34	334.33	334.32	334.31	334.29
334.28							
18.36	CFS	30.62	30.34	30.09	29.93	29.83	29.56
29.42							
18.36	ELEV	334.27	334.26	334.25	334.24	334.24	334.23
334.22							
18.84	CFS	29.36	29.29	29.17	29.03	28.92	28.72
28.63							
18.84	ELEV	334.22	334.22	334.21	334.21	334.20	334.20
334.19							
19.32	CFS	28.54	28.47	28.41	28.36	28.29	28.05
27.99							
19.32	ELEV	334.19	334.19	334.19	334.18	334.18	334.17
334.17							
19.80	CFS	27.92	27.78	27.64	27.55	27.53	27.39
27.28							
19.80	ELEV	334.17	334.16	334.16	334.15	334.15	334.15
334.14							
20.28	CFS	27.20	27.11	26.97	26.80	26.69	26.58
26.47							
20.28	ELEV	334.14	334.13	334.13	334.12	334.12	334.11
334.11							
20.76	CFS	26.34	26.28	26.23	26.13	26.00	25.77
25.67							
20.76	ELEV	334.10	334.10	334.10	334.10	334.09	334.08
334.08							
21.24	CFS	25.57	25.48	25.40	25.33	25.27	25.10
24.96							

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21.24	ELEV	334.07	334.07	334.07	334.07	334.06	334.06	334.06
334.05								
21.72	CFS	24.88	24.81	24.70	24.61	24.57	24.49	24.37
24.25								
21.72	ELEV	334.05	334.05	334.04	334.04	334.04	334.03	334.03
334.02								
22.20	CFS	24.14	24.05	23.95	23.87	23.79	23.72	23.64
23.50								
22.20	ELEV	334.02	334.02	334.01	334.01	334.01	334.00	334.00
333.99								
22.68	CFS	23.36	23.29	23.20	23.06	22.91	22.82	22.79
22.74								
22.68	ELEV	333.99	333.99	333.98	333.98	333.97	333.97	333.97
333.96								
23.16	CFS	22.64	22.53	22.44	22.36	22.28	22.18	22.03
21.88								
23.16	ELEV	333.96	333.96	333.95	333.95	333.95	333.94	333.94
333.93								
23.64	CFS	21.80	21.77	21.71	21.59	21.44	21.33	21.39



21.35								
23.64	ELEV	333.93	333.93	333.92	333.92	333.91	333.91	333.91
333.91								
24.12	CFS	20.49	19.07	17.65	16.35	15.09	13.83	12.67
11.64								
24.12	ELEV	333.88	333.82	333.77	333.72	333.67	333.62	333.57
333.53								
24.60	CFS	11.04	10.74	10.49	10.30	10.10	9.94	9.77
9.63								
24.60	ELEV	333.51	333.50	333.49	333.48	333.47	333.47	333.46
333.45								
25.08	CFS	9.48	9.34	9.20	9.07	8.94	8.82	8.69
8.57								
25.08	ELEV	333.45	333.44	333.44	333.43	333.43	333.42	333.42
333.41								
25.56	CFS	8.46	8.34	8.22	8.11	8.00	7.89	7.78
25.56	ELEV	333.41	333.40	333.40	333.40	333.39	333.39	333.38

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.48 WATERSHED INCHES; 1127 CFS-HRS; 93.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	189	55	38	31	27	24	22	10

DURATION(HRS) 17  
 FLOW(CFS) 8 TRUNCATED

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 16.  
 \*\*\*

OPERATION REACH XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.86	358.7	333.85
15.17	56.0	331.78
15.28	52.8	331.74
15.40	50.2	331.71
24.01	21.4	331.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.48 WATERSHED INCHES; 1127 CFS-HRS; 93.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	98.2	(RUNOFF)
17.34	2.2	(RUNOFF)

24.00 1.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.01 WATERSHED INCHES; 95 CFS-HRS; 7.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 118

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	111.9	(RUNOFF)
18.86	2.1	(RUNOFF)
19.75	2.0	(RUNOFF)
24.02	1.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.65 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.18	111.9	(NULL)
18.86	2.1	(NULL)
19.75	2.0	(NULL)
24.02	1.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03 SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	ALTERNATE	=	1,	STORM	=	99
1.62 CFS	.00	.01	.02	.04	.06	.09	.11					
.14												
2.10 CFS	.16	.19	.21	.24	.26	.29	.31					
.33												
2.58 CFS	.35	.38	.40	.43	.45	.47	.49					
.51												
3.06 CFS	.53	.55	.57	.59	.62	.65	.67					
.68												
3.54 CFS	.71	.73	.75	.76	.77	.79	.82					
.84												
4.02 CFS	.86	.89	.92	.94	.95	.95	.97					
1.00												
4.50 CFS	1.03	1.05	1.05	1.06	1.08	1.10	1.12					
1.14												
4.98 CFS	1.16	1.17	1.18	1.20	1.23	1.26	1.26					
1.26												
5.46 CFS	1.27	1.30	1.33	1.36	1.37	1.38	1.38					
1.37												
5.94 CFS	1.39	1.44	1.48	1.49	1.50	1.53	1.56					
1.58												
6.42 CFS	1.62	1.66	1.70	1.74	1.77	1.79	1.81					
1.86												
6.90 CFS	1.90	1.91	1.94	1.99	2.04	2.09	2.12					
2.14												
7.38 CFS	2.17	2.22	2.26	2.28	2.31	2.33	2.38					
2.42												
7.86 CFS	2.45	2.50	2.54	2.58	2.62	2.67	2.68					
2.70												
8.34 CFS	2.76	2.80	2.82	2.85	2.90	2.96	3.01					
3.04												
8.82 CFS	3.06	3.08	3.10	3.15	3.23	3.30	3.37					

3.46								
9.30	CFS	3.59	3.72	3.83	3.93	4.03	4.14	4.27
4.41								
9.78	CFS	4.55	4.66	4.77	4.87	4.99	5.13	5.28
5.41								
10.26	CFS	5.53	5.63	5.74	5.87	6.02	6.20	6.45
6.78								

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10.74	CFS	7.18	7.61	8.06	8.53	8.98	9.45	10.02
10.70								
11.22	CFS	11.50	12.31	13.15	14.01	14.87	15.75	17.47
20.49								
11.70	CFS	23	26	30	36	44	56	75
100								
12.18	CFS	112	99	77	60	47	39	33
29								
12.66	CFS	24.19	20.77	18.57	17.06	15.88	14.87	13.92
13.02								
13.14	CFS	12.13	11.38	10.76	10.22	9.71	9.20	8.70
8.22								
13.62	CFS	7.77	7.38	7.08	6.85	6.66	6.51	6.40
6.29								
14.10	CFS	6.17	6.04	5.89	5.75	5.63	5.53	5.43
5.31								
14.58	CFS	5.17	5.02	4.89	4.78	4.68	4.57	4.45
4.33								
15.06	CFS	4.22	4.09	3.96	3.85	3.78	3.74	3.72
3.71								
15.54	CFS	3.70	3.67	3.62	3.56	3.52	3.51	3.51
3.47								
16.02	CFS	3.41	3.36	3.33	3.31	3.29	3.25	3.21
3.18								
16.50	CFS	3.14	3.09	3.06	3.04	3.02	2.99	2.95
2.92								
16.98	CFS	2.90	2.88	2.85	2.80	2.74	2.70	2.69
2.69								
17.46	CFS	2.65	2.59	2.54	2.50	2.49	2.47	2.43
2.39								
17.94	CFS	2.36	2.35	2.33	2.29	2.25	2.22	2.21
2.19								
18.42	CFS	2.16	2.13	2.14	2.16	2.17	2.15	2.13
2.13								
18.90	CFS	2.13	2.11	2.08	2.07	2.06	2.06	2.06
2.06								
19.38	CFS	2.06	2.06	2.06	2.05	2.02	2.00	2.00
2.00								
19.86	CFS	1.97	1.95	1.95	1.98	1.99	1.97	1.95
1.93								
20.34	CFS	1.92	1.90	1.86	1.86	1.88	1.90	1.88
1.86								
20.82	CFS	1.86	1.86	1.85	1.82	1.80	1.79	1.79
1.79								
21.30	CFS	1.79	1.78	1.78	1.78	1.78	1.75	1.72
1.72								
21.78	CFS	1.73	1.71	1.71	1.72	1.72	1.69	1.67

1.66								
22.26 CFS	1.65	1.65	1.65	1.65	1.65	1.64	1.61	
1.58								
22.74 CFS	1.59	1.59	1.56	1.54	1.54	1.57	1.58	
1.56								
23.22 CFS	1.53	1.52	1.52	1.51	1.50	1.47	1.45	
1.46								
23.70 CFS	1.48	1.48	1.46	1.42	1.41	1.47	1.46	
1.13								
24.18 CFS	.67	.35	.18	.09	.05	.02	.01	
.00								

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.65 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-  
 FEET.

DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	11	6	4	3	2	2	2	2
DURATION (HRS)	18	20	21					
FLOW (CFS)	1	1	0					

OPERATION RUNOFF XSECTION 119

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET)  
 12.13 28.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.81 WATERSHED INCHES; 26 CFS-HRS; 2.1 ACRE-  
 FEET.

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OPERATION ADDHYD XSECTION 120

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET)  
 12.17 137.4 (NULL)  
 15.82 4.3 (NULL)  
 17.32 3.3 (NULL)  
 21.96 2.1 (NULL)  
 24.01 1.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.49 WATERSHED INCHES; 151 CFS-HRS; 12.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 20

PEAK TIME (HRS) PEAK DISCHARGE (CFS) PEAK  
 ELEVATION (FEET)  
 12.16 234.3 (NULL)

15.83	7.2	(NULL)
17.33	5.5	(NULL)
19.74	4.1	(NULL)
20.06	4.1	(NULL)
23.06	3.2	(NULL)
23.72	3.1	(NULL)
24.00	3.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.30 WATERSHED INCHES; 246 CFS-HRS; 20.4 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 19

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	179.0	(RUNOFF)
15.84	5.4	(RUNOFF)
17.34	4.2	(RUNOFF)
19.75	3.1	(RUNOFF)
20.05	3.1	(RUNOFF)
24.00	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.60 WATERSHED INCHES; 172 CFS-HRS; 14.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 22

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	413.1	(NULL)
15.84	12.6	(NULL)
17.34	9.7	(NULL)
19.74	7.2	(NULL)
20.06	7.2	(NULL)
21.95	6.2	(NULL)
24.00	5.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.99 WATERSHED INCHES; 418 CFS-HRS; 34.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.16	586.3	(NULL)
12.84	415.9	(NULL)
15.17	70.1	(NULL)
15.28	66.2	(NULL)

15.40	63.5	(NULL)
18.82	37.1	(NULL)
19.72	35.2	(NULL)
20.05	34.7	(NULL)
20.58	33.5	(NULL)
20.80	33.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.81 WATERSHED INCHES; 1541 CFS-HRS; 127.4 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 122  
 OUTPUT #1 HYDROGRAPH

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
11.64	168.0 *	(DIVERT)
15.17	70.1	(DIVERT)
15.28	66.2	(DIVERT)
15.40	63.5	(DIVERT)
18.82	37.1	(DIVERT)
19.72	35.2	(DIVERT)
20.05	34.7	(DIVERT)
20.58	33.5	(DIVERT)
20.80	33.0	(DIVERT)
21.94	30.8	(DIVERT)

\* FIRST POINT OF FLAT PEAK

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1125 CFS-HRS; 93.0 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.16	418.3	177.48
12.84	247.9	176.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.57 WATERSHED INCHES; 416 CFS-HRS; 34.4 ACRE-  
 FEET.

\*\*\* MESSAGE - STRUCTURE 83, USER ENTERED STARTING ELEVATION OR STRUCTURE  
 TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 322.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 83

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
-----------------	----------------------	------

ELEVATION (FEET)		
12.37	308.8	323.00
12.48	258.1	322.83
12.60	242.0	322.78
12.73	285.8	322.92
12.84	305.9	322.99
12.96	283.3	322.91
13.07	242.6	322.78
13.20	207.5	322.67
13.32	177.7	322.57
13.44	157.0	322.51

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.22 WATERSHED INCHES; 324 CFS-HRS; 26.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 123

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.37	476.8	(NULL)
12.48	426.1	(NULL)
12.60	410.0	(NULL)
12.73	453.8	(NULL)
12.84	473.9	(NULL)
12.96	451.3	(NULL)
13.07	410.6	(NULL)
13.20	375.5	(NULL)
13.32	345.7	(NULL)
13.44	325.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.46 WATERSHED INCHES; 1449 CFS-HRS; 119.8 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.61	359.4	316.07
12.73	363.8	316.09
12.85	391.0	316.15
12.97	417.9	316.22
13.07	416.9	316.22
13.19	392.5	316.16
13.30	360.2	316.08
13.42	330.8	315.99
13.55	305.7	315.91
13.67	291.3	315.87

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.28 WATERSHED INCHES; 1402 CFS-HRS; 115.8 ACRE-FEET.

FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	165.8	(RUNOFF)
18.66	4.1	(RUNOFF)
20.68	3.6	(RUNOFF)
23.12	3.0	(RUNOFF)
24.00	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.34 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 31, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
\*\*\*

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\*\*\* WARNING - STRUCTURE 31, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES  
FIRST NEGATIVE VALUE IS 0 CFS.  
\*\*\*

OPERATION RESVOR STRUCTURE 31

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	160.7	365.43
18.69	4.1	356.71
20.69	3.6	356.67
23.15	3.0	356.62
24.03	2.8	356.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.35 WATERSHED INCHES; 207 CFS-HRS; 17.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 25

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.26	237.1	(RUNOFF)
18.65	6.1	(RUNOFF)
20.67	5.3	(RUNOFF)
23.98	4.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.26 WATERSHED INCHES; 302 CFS-HRS; 25.0 ACRE-FEET.



OPERATION ADDHYD XSECTION 26

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.28	395.1	(NULL)
18.66	10.2	(NULL)
20.14	9.4	(NULL)
20.68	8.9	(NULL)
23.14	7.4	(NULL)
23.78	7.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.30 WATERSHED INCHES; 509 CFS-HRS; 42.1 ACRE-  
FEET.

OPERATION REACH XSECTION 27

1 TR20 ----- SCS  
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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.36	384.2	319.84
20.20	9.4	316.93
20.74	8.9	316.91
23.20	7.4	316.81
23.83	7.0	316.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
6.29 WATERSHED INCHES; 509 CFS-HRS; 42.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 28

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	190.4	(RUNOFF)
20.67	4.2	(RUNOFF)
24.01	3.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.89 WATERSHED INCHES; 228 CFS-HRS; 18.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 29

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	358.3	(NULL)
12.50	419.5	(NULL)
12.60	435.8	(NULL)
12.72	420.5	(NULL)
12.85	434.0	(NULL)

12.96	454.1	(NULL)
13.07	448.4	(NULL)
13.18	420.0	(NULL)
13.30	384.5	(NULL)
13.42	352.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.36 WATERSHED INCHES; 1629 CFS-HRS; 134.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 30

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.32	715.1	(NULL)
12.48	738.7	(NULL)
12.70	611.1	(NULL)
12.83	565.3	(NULL)
12.95	555.7	(NULL)
13.07	532.7	(NULL)
13.18	492.2	(NULL)
13.30	449.3	(NULL)
13.42	411.9	(NULL)
13.55	379.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.55 WATERSHED INCHES; 2138 CFS-HRS; 176.7 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.32	715.1	(NULL)
12.48	738.7	(NULL)
12.70	611.1	(NULL)
12.83	565.3	(NULL)
12.95	555.7	(NULL)
13.07	532.7	(NULL)
13.18	492.2	(NULL)
13.30	449.3	(NULL)
13.42	411.9	(NULL)
13.55	379.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.55 WATERSHED INCHES; 2138 CFS-HRS; 176.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 31

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
-----------------	----------------------	------

ELEVATION (FEET)		
12.21	264.7	(RUNOFF)
20.66	5.1	(RUNOFF)
23.11	4.2	(RUNOFF)
24.02	3.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-FEET.

OPERATION REACH XSECTION 32  
 1 TR20 ----- SCS

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PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.31	244.6	314.09
20.73	5.1	310.41
23.19	4.2	310.34
24.09	3.9	310.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.90 WATERSHED INCHES; 308 CFS-HRS; 25.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 33

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.16	39.4	(RUNOFF)
15.84	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.86 WATERSHED INCHES; 43 CFS-HRS; 3.5 ACRE-FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 32, TRUNCATED AT 400 POINTS  
 WITH .53 AC-FT ( .10 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 378.24.  
 \*\*\*

OPERATION RESVOR STRUCTURE 32

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK
ELEVATION (FEET)		
12.23	32.9	380.81

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 34.

\*\*\*

OPERATION REACH XSECTION 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.23	32.9	338.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.68 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 35

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	118.2	(RUNOFF)
20.86	2.0	(RUNOFF)
24.02	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.86 WATERSHED INCHES; 139 CFS-HRS; 11.5 ACRE-  
 FEET.

\*\*\* MESSAGE - RESERVOIR ROUTING, STRUCTURE 33, TRUNCATED AT 400 POINTS  
 WITH 1.05 AC-FT ( .06 WATERSHED INCHES) FLOOD STORAGE  
 REMAINING IN RESERVOIR AT ELEV. 354.18.  
 \*\*\*

OPERATION RESVOR STRUCTURE 33

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.29	96.1	357.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.15 WATERSHED INCHES; 127 CFS-HRS; 10.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	128.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 34

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	128.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 37.  
 \*\*\*

OPERATION REACH XSECTION 37

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	128.6	330.88

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.04 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 138

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.14	135.6	(RUNOFF)
15.84	3.9	(RUNOFF)
20.84	2.1	(RUNOFF)
24.00	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.24 WATERSHED INCHES; 131 CFS-HRS; 10.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 139

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	245.1	(NULL)
20.83	5.1	(NULL)
24.00	4.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.13 WATERSHED INCHES; 294 CFS-HRS; 24.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 35

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.17	245.1	(NULL)
20.83	5.1	(NULL)
24.00	4.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .06  
 HRS SQ.MI.

1.74 CFS	.00	.01	.01	.01	.01	.02	.02
.02							
2.22 CFS	.02	.03	.03	.04	.05	.07	.10
.12							
2.70 CFS	.15	.17	.20	.23	.25	.28	.30
.33							
3.18 CFS	.35	.38	.41	.44	.46	.48	.52
.55							
3.66 CFS	.57	.58	.61	.64	.67	.70	.73
.76							
4.14 CFS	.80	.82	.83	.85	.89	.93	.96
.98							
4.62 CFS	.99	1.02	1.05	1.09	1.11	1.14	1.16
1.19							
5.10 CFS	1.21	1.25	1.29	1.32	1.32	1.34	1.36
1.41							
5.58 CFS	1.45	1.48	1.51	1.52	1.52	1.54	1.59
1.65							
6.06 CFS	1.69	1.70	1.73	1.78	1.81	1.86	1.91
1.96							
6.54 CFS	2.00	2.06	2.10	2.11	2.16	2.24	2.27
2.29							
7.02 CFS	2.35	2.42	2.49	2.54	2.58	2.61	2.67
2.74							
7.50 CFS	2.79	2.82	2.86	2.91	2.98	3.03	3.09
3.16							
7.98 CFS	3.22	3.27	3.34	3.39	3.41	3.47	3.57
3.60							

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8.46 CFS	3.63	3.70	3.78	3.87	3.93	3.97	4.01
4.05							
8.94 CFS	4.10	4.21	4.32	4.39	4.50	4.64	4.81
4.96							
9.42 CFS	5.09	5.21	5.33	5.49	5.66	5.92	6.34
6.72							
9.90 CFS	7.09	7.50	7.99	8.46	8.92	9.34	9.72
10.09							
10.38 CFS	10.48	10.87	11.28	11.74	12.31	13.02	13.78
14.59							
10.86 CFS	15.42	16.28	17.14	18.03	19.20	20.49	21.89
23.33							
11.34 CFS	24.80	26.48	28.15	29.88	33.84	39.18	43.28
48.53							
11.82 CFS	57	69	86	118	163	228	245
216							

12.30 CFS	192	167	144	117	98	84	72
64							
12.78 CFS	58.40	53.18	48.66	44.75	41.25	38.21	36.40
34.78							
13.26 CFS	33.28	31.80	30.35	28.94	27.52	26.17	24.88
23.75							
13.74 CFS	22.75	21.84	21.03	20.31	19.68	19.14	18.58
18.04							
14.22 CFS	17.51	17.03	16.60	16.20	15.80	15.38	14.95
14.53							
14.70 CFS	14.16	13.82	13.49	13.14	12.78	12.45	12.12
11.77							
15.18 CFS	11.44	11.15	10.92	10.73	10.57	10.44	10.32
10.16							
15.66 CFS	9.99	9.81	9.71	9.66	9.55	9.41	9.25
9.13							
16.14 CFS	9.04	8.96	8.87	8.75	8.65	8.56	8.44
8.33							
16.62 CFS	8.24	8.18	8.11	8.00	7.90	7.82	7.77
7.70							
17.10 CFS	7.60	7.48	7.35	7.30	7.29	7.22	7.12
7.00							
17.58 CFS	6.91	6.86	6.81	6.74	6.64	6.57	6.51
6.47							
18.06 CFS	6.41	6.31	6.23	6.18	6.14	6.08	5.99
5.95							
18.54 CFS	5.96	5.96	5.92	5.85	5.82	5.84	5.79
5.73							
19.02 CFS	5.69	5.66	5.64	5.62	5.60	5.59	5.57
5.56							
19.50 CFS	5.55	5.51	5.44	5.43	5.45	5.40	5.35
5.32							
19.98 CFS	5.34	5.37	5.34	5.29	5.26	5.24	5.22
5.15							
20.46 CFS	5.11	5.13	5.15	5.14	5.08	5.05	5.07
5.06							
20.94 CFS	5.00	4.96	4.94	4.92	4.91	4.90	4.88
4.87							
21.42 CFS	4.86	4.86	4.84	4.77	4.74	4.76	4.75
4.70							
21.90 CFS	4.72	4.73	4.68	4.64	4.62	4.60	4.59
4.58							
22.38 CFS	4.57	4.56	4.55	4.52	4.45	4.44	4.46
4.42							
22.86 CFS	4.36	4.34	4.36	4.39	4.36	4.31	4.28
4.27							
23.34 CFS	4.25	4.24	4.21	4.14	4.12	4.16	4.17
4.14							
23.82 CFS	4.08	4.03	4.03	4.18	4.03	3.27	2.72
2.46							
24.30 CFS	2.30	2.18	2.07	1.98	1.89	1.81	1.75
1.74							
24.78 CFS	1.73	1.72	1.71	1.70	1.69		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 7.13 WATERSHED INCHES; 294 CFS-HRS; 24.3 ACRE-FEET.

DURATION (HRS)	2	4	6	8	10	12	14	16
FLOW (CFS)	28	14	9	7	5	5	4	3
DURATION (HRS)	18	19						
FLOW (CFS)	2	2 TRUNCATED						

OPERATION RUNOFF XSECTION 140

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.13	15.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
3.98 WATERSHED INCHES;	12 CFS-HRS;	1.0 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 141

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.17	258.1	(NULL)
18.82	6.2	(NULL)
20.83	5.4	(NULL)
21.73	5.0	(NULL)
24.00	4.4	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.91 WATERSHED INCHES;	306 CFS-HRS;	25.3 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 40

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.26	121.2	(RUNOFF)
18.64	3.2	(RUNOFF)
23.76	2.2	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.10 WATERSHED INCHES;	155 CFS-HRS;	12.8 ACRE-
FEET.		

OPERATION ADDHYD XSECTION 41

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.31	831.6	(NULL)
12.48	816.8	(NULL)
12.69	656.4	(NULL)
12.83	598.4	(NULL)
12.95	582.3	(NULL)
13.06	555.4	(NULL)
13.18	511.8	(NULL)
13.30	466.4	(NULL)
13.42	427.0	(NULL)
13.54	392.9	(NULL)



RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.59 WATERSHED INCHES; 2293 CFS-HRS; 189.5 ACRE-  
FEET.

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OPERATION ADDHYD XSECTION 42

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	1076.2	(NULL)
12.46	993.8	(NULL)
12.82	664.2	(NULL)
12.95	633.3	(NULL)
13.06	598.5	(NULL)
13.17	549.1	(NULL)
13.30	498.8	(NULL)
13.42	455.8	(NULL)
13.54	418.5	(NULL)
13.67	392.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.72 WATERSHED INCHES; 2601 CFS-HRS; 214.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 43

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	1273.8	(NULL)
12.45	1124.0	(NULL)
12.81	721.4	(NULL)
12.94	680.8	(NULL)
13.06	639.3	(NULL)
13.17	586.1	(NULL)
13.29	532.5	(NULL)
13.42	486.5	(NULL)
13.54	446.2	(NULL)
13.66	417.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.81 WATERSHED INCHES; 2902 CFS-HRS; 239.8 ACRE-  
FEET.

OPERATION DIVERT XSECTION 144  
OUTPUT #1 HYDROGRAPH

1

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.00	543.0 *	(DIVERT)
13.29	532.5	(DIVERT)
13.42	486.5	(DIVERT)
13.54	446.2	(DIVERT)
13.66	417.6	(DIVERT)
13.79	393.4	(DIVERT)
13.91	371.7	(DIVERT)
14.03	353.0	(DIVERT)
14.15	336.5	(DIVERT)
14.27	320.9	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 2502 CFS-HRS; 206.8 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	730.8	178.42
12.45	581.0	178.03
12.81	178.4	176.48
12.94	137.8	176.27
13.06	96.3	176.06
13.17	40.7	175.48

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .80 WATERSHED INCHES; 400 CFS-HRS; 33.0 ACRE-FEET.

\*\*\* MESSAGE - STRUCTURE 82, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE

STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 318.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 82

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	916.3	320.05
12.41	723.3	319.73
12.53	602.6	319.52
12.65	431.8	319.21
12.78	312.1	319.00
12.90	254.1	318.82
13.02	212.5	318.69
13.14	90.1	318.29
13.26	19.0	318.06

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.67 WATERSHED INCHES; 335 CFS-HRS; 27.7 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 145

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.31	1459.3	(NULL)
12.41	1266.3	(NULL)
12.53	1145.6	(NULL)
12.65	974.8	(NULL)
12.78	855.1	(NULL)
12.90	797.1	(NULL)
13.02	755.5	(NULL)
13.14	633.1	(NULL)
13.42	486.5	(NULL)
13.54	446.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.68 WATERSHED INCHES; 2838 CFS-HRS; 234.5 ACRE-  
FEET.

OPERATION REACH XSECTION 44

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.39	1141.2	291.45
12.48	1185.9	291.51
12.58	1111.7	291.41
12.70	960.1	291.20
12.82	827.5	291.01
12.95	749.8	290.89
13.08	704.6	290.81
13.18	624.9	290.68
14.19	337.4	290.10
14.31	321.7	290.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.57 WATERSHED INCHES; 2781 CFS-HRS; 229.8 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 2

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
-------------------------------------	----------------------	------

12.39	1141.2	(NULL)
12.48	1185.9	(NULL)
12.58	1111.7	(NULL)
12.70	960.1	(NULL)
12.82	827.5	(NULL)
12.95	749.8	(NULL)
13.08	704.6	(NULL)
13.18	624.9	(NULL)
14.19	337.4	(NULL)
14.31	321.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.57 WATERSHED INCHES; 2781 CFS-HRS; 229.8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 45

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	140.0	(RUNOFF)
20.10	3.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.16 WATERSHED INCHES; 190 CFS-HRS; 15.7 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 46

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.31	175.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.06 WATERSHED INCHES; 245 CFS-HRS; 20.3 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 47

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	315.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.10 WATERSHED INCHES; 435 CFS-HRS; 36.0 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 48

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
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12.20	171.6	(RUNOFF)
21.97	3.0	(RUNOFF)
24.03	2.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.09 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 49

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.20	712.1	(NULL)
12.39	1236.3	(NULL)
12.47	1256.7	(NULL)
12.58	1165.4	(NULL)
12.70	999.7	(NULL)
12.82	858.4	(NULL)
12.95	776.1	(NULL)
13.08	727.5	(NULL)
13.18	645.2	(NULL)
14.19	347.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.60 WATERSHED INCHES; 2965 CFS-HRS; 245.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 50

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.25	1006.9	(NULL)
12.38	1531.2	(NULL)
12.47	1503.8	(NULL)
12.57	1355.6	(NULL)
12.69	1144.0	(NULL)
12.82	966.8	(NULL)
12.95	860.5	(NULL)
13.07	797.0	(NULL)
13.18	705.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.66 WATERSHED INCHES; 3400 CFS-HRS; 281.0 ACRE-  
 FEET.

OPERATION REACH XSECTION 51

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PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.54	1456.3	286.79
13.12	792.2	285.53

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.70 WATERSHED INCHES; 3424 CFS-HRS; 282.9 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 52

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.17	8.3	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.63 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-  
 FEET.

\*\*\* WARNING - XSECTION 53, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN  
 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,  
 UNLESS NEW RATING TABLE VALUES ARE INSERTED.  
 \*\*\*

OPERATION REACH XSECTION 53

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		288.45
12.24	8.0	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.63 WATERSHED INCHES; 9 CFS-HRS; .8 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 54

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.32	1.7	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 .85 WATERSHED INCHES; 4 CFS-HRS; .3 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 55

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		(RUNOFF)
12.20	112.9	(RUNOFF)
21.97	2.0	(RUNOFF)
24.03	1.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.79 WATERSHED INCHES; 120 CFS-HRS; 9.9 ACRE-  
 FEET.

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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OPERATION ADDHYD XSECTION 56

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	1066.0	(NULL)
12.53	1496.4	(NULL)
13.12	806.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.70 WATERSHED INCHES; 3544 CFS-HRS; 292.9 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 57

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.25	9.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
1.28 WATERSHED INCHES; 13 CFS-HRS; 1.1 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 58

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.32	1074.3	(NULL)
12.53	1501.4	(NULL)
13.12	809.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.63 WATERSHED INCHES; 3557 CFS-HRS; 294.0 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 59

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	78.5	(RUNOFF)
24.02	1.3	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .03  
SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	.03
8.76 CFS	.49	.52	.54	.56	.59	.62	.65			
.69										
9.24 CFS	.73	.77	.82	.87	.92	.97	1.02			
1.08										
9.72 CFS	1.15	1.21	1.28	1.34	1.40	1.47	1.54			
1.62										
10.20 CFS	1.70	1.78	1.85	1.93	2.02	2.11	2.21			
2.34										
10.68 CFS	2.50	2.69	2.91	3.14	3.39	3.65	3.93			
4.24										
11.16 CFS	4.63	5.07	5.55	6.07	6.62	7.19	7.81			
8.79										
11.64 CFS	10.36	12.19	14.15	16.65	20.13	25.27	33.50			
46.51										

12.12	CFS	64.00	77.27	76.01	65.16	52.39	42.68	35.46
30.29								
12.60	CFS	26.22	22.48	19.36	17.08	15.51	14.30	13.32
12.47								
13.08	CFS	11.67	10.91	10.23	9.66	9.16	8.71	8.27
7.84								

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13.56	CFS	7.42	7.02	6.66	6.37	6.15	5.96	5.82
5.71								
14.04	CFS	5.61	5.51	5.40	5.28	5.16	5.05	4.96
4.87								
14.52	CFS	4.77	4.66	4.53	4.41	4.31	4.22	4.13
4.02								
15.00	CFS	3.92	3.82	3.71	3.60	3.50	3.42	3.38
3.35								
15.48	CFS	3.34	3.32	3.31	3.27	3.22	3.18	3.17
3.16								
15.96	CFS	3.14	3.09	3.05	3.01	2.99	2.97	2.95
2.91								
16.44	CFS	2.88	2.85	2.81	2.78	2.75	2.74	2.72
2.68								
16.92	CFS	2.65	2.63	2.62	2.60	2.56	2.51	2.47
2.45								
17.40	CFS	2.44	2.42	2.37	2.33	2.29	2.27	2.25
2.22								
17.88	CFS	2.19	2.16	2.14	2.13	2.10	2.07	2.04
2.02								
18.36	CFS	2.00	1.98	1.96	1.95	1.97	1.97	1.96
1.95								
18.84	CFS	1.95	1.95	1.93	1.91	1.90	1.89	1.89
1.88								
19.32	CFS	1.88	1.88	1.88	1.88	1.88	1.85	1.83
1.83								
19.80	CFS	1.83	1.81	1.80	1.79	1.80	1.82	1.81
1.79								
20.28	CFS	1.78	1.77	1.75	1.72	1.71	1.72	1.74
1.73								
20.76	CFS	1.71	1.71	1.71	1.70	1.68	1.66	1.65
1.65								
21.24	CFS	1.64	1.64	1.64	1.64	1.64	1.64	1.62
1.60								
21.72	CFS	1.59	1.59	1.58	1.58	1.58	1.58	1.56
1.55								
22.20	CFS	1.53	1.53	1.52	1.52	1.52	1.52	1.51
1.49								
22.68	CFS	1.47	1.47	1.47	1.45	1.43	1.43	1.44
1.45								
23.16	CFS	1.44	1.43	1.41	1.40	1.40	1.39	1.37
1.35								
23.64	CFS	1.35	1.36	1.37	1.36	1.33	1.32	1.34
1.34								
24.12	CFS	1.15	.80	.47				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.92 WATERSHED INCHES; 85 CFS-HRS; 7.0 ACRE-



FEET.

OPERATION ADDHYD XSECTION 60

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	1137.8	(NULL)
12.53	1532.2	(NULL)
13.12	820.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.61 WATERSHED INCHES; 3642 CFS-HRS; 300.9 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.30	1137.8	(NULL)
12.53	1532.2	(NULL)
13.12	820.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.61 WATERSHED INCHES; 3642 CFS-HRS; 300.9 ACRE-  
 FEET.

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OPERATION RUNOFF XSECTION 61

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.23	47.3	(RUNOFF)
21.96	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.83 WATERSHED INCHES; 54 CFS-HRS; 4.5 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 62

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	1181.3	(NULL)
12.53	1553.9	(NULL)
13.12	827.8	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02  
 SQ.MI.  
 2.88 CFS .46 .51 .56 .61 .66 .71 .76  
 .81

3.36 CFS	.88	.95	1.03	1.11	1.20	1.30	1.41
1.52							
3.84 CFS	1.63	1.74	1.84	1.95	2.07	2.19	2.32
2.46							
4.32 CFS	2.60	2.74	2.88	3.01	3.15	3.29	3.45
3.62							
4.80 CFS	3.80	3.99	4.19	4.41	4.66	4.91	5.18
5.46							
5.28 CFS	5.74	6.04	6.34	6.67	6.99	7.33	7.66
8.00							
5.76 CFS	8.36	8.74	9.11	9.48	9.84	10.20	10.57
10.96							
6.24 CFS	11.37	11.82	12.29	12.76	13.24	13.75	14.29
14.86							
6.72 CFS	15.46	16.07	16.68	17.31	17.95	18.59	19.24
19.93							
7.20 CFS	20.63	21.37	22.14	22.93	23.75	24.58	25.40
26.22							
7.68 CFS	27.04	27.88	28.72	29.56	30.41	31.30	32.22
33.16							
8.16 CFS	34.14	35.13	36.12	37.11	38.11	39.10	40.06
41.05							
8.64 CFS	42.09	43.18	44.31	45.48	46.70	47.93	49.16
50.40							
9.12 CFS	51.66	52.97	54.37	55.95	57.70	59.62	61.70
63.95							
9.60 CFS	66.36	68.88	71.51	74.35	77.51	80.96	84.61
88.35							
10.08 CFS	92	96	100	104	107	111	115
119							
10.56 CFS	123	127	132	137	142	149	156
165							
11.04 CFS	174	184	195	207	221	235	252
269							
11.52 CFS	289	311	337	368	405	451	507
577							
12.00 CFS	667	791	938	1078	1163	1181	1152
1440							
12.48 CFS	1497	1552	1450	1418	1261	1205	1057
1020							
12.96 CFS	903	898	812	823	760	742	700
669							
13.44 CFS	643	607	583	551	532	505	492
470							
13.92 CFS	460	442	433	417	411	397	391
378							
14.40 CFS	373	360	355	343	337	326	318
308							
14.88 CFS	301	293	284	275	266	257	248
237							
15.36 CFS	219	200	184	172	163	157	153
149							
15.84 CFS	146	144	142	140	139	137	135
134							
16.32 CFS	133	131	130	128	127	126	124
123							
16.80 CFS	122	121	120	119	118	117	115
114							

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17.28	CFS	113	112	111	110	109	107	106
105								
17.76	CFS	104	103	102	100	99	98	97
96								
18.24	CFS	95.12	94.14	93.17	92.18	91.19	90.30	89.55
88.88								
18.72	CFS	88.25	87.71	87.31	87.00	86.67	86.27	85.88
85.51								
19.20	CFS	85.13	84.74	84.36	84.02	83.73	83.49	83.28
83.04								
19.68	CFS	82.77	82.51	82.24	81.90	81.48	81.11	80.82
80.57								
20.16	CFS	80.29	80.00	79.78	79.58	79.31	78.92	78.50
78.13								
20.64	CFS	77.78	77.41	77.04	76.76	76.56	76.35	76.05
75.71								
21.12	CFS	75.39	75.05	74.68	74.31	73.96	73.67	73.42
73.20								
21.60	CFS	72.98	72.71	72.44	72.18	71.88	71.53	71.23
70.98								
22.08	CFS	70.70	70.40	70.12	69.84	69.52	69.17	68.84
68.54								
22.56	CFS	68.28	67.99	67.68	67.38	67.09	66.73	66.29
65.89								
23.04	CFS	65.58	65.31	65.01	64.72	64.48	64.28	64.05
63.77								
23.52	CFS	63.41	63.01	62.65	62.34	62.04	61.70	61.35
61.05								
24.00	CFS	60.90	60.72	59.90	58.08	55.44	52.23	48.15
43.14								
24.48	CFS	37.74	32.61	28.13	24.38	21.31	18.82	16.87
15.41								
24.96	CFS	14.34	13.55					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.60 WATERSHED INCHES; 3696 CFS-HRS; 305.4 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 162  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.00	621.0 *	(DIVERT)
	* FIRST POINT OF FLAT PEAK	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3069 CFS-HRS; 253.6 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.29	560.3	177.97
12.53	932.9	178.94
13.12	206.8	176.63

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

.95 WATERSHED INCHES; 626 CFS-HRS; 51.8 ACRE-  
FEET.

OPERATION RESVOR STRUCTURE 73

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	560.3	(NULL)
12.53	932.9	(NULL)
13.12	206.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.95 WATERSHED INCHES; 626 CFS-HRS; 51.8 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 163

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.29	1181.3	(NULL)
12.53	1553.9	(NULL)
13.12	827.8	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.02  
SQ.MI.

HRS	2.88 CFS	3.36 CFS	3.84 CFS	4.32 CFS	4.80 CFS	5.28 CFS	5.76 CFS	6.24 CFS	6.72 CFS	7.20 CFS	7.68 CFS	8.16 CFS	8.64 CFS
.81	.46	.51	.56	.61	.66	.71	.76	.81	.86	.91	.96	1.01	1.06
1.52	.88	.95	1.03	1.11	1.20	1.30	1.41	1.52	1.63	1.74	1.84	1.95	2.07
2.46	1.63	1.74	1.84	1.95	2.07	2.19	2.32	2.46	2.60	2.74	2.88	3.01	3.15
3.62	2.60	2.74	2.88	3.01	3.15	3.29	3.45	3.62	3.80	3.99	4.19	4.41	4.66
5.46	3.80	3.99	4.19	4.41	4.66	4.91	5.18	5.46	5.74	6.04	6.34	6.67	6.99
8.00	5.74	6.04	6.34	6.67	6.99	7.33	7.66	8.00	8.36	8.74	9.11	9.48	9.84
10.96	8.36	8.74	9.11	9.48	9.84	10.20	10.57	10.96	11.37	11.82	12.29	12.76	13.24
14.86	11.37	11.82	12.29	12.76	13.24	13.75	14.29	14.86	15.46	16.07	16.68	17.31	17.95
19.93	15.46	16.07	16.68	17.31	17.95	18.59	19.24	19.93	20.63	21.37	22.14	22.93	23.75
26.22	20.63	21.37	22.14	22.93	23.75	24.58	25.40	26.22	27.04	27.88	28.72	29.56	30.41
33.16	27.04	27.88	28.72	29.56	30.41	31.30	32.22	33.16	34.14	35.13	36.12	37.11	38.11
41.05	34.14	35.13	36.12	37.11	38.11	39.10	40.06	41.05	42.09	43.18	44.31	45.48	46.70
50.40	42.09	43.18	44.31	45.48	46.70	47.93	49.16	50.40					

9.12 CFS	51.66	52.97	54.37	55.95	57.70	59.62	61.70
63.95							
9.60 CFS	66.36	68.88	71.51	74.35	77.51	80.96	84.61
88.35							
10.08 CFS	92	96	100	104	107	111	115
119							
10.56 CFS	123	127	132	137	142	149	156
165							
11.04 CFS	174	184	195	207	221	235	252
269							
11.52 CFS	289	311	337	368	405	451	507
577							
12.00 CFS	667	791	938	1078	1163	1181	1152
1440							
12.48 CFS	1497	1552	1450	1418	1261	1205	1057
1020							
12.96 CFS	903	898	812	823	760	742	700
669							
13.44 CFS	643	607	583	551	532	505	492
470							
13.92 CFS	460	442	433	417	411	397	391
378							
14.40 CFS	373	360	355	343	337	326	318
308							
14.88 CFS	301	293	284	275	266	257	248
237							
15.36 CFS	219	200	184	172	163	157	153
149							
15.84 CFS	146	144	142	140	139	137	135
134							
16.32 CFS	133	131	130	128	127	126	124
123							
16.80 CFS	122	121	120	119	118	117	115
114							
17.28 CFS	113	112	111	110	109	107	106
105							
17.76 CFS	104	103	102	100	99	98	97
96							

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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18.24 CFS	95.12	94.14	93.17	92.18	91.19	90.30	89.55
88.88							
18.72 CFS	88.25	87.71	87.31	87.00	86.67	86.27	85.88
85.51							
19.20 CFS	85.13	84.74	84.36	84.02	83.73	83.49	83.28
83.04							
19.68 CFS	82.77	82.51	82.24	81.90	81.48	81.11	80.82
80.57							
20.16 CFS	80.29	80.00	79.78	79.58	79.31	78.92	78.50
78.13							
20.64 CFS	77.78	77.41	77.04	76.76	76.56	76.35	76.05
75.71							
21.12 CFS	75.39	75.05	74.68	74.31	73.96	73.67	73.42
73.20							
21.60 CFS	72.98	72.71	72.44	72.18	71.88	71.53	71.23
70.98							

22.08	CFS	70.70	70.40	70.12	69.84	69.52	69.17	68.84
68.54								
22.56	CFS	68.28	67.99	67.68	67.38	67.09	66.73	66.29
65.89								
23.04	CFS	65.58	65.31	65.01	64.72	64.48	64.28	64.05
63.77								
23.52	CFS	63.41	63.01	62.65	62.34	62.04	61.70	61.35
61.05								
24.00	CFS	60.90	60.72	59.90	58.08	55.44	52.23	48.15
43.14								
24.48	CFS	37.74	32.61	28.13	24.38	21.31	18.82	16.87
15.41								
24.96	CFS	14.34	13.55					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.60 WATERSHED INCHES; 3696 CFS-HRS; 305.4 ACRE-FEET.

OPERATION REACH XSECTION 63

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.62	1488.5	250.97

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.58 WATERSHED INCHES; 3683 CFS-HRS; 304.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 64

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	30.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-FEET.

OPERATION RESVOR STRUCTURE 61

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.55	24.7	335.67

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-FEET.

OPERATION REACH XSECTION 65

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.63	24.4	301.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.61 WATERSHED INCHES; 47 CFS-HRS; 3.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 66

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	139.6	(RUNOFF)
20.10	3.1	(RUNOFF)
24.02	2.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 145 CFS-HRS; 11.9 ACRE-FEET.

\*\*\* WARNING - STRUCTURE 62, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .043 HOURS.  
 \*\*\*

\*\*\* WARNING - STRUCTURE 62, RESERVOIR ROUTING HAS NEGATIVE DISCHARGES FIRST NEGATIVE VALUE IS 0 CFS.  
 \*\*\*

OPERATION RESVOR STRUCTURE 62

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.42	70.1	297.03
20.12	3.1	287.70
24.04	2.3	287.60

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.89 WATERSHED INCHES; 145 CFS-HRS; 11.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 67

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.51	90.2	(NULL)
18.87	4.3	(NULL)
23.11	3.2	(NULL)
24.04	3.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.22 WATERSHED INCHES; 191 CFS-HRS; 15.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 68

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PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.19	258.6	(RUNOFF)
20.87	5.1	(RUNOFF)
23.74	4.1	(RUNOFF)
24.03	4.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 263 CFS-HRS; 21.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 69

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.20	309.1	(NULL)
18.87	10.1	(NULL)
20.10	9.4	(NULL)
20.65	9.0	(NULL)
21.97	8.2	(NULL)
23.10	7.5	(NULL)
23.75	7.1	(NULL)
24.03	7.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.24 WATERSHED INCHES; 455 CFS-HRS; 37.6 ACRE-  
 FEET.

OPERATION REACH XSECTION 70

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.39	230.4	249.15
20.14	9.4	247.79
24.09	7.0	247.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.23 WATERSHED INCHES; 455 CFS-HRS; 37.6 ACRE-  
 FEET.

OPERATION RUNOFF XSECTION 71

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	54.7	(RUNOFF)
17.33	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.05 WATERSHED INCHES; 46 CFS-HRS; 3.8 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 63

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.19	44.5	267.78
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.07 WATERSHED INCHES;		47 CFS-HRS; 3.9 ACRE-
FEET.		

OPERATION REACH XSECTION 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.27	40.6	248.21
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
6.05 WATERSHED INCHES;		46 CFS-HRS; 3.8 ACRE-
FEET.		

OPERATION RUNOFF XSECTION 73

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.18	312.6	(RUNOFF)
15.84	12.1	(RUNOFF)
17.34	9.4	(RUNOFF)
19.75	7.1	(RUNOFF)
20.08	7.0	(RUNOFF)
21.96	6.2	(RUNOFF)
24.01	5.3	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .11  
 SQ.MI.

8.82 CFS	.43	.51	.59	.68	.78	.88	.98
1.10							
9.30 CFS	1.24	1.38	1.53	1.67	1.82	1.98	2.17
2.36							
9.78 CFS	2.56	2.76	2.95	3.16	3.39	3.63	3.89
4.15							
10.26 CFS	4.40	4.65	4.91	5.20	5.52	5.89	6.35
6.91							
10.74 CFS	7.57	8.30	9.08	9.92	10.78	11.71	12.86
14.23							
11.22 CFS	15.80	17.48	19.28	21.25	23.29	25.46	29.59
36.52							
11.70 CFS	43	50	61	75	98	135	195
276							
12.18 CFS	313	268	207	164	133	112	98
86							
12.66 CFS	72.72	63.35	57.67	53.61	50.33	47.44	44.61
41.80							
13.14 CFS	39.05	36.77	34.96	33.30	31.70	30.10	28.51
26.97							
13.62 CFS	25.51	24.32	23.42	22.72	22.16	21.73	21.39

21.08								
14.10	CFS	20.70	20.26	19.77	19.33	18.96	18.65	18.33
17.93								
14.58	CFS	17.45	16.96	16.53	16.19	15.87	15.52	15.09
14.69								
15.06	CFS	14.32	13.89	13.46	13.12	12.90	12.80	12.75
12.73								
15.54	CFS	12.71	12.61	12.43	12.21	12.09	12.11	12.09
11.95								
16.02	CFS	11.74	11.57	11.47	11.42	11.37	11.23	11.09
10.99								
16.50	CFS	10.85	10.69	10.58	10.53	10.49	10.38	10.22
10.12								
16.98	CFS	10.07	10.03	9.92	9.73	9.50	9.38	9.40
9.37								
17.46	CFS	9.23	9.01	8.83	8.73	8.68	8.62	8.48
8.33								
17.94	CFS	8.25	8.21	8.15	8.01	7.87	7.78	7.74
7.68								
18.42	CFS	7.55	7.48	7.54	7.62	7.63	7.53	7.47
7.52								

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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18.90	CFS	7.51	7.41	7.33	7.29	7.27	7.26	7.26
7.26								
19.38	CFS	7.26	7.26	7.26	7.23	7.10	7.03	7.08
7.06								
19.86	CFS	6.96	6.88	6.91	7.03	7.04	6.95	6.88
6.84								
20.34	CFS	6.81	6.70	6.58	6.60	6.70	6.74	6.67
6.57								
20.82	CFS	6.60	6.62	6.54	6.44	6.39	6.37	6.36
6.35								
21.30	CFS	6.35	6.35	6.35	6.35	6.34	6.23	6.12
6.14								
21.78	CFS	6.16	6.10	6.10	6.16	6.11	6.01	5.94
5.91								
22.26	CFS	5.90	5.89	5.89	5.89	5.89	5.84	5.72
5.65								
22.74	CFS	5.69	5.68	5.57	5.49	5.52	5.63	5.65
5.56								
23.22	CFS	5.48	5.45	5.43	5.42	5.37	5.24	5.17
5.24								
23.70	CFS	5.32	5.33	5.22	5.09	5.06	5.32	5.21
3.80								
24.18	CFS	2.04	.99	.48				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.26 WATERSHED INCHES; 302 CFS-HRS; 25.0 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 74

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK  
 ELEVATION(FEET)

12.36	1292.8	(NULL)
12.61	1570.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.45 WATERSHED INCHES; 3986 CFS-HRS; 329.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 75

PEAK TIME (HRS) ELEVATION (FEET)	PEAK DISCHARGE (CFS)	PEAK
12.35	260.5	(NULL)
20.14	10.3	(NULL)
23.13	8.2	(NULL)
24.09	7.7	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .15 SQ.MI.

HRS	MAIN	TIME	INCREMENT	=	.060	hr,	DRAINAGE	AREA	=	.15
6.78 CFS	.49	.52	.57	.62	.67	.73	.79			
.85										
7.26 CFS	.92	.99	1.06	1.14	1.22	1.31	1.40			
1.50										
7.74 CFS	1.60	1.70	1.81	1.92	2.04	2.16	2.28			
2.40										
8.22 CFS	2.53	2.65	2.78	2.91	3.04	3.17	3.31			
3.44										
8.70 CFS	3.59	3.74	3.89	4.04	4.18	4.32	4.47			
4.64										
9.18 CFS	4.81	5.00	5.20	5.43	5.69	5.96	6.24			
6.53										
9.66 CFS	6.83	7.15	7.49	7.86	8.23	8.61	8.99			
9.38										
10.14 CFS	9.79	10.21	10.63	11.05	11.48	11.90	12.35			
12.81										
10.62 CFS	13.30	13.85	14.49	15.25	16.13	17.12	18.18			
19.30										
11.10 CFS	20.50	21.82	23.30	24.99	26.90	29.01	31.22			
33.45										
11.58 CFS	35.80	38.67	42.69	47.52	52.98	59.58	67.97			
79.25										
12.06 CFS	99	129	174	229	257	260	255			
244										
12.54 CFS	231	220	209	197	183	170	157			
145										
13.02 CFS	133	123	114	107	99	91	84			
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

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13.50 CFS	71.93	67.34	63.36	59.86	56.88	54.37	52.29
50.55							
13.98 CFS	49.09	47.87	46.82	45.90	45.06	44.27	43.52
42.82							
14.46 CFS	42.16	41.53	40.92	40.30	39.67	39.04	38.43
37.80							

14.94	CFS	37.14	36.44	35.72	34.96	34.15	33.31	32.44
31.61								
15.42	CFS	30.82	30.09	29.29	28.45	27.60	26.68	25.63
24.58								
15.90	CFS	23.64	22.83	22.11	21.48	20.92	20.40	19.96
19.60								
16.38	CFS	19.28	18.99	18.72	18.43	18.11	17.81	17.53
17.28								
16.86	CFS	17.03	16.77	16.51	16.26	16.04	15.83	15.61
15.36								
17.34	CFS	15.11	14.91	14.75	14.58	14.39	14.18	13.97
13.78								
17.82	CFS	13.62	13.44	13.26	13.08	12.93	12.78	12.63
12.46								
18.30	CFS	12.25	12.06	11.88	11.72	11.56	11.44	11.38
11.34								
18.78	CFS	11.29	11.22	11.18	11.15	11.10	11.03	10.96
10.90								
19.26	CFS	10.85	10.80	10.77	10.75	10.73	10.71	10.69
10.64								
19.74	CFS	10.57	10.52	10.49	10.43	10.36	10.31	10.30
10.30								
20.22	CFS	10.28	10.24	10.20	10.15	10.08	9.99	9.92
9.89								
20.70	CFS	9.88	9.86	9.82	9.78	9.76	9.72	9.66
9.60								
21.18	CFS	9.54	9.48	9.44	9.41	9.38	9.36	9.34
9.32								
21.66	CFS	9.28	9.22	9.16	9.12	9.08	9.04	9.03
9.01								
22.14	CFS	8.97	8.91	8.85	8.80	8.75	8.72	8.69
8.67								
22.62	CFS	8.64	8.58	8.51	8.46	8.42	8.36	8.29
8.24								
23.10	CFS	8.22	8.23	8.21	8.17	8.12	8.07	8.03
7.99								
23.58	CFS	7.93	7.85	7.79	7.78	7.77	7.75	7.68
7.62								
24.06	CFS	7.62	7.63	7.29	6.48	5.44	4.43	3.54
2.81								
24.54	CFS	2.21	1.73	1.36	1.05	.82	.63	.49

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.30 WATERSHED INCHES; 501 CFS-HRS; 41.4 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 76

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	1553.3	(NULL)
12.60	1789.7	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28 SQ.MI.

3.00	CFS	.47	.52	.56	.61	.66	.71	.77
.82								
3.48	CFS	.89	.96	1.04	1.13	1.22	1.32	1.43
1.53								
3.96	CFS	1.64	1.75	1.86	1.97	2.09	2.21	2.34
2.48								
4.44	CFS	2.62	2.77	2.91	3.05	3.20	3.36	3.52

3.70								
4.92 CFS	3.88	4.08	4.30	4.54	4.79	5.06	5.34	
5.63								
5.40 CFS	5.93	6.24	6.56	6.89	7.23	7.57	7.92	
8.28								
5.88 CFS	8.66	9.04	9.42	9.80	10.17	10.55	10.94	
11.35								
6.36 CFS	11.79	12.25	12.72	13.21	13.72	14.27	14.84	
15.44								
6.84 CFS	16.08	16.72	17.39	18.08	18.76	19.47	20.20	
20.95								
7.32 CFS	21.74	22.55	23.40	24.28	25.18	26.09	27.01	
27.93								
7.80 CFS	28.86	29.80	30.75	31.71	32.69	33.71	34.76	
35.84								
8.28 CFS	36.93	38.04	39.17	40.32	41.48	42.65	43.84	
45.08								
8.76 CFS	46.36	47.68	49.04	50.44	51.88	53.35	54.85	
56.37								
9.24 CFS	57.95	59.64	61.48	63.50	65.69	68.06	70.62	
73.37								

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

18:28:10 PASS 6 JOB NO. 1 PAGE  
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9.72 CFS	76	79	83	86	90	94	98	
103								
10.20 CFS	107	111	116	121	125	130	135	
139								
10.68 CFS	145	150	156	163	171	179	189	
200								
11.16 CFS	212	225	240	256	274	293	314	
339								
11.64 CFS	369	403	442	490	551	630	739	
894								
12.12 CFS	1107	1315	1460	1533	1553	1528	1656	
1735								
12.60 CFS	1790	1747	1700	1585	1493	1364	1276	
1165								
13.08 CFS	1105	1025	989	934	893	848	806	
769								
13.56 CFS	730	697	662	633	605	583	560	
543								
14.04 CFS	525	512	496	485	471	461	449	
440								
14.52 CFS	429	420	409	400	390	380	370	
360								
15.00 CFS	351	341	332	322	312	301	290	
275								
15.48 CFS	257	240	225	213	204	196	190	
185								
15.96 CFS	182	178	175	173	170	168	166	
164								
16.44 CFS	162	161	159	157	155	154	152	
150								
16.92 CFS	149	147	146	144	143	141	140	
139								
17.40 CFS	137	136	134	133	131	130	129	

127							
17.88 CFS	126	124	123	121	120	119	117
116							
18.36 CFS	115	113	112	111	110	109	108
108							
18.84 CFS	107	106	106	105	105	104	104
104							
19.32 CFS	103	103	102	102	102	101	101
101							
19.80 CFS	100	100	99	99	99	98	98
98							
20.28 CFS	97.34	97.00	96.62	96.19	95.80	95.45	95.08
94.64							
20.76 CFS	94.16	93.77	93.44	93.08	92.72	92.34	91.94
91.55							
21.24 CFS	91.17	90.78	90.38	90.00	89.66	89.34	88.97
88.59							
21.72 CFS	88.29	87.99	87.63	87.31	87.01	86.64	86.24
85.85							
22.20 CFS	85.47	85.11	84.77	84.42	84.06	83.70	83.33
82.88							
22.68 CFS	82.47	82.14	81.78	81.34	80.87	80.44	80.10
79.76							
23.16 CFS	79.36	78.97	78.59	78.26	77.97	77.66	77.23
76.78							
23.64 CFS	76.40	76.08	75.74	75.31	74.82	74.39	74.26
73.94							
24.12 CFS	72.33	69.69	66.62	63.09	59.19	54.78	49.71
44.22							
24.60 CFS	38.72	33.60	29.10	25.26	22.07	19.49	17.45
15.90							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.43 WATERSHED INCHES; 4487 CFS-HRS; 370.8 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 176  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.00	691.0 *	(DIVERT)
	* FIRST POINT OF FLAT	PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 3584 CFS-HRS; 296.2 ACRE-FEET.

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 TR20 ----- SCS  
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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
 18:28:10 PASS 6 JOB NO. 1 PAGE  
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OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	862.3	178.76

12.60 1098.7 179.29

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.09 WATERSHED INCHES; 902 CFS-HRS; 74.6 ACRE-  
 FEET.

OPERATION RESVOR STRUCTURE 72

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	862.3	(NULL)
12.60	1098.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.09 WATERSHED INCHES; 902 CFS-HRS; 74.6 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 177

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.36	1553.3	(NULL)
12.60	1789.7	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.28  
 SQ.MI.

HRS	3.00 CFS	3.48 CFS	3.96 CFS	4.44 CFS	4.92 CFS	5.40 CFS	5.88 CFS	6.36 CFS	6.84 CFS	7.32 CFS	7.80 CFS	8.28 CFS	8.76 CFS	9.24 CFS	9.72 CFS	10.20 CFS	10.68 CFS	11.16 CFS
.82	.47	.89	1.64	2.62	3.88	5.93	8.66	11.79	16.08	21.74	28.86	35.84	46.36	57.95	76	107	145	212
1.53	.52	.96	1.75	2.77	4.08	6.24	9.04	12.25	16.72	22.55	29.80	38.04	47.68	59.64	79	111	150	225
2.48	.56	1.04	1.86	2.91	4.30	6.56	9.42	12.72	17.39	23.40	30.75	39.17	49.04	61.48	83	116	156	240
3.70	.61	1.13	1.97	3.05	4.54	6.89	9.80	13.21	18.08	24.28	31.71	40.32	50.44	63.50	86	121	163	256
5.63	.66	1.22	2.09	3.20	4.79	7.23	10.17	13.72	18.76	25.18	32.69	41.48	51.88	65.69	90	125	171	274
8.28	.71	1.32	2.21	3.36	5.06	7.57	10.55	14.27	19.47	26.09	33.71	42.65	53.35	68.06	94	130	179	293
11.35	.77	1.43	2.34	3.52	5.34	7.92	10.94	14.84	20.20	27.01	34.76	43.84	54.85	70.62	98	135	189	314
15.44																		
20.95																		
27.93																		
35.84																		
45.08																		
56.37																		
73.37																		
103																		
139																		
200																		

339								
11.64	CFS	369	403	442	490	551	630	739
894								
12.12	CFS	1107	1315	1460	1533	1553	1528	1656
1735								
12.60	CFS	1790	1747	1700	1585	1493	1364	1276
1165								

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TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

05/04/\*\* CN MGMT- PROP COND.- 2, 5, 10, 25, 50, 100 yr NOAA

Dist;H1&H8UG;GHC2.04TEST

18:28:10

PASS 6 JOB NO. 1

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13.08	CFS	1105	1025	989	934	893	848	806
769								
13.56	CFS	730	697	662	633	605	583	560
543								
14.04	CFS	525	512	496	485	471	461	449
440								
14.52	CFS	429	420	409	400	390	380	370
360								
15.00	CFS	351	341	332	322	312	301	290
275								
15.48	CFS	257	240	225	213	204	196	190
185								
15.96	CFS	182	178	175	173	170	168	166
164								
16.44	CFS	162	161	159	157	155	154	152
150								
16.92	CFS	149	147	146	144	143	141	140
139								
17.40	CFS	137	136	134	133	131	130	129
127								
17.88	CFS	126	124	123	121	120	119	117
116								
18.36	CFS	115	113	112	111	110	109	108
108								
18.84	CFS	107	106	106	105	105	104	104
104								
19.32	CFS	103	103	102	102	102	101	101
101								
19.80	CFS	100	100	99	99	99	98	98
98								
20.28	CFS	97.34	97.00	96.62	96.19	95.80	95.45	95.08
94.64								
20.76	CFS	94.16	93.77	93.44	93.08	92.72	92.34	91.94
91.55								
21.24	CFS	91.17	90.78	90.38	90.00	89.66	89.34	88.97
88.59								
21.72	CFS	88.29	87.99	87.63	87.31	87.01	86.64	86.24
85.85								
22.20	CFS	85.47	85.11	84.77	84.42	84.06	83.70	83.33
82.88								
22.68	CFS	82.47	82.14	81.78	81.34	80.87	80.44	80.10
79.76								
23.16	CFS	79.36	78.97	78.59	78.26	77.97	77.66	77.23
76.78								
23.64	CFS	76.40	76.08	75.74	75.31	74.82	74.39	74.26
73.94								
24.12	CFS	72.33	69.69	66.62	63.09	59.19	54.78	49.71



44.22  
 24.60 CFS      38.72    33.60    29.10    25.26    22.07    19.49    17.45  
 15.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.43 WATERSHED INCHES;      4487 CFS-HRS;      370.8 ACRE-FEET.

\*\*\* WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,  
 CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 77.  
 \*\*\*

OPERATION REACH      XSECTION 77

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	1553.3	231.09
12.60	1789.7	231.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.43 WATERSHED INCHES;      4487 CFS-HRS;      370.8 ACRE-FEET.

OPERATION RUNOFF      XSECTION 78

1 TR20 ----- SCS  
 -

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
 18:28:10      PASS 6      JOB NO. 1      PAGE 267

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	171.1	(RUNOFF)
15.84	6.1	(RUNOFF)
17.34	4.7	(RUNOFF)
21.96	3.1	(RUNOFF)
24.01	2.7	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .05 SQ.MI.

7.98 CFS	.47	.51	.55	.59	.62	.66	.71
.76							
8.46 CFS	.79	.84	.89	.94	1.00	1.04	1.08
1.12							
8.94 CFS	1.17	1.23	1.30	1.36	1.43	1.52	1.62
1.72							
9.42 CFS	1.82	1.91	2.01	2.12	2.24	2.38	2.51
2.63							
9.90 CFS	2.75	2.87	3.01	3.17	3.33	3.49	3.63
3.77							
10.38 CFS	3.92	4.10	4.29	4.51	4.80	5.17	5.59
6.05							
10.86 CFS	6.54	7.05	7.58	8.12	8.82	9.66	10.62
11.62							
11.34 CFS	12.66	13.80	14.95	16.16	18.71	22.84	26.72
30.55							

11.82 CFS	37	45	57	78	111	154	171
141							
12.30 CFS	107	84	67	57	50	43	37
32							
12.78 CFS	29.22	27.20	25.54	24.07	22.61	21.15	19.76
18.60							
13.26 CFS	17.69	16.83	16.01	15.20	14.38	13.60	12.86
12.26							
13.74 CFS	11.82	11.46	11.18	10.96	10.79	10.64	10.44
10.21							
14.22 CFS	9.96	9.73	9.55	9.39	9.23	9.02	8.77
8.52							
14.70 CFS	8.31	8.13	7.97	7.79	7.57	7.37	7.18
6.96							
15.18 CFS	6.75	6.58	6.47	6.42	6.40	6.39	6.38
6.33							
15.66 CFS	6.23	6.11	6.06	6.08	6.06	5.99	5.88
5.79							
16.14 CFS	5.74	5.72	5.69	5.62	5.55	5.50	5.43
5.34							
16.62 CFS	5.29	5.27	5.25	5.19	5.11	5.06	5.04
5.02							
17.10 CFS	4.95	4.85	4.74	4.68	4.70	4.68	4.60
4.49							
17.58 CFS	4.40	4.35	4.33	4.30	4.23	4.15	4.11
4.09							
18.06 CFS	4.06	3.99	3.92	3.88	3.86	3.83	3.76
3.72							
18.54 CFS	3.76	3.80	3.81	3.75	3.72	3.75	3.74
3.69							
19.02 CFS	3.65	3.63	3.62	3.62	3.62	3.62	3.62
3.62							
19.50 CFS	3.62	3.60	3.53	3.50	3.53	3.51	3.46
3.42							
19.98 CFS	3.44	3.50	3.50	3.46	3.42	3.40	3.38
3.33							
20.46 CFS	3.27	3.29	3.34	3.35	3.31	3.26	3.28
3.29							
20.94 CFS	3.25	3.20	3.17	3.16	3.16	3.16	3.16
3.16							
21.42 CFS	3.16	3.16	3.15	3.09	3.03	3.05	3.06
3.02							
21.90 CFS	3.03	3.06	3.03	2.98	2.95	2.93	2.93
2.92							
22.38 CFS	2.92	2.92	2.92	2.90	2.83	2.80	2.83
2.81							
22.86 CFS	2.76	2.72	2.74	2.80	2.80	2.75	2.72
2.70							
23.34 CFS	2.69	2.69	2.66	2.59	2.56	2.60	2.64
2.64							
23.82 CFS	2.58	2.51	2.51	2.66	2.60	1.82	.92
.43							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.96 WATERSHED INCHES; 163 CFS-HRS; 13.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 79

1

TR20 ----- SCS

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
Dist;H1&H8UG;GHC2.04TEST  
18:28:10 PASS 6 JOB NO. 1  
268

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.33	1644.1	(NULL)
12.60	1832.9	(NULL)
23.97	77.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.42 WATERSHED INCHES; 4650 CFS-HRS; 384.3 ACRE-FEET.

OPERATION REACH XSECTION 80

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.40	1638.6	217.36
12.67	1823.8	217.71

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.42 WATERSHED INCHES; 4654 CFS-HRS; 384.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 81

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.17	97.7	(RUNOFF)
15.84	3.6	(RUNOFF)
20.07	2.1	(RUNOFF)
24.01	1.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.57 WATERSHED INCHES; 92 CFS-HRS; 7.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 82

PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)
12.39	1680.9	180.47
12.66	1844.1	180.80

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.40 WATERSHED INCHES; 4746 CFS-HRS; 392.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 83

1 TR20 ----- SCS  
-

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES, VERSION

05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
Dist;H1&H8UG;GHC2.04TEST  
18:28:10 PASS 6 JOB NO. 1

269

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.15	187.0	(RUNOFF)
15.84	6.2	(RUNOFF)
17.34	4.8	(RUNOFF)
21.95	3.1	(RUNOFF)
24.00	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.14 WATERSHED INCHES; 170 CFS-HRS; 14.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 84

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	200.3	(RUNOFF)
18.67	5.4	(RUNOFF)
20.68	4.8	(RUNOFF)
24.01	3.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.03 WATERSHED INCHES; 235 CFS-HRS; 19.5 ACRE-FEET.

OPERATION DIVERT XSECTION 184  
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.12	118.0 *	(DIVERT)
18.67	5.4	(DIVERT)
20.68	4.8	(DIVERT)
24.01	3.7	(DIVERT)

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
217 CFS-HRS; 17.9 ACRE-FEET.

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.24	82.3	175.97

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
.40 WATERSHED INCHES; 19 CFS-HRS; 1.6 ACRE-FEET.

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
VERSION  
05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
Dist;H1&H8UG;GHC2.04TEST  
18:28:10 PASS 6 JOB NO. 1 PAGE  
270

\*\*\* MESSAGE - STRUCTURE 81, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE  
 STARTS 10.00 FEET BELOW ASSUMED CREST ELEVATION AT 200.00.  
 THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME.  
 \*\*\*

OPERATION RESVOR STRUCTURE 81

\*\*\* MESSAGE - NO SIGNIFICANT PEAK FOUND, MAX. DISCHARGE 0 CFS,  
 AT STRUCTURE 81  
 \*\*\*

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.48	.0	192.37
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
.00 WATERSHED INCHES; 0 CFS-HRS; .0 ACRE-FEET.		

OPERATION ADDHYD XSECTION 185

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.39	118.6	(NULL)
18.67	5.4	(NULL)
20.68	4.8	(NULL)
24.01	3.7	(NULL)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.64 WATERSHED INCHES; 217 CFS-HRS; 17.9 ACRE-FEET.		

OPERATION RUNOFF XSECTION 186

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	103.1	(RUNOFF)
18.67	3.1	(RUNOFF)
24.01	2.1	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
4.06 WATERSHED INCHES; 121 CFS-HRS; 10.0 ACRE-FEET.		

OPERATION ADDHYD XSECTION 187

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.25	221.1	(NULL)
18.67	8.6	(NULL)
20.68	7.5	(NULL)
23.12	6.3	(NULL)
24.01	5.8	(NULL)

1 TR20 ----- SCS  
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05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
 18:28:10 PASS 6 JOB NO. 1  
 271

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4.41 WATERSHED INCHES; 338 CFS-HRS; 27.9 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 85

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.17	392.3	(NULL)
18.83	12.3	(NULL)
20.07	11.4	(NULL)
20.82	10.8	(NULL)
21.95	10.0	(NULL)
23.07	9.2	(NULL)
24.00	8.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .17  
 SQ.MI.

HRS	7.32	7.80	8.28	8.76	9.24	9.72	10.20	10.68	11.16	11.64	12.12	12.60	13.08	13.56	14.04	14.52	15.00	15.48	15.96								
7.32 CFS	.43	.51	.59	.67	.75	.83	.91																				
1.00																											
7.80 CFS	1.09	1.19	1.29	1.39	1.48	1.59	1.70																				
1.78																											
8.28 CFS	1.89	2.01	2.11	2.21	2.32	2.44	2.57																				
2.70																											
8.76 CFS	2.82	2.93	3.04	3.17	3.34	3.53	3.71																				
3.92																											
9.24 CFS	4.16	4.44	4.74	5.03	5.32	5.62	5.95																				
6.31																											
9.72 CFS	6.69	7.08	7.46	7.84	8.23	8.65	9.11																				
9.59																											
10.20 CFS	10.07	10.53	10.99	11.47	11.99	12.56	13.21																				
14.03																											
10.68 CFS	15.03	16.17	17.49	18.91	20.43	22.00	23.66																				
25.69																											
11.16 CFS	28.04	30.72	33.63	36.73	40.12	43.62	47.42																				
54.29																											
11.64 CFS	64	75	86	103	125	157	212																				
293																											
12.12 CFS	373	391	354	314	280	252	228																				
197																											
12.60 CFS	169	145	127	113	102	93	86																				
80																											
13.08 CFS	74.70	69.60	65.30	61.59	58.32	55.33	52.50																				
49.72																											
13.56 CFS	47.04	44.53	42.35	40.56	39.08	37.86	36.92																				
36.14																											
14.04 CFS	35.48	34.79	34.06	33.29	32.56	31.90	31.31																				
30.73																											
14.52 CFS	30.08	29.36	28.60	27.89	27.25	26.67	26.06																				
25.40																											
15.00 CFS	24.76	24.12	23.42	22.75	22.15	21.70	21.39																				
21.20																											
15.48 CFS	21.09	20.99	20.83	20.59	20.29	20.09	20.03																				
19.92																											
15.96 CFS	19.73	19.47	19.22	19.03	18.90	18.76	18.56																				
18.37																											

16.44	CFS	18.20	17.97	17.73	17.54	17.41	17.30	17.12
16.92								
16.92	CFS	16.76	16.64	16.53	16.36	16.11	15.80	15.60
15.53								
17.40	CFS	15.42	15.23	14.96	14.70	14.50	14.36	14.23
14.02								
17.88	CFS	13.82	13.67	13.55	13.43	13.24	13.04	12.89
12.78								
18.36	CFS	12.66	12.48	12.37	12.39	12.44	12.44	12.35
12.29								
18.84	CFS	12.32	12.27	12.17	12.08	12.00	11.94	11.91
11.89								
19.32	CFS	11.88	11.88	11.87	11.87	11.82	11.67	11.59
11.60								
19.80	CFS	11.54	11.43	11.34	11.34	11.44	11.44	11.37
11.30								
20.28	CFS	11.23	11.16	11.01	10.87	10.87	10.92	10.96
10.89								
20.76	CFS	10.80	10.82	10.80	10.70	10.60	10.52	10.45
10.41								
21.24	CFS	10.39	10.38	10.37	10.37	10.36	10.34	10.21
10.09								
21.72	CFS	10.09	10.06	9.97	9.99	10.03	9.95	9.86
9.77								
22.20	CFS	9.70	9.66	9.63	9.62	9.61	9.60	9.54
9.40								
22.68	CFS	9.31	9.32	9.25	9.14	9.05	9.05	9.14
9.15								

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23.16	CFS	9.08	9.00	8.94	8.89	8.86	8.79	8.63
8.54								
23.64	CFS	8.57	8.63	8.64	8.53	8.39	8.35	8.61
8.38								
24.12	CFS	6.78	4.86	3.26	2.02	1.25	.79	.49

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
4.63 WATERSHED INCHES; 508 CFS-HRS; 42.0 ACRE-  
FEET.

OPERATION ADDHYD XSECTION 86

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.34	1958.8	(NULL)
12.65	1990.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
5.31 WATERSHED INCHES; 5254 CFS-HRS; 434.2 ACRE-  
FEET.

OPERATION RUNOFF XSECTION 87

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
----------------	---------------------	------

ELEVATION(FEET)		
12.13	76.9	(RUNOFF)
15.84	2.2	(RUNOFF)
22.42	1.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 6.87 WATERSHED INCHES; 70 CFS-HRS; 5.8 ACRE-  
 FEET.

OPERATION ADDHYD XSECTION 88

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK
ELEVATION(FEET)		
12.33	1987.8	(NULL)
12.65	2002.8	(NULL)
23.97	88.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55  
 SQ.MI.

HRS	.46	.51	.56	.62	.68	.74	.80
3.06 CFS							
.87							
3.54 CFS	.94	1.02	1.11	1.20	1.31	1.42	1.53
1.65							
4.02 CFS	1.76	1.89	2.01	2.13	2.25	2.38	2.52
2.67							
4.50 CFS	2.83	2.98	3.12	3.28	3.44	3.60	3.78
3.96							
4.98 CFS	4.15	4.36	4.58	4.83	5.10	5.37	5.65
5.94							
5.46 CFS	6.25	6.57	6.91	7.25	7.60	7.94	8.29
8.65							
5.94 CFS	9.05	9.45	9.85	10.22	10.61	11.01	11.41
11.83							
6.42 CFS	12.29	12.76	13.25	13.76	14.28	14.82	15.43
16.08							
6.90 CFS	16.74	17.41	18.15	18.90	19.67	20.47	21.29
22.15							
7.38 CFS	23.05	24.00	24.97	25.97	26.99	28.04	29.11
30.17							
7.86 CFS	31.26	32.38	33.50	34.63	35.82	37.01	38.20
39.47							
8.34 CFS	40.78	42.07	43.36	44.71	46.10	47.51	48.93
50.36							
8.82 CFS	51.83	53.34	54.90	56.60	58.36	60.13	61.98
63.92							

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9.30 CFS	65.98	68.16	70.48	72.95	75.61	78.50	81.64
85.01							
9.78 CFS	89	92	96	100	105	109	114
120							
10.26 CFS	125	130	135	141	146	152	158
165							
10.74 CFS	172	179	188	197	207	218	231



246							
11.22 CFS	262	280	300	321	344	369	401
442							
11.70 CFS	489	542	608	692	804	970	1210
1512							
12.18 CFS	1773	1923	1983	1983	1947	1880	1938
1979							
12.66 CFS	2001	1946	1881	1761	1655	1521	1419
1302							
13.14 CFS	1227	1142	1094	1036	988	939	892
850							
13.62 CFS	808	770	732	700	670	645	622
603							
14.10 CFS	584	568	552	538	524	513	500
490							
14.58 CFS	477	467	455	445	434	423	412
401							
15.06 CFS	391	380	370	359	348	337	326
311							
15.54 CFS	294	277	261	248	237	229	223
218							
16.02 CFS	213	209	206	203	201	198	196
194							
16.50 CFS	191	189	187	185	183	181	179
177							
16.98 CFS	176	174	172	170	168	167	165
163							
17.46 CFS	162	160	158	156	154	153	151
149							
17.94 CFS	148	146	144	143	141	139	138
136							
18.42 CFS	135	133	132	131	130	129	128
127							
18.90 CFS	127	126	125	125	124	123	123
123							
19.38 CFS	122	122	121	121	120	120	119
119							
19.86 CFS	119	118	118	117	117	117	116
116							
20.34 CFS	115	115	114	114	113	113	112
112							
20.82 CFS	111	111	111	110	109	109	109
108							
21.30 CFS	108	107	107	107	106	106	105
105							
21.78 CFS	104	104	104	103	103	102	102
101							
22.26 CFS	101	100	100	100	99	99	98
98							
22.74 CFS	97.33	96.91	96.37	95.78	95.32	95.05	94.73
94.27							
23.22 CFS	93.74	93.23	92.78	92.39	91.99	91.43	90.85
90.45							
23.70 CFS	90.19	89.89	89.37	88.71	88.13	88.14	87.69
84.78							
24.18 CFS	80.02	74.75	69.84	65.28	60.83	56.13	50.97
45.43							
24.66 CFS	39.86	34.64	30.01	26.03	22.70	20.00	17.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.33 WATERSHED INCHES; 5325 CFS-HRS; 440.0 ACRE-  
 FEET.

OPERATION DIVERT XSECTION 81  
 OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
11.94	730.0 *	178.42
23.97	88.2	176.02

\* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 4049 CFS-HRS; 334.6 ACRE-FEET.

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OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 82)

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	1257.8	179.61
12.65	1272.8	179.64

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.28 WATERSHED INCHES; 1276 CFS-HRS; 105.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 71

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	1257.8	(NULL)
12.65	1272.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 1.28 WATERSHED INCHES; 1276 CFS-HRS; 105.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 89

PEAK TIME(HRS) ELEVATION(FEET)	PEAK DISCHARGE(CFS)	PEAK
12.33	1987.8	(NULL)
12.65	2002.8	(NULL)
23.97	88.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM =99  
 HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = 1.55 SQ.MI.

3.06 CFS	.46	.51	.56	.62	.68	.74	.80
.87							
3.54 CFS	.94	1.02	1.11	1.20	1.31	1.42	1.53
1.65							
4.02 CFS	1.76	1.89	2.01	2.13	2.25	2.38	2.52
2.67							

4.50 CFS	2.83	2.98	3.12	3.28	3.44	3.60	3.78
3.96							
4.98 CFS	4.15	4.36	4.58	4.83	5.10	5.37	5.65
5.94							
5.46 CFS	6.25	6.57	6.91	7.25	7.60	7.94	8.29
8.65							
5.94 CFS	9.05	9.45	9.85	10.22	10.61	11.01	11.41
11.83							
6.42 CFS	12.29	12.76	13.25	13.76	14.28	14.82	15.43
16.08							
6.90 CFS	16.74	17.41	18.15	18.90	19.67	20.47	21.29
22.15							
7.38 CFS	23.05	24.00	24.97	25.97	26.99	28.04	29.11
30.17							
7.86 CFS	31.26	32.38	33.50	34.63	35.82	37.01	38.20
39.47							
8.34 CFS	40.78	42.07	43.36	44.71	46.10	47.51	48.93
50.36							
8.82 CFS	51.83	53.34	54.90	56.60	58.36	60.13	61.98
63.92							
9.30 CFS	65.98	68.16	70.48	72.95	75.61	78.50	81.64
85.01							
9.78 CFS	89	92	96	100	105	109	114
120							
10.26 CFS	125	130	135	141	146	152	158
165							
10.74 CFS	172	179	188	197	207	218	231
246							
11.22 CFS	262	280	300	321	344	369	401
442							
11.70 CFS	489	542	608	692	804	970	1210
1512							
12.18 CFS	1773	1923	1983	1983	1947	1880	1938
1979							

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12.66 CFS	2001	1946	1881	1761	1655	1521	1419
1302							
13.14 CFS	1227	1142	1094	1036	988	939	892
850							
13.62 CFS	808	770	732	700	670	645	622
603							
14.10 CFS	584	568	552	538	524	513	500
490							
14.58 CFS	477	467	455	445	434	423	412
401							
15.06 CFS	391	380	370	359	348	337	326
311							
15.54 CFS	294	277	261	248	237	229	223
218							
16.02 CFS	213	209	206	203	201	198	196
194							
16.50 CFS	191	189	187	185	183	181	179
177							
16.98 CFS	176	174	172	170	168	167	165
163							

17.46 CFS	162	160	158	156	154	153	151
149							
17.94 CFS	148	146	144	143	141	139	138
136							
18.42 CFS	135	133	132	131	130	129	128
127							
18.90 CFS	127	126	125	125	124	123	123
123							
19.38 CFS	122	122	121	121	120	120	119
119							
19.86 CFS	119	118	118	117	117	117	116
116							
20.34 CFS	115	115	114	114	113	113	112
112							
20.82 CFS	111	111	111	110	109	109	109
108							
21.30 CFS	108	107	107	107	106	106	105
105							
21.78 CFS	104	104	104	103	103	102	102
101							
22.26 CFS	101	100	100	100	99	99	98
98							
22.74 CFS	97.33	96.91	96.37	95.78	95.32	95.05	94.73
94.27							
23.22 CFS	93.74	93.23	92.78	92.39	91.99	91.43	90.85
90.45							
23.70 CFS	90.19	89.89	89.37	88.71	88.13	88.14	87.69
84.78							
24.18 CFS	80.02	74.75	69.84	65.28	60.83	56.13	50.97
45.43							
24.66 CFS	39.86	34.64	30.01	26.03	22.70	20.00	17.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)  
 5.33 WATERSHED INCHES; 5325 CFS-HRS; 440.0 ACRE-  
 FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 6

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.  
 RAINFALL NUMBER 9, ARC 2

MAIN TIME INCREMENT .060 HOURS

ALTERNATE	1	STORM	2					
STRUCTURE 11	RESVOR	.09	1.39	382.15	12.47	51	566.7	
XSECTION 7	ADDHYD	.17	1.31	---	12.44	85	500.0	
XSECTION 107	DIVERT	.00	1.31	---	12.44	85	*****	
XSECTION 82	DIVERT	.17	.00	---	.00	0	.0	
STRUCTURE 84	RESVOR	.17	.00	---	.00	0	.0	
XSECTION 108	ADDHYD	.17	1.31	---	12.44	85	500.0	
XSECTION 8	REACH	.17	1.31	357.10	12.52	84	494.1	
STRUCTURE 21	RESVOR	.07	1.91	374.07	13.56F	10F	142.9	
STRUCTURE 22	RESVOR	.07	1.91	353.09	13.68F	10F	142.9	
STRUCTURE 23	RESVOR	.32	1.40	337.25	12.61	106	331.3	
XSECTION 16	REACH	.32	1.40	332.26	12.61	106	331.3	
STRUCTURE 24	RESVOR	.03	2.46	---	12.18	38	1266.7	
XSECTION 20	ADDHYD	.05	2.19	---	12.16	75	1500.0	
XSECTION 21	ADDHYD	.41	1.52	---	12.19	202	492.7	
XSECTION 122	DIVERT	.00	1.52	---	12.12F	168F	*****	
XSECTION 82	DIVERT	.41	.02	175.40	12.19	34	82.9	
STRUCTURE 83	RESVOR	.41	.02	---	.00	0	.0	
XSECTION 123	ADDHYD	.41	1.51	---	12.12F	168F	409.8	
XSECTION 23	REACH	.41	1.50	315.36	12.43	153	373.2	
STRUCTURE 31	RESVOR	.05	1.55	362.31	12.46	28	560.0	
STRUCTURE 1	RESVOR	.60	1.49	---	12.39	261	435.0	
STRUCTURE 32	RESVOR	.01	2.01	379.28	13.56R	1R	100.0	
STRUCTURE 33	RESVOR	.03	2.08	355.98	12.47	18	600.0	
STRUCTURE 34	RESVOR	.04	2.06	---	12.48	18	450.0	
STRUCTURE 35	RESVOR	.06	2.10	---	12.15	45	750.0	
XSECTION 141	ADDHYD	.07	1.98	---	12.15	46	657.1	
XSECTION 43	ADDHYD	.77	1.56	---	12.37	387	502.6	
XSECTION 144	DIVERT	.00	1.56	---	12.37	387	*****	

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

ALTERNATE 1 STORM 2

XSECTION	82	DIVERT	.77	.00	---	.00	0	.0
STRUCTURE	82	RESVOR	.77	.00	---	.00	0	.0
XSECTION	145	ADDHYD	.77	1.56	---	12.37	387	502.6
XSECTION	44	REACH	.77	1.56	290.15	12.52	360	467.5
STRUCTURE	2	RESVOR	.77	1.56	---	12.52	360	467.5
XSECTION	49	ADDHYD	.82	1.55	---	12.51	377	459.8
XSECTION	51	REACH	.93	1.54	284.55	12.61	420	451.6
XSECTION	60	ADDHYD	1.01	1.48	---	12.60	434	429.7
STRUCTURE	3	RESVOR	1.01	1.48	---	12.60	434	429.7
XSECTION	62	ADDHYD	1.02	1.47	---	12.59	438	429.4
XSECTION	162	DIVERT	.00	1.47	---	12.59	438	*****
XSECTION	82	DIVERT	1.02	.00	---	.00	0	.0
STRUCTURE	73	RESVOR	1.02	.00	---	.00	0	.0
XSECTION	163	ADDHYD	1.02	1.47	---	12.59	438	429.4
XSECTION	63	REACH	1.02	1.47	249.55	12.77	413	404.9
STRUCTURE	61	RESVOR	.01	1.71	332.36	12.74	5	500.0
STRUCTURE	62	RESVOR	.05	.83	290.42	12.43	12	240.0
STRUCTURE	63	RESVOR	.01	1.40	263.40	12.49	3	300.0
XSECTION	76	ADDHYD	1.28	1.34	---	12.74	459	358.6
XSECTION	176	DIVERT	.00	1.34	---	12.74	459	*****
XSECTION	82	DIVERT	1.28	.00	---	.00	0	.0
STRUCTURE	72	RESVOR	1.28	.00	---	.00	0	.0
XSECTION	177	ADDHYD	1.28	1.34	---	12.74	459	358.6
XSECTION	77	REACH	1.28	1.34	229.21	12.81	458	357.8
XSECTION	84	RUNOFF	.07	.89	---	12.27	33	471.4
XSECTION	184	DIVERT	.00	.89	---	12.27	33	*****
XSECTION	82	DIVERT	.07	.00	---	.00	0	.0
STRUCTURE	81	RESVOR	.07	.00	---	.00	0	.0
XSECTION	185	ADDHYD	.07	.89	---	12.27	33	471.4
XSECTION	187	ADDHYD	.12	.75	---	12.28	42	350.0

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Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				AMOUNT	ELEVATION	TIME	RATE
ID	OPERATION	AREA (SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)
ALTERNATE	1	STORM	2				

XSECTION	85	ADDHYD	.17	.80	---	12.20	68	400.0
XSECTION	88	ADDHYD	1.55	1.26	---	12.79	492	317.4
XSECTION	81	DIVERT	.00	1.26	177.74	12.79	492	*****
XSECTION	82	DIVERT	1.55	.00	---	.00	0	.0
STRUCTURE	71	RESVOR	1.55	.00	---	.00	0	.0
XSECTION	89	ADDHYD	1.55	1.26	---	12.79	492	317.4

RAINFALL OF 4.10 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE	1	STORM	5					
STRUCTURE	11	RESVOR	.09	2.13	382.73	12.33	97	1077.8
XSECTION	7	ADDHYD	.17	2.02	---	12.38	161	947.1
XSECTION	107	DIVERT	.00	2.02	---	12.38	161	*****
XSECTION	82	DIVERT	.17	.00	---	.00	0	.0
STRUCTURE	84	RESVOR	.17	.00	---	.00	0	.0
XSECTION	108	ADDHYD	.17	2.02	---	12.38	161	947.1
XSECTION	8	REACH	.17	2.02	357.55	12.45	156	917.6
STRUCTURE	21	RESVOR	.07	2.74	375.57	12.90	30	428.6
STRUCTURE	22	RESVOR	.07	2.74	354.29	13.04	29	414.3
STRUCTURE	23	RESVOR	.32	2.12	339.31	12.68	148	462.5
XSECTION	16	REACH	.32	2.12	332.55	12.68	148	462.5
STRUCTURE	24	RESVOR	.03	3.34	---	12.18	51	1700.0
XSECTION	20	ADDHYD	.05	3.05	---	12.16	103	2060.0
XSECTION	21	ADDHYD	.41	2.26	---	12.17	279	680.5
XSECTION	122	DIVERT	.00	2.26	---	12.06F	168F	*****
XSECTION	82	DIVERT	.41	.13	176.14	12.17	111	270.7
STRUCTURE	83	RESVOR	.41	.00	---	13.67	0	.0
XSECTION	123	ADDHYD	.41	2.13	---	12.81	168	409.8
XSECTION	23	REACH	.41	2.14	315.42	13.01	168	409.8
STRUCTURE	31	RESVOR	.05	2.31	363.56	12.36	55	1100.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)					
ALTERNATE	1	STORM	5					
STRUCTURE	1	RESVOR	.60	2.15	---	12.42	324	540.0

STRUCTURE 32	RESVOR	.01	2.77	379.83	12.63T	4T	400.0
STRUCTURE 33	RESVOR	.03	2.91	356.65	12.37	33	1100.0
STRUCTURE 34	RESVOR	.04	2.87	---	12.39	35	875.0
STRUCTURE 35	RESVOR	.06	2.93	---	12.16	74	1233.3
XSECTION 141	ADDHYD	.07	2.79	---	12.16	77	1100.0
XSECTION 43	ADDHYD	.77	2.25	---	12.35	513	666.2
XSECTION 144	DIVERT	.00	2.25	---	12.35	513	*****
XSECTION 82	DIVERT	.77	.00	---	.00	0	.0
STRUCTURE 82	RESVOR	.77	.00	---	.00	0	.0
XSECTION 145	ADDHYD	.77	2.25	---	12.35	513	666.2
XSECTION 44	REACH	.77	2.25	290.41	12.49	485	629.9
STRUCTURE 2	RESVOR	.77	2.25	---	12.49	485	629.9
XSECTION 49	ADDHYD	.82	2.25	---	12.47	512	624.4
XSECTION 51	REACH	.93	2.23	285.04	12.55	591	635.5
XSECTION 60	ADDHYD	1.01	2.17	---	12.54	615	608.9
STRUCTURE 3	RESVOR	1.01	2.17	---	12.54	615	608.9
XSECTION 62	ADDHYD	1.02	2.16	---	12.54	621	608.8
XSECTION 162	DIVERT	.00	2.16	---	12.54	621	*****
XSECTION 82	DIVERT	1.02	2.16	---	.00	0	.0
STRUCTURE 73	RESVOR	1.02	.00	---	12.54R	0R	.0
XSECTION 163	ADDHYD	1.02	2.16	---	12.54	621	608.8
XSECTION 63	REACH	1.02	2.15	249.86	12.69	594	582.4
STRUCTURE 61	RESVOR	.01	2.50	333.50	12.82	6	600.0
STRUCTURE 62	RESVOR	.05	1.41	292.31	12.54	16	320.0
STRUCTURE 63	RESVOR	.01	2.13	265.07	12.59	4	400.0
XSECTION 76	ADDHYD	1.28	2.00	---	12.66	672	525.0
XSECTION 176	DIVERT	.00	2.00	---	12.66	672	*****
XSECTION 82	DIVERT	1.28	.00	---	.00	0	.0
STRUCTURE 72	RESVOR	1.28	.00	---	.00	0	.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:

F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE	1	STORM	5				
XSECTION 177	ADDHYD	1.28	2.00	---	12.66	672	525.0
XSECTION 77	REACH	1.28	2.00	229.74	12.73	672	525.0



XSECTION	84	RUNOFF	.07	1.49	---	12.26	57	814.3
XSECTION	184	DIVERT	.00	1.49	---	12.26	57	*****
XSECTION	82	DIVERT	.07	.00	---	.00	0	.0
STRUCTURE	81	RESVOR	.07	.00	---	.00	0	.0
XSECTION	185	ADDHYD	.07	1.49	---	12.26	57	814.3
XSECTION	187	ADDHYD	.12	1.29	---	12.26	79	658.3
XSECTION	85	ADDHYD	.17	1.37	---	12.20	125	735.3
XSECTION	88	ADDHYD	1.55	1.91	---	12.69	735	474.2
XSECTION	81	DIVERT	.00	1.91	178.42	12.69	731	*****
XSECTION	82	DIVERT	1.55	.00	175.04	12.69	4	2.6
STRUCTURE	71	RESVOR	1.55	.00	---	12.69	4	2.6
XSECTION	89	ADDHYD	1.55	1.91	---	12.69	735	474.2

RAINFALL OF 4.91 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 10

STRUCTURE	11	RESVOR	.09	2.81	383.02	12.34	121	1344.4
XSECTION	7	ADDHYD	.17	2.70	---	12.36	213	1252.9
XSECTION	107	DIVERT	.00	2.70	---	12.36	213	*****
XSECTION	82	DIVERT	.17	2.70	---	.00	0	.0
STRUCTURE	84	RESVOR	.17	2.70	---	.00	0	.0
XSECTION	108	ADDHYD	.17	2.70	---	12.36	213	1252.9
XSECTION	8	REACH	.17	2.70	357.82	12.43	212	1247.1
STRUCTURE	21	RESVOR	.07	3.49	376.27	12.68	61	871.4
STRUCTURE	22	RESVOR	.07	3.49	355.97	12.81	57	814.3
STRUCTURE	23	RESVOR	.32	2.79	341.39	12.83	182	568.8
XSECTION	16	REACH	.32	2.79	332.78	12.83	182	568.8
STRUCTURE	24	RESVOR	.03	4.13	---	12.18	63	2100.0

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE AREA	RUNOFF AMOUNT	ELEVATION (FT)	PEAK DISCHARGE			
					TIME (HR)	RATE (CFS)	RATE (CSM)	
ALTERNATE	1	STORM	10					
XSECTION	20	ADDHYD	.05	3.82	---	12.16	127	2540.0
XSECTION	21	ADDHYD	.41	2.96	---	12.17	340	829.3
XSECTION	122	DIVERT	.00	2.96	---	12.00F	168F	*****

XSECTION	82	DIVERT	.41	.33	176.45	12.17	172	419.5
STRUCTURE	83	RESVOR	.41	.00	---	14.38	0	.0
XSECTION	123	ADDHYD	.41	2.63	---	13.47	169	412.2
XSECTION	23	REACH	.41	2.62	315.43	13.65	168	409.8
STRUCTURE	31	RESVOR	.05	3.02	363.94	12.32	78	1560.0
STRUCTURE	1	RESVOR	.60	2.71	---	12.38	402	670.0
STRUCTURE	32	RESVOR	.01	3.48	380.16	12.40	9	900.0
STRUCTURE	33	RESVOR	.03	3.67	357.05	12.32	49	1633.3
STRUCTURE	34	RESVOR	.04	3.62	---	12.35	54	1350.0
STRUCTURE	35	RESVOR	.06	3.69	---	12.18	101	1683.3
XSECTION	141	ADDHYD	.07	3.53	---	12.18	106	1514.3
XSECTION	43	ADDHYD	.77	2.85	---	12.33	662	859.7
XSECTION	144	DIVERT	.00	2.85	---	12.18F	543F*****	
XSECTION	82	DIVERT	.77	.05	176.17	12.33	119	154.5
STRUCTURE	82	RESVOR	.77	.00	---	24.00	0	.0
XSECTION	145	ADDHYD	.77	2.80	---	12.45	545	707.8
XSECTION	44	REACH	.77	2.80	290.52	12.59	539	700.0
STRUCTURE	2	RESVOR	.77	2.80	---	12.59	539	700.0
XSECTION	49	ADDHYD	.82	2.80	---	12.56	565	689.0
XSECTION	51	REACH	.93	2.80	285.26	12.54	675	725.8
XSECTION	60	ADDHYD	1.01	2.73	---	12.52	709	702.0
STRUCTURE	3	RESVOR	1.01	2.73	---	12.52	709	702.0
XSECTION	62	ADDHYD	1.02	2.72	---	12.51	720	705.9
XSECTION	162	DIVERT	.00	2.72	---	12.36F	621F*****	
XSECTION	82	DIVERT	1.02	.05	176.07	12.51	99	97.1
STRUCTURE	73	RESVOR	1.02	.05	---	12.51	99	97.1
XSECTION	163	ADDHYD	1.02	2.72	---	12.51	720	705.9

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SUMMARY TABLE 1

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION	TIME	RATE	RATE	
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	10					
XSECTION	63	REACH	1.02	2.72	250.02	12.68	696	682.4
STRUCTURE	61	RESVOR	.01	3.24	334.33	12.74	8	800.0
STRUCTURE	62	RESVOR	.05	1.98	293.76	12.62	18	360.0
STRUCTURE	63	RESVOR	.01	2.82	265.90	12.33	10	1000.0

XSECTION	76	ADDHYD	1.28	2.57	---	12.63	811	633.6
XSECTION	176	DIVERT	.00	2.57	---	12.42F	691F*****	
XSECTION	82	DIVERT	1.28	.05	176.18	12.63	120	93.8
STRUCTURE	72	RESVOR	1.28	.05	---	12.63	120	93.8
XSECTION	177	ADDHYD	1.28	2.57	---	12.63	811	633.6
XSECTION	77	REACH	1.28	2.57	230.03	12.69	810	632.8
XSECTION	84	RUNOFF	.07	2.08	---	12.25	82	1171.4
XSECTION	184	DIVERT	.00	2.08	---	12.25	82	*****
XSECTION	82	DIVERT	.07	.00	---	.00	0	.0
STRUCTURE	81	RESVOR	.07	.00	---	.00	0	.0
XSECTION	185	ADDHYD	.07	2.08	---	12.25	82	1171.4
XSECTION	187	ADDHYD	.12	1.84	---	12.25	116	966.7
XSECTION	85	ADDHYD	.17	1.93	---	12.20	182	1070.6
XSECTION	88	ADDHYD	1.55	2.47	---	12.71	894	576.8
XSECTION	81	DIVERT	.00	2.47	178.42	12.42F	730F*****	
XSECTION	82	DIVERT	1.55	.07	176.41	12.71	164	105.8
STRUCTURE	71	RESVOR	1.55	.07	---	12.71	164	105.8
XSECTION	89	ADDHYD	1.55	2.47	---	12.71	894	576.8

RAINFALL OF 6.14 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 25

STRUCTURE	11	RESVOR	.09	3.89	383.65	12.33	175	1944.4
XSECTION	7	ADDHYD	.17	3.77	---	12.35	307	1805.9
XSECTION	107	DIVERT	.00	3.77	---	12.18F	213F*****	
XSECTION	82	DIVERT	.17	.21	176.05	12.35	94	552.9

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

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XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AREA	AMOUNT	ELEVATION	TIME	RATE
ID	OPERATION	(SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	25					
STRUCTURE	84	RESVOR	.17	.00	---	23.11	0	.0
XSECTION	108	ADDHYD	.17	3.57	---	12.51	215	1264.7
XSECTION	8	REACH	.17	3.56	357.84	12.57	214	1258.8
STRUCTURE	21	RESVOR	.07	4.61	377.05	12.54	109	1557.1
STRUCTURE	22	RESVOR	.07	4.60	358.68	12.69	100	1428.6

STRUCTURE	23	RESVOR	.32	3.75	344.17	12.91	223	696.9
XSECTION	16	REACH	.32	3.75	333.07	12.91	223	696.9
STRUCTURE	24	RESVOR	.03	5.34	---	12.18	80	2666.7
XSECTION	20	ADDHYD	.05	5.01	---	12.16	164	3280.0
XSECTION	21	ADDHYD	.41	3.96	---	12.17	424	1034.1
XSECTION	122	DIVERT	.00	3.96	---	11.88F	168F	*****
XSECTION	82	DIVERT	.41	.71	176.89	12.17	256	624.4
STRUCTURE	83	RESVOR	.41	.28	322.49	12.96	151	368.3
XSECTION	123	ADDHYD	.41	3.53	---	12.96	319	778.0
XSECTION	23	REACH	.41	3.45	315.76	13.26	257	626.8
STRUCTURE	31	RESVOR	.05	4.16	364.70	12.32	107	2140.0
STRUCTURE	1	RESVOR	.60	3.62	---	12.35	512	853.3
STRUCTURE	32	RESVOR	.01	4.57	380.46	12.27	21	2100.0
STRUCTURE	33	RESVOR	.03	4.86	357.38	12.28	71	2366.7
STRUCTURE	34	RESVOR	.04	4.79	---	12.28	91	2275.0
STRUCTURE	35	RESVOR	.06	4.87	---	12.20	155	2583.3
XSECTION	141	ADDHYD	.07	4.69	---	12.20	162	2314.3
XSECTION	43	ADDHYD	.77	3.82	---	12.30	888	1153.2
XSECTION	144	DIVERT	.00	3.82	---	12.12F	543F	*****
XSECTION	82	DIVERT	.77	.23	177.23	12.30	345	448.1
STRUCTURE	82	RESVOR	.77	.00	---	13.49	0	.0
XSECTION	145	ADDHYD	.77	3.59	---	12.57	546	709.1
XSECTION	44	REACH	.77	3.60	290.53	12.69	544	706.5
STRUCTURE	2	RESVOR	.77	3.60	---	12.69	544	706.5
XSECTION	49	ADDHYD	.82	3.62	---	12.30	602	734.1

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SUMMARY TABLE 1

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A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD		DRAINAGE	RUNOFF	PEAK DISCHARGE			
	CONTROL	OPERATION			TIME	RATE	RATE	
ID			AREA	AMOUNT	ELEVATION	(HR)	(CFS)	(CSM)
			(SQ MI)	(IN)	(FT)			
ALTERNATE	1	STORM	25					
XSECTION	51	REACH	.93	3.65	285.52	12.43	786	845.2
XSECTION	60	ADDHYD	1.01	3.58	---	12.39	853	844.6
STRUCTURE	3	RESVOR	1.01	3.58	---	12.39	853	844.6
XSECTION	62	ADDHYD	1.02	3.57	---	12.38	874	856.9
XSECTION	162	DIVERT	.00	3.57	---	12.18F	621F	*****

XSECTION	82	DIVERT	1.02	.18	176.87	12.38	253	248.0
STRUCTURE	73	RESVOR	1.02	.18	---	12.38	253	248.0
XSECTION	163	ADDHYD	1.02	3.57	---	12.38	874	856.9
XSECTION	63	REACH	1.02	3.57	250.22	12.54	840	823.5
STRUCTURE	61	RESVOR	.01	4.38	334.86	12.62	14	1400.0
STRUCTURE	62	RESVOR	.05	2.94	295.13	12.47	37	740.0
STRUCTURE	63	RESVOR	.01	3.90	266.77	12.29	16	1600.0
XSECTION	76	ADDHYD	1.28	3.44	---	12.50	1041	813.3
XSECTION	176	DIVERT	.00	3.44	---	12.18F	691F*****	
XSECTION	82	DIVERT	1.28	.24	177.25	12.50	350	273.4
STRUCTURE	72	RESVOR	1.28	.24	---	12.50	350	273.4
XSECTION	177	ADDHYD	1.28	3.44	---	12.50	1041	813.3
XSECTION	77	REACH	1.28	3.44	230.43	12.56	1040	812.5
XSECTION	84	RUNOFF	.07	3.05	---	12.25	121	1728.6
XSECTION	184	DIVERT	.00	3.05	---	12.25	118	*****
XSECTION	82	DIVERT	.07	.00	175.03	12.24	2	28.6
STRUCTURE	81	RESVOR	.07	.00	---	.00	0	.0
XSECTION	185	ADDHYD	.07	3.04	---	12.25	118	1685.7
XSECTION	187	ADDHYD	.12	2.75	---	12.25	175	1458.3
XSECTION	85	ADDHYD	.17	2.87	---	12.19	273	1605.9
XSECTION	88	ADDHYD	1.55	3.36	---	12.56	1204	776.8
XSECTION	81	DIVERT	.00	3.36	178.42	12.12F	730F*****	
XSECTION	82	DIVERT	1.55	.34	177.68	12.56	474	305.8
STRUCTURE	71	RESVOR	1.55	.34	---	12.56	474	305.8
XSECTION	89	ADDHYD	1.55	3.36	---	12.56	1204	776.8

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SUMMARY TABLE 1

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE			
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)

RAINFALL OF 7.23 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 50

STRUCTURE	11	RESVOR	.09	4.89	384.18	12.32	219	2433.3
XSECTION	7	ADDHYD	.17	4.75	---	12.35	387	2276.5
XSECTION	107	DIVERT	.00	4.75	---	12.12F	213F*****	
XSECTION	82	DIVERT	.17	.50	176.46	12.35	174	1023.5
STRUCTURE	84	RESVOR	.17	.00	---	22.72	0	.0

XSECTION	108	ADDHYD	.17	4.26	---	12.57	213	1252.9
XSECTION	8	REACH	.17	4.26	357.83	12.63	213	1252.9
STRUCTURE	21	RESVOR	.07	5.58	377.76	12.51	140	2000.0
STRUCTURE	22	RESVOR	.07	5.57	359.61	12.80	112	1600.0
STRUCTURE	23	RESVOR	.32	4.58	346.08	13.01	253	790.6
XSECTION	16	REACH	.32	4.58	333.24	13.01	253	790.6
STRUCTURE	24	RESVOR	.03	6.42	---	12.18	95	3166.7
XSECTION	20	ADDHYD	.05	6.08	---	12.16	197	3940.0
XSECTION	21	ADDHYD	.41	4.83	---	12.16	499	1217.1
XSECTION	122	DIVERT	.00	4.83	---	11.76F	168F	*****
XSECTION	82	DIVERT	.41	1.08	177.18	12.16	331	807.3
STRUCTURE	83	RESVOR	.41	.46	322.72	12.60	224	546.3
XSECTION	123	ADDHYD	.41	4.22	---	12.60	392	956.1
XSECTION	23	REACH	.41	4.37	315.94	13.02	313	763.4
STRUCTURE	31	RESVOR	.05	5.15	365.04	12.30	132	2640.0
STRUCTURE	1	RESVOR	.60	4.56	---	12.33	609	1015.0
STRUCTURE	32	RESVOR	.01	5.55	380.63	12.24	29	2900.0
STRUCTURE	33	RESVOR	.03	5.93	357.61	12.27	85	2833.3
STRUCTURE	34	RESVOR	.04	5.84	---	12.26	114	2850.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				ELEVATION	TIME	RATE	RATE	
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	50					
STRUCTURE	35	RESVOR	.06	5.92	---	12.19	206	3433.3
XSECTION	141	ADDHYD	.07	5.72	---	12.18	216	3085.7
XSECTION	43	ADDHYD	.77	4.74	---	12.30	1075	1396.1
XSECTION	144	DIVERT	.00	4.74	---	12.87	549	*****
XSECTION	82	DIVERT	.77	.43	177.88	12.30	532	690.9
STRUCTURE	82	RESVOR	.77	.16	319.63	12.41	666	864.9
XSECTION	145	ADDHYD	.77	4.48	---	12.41	1209	1570.1
XSECTION	44	REACH	.77	4.55	291.23	12.48	979	1271.4
STRUCTURE	2	RESVOR	.77	4.55	---	12.48	979	1271.4
XSECTION	49	ADDHYD	.82	4.57	---	12.48	1036	1263.4
XSECTION	51	REACH	.93	4.59	286.21	12.55	1121	1205.4
XSECTION	60	ADDHYD	1.01	4.51	---	12.55	1180	1168.3

STRUCTURE	3	RESVOR	1.01	4.51	---	12.55	1180	1168.3
XSECTION	62	ADDHYD	1.02	4.50	---	12.55	1196	1172.5
XSECTION	162	DIVERT	.00	4.50	---	12.06F	621F*****	
XSECTION	82	DIVERT	1.02	.49	178.02	12.55	575	563.7
STRUCTURE	73	RESVOR	1.02	.49	---	12.55	575	563.7
XSECTION	163	ADDHYD	1.02	4.50	---	12.55	1196	1172.5
XSECTION	63	REACH	1.02	4.51	250.56	12.63	1111	1089.2
STRUCTURE	61	RESVOR	.01	5.41	335.25	12.57	19	1900.0
STRUCTURE	62	RESVOR	.05	3.83	296.06	12.44	52	1040.0
STRUCTURE	63	RESVOR	.01	4.90	267.40	12.24	27	2700.0
XSECTION	76	ADDHYD	1.28	4.37	---	12.62	1352	1056.3
XSECTION	176	DIVERT	.00	4.37	---	12.12F	691F*****	
XSECTION	82	DIVERT	1.28	.61	178.24	12.62	661	516.4
STRUCTURE	72	RESVOR	1.28	.61	---	12.62	661	516.4
XSECTION	177	ADDHYD	1.28	4.37	---	12.62	1352	1056.3
XSECTION	77	REACH	1.28	4.36	230.85	12.68	1350	1054.7
XSECTION	84	RUNOFF	.07	3.96	---	12.24	157	2242.9
XSECTION	184	DIVERT	.00	3.96	---	12.18F	118F*****	

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SUMMARY TABLE 1

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AREA	AMOUNT	ELEVATION	TIME	RATE
ID	OPERATION	(SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	50					
XSECTION	82	DIVERT	.07	.14	175.46	12.24	39	557.1
STRUCTURE	81	RESVOR	.07	.14	---	.00	0	.0
XSECTION	185	ADDHYD	.07	3.81	---	12.18F	118F	1685.7
XSECTION	187	ADDHYD	.12	3.53	---	12.25	195	1625.0
XSECTION	85	ADDHYD	.17	3.69	---	12.17	332	1952.9
XSECTION	88	ADDHYD	1.55	4.27	---	12.47	1551	1000.6
XSECTION	81	DIVERT	.00	4.27	178.42	12.06F	730F*****	
XSECTION	82	DIVERT	1.55	.75	178.65	12.47	821	529.7
STRUCTURE	71	RESVOR	1.55	.75	---	12.47	821	529.7
XSECTION	89	ADDHYD	1.55	4.27	---	12.47	1551	1000.6

RAINFALL OF 8.47 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 99

STRUCTURE	11	RESVOR	.09	6.04	384.78	12.32	269	2988.9
XSECTION	7	ADDHYD	.17	5.90	---	12.34	479	2817.6
XSECTION	107	DIVERT	.00	5.90	---	12.06F	213F	*****
XSECTION	82	DIVERT	.17	.89	176.94	12.34	266	1564.7
STRUCTURE	84	RESVOR	.17	.00	---	23.74	0	.0
XSECTION	108	ADDHYD	.17	5.02	---	12.69	216	1270.6
XSECTION	8	REACH	.17	5.02	357.84	12.75	215	1264.7
STRUCTURE	21	RESVOR	.07	6.69	378.71	12.54	154	2200.0
STRUCTURE	22	RESVOR	.07	6.68	360.78	12.91	127	1814.3
STRUCTURE	23	RESVOR	.32	5.48	346.82	12.86	359	1121.9
XSECTION	16	REACH	.32	5.48	333.85	12.86	359	1121.9
STRUCTURE	24	RESVOR	.03	7.65	---	12.18	112	3733.3
XSECTION	20	ADDHYD	.05	7.30	---	12.16	234	4680.0
XSECTION	21	ADDHYD	.41	5.81	---	12.16	586	1429.3
XSECTION	122	DIVERT	.00	5.81	---	11.64F	168F	*****
XSECTION	82	DIVERT	.41	1.57	177.48	12.16	418	1019.5

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)
ALTERNATE	1	STORM	99					
STRUCTURE	83	RESVOR	.41	1.22	323.00	12.37	309	753.7
XSECTION	123	ADDHYD	.41	5.46	---	12.37	477	1163.4
XSECTION	23	REACH	.41	5.28	316.22	12.97	418	1019.5
STRUCTURE	31	RESVOR	.05	6.35	365.43	12.30	161	3220.0
STRUCTURE	1	RESVOR	.60	5.55	---	12.48	739	1231.7
STRUCTURE	32	RESVOR	.01	6.68	380.81	12.23	33	3300.0
STRUCTURE	33	RESVOR	.03	7.15	357.96	12.29	96	3200.0
STRUCTURE	34	RESVOR	.04	7.04	---	12.27	129	3225.0
STRUCTURE	35	RESVOR	.06	7.13	---	12.17	245	4083.3
XSECTION	141	ADDHYD	.07	6.91	---	12.17	258	3685.7
XSECTION	43	ADDHYD	.77	5.81	---	12.29	1274	1654.5
XSECTION	144	DIVERT	.00	5.81	---	12.00F	543F	*****
XSECTION	82	DIVERT	.77	.80	178.42	12.29	731	949.4
STRUCTURE	82	RESVOR	.77	.67	320.05	12.31	916	1189.6



XSECTION	145	ADDHYD	.77	5.68	---	12.31	1459	1894.8
XSECTION	44	REACH	.77	5.57	291.51	12.48	1186	1540.3
STRUCTURE	2	RESVOR	.77	5.57	---	12.48	1186	1540.3
XSECTION	49	ADDHYD	.82	5.60	---	12.47	1257	1532.9
XSECTION	51	REACH	.93	5.70	286.79	12.54	1456	1565.6
XSECTION	60	ADDHYD	1.01	5.61	---	12.53	1532	1516.8
STRUCTURE	3	RESVOR	1.01	5.61	---	12.53	1532	1516.8
XSECTION	62	ADDHYD	1.02	5.60	---	12.53	1554	1523.5
XSECTION	162	DIVERT	.00	5.60	---	12.00F	621F*****	
XSECTION	82	DIVERT	1.02	.95	178.94	12.53	933	914.7
STRUCTURE	73	RESVOR	1.02	.95	---	12.53	933	914.7
XSECTION	163	ADDHYD	1.02	5.60	---	12.53	1554	1523.5
XSECTION	63	REACH	1.02	5.58	250.97	12.62	1488	1458.8
STRUCTURE	61	RESVOR	.01	6.61	335.67	12.55	25	2500.0
STRUCTURE	62	RESVOR	.05	4.89	297.03	12.42	70	1400.0
STRUCTURE	63	RESVOR	.01	6.07	267.78	12.19	44	4400.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.  
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:  
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED  
 HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF	PEAK DISCHARGE				
				AMOUNT	ELEVATION	TIME	RATE	RATE
ID	OPERATION	AREA (SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)	
ALTERNATE	1	STORM	99					
XSECTION	76	ADDHYD	1.28	5.43	---	12.60	1790	1398.4
XSECTION	176	DIVERT	.00	5.43	---	12.00F	691F*****	
XSECTION	82	DIVERT	1.28	1.09	179.29	12.60	1099	858.6
STRUCTURE	72	RESVOR	1.28	1.09	---	12.60	1099	858.6
XSECTION	177	ADDHYD	1.28	5.43	---	12.60	1790	1398.4
XSECTION	77	REACH	1.28	5.43	231.33	12.60	1790	1398.4
XSECTION	84	RUNOFF	.07	5.03	---	12.24	200	2857.1
XSECTION	184	DIVERT	.00	5.03	---	12.12F	118F*****	
XSECTION	82	DIVERT	.07	.40	175.97	12.24	82	1171.4
STRUCTURE	81	RESVOR	.07	.00	---	20.68	0	.0
XSECTION	185	ADDHYD	.07	4.64	---	12.39	119	1700.0
XSECTION	187	ADDHYD	.12	4.41	---	12.25	221	1841.7
XSECTION	85	ADDHYD	.17	4.63	---	12.17	392	2305.9
XSECTION	88	ADDHYD	1.55	5.33	---	12.65	2003	1292.3
XSECTION	81	DIVERT	.00	5.33	178.42	11.94F	730F*****	

XSECTION	82	DIVERT	1.55	1.28	179.64	12.65	1273	821.3
STRUCTURE	71	RESVOR	1.55	1.28	---	12.65	1273	821.3
XSECTION	89	ADDHYD	1.55	5.33	---	12.65	2003	1292.3

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

		HYDROGRAPH INFORMATION				ROUTING PARAMETERS					
XSEC	REACH	FLOOD PLAIN	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR	PEAK RATIO Q/I	ATT- KIN
			PEAK	TIME	PEAK	TIME	COEFF	POWER			
ID	LENGTH	LENGTH	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)	(Q*)	(C)
COEFF	(FT)	(FT)									
BASEFLOW IS		.0	CFS								
ALTERNATE		1	STORM		2						
2	1170		24	12.3	23	12.4	1.55	1.37	.029	.952	
.58											
5	797		51	12.5	50	12.5	2.26	1.19	.019	.989	
.75?											
8	1221		85	12.4	84	12.5	1.15	1.48	.009	.990	
.76?											
16	920		106	12.6	106	12.6	3.61	1.49	.001	1.000	
1.00?											
23	1379		168	12.1	153	12.4	1.15	1.15	.050	.911	
.33											
27	1021		84	12.3	77	12.4	1.10	1.18	.061	.910	
.41											
32	1603		76	12.2	68	12.4	1.28	1.33	.055	.899	
.48											
34	583		1	13.6	1	13.7	1.14	1.62	.001	.998	
.49											
37	934		18	12.5	18	12.5	2.31	1.55	.002	.999	
.92?											
44	1428		386	12.4	360	12.5	.46	1.34	.033	.931	
.40											
51	1275		435	12.5	420	12.6	.60	1.31	.025	.966	
.47											
53	652		0	.0	0	.0	.000	.00	.000	.000	
.00											
63	1959		438	12.6	413	12.8	.79	1.27	.040	.945	

.35	65	1283	5	12.7	5	12.8	2.47	1.43	.012	.996
.53	70	2166	58	12.2	52	12.3	1.72	1.40	.032	.899
.49	72	1081	3	12.5	3	12.7	1.50	1.61	.007	.994
.49	77	884	458	12.7	457	12.8	1.92	1.22	.008	.998
.87?	80	1296	463	12.8	463	12.8	1.59	1.44	.003	1.000
1.00?										

ALTERNATE	1	STORM	5							
2	1170	36	12.3	34	12.4	1.72	1.27	.038	.945	
.55	5	797	94	12.3	90	12.4	2.08	1.23	.018	.965
.83?	8	1221	159	12.4	155	12.5	1.22	1.46	.010	.971
.84?	16	920	148	12.7	148	12.7	3.61	1.49	.001	1.000
1.00?	23	1379	168	12.8	168	13.0	1.15	1.15	.034	.999
.33	27	1021	137	12.3	123	12.4	1.07	1.18	.060	.901
.44	32	1603	107	12.2	98	12.3	1.33	1.32	.050	.915
.51	34	583	4	12.6	4	12.7	1.14	1.62	.002	.994
.71?										

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
 USED;  
 LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION						ROUTING PARAMETERS					
XSEC REACH ID COEFF	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN (C)
			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)			
ALTERNATE	1	STORM	5								
37	934		35	12.4	35	12.4	2.31	1.55	.003	1.000	
1.00?											

44	1428	513	12.4	485	12.5	.38	1.38	.023	.946
.45									
51	1275	608	12.4	590	12.5	.51	1.34	.019	.970
.52									
53	652	0	13.3	0	13.4	2.05	1.40	.007	.956
.32									
63	1959	621	12.5	592	12.7	.60	1.34	.028	.953
.40									
65	1283	6	12.8	6	13.0	2.47	1.43	.009	.997
.55									
70	2166	94	12.2	74	12.4	1.68	1.19	.086	.790
.32									
72	1081	4	12.6	4	12.7	1.50	1.61	.004	.998
.52									
77	884	672	12.7	671	12.7	1.91	1.22	.007	.999
.90?									
80	1296	682	12.7	682	12.7	1.70	1.41	.003	1.000
1.00?									

ALTERNATE	1	STORM	10
-----------	---	-------	----

2	1170	48	12.3	45	12.4	1.90	1.19	.047	.937
.52									
5	797	121	12.4	120	12.4	2.00	1.25	.016	.996
.87?									
8	1221	213	12.4	212	12.4	1.26	1.44	.009	.993
.88?									
16	920	182	12.8	182	12.8	3.61	1.49	.001	1.000
1.00?									
23	1379	168	13.5	168	13.7	1.15	1.15	.026	1.000
.33									
27	1021	191	12.3	174	12.4	.73	1.29	.043	.911
.52									
32	1603	136	12.2	125	12.3	1.35	1.31	.047	.925
.52									
34	583	9	12.4	9	12.5	1.14	1.62	.004	.994
.86?									
37	934	54	12.4	54	12.4	2.32	1.54	.003	1.000
1.00?									
44	1428	543	12.5	539	12.6	.37	1.39	.018	.992
.46									
51	1275	691	12.4	675	12.5	.49	1.35	.015	.977
.54									
53	652	0	12.5	0	12.7	2.05	1.40	.010	.932
.47									
63	1959	718	12.5	695	12.7	.54	1.36	.022	.969
.42									
65	1283	8	12.7	8	12.8	2.46	1.41	.010	.978
.59									
70	2166	127	12.2	88	12.4	1.90	1.05	.154	.692
.22									

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
 ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION				ROUTING PARAMETERS				
			INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR	PEAK RATIO Q/I	ATT-KIN
COEFF			PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)	(k*)	(Q*)	(C)
	ALTERNATE	1	STORM	10							
72	1081		9	12.4	9	12.4	1.48	1.55	.008	.934	
.61											
77	884		810	12.6	809	12.7	1.89	1.22	.007	.999	
.92?											
80	1296		825	12.7	824	12.7	2.44	1.26	.006	.999	
.92?											
	ALTERNATE	1	STORM	25							
2	1170		65	12.3	65	12.4	.29	2.00	.003	.995	
.89?											
5	797		173	12.3	172	12.4	1.91	1.27	.014	.995	
.92?											
8	1221		213	12.5	213	12.6	1.26	1.44	.006	1.000	
.88?											
16	920		223	12.9	223	12.9	3.61	1.49	.000	1.000	
1.00?											
23	1379		319	13.0	257	13.3	.84	1.23	.026	.805	
.39											
27	1021		260	12.3	244	12.4	.48	1.40	.027	.939	
.60											
32	1603		180	12.2	168	12.3	1.37	1.30	.043	.930	
.55											
34	583		20	12.2	20	12.2	1.14	1.62	.005	1.000	
1.00?											
37	934		91	12.3	91	12.3	2.39	1.52	.004	1.000	
1.00?											
44	1428		543	12.6	543	12.7	.37	1.39	.013	.999	
.46											
51	1275		808	12.3	785	12.4	.47	1.36	.012	.972	
.56											
53	652		2	12.2	2	12.3	2.05	1.40	.014	.917	
.63											
63	1959		872	12.4	840	12.5	.48	1.38	.017	.963	
.45											
65	1283		14	12.6	14	12.7	2.48	1.39	.012	.979	
.64											
70	2166		181	12.2	128	12.4	1.83	1.06	.150	.709	
.22											
72	1081		16	12.3	15	12.4	1.53	1.49	.011	.986	
.66											

77	884	1040	12.5	1039	12.5	1.95	1.22	.006	.999
.94?									
80	1296	1071	12.5	1068	12.6	3.31	1.18	.008	.998
.87?									
ALTERNATE		1	STORM	50					
-----									
2	1170	81	12.3	81	12.4	.29	2.00	.003	.998
.94?									
5	797	217	12.3	216	12.4	1.85	1.28	.012	.995
.95?									

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION				ROUTING PARAMETERS							
XSEC ID	REACH LENGTH	FLOOD PLAIN LENGTH	INFLOW		OUTFLOW		Q-A EQ.		LENGTH FACTOR	PEAK RATIO Q/I	ATT- KIN
			PEAK	TIME	PEAK	TIME	COEFF	POWER			
COEFF	(FT)	(FT)	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)	(Q*)	(C)
ALTERNATE		1	STORM	50							
-----											
8	1221		213	12.6	213	12.7	1.26	1.44	.005	1.000	
.88?											
16	920		253	13.0	253	13.0	3.66	1.49	.000	1.000	
1.00?											
23	1379		392	12.6	313	13.0	.76	1.25	.023	.799	
.42											
27	1021		323	12.3	312	12.4	.40	1.45	.021	.967	
.65											
32	1603		216	12.2	204	12.3	1.38	1.30	.040	.944	
.56											
34	583		29	12.2	29	12.2	1.14	1.61	.006	1.000	
1.00?											
37	934		113	12.2	113	12.2	2.43	1.51	.004	1.000	
1.00?											
44	1428		1205	12.4	978	12.5	.27	1.45	.016	.812	
.58											
51	1275		1234	12.5	1118	12.5	.44	1.37	.013	.906	
.61											
53	652		5	12.2	4	12.2	2.05	1.40	.017	.927	
.75?											
63	1959		1194	12.5	1105	12.7	.41	1.41	.015	.925	

.50										
65	1283	19	12.6	19	12.7	2.49	1.38	.012	.986	
.67?										
70	2166	231	12.2	171	12.5	1.69	1.08	.138	.742	
.23										
72	1081	27	12.2	25	12.3	1.66	1.42	.017	.927	
.70?										
77	884	1348	12.6	1346	12.7	1.91	1.22	.006	.998	
.97?										
80	1296	1375	12.7	1365	12.7	4.05	1.13	.010	.992	
.84?										
ALTERNATE	1	STORM	99							
2	1170	99	12.3	99	12.4	.27	2.00	.002	.999	
.97?										
5	797	267	12.3	267	12.4	1.81	1.28	.011	.998	
.97?										
8	1221	213	12.7	213	12.8	1.26	1.44	.004	1.000	
.88?										
16	920	358	12.8	358	12.8	3.84	1.46	.000	1.000	
1.00?										
23	1379	474	12.8	417	13.0	.67	1.28	.018	.881	
.45										
27	1021	392	12.3	384	12.4	.35	1.48	.017	.980	
.70?										
32	1603	260	12.2	244	12.3	1.50	1.27	.043	.941	
.55										
34	583	33	12.2	33	12.2	1.15	1.61	.005	1.000	
1.00?										

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS  
USED;

LENGTH FACTOR - VALUE K\* GREATER THAN 1.0;  
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

HYDROGRAPH INFORMATION				ROUTING PARAMETERS							
XSEC REACH ID COEFF	REACH LENGTH (FT)	FLOOD PLAIN		INFLOW		OUTFLOW		Q-A EQ.		PEAK RATIO Q/I	ATT-KIN (C)
		LENGTH (FT)	PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)	LENGTH FACTOR (k*)		
ALTERNATE	1	STORM	99								
37	934	127	12.3	127	12.3	2.45	1.51	.003	1.000		
1.00?											

44	1428	1433	12.3	1186	12.5	.26	1.46	.013	.828
.60									
51	1275	1497	12.5	1456	12.5	.43	1.37	.012	.972
.64									
53	652	8	12.2	8	12.2	2.05	1.40	.017	.971
.83?									
63	1959	1552	12.5	1484	12.6	.38	1.43	.014	.956
.53									
65	1283	25	12.5	24	12.7	2.51	1.37	.012	.982
.70?									
70	2166	304	12.2	230	12.4	1.33	1.14	.117	.755
.26									
72	1081	44	12.2	39	12.2	1.69	1.41	.021	.888
.76?									
77	884	1790	12.6	1790	12.6	1.82	1.23	.006	1.000
1.00?									
80	1296	1833	12.6	1823	12.7	4.33	1.11	.012	.995
.84?									

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
STRUCTURE 84	.17					
-----						
ALTERNATE 0	1	0	0	0	0	
STRUCTURE 83	.41					
-----						
ALTERNATE 224	1	0	0	0	151	
STRUCTURE 82	.77					
-----						
ALTERNATE 666	1	0	0	0	0	
STRUCTURE 81	.07					
-----						
ALTERNATE 0	1	0	0	0	0	
STRUCTURE 73	1.02					
-----						
ALTERNATE 575	1	0	0	99	253	



STRUCTURE	72	1.28				
ALTERNATE	1		0	0	120	350
661						
STRUCTURE	71	1.55				
ALTERNATE	1		0	4	164	474
821						
STRUCTURE	63	.01				
ALTERNATE	1		3	4	10	16
27						
STRUCTURE	62	.05				
ALTERNATE	1		12	16	18	37
52						
STRUCTURE	61	.01				
ALTERNATE	1		5	6	8	14
19						
STRUCTURE	35	.06				
ALTERNATE	1		45	74	101	155
206						
STRUCTURE	34	.04				
ALTERNATE	1		18	35	54	91
114						
STRUCTURE	33	.03				
ALTERNATE	1		18	33	49	71
85						
STRUCTURE	32	.01				

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50

STRUCTURE	32	.01				
ALTERNATE	1		1?	4	9	21
	29					
STRUCTURE	31	.05				
ALTERNATE	1		28	55	78	107
	132					
STRUCTURE	24	.03				
ALTERNATE	1		38	51	63	80
	95					
STRUCTURE	23	.32				
ALTERNATE	1		106	148	182	223
	253					
STRUCTURE	22	.07				
ALTERNATE	1		10	29	57	100
	112					
STRUCTURE	21	.07				
ALTERNATE	1		10	30	61	109
	140					
STRUCTURE	11	.09				
ALTERNATE	1		51	97	121	175
	219					
STRUCTURE	3	1.01				
ALTERNATE	1		434	615	709	853
	1180					
STRUCTURE	2	.77				
ALTERNATE	1		360	485	539	544
	979					
STRUCTURE	1	.60				
ALTERNATE	1		261	324	402	512
	609					
XSECTION	7	.17				
ALTERNATE	1		85	161	213	307
	387					
XSECTION	8	.17				
ALTERNATE	1		84	156	212	214
	213					
XSECTION	16	.32				
ALTERNATE	1		106	148	182	223
	253					

XSECTION 20 .05

-----  
 ALTERNATE 1 75 103 127 164  
 197

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SUMMARY TABLE 3

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 STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
XSECTION 21 .41						
----- ALTERNATE 1 499		202	279	340	424	
XSECTION 23 .41						
----- ALTERNATE 1 313		153	168	168	257	
XSECTION 43 .77						
----- ALTERNATE 1 1075		387	513	662	888	
XSECTION 44 .77						
----- ALTERNATE 1 979		360	485	539	544	
XSECTION 49 .82						
----- ALTERNATE 1 1036		377	512	565	602	
XSECTION 51 .93						
----- ALTERNATE 1 1121		420	591	675	786	
XSECTION 60 1.01						
----- ALTERNATE 1 1180		434	615	709	853	
XSECTION 62 1.02						
----- ALTERNATE 1		438	621	720	874	

1196

XSECTION 63 1.02

-----  
 ALTERNATE 1 413 594 696 840  
 1111

XSECTION 76 1.28

-----  
 ALTERNATE 1 459 672 811 1041  
 1352

XSECTION 77 1.28

-----  
 ALTERNATE 1 458 672 810 1040  
 1350

XSECTION 81 .00

-----  
 ALTERNATE 1 492 731 730 730  
 730

XSECTION 82 1.55

-----  
 ALTERNATE 1 0 4 164 474  
 821

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SUMMARY TABLE 3

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 STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
XSECTION 84	.07					
----- ALTERNATE 1 157		33	57	82	121	
XSECTION 85	.17					
----- ALTERNATE 1 332		68	125	182	273	
XSECTION 88	1.55					
----- ALTERNATE 1 1551		492	735	894	1204	
XSECTION 89	1.55					
-----						

ALTERNATE 1551	1	492	735	894	1204
XSECTION 107					.00
ALTERNATE 213	1	85	161	213	213
XSECTION 108					.17
ALTERNATE 213	1	85	161	213	215
XSECTION 122					.00
ALTERNATE 168	1	168	168	168	168
XSECTION 123					.41
ALTERNATE 392	1	168	168	169	319
XSECTION 141					.07
ALTERNATE 216	1	46	77	106	162
XSECTION 144					.00
ALTERNATE 549	1	387	513	543	543
XSECTION 145					.77
ALTERNATE 1209	1	387	513	545	546
XSECTION 162					.00
ALTERNATE 621	1	438	621	621	621
XSECTION 163					1.02
ALTERNATE 1196	1	438	621	720	874

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ DRAINAGE

STRUCTURE ID	AREA (SQ MI)	STORM NUMBERS.....				
		2	5	10	25	50
XSECTION 176	.00					
-----						
ALTERNATE 691	1	459	672	691	691	
XSECTION 177	1.28					
-----						
ALTERNATE 1352	1	459	672	811	1041	
XSECTION 184	.00					
-----						
ALTERNATE 118	1	33	57	82	118	
XSECTION 185	.07					
-----						
ALTERNATE 118	1	33	57	82	118	
XSECTION 187	.12					
-----						
ALTERNATE 195	1	42	79	116	175	

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....
		99
STRUCTURE 84	.17	
-----		
ALTERNATE	1	0
STRUCTURE 83	.41	
-----		
ALTERNATE	1	309
STRUCTURE 82	.77	
-----		
ALTERNATE	1	916
STRUCTURE 81	.07	
-----		
ALTERNATE	1	0
STRUCTURE 73	1.02	
-----		
ALTERNATE	1	933
STRUCTURE 72	1.28	
-----		
ALTERNATE	1	1099
STRUCTURE 71	1.55	

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-----
ALTERNATE      1                1273
STRUCTURE  63                .01
-----
ALTERNATE      1                44
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      Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,
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STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
STRUCTURE 62	.05	
ALTERNATE 1		70
STRUCTURE 61	.01	
ALTERNATE 1		25
STRUCTURE 35	.06	
ALTERNATE 1		245
STRUCTURE 34	.04	
ALTERNATE 1		129
STRUCTURE 33	.03	
ALTERNATE 1		96
STRUCTURE 32	.01	
ALTERNATE 1		33
STRUCTURE 31	.05	
ALTERNATE 1		161
STRUCTURE 24	.03	
ALTERNATE 1		112
STRUCTURE 23	.32	
ALTERNATE 1		359
STRUCTURE 22	.07	

ALTERNATE	1		127
STRUCTURE	21	.07	
ALTERNATE	1		154
STRUCTURE	11	.09	
ALTERNATE	1		269
STRUCTURE	3	1.01	
ALTERNATE	1		1532

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STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
STRUCTURE 2	.77	
ALTERNATE 1		1186
STRUCTURE 1	.60	
ALTERNATE 1		739
XSECTION 7	.17	
ALTERNATE 1		479
XSECTION 8	.17	
ALTERNATE 1		215
XSECTION 16	.32	
ALTERNATE 1		359
XSECTION 20	.05	
ALTERNATE 1		234
XSECTION 21	.41	
ALTERNATE 1		586
XSECTION 23	.41	



ALTERNATE	1	418
XSECTION	43	.77
ALTERNATE	1	1274
XSECTION	44	.77
ALTERNATE	1	1186
XSECTION	49	.82
ALTERNATE	1	1257
XSECTION	51	.93
ALTERNATE	1	1456
XSECTION	60	1.01
ALTERNATE	1	1532

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
XSECTION 62	1.02	
ALTERNATE 1		1554
XSECTION 63	1.02	
ALTERNATE 1		1488
XSECTION 76	1.28	
ALTERNATE 1		1790
XSECTION 77	1.28	
ALTERNATE 1		1790
XSECTION 81	.00	
ALTERNATE 1		730
XSECTION 82	1.55	

ALTERNATE	1	1273
XSECTION	84	.07
ALTERNATE	1	200
XSECTION	85	.17
ALTERNATE	1	392
XSECTION	88	1.55
ALTERNATE	1	2003
XSECTION	89	1.55
ALTERNATE	1	2003
XSECTION	107	.00
ALTERNATE	1	213
XSECTION	108	.17
ALTERNATE	1	216
XSECTION	122	.00
ALTERNATE	1	168

1  
 TR20 ----- SCS  
 -  
 Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST  
 18:28:10 SUMMARY, JOB NO. 1 PAGE  
 303

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES  
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
XSECTION 123	.41	
ALTERNATE 1		477
XSECTION 141	.07	
ALTERNATE 1		258
XSECTION 144	.00	
ALTERNATE 1		543
XSECTION 145	.77	

ALTERNATE	1	1459
XSECTION 162	.00	
ALTERNATE	1	621
XSECTION 163	1.02	
ALTERNATE	1	1554
XSECTION 176	.00	
ALTERNATE	1	691
XSECTION 177	1.28	
ALTERNATE	1	1790
XSECTION 184	.00	
ALTERNATE	1	118
XSECTION 185	.07	
ALTERNATE	1	119
XSECTION 187	.12	
ALTERNATE	1	221

1

TR20 ----- SCS

Ellicott City Flood Study- All Combined SAs- MGMT STRUCTURES,  
 VERSION  
 05/04/\*\* CN MGMT- PROP COND.- 2,5,10,25,50,100 yr NOAA  
 Dist;H1&H8UG;GHC2.04TEST

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST  
 FILES

INPUT = h7h8.dat , GIVEN DATA FILE  
 OUTPUT = h7h8.OUT , DATED  
 05/04/\*\*,18:28:10

FILES GENERATED - DATED 05/04/\*\*,18:28:10

NONE!

TOTAL NUMBER OF WARNINGS = 68, MESSAGES = 96

\*\*\* TR-20 RUN COMPLETED \*\*\*

# Principal Spillway Computations - Proposed Conditions

## Concept H2

Pond Elevation	Pond Area	Pond Volume
272.00 ft	40963.83 ft <sup>2</sup>	4.834 ac-ft
273.00 ft	44306.62 ft <sup>2</sup>	5.813 ac-ft
274.00 ft	47734.39 ft <sup>2</sup>	6.869 ac-ft
275.00 ft	51249.29 ft <sup>2</sup>	8.005 ac-ft
276.00 ft	54850.88 ft <sup>2</sup>	9.223 ac-ft
277.00 ft	58533.26 ft <sup>2</sup>	10.525 ac-ft
278.00 ft	62294.25 ft <sup>2</sup>	11.912 ac-ft
279.00 ft	66137.58 ft <sup>2</sup>	13.386 ac-ft
280.00 ft	70070.30 ft <sup>2</sup>	14.949 ac-ft
281.00 ft	74100.94 ft <sup>2</sup>	16.604 ac-ft
282.00 ft	78228.42 ft <sup>2</sup>	18.353 ac-ft

Barrel Q	Barrel HW
0.00 ft <sup>3</sup> /s	265.00 ft
210.00 ft <sup>3</sup> /s	268.81 ft
420.00 ft <sup>3</sup> /s	271.02 ft
630.00 ft <sup>3</sup> /s	272.85 ft
840.00 ft <sup>3</sup> /s	274.53 ft
1045.14 ft <sup>3</sup> /s	276.16 ft
1157.25 ft <sup>3</sup> /s	277.08 ft
1236.41 ft <sup>3</sup> /s	277.76 ft
1301.57 ft <sup>3</sup> /s	278.34 ft
1357.36 ft <sup>3</sup> /s	278.85 ft
1407.20 ft <sup>3</sup> /s	279.31 ft

Release Point	Crest Elevation	Crest Width	Orifice Height	Orifice Area	Co	Cw
Low Flow	0.00 ft	0.00 ft	0.00 ft	0.00 ft <sup>2</sup>	0	0
Weir	0.00 ft	0.00 ft	0.00 ft	0.00 ft <sup>2</sup>	0	0

Total Flow	Riser WSEL	Pond WSEL	Pond Storage	Low Flow		Weir			Emergency Spillway	
				h=0.00 ft	Q=0.00 ft <sup>3</sup> /s	h=0.00 ft	h=0.00 ft	h=0.00 ft	h=0.00 ft	
0.00 ft <sup>3</sup> /s	265.00 ft <sup>3</sup> /s			barrel	n/a	n/a	barrel	n/a	n/a	
100.00 ft <sup>3</sup> /s	266.81 ft <sup>3</sup> /s	266.81 ft	0.933 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	
200.00 ft <sup>3</sup> /s	268.63 ft <sup>3</sup> /s	268.63 ft	2.082 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	
300.00 ft <sup>3</sup> /s	269.76 ft <sup>3</sup> /s	269.76 ft	2.912 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	
400.00 ft <sup>3</sup> /s	270.81 ft <sup>3</sup> /s	270.81 ft	3.767 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	
500.00 ft <sup>3</sup> /s	271.72 ft <sup>3</sup> /s	271.72 ft	4.571 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	
600.00 ft <sup>3</sup> /s	272.59 ft <sup>3</sup> /s	272.59 ft	5.401 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	
700.00 ft <sup>3</sup> /s	273.41 ft <sup>3</sup> /s	273.41 ft	6.236 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	
800.00 ft <sup>3</sup> /s	274.21 ft <sup>3</sup> /s	274.21 ft	7.101 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	
900.00 ft <sup>3</sup> /s	275.01 ft <sup>3</sup> /s	275.01 ft	8.013 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	
1025.00 ft <sup>3</sup> /s	276.00 ft <sup>3</sup> /s	276.00 ft	9.223 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=0.00 ft
1143.95 ft <sup>3</sup> /s	276.61 ft <sup>3</sup> /s	276.61 ft	10.007 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=0.61 ft
1373.75 ft <sup>3</sup> /s	277.45 ft <sup>3</sup> /s	277.45 ft	11.134 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=1.45 ft
1678.37 ft <sup>3</sup> /s	278.33 ft <sup>3</sup> /s	278.33 ft	12.382 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=2.33 ft
2056.25 ft <sup>3</sup> /s	279.24 ft <sup>3</sup> /s	279.24 ft	13.758 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=3.24 ft

**orifice:**  $Q_o = C_d A_o (2gH_o)^{1/2}$

$Q_o$  = the orifice flow rate

$C_d$  = orifice discharge coefficient (0.40 - 0.60)

$A_o$  = area of orifice

$H_o$  = effective head on the orifice measured from the centre of the opening

$g$  = acceleration due to gravity

**sharp-crested weir:**  $Q_w = C_w L H_w^{3/2}$

$Q_w$  = weir discharge

$L$  = weir base width

$H_w$  = head above weir crest excluding velocity head

**submerged sharp-crested weir:**  $Q_s = Q_u [1 - (H_2/H_1)^{1/2}]^{3/2}$

$Q_s$  = submerged weir discharge

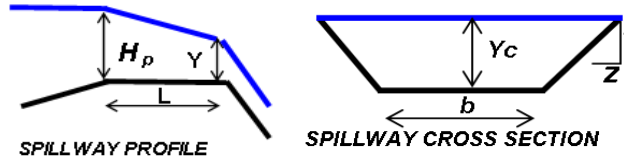
$Q_u$  = unsubmerged weir discharge

$H_1$  = upstream head above weir crest

$H_2$  = downstream head above weir crest

# Low Point of Pond in Cut - Spillway Computations

<b>SELECTED BOTTOM WIDTH (b):</b>	30.00 ft
<b>SIDE SLOPE:</b>	3.0:1
<b>LEVEL SECTION LENGTH (L):</b>	10.00 ft
<b>ROUGHNESS COEFFICIENT (n):</b>	0.020
<b>SPILLWAY INVERT ELEVATION:</b>	276.00



Yc	T	Ac	Qc	Vc	Hec	a	Hp	R	Sc	Elev
0.00			0.00							276.00
0.40	32.40 ft	12.48 ft <sup>2</sup>	43.95 ft <sup>3</sup> /s	3.52 ft/s	0.59 ft	0.00347	0.61 ft	0.38 ft	0.80%	276.61
0.98	35.88 ft	32.28 ft <sup>2</sup>	173.75 ft <sup>3</sup> /s	5.38 ft/s	1.43 ft	0.00107	1.45 ft	0.89 ft	0.61%	277.45
1.61	39.66 ft	56.08 ft <sup>2</sup>	378.37 ft <sup>3</sup> /s	6.75 ft/s	2.32 ft	0.00056	2.33 ft	1.40 ft	0.53%	278.33
2.27	43.62 ft	83.56 ft <sup>2</sup>	656.25 ft <sup>3</sup> /s	7.85 ft/s	3.23 ft	0.00036	3.24 ft	1.88 ft	0.48%	279.24

276.00  
276.61  
277.45  
278.33  
279.24

CRITICAL FLOW EQUATIONS from SCS TR-2 dated 1956 and the Handbook of Hydraulics (Brater & King, 6 ed., page 8-16):

$$T = b + 2ZY_c$$

$$V_c = \text{SQRT}(gA/T)$$

$$H_p = H_{ec}(1 + aL)$$

$$A_c = (b + ZY_c)Y_c$$

$$H_{ec} = Y_c + V_c^2/2g$$

$$R = (b + ZY_c)Y_c / (b + 2ZY_c \text{SQRT}(1 + Z^2))$$

$$Q_c = \text{SQRT}(gA^3/T)$$

$$a = (4.32n^2)/H_{ec}^{1.33}$$

$$S_c = 14.56n^2A/(R^{1.33})T$$

# Principal Spillway Computations - Proposed Conditions

## Concept H3

Pond Elevation	Pond Area	Pond Volume
#REF!	#REF!	0.000 ac-ft
295.00 ft	17819.40 ft <sup>2</sup>	0.432 ac-ft
296.00 ft	19854.39 ft <sup>2</sup>	0.912 ac-ft
297.00 ft	21965.36 ft <sup>2</sup>	1.442 ac-ft
298.00 ft	24154.53 ft <sup>2</sup>	2.022 ac-ft
299.00 ft	26423.19 ft <sup>2</sup>	2.656 ac-ft
300.00 ft	28771.51 ft <sup>2</sup>	3.344 ac-ft
301.00 ft	31199.65 ft <sup>2</sup>	4.089 ac-ft
302.00 ft	33707.56 ft <sup>2</sup>	4.893 ac-ft
303.00 ft	36295.30 ft <sup>2</sup>	5.757 ac-ft
304.00 ft	38963.10 ft <sup>2</sup>	6.683 ac-ft

Barrel Q	Barrel HW
0.00 ft <sup>3</sup> /s	295.00 ft
170.00 ft <sup>3</sup> /s	298.50 ft
340.00 ft <sup>3</sup> /s	300.63 ft
489.46 ft <sup>3</sup> /s	302.73 ft
526.66 ft <sup>3</sup> /s	303.34 ft
545.01 ft <sup>3</sup> /s	303.66 ft
571.47 ft <sup>3</sup> /s	304.13 ft
589.02 ft <sup>3</sup> /s	304.46 ft
604.43 ft <sup>3</sup> /s	304.76 ft
618.48 ft <sup>3</sup> /s	305.04 ft
631.25 ft <sup>3</sup> /s	305.29 ft

Release Point	Crest Elevation	Crest Width	Orifice Height	Orifice Area	Co	Cw
Low Flow	0.00 ft	0.00 ft	0.00 ft	0.00 ft <sup>2</sup>	0	0
Weir	0.00 ft	0.00 ft	0.00 ft	0.00 ft <sup>2</sup>	0	0

Total Flow	Riser WSEL	Pond WSEL	Pond Storage	Low Flow			Weir			Emergency Spillway	
0.00 ft <sup>3</sup> /s	295.00 ft <sup>3</sup> /s			h=0.00 ft	Q=0.00 ft <sup>3</sup> /s	h=0.00 ft	h=0.00 ft	h=0.00 ft	h=0.00 ft		
100.00 ft <sup>3</sup> /s	297.06 ft <sup>3</sup> /s	297.06 ft	0.942 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
200.00 ft <sup>3</sup> /s	298.88 ft <sup>3</sup> /s	298.88 ft	1.948 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
250.00 ft <sup>3</sup> /s	299.50 ft <sup>3</sup> /s	299.50 ft	2.334 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
300.00 ft <sup>3</sup> /s	300.13 ft <sup>3</sup> /s	300.13 ft	2.741 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
400.00 ft <sup>3</sup> /s	301.47 ft <sup>3</sup> /s	301.47 ft	3.690 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
437.50 ft <sup>3</sup> /s	302.00 ft <sup>3</sup> /s	302.00 ft	4.089 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
853.50 ft <sup>3</sup> /s	303.31 ft <sup>3</sup> /s	303.31 ft	5.156 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=1.31 ft	328.50 ft <sup>3</sup> /s
1069.10 ft <sup>3</sup> /s	303.75 ft <sup>3</sup> /s	303.75 ft	5.534 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=1.75 ft	519.10 ft <sup>3</sup> /s
1317.66 ft <sup>3</sup> /s	304.20 ft <sup>3</sup> /s	304.20 ft	5.934 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=2.20 ft	742.66 ft <sup>3</sup> /s
2019.83 ft <sup>3</sup> /s	305.27 ft <sup>3</sup> /s	305.27 ft	6.939 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=3.27 ft	1389.83 ft <sup>3</sup> /s

**orifice:  $Q_o = C_d A_o (2gH_o)^{1/2}$**

$Q_o$  = the orifice flow rate

$C_d$  = orifice discharge coefficient (0.40 - 0.60)

$A_o$  = area of orifice

$H_o$  = effective head on the orifice measured from the centre of the opening

$g$  = acceleration due to gravity

**sharp-crested weir:  $Q_w = C_w L H_w^{3/2}$**

$Q_w$  = weir discharge

$L$  = weir base width

$H_w$  = head above weir crest excluding velocity head

**submerged sharp-crested weir:  $Q_s = Q_u [1 - (H_2/H_1)^{1.5}]^{0.667}$**

$Q_s$  = submerged weir discharge

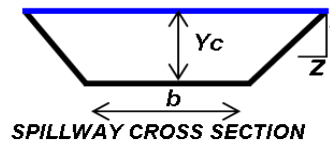
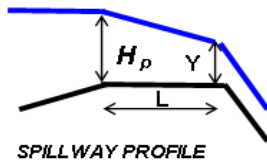
$Q_u$  = unsubmerged weir discharge

$H_1$  = upstream head above weir crest

$H_2$  = downstream head above weir crest

# Low Point of Pond in Cut - Spillway Computations

<b>SELECTED BOTTOM WIDTH (b):</b>	70.00 ft
<b>SIDE SLOPE:</b>	3.0:1
<b>LEVEL SECTION LENGTH (L):</b>	10.00 ft
<b>ROUGHNESS COEFFICIENT (n):</b>	0.020
<b>SPILLWAY INVERT ELEVATION:</b>	302.00



Yc	T	Ac	Qc	Vc	Hec	a	Hp	R	Sc	Elev
0.00			0.00							302.00
0.87	75.22 ft	63.17 ft <sup>2</sup>	328.50 ft <sup>3</sup> /s	5.20 ft/s	1.29 ft	0.00123	1.31 ft	0.84 ft	0.62%	303.31
1.18	77.05 ft	86.39 ft <sup>2</sup>	519.10 ft <sup>3</sup> /s	6.01 ft/s	1.74 ft	0.00083	1.75 ft	1.12 ft	0.56%	303.75
1.49	78.91 ft	110.57 ft <sup>2</sup>	742.66 ft <sup>3</sup> /s	6.72 ft/s	2.19 ft	0.00061	2.20 ft	1.39 ft	0.52%	304.20
2.23	83.38 ft	171.02 ft <sup>2</sup>	1389.83 ft <sup>3</sup> /s	8.13 ft/s	3.26 ft	0.00036	3.27 ft	2.03 ft	0.46%	305.27

303.31  
303.75  
304.20  
305.27

CRITICAL FLOW EQUATIONS from SCS TR-2 dated 1956 and the Handbook of Hydraulics (Brater & King, 6 ed., page 8-16):

$$\begin{aligned}
 T &= b + 2ZY_c & V_c &= \text{SQRT}(gA/T) & H_p &= Hec(1 + aL) \\
 Ac &= (b + ZY_c)Y_c & Hec &= Y_c + V_c^2/2g & R &= (b + ZY_c)Y_c / (b + 2ZY_c \text{SQRT}(1 + Z^2)) \\
 Q_c &= \text{SQRT}(gA^3/T) & a &= (4.32n^2)/Hec^{1.33} & Sc &= 14.56n^2A / (R^{1.33})T
 \end{aligned}$$



# Principal Spillway Computations - Proposed Conditions

## Concept - H4

Pond Elevation	Pond Area	Pond Volume
308.00 ft	55345.00 ft <sup>2</sup>	1.299 ac-ft
309.00 ft	57843.00 ft <sup>2</sup>	2.656 ac-ft
310.00 ft	60369.00 ft <sup>2</sup>	4.071 ac-ft
311.00 ft	62921.00 ft <sup>2</sup>	5.545 ac-ft
312.00 ft	65500.00 ft <sup>2</sup>	7.079 ac-ft
313.00 ft	68106.00 ft <sup>2</sup>	8.673 ac-ft
314.00 ft	70740.00 ft <sup>2</sup>	10.327 ac-ft
315.00 ft	73400.00 ft <sup>2</sup>	12.043 ac-ft
316.00 ft	76086.00 ft <sup>2</sup>	13.821 ac-ft
317.00 ft	78798.00 ft <sup>2</sup>	15.661 ac-ft
318.00 ft	81535.00 ft <sup>2</sup>	17.565 ac-ft

Barrel Q	Barrel HW
0.00 ft <sup>3</sup> /s	308.00 ft
130.00 ft <sup>3</sup> /s	311.15 ft
260.00 ft <sup>3</sup> /s	313.00 ft
390.00 ft <sup>3</sup> /s	314.88 ft
481.92 ft <sup>3</sup> /s	316.49 ft
512.44 ft <sup>3</sup> /s	317.09 ft
534.14 ft <sup>3</sup> /s	317.55 ft
552.40 ft <sup>3</sup> /s	317.94 ft
568.00 ft <sup>3</sup> /s	318.29 ft
581.89 ft <sup>3</sup> /s	318.61 ft
594.31 ft <sup>3</sup> /s	318.91 ft

Release Point	Crest Elevation	Crest Width	Orifice Height	Orifice Area	Co	Cw
Low Flow	0.00 ft	0.00 ft	0.00 ft	0.00 ft <sup>2</sup>	0	0
Weir	0.00 ft	0.00 ft	0.00 ft	0.00 ft <sup>2</sup>	0	0

Total Flow	Riser WSEL	Pond WSEL	Pond Storage	Low Flow			Weir			Emergency Spillway	
0.00 ft <sup>3</sup> /s	308.00 ft <sup>3</sup> /s			h=0.00 ft	Q=0.00 ft <sup>3</sup> /s	h=0.00 ft	h=0.00 ft	h=0.00 ft	h=0.00 ft		
100.00 ft <sup>3</sup> /s	310.42 ft <sup>3</sup> /s	310.42 ft	3.248 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
200.00 ft <sup>3</sup> /s	312.15 ft <sup>3</sup> /s	312.15 ft	5.766 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
250.00 ft <sup>3</sup> /s	312.86 ft <sup>3</sup> /s	312.86 ft	6.857 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
300.00 ft <sup>3</sup> /s	313.58 ft <sup>3</sup> /s	313.58 ft	7.993 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
400.00 ft <sup>3</sup> /s	315.06 ft <sup>3</sup> /s	315.06 ft	10.420 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
454.00 ft <sup>3</sup> /s	316.00 ft <sup>3</sup> /s	316.00 ft	12.045 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
597.18 ft <sup>3</sup> /s	316.85 ft <sup>3</sup> /s	316.85 ft	13.542 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=0.85 ft	97.18 ft <sup>3</sup> /s
897.54 ft <sup>3</sup> /s	317.89 ft <sup>3</sup> /s	317.89 ft	15.453 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=1.89 ft	347.54 ft <sup>3</sup> /s
1251.79 ft <sup>3</sup> /s	318.81 ft <sup>3</sup> /s	318.81 ft	17.190 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=2.81 ft	661.79 ft <sup>3</sup> /s

**orifice:  $Q_o = C_d A_o (2gH_o)^{1/2}$**

$Q_o$  = the orifice flow rate

$C_d$  = orifice discharge coefficient (0.40 - 0.60)

$A_o$  = area of orifice

$H_o$  = effective head on the orifice measured from the centre of the opening

$g$  = acceleration due to gravity

**sharp-crested weir:  $Q_w = C_w L H_w^{3/2}$**

$Q_w$  = weir discharge

$L$  = weir base width

$H_w$  = head above weir crest excluding velocity head

**submerged sharp-crested weir:  $Q_s = Q_u [1 - (H_2/H_1)^{1/2}]^{3/2}$**

$Q_s$  = submerged weir discharge

$Q_u$  = unsubmerged weir discharge

$H_1$  = upstream head above weir crest

$H_2$  = downstream head above weir crest

# Principal Spillway Computations - Proposed Conditions

## Concept NC1

Pond Elevation	Pond Area	Pond Volume
138.00 ft	183.00 ft <sup>2</sup>	0.000 ac-ft
140.00 ft	1441.00 ft <sup>2</sup>	0.037 ac-ft
142.00 ft	3231.00 ft <sup>2</sup>	0.145 ac-ft
144.00 ft	5888.00 ft <sup>2</sup>	0.354 ac-ft
146.00 ft	9467.00 ft <sup>2</sup>	0.706 ac-ft
148.00 ft	12522.00 ft <sup>2</sup>	1.211 ac-ft
150.00 ft	15447.00 ft <sup>2</sup>	1.853 ac-ft
152.00 ft	18949.00 ft <sup>2</sup>	2.643 ac-ft
154.00 ft	23476.00 ft <sup>2</sup>	3.617 ac-ft
156.00 ft	28090.00 ft <sup>2</sup>	4.801 ac-ft
158.00 ft	103722.00 ft <sup>2</sup>	7.827 ac-ft
160.00 ft	117010.00 ft <sup>2</sup>	12.894 ac-ft
162.00 ft	130272.00 ft <sup>2</sup>	18.571 ac-ft
164.00 ft	143804.00 ft <sup>2</sup>	24.863 ac-ft
166.00 ft	172329.00 ft <sup>2</sup>	32.120 ac-ft
168.00 ft	172329.00 ft <sup>2</sup>	40.032 ac-ft

Barrel Q	Barrel HW
0.00 ft <sup>3</sup> /s	138.00 ft
348.20 ft <sup>3</sup> /s	142.35 ft
696.40 ft <sup>3</sup> /s	144.85 ft
1044.60 ft <sup>3</sup> /s	146.95 ft
1137.00 ft <sup>3</sup> /s	147.48 ft
1741.00 ft <sup>3</sup> /s	151.12 ft
2089.20 ft <sup>3</sup> /s	153.55 ft
2437.40 ft <sup>3</sup> /s	156.37 ft
2785.60 ft <sup>3</sup> /s	159.65 ft
3124.93 ft <sup>3</sup> /s	163.30 ft
3272.86 ft <sup>3</sup> /s	165.03 ft
3387.47 ft <sup>3</sup> /s	166.43 ft
3441.44 ft <sup>3</sup> /s	167.11 ft

Release Point	Crest Elevation	Crest Width	Orifice Height	Orifice Area	Co	Cw
Low Flow	0.00 ft	0.00 ft	0.00 ft	0.00 ft <sup>2</sup>	0	0
Weir	0.00 ft	0.00 ft	0.00 ft	0.00 ft <sup>2</sup>	0	0

Total Flow	Riser WSEL	Pond WSEL	Pond Storage	Low Flow			Weir			Emergency Spillway	
				h=0.00 ft	Q=0.00 ft <sup>3</sup> /s	h=0.00 ft	h=0.00 ft	h=0.00 ft	h=0.00 ft		
0.00 ft <sup>3</sup> /s	138.00 ft <sup>3</sup> /s										
200.00 ft <sup>3</sup> /s	140.50 ft <sup>3</sup> /s	140.50 ft	0.056 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
400.00 ft <sup>3</sup> /s	142.72 ft <sup>3</sup> /s	142.72 ft	0.206 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
600.00 ft <sup>3</sup> /s	144.16 ft <sup>3</sup> /s	144.16 ft	0.376 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
800.00 ft <sup>3</sup> /s	145.47 ft <sup>3</sup> /s	145.47 ft	0.598 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
1000.00 ft <sup>3</sup> /s	146.68 ft <sup>3</sup> /s	146.68 ft	0.863 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
1137.00 ft <sup>3</sup> /s	147.48 ft <sup>3</sup> /s	147.48 ft	1.066 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
1200.00 ft <sup>3</sup> /s	147.86 ft <sup>3</sup> /s	147.86 ft	1.171 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
1631.00 ft <sup>3</sup> /s	150.46 ft <sup>3</sup> /s	150.46 ft	2.020 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
1800.00 ft <sup>3</sup> /s	151.53 ft <sup>3</sup> /s	151.53 ft	2.444 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
2000.00 ft <sup>3</sup> /s	152.93 ft <sup>3</sup> /s	152.93 ft	3.069 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
2500.00 ft <sup>3</sup> /s	156.96 ft <sup>3</sup> /s	156.96 ft	5.819 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
2700.00 ft <sup>3</sup> /s	158.84 ft <sup>3</sup> /s	158.84 ft	9.890 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
3000.00 ft <sup>3</sup> /s	161.96 ft <sup>3</sup> /s	161.96 ft	18.440 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
3100.00 ft <sup>3</sup> /s	163.03 ft <sup>3</sup> /s	163.03 ft	21.739 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
3283.92 ft <sup>3</sup> /s	164.18 ft <sup>3</sup> /s	164.18 ft	25.455 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=1.18 ft	Q=83.92 ft <sup>3</sup> /s
3969.22 ft <sup>3</sup> /s	166.59 ft <sup>3</sup> /s	166.59 ft	34.446 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=3.59 ft	Q=569.22 ft <sup>3</sup> /s

**orifice:**  $Q_o = C_d A_o (2gH_o)^{1/2}$

$Q_o$  = the orifice flow rate

$C_d$  = orifice discharge coefficient (0.40 - 0.60)

$A_o$  = area of orifice

$H_o$  = effective head on the orifice measured from the centre of the opening

$g$  = acceleration due to gravity

**sharp-crested weir:**  $Q_w = C_w L H_w^{3/2}$

$Q_w$  = weir discharge

$L$  = weir base width

$H_w$  = head above weir crest excluding velocity head

**submerged sharp-crested weir:**  $Q_s = Q_u [1 - (H_2/H_1)^{1.5}]^{0.003}$

$Q_s$  = submerged weir discharge

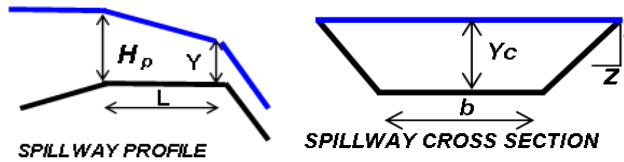
$Q_u$  = unsubmerged weir discharge

$H_1$  = upstream head above weir crest

$H_2$  = downstream head above weir crest

# Low Point of Pond in Cut - Spillway Computations

<b>SELECTED BOTTOM WIDTH (b):</b>	20.00 ft
<b>SIDE SLOPE:</b>	3.0:1
<b>LEVEL SECTION LENGTH (L):</b>	25.00 ft
<b>ROUGHNESS COEFFICIENT (n):</b>	0.020
<b>SPILLWAY INVERT ELEVATION:</b>	163.00



Yc	T	Ac	Qc	Vc	Hec	a	Hp	R	Sc	Elev
0.00			0.00							163.00
0.00	20.00 ft	0.00 ft <sup>2</sup>	0.00 ft <sup>3</sup> /s	#DIV/0!	#####	#DIV/0!	#####	0.00 ft	#####	#####
0.79	24.71 ft	17.55 ft <sup>2</sup>	83.92 ft <sup>3</sup> /s	4.78 ft/s	1.14 ft	0.00145	1.18 ft	0.70 ft	0.66%	164.18
2.56	35.36 ft	70.86 ft <sup>2</sup>	569.22 ft <sup>3</sup> /s	8.03 ft/s	3.56 ft	0.00032	3.59 ft	1.96 ft	0.48%	166.59

163.03  
164.18  
166.59

CRITICAL FLOW EQUATIONS from SCS TR-2 dated 1956 and the Handbook of Hydraulics (Brater & King, 6 ed., page 8-16):

$$T = b + 2ZY_c$$

$$V_c = \text{SQRT}(gA/T)$$

$$H_p = H_{ec}(1 + aL)$$

$$A_c = (b + ZY_c)Y_c$$

$$H_{ec} = Y_c + V_c^2/2g$$

$$R = (b + ZY_c)Y_c / (b + 2ZY_c \text{SQRT}(1 + Z^2))$$

$$Q_c = \text{SQRT}(gA^3/T)$$

$$a = (4.32n^2)/H_{ec}^{1.33}$$

$$S_c = 14.56n^2A / (R^{1.33})T$$

# Principal Spillway Computations - Proposed Conditions

## Concept NC2

Pond Elevation	Pond Area	Pond Volume
215.00 ft	52540.64 ft <sup>2</sup>	0.000 ac-ft
216.00 ft	56264.22 ft <sup>2</sup>	1.249 ac-ft
217.00 ft	60062.47 ft <sup>2</sup>	2.584 ac-ft
218.00 ft	63934.26 ft <sup>2</sup>	4.007 ac-ft
219.00 ft	67882.16 ft <sup>2</sup>	5.520 ac-ft
220.00 ft	71907.78 ft <sup>2</sup>	7.125 ac-ft
221.00 ft	76010.57 ft <sup>2</sup>	8.823 ac-ft
222.00 ft	80191.33 ft <sup>2</sup>	10.616 ac-ft
223.00 ft	84453.13 ft <sup>2</sup>	12.506 ac-ft
224.00 ft	88798.29 ft <sup>2</sup>	14.494 ac-ft
225.00 ft	93226.85 ft <sup>2</sup>	16.584 ac-ft
226.00 ft	97740.91 ft <sup>2</sup>	18.776 ac-ft
227.00 ft	102339.68 ft <sup>2</sup>	21.072 ac-ft
228.00 ft	107018.51 ft <sup>2</sup>	23.475 ac-ft
229.00 ft	111779.98 ft <sup>2</sup>	25.987 ac-ft
230.00 ft	116626.03 ft <sup>2</sup>	28.609 ac-ft
231.00 ft	121560.38 ft <sup>2</sup>	31.343 ac-ft
232.00 ft	126640.04 ft <sup>2</sup>	34.192 ac-ft
233.00 ft	131951.93 ft <sup>2</sup>	37.160 ac-ft
234.00 ft	137481.90 ft <sup>2</sup>	40.253 ac-ft

Barrel Q	Barrel HW
0.00 ft <sup>3</sup> /s	215.00 ft
138.80 ft <sup>3</sup> /s	218.10 ft
277.60 ft <sup>3</sup> /s	219.87 ft
416.40 ft <sup>3</sup> /s	221.37 ft
504.00 ft <sup>3</sup> /s	222.27 ft
694.00 ft <sup>3</sup> /s	224.36 ft
832.80 ft <sup>3</sup> /s	226.13 ft
971.60 ft <sup>3</sup> /s	228.19 ft
1110.40 ft <sup>3</sup> /s	230.58 ft
1243.90 ft <sup>3</sup> /s	233.21 ft
1293.73 ft <sup>3</sup> /s	234.28 ft
1320.12 ft <sup>3</sup> /s	234.86 ft

Release Point	Crest Elevation	Crest Width	Orifice Height	Orifice Area	Co	Cw
Low Flow	0.00 ft	0.00 ft	0.00 ft	0.00 ft <sup>2</sup>	0	0
Weir	0.00 ft	0.00 ft	0.00 ft	0.00 ft <sup>2</sup>	0	0

Total Flow	Riser WSEL	Pond WSEL	Pond Storage	Low Flow		Weir			Emergency Spillway		
0.00 ft <sup>3</sup> /s	215.00 ft <sup>3</sup> /s			h=0.00 ft	Q=0.00 ft <sup>3</sup> /s	h=0.00 ft	h=0.00 ft	h=0.00 ft	h=0.00 ft		
100.00 ft <sup>3</sup> /s	217.23 ft <sup>3</sup> /s	217.23 ft	2.908 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
200.00 ft <sup>3</sup> /s	218.88 ft <sup>3</sup> /s	218.88 ft	5.335 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
400.00 ft <sup>3</sup> /s	221.19 ft <sup>3</sup> /s	221.19 ft	9.161 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
500.00 ft <sup>3</sup> /s	222.23 ft <sup>3</sup> /s	222.23 ft	11.040 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
504.00 ft <sup>3</sup> /s	222.27 ft <sup>3</sup> /s	222.27 ft	11.116 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
600.00 ft <sup>3</sup> /s	223.33 ft <sup>3</sup> /s	223.33 ft	13.143 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
700.00 ft <sup>3</sup> /s	224.44 ft <sup>3</sup> /s	224.44 ft	15.394 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
800.00 ft <sup>3</sup> /s	225.71 ft <sup>3</sup> /s	225.71 ft	18.133 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
900.00 ft <sup>3</sup> /s	227.13 ft <sup>3</sup> /s	227.13 ft	21.372 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
1000.00 ft <sup>3</sup> /s	228.68 ft <sup>3</sup> /s	228.68 ft	25.169 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
1100.00 ft <sup>3</sup> /s	230.40 ft <sup>3</sup> /s	230.40 ft	29.691 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
1200.00 ft <sup>3</sup> /s	232.35 ft <sup>3</sup> /s	232.35 ft	35.202 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
1496.28 ft <sup>3</sup> /s	234.84 ft <sup>3</sup> /s	234.84 ft	42.934 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=1.84 ft	Q=177.28 ft <sup>3</sup> /s

**orifice:**  $Q_o = C_d A_o (2gH_o)^{1/2}$

$Q_o$  = the orifice flow rate

$C_d$  = orifice discharge coefficient (0.40 - 0.60)

$A_o$  = area of orifice

$H_o$  = effective head on the orifice measured from the centre of the opening

$g$  = acceleration due to gravity

**sharp-crested weir:**  $Q_w = C_w L H_w^{3/2}$

$Q_w$  = weir discharge

$L$  = weir base width

$H_w$  = head above weir crest excluding velocity head

**submerged sharp-crested weir:**  $Q_s = Q_u [1 - (H_2/H_1)^{1/2}]^{0.5}$

$Q_s$  = submerged weir discharge

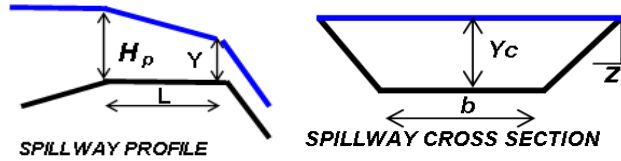
$Q_u$  = unsubmerged weir discharge

$H_1$  = upstream head above weir crest

$H_2$  = downstream head above weir crest

# Low Point of Pond in Cut - Spillway Computations

<b>SELECTED BOTTOM WIDTH (b):</b>	20.00 ft
<b>SIDE SLOPE:</b>	3.0:1
<b>LEVEL SECTION LENGTH (L):</b>	25.00 ft
<b>ROUGHNESS COEFFICIENT (n):</b>	0.020
<b>SPILLWAY INVERT ELEVATION:</b>	233.00



Yc	T	Ac	Qc	Vc	Hec	a	Hp	R	Sc	Elev
0.00			0.00							233.00
1.26	27.56 ft	29.96 ft <sup>2</sup>	177.28 ft <sup>3</sup> /s	5.92 ft/s	1.80 ft	0.00079	1.84 ft	1.07 ft	0.58%	234.84

234.84

CRITICAL FLOW EQUATIONS from SCS TR-2 dated 1956 and the Handbook of Hydraulics (Brater & King, 6 ed., page 8-16):

$$T = b + 2ZY_c$$

$$V_c = \text{SQRT}(gA/T)$$

$$H_p = H_{ec}(1 + aL)$$

$$A_c = (b + ZY_c)Y_c$$

$$H_{ec} = Y_c + V_c^2/2g$$

$$R = (b + ZY_c)Y_c / (b + 2ZY_c \text{SQRT}(1 + Z^2))$$

$$Q_c = \text{SQRT}(gA^3/T)$$

$$a = (4.32n^2)/H_{ec}^{1.33}$$

$$S_c = 14.56n^2/(R^{1.33})T$$

# Principal Spillway Computations - Proposed Conditions

## Concept NC3

Pond Elevation	Pond Area	Pond Volume
285.00 ft	52156.65 ft <sup>2</sup>	0.000 ac-ft
286.00 ft	56511.58 ft <sup>2</sup>	1.247 ac-ft
287.00 ft	61378.48 ft <sup>2</sup>	2.601 ac-ft
288.00 ft	66347.67 ft <sup>2</sup>	4.067 ac-ft
289.00 ft	71463.49 ft <sup>2</sup>	5.648 ac-ft
290.00 ft	77027.57 ft <sup>2</sup>	7.353 ac-ft
291.00 ft	82646.08 ft <sup>2</sup>	9.186 ac-ft
292.00 ft	88357.66 ft <sup>2</sup>	11.149 ac-ft
293.00 ft	94152.78 ft <sup>2</sup>	13.244 ac-ft
294.00 ft	100032.86 ft <sup>2</sup>	15.472 ac-ft
295.00 ft	105999.90 ft <sup>2</sup>	17.837 ac-ft
296.00 ft	112054.62 ft <sup>2</sup>	20.340 ac-ft
297.00 ft	118188.39 ft <sup>2</sup>	22.983 ac-ft
298.00 ft	124417.27 ft <sup>2</sup>	25.768 ac-ft
299.00 ft	130741.33 ft <sup>2</sup>	28.697 ac-ft
300.00 ft	137165.45 ft <sup>2</sup>	31.772 ac-ft
301.00 ft	143691.10 ft <sup>2</sup>	34.996 ac-ft
302.00 ft	150403.64 ft <sup>2</sup>	38.371 ac-ft
303.00 ft	157259.68 ft <sup>2</sup>	41.903 ac-ft
304.00 ft	164292.22 ft <sup>2</sup>	45.594 ac-ft
305.00 ft	171477.56 ft <sup>2</sup>	49.448 ac-ft
306.00 ft	178896.70 ft <sup>2</sup>	53.470 ac-ft

Barrel Q	Barrel HW
0.00 ft <sup>3</sup> /s	285.00 ft
140.00 ft <sup>3</sup> /s	289.46 ft
280.00 ft <sup>3</sup> /s	293.20 ft
390.00 ft <sup>3</sup> /s	297.70 ft
491.42 ft <sup>3</sup> /s	303.71 ft
501.17 ft <sup>3</sup> /s	304.37 ft
508.24 ft <sup>3</sup> /s	304.86 ft
514.22 ft <sup>3</sup> /s	305.27 ft
519.47 ft <sup>3</sup> /s	305.64 ft
524.17 ft <sup>3</sup> /s	305.98 ft
527.32 ft <sup>3</sup> /s	306.20 ft

Release Point	Crest Elevation	Crest Width	Orifice Height	Orifice Area	Co	Cw
Low Flow	0.00 ft	0.00 ft	0.00 ft	0.00 ft <sup>2</sup>	0	0
Weir	0.00 ft	0.00 ft	0.00 ft	0.00 ft <sup>2</sup>	0	0

Total Flow	Riser WSEL	Pond WSEL	Pond Storage	Low Flow			Weir			Emergency Spillway	
0.00 ft <sup>3</sup> /s	285.00 ft <sup>3</sup> /s			h=0.00 ft	Q=0.00 ft <sup>3</sup> /s	h=0.00 ft	h=0.00 ft	h=0.00 ft	h=0.00 ft		
100.00 ft <sup>3</sup> /s	288.19 ft <sup>3</sup> /s	288.19 ft	4.352 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
200.00 ft <sup>3</sup> /s	291.06 ft <sup>3</sup> /s	291.06 ft	9.305 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
390.00 ft <sup>3</sup> /s	297.70 ft <sup>3</sup> /s	297.70 ft	24.917 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
425.00 ft <sup>3</sup> /s	299.77 ft <sup>3</sup> /s	299.77 ft	31.064 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
450.00 ft <sup>3</sup> /s	301.26 ft <sup>3</sup> /s	301.26 ft	35.844 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
470.00 ft <sup>3</sup> /s	302.44 ft <sup>3</sup> /s	302.44 ft	39.908 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a		
479.50 ft <sup>3</sup> /s	303.00 ft <sup>3</sup> /s	303.00 ft	41.916 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=0.00 ft	0.00 ft <sup>3</sup> /s
550.52 ft <sup>3</sup> /s	303.63 ft <sup>3</sup> /s	303.63 ft	44.194 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=0.63 ft	60.52 ft <sup>3</sup> /s
778.25 ft <sup>3</sup> /s	304.64 ft <sup>3</sup> /s	304.64 ft	48.024 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=1.63 ft	273.25 ft <sup>3</sup> /s
931.33 ft <sup>3</sup> /s	305.12 ft <sup>3</sup> /s	305.12 ft	49.913 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=2.12 ft	419.33 ft <sup>3</sup> /s
1334.58 ft <sup>3</sup> /s	306.18 ft <sup>3</sup> /s	306.18 ft	54.217 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=3.18 ft	807.58 ft <sup>3</sup> /s

**orifice:**  $Q_o = C_d A_o (2gH_o)^{1/2}$

$Q_o$  = the orifice flow rate

$C_d$  = orifice discharge coefficient (0.40 - 0.60)

$A_o$  = area of orifice

$H_o$  = effective head on the orifice measured from the centre of the opening

$g$  = acceleration due to gravity

**sharp-crested weir:**  $Q_w = C_w L H_w^{3/2}$

$Q_w$  = weir discharge

$L$  = weir base width

$H_w$  = head above weir crest excluding velocity head

**submerged sharp-crested weir:**  $Q_s = Q_u [1 - (H_2/H_1)^{1.5}]^{0.003}$

$Q_s$  = submerged weir discharge

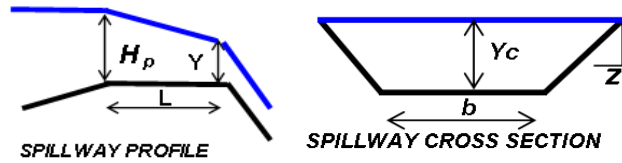
$Q_u$  = unsubmerged weir discharge

$H_1$  = upstream head above weir crest

$H_2$  = downstream head above weir crest

## Low Point of Pond in Cut - Spillway Computations

<b>SELECTED BOTTOM WIDTH (b):</b>	40.00 ft
<b>SIDE SLOPE:</b>	3.0:1
<b>LEVEL SECTION LENGTH (L):</b>	10.00 ft
<b>ROUGHNESS COEFFICIENT (n):</b>	0.020
<b>SPILLWAY INVERT ELEVATION:</b>	303.00



Y <sub>c</sub>	T	A <sub>c</sub>	Q <sub>c</sub>	V <sub>c</sub>	H <sub>ec</sub>	a	H <sub>p</sub>	R	Sc	Elev
0.00			0.00							303.00
0.41	42.46 ft	16.90 ft <sup>2</sup>	60.52 ft <sup>3</sup> /s	3.58 ft/s	0.61 ft	0.00334	0.63 ft	0.40 ft	0.79%	303.63
1.10	46.60 ft	47.63 ft <sup>2</sup>	273.25 ft <sup>3</sup> /s	5.74 ft/s	1.61 ft	0.00091	1.63 ft	1.01 ft	0.58%	304.63
1.45	48.70 ft	64.31 ft <sup>2</sup>	419.33 ft <sup>3</sup> /s	6.52 ft/s	2.11 ft	0.00064	2.12 ft	1.31 ft	0.54%	305.12
2.20	53.20 ft	102.52 ft <sup>2</sup>	807.58 ft <sup>3</sup> /s	7.88 ft/s	3.16 ft	0.00037	3.18 ft	1.90 ft	0.48%	306.18

CRITICAL FLOW EQUATIONS from SCS TR-2 dated 1956 and the Handbook of Hydraulics (Brater & King, 6 ed., page 8-16):

$$T = b + 2ZY_c$$

$$V_c = \text{SQRT}(gA/T)$$

$$H_p = H_{ec}(1 + aL)$$

$$A_c = (b + ZY_c)Y_c$$

$$H_{ec} = Y_c + V_c^2/2g$$

$$R = (b + ZY_c)Y_c / (b + 2ZY_c \text{SQRT}(1 + Z^2))$$

$$Q_c = \text{SQRT}(gA^3/T)$$

$$a = (4.32n^2)/H_{ec}^{1.33}$$

$$S_c = 14.56n^2A/(R^{1.33})T$$

# Principal Spillway Computations - Proposed Conditions

## Concept NC4

Pond Elevation	Pond Area	Pond Volume
386.00 ft	35707.63 ft <sup>2</sup>	0.000 ac-ft
387.00 ft	39366.70 ft <sup>2</sup>	0.862 ac-ft
388.00 ft	43131.49 ft <sup>2</sup>	1.809 ac-ft
389.00 ft	47017.06 ft <sup>2</sup>	2.843 ac-ft
390.00 ft	51050.38 ft <sup>2</sup>	3.969 ac-ft
391.00 ft	55262.03 ft <sup>2</sup>	5.189 ac-ft
392.00 ft	59627.26 ft <sup>2</sup>	6.508 ac-ft
393.00 ft	64159.79 ft <sup>2</sup>	7.929 ac-ft
394.00 ft	68909.08 ft <sup>2</sup>	9.456 ac-ft
395.00 ft	73846.60 ft <sup>2</sup>	11.095 ac-ft
396.00 ft	78923.42 ft <sup>2</sup>	12.849 ac-ft

Barrel Q	Barrel HW
0.00 ft <sup>3</sup> /s	386.00 ft
70.00 ft <sup>3</sup> /s	389.89 ft
134.73 ft <sup>3</sup> /s	393.18 ft
144.97 ft <sup>3</sup> /s	393.91 ft
151.13 ft <sup>3</sup> /s	394.37 ft
155.82 ft <sup>3</sup> /s	394.73 ft
159.86 ft <sup>3</sup> /s	395.06 ft
163.37 ft <sup>3</sup> /s	395.34 ft
166.52 ft <sup>3</sup> /s	395.61 ft
169.36 ft <sup>3</sup> /s	395.85 ft
171.69 ft <sup>3</sup> /s	396.05 ft
0.00 ft <sup>3</sup> /s	0.00 ft
0.00 ft <sup>3</sup> /s	0.00 ft
0.00 ft <sup>3</sup> /s	0.00 ft
0.00 ft <sup>3</sup> /s	0.00 ft

Release Point	Crest Elevation	Crest Width	Orifice Height	Orifice Area	Co	Cw
Low Flow	0.00 ft	0.00 ft	0.00 ft	0.00 ft <sup>2</sup>	0	0
Weir	0.00 ft	0.00 ft	0.00 ft	0.00 ft <sup>2</sup>	0	0

Total Flow	Riser WSEL	Pond WSEL	Pond Storage	Low Flow		Weir			Emergency Spillway	
0.00 ft <sup>3</sup> /s	386.00 ft <sup>3</sup> /s			h=0.00 ft	Q=0.00 ft <sup>3</sup> /s	h=0.00 ft	h=0.00 ft	h=0.00 ft	h=0.00 ft	
10.00 ft <sup>3</sup> /s	386.56 ft <sup>3</sup> /s	386.56 ft	0.469 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	
25.00 ft <sup>3</sup> /s	387.39 ft <sup>3</sup> /s	387.39 ft	1.220 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	
40.00 ft <sup>3</sup> /s	388.22 ft <sup>3</sup> /s	388.22 ft	2.032 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	
60.00 ft <sup>3</sup> /s	389.33 ft <sup>3</sup> /s	389.33 ft	3.209 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	
80.00 ft <sup>3</sup> /s	390.40 ft <sup>3</sup> /s	390.40 ft	4.444 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	
100.00 ft <sup>3</sup> /s	391.41 ft <sup>3</sup> /s	391.41 ft	5.724 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	
110.00 ft <sup>3</sup> /s	391.92 ft <sup>3</sup> /s	391.92 ft	6.403 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	
120.00 ft <sup>3</sup> /s	392.43 ft <sup>3</sup> /s	392.43 ft	7.108 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	
131.10 ft <sup>3</sup> /s	393.00 ft <sup>3</sup> /s	393.00 ft	7.922 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=0.00 ft
175.68 ft <sup>3</sup> /s	393.56 ft <sup>3</sup> /s	393.56 ft	8.764 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=0.56 ft
332.85 ft <sup>3</sup> /s	394.29 ft <sup>3</sup> /s	394.29 ft	9.913 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=1.29 ft
645.74 ft <sup>3</sup> /s	395.07 ft <sup>3</sup> /s	395.07 ft	11.216 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=2.07 ft
1168.38 ft <sup>3</sup> /s	395.90 ft <sup>3</sup> /s	395.90 ft	12.677 ac-ft	barrel	n/a	n/a	barrel	n/a	n/a	h=2.90 ft

**orifice:**  $Q_o = C_d A_o (2gH_o)^{1/2}$

$Q_o$  = the orifice flow rate

$C_d$  = orifice discharge coefficient (0.40 - 0.60)

$A_o$  = area of orifice

$H_o$  = effective head on the orifice measured from the centre of the opening

$g$  = acceleration due to gravity

**sharp-crested weir:**  $Q_w = C_w L H_w^{1.5}$

$Q_w$  = weir discharge

$L$  = weir base width

$H_w$  = head above weir crest excluding velocity head

**submerged sharp-crested weir:**  $Q_s = Q_u [1 - (H_2/H_1)^{1.5}]^{0.95}$

$Q_s$  = submerged weir discharge

$Q_u$  = unsubmerged weir discharge

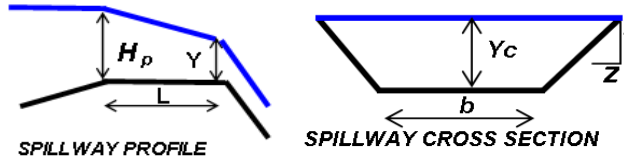
$H_1$  = upstream head above weir crest

$H_2$  = downstream head above weir crest



# Low Point of Pond in Cut - Spillway Computations

<b>SELECTED BOTTOM WIDTH (b):</b>	25.00 ft
<b>SIDE SLOPE:</b>	20.0:1
<b>LEVEL SECTION LENGTH (L):</b>	25.00 ft
<b>ROUGHNESS COEFFICIENT (n):</b>	0.020
<b>SPILLWAY INVERT ELEVATION:</b>	393.00



Yc	T	Ac	Qc	Vc	Hec	a	Hp	R	Sc	Elev
0.00			0.00							393.00
0.36	39.40 ft	11.59 ft <sup>2</sup>	35.68 ft <sup>3</sup> /s	3.08 ft/s	0.51 ft	0.00427	0.56 ft	0.29 ft	0.88%	393.56
0.92	61.88 ft	40.05 ft <sup>2</sup>	182.85 ft <sup>3</sup> /s	4.57 ft/s	1.25 ft	0.00129	1.29 ft	0.65 ft	0.67%	394.29
1.54	86.60 ft	85.93 ft <sup>2</sup>	485.74 ft <sup>3</sup> /s	5.65 ft/s	2.04 ft	0.00067	2.07 ft	0.99 ft	0.58%	395.07
2.20	113.00 ft	151.80 ft <sup>2</sup>	998.38 ft <sup>3</sup> /s	6.58 ft/s	2.87 ft	0.00042	2.90 ft	1.34 ft	0.53%	395.90

393.00  
393.56  
394.29  
395.07  
395.90

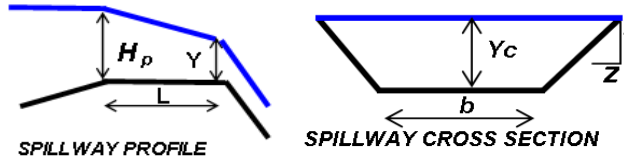
CRITICAL FLOW EQUATIONS from SCS TR-2 dated 1956 and the Handbook of Hydraulics (Brater & King, 6 ed., page 8-16):

$$\begin{aligned}
 T &= b + 2ZY_c & V_c &= \text{SQRT}(gA/T) & H_p &= Hec(1 + aL) \\
 A_c &= (b + ZY_c)Y_c & Hec &= Y_c + V_c^2/2g & R &= (b + ZY_c)Y_c / (b + 2Y_c\text{SQRT}(1 + Z^2)) \\
 Q_c &= \text{SQRT}(gA^3/T) & a &= (4.32n^2)/Hec^{1.33} & Sc &= 14.56n^2A / (R^{1.33})T
 \end{aligned}$$



# Low Point of Pond in Cut - Spillway Computations

<b>SELECTED BOTTOM WIDTH (b):</b>	10.00 ft
<b>SIDE SLOPE:</b>	3.0:1
<b>LEVEL SECTION LENGTH (L):</b>	25.00 ft
<b>ROUGHNESS COEFFICIENT (n):</b>	0.020
<b>SPILLWAY INVERT ELEVATION:</b>	277.54



Yc	T	Ac	Qc	Vc	Hec	a	Hp	R	Sc	Elev
0.84	15.04 ft	10.52 ft <sup>2</sup>	49.90 ft <sup>3</sup> /s	4.75 ft/s	1.19 ft	0.00137	1.23 ft	0.69 ft	0.67%	278.77
1.53	19.15 ft	22.23 ft <sup>2</sup>	135.88 ft <sup>3</sup> /s	6.11 ft/s	2.11 ft	0.00064	2.14 ft	1.13 ft	0.57%	279.68
2.29	23.74 ft	38.63 ft <sup>2</sup>	279.65 ft <sup>3</sup> /s	7.24 ft/s	3.10 ft	0.00038	3.13 ft	1.58 ft	0.52%	280.67

277.70  
279.13  
280.67

CRITICAL FLOW EQUATIONS from SCS TR-2 dated 1956 and the Handbook of Hydraulics (Brater & King, 6 ed., page 8-16):

$$\begin{aligned}
 T &= b + 2ZY_c & V_c &= \text{SQRT}(gA/T) & H_p &= Hec(1 + aL) \\
 A_c &= (b + ZY_c)Y_c & Hec &= Y_c + V_c^2/2g & R &= (b + ZY_c)Y_c / (b + 2Y_c\text{SQRT}(1 + Z^2)) \\
 Q_c &= \text{SQRT}(gA^3/T) & a &= (4.32n^2)/Hec^{1.33} & Sc &= 14.56n^2A/(R^{1.33})T
 \end{aligned}$$

Project: E.C.FS 2016  
 County: \_\_\_\_\_  
 Watershed: \_\_\_\_\_  
 Project Number: \_\_\_\_\_  
 Design Phase: CONCEPT -H1-UG1

Designed By: KMO  
 Checked By: \_\_\_\_\_  
 Approved By: \_\_\_\_\_  
 Date: 4/7/2017  
 Study Area: \_\_\_\_\_  
 BMP ID: \_\_\_\_\_

## H1-UG1 Stage Storage Table

**Stage -Storage Data Table**

Storage Volume Using Average-End-Area Method (Pond)						
(1) Contour Elevation (ft.)	(2) Elevation Area (ft. <sup>2</sup> )	(3) Average Area (ft. <sup>2</sup> )	(4) Incremental Height (ft.)	(5) Elevation Storage (ft. <sup>3</sup> )	(6) Cumulative Storage (ft. <sup>3</sup> )	(7) Cumulative Storage (acre-ft)
149.00	43,590	0	0.00	0	0	0.00
154.00	43,590	43,590	5.00	217,950	217,950	5.00
159.00	43,590	43,590	5.00	217,950	435,900	10.01
164.00	43,590	43,590	5.00	217,950	653,850	15.01
169.00	43,590	43,590	5.00	217,950	871,800	20.01
174.00	43,590	43,590	5.00	217,950	1,089,750	25.02
175.00	43,590	43,590	1.00	43,590	1,133,340	26.02
176.00	43,590	43,590	1.00	43,590	1,176,930	27.02
177.00	43,590	43,590	1.00	43,590	1,220,520	28.02
178.00	43,590	43,590	1.00	43,590	1,264,110	29.02
179.00	43,590	43,590	1.00	43,590	1,307,700	30.02

Project: E.C.FS 2016  
 County: \_\_\_\_\_  
 Watershed: \_\_\_\_\_  
 Project Number: \_\_\_\_\_  
 Design Phase: CONCEPT -H1-UG2

Designed By: KMO  
 Checked By: \_\_\_\_\_  
 Approved By: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Study Area: \_\_\_\_\_  
 BMP ID: \_\_\_\_\_

## H1-UG2 Stage Storage Table

**Stage -Storage Data Table**

Storage Volume Using Average-End-Area Method (Pond)						
(1) Contour Elevation (ft.)	(2) Elevation Area (ft. <sup>2</sup> )	(3) Average Area (ft. <sup>2</sup> )	(4) Incremental Height (ft.)	(5) Elevation Storage (ft. <sup>3</sup> )	(6) Cumulative Storage (ft. <sup>3</sup> )	(7) Cumulative Storage (acre-ft)
220.00	89,036	0	0.00	0	0	0.00
225.00	89,036	89,036	5.00	445,180	445,180	10.22
230.00	89,036	89,036	5.00	445,180	890,360	20.44
235.00	89,036	89,036	5.00	445,180	1,335,540	30.66
240.00	89,036	89,036	5.00	445,180	1,780,720	40.88
241.00	89,036	89,036	1.00	89,036	1,869,756	42.92
242.00	89,036	89,036	1.00	89,036	1,958,792	44.97
243.00	89,036	89,036	1.00	89,036	2,047,828	47.01

Project: E.C.FS 2016  
 County: \_\_\_\_\_  
 Watershed: \_\_\_\_\_  
 Project Number: \_\_\_\_\_  
 Design Phase: CONCEPT -H1-UG3

Designed By: KMO  
 Checked By: \_\_\_\_\_  
 Approved By: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Study Area: \_\_\_\_\_  
 BMP ID: \_\_\_\_\_

## H1-UG3 Stage Storage Table

**Stage -Storage Data Table**

Storage Volume Using Average-End-Area Method (Pond)						
(1) Contour Elevation (ft.)	(2) Elevation Area (ft. <sup>2</sup> )	(3) Average Area (ft. <sup>2</sup> )	(4) Incremental Height (ft.)	(5) Elevation Storage (ft. <sup>3</sup> )	(6) Cumulative Storage (ft. <sup>3</sup> )	(7) Cumulative Storage (acre-ft)
240.00	35,940	0	0.00	0	0	0.00
245.00	35,940	35,940	5.00	179,700	179,700	4.13
250.00	35,940	35,940	5.00	179,700	359,400	8.25
255.00	35,940	35,940	5.00	179,700	539,100	12.38
260.00	35,940	35,940	5.00	179,700	718,800	16.50
261.00	35,940	35,940	1.00	35,940	754,740	17.33
262.00	35,940	35,940	1.00	35,940	790,680	18.15
263.00	35,940	35,940	1.00	35,940	826,620	18.98

Project: E.C.FS 2016  
 County: \_\_\_\_\_  
 Watershed: \_\_\_\_\_  
 Project Number: \_\_\_\_\_  
 Design Phase: CONCEPT -H8-UG1

Designed By: KMO  
 Checked By: \_\_\_\_\_  
 Approved By: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Study Area: \_\_\_\_\_  
 BMP ID: \_\_\_\_\_

## H8-UG1 Stage Storage Table

**Stage -Storage Data Table**

Storage Volume Using Average-End-Area Method (Pond)				
(1) Contour Elevation (ft.)	(2) Elevation Cross Section (ft. <sup>2</sup> )	(3) Pipe Length (ft.)	(6) Cumulative Storage (ft. <sup>3</sup> )	(7) Cumulative Storage (acre-ft)
190.00	0	4,640	0	0.00
192.00	11.18	4,640	51,875	1.19
194.00	29.34	4,640	136,138	3.13
196.00	49.2	4,640	228,288	5.24
198.00	67.36	4,640	312,550	7.18
200.00	78.54	4,640	364,426	8.37
201.00	78.54	N/A	364,426	8.37
202.00	78.54	N/A	364,426	8.37

8 Rows      at 580' long each

Project: E.C.FS 2016  
 County: \_\_\_\_\_  
 Watershed: \_\_\_\_\_  
 Project Number: \_\_\_\_\_  
 Design Phase: CONCEPT -H8-UG2

Designed By: KMO  
 Checked By: \_\_\_\_\_  
 Approved By: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Study Area: \_\_\_\_\_  
 BMP ID: \_\_\_\_\_

## H8-UG2 Stage Storage Table

**Stage -Storage Data Table**

Storage Volume Using Average-End-Area Method (Pond)				
(1) Contour Elevation (ft.)	(2) Elevation Cross Section (ft. <sup>2</sup> )	(3) Pipe Length (ft.)	(6) Cumulative Storage (ft. <sup>3</sup> )	(7) Cumulative Storage (acre-ft)
308.00	0	5,280	0	0.00
310.00	11.18	5,280	59,030	1.36
312.00	29.34	5,280	154,915	3.56
314.00	49.2	5,280	259,776	5.96
316.00	67.36	5,280	355,661	8.16
318.00	78.54	5,280	414,691	9.52
319.00	78.54	N/A	414,691	9.52
320.00	78.54	N/A	414,691	9.52

12 Rows at 440' long each



Project: E.C.FS 2016  
 County: \_\_\_\_\_  
 Watershed: \_\_\_\_\_  
 Project Number: \_\_\_\_\_  
 Design Phase: CONCEPT -H8-UG3

Designed By: KMO  
 Checked By: \_\_\_\_\_  
 Approved By: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Study Area: \_\_\_\_\_  
 BMP ID: \_\_\_\_\_

## H8-UG3 Stage Storage Table

**Stage -Storage Data Table**

Storage Volume Using Average-End-Area Method (Pond)				
(1) Contour Elevation (ft.)	(2) Elevation Cross Section (ft. <sup>2</sup> )	(3) Pipe Length (ft.)	(6) Cumulative Storage (ft. <sup>3</sup> )	(7) Cumulative Storage (acre-ft)
312.00	0	5,940	0	0.00
314.00	11.18	5,940	66,409	1.52
316.00	29.34	5,940	174,280	4.00
318.00	49.2	5,940	292,248	6.71
320.00	67.36	5,940	400,118	9.19
322.00	78.54	5,940	466,528	10.71
323.00	78.54	N/A	466,528	10.71
324.00	78.54	N/A	466,528	10.71

9 Rows      at 660' long each

Project: E.C.FS 2016  
 County: \_\_\_\_\_  
 Watershed: \_\_\_\_\_  
 Project Number: \_\_\_\_\_  
 Design Phase: CONCEPT -H8-UG4

Designed By: KMO  
 Checked By: \_\_\_\_\_  
 Approved By: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Study Area: \_\_\_\_\_  
 BMP ID: \_\_\_\_\_

## H8-UG4 Stage Storage Table

**Stage -Storage Data Table**

Storage Volume Using Average-End-Area Method (Pond)				
(1) Contour Elevation (ft.)	(2) Elevation Cross Section (ft. <sup>2</sup> )	(3) Pipe Length (ft.)	(6) Cumulative Storage (ft. <sup>3</sup> )	(7) Cumulative Storage (acre-ft)
348.00	0	6,300	0	0.00
350.00	11.18	6,300	70,434	1.62
352.00	29.34	6,300	184,842	4.24
354.00	49.2	6,300	309,960	7.12
356.00	67.36	6,300	424,368	9.74
358.00	78.54	6,300	494,802	11.36
359.00	78.54	N/A	494,802	11.36
360.00	78.54	N/A	494,802	11.36

10 Rows at 630' long each