



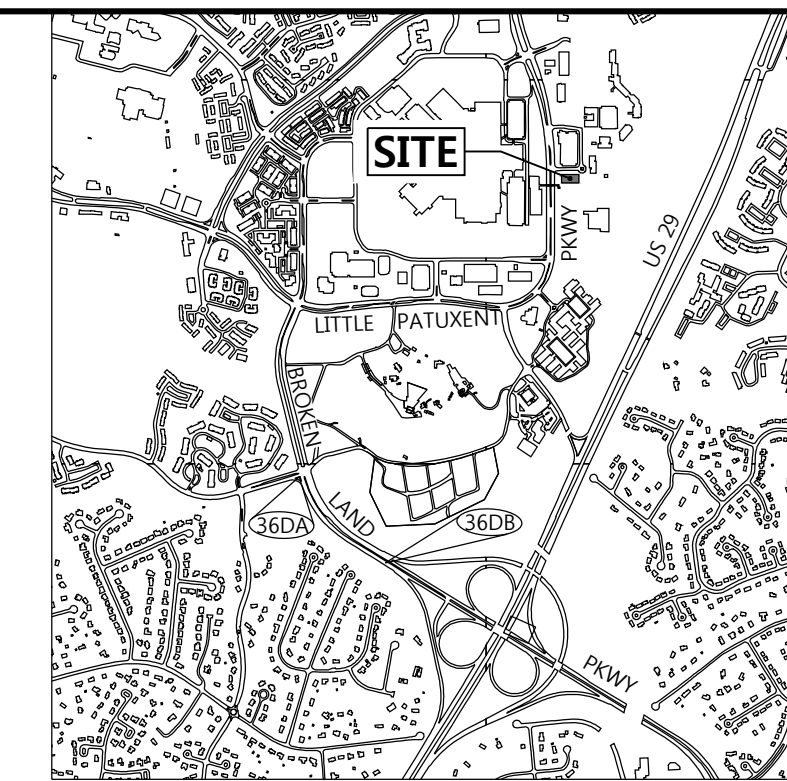
TEMPORARY SURFACE LOT
PARCEL 321, LOT 17 10227 WINCOPIN
CIRCLE COLUMBIA, MD 21044

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-3880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD); ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- EXISTING TOPOGRAPHIC INFORMATION SHOWN HEREON REFLECTS THE TOPOGRAPHIC SURVEY PERFORMED BY DMW, INC. ON AUGUST 27, 2019. THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH ONE FOOT CONTOUR INTERVALS PREPARED BY DMW, INC. ON AUGUST 27, 2019.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UP ON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NO'S 36AA, 30GA, 36DB & 30G4.
- EXISTING PUBLIC WATER CONSTRUCTED UNDER SDP 69-904.
- EXISTING PUBLIC SEWER CONSTRUCTED UNDER SDP 69-904.
- PROPOSED STORMWATER MANAGEMENT BY MEANS OF MICRO-BIORETENTION WILL BE PRIVATE AND THE MAINTENANCE RESPONSIBILITY WILL BE THE OWNER'S. STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME I, STORM DRAINAGE, AND REVISED MAY 3, 2010. THIS REVISION TO THE DESIGN MANUAL (CHAPTER 5 - STORM WATER MANAGEMENT) AMENDS HOWARD COUNTY'S STANDARD FOR DESIGN AND CONSTRUCTION OF STORMWATER MANAGEMENT FACILITIES IN ACCORDANCE WITH THE STATE'S STORMWATER MANAGEMENT ACT OF 2007.
- EXISTING UTILITIES ARE BASED ON FIELD LOCATIONS BY AL DATA, INC. AND SUPPLEMENTED WITH OBSERVABLE EVIDENCE DMW, INC. FIELD CREWS.
- THERE ARE NO WETLANDS ON THIS SITE.
- A TRAFFIC IMPACT STUDY STATEMENT, PREPARED BY WELLS AND ASSOCIATES, DATED OCTOBER 27, 2017, WAS REVIEWED AND APPROVED AS A PART OF THE FDP DOWNTOWN COLUMBIA LAKEFRONT CORE NEIGHBORHOOD PHASE I. THE TRAFFIC GENERATED AS A RESULT OF THIS SDP-69-904 PLAN DOES NOT WARRANT A TRAFFIC SIGNAL AT THIS TIME.
- THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF A 2.0 FOOT PROTECTIVE COVER OVER ALL UTILITIES DURING CONSTRUCTION.
- ALL OUTDOOR LIGHTING SHALL COMPLY WITH THE REQUIREMENTS OF ZONING SECTION 134. ALL EXTERIOR LIGHT FIXTURES SHALL BE ORIENTED TO DIRECT LIGHT INWARD AND DOWNWARD AND AWAY FROM ALL ADJOINING RESIDENTIAL PROPERTIES AND PUBLIC ROADS IN ACCORDANCE WITH SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS.
- THE SITE HAS BEEN DESIGNED TO BE IN CONFORMANCE WITH ADA REGULATIONS 28 CFR PART 36, REVISED SEPTEMBER 15, 2010. HANDICAP PARKING DETAILS AND SIGNAGE SHALL BE IN ACCORDANCE WITH ADAAG (AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES) AND COMAR (CODE OF MARYLAND REGULATIONS) SECTION 5.02.02.
- ANY DAMAGE TO THE COUNTY OWNED RIGHT-OF-WAY SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- ALL SIDEWALKS SHALL BE CROSS SLOPED AT 1/4 INCH PER FOOT.
- TRENCH BEDDING FOR STORM DRAINAGE STRUCTURES SHALL BE IN ACCORDANCE WITH HOWARD COUNTY STANDARD G2.01.
- ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS OR MSHA STANDARDS AS SPECIFIED ON THE STRUCTURE.
- ALL MATERIALS AND CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME IV.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING PROPERTY WHICH MAY OCCUR AS A RESULT OF NEGLIGENCE DURING THE EXECUTION OF WORK.
- ELECTRIC, GAS, CABLE, TELEPHONE AND LIGHTING LINES ARE DESIGNED BY OTHERS.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$4,470.00 FOR 10 SHADE TREES AND 49 SHRUBS.
- THE SUBJECT PROPERTY IS ZONED NT PER THE COMPREHENSIVE PLAN EFFECTIVE 10/03/13 AND DESIGNATED DMUA PER THE DOWNTOWN COLUMBIA PLAN AND FDP-DC-L-1.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREA AND 100-YEAR FLOODPLAIN.
- THIS PROJECT IS EXEMPT FROM FOREST CONSERVATION IN ACCORDANCE WITH SECTION 16.1202(B)(1)(IV) OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION MANUAL SINCE IT IS PLANNED UNIT DEVELOPMENT WHICH HAS PRELIMINARY DEVELOPMENT PLAN APPROVAL AND 50% OR MORE OF THE LAND IS RECORDED AND SUBSTANTIALLY DEVELOPED BEFORE DECEMBER 31, 1992.
- SETBACKS AND SITE DESIGN SHALL BE CONSISTANT WITH THE LAKEFRONT CORE NEIGHBORHOOD DESIGN GUIDELINES.
- VOLUME III DESIGN MANUAL WAVEN ON APRIL 6, 2020. THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING ALONG WITH THE DEPARTMENT OF PUBLIC WORKS GRANTED A DESIGN MANUAL WAVEN TO SECTION 2.5.8.9 GEOMETRIC DESIGN-INTERSECTION SITE DISTANCE TO UTILIZE THE AASHTO GREEN BOOK METHODOLOGY TO CALCULATE THE DESIGN SPEED BASED ON THE GEOMETRY OF THE ROAD THUS REDUCING THE REQUIRED SITE DISTANCE FROM 275' TO 135'. THE PROVIDED SITE DISTANCE IN THIS LOCATION IS 146'.

SITE DEVELOPMENT PLAN DOWNTOWN COLUMBIA 10227 WINCOPIN CIRCLE PARCEL 298 SDP-69-904 HOWARD COUNTY MARYLAND

SHEET INDEX	
SHEET NUMBER	SHEET TITLE
01	COVER SHEET
02	EXISTING CONDITIONS & DEMOLITION PLAN
03	SITE GRADING AND UTILITY PLAN
04	SITE & UTILITY DETAILS
05	STORM DRAIN PROFILES AND DRAINAGE AREA MAP
06	SWM FACILITY 1 DETAIL PLANTING AND DRAINAGE AREA MAP
07	SWM NOTES AND DETAILS
08	SEDIMENT AND EROSION CONTROL PLANS
09	SEC DRAINAGE AREA MAPS
10	SEC DETAILS
11	SEC SPECIFICATIONS
12	LANDSCAPE PLAN
13	LANDSCAPE DETAILS
14	LANDSCAPE NOTES



VICINITY MAP

SCALE: 1"=2000'
HOWARD COUNTY ADC
MAP NUMBER 4935
GRID NO. D6

HOWARD COUNTY GEODETIC COORDINATES	
BENCH MARK ID: 36DB NORTHING: 559,949.816 EASTING: 1,350,845.671 ELEV.: 344.648	BENCH MARK ID: 36DA NORTHING: 560,849.324 EASTING: 1,350,037.511 ELEV.: 363.651

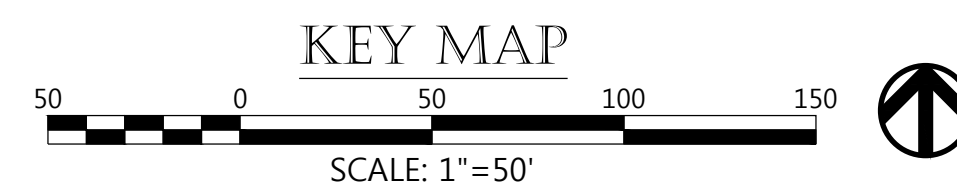
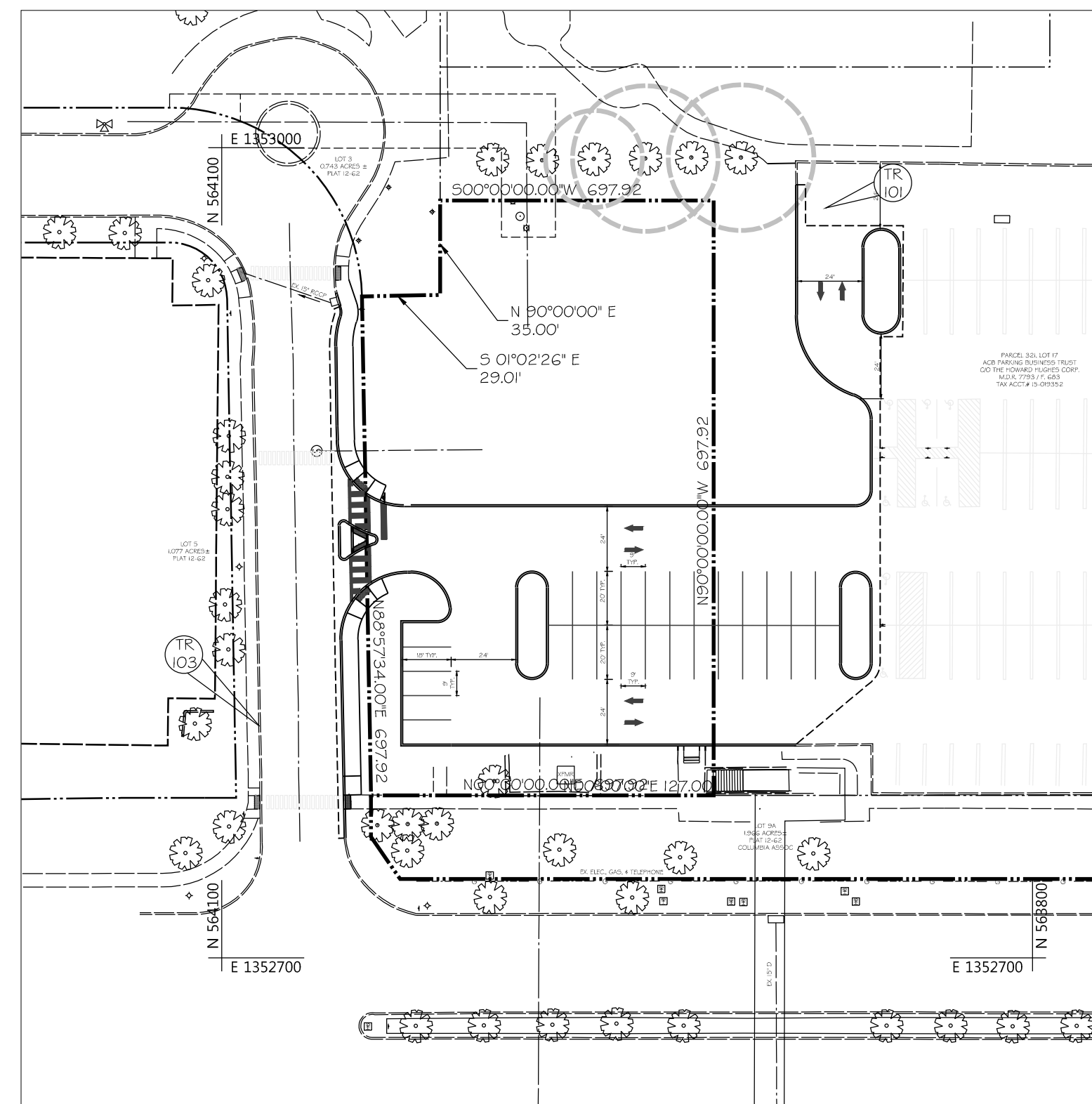
BENCHMARK

DESCRIPTION

TR101
N: 563,876.2910
E: 1,352,977.5570
ELEV=332.67
MAGNAIL IN PAVEMENT

TR103
N: 564,086.3200
E: 1,352,785.4820
ELEV=328.67
MAGNAIL IN CURB

- EXISTING TOPOGRAPHIC INFORMATION SHOWN HEREON REFLECTS THE RESULT A TOPOGRAPHIC SURVEY PERFORMED BY DMW, INC. ON AUGUST 27, 2019.
- PROPERTY LINES SHOWN HEREON ARE BASED UPON THE RESULTS OF ALTA SURVEY DATED 08/31/12.
- ADJOINING PROPERTY INFORMATION REFERENCED FROM HOWARD COUNTY, MARYLAND PROPERTY FINDER DATED 2010.



SITE ANALYSIS DATA CHART

- GENERAL SITE DATA
 - PRESENT ZONING: NT
 - APPLICABLE DPZ FILE REFERENCES: SDP-69-904, PB13-013, FDP-DC-L-1
 - PROPOSED USE: SURFACE PARKING LOT (15,488 SF)
 - EXISTING USE: VACANT LOT
 - PROPOSED WATER: N/A
 - PROPOSED SEWER: N/A
 - ANY OTHER RELEVANT INFORMATION: N/A
 - AREA OF STEEP SLOPES: 0 ACRES
 - AREA OF FLOODPLAIN: N/A
- AREA TABULATION
 - TOTAL SITE AREA: 0.629 AC +/-
 - LIMIT OF DISTURBED AREA: 45,450 S.F. OR 1.04 AC +/-
 - TOTAL IMPERVIOUS AREA: 20,125 S.F. OR 0.46 AC +/-
 - BUILDING COVERAGE OF SITE: N/A
- PARKING SPACE DATA
 - EXISTING PARKING SPACES FOR WHOLE FOODS: 159 SPACES
 - EXISTING HANDICAPPED SPACES: 8 TOTAL (4 STANDARD, 4 VAN)
 - NEW TEMPORARY PARKING SPACES PROVIDED: 29 SPACES (24 @ 9'x20', 5 @ 9'x18')
 - TOTAL PARKING SPACES IN PARKING FACILITY: 188 SPACES
 - REQUIRED HANDICAPPED SPACES FOR FACILITY: 6 SPACES (5 STANDARD, 1 VAN)
 - REQUIRED NEW HANDICAPPED SPACES: 0 SPACES

ADDRESS CHART

LOT NUMBER	STREET ADDRESS
13	10227 WINCOPIN CIRCLE, COLUMBIA, MD 21044

PURPOSE STATEMENT:

- THE PURPOSE OF REDLINE REVISION #1 IS TO:
- PROVIDE TEMPORARY SURFACE PARKING IN PREPARATION FOR THE FUTURE REDEVELOPMENT OF DOWNTOWN COLUMBIA AS PART OF THE LAKESIDE REDEVELOPMENT.
 - PROVIDE NEW STORMWATER MANAGEMENT BMP'S TO TREAT REQUIRED STORMWATER RUNOFF.

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 27020, EXPIRATION DATE: 01/25/22.

04-02-2020
DATE

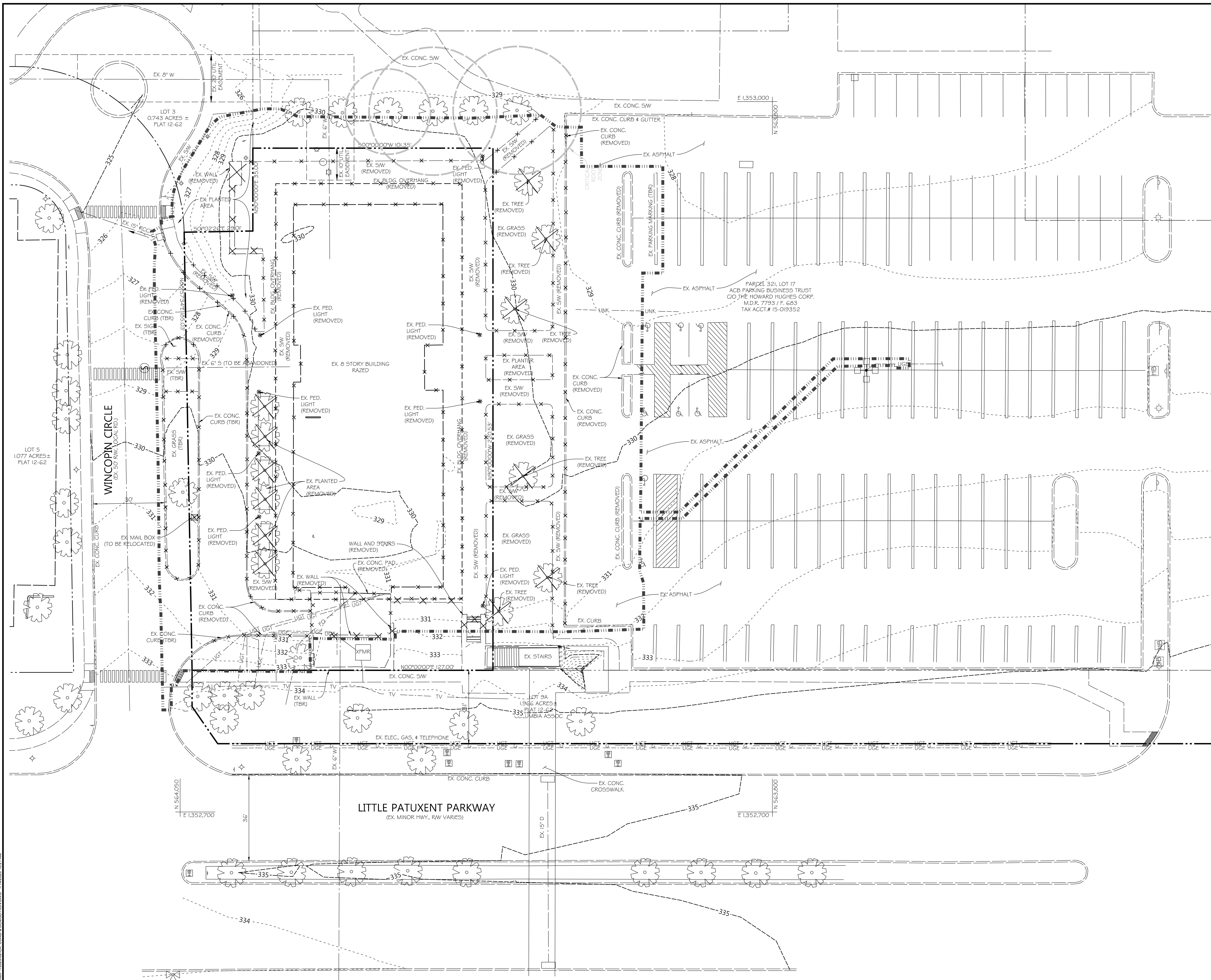
PROFESSIONAL ENGR. NO. 27020

APPROVED:
PLANNING BOARD OF HOWARD COUNTY
DATE: _____

04/02/20		REPLACEMENT OF ORIGINAL SDP SET WITH TEMPORARY PARKING LOT DESIGN SET
Date	No.	Revision Description
TEMPORARY SURFACE LOT PARCEL 321, LOT 17 10227 WINCOPIN CIRCLE COLUMBIA, MD 21044		
OWNER / DEVELOPER: AMERICAN CITY BUILDING BUSINESS TRUST C/O THE HOWARD HUGHES CORPORATION COLUMBIA REGIONAL OFFICE 10960 GRANTCHESTER WAY, SUITE 110 COLUMBIA, MD 21044 (410) 964-4800		
 DAFT MCULINE WALKER INC		
501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286 P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM		
SUBMISSION NAME	SECTION/AREA	LOT/PARCEL #
COLUMBIA TOWN CENTER	0001	13/0298 & 17/0321
PLAN FOR DP	RECORD #	ZONE
B-13 E-13	NT	36
WATER CODE	SEWER CODE	REG. DISTRICT
550	LITTLE PATUXENT	5-03
		CENSUS TRAC
		605402
		STAGE
		1
TITLE		
COVER SHEET		
REVISED SITE DEVELOPMENT PLAN		
Des. By	PAB	SCALE: AS SHOWN
Drn. By	PAB	Date 04-02-2020
Chk. By	RRP	Approved RRP
		Proj. No. 19029.00
		01 of 14

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
DIRECTOR	DATE



LEGEND

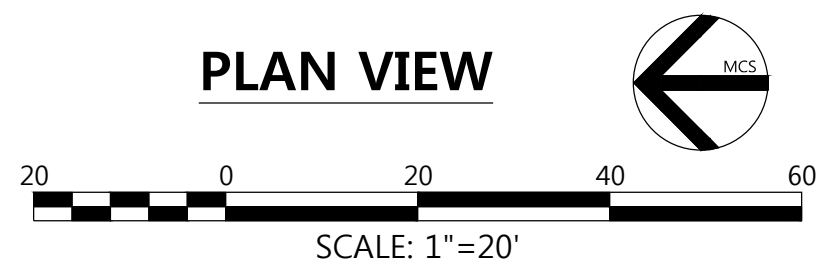
---	PROPERTY LINE
---	RIGHT-OF-WAY LINE
---	EX. F. CONTOUR
---	EX. S. CONTOUR
---	EX. CURB
---	EX. SIDEWALK
---	EX. BUILDING OVERHANG
---	EX. BUILDING
○	EX. TREE
○	EX. WATER LINE
○	EX. WATER STRUCTURE
○	EX. STORM DRAIN INLET
○	EX. STORM DRAIN INLET
○	EX. SANITARY SEWER PIPE
○	EX. SANITARY SEWER MANHOLE
---	EX. UNDERGROUND TELEPHONE LINE
---	EX. UNDERGROUND ELECTRIC LINE
---	EX. UNDERGROUND FIBEROPTIC LINE
---	EX. UNDERGROUND TELEVISION LINE
---	EX. UNDERGROUND GAS LINE
---	EX. UNKNOWN UNDERGROUND LINE
○	EX. HAND BOX
○	EX. PEDESTRIAN LIGHT
○	EX. STREET LIGHT
---	EX. SIGN
---	LIMIT OF DISTURBANCE
---	EX. FEATURE TO BE DEMOLISHED

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION _____ DATE _____

CHIEF, DIVISION OF LAND DEVELOPMENT _____ DATE _____

DIRECTOR _____ DATE _____



PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 27020, EXPIRATION DATE: 01/25/22.

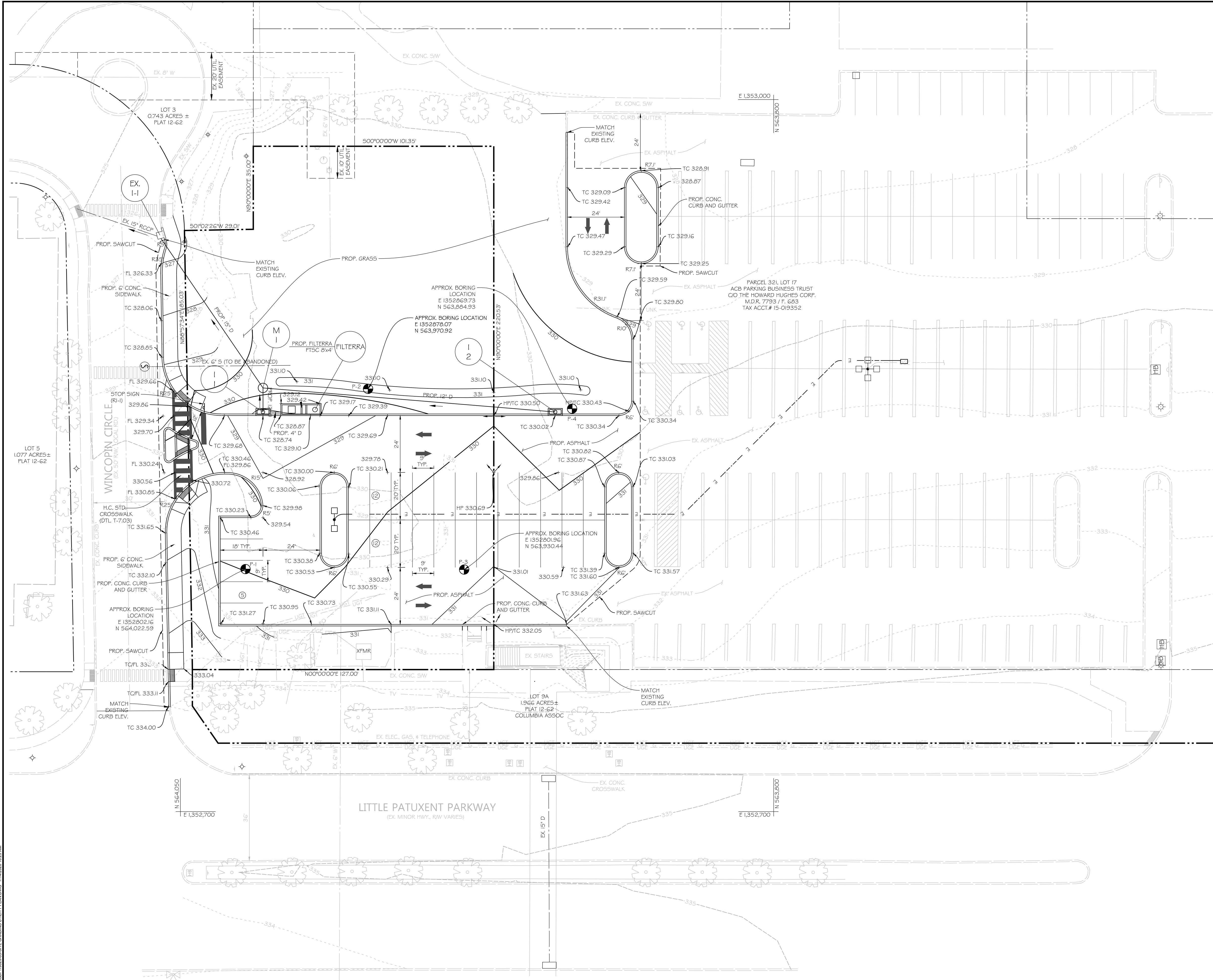
04-02-2020
 DATE

PROFESSIONAL ENGR. NO. 27020

APPROVED:
 PLANNING BOARD OF HOWARD COUNTY

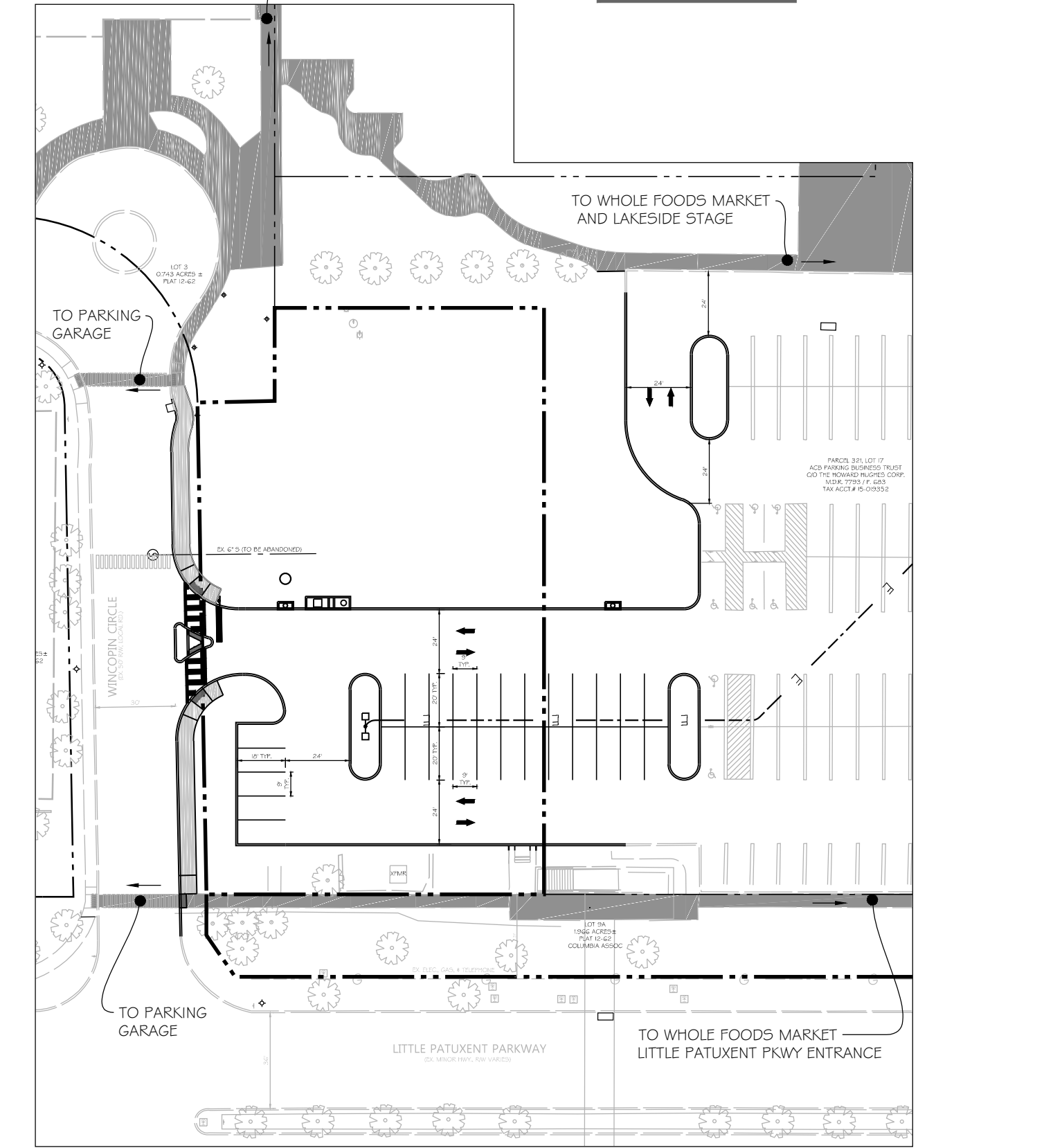
DATE: _____

04/02/20	REPLACEMENT OF ORIGINAL SDP SET WITH TEMPORARY PARKING LOT DESIGN SET
Date	Revision Description
TEMPORARY SURFACE LOT PARCEL 321, LOT 17 10227 WINCOPIN CIRCLE COLUMBIA, MD 21044	
OWNER / DEVELOPER: AMERICAN CITY BUILDING BUSINESS TRUST C/O THE HOWARD HUGHES CORPORATION COLUMBIA REGIONAL OFFICE 10960 GRANTCHESTER WAY, SUITE 110 COLUMBIA, MD 21044 410/964-4800	
501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286 P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM	
SUBDIVISION NAME COLUMBIA TOWN CENTER	SECTION/AREA 0001
LOT/PARCEL # 13/0298 & 17/0321	
PLAT FOR SDP B-13 E-13	RECORD # 5-03
CENSUS TRACT 605402	
WATER CODE 550	SEWER CODE LITTLE PATUXENT
STAGE 1	
EXISTING CONDITIONS & DEMOLITION PLAN	
REVISED SITE DEVELOPMENT PLAN	
Des. By PAB	SCALE: 1"=20'
Drn. By PAB	Date 04-02-2020
Chk. By RRP	Approved RRP
02 of 14	



LEGEND

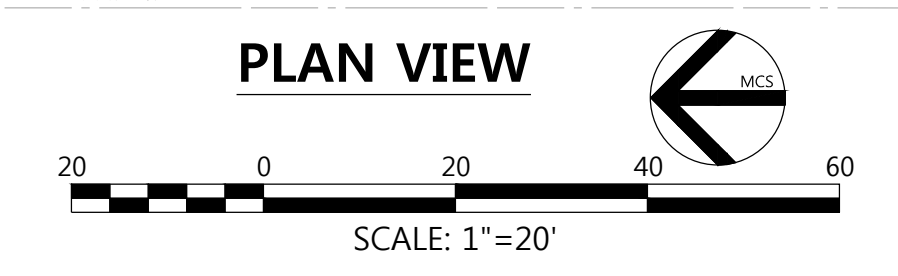
	PROPERTY LINE		EX. HAND BOX
	RIGHT-OF-WAY LINE		EX. PEDESTRIAN LIGHT
	EX. 1' CONTOUR		EX. STREET LIGHT
	EX. 5' CONTOUR		EX. SIGN
	EX. CURB		PROP. 1' CONTOUR
	EX. SIDEWALK		PROP. 5' CONTOUR
	EX. TREE		PROP. STORM DRAIN PIPE
	EX. WATER LINE		PROP. STORM INLET
	EX. WATER STRUCTURE		PROP. STORM MANHOLE
	EX. STORM DRAIN PIPE		PROP. CONC. CURB & GUTTER
	EX. STORM DRAIN INLET		PROP. SOIL BORING LOCATION
	EX. 6\"/>		PROP. SITE LIGHTING (REFER TO SHEET 15)
	EX. SANITARY SEWER PIPE		PROP. UNDERGROUND ELECTRIC
	EX. SANITARY SEWER MANHOLE		PROP. SIGN
	EX. UNDERGROUND TELEPHONE LINE		PROP. PEDESTRIAN CIRCULATION MOVEMENT
	EX. UNDERGROUND ELECTRIC LINE		EX. SIDEWALK CIRCULATION MOVEMENT
	EX. UNDERGROUND FIBEROPTIC LINE		
	EX. UNDERGROUND GAS LINE		
	EX. UNDERGROUND TELEVISION LINE		
	EX. UNKNOWN UNDERGROUND LINE		



APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
DIRECTOR	DATE

NOTE: SEE SHEET 5 FOR STORM DRAIN PROFILES



NOTE: EXISTING SIDEWALKS ARE SHOWN FOR REFERENCE ONLY AND ARE NOT INTENDED TO INDICATE AN ACCESSIBLE ROUTE.

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 27020, EXPIRATION DATE: 01/25/22.

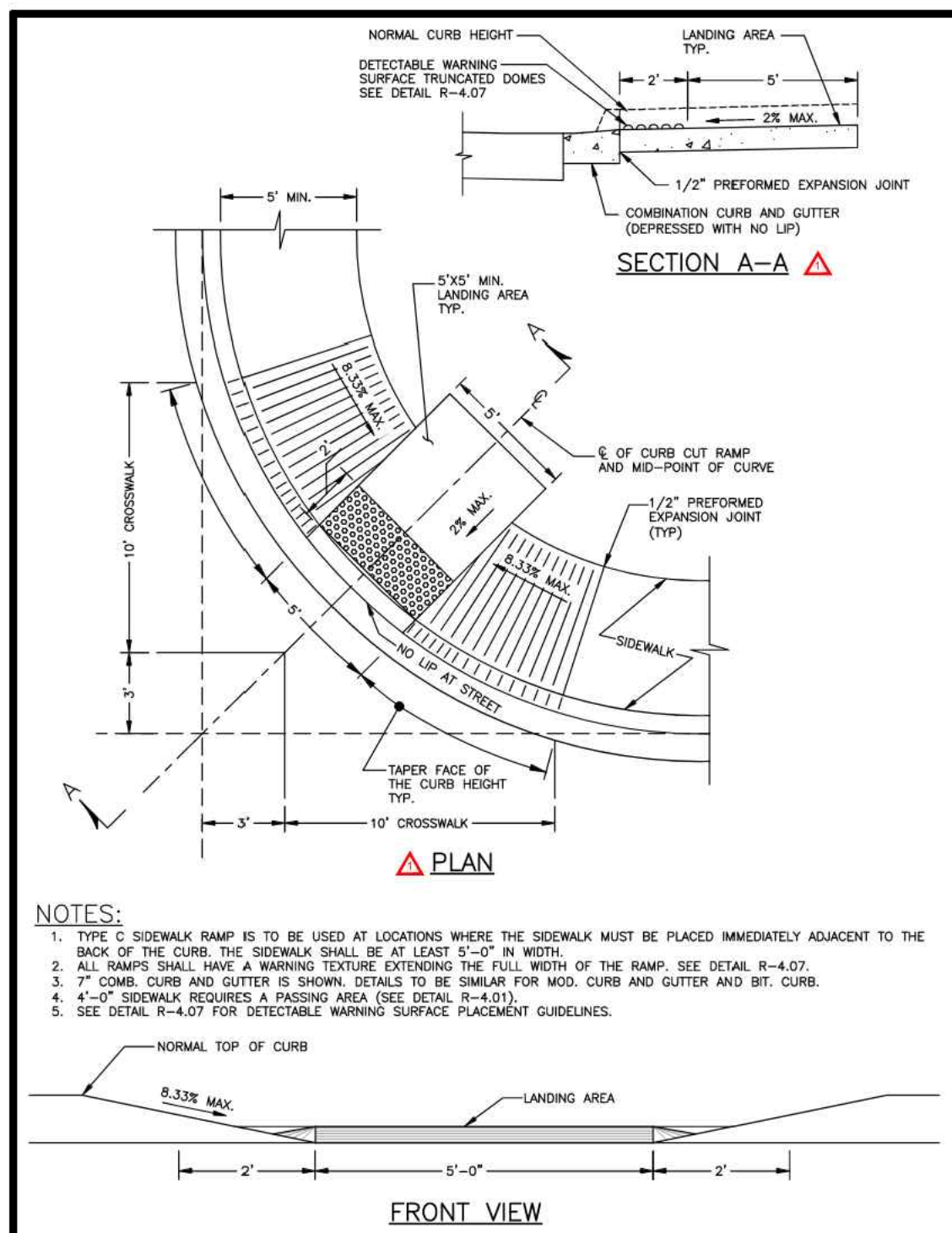
04-02-2020
DATE

PROFESSIONAL ENGR. NO. 27020

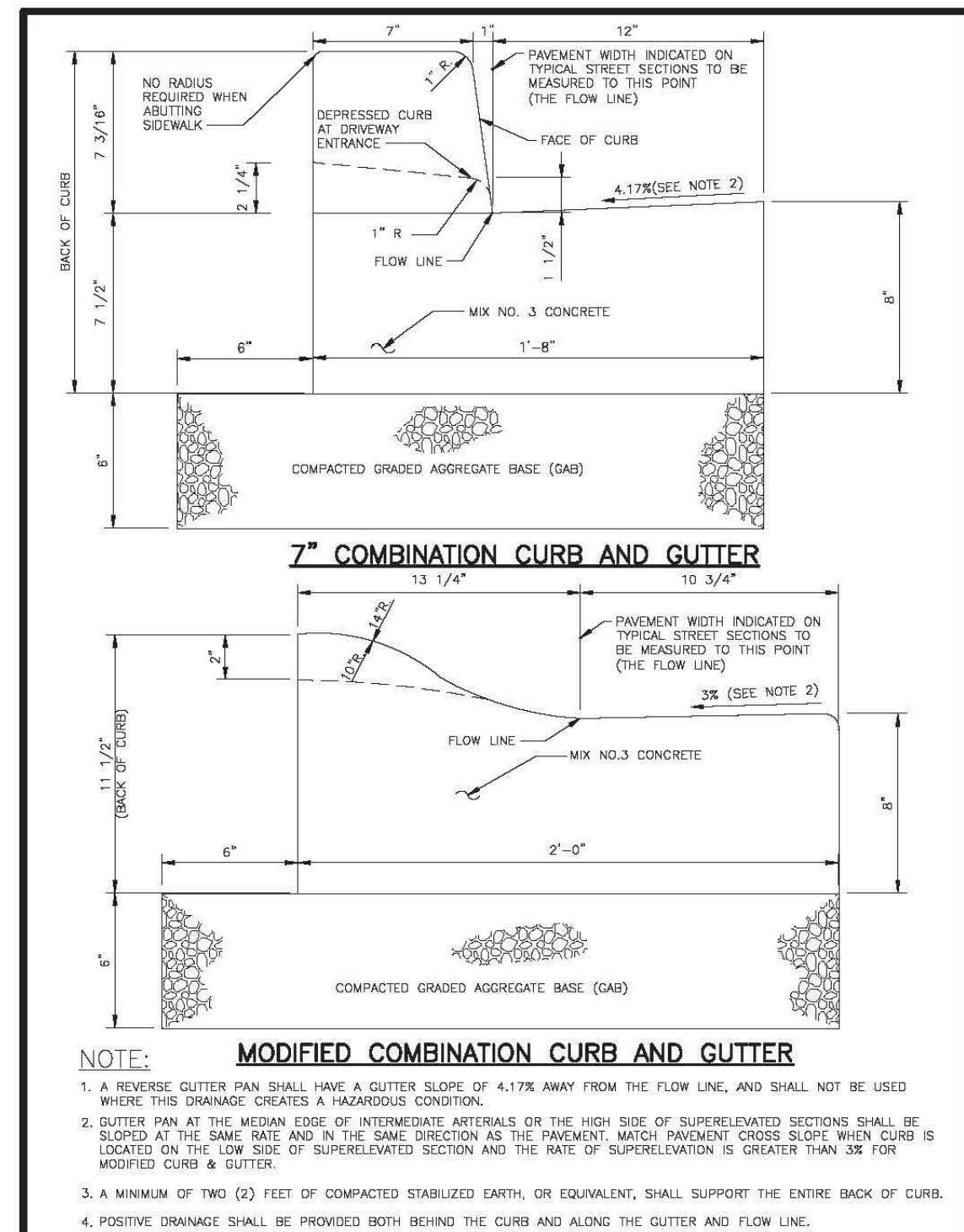
APPROVED:
PLANNING BOARD OF HOWARD COUNTY

DATE: _____

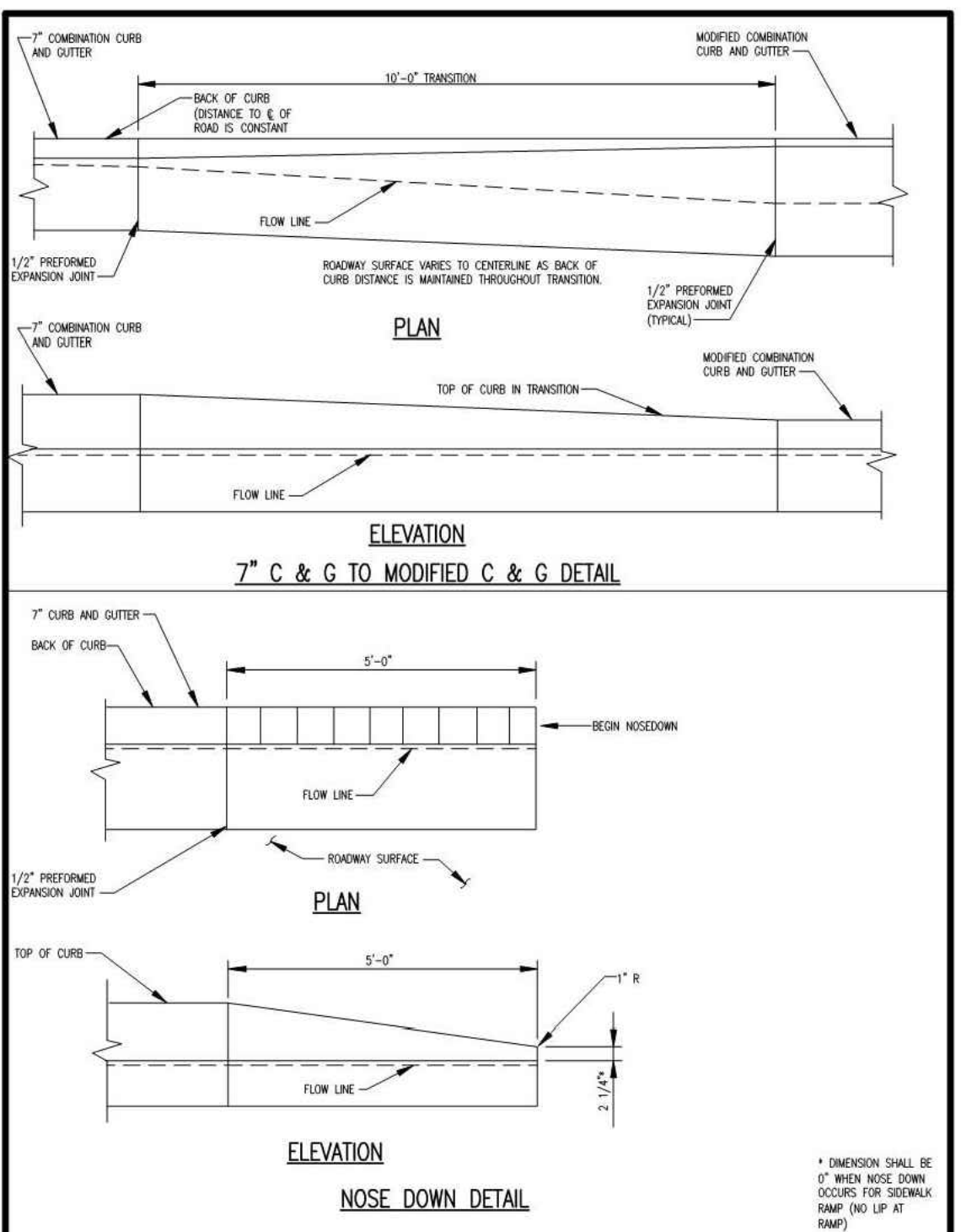
04/02/20	REPLACEMENT OF ORIGINAL SDP SET WITH TEMPORARY PARKING LOT DESIGN SET
Date	Revision Description
TEMPORARY SURFACE LOT PARCEL 321, LOT 17 10227 WINCOPIN CIRCLE COLUMBIA, MD 21044	
OWNER / DEVELOPER: AMERICAN CITY BUILDING BUSINESS TRUST C/O THE HOWARD HUGHES CORPORATION COLUMBIA REGIONAL OFFICE 10960 GRANTCHESTER WAY, SUITE 110 COLUMBIA, MD 21044 410/964-4800	
 DAFT MCCUNE WALKER INC	
501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286 P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM	
SUBMISSION NAME COLUMBIA TOWN CENTER	SECTION/AREA 0001
LOT/PARCEL # 13/0298 & 17/0321	
PLAT FOR SDP 8-13-E-13	BLOCK # ZONE 36
WATER CODE 550	SEWER CODE LITTLE PATUXENT
	STAGE 1
TITLE SITE GRADING AND UTILITY PLAN	
REVISED SITE DEVELOPMENT PLAN	
Des. By PAB	SCALE: AS NOTED
Drn. By PAB	Date 04-02-2020
Chk. By RRP	Approved RRP
03 of 14	



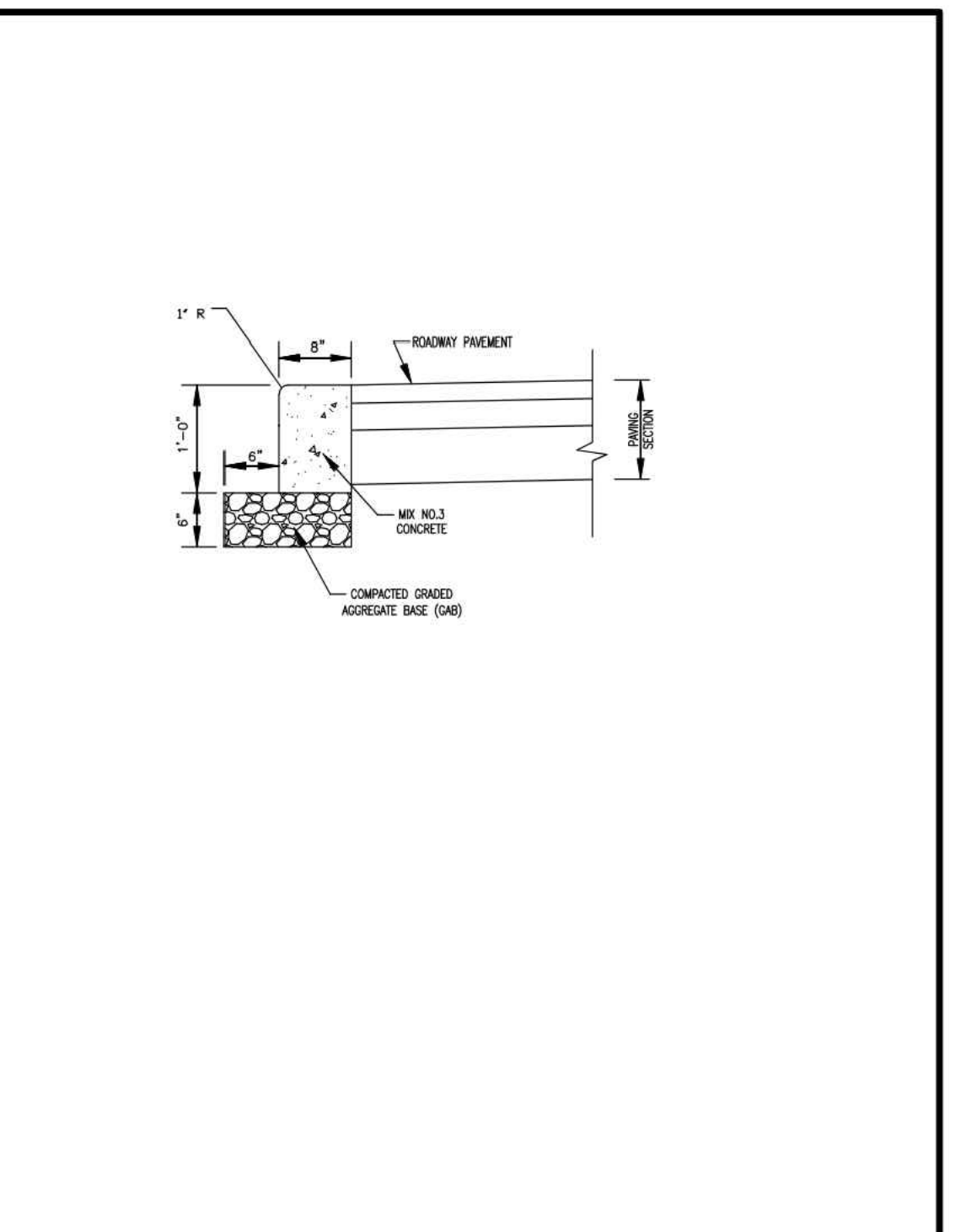
	Howard County, Maryland Department of Public Works Approved: <i>Thomas & Smith</i> Chief, Bureau of Engineering	SIDEWALK RAMP Type C	Detail R-4.04
--	--	-------------------------	------------------



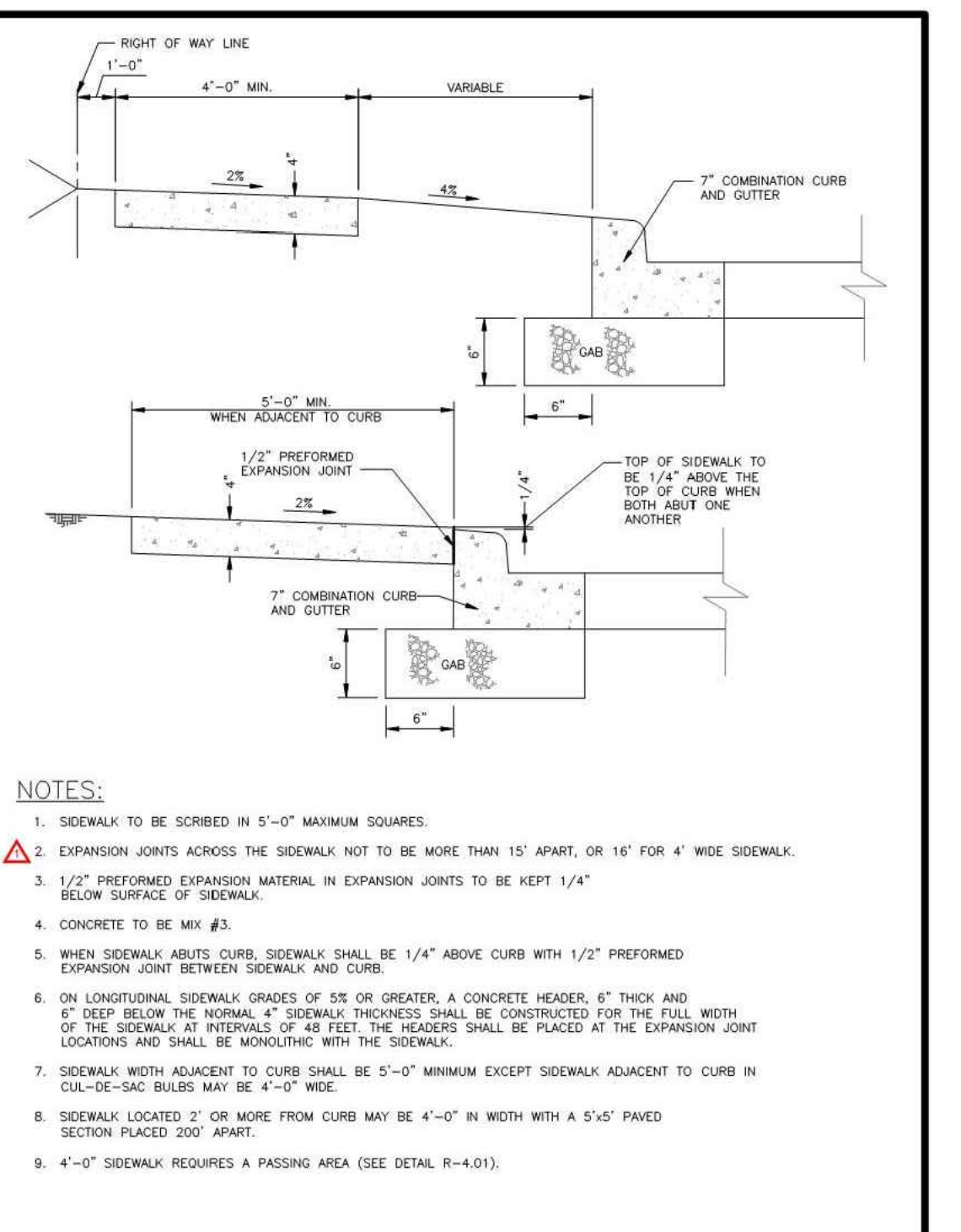
	Howard County, Maryland Department of Public Works Approved: <i>Thomas & Smith</i> Chief, Bureau of Engineering	CURB AND GUTTER 7" & Modified	Detail R-3.01
--	--	----------------------------------	------------------



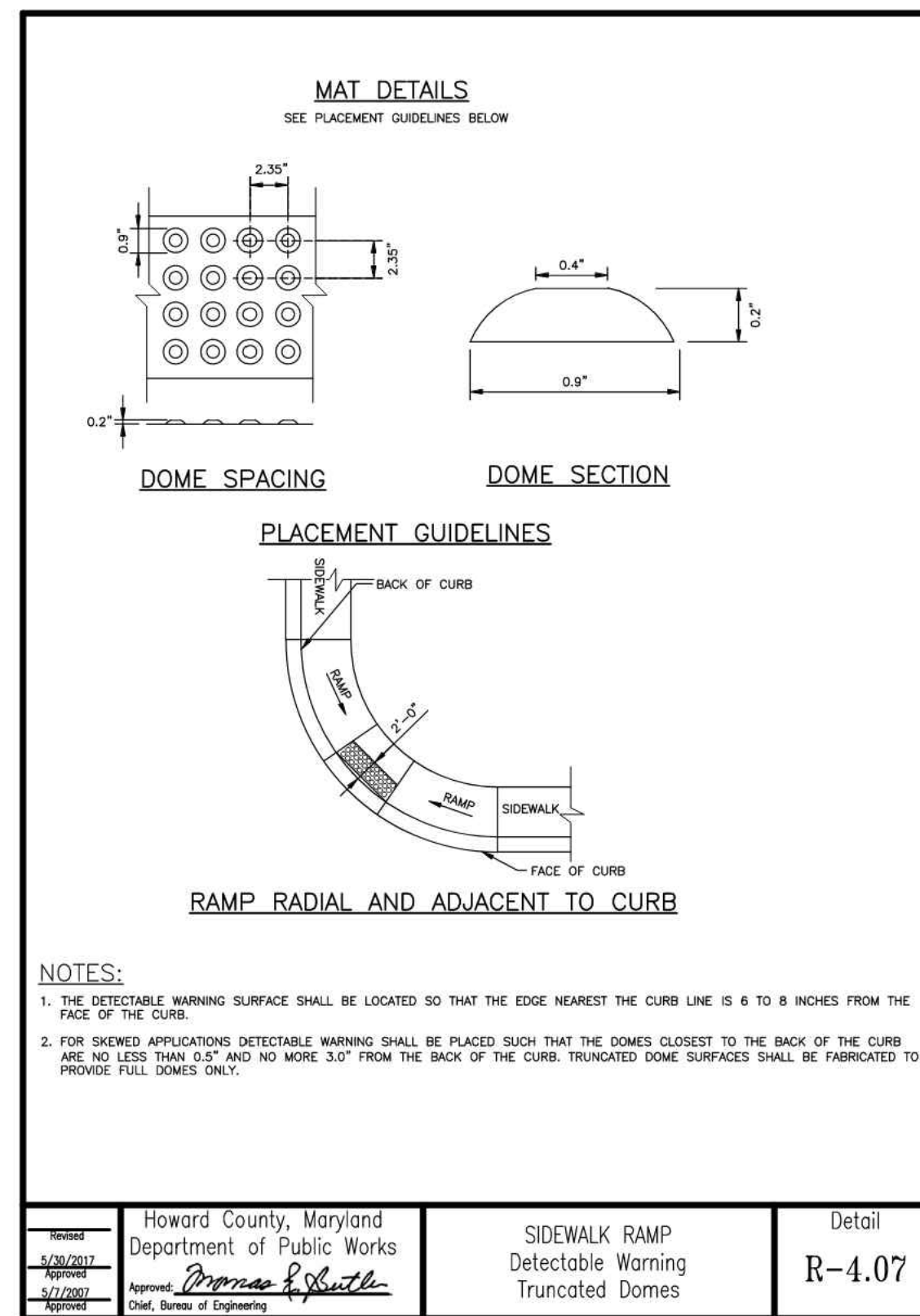
	Howard County, Maryland Department of Public Works Approved: <i>Thomas & Smith</i> Chief, Bureau of Engineering	CURB AND GUTTER 7" Transition to Modified & Nose Down	Detail R-3.02
--	--	---	------------------



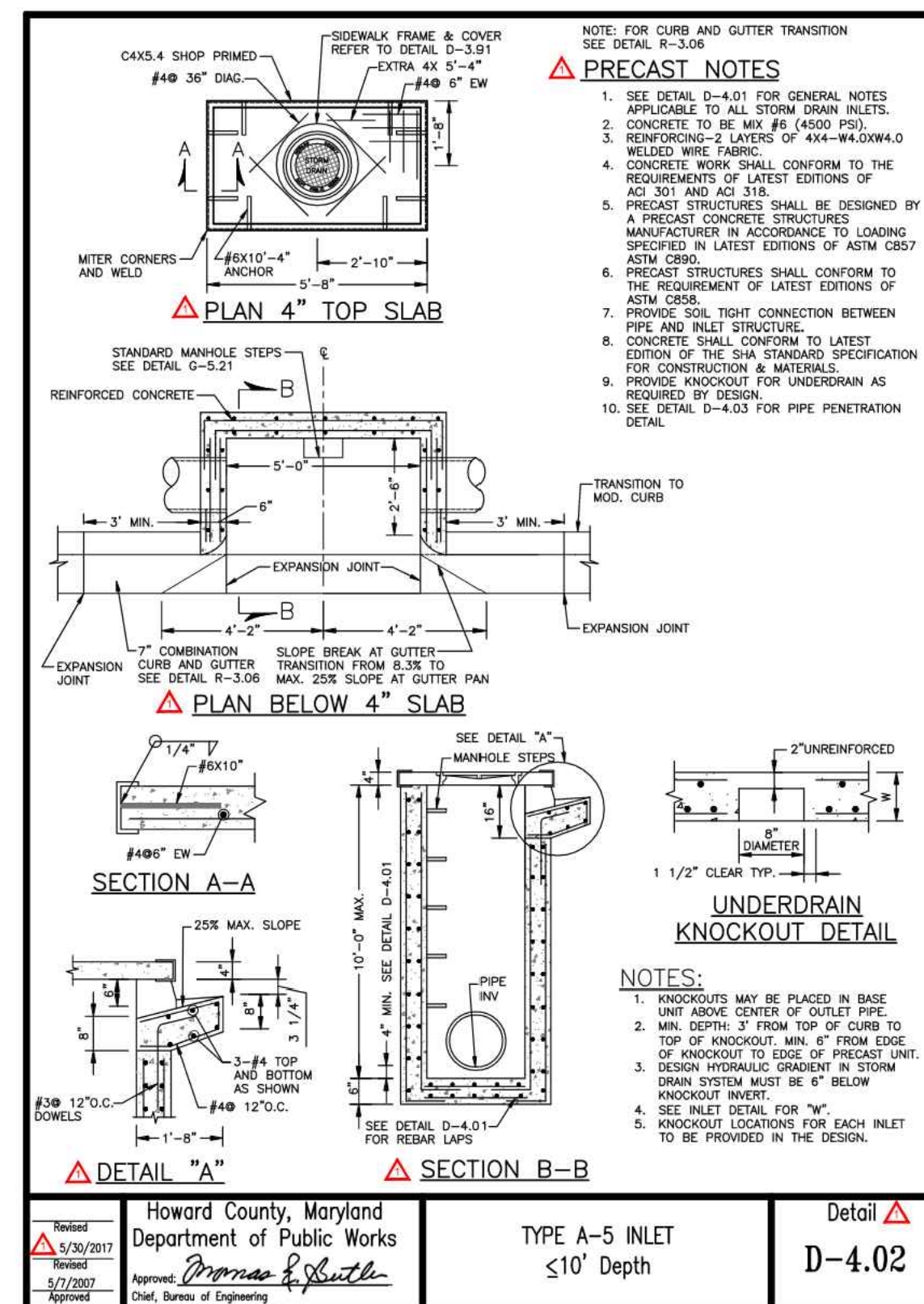
	Howard County, Maryland Department of Public Works Approved: <i>Thomas & Smith</i> Chief, Bureau of Engineering	Curb Flush	Detail R-3.07
--	--	---------------	------------------



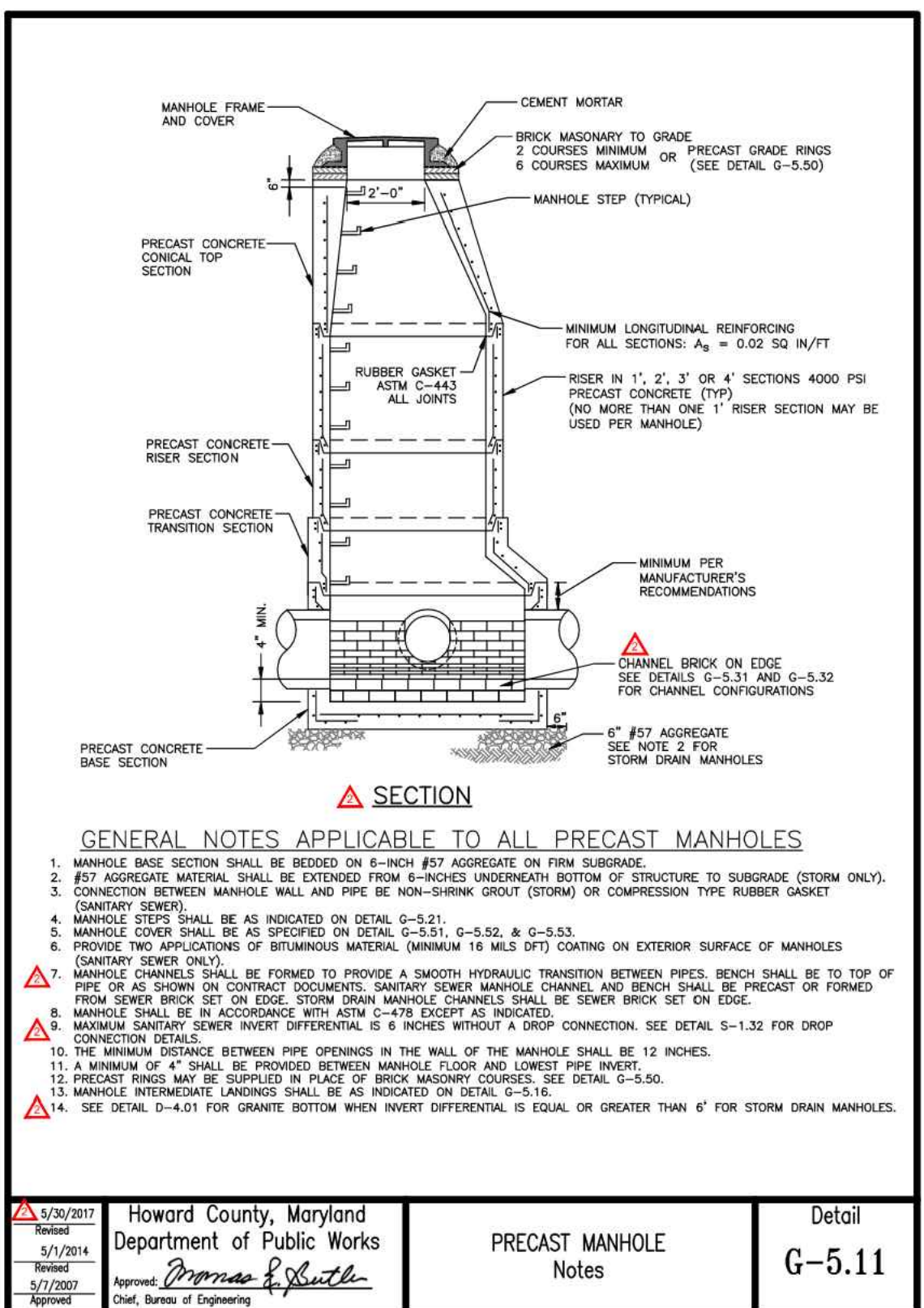
	Howard County, Maryland Department of Public Works Approved: <i>Thomas & Smith</i> Chief, Bureau of Engineering	CONCRETE SIDEWALK	Detail R-3.05
--	--	-------------------	------------------



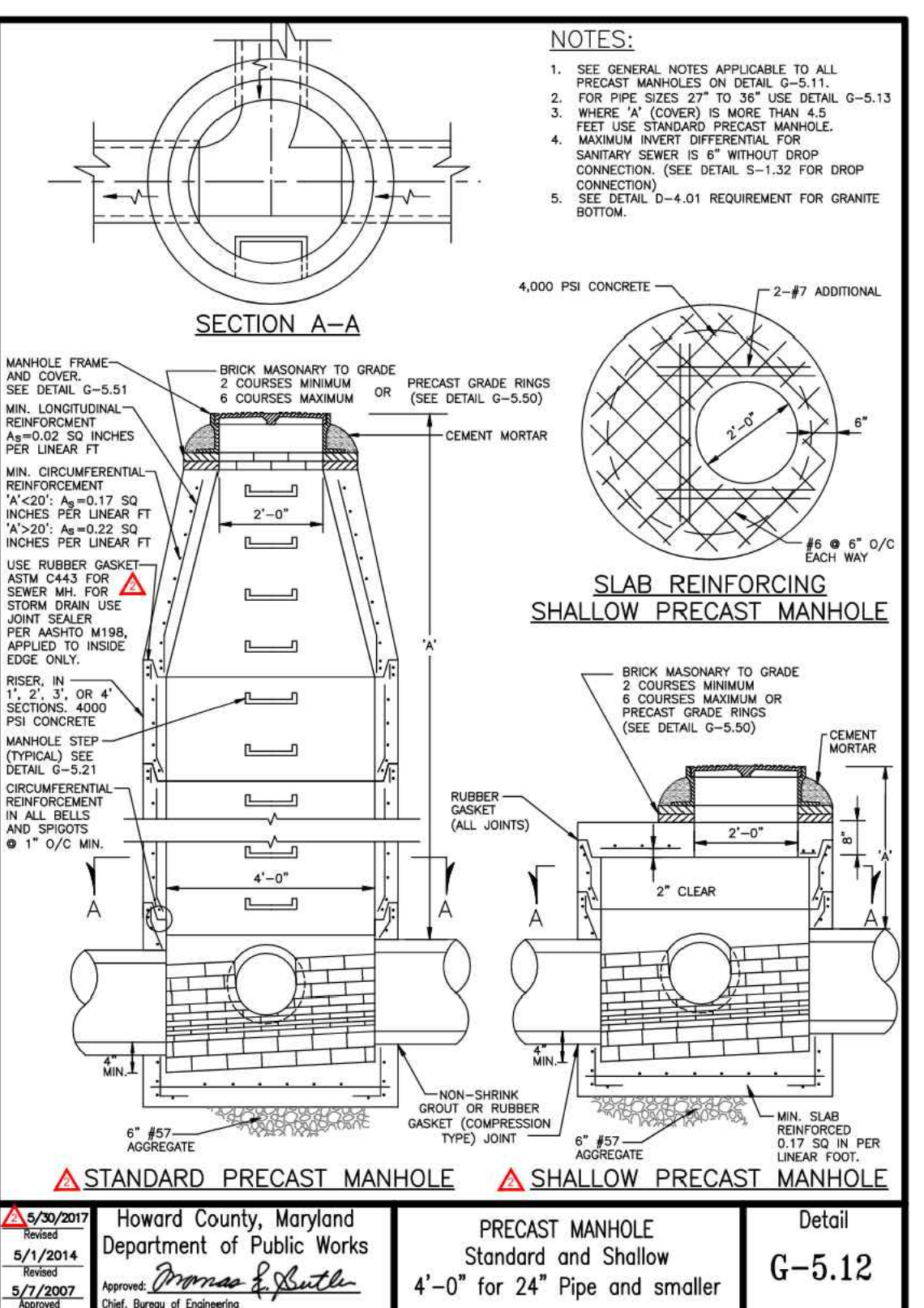
	Howard County, Maryland Department of Public Works Approved: <i>Thomas & Smith</i> Chief, Bureau of Engineering	SIDEWALK RAMP Detectable Warning Truncated Domes	Detail R-4.07
--	--	--	------------------



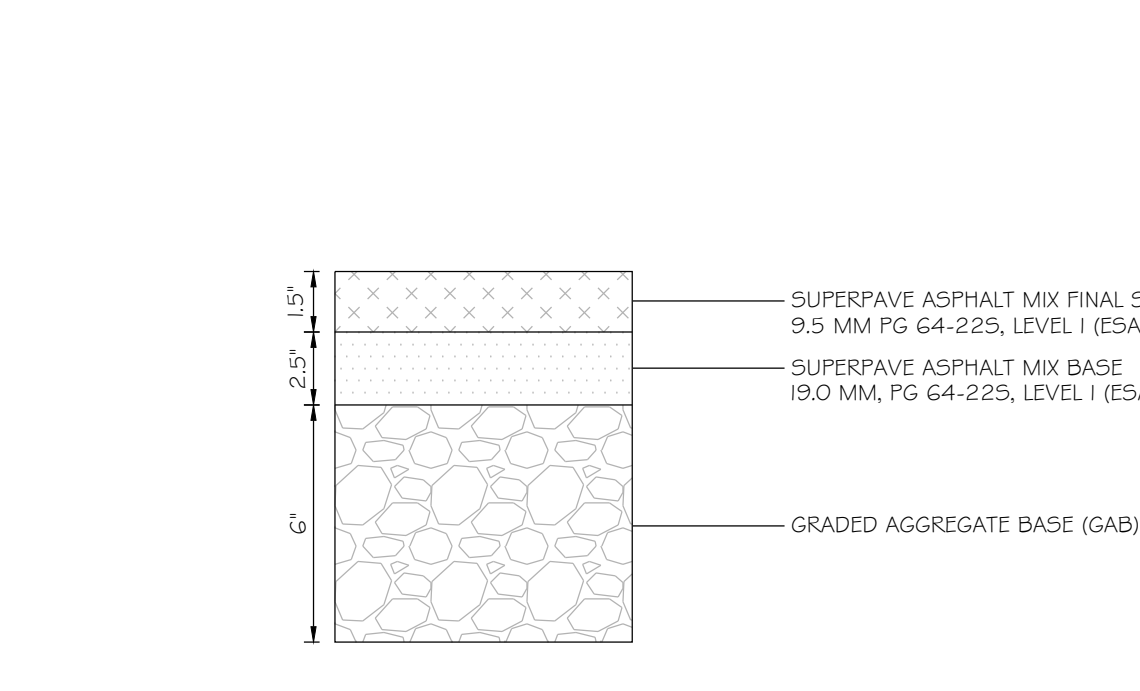
	Howard County, Maryland Department of Public Works Approved: <i>Thomas & Smith</i> Chief, Bureau of Engineering	TYPE A-5 INLET ≤10' Depth	Detail D-4.02
--	--	------------------------------	------------------



	Howard County, Maryland Department of Public Works Approved: <i>Thomas & Smith</i> Chief, Bureau of Engineering	PRECAST MANHOLE Notes	Detail G-5.11
--	--	--------------------------	------------------



	Howard County, Maryland Department of Public Works Approved: <i>Thomas & Smith</i> Chief, Bureau of Engineering	PRECAST MANHOLE Standard and Shallow 4'-0" for 24" Pipe and smaller	Detail G-5.12
--	--	---	------------------



ASPHALT PAVEMENT SECTION (P-1)
NOT TO SCALE

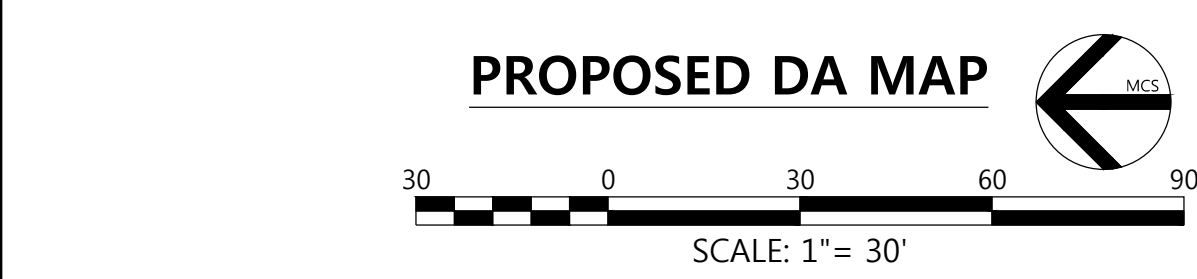
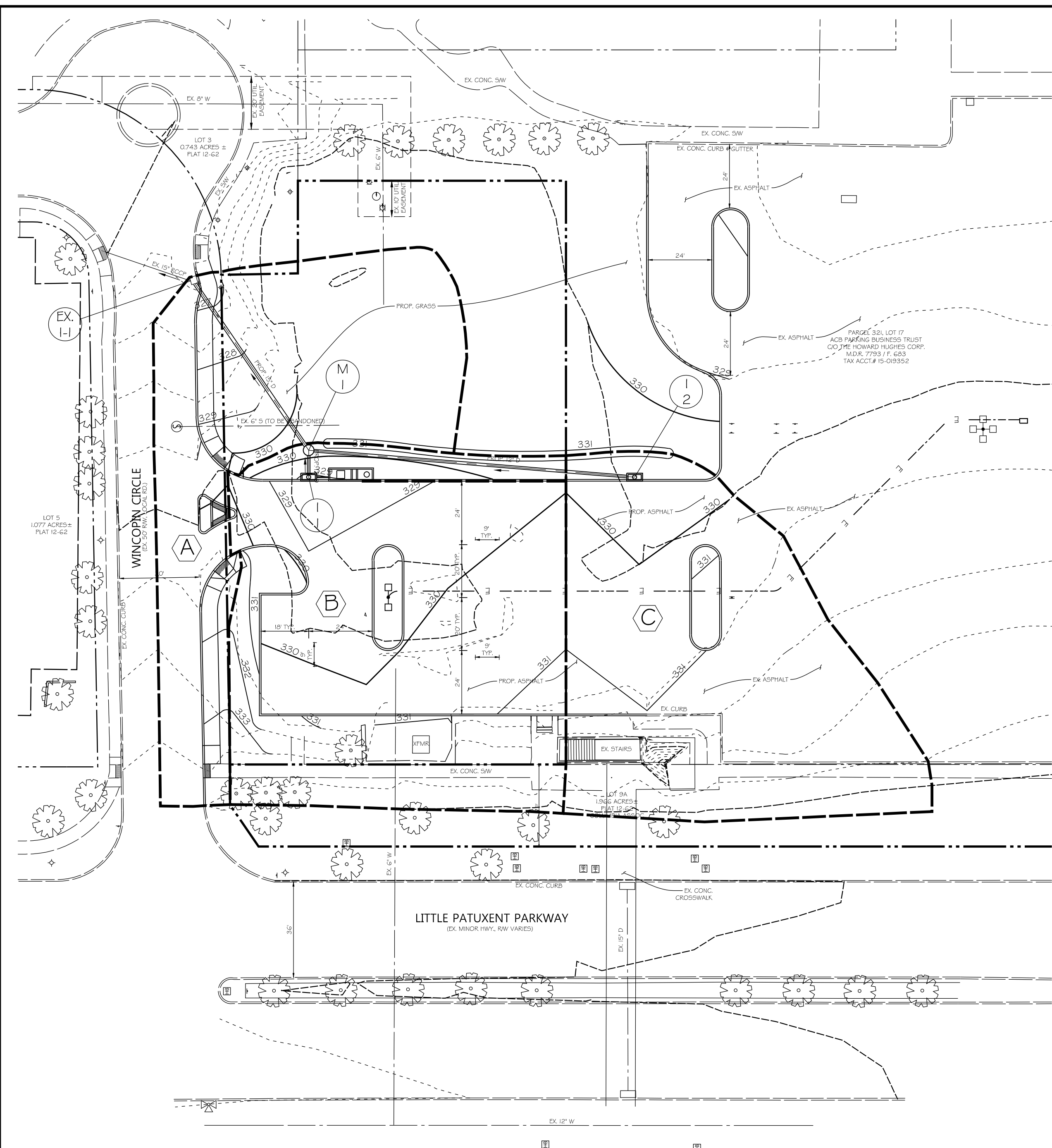
04/02/20	REPLACEMENT OF ORIGINAL SDP SET WITH TEMPORARY PARKING LOT DESIGN SET
Date	No. Revision Description
TEMPORARY SURFACE LOT PARCEL 321, LOT 17 10227 WINCOPIN CIRCLE COLUMBIA, MD 21044	
OWNER / DEVELOPER: AMERICAN CITY BUILDING BUSINESS TRUST C/O THE HOWARD HUGHES CORPORATION COLUMBIA REGIONAL OFFICE 10960 GRANTCHESTER WAY, SUITE 110 COLUMBIA, MD 21044 (410) 964-1800	
501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286 P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM	
SUBMISSION NAME	SECTION/AREA
COLUMBIA TOWN CENTER	0001
PLAN FOR DP	RECORD BOOK
8.13.13	NT
WATER CODE	550
SEWER CODE	LITTLE PATUXENT
STAGE	1

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 27020, EXPIRATION DATE: 01/25/22.

04-02-2020
 DATE

PROFESSIONAL ENGR. NO. 27020
 APPROVED:
 PLANNING BOARD OF HOWARD COUNTY
 DATE:

SITE & UTILITY DETAILS REVISED SITE DEVELOPMENT PLAN		
Des. By	PAB	SCALE: AS SHOWN
Drn. By	PAB	Date 04-02-2020
Chk. By	RRP	Approved RRP
		04 of 14



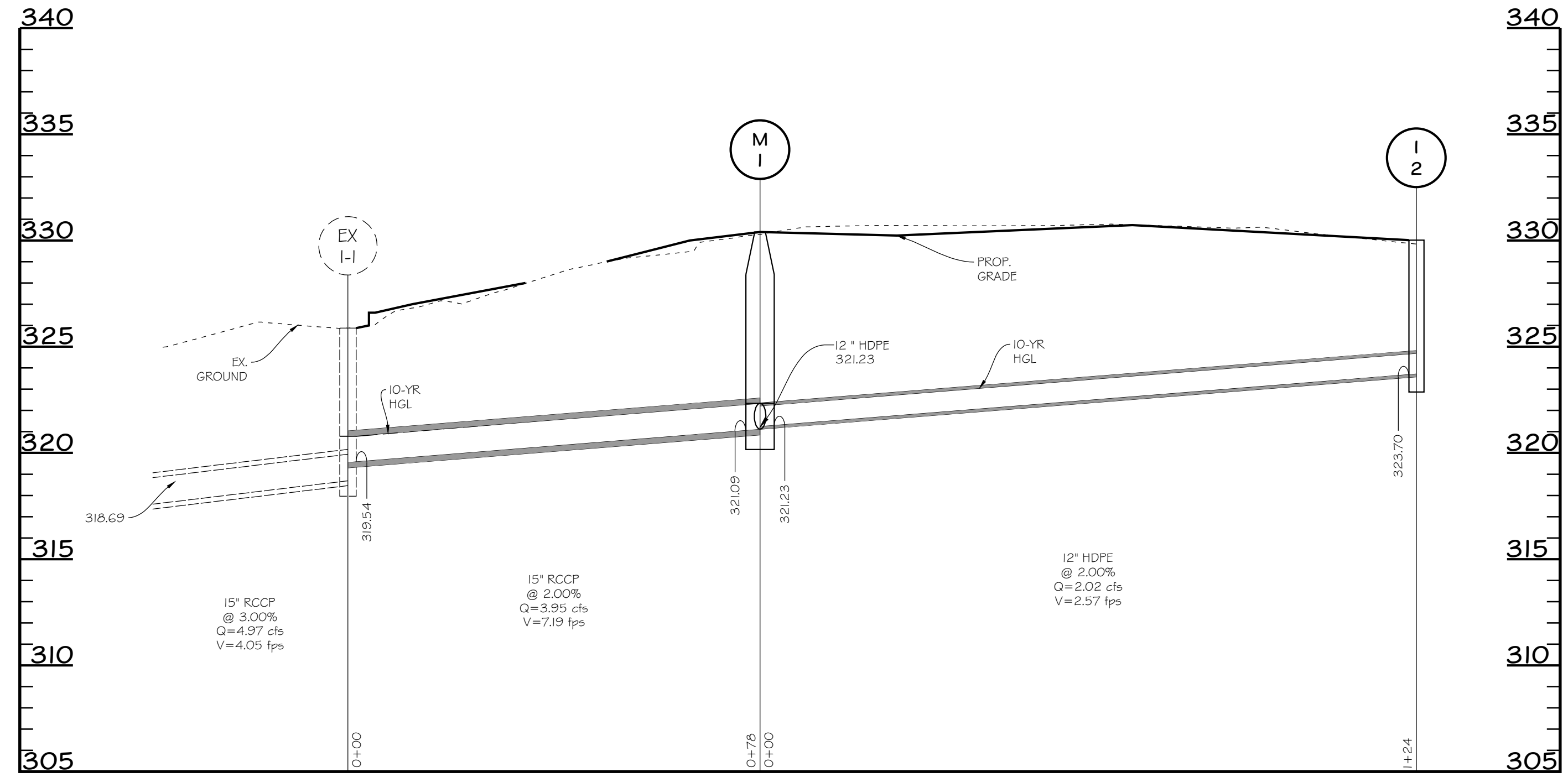
DRAINAGE AREA SUMMARY (PROPOSED CONDITIONS)				
D.A. LABEL	D.A. SIZE (AC)	COEFF. C	IMP. (%)	Q (CFS)
A	0.27	0.49	40	1.13
B	0.39	0.64	65	2.44
C	0.32	0.73	79	2.32

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

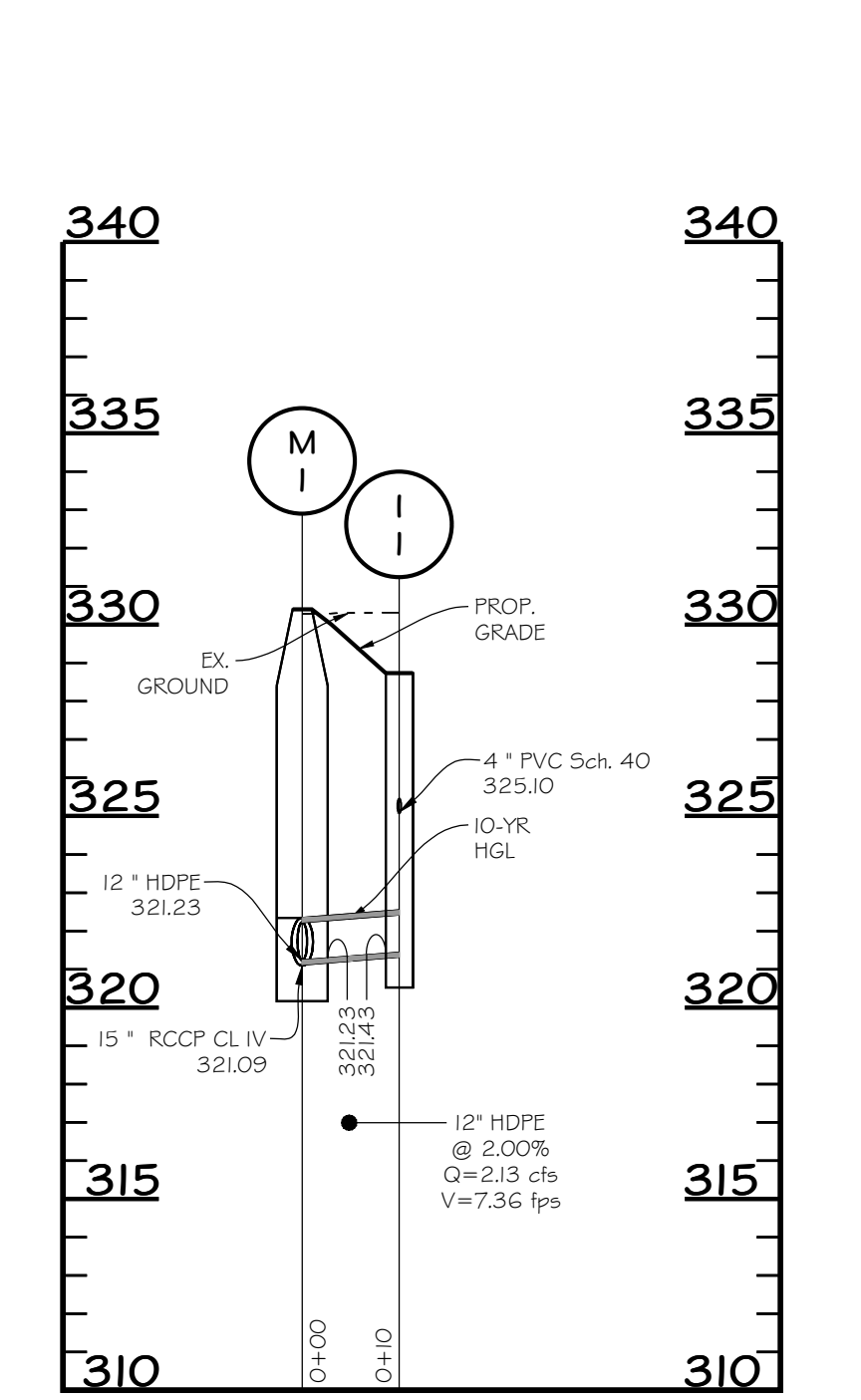
CHIEF, DEVELOPMENT ENGINEERING DIVISION _____ DATE _____

CHIEF, DIVISION OF LAND DEVELOPMENT _____ DATE _____

DIRECTOR _____ DATE _____



PROFILE: Ex. I-1 to I-2
SCALE: HORIZ. 1"=20'
VERT. 1"=5'



PROFILE: M-1 to I-1
SCALE: HORIZ. 1"=20'
VERT. 1"=5'

STRUCTURE SCHEDULE							
NO.	TYPE	PIPE SIZE	RIM / WEIR ELEV.	INV. IN	INV. OUT	NORTHING	EASTING
EX I-1	TYPE A-5 INLET - PRECAST - D-4.01	IN 15" OUT 15"	325.88	319.54	318.69	564,058.61	1,352,942.81
I 1	HOWARD CO. - TYPE A-5 INLET - PRECAST - D-4.01	IN 4" OUT 12"	328.74	325.10	321.43	564,015.22	1,352,868.35
I 2	HOWARD CO. - TYPE A-5 INLET - PRECAST - D-4.01	OUT 12"	330.02		323.70	563,892.06	1,352,868.35
M 1	48" PRECAST STANDARD MANHOLE - G-5.12	IN 12" OUT 15"	330.40	321.23	321.09	564,015.22	1,352,878.49

- LEGEND**
- PROPERTY LINE
 - RIGHT-OF-WAY LINE
 - EX. 1' CONTOUR
 - EX. 5' CONTOUR
 - EX. CURB
 - EX. SIDEWALK
 - EX. TREE
 - EX. 6" W
 - EX. WATER LINE
 - EX. WATER STRUCTURE
 - EX. 15" RCCP
 - EX. STORM DRAIN PIPE
 - EX. STORM DRAIN INLET
 - EX. 6" S
 - EX. SANITARY SEWER PIPE
 - EX. SANITARY SEWER MANHOLE
 - LOT
 - EX. UNDERGROUND TELEPHONE LINE
 - EX. UNDERGROUND ELECTRIC LINE
 - EX. UNDERGROUND FIBEROPTIC LINE
 - EX. UNDERGROUND TELEVISION LINE
 - EX. UNDERGROUND GAS LINE
 - EX. UNKNOWN UNDERGROUND LINE
 - EX. HAND BOX
 - EX. PEDESTRIAN LIGHT
 - EX. STREET LIGHT
 - EX. SIGN
 - 328
 - 330
 - PROF. 1' CONTOUR
 - PROF. 5' CONTOUR
 - PROF. CONC. CURB 4 GUTTER
 - PROF. STORM DRAIN PIPE
 - PROF. STORM INLET
 - PROF. STORM MANHOLE
 - PROF. SITE LIGHTING (REFER TO SHEET 15)
 - PROF. UNDERGROUND ELECTRIC
 - PROF. SIGN
 - DRAINAGE AREA BOUNDARY
 - DRAINAGE AREA DESIGNATION

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 27020, EXPIRATION DATE: 01/25/22.

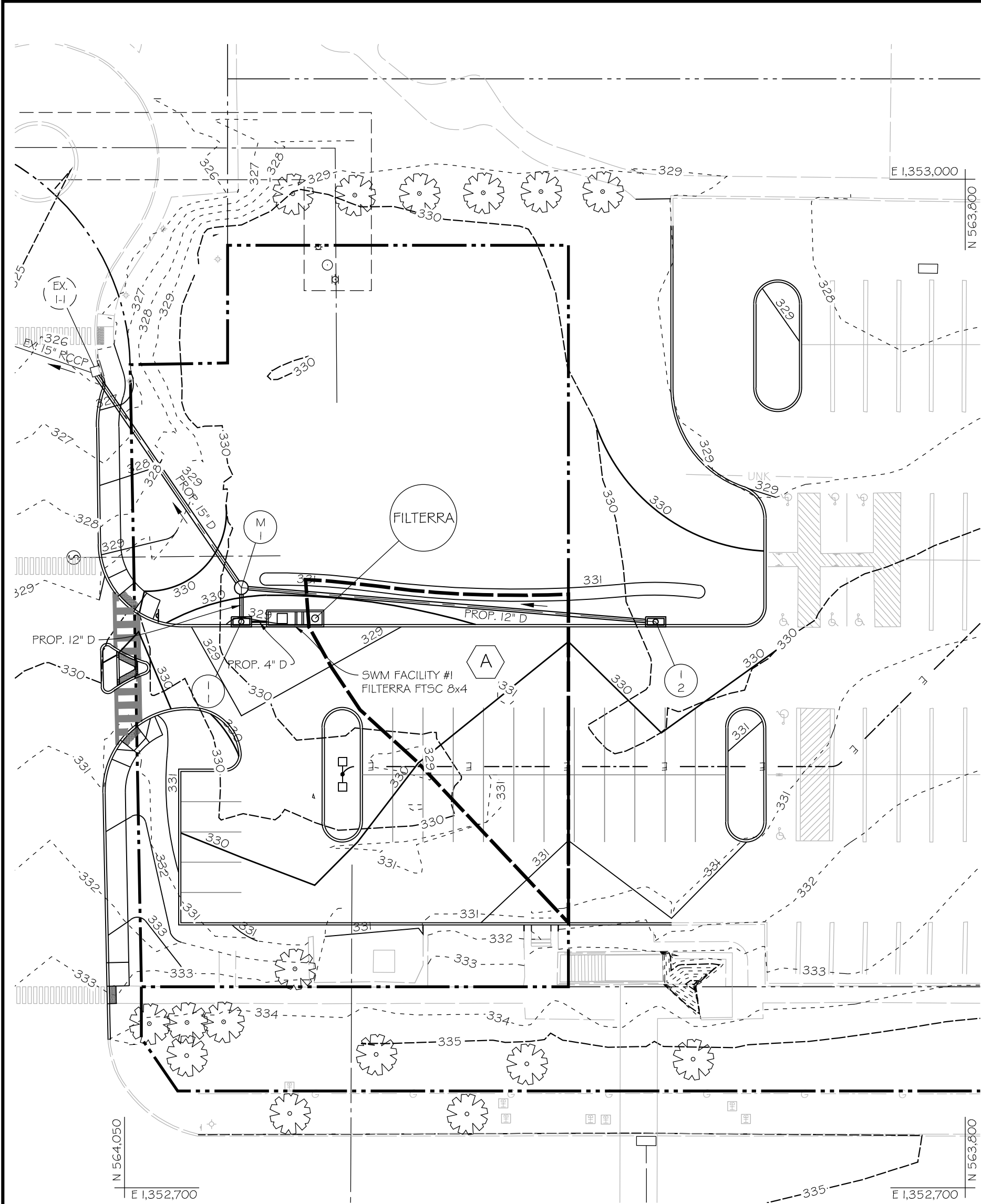
04-02-2020
DATE

PROFESSIONAL ENGR. NO. 27020

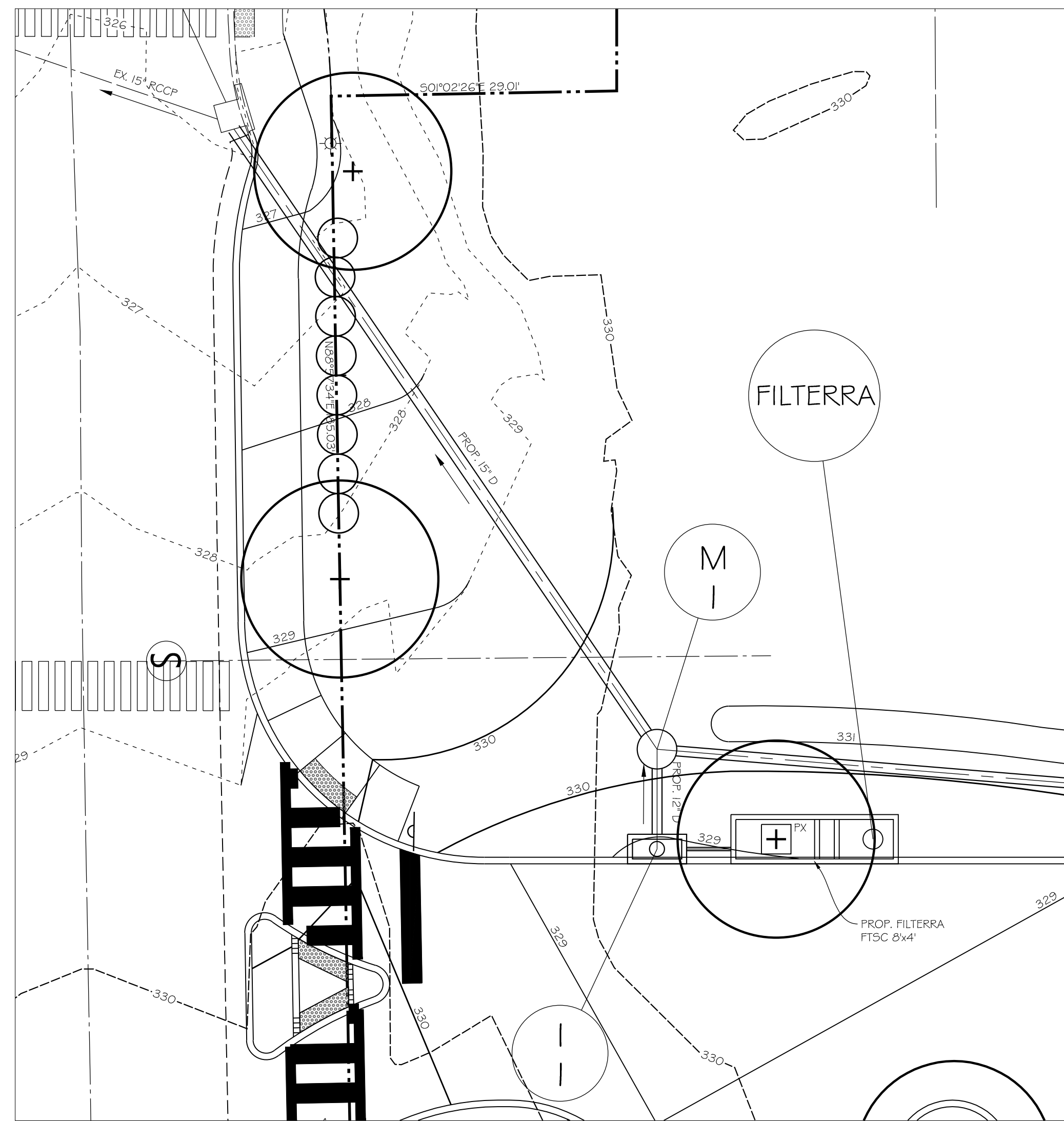
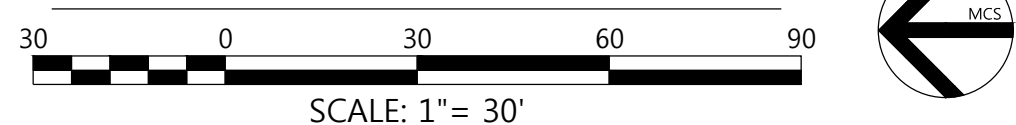
APPROVED:
PLANNING BOARD OF HOWARD COUNTY

DATE: _____

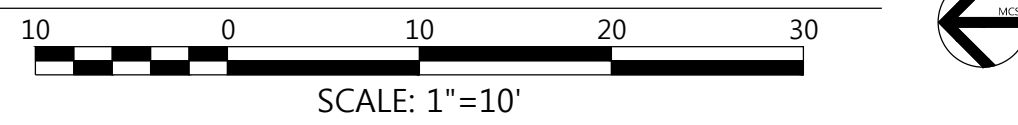
04/02/20	REPLACEMENT OF ORIGINAL SDP SET WITH TEMPORARY PARKING LOT DESIGN SET
Date	Revision Description
	TEMPORARY SURFACE LOT PARCEL 321, LOT 17 10227 WINCOPIN CIRCLE COLUMBIA, MD 21044
OWNER / DEVELOPER: AMERICAN CITY BUILDING BUSINESS TRUST C/O THE HOWARD HUGHES CORPORATION COLUMBIA REGIONAL OFFICE 10960 GRANTCHESTER WAY, SUITE 110 COLUMBIA, MD 21044 (410) 964-4800	
 DAFT MCCUNE WALKER INC	
501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286 P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM	
SUBDIVISION NAME	SECTION/AREA
COLUMBIA TOWN CENTER	0001
LOT/PARCEL #	13/0298 & 17/0321
PLANNING BOARD	RECORD # ZONE
B-13 E-13	36
WATER CODE	SEWER CODE
550	5-03
	CENSUS TRACT
	605402
	STAGE
	1
TITLE	
STORM DRAIN PROFILES AND DRAINAGE AREA MAP	
REVISED SITE DEVELOPMENT PLAN	
Des. By PAB	SCALE: #####
Drn. By PAB	Date 04-02-2020
Chk. By RRP	Approved RRP
Proj. No. 19029.00	05 of 14



SWM DRAINAGE AREA MAP

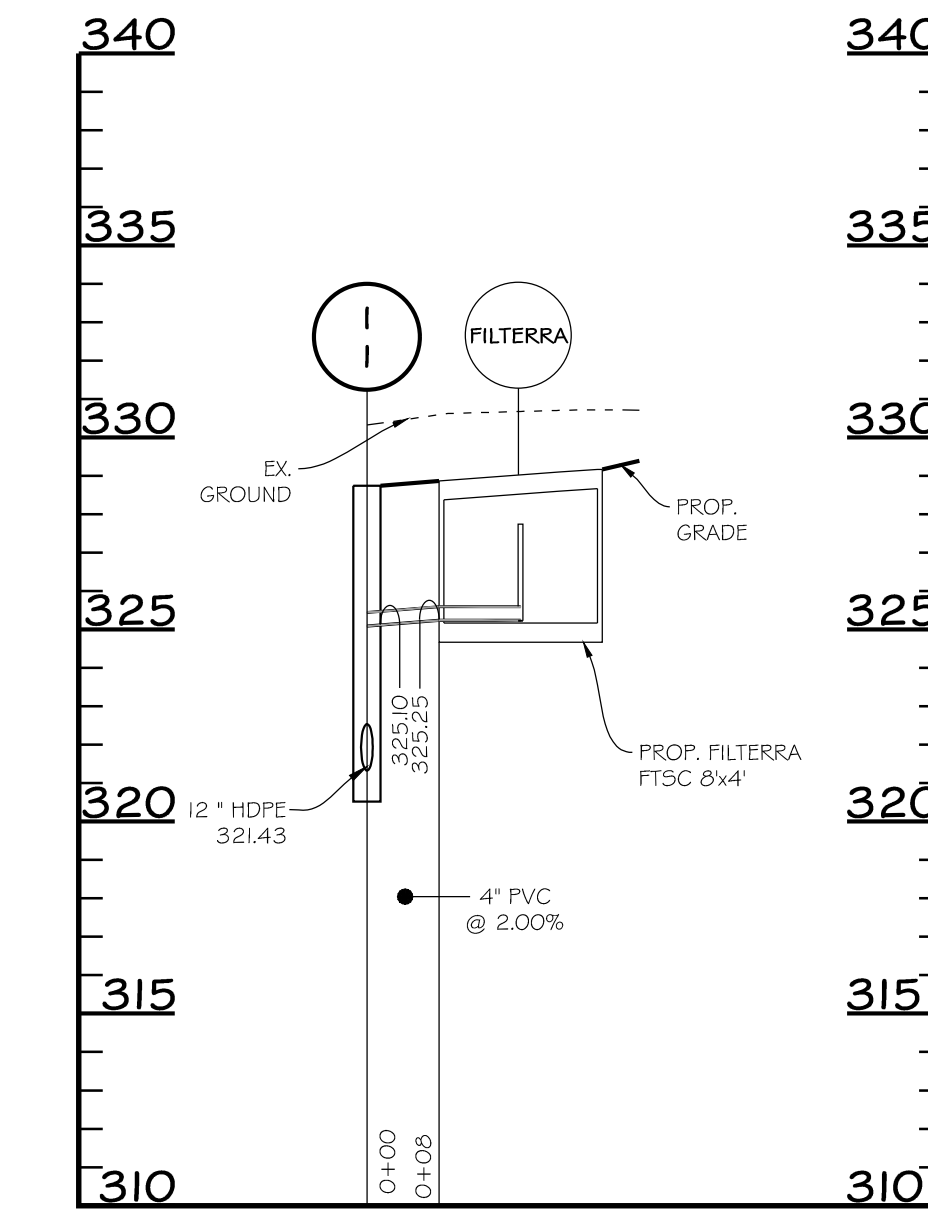


SWM FACILITY #1 PLAN & PLANTING



FILTERRA SEQUENCE OF CONSTRUCTION

- SEE EROSION AND SEDIMENT CONTROL PLANS FOR OVERALL SEQUENCE OF CONSTRUCTION AND IMPLEMENTATION OF FILTERRA SEQUENCE OF CONSTRUCTION.
- UNIT SHALL BE CONSTRUCTED AT THE LOCATION AND ELEVATIONS SHOWN ON THESE DRAWINGS. ANY MODIFICATIONS TO THE ELEVATIONS OR LOCATION SHALL BE AT THE DIRECTION OF THE ENGINEER OF RECORD.
- DURING UTILITY AND CURB & GUTTER INSTALLATION, EXCAVATE TO COMPACTED SUB-GRADE FOR THE FOOTPRINT OF THE UNIT. REFER TO INSTALLATION GUIDELINES FOR FILTERRA LOCATED ON THIS SHEET FOR PLACEMENT OF UNIT. THROAT OF UNIT SHALL BE BLOCKED AT ALL TIMES BEFORE, DURING, AND AFTER THE INSTALLATION PROCESS.
- PROVIDE FILTER SOCK IN FRONT OF THROAT OPENING OF UNIT.
- ONCE CONTRIBUTING DRAINAGE AREA TO THE FILTERRA HAS BEEN STABILIZED, CONTACT SUPPLIER (CONTECH) AND SCHEDULE INSPECTION WITH SUPPLIER AND HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- UPON THE WRITTEN APPROVAL OF THE SUPPLIER AND THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, ACTIVATE THE FILTERRA UNIT (REMOVE FILTER SOCK AND ANY OTHER THROAT BLOCKING AND ALLOW RUNOFF TO ENTER THE UNIT).



PROFILE: I-1 to Filterra

SCALE: HORIZ. 1"=20'
VERT. 1"=5'

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- - - 328 EX. 1' CONTOUR
- - - 330 EX. 5' CONTOUR
- - - EX. CURB
- - - EX. SIDEWALK
- EX. TREE TO REMAIN
- EX. 6" W
- EX. WATER LINE
- EX. WATER STRUCTURE
- EX. 15" RCP
- EX. STORM DRAIN PIPE
- EX. STORM DRAIN INLET
- EX. 6" S
- EX. SANITARY SEWER PIPE
- EX. SANITARY SEWER MANHOLE
- EX. UNDERGROUND TELEPHONE LINE
- EX. UNDERGROUND ELECTRIC LINE
- EX. UNDERGROUND FIBEROPTIC LINE
- EX. UNDERGROUND TELEVISION LINE
- EX. UNDERGROUND GAS LINE
- EX. UNKNOWN UNDERGROUND LINE
- EX. HAND BOX
- EX. PEDESTRIAN LIGHT
- EX. STREET LIGHT
- EX. SIGN
- PROP. SITE LIGHTING (REFER TO SHEET 15)
- E PROP. UNDERGROUND ELECTRIC
- PROP. SIGN
- PROP. 1' CONTOUR
- PROP. 5' CONTOUR
- PROP. STORM DRAIN PIPE
- PROP. STORM INLET
- PROP. STORM MANHOLE
- PROP. CONC. CURB & GUTTER
- PROPOSED SITE PLANTINGS (REFER SHEET 13)

SWM FACILITY #1 PLANT SCHEDULE					
KEY	QTY	BOTANICAL/Common NAME	PLANT SIZE	ROOT	REMARKS
TREES					
PX	1	Prunus x cistena / Purpleleaf Sand Cherry	2.5" cal.	B&B	See Filterra Planting Specs

ESD Treatment Summary		
TOTAL Target WQv =	276	c.f. Required
75% WQv for Micro-Bioretenion =	207	c.f. Required
1. Bioretention (Filterra): Facility No. 1	Drainage Area	A
	ESDv =	283 c.f. Provided
	Imp. Area =	3,632 Ac. Provided

Unified Stormwater Sizing Criteria		
Sizing Criteria	Required	Provided
Water Quality Volume (WQv) (cf)	276	283
Recharge Volume (Rv) (cf)	n/a	n/a
Channel Protection Volume (Cp)	n/a	n/a
Overbank Flood Protection Volume (Ov)	n/a	n/a
Extreme Flood Volume (Qv)	n/a	n/a


* WQv Required: Accounts for 75% of New Target ESDv for Micro-Bioretenion
** Qv Required: Is based on the existing conditions

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 27020, EXPIRATION DATE: 01/25/22.

04-02-2020
DATE

PROFESSIONAL ENGR. NO. 27020

APPROVED:
PLANNING BOARD OF HOWARD COUNTY
DATE:

04/02/20	REPLACEMENT OF ORIGINAL SDP SET WITH TEMPORARY PARKING LOT DESIGN SET
Date	Revision Description
TEMPORARY SURFACE LOT PARCEL 321, LOT 17 10227 WINCOPIN CIRCLE COLUMBIA, MD 21044	
OWNER / DEVELOPER: AMERICAN CITY BUILDING BUSINESS TRUST C/O THE HOWARD HUGHES CORPORATION COLUMBIA REGIONAL OFFICE 10960 GRANTCHESTER WAY, SUITE 110 COLUMBIA, MD 21044 (410) 964-4800	
 DAFT MCCUNE WALKER INC	
501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286 P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM	
SUBDIVISION NAME	SECTION/AREA
COLUMBIA TOWN CENTER	0001
LOT/PARCEL #	13/0298 & 17/0321
PLAT FOR REF.	RECORD #
B-13 E-13	36
WATER CODE	SEWER CODE
550	LITTLE PATUXENT
STAGE	1
TITLE	
SWM FACILITY 1 DETAIL PLANTING AND DRAINAGE AREA MAP	
REVISED SITE DEVELOPMENT PLAN	
Des. By	PAB
Drn. By	PAB
Chk. By	RRP
SCALE:	AS NOTED
Date	04-02-2020
Approved	RRP
Proj. No.	19029.00
06 of 14	

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION _____ DATE _____

CHIEF, DIVISION OF LAND DEVELOPMENT _____ DATE _____

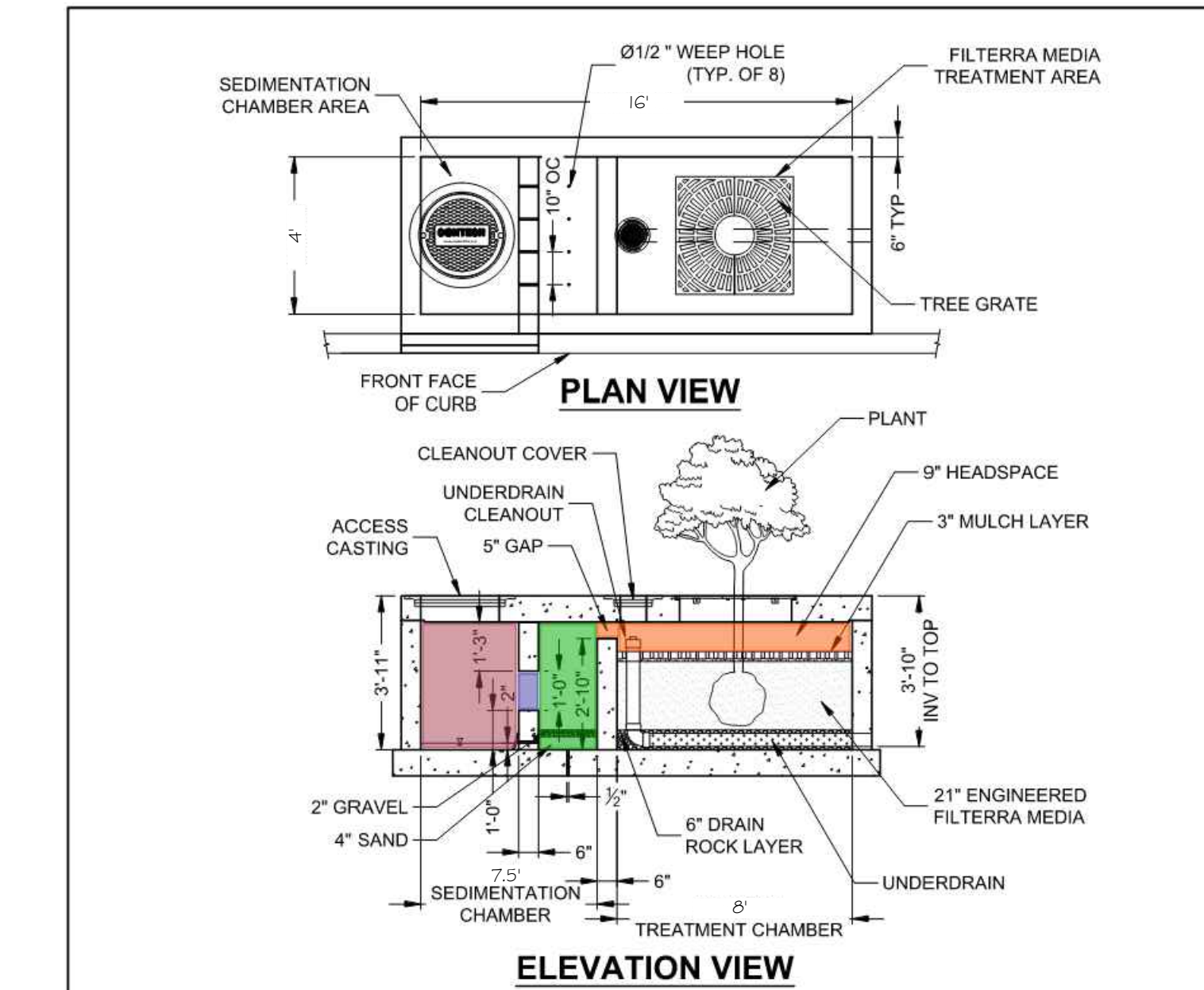
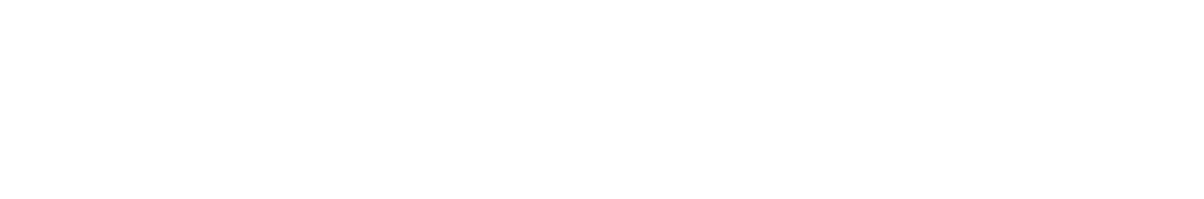
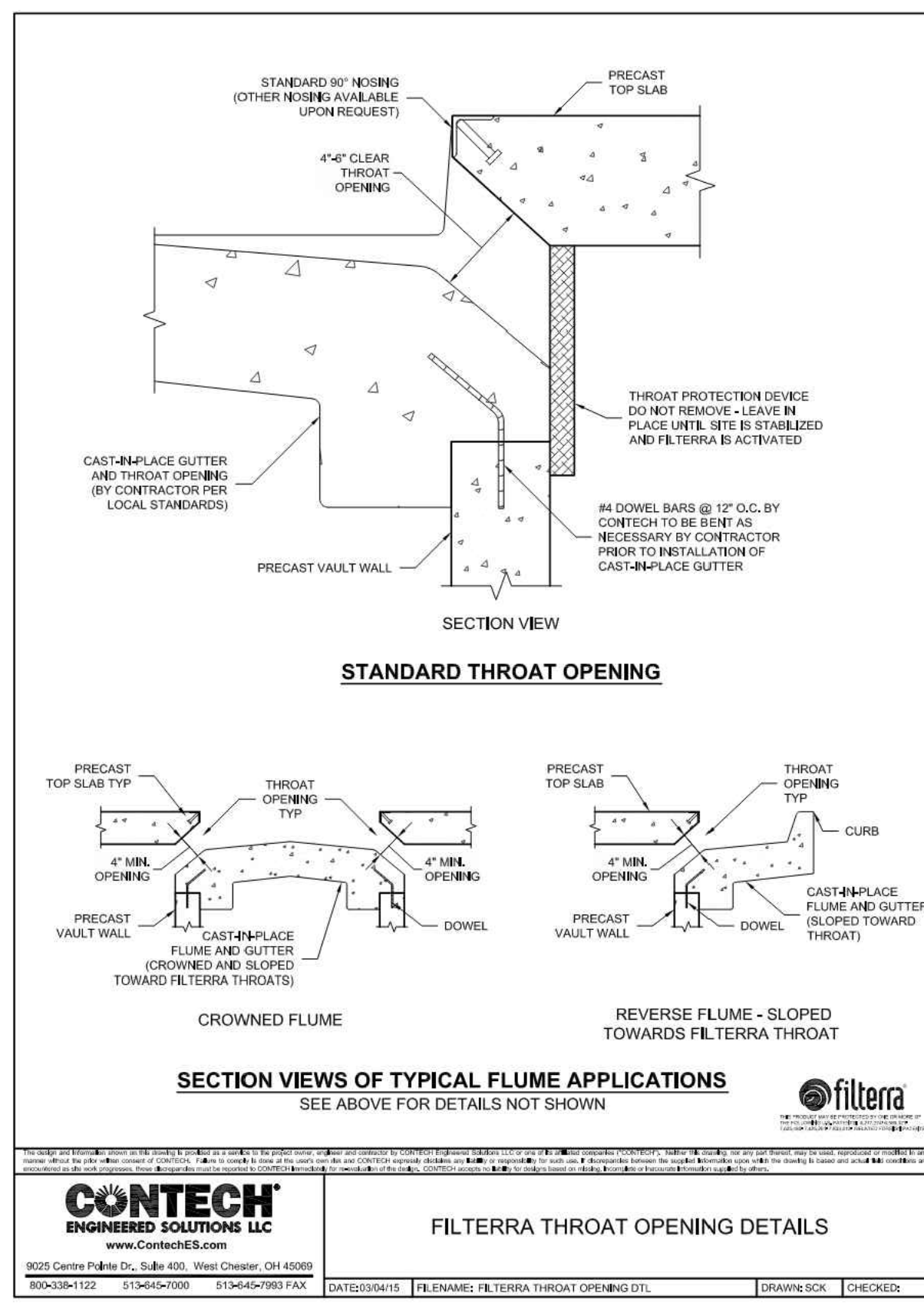
DIRECTOR _____ DATE _____

OPERATION AND MAINTENANCE SCHEDULE FOR FILTERRA

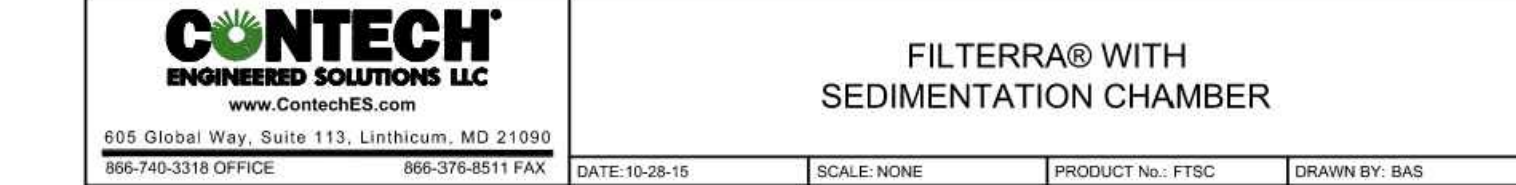
- THE START OF THE MAINTENANCE PLAN BEGINS WHEN THE SYSTEM IS ACTIVATED FOR FULL OPERATION. FULL OPERATION IS DEFINED AS THE UNIT INSTALLED, CURB AND GUTTER AND TRANSITIONS IN PLACE AND ACTIVATION (BY SUPPLIER) WHEN MULCH AND INSET ARE ADDED AND TEMPORARY THROAT PROTECTION REMOVED. ACTIVATION CANNOT BE CARRIED OUT UNTIL THE SITE IS FULLY STABILIZED (FULL LANDSCAPING, GRASS COVER, FINAL PAVING AND STREET SWEEPING COMPLETED).
- OWNER SHALL LEAVE THE FIRST YEAR OF MAINTENANCE UP TO THE SUPPLIER, SINCE IT IS INCLUDED IN THE PURCHASE OF THE SYSTEM. OWNER MUST PROMPTLY NOTIFY THE (MAINTENANCE) SUPPLIER OF ANY DAMAGE TO THE PLANTS) AND SHALL ADVISE OTHER LANDSCAPE OR MAINTENANCE CONTRACTORS TO LEAVE ALL MAINTENANCE TO THE SUPPLIER (E.G. PRUNING OR FERTILIZING). AFTER THE FIRST YEAR, THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER TWICE A YEAR. MAINTENANCE SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING OR FALL. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FILTERRA PLANT SELECTION LIST.
- THE OWNER SHALL PERFORM A PLANT INSPECTION IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT. REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL. TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- THE OWNER SHALL INSPECT THE MULCH EACH SPRING AND FALL. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. MULCH MAY NEED TO BE REPLACED MORE FREQUENTLY DEPENDING ON RAINFALL PATTERNS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
- THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, BUT AT A MINIMUM, TWICE PER YEAR AND AFTER EACH HEAVY STORM.
- BI-ANNUALLY REMOVE TRASH & DEBRIS AS IT ACCUMULATES. THIS SHOULD BE DONE IN THE SPRING AND THE FALL. THE SPRING MAINTENANCE SHALL TARGET CLEANING UP WINTER DEBRIS (SALTS AND SANDS) WHILE THE FALL MAINTENANCE SHALL TARGET THE REMOVAL OF LEAF LITTER.
- REMOVE AND REPLACE TOP FEW INCHES OF FILTER MEDIA WHEN WATER PONDS FOR MORE THAN 48 HRS. REFER TO FILTERRA'S MAINTENANCE VISIT PROCEDURE.
- PRUNE AND REPLACE DEAD VEGETATION AS NECESSARY WHEN PERFORMING MAINTENANCE VISITS. CONSULT FILTERRA PLANT LIST FOR ACCEPTABLE SPECIES.
- WATER VEGETATION DURING DRY PERIODS.

INSTALLATION GUIDELINES FOR FILTERRA

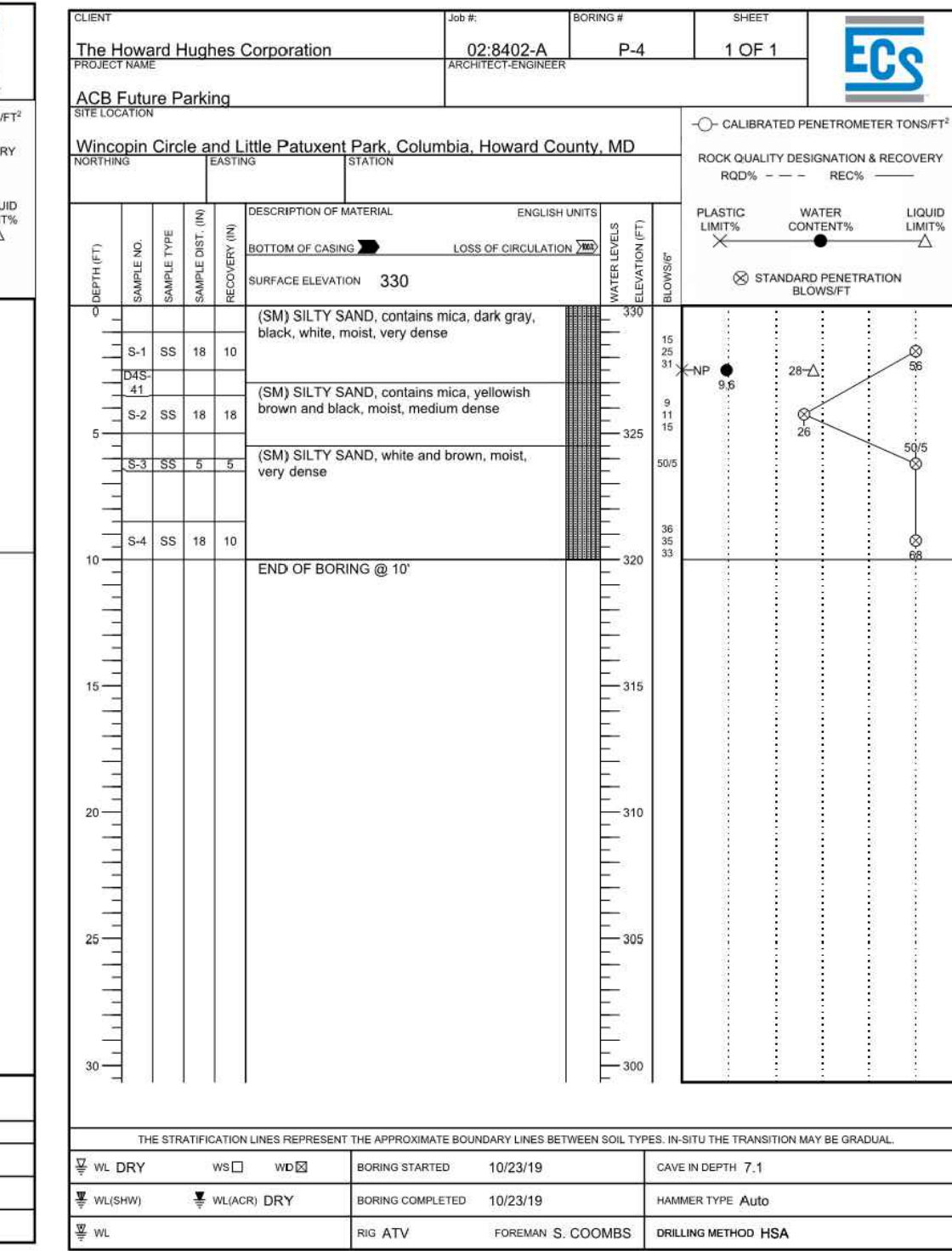
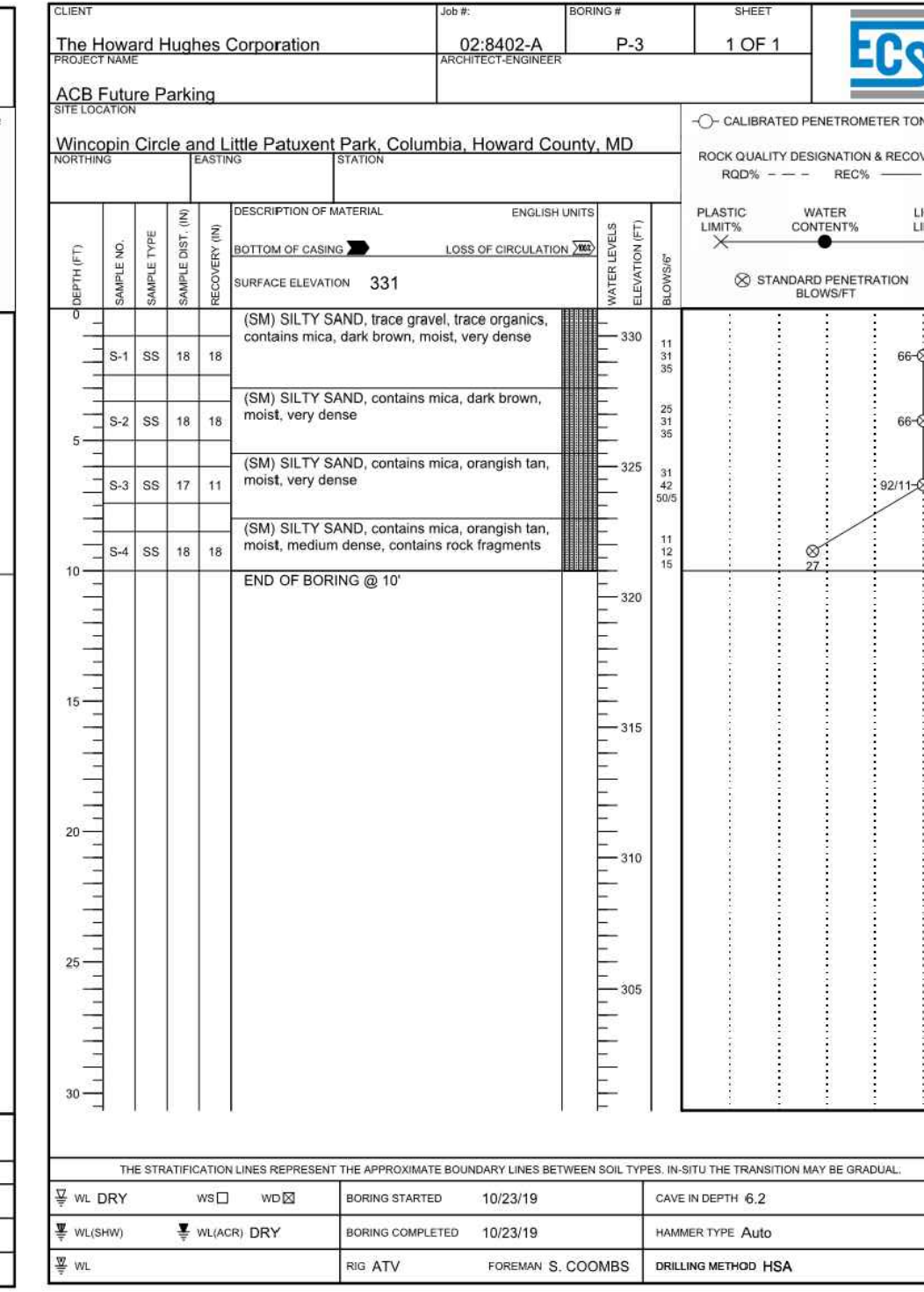
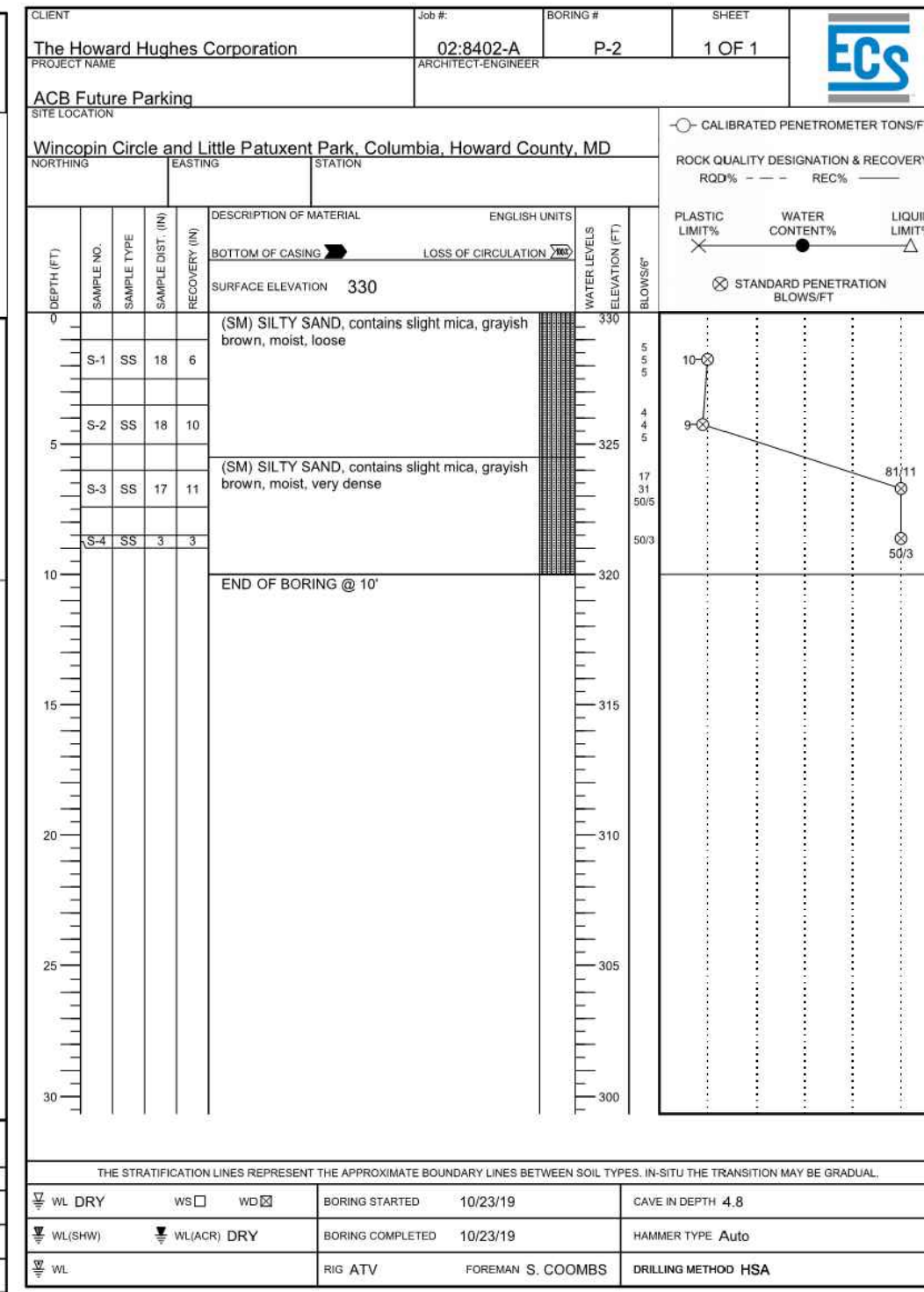
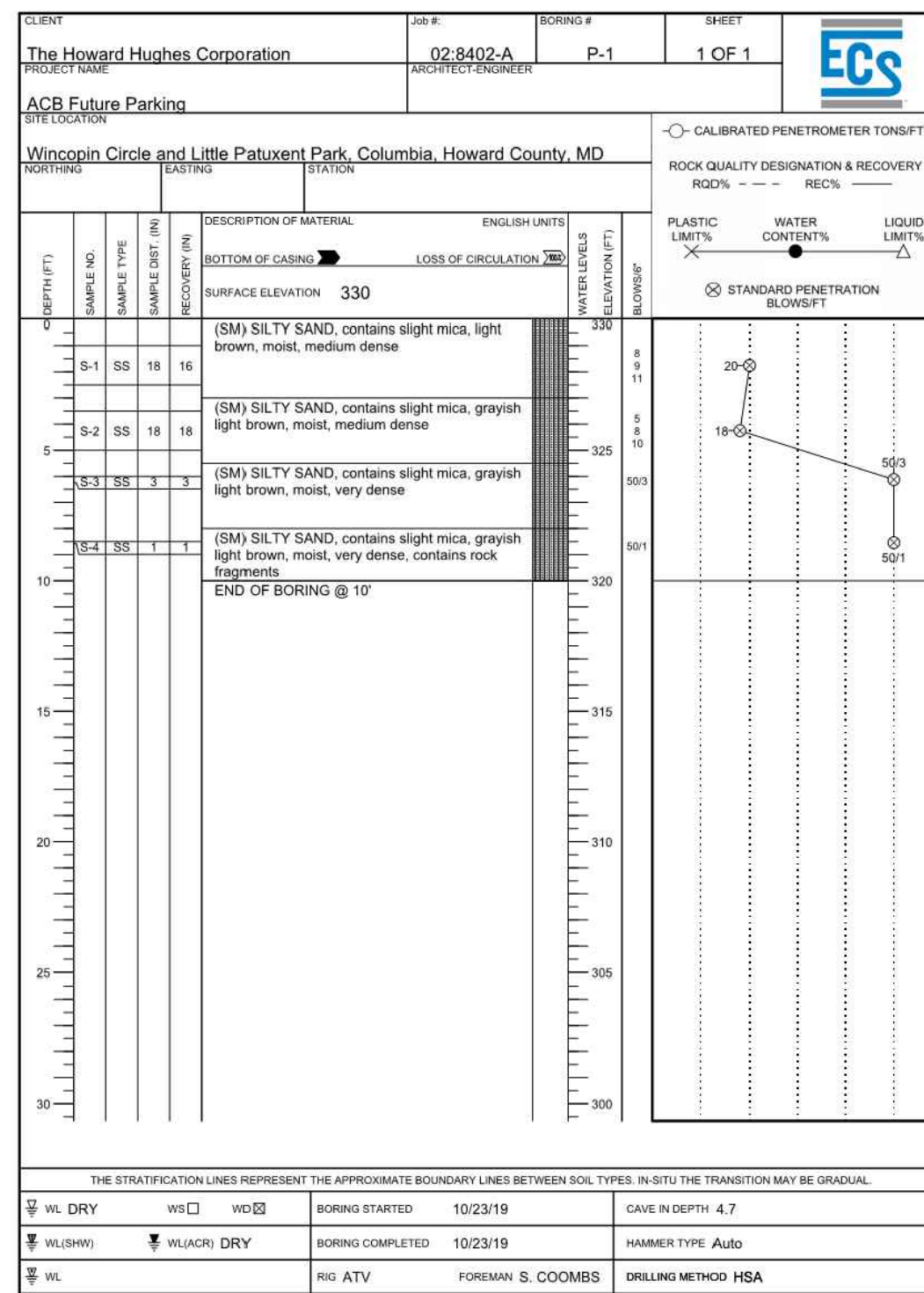
- EACH UNIT SHALL BE CONSTRUCTED AT THE LOCATIONS AND ELEVATIONS ACCORDING TO THE SIZES SHOWN ON THE APPROVED DRAWINGS. ANY MODIFICATIONS TO THE ELEVATION OR LOCATION SHALL BE AT THE DIRECTION OF AND APPROVED BY THE ENGINEER.
- IF THE FILTERRA IS STORED BEFORE INSTALLATION, THE TOP SLAB MUST BE PLACED ON THE BOX USING THE 2x4 WOOD PROVIDED, TO PREVENT CONTAMINATION FROM THE SITE. ALL INTERNAL FITTINGS SUPPLIED (IF ANY), MUST BE LEFT IN PLACE PER THE DELIVERY.
- THE UNIT SHALL BE PLACED ON THE COMPACTED SUB-GRADE WITH A MINIMUM 6-INCH GRAVEL BASE MATCHING THE FINAL GRADE OF THE CURB LINE IN THE AREA OF THE UNIT. THE UNIT IS TO BE PLACED SUCH THAT THE UNIT AND TOP SLAB MATCH THE GRADE OF THE CURB IN THE AREA OF THE UNIT. COMPACT UNDISTURBED SUB-GRADE MATERIALS TO 95% OF THE MAXIMUM DENSITY AT +1% TO 2% OF THE OPTIMUM MOISTURE. UNSUITABLE MATERIAL BELOW SUB-GRADE SHALL BE REPLACED TO SITE ENGINEER'S APPROVAL. CONTACT CONTECH FOR GUIDANCE WHERE SLOPE EXCEEDS 5%.
- ONCE THE UNIT IS SET, THE INTERNAL WOODEN FORMS AND PROTECTIVE SILT FABRIC COVER MUST BE LEFT INTACT. ONLY REMOVE THE TEMPORARY WOODEN SHIPPING BLOCKS BETWEEN THE BOX AND THE TOP SLAB. THE TOP LID SHOULD BE SEALED ONTO THE BOX BEFORE BACKFILLING, USING A NON-SHOCK GROUT, BUTYL RUBBER OR SIMILAR WATERPROOF SEAL. THE BOARDS ON THE TOP OF THE LID AND BOARDS SEALED IN THE UNIT'S THROAT MUST NOT BE REMOVED. THE SUPPLIER REMOVE THESE SECTIONS AT THE TIME OF ACTIVATION.
- OUTLET CONNECTIONS SHALL BE ALIGNED AND SEALED TO MEET THE APPROVED DRAWINGS WITH MODIFICATIONS NECESSARY TO MEET SITE CONDITIONS AND LOCAL REGULATIONS. THE CORRECT OUTLET WILL BE MARKED ON THE FILTERRA BOX. DO NOT USE PLUGGED COUPLINGS MARKED "USE OTHER CONNECTION".
- BACKFILLING SHALL BE PERFORMED IN A CAREFUL MANNER, BRINGING THE APPROPRIATE FILL MATERIAL UP IN 6" LIFTS ON ALL SIDES. PRECAST SECTIONS SHALL BE SET IN A MANNER THAT WILL RESULT IN A WATERTIGHT JOINT. IN ALL INSTANCES, INSTALLATION OF THE FILTERRA UNIT SHALL CONFORM TO ASTM SPECIFICATION C891 "STANDARD PRACTICE FOR INSTALLATION OF UNDERGROUND PRECAST UTILITY STRUCTURES" UNLESS SPECIFIED OTHERWISE IN CONTRACT DOCUMENTS.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE CURB AND GUTTER AND TRANSITION TO THE FILTERRA UNIT FOR PROPER STORMWATER FLOW INTO THE SYSTEM THROUGH THE THROAT OPENING. CONTRACTOR SHALL ENSURE THAT THE FLOW LINE OF THE FILTERRA UNIT IS AT A HIGHER ELEVATION THAN THE FLOW LINE OF THE BYPASS STRUCTURE OR RELIEF. EFFECTIVE BYPASS FOR THE FILTERRA SYSTEM IS ESSENTIAL FOR CORRECT OPERATION. FAILURE TO COMPLY WITH THIS GUIDELINE MAY CAUSE FAILURE AND/OR DAMAGE TO THE FILTERRA DEVICE. A STANDARD DRAWING OF THE THROAT AND GUTTER DETAIL IS SHOWN ON THIS SHEET.



UNIT DESIGNATION	INSIDE VAULT DIMENSIONS	FILTERRA TREATMENT AREA	MAXIMUM DRAINAGE AREA TREATED (SF)	STORAGE CAPACITY OF UNIT PRIOR TO FILTRATION (CF)	WQV TREATMENT EQUIVALENT (CF)
FTSC 8' x 4'	12' x 4'	6' x 4'	4,356	85	339
FTSC 8' x 4'	16' x 4'	8' x 4'	5,990	117	467
FTSC 8' x 6'	12' x 6'	6' x 6'	6,534	128	511
FTSC 8' x 6'	16' x 6'	8' x 6'	9,039	176	702
FTSC 10' x 6'	19' x 6'	10' x 6'	10,454	204	816
FTSC 10' x 6'	20' x 6'	10' x 6'	15,246	298	1,194
FTSC 11' x 8'	22' x 8'	11' x 8'	16,990	330	1,322



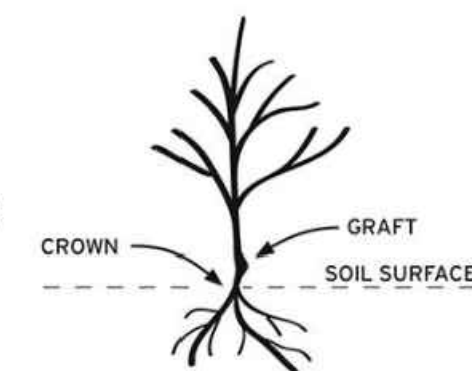
APPROVED:	HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
DIRECTOR	DATE



Planting Requirements for Filterra® Systems

Plant Material Selection

- Select plant(s) as specified in the engineering plans and specifications.
- Select plant(s) with full root development but not to the point where root bound.
- Use local nursery container plants only. Ball and burlapped plants are not permitted.
- For precast Filterra systems, plant(s) must not have scaffold limbs at least 14 inches from the crown due to spacing between the top of the mulch and the tree grate. Lower branches can be pruned away provided there are sufficient scaffold branches for tree or shrub development.
- For precast Filterra systems, at the time of installation plant(s) must be at least 4 feet tall from the crown.
- Plant(s) shall not have a mature height greater than 25 feet.
- For standard 21" media depth, a 7 – 15 gallon container size shall be used. Media less than 21" (Filterra boxes only) will require smaller container plants.
- Plant(s) must have a single trunk at installation, and pruning may be necessary at activation and maintenance for some of the faster growing species, or species known to produce basal sprouts.



Plant Installation

- During transport protect the plant leaves from wind and excessive jostling.
- Prior to removing the plant(s) from the container, ensure the soil moisture is sufficient to maintain the integrity of the root ball. If needed, pre-wet the container plant.
- Cut away any roots which are growing out of the container drain holes. Plants with excessive root growth from the drain holes should be rejected.
- Plant(s) should be carefully removed from the pot by gently pounding on the sides of the container with the fist to loosen root ball. Then carefully slide out. Do not lift plant(s) by trunk as this can break roots and cause soil to fall off. Extract the root ball in a horizontal position and support it to prevent it from breaking apart. Alternatively the pot can be cut away to minimize root ball disturbance.
- Remove any excess soil from above the root flare after removing plant(s) from container.
- Excavate a hole with a diameter 4" greater than the root ball, gently place the plant(s).
- If plant(s) have any circling roots from being pot bound, gently tease them loose without breaking them.
- If root ball has a root mat on the bottom, it should be shaved off with a knife just above the mat line.
- Plant the tree/shrub/grass with the top of the root ball 1" above surrounding media to allow for settling.
- All plants should have the main stem centered in the tree grate upon completion of installation.
- With all trees/shrubs, remove dead, diseased, crossed/rubbing, sharply crotched branches or branches growing excessively long or in wrong direction compared to majority of branches.

- To prevent transplant shock (especially if planting takes place in the hot season), it may be necessary to prune some of the foliage to compensate for reduced root uptake capacity. This is accomplished by pruning away some of the smaller secondary branches or a main scaffold branch if there are too many. Too much foliage relative to the root ball can dehydrate and damage the plant.
- Plant staking may be required.

Mulch Installation

- Only mulch that has been analyzed and approved by the Contech Engineered Solutions lab can be used in the Filterra system.
- Mulch must be applied to a depth of 3" evenly over the surface of the media.

Irrigation Requirements

- Each Filterra® system must receive adequate irrigation to ensure survival of the living system during periods of drier weather.
- Irrigation sources include rainfall runoff from downspouts and/or gutter flow, applied water through the tree grate or in some cases from an irrigation system with emitters installed during construction.
- At Activation:** Apply about one (cool climates) to two (warm climates) gallons of water per inch of trunk diameter over the root ball.
- During Establishment:** In common with all plants, each Filterra® plant will require more frequent watering during the establishment period. One inch of applied water per week for the first three months is recommended for cooler climates (2 to 3 inches for warmer climates). If the system is receiving rainfall runoff from the drainage area, then irrigation may not be needed. Inspection of the soil moisture content can be evaluated by gently brushing aside the mulch layer and feeling the soil. Be sure to replace the mulch when the assessment is complete. Irrigate as needed**.
- Established Plants:** Established plants have fully developed root systems and can access the entire water column in the media. Therefore irrigation is less frequent but requires more applied water when performed. For a mature system assume 3.5 inches of available water within the media matrix. Irrigation demand can be estimated as 1" of irrigation demand per week. Therefore if dry periods exceed 3 weeks, irrigation may be required. It is also important to recognize that plants which are exposed to windy areas and reflected heat from paved surfaces may need more frequent irrigation. Long term care should develop a history which is more site specific.

** Five gallons per square yard approximates 1 inch of water. Therefore for a 6' by 6 foot Filterra® approximately 20-60 gallons of applied water is needed. To ensure even distribution of water it needs to be evenly applied over the entire surface of the filter bed, with special attention to make sure the root ball is completely wetted. NOTE: if needed, measure the time it takes to fill a five gallon bucket to estimate the applied water flow rate. Then calculate the time needed to irrigate the Filterra®, For example is the flow rate of the sprinkler is 5 gallons/minute then it would take 12 minutes to irrigate a 6'x6' filter.

Filterra Bioretention Systems Mulch Specifications

General Description

Filterra Bioretention Systems mulch consists of double shredded wood or bark mulch.

Basic Use

The mulch is used in Filterra Bioretention Systems as the surface component for pretreatment of stormwater runoff, protection of the Filterra bioretention media and moisture control. No more than a 3" mulch layer should be applied.

Technical Specifications

- Mulch should be approved by Contech Engineered Solutions LLC for use in Filterra systems
- Mulch should include only hardwood, fir or cedar material.
- Mulch should be double shredded wood or bark, but not bark nugget mulch.
- If dyed, Mulch should be brown or black only.
- Mulch should be certified by the Mulch and Soil Council.
- Mulch should be of a type that is low in total phosphorus (TP).

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 27020, EXPIRATION DATE: 01/25/22.

04-02-2020
DATE

APPROVED:
PLANNING BOARD OF HOWARD COUNTY
DATE: _____

PROFESSIONAL ENGR. NO. 27020

REPLACEMENT OF ORIGINAL SDP SET WITH TEMPORARY PARKING LOT DESIGN SET

Date: 04/02/20 Revision Description

TEMPORARY SURFACE LOT PARCEL 321, LOT 17 10227 WINCOPIN CIRCLE COLUMBIA, MD 21044

OWNER / DEVELOPER:
AMERICAN CITY BUILDING BUSINESS TRUST
C/O THE HOWARD HUGHES CORPORATION
COLUMBIA REGIONAL OFFICE
10960 GRANTCHESTER WAY, SUITE 110
COLUMBIA, MD 21044
(410) 964-1800

DW
DAFT MCCUNE WALKER INC

501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286
P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM

SUBDIVISION NAME: SECTION/AREA: LOT/PARCEL #
COLUMBIA TOWN CENTER: 0001 13/0298 & 17/0321

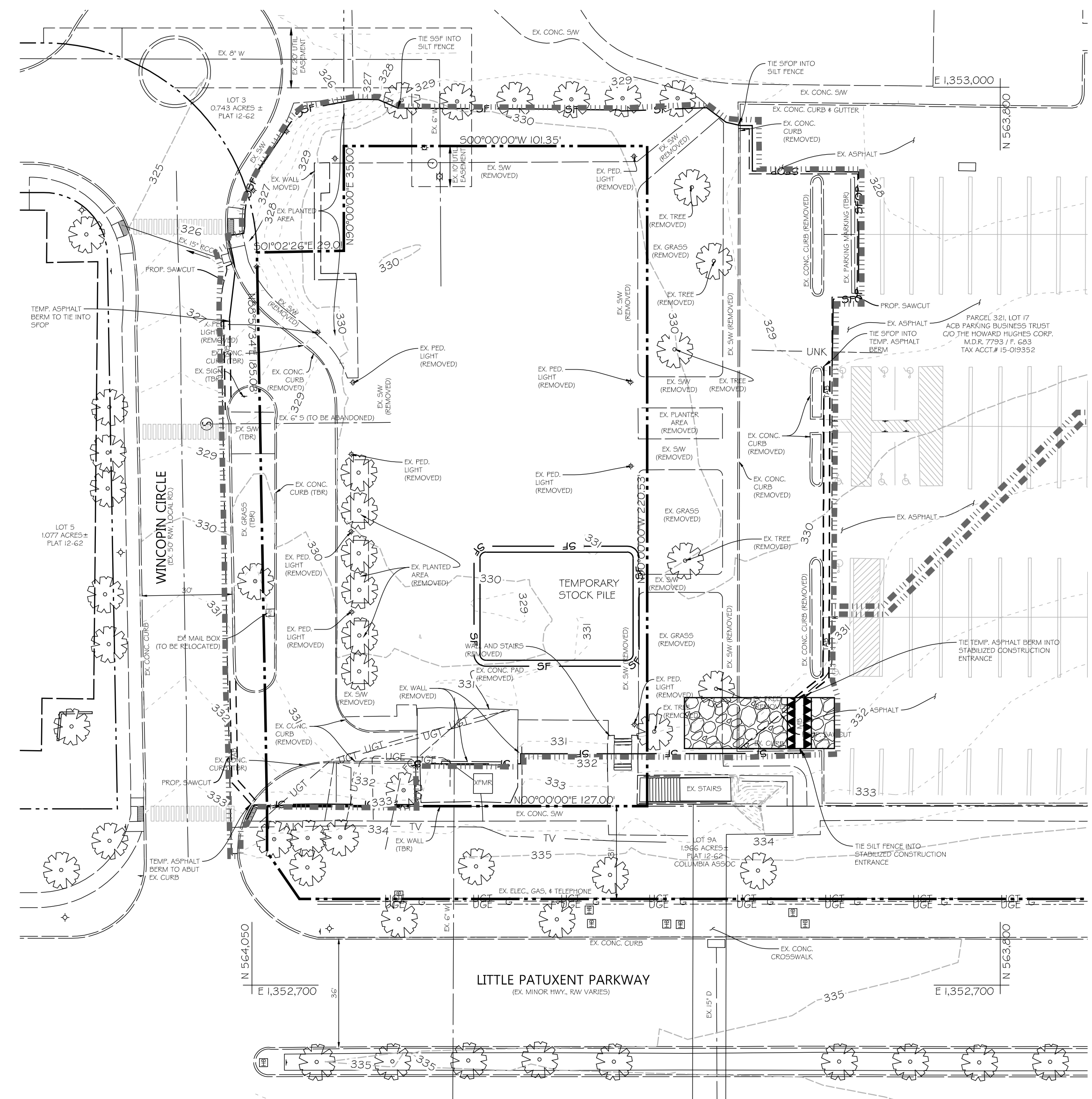
PLAN OR DEP. NO.: 8-13-13 RECD. #/DATE: 36 RECD. STREET: 5-03 CENSUS TRAC: 605402

WATER CODE: 550 SEWER CODE: LITTLE PATUXENT STAGE: 1

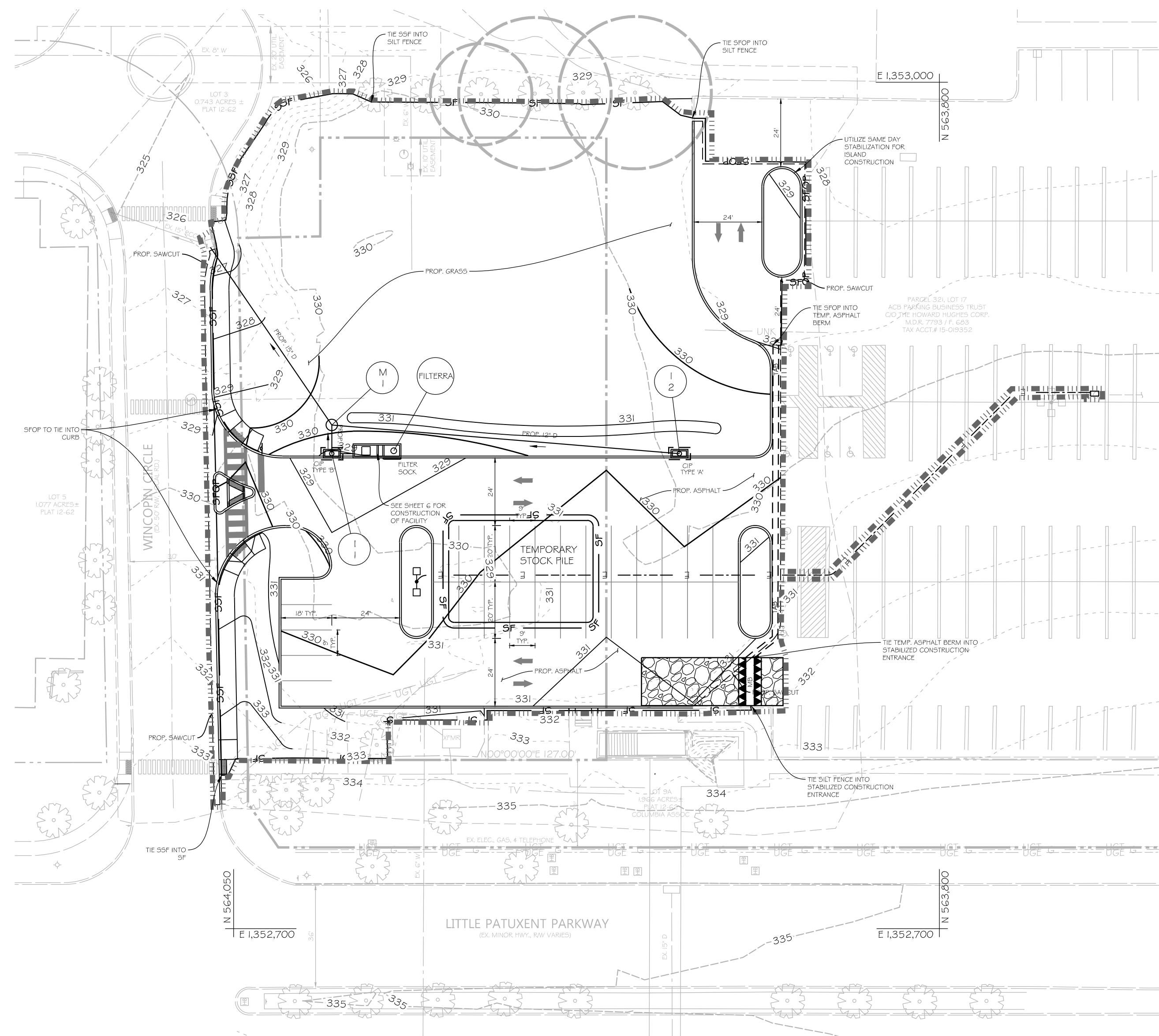
TITLE: **SWM NOTES AND DETAILS**

REVISED SITE DEVELOPMENT PLAN

Des. By PAB SCALE: AS SHOWN Proj. No. 19029.00
Dwn. By PAB Date 04-02-2020
Chk. By RRP Approved RRP 07 of 14



EX. CONDITIONS SEC PLAN
SCALE: 1" = 30'



PROP. CONDITIONS SEC PLAN
SCALE: 1" = 30'

LEGEND

	PROPERTY LINE
	RIGHT-OF-WAY LINE
	EX. 1' CONTOUR
	EX. 5' CONTOUR
	EX. CURB
	EX. SIDEWALK
	EX. BUILDING OVERHANG
	EX. BUILDING
	EX. TREE
	EX. WATER LINE
	EX. WATER STRUCTURE
	EX. STORM DRAIN PIPE
	EX. STORM DRAIN INLET
	EX. SANITARY SEWER PIPE
	EX. SANITARY SEWER MANHOLE
	EX. UNDERGROUND TELEPHONE LINE
	EX. UNDERGROUND ELECTRIC LINE
	EX. UNDERGROUND FIBEROPTIC LINE
	EX. UNDERGROUND TELEVISION LINE
	EX. UNDERGROUND GAS LINE
	EX. UNKNOWN UNDERGROUND LINE
	EX. HAND BOX
	EX. PEDESTRIAN LIGHT
	EX. STREET LIGHT
	EX. SIGN
	PROP. 1' CONTOUR
	PROP. 5' CONTOUR
	PROP. SITE LIGHTING (REFER TO SHEET 15)
	PROP. UNDERGROUND ELECTRIC
	PROP. SIGN
	PROP. STORM DRAIN PIPE
	PROP. STORM INLET
	PROP. STORM MANHOLE
	PROP. CONC. CURB & GUTTER
	SILT FENCE
	SILT FENCE ON PAVEMENT
	SUPER SILT FENCE
	LIMIT OF DISTURBANCE
	CURB INLET PROTECTION
	TEMPORARY ASPHALT BERM
	STABILIZED CONSTRUCTION ENTRANCE W/ MOUNTABLE BERM

- UTILITY CONSTRUCTION NOTES**
(FOR ALL UTILITY CONSTRUCTION BEYOND EROSION AND SEDIMENT CONTROL MEASURES)
- CONTRACTOR SHOULD OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY.
 - PLACE ALL EXCAVATED MATERIAL ON THE UPHILL SIDE OF A TRENCH.
 - ANY SEDIMENT CONTROLS DISTURBED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY.
- DAILY STABILIZATION NOTES**
(FOR ALL CONSTRUCTION OUTSIDE PERIMETER SEDIMENT AND EROSION CONTROL MEASURES)
- CONTRACTOR SHALL ONLY DISTURB THAT AREA WITH WHICH CAN BE COMPLETED AND STABILIZED BY THE END OF EACH WORKING DAY. ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF A TRENCH. STABILIZATION SHALL BE AS FOLLOWS:
- FOR AREAS TO BE PAVED, THE APPLICATION OF STONE BASE.
 - FOR AREAS TO BE VEGETATIVELY STABILIZED:
 - PERMANENT SEED AND SOIL STABILIZATION MATTING OR SOD FOR ALL STEEP SLOPES, CHANNELS OR SWALES.
 - PERMANENT SEED AND MULCH FOR ALL OTHER AREAS.
- IF THE CONTRACTOR IS UNABLE TO BACKFILL AND STABILIZE TRENCH, THEN SILT FENCE WILL BE PLACED ON THE DOWNSLOPE SIDE OF A TRENCH.
- ANY SOIL/SEDIMENT TRACKED ONTO ROADWAYS MUST BE REMOVED IMMEDIATELY BY MECHANICAL METHODS (SCRAPING, SWEEPING, ETC.) AND FLUSHING OF PAVEMENT WILL NOT BE PERMITTED.

- ALL UNDERLYING SOILS WITHIN LIMIT OF DISTURBANCE ARE URBAN LAND-USE/ORTIENTS COMPLEX (U-B), 0 TO 8% SLOPES WHICH ARE HYDROLOGIC SOIL GROUP D.
- SEQUENCE OF CONSTRUCTION**
- OBTAIN A GRADING PERMIT FOR THE PROPOSED WORK. NOTIFY THE HOWARD COUNTY DEPARTMENT OF PERMITS AND LICENSES (DPLP) AT LEAST 48 HOURS PRIOR TO BEGINNING WORK. (2 DAYS)
 - INSTALL THE STABILIZED CONSTRUCTION ENTRANCE (SCE) AND PERIMETER CONTROLS: SUPER SILT FENCE (SSF), SILT FENCE (SF), SILT FENCE ON PAVEMENT (SFOP), AND TEMPORARY ASPHALT BERM (TAB) AS SHOWN ON THE PLANS (5 DAYS). (5 DAYS)
- NOTE: REFER TO DAILY STABILIZATION NOTES FOR WORK PERFORMED OUTSIDE OF THE PERIMETER CONTROLS SHOWN ON THESE PLANS.
- IF NECESSARY, AN ON-SITE STOCKPILE AREA WILL BE LOCATED WITHIN THE LIMIT OF DISTURBANCE WITH THE COORDINATION AND DISCRETION OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR AND THE GENERAL CONTRACTOR.
 - WITH THE SEDIMENT CONTROL INSPECTOR'S WRITTEN APPROVAL, BEGIN GRADING SITE TO GRADES SHOWN ON THESE PLANS MAKING SURE TO ACCOUNT FOR THE PAVEMENT SECTION. ALL SOIL WILL NEED TO BE TAKEN TO A SITE WITH AN APPROVED OPEN GRADING PERMIT AND AN APPROVED SEDIMENT CONTROL PLAN. (2 WEEKS)
 - WHILE GRADING OPERATIONS ARE UNDERWAY, INSTALL PROPOSED STORM DRAIN SYSTEMS AND LIGHTING/ELECTRIC. UTILIZE PUMP AND PORTABLE SEDIMENT TANK AND DISCHARGE TO A STABILIZED OUTLET OR STORM DRAIN SYSTEM IN A NON-EROSIVE MANNER. INSTALL FILTERRA SYSTEM, ENSURING THAT THROAT OPENING IS BLOCKED WITH BOARD FROM SUPPLIER. SEE STORMWATER MANAGEMENT SEQUENCE OF CONSTRUCTION FOR INSTALL. INSTALL FILTER SOCK AT THROAT OPENING AS EXTRA MEASURE. AS SOON AS INLETS ARE INSTALLED, IMMEDIATELY INSTALL INLET PROTECTION. (1 WEEK)
 - INSTALL CURB AND GUTTER, SIDEWALK, RAMPS, AND ASPHALT PAVEMENT SECTION. CONTRACTOR SHALL WORK FROM STABILIZED CONSTRUCTION ENTRANCE TOWARDS WINCOPIN CIRCLE. AFTER THESE ITEMS ARE INSTALLED, RELOCATE PERIMETER CONTROLS, SPECIFICALLY SUPER SILT FENCE (SSF), REMOVE TEMPORARY ASPHALT BERMS ALONG WINCOPIN ONCE CURB AND PAVEMENT IS INSTALLED. (3 WEEKS)
- NOTE: STEPS 5 AND 6 MAY BE DONE CONCURRENTLY.
- INSTALL SITE AND STORMWATER PLANTINGS PER LANDSCAPE PLANS PROVIDED IN THIS SET. (2 WEEKS)
 - WITH THE SEDIMENT CONTROL INSPECTOR'S & SUPPLIER'S WRITTEN APPROVAL THAT THE STORMWATER MANAGEMENT FACILITIES' CONTRIBUTING DRAINAGE AREA IS PERMANENTLY STABILIZED, REMOVE FILTER SOCK AND THROAT OPENING BLOCKAGE ON FILTERRA AND ALLOW RUNOFF TO ENTER FACILITIES (ACTIVATE FILTERRA). REMOVE INLET PROTECTION ON INLETS. (2 DAYS)
 - WITH THE SEDIMENT CONTROL INSPECTOR'S WRITTEN APPROVAL, REMOVE REMAINING CONTROLS AND IMMEDIATELY STABILIZE/REPAIR THOSE AREAS DISTURBED BY THEIR REMOVAL. (3 DAYS)

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
DIRECTOR	DATE

LIMIT OF DISTURBANCE: 45,450 SF. / I.04 AC ±
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

HOWARD SOIL CONSERVATION DISTRICT DATE

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 27020, EXPIRATION DATE: 01/25/22.

04-02-2020
DATE

PROFESSIONAL ENGR. NO. 27020

APPROVED:
PLANNING BOARD OF HOWARD COUNTY
DATE:

OWNERS/DEVELOPER CERTIFICATION:
"I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."

OWNER'S/DEVELOPER'S SIGNATURE DATE

PRINTED NAME & TITLE

DESIGN CERTIFICATION:
"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

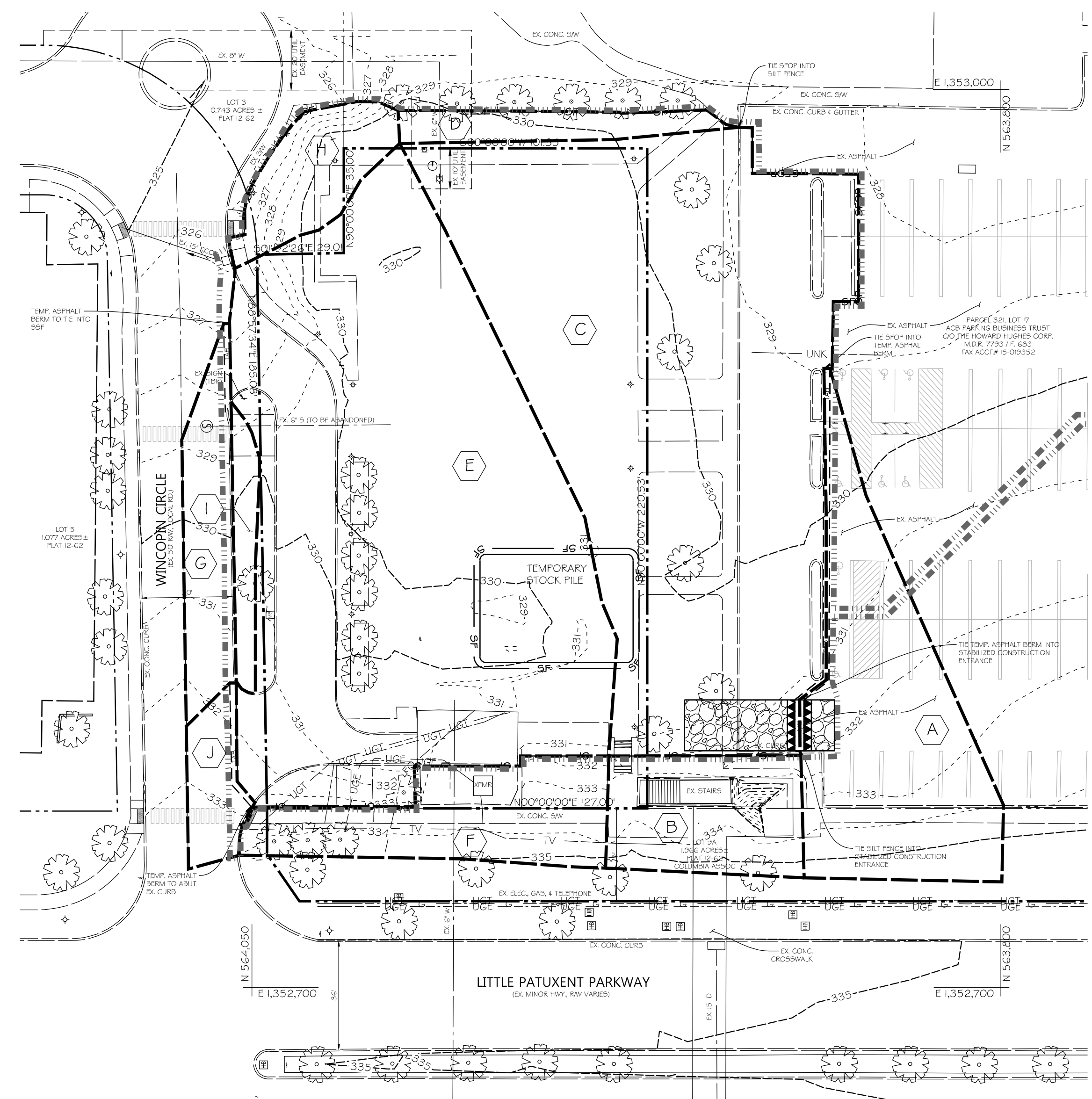
DESIGNER'S SIGNATURE DATE

PRINTED NAME MD REGISTRATION NO. P.E., R.L.S., OR R.L.A. (CIRCLE ONE)

04/02/20	REPLACEMENT OF ORIGINAL SDP SET WITH TEMPORARY PARKING LOT DESIGN SET
Date	No. Revision Description
TEMPORARY SURFACE LOT PARCEL 321, LOT 17 10227 WINCOPIN CIRCLE COLUMBIA, MD 21044	
OWNER / DEVELOPER: AMERICAN CITY BUILDING BUSINESS TRUST C/O THE HOWARD HUGHES CORPORATION COLUMBIA REGIONAL OFFICE 10960 GRANTCHESTER WAY, SUITE 110 COLUMBIA, MD 21044 (410) 964-1800	
DAFT MCULINE WALKER INC	
501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286 P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM	
SUBDIVISION NAME	SECTION/ZONING
COLUMBIA TOWN CENTER	0001
PLANNING DISTRICT	LOT/PARCEL #
B-13-E-13	13/0298 & 17/0321
WATER CODE	SEWER CODE
550	LITTLE PATUXENT
TITLE: SEDIMENT AND EROSION CONTROL PLANS REVISED SITE DEVELOPMENT PLAN	
Des. By PAB	SCALE: 1"=20'
Drn. By PAB	Date 04-02-2020
Chk. By RRP	Approved RRP
Proj. No. 19029.00 08 of 14	

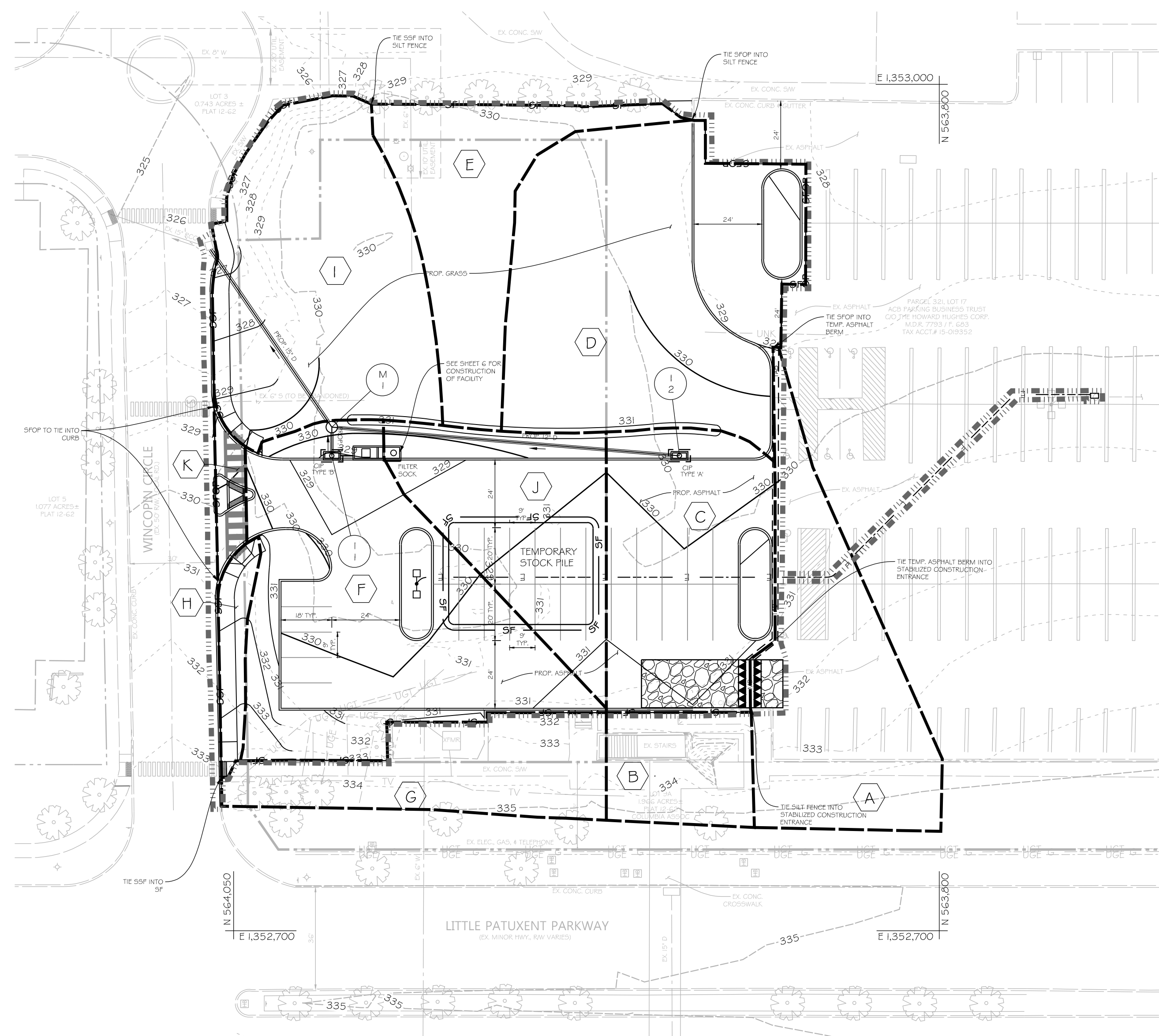
LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- EX. 1' CONTOUR
- EX. 5' CONTOUR
- EX. CURB
- EX. SIDEWALK
- EX. BUILDING OVERHANG
- EX. BUILDING
- EX. TREE
- EX. WATER LINE
- EX. WATER STRUCTURE
- EX. STORM DRAIN PIPE
- EX. STORM DRAIN INLET
- EX. SANITARY SEWER PIPE
- EX. SANITARY SEWER MANHOLE
- EX. UNDERGROUND TELEPHONE LINE
- EX. UNDERGROUND ELECTRIC LINE
- EX. UNDERGROUND FIBEROPTIC LINE
- EX. UNDERGROUND TELEVISION LINE
- EX. UNDERGROUND GAS LINE
- EX. UNKNOWN UNDERGROUND LINE
- EX. HAND BOX
- EX. PEDESTRIAN LIGHT
- EX. STREET LIGHT
- EX. SIGN
- PROP. 1' CONTOUR
- PROP. 5' CONTOUR
- PROP. STORM DRAIN PIPE
- PROP. STORM INLET
- PROP. STORM MANHOLE
- PROP. CONC. CURB + GUTTER
- PROP. SITE LIGHTING (REFER TO SHEET 15)
- PROP. UNDERGROUND ELECTRIC
- PROP. SIGN
- SILT FENCE
- SILT FENCE ON PAVEMENT
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- STANDARD INLET PROTECTION
- CURB INLET PROTECTION
- TEMPORARY ASPHALT BERM
- STABILIZED CONSTRUCTION ENTRANCE W/ MOUNTABLE BERM
- DRAINAGE AREA BOUNDARY
- DRAINAGE AREA DESIGNATION



EX. SEC DRAINAGE AREA MAP
 SCALE: 1" = 30'
 30 0 30 60 90

DRAINAGE AREA	AREA DRAINING TO CONTROL (AC.)	CONTROL TYPE	NOTES
A	0.14	TEMP. ASPHALT BERM	
B	0.06	SILT FENCE	DRAINS TO AREA 'C'
C	0.39 (0.45 TOTAL)	SILT FENCE ON PAVEMENT	RECEIVES AREA 'B'
D	0.02	SILT FENCE	
E	0.46 (0.55 TOTAL)	SILT FENCE ON PAVEMENT	RECEIVES AREA 'F'
F	0.07	SILT FENCE	DRAINS TO AREA 'E'
G	0.04	SUPER SILT FENCE	
H	0.04	SUPER SILT FENCE	
I	0.02	SUPER SILT FENCE	
J	0.02	TEMP. ASPHALT BERM	



PROP. SEC DRAINAGE AREA MAP
 SCALE: 1" = 30'
 30 0 30 60 90

DRAINAGE AREA	AREA DRAINING TO CONTROL (AC.)	CONTROL TYPE	NOTES
A	0.14	TEMP. ASPHALT BERM	
B	0.05	SILT FENCE	DRAINS TO AREA 'C'
C	0.13 (0.18 TOTAL)	CURB INLET PROTECTION	RECEIVES AREA 'B'
D	0.23	SILT FENCE ON PAVEMENT	
E	0.1	SILT FENCE	
F	0.21 (0.29 TOTAL)	CURB INLET PROTECTION	RECEIVES AREA 'G'
G	0.08	SILT FENCE	DRAINS TO AREA 'F'
H	0.02	SUPER SILT FENCE	
I	0.18	SUPER SILT FENCE	
J	0.1	FILTER SOCK	
K	0.01	SILT FENCE ON PAVEMENT	

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 27020, EXPIRATION DATE: 01/25/22.

04-02-2020
 DATE

PROFESSIONAL ENGR. NO. 27020

APPROVED:
 PLANNING BOARD OF HOWARD COUNTY


DATE: _____

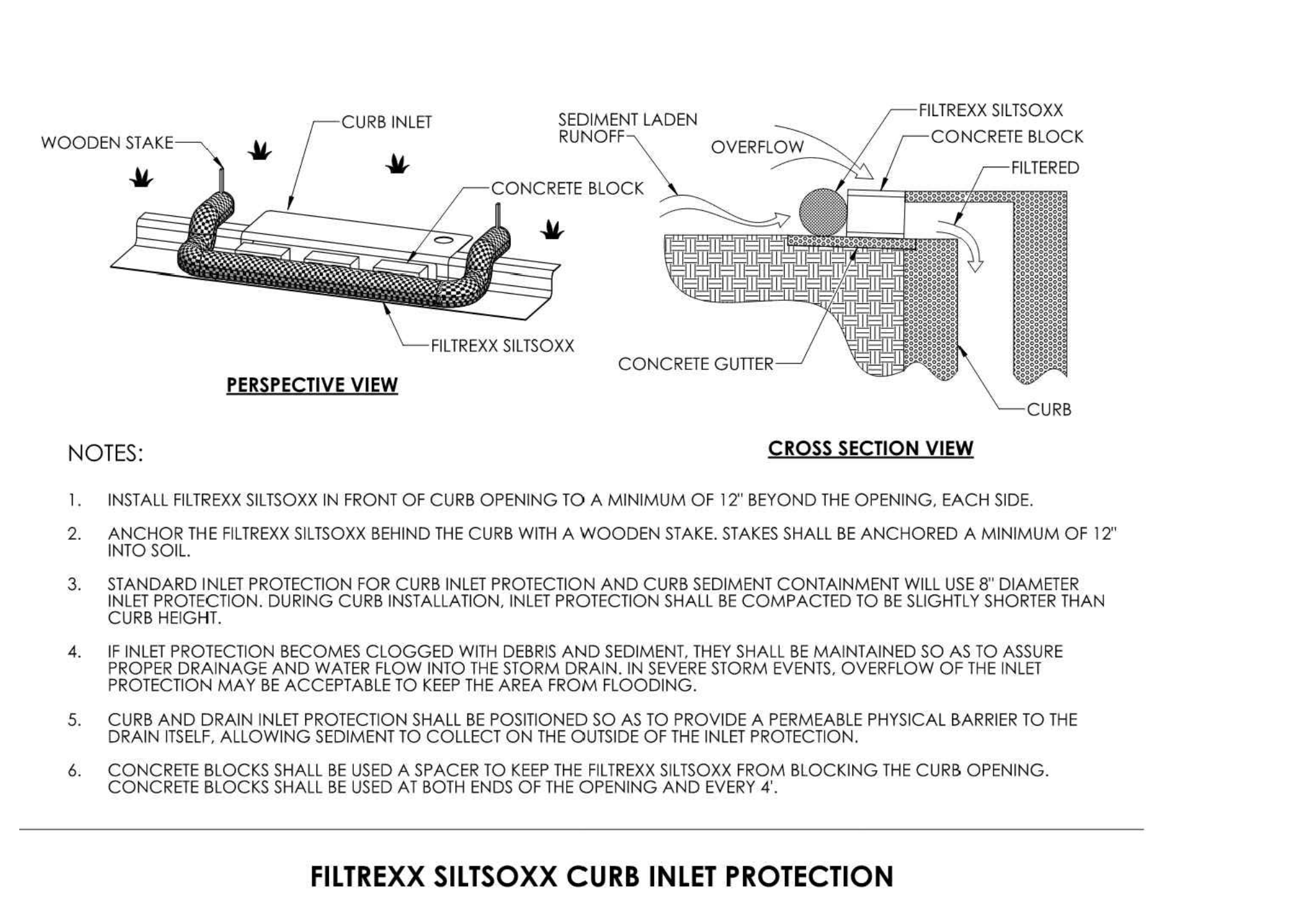
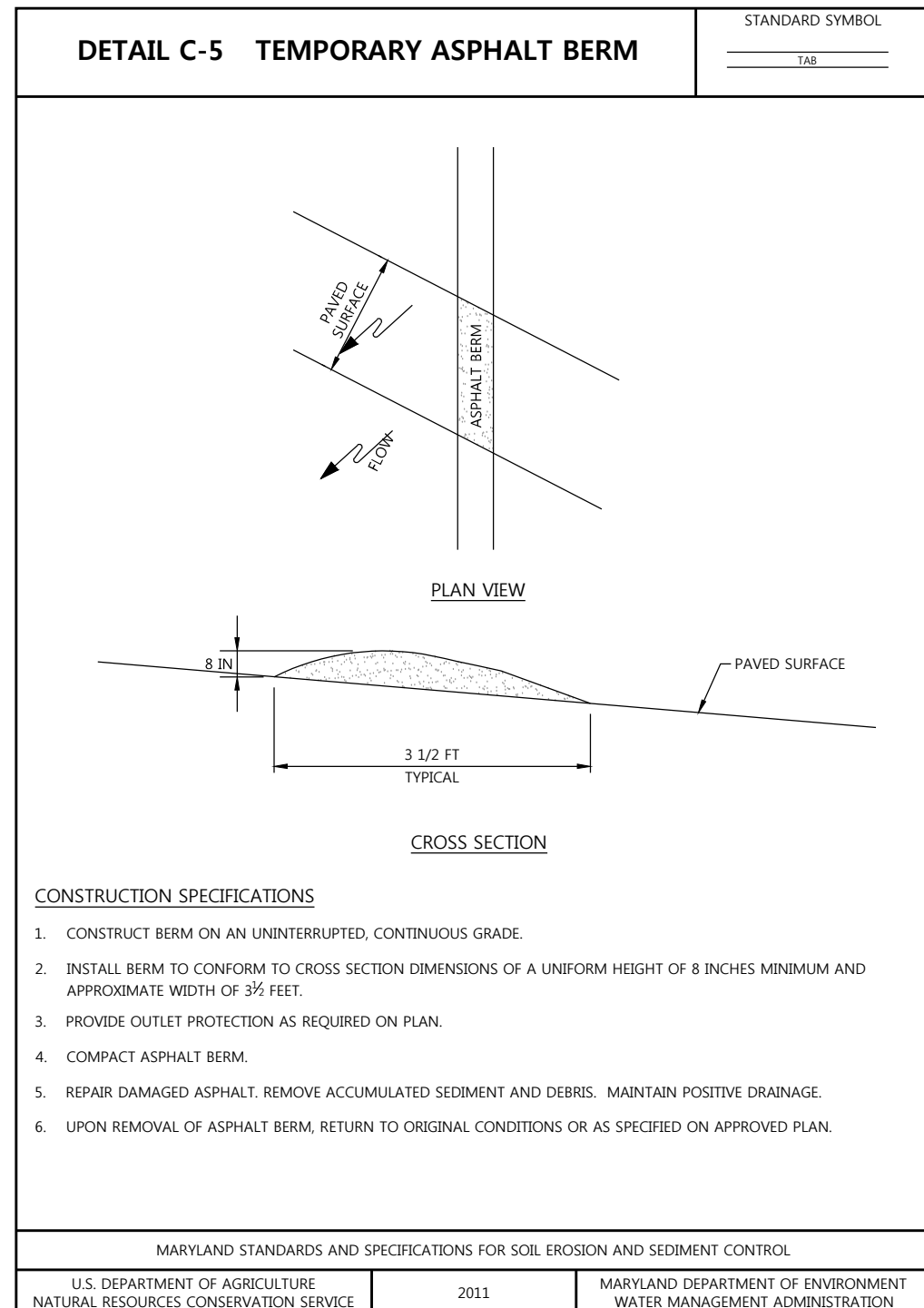
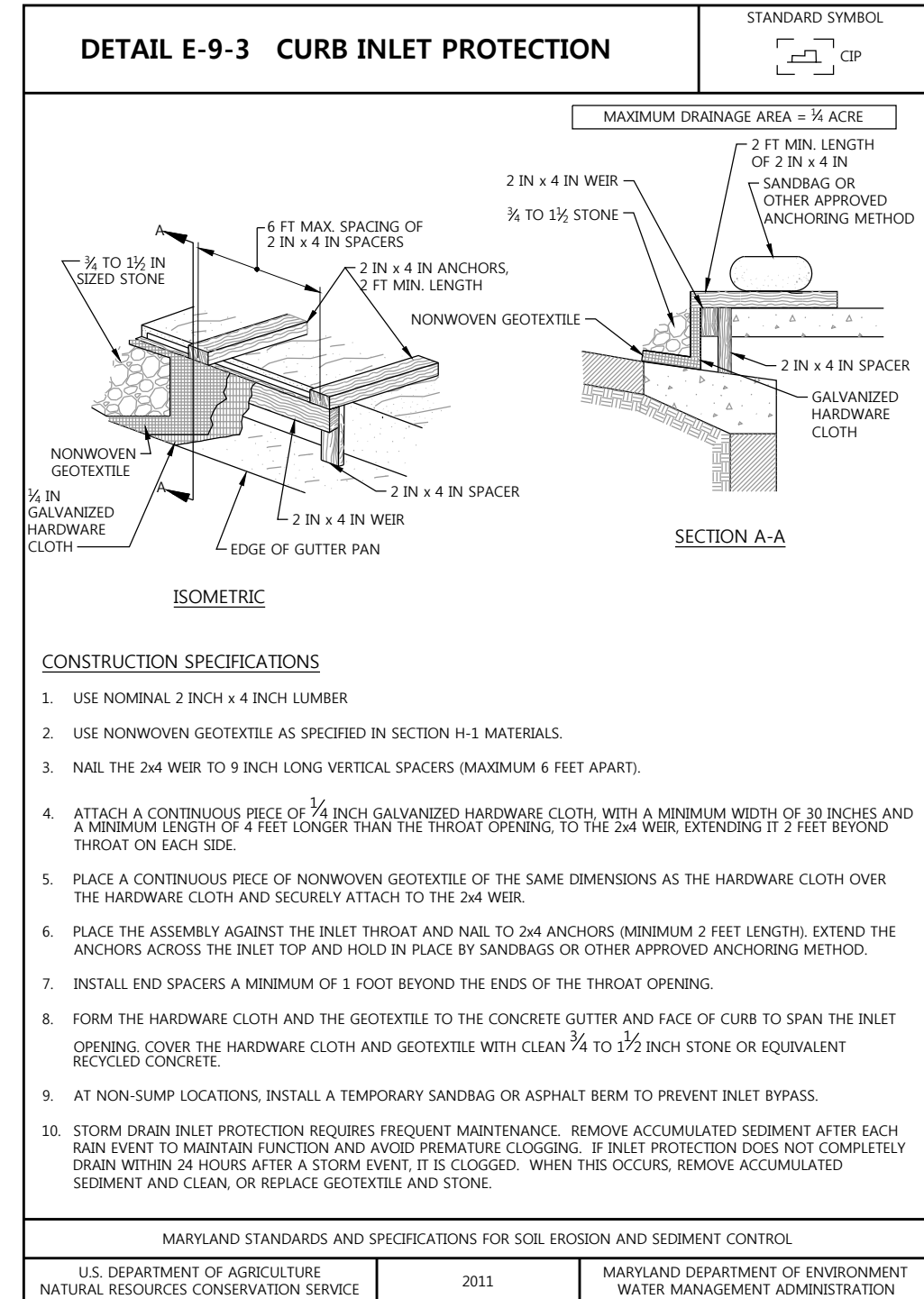
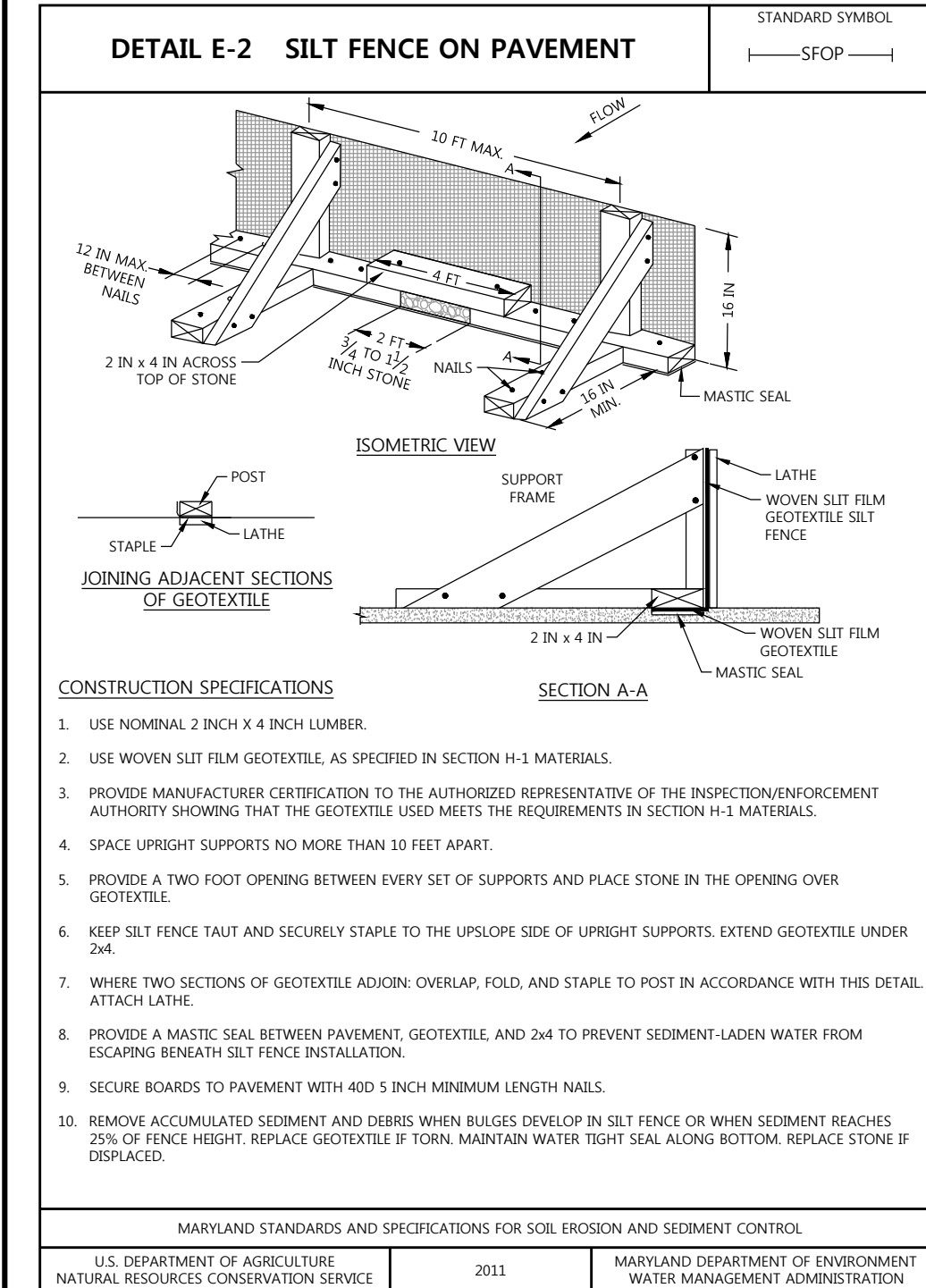
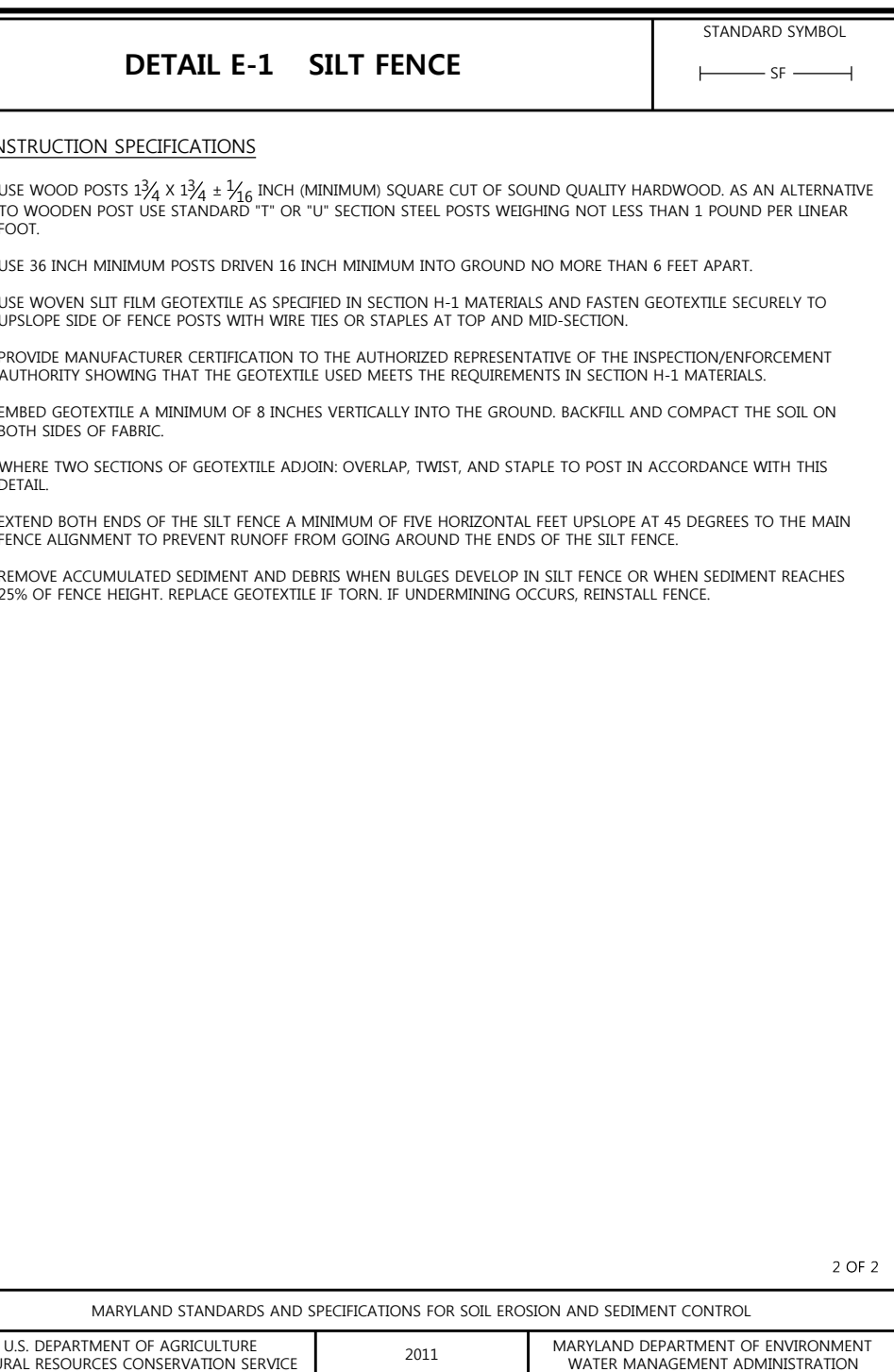
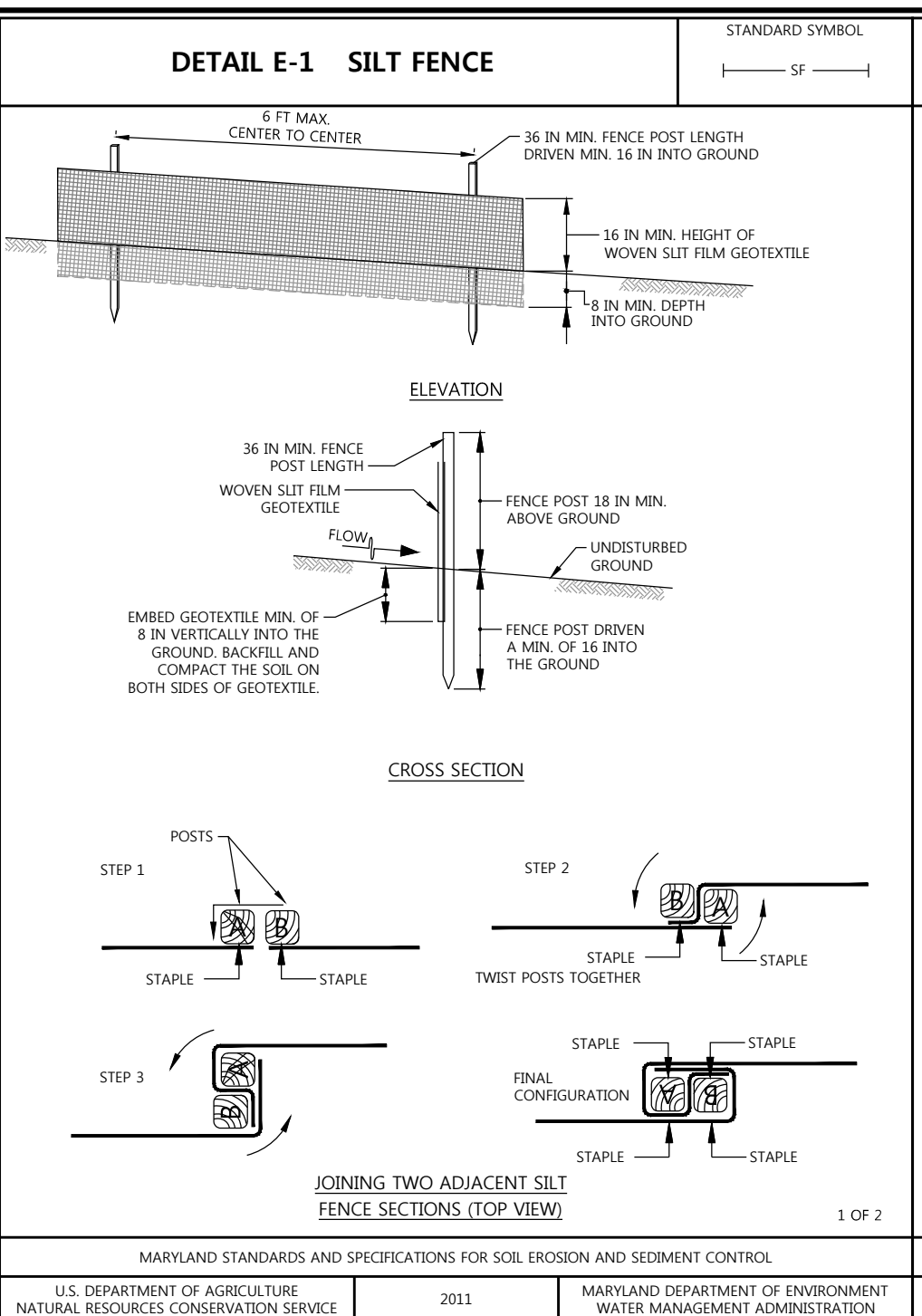
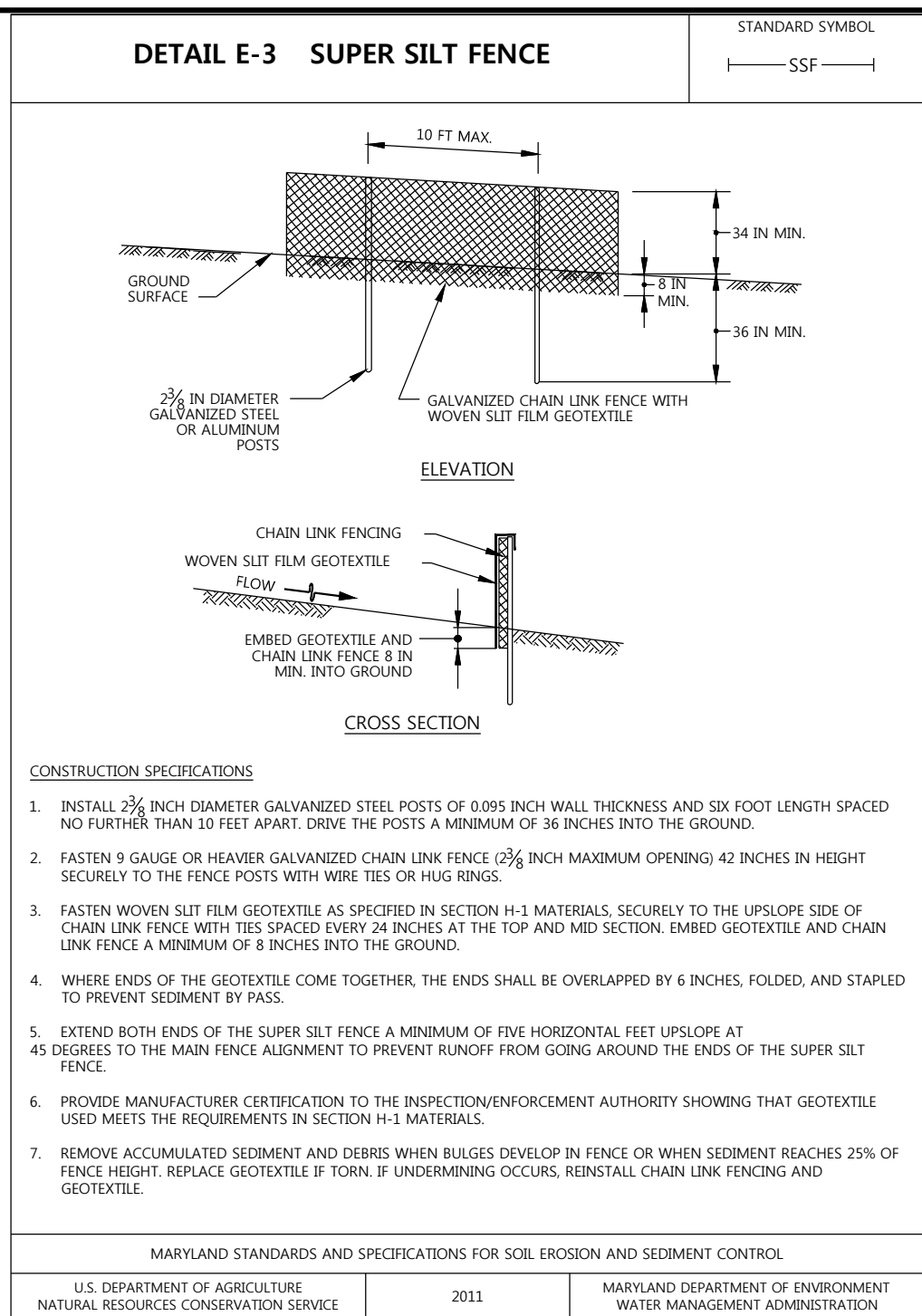
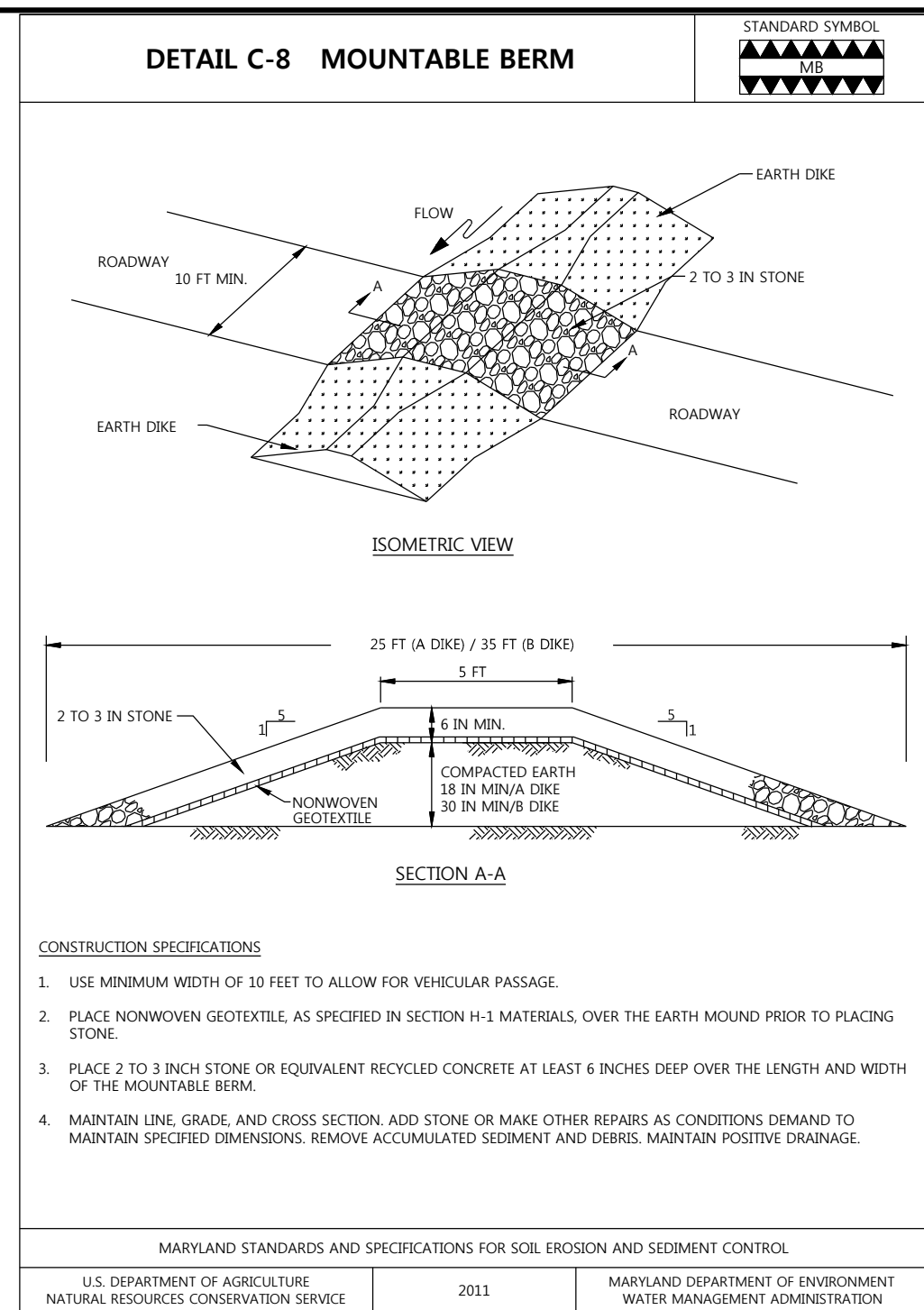
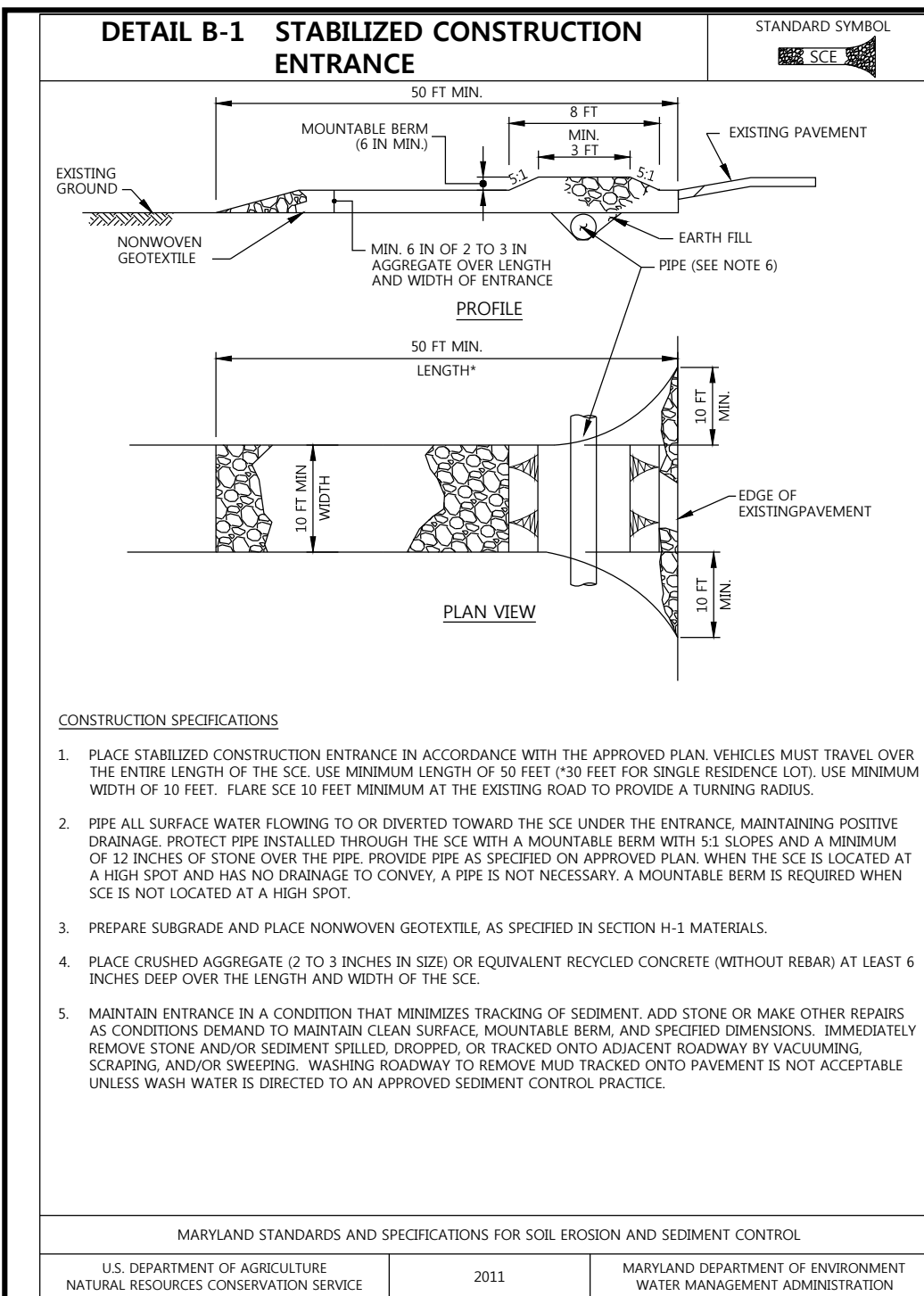
LIMIT OF DISTURBANCE: 45,450 SF. / 1.04 AC ±
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

HOWARD SOIL CONSERVATION DISTRICT DATE _____

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE _____
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE _____
 DIRECTOR DATE _____

ALL UNDERLYING SOILS WITHIN LIMIT OF DISTURBANCE ARE URBAN LAND-USE/ORTHOENTS COMPLEX (UUB), 0 TO 8% SLOPES WHICH ARE HYDROLOGIC SOIL GROUP 'D'.

04/02/20	REPLACEMENT OF ORIGINAL SDP SET WITH TEMPORARY PARKING LOT DESIGN SET
Date	Revision Description
TEMPORARY SURFACE LOT PARCEL 321, LOT 17 10227 WINCOPIN CIRCLE COLUMBIA, MD 21044	
OWNER / DEVELOPER: AMERICAN CITY BUILDING BUSINESS TRUST C/O THE HOWARD HUGHES CORPORATION COLUMBIA REGIONAL OFFICE 10960 GRANTCHESTER WAY, SUITE 110 COLUMBIA, MD 21044 410/964-1800	
 DAFT MCCUNE WALKER INC	
501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286 P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM	
SUBMISSION NAME	SECTION/AREA
COLUMBIA TOWN CENTER	0001
PLAN FOR SDP	RECORD #
B-13-E-13	36
WATER CODE	SEWER CODE
550	LITTLE PATUXENT
LOT/PARCEL #	RECORD DISTRICT
17/0227	5-03
CENSUS TRACT	STAGE
605402	1
SEC DRAINAGE AREA MAPS	
REVISED SITE DEVELOPMENT PLAN	
Des. By PAB	SCALE: AS SHOWN
Drn. By PAB	Date 04-02-2020
Chk. By RRP	Approved RRP
Proj. No. 19029.00 09 of 14	



APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION _____ DATE _____

CHIEF, DIVISION OF LAND DEVELOPMENT _____ DATE _____

DIRECTOR _____ DATE _____

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION _____ DATE _____

CHIEF, DIVISION OF LAND DEVELOPMENT _____ DATE _____

DIRECTOR _____ DATE _____

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION _____ DATE _____

CHIEF, DIVISION OF LAND DEVELOPMENT _____ DATE _____

DIRECTOR _____ DATE _____

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION _____ DATE _____

CHIEF, DIVISION OF LAND DEVELOPMENT _____ DATE _____

DIRECTOR _____ DATE _____

04/02/2020 REPLACEMENT OF ORIGINAL SDP SET WITH TEMPORARY PARKING LOT DESIGN SET

Date Revision Description

TEMPORARY SURFACE LOT
PARCEL 321, LOT 17 10227 WINCOPIN
CIRCLE COLUMBIA, MD 21044

OWNER / DEVELOPER:
 AMERICAN CITY BUILDING BUSINESS TRUST
 C/O THE HOWARD HUGHES CORPORATION
 COLUMBIA REGIONAL OFFICE
 10960 GRANTCHESTER WAY, SUITE 110
 COLUMBIA, MD 21044
 410/964-1800

DAFT MCCUNE WALKER INC

501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286
 P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM

SUBDIVISION NAME SECTION/AREA LOT/PARCEL #
 COLUMBIA TOWN CENTER 0001 13/0298 & 17/0321

PLAN FOR OFF RECORD # NONE TAX ZONING MAP # 36 REVISION DISTRICT 5-03 CENSUS TRACT 8 11 E 13 INT 605402

WATER CODE 550 SEWER CODE LITTLE PATUXENT STAGE 1

TITLE

PROFESSIONAL ENGR. NO. 27020

SEC DETAILS
 REVISED SITE DEVELOPMENT PLAN

Des. By PAB SCALE: AS SHOWN Proj. No. 19029.00
 Drn. By PAB Date 04-02-2020
 Chk. By RRP Approved RRP 10 of 14

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 27020, EXPIRATION DATE: 01/25/22.

04-02-2020
 DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

HOWARD SOIL CONSERVATION DISTRICT _____ DATE _____

APPROVED:
 PLANNING BOARD OF HOWARD COUNTY

DATE: _____

STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

(B-4-2) SECTION 2 - SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

- SOIL PREPARATION
 - TEMPORARY STABILIZATION
 - SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPER MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
 - APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
 - INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
 - PERMANENT STABILIZATION
 - A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
 - SOIL PH BETWEEN 6.0 AND 7.0.
 - SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
 - SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE, AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 - SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
 - SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
 - APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
 - GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
 - APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
 - MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE. REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRAGILE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

- TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, TOXIC MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
- TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
- TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
- AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
- TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
 - TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2 INCHES IN DIAMETER.
 - TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

- TOPSOIL APPLICATION
 - EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
 - UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SOODING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
 - TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
- SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
 - SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
 - FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
 - LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
 - LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
 - WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS PER 1000 SQUARE FEET PRIOR TO THE PLACEMENT OF TOPSOIL.

(B-4-3) SECTION 3 - SEEDING AND MULCHING

- SEEDING
 - SPECIFICATIONS
 - ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
 - MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
 - INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING.
 - NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
 - SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
- APPLICATION
 - DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
 - INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
 - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
 - DRILL OR CULTPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
 - CULTPACKER SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
 - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
 - HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).

- IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE.
 - LIME: LIME USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED DURING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
 - MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
 - WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.
- MULCHING
 - MULCH MATERIALS (IN ORDER OF PREFERENCE)
 - STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
 - WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
 - WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
 - WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
 - WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
 - WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
 - WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 50 PERCENT MINIMUM.

- APPLICATION
 - APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
 - WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 2 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
 - WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 - ANCHORING
 - PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
 - A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
 - WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 - SYNTHETIC BINDERS SUCH AS ACRYLIC CLR (AGRO-TACK), DCA-70, PETROSET, TERRA TACK OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OR BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
 - LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 15 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

(B-4-4) SECTION 4 - TEMPORARY STABILIZATION

- EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS, FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.
- CRITERIA:
- SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
 - FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
 - WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.
- | Seed Mixture (Hardiness Zone 6b) | | | | | Fertilizer Rate (10-10-10) | Lime Rate |
|----------------------------------|-----------------|----------------------------|-----------------------|----------------|---|---|
| Season | Species | Application Rate (Lb./Ac.) | Seeding Dates | Seeding Depths | | |
| Cool | Annual Ryegrass | 40 | 3/1-5/15
8/1-10/15 | 1/2" | 436 Lbs./Ac.
(10 Lbs./
1000 Sq.Ft.) | 2 Tons/Ac.
(90 Lbs./
1000 Sq.Ft.) |
| Warm | Pearl Millet | 20 | 5/16-7/31 | 1/2" | | |

- SEEDING RATES FOR THE WARM-SEASON GRASSES ARE IN POUNDS OF PURE LIVE SEED (PLS). ACTUAL PLANTING RATES SHALL BE ADJUSTED TO REFLECT PERCENT SEED GERMINATION AND PURITY, AS TESTED. ADJUSTMENTS ARE USUALLY NOT NEEDED FOR THE COOL-SEASON GRASSES.
- SEEDING RATES LISTED ABOVE ARE FOR TEMPORARY SEEDINGS, WHEN PLANTED AS A NURSE CROP WITH PERMANENT SEED MIXES. USE 1/3 OF THE SEEDING RATE LISTED ABOVE FOR BARLEY, OATS, AND WHEAT. FOR SMALLER-SEEDED GRASSES (ANNUAL RYEGRASS, PEARL MILLET, FOXTAIL MILLET), DO NOT EXCEED MORE THAN 5% (BY WEIGHT) OF THE OVERALL PERMANENT SEEDING MIX. CEREAL RYE, GENERALLY SHOULD NOT BE USED AS A NURSE CROP UNLESS PLANTING WILL OCCUR IN VERY LATE FALL BEYOND THE SEEDING DATES FOR OTHER TEMPORARY SEEDINGS. CEREAL RYE HAS ALLOPATHIC PROPERTIES THAT INHIBIT THE GERMINATION AND GROWTH OF OTHER PLANTS. IF IT MUST BE USED AS A NURSE CROP, SEED AT 1/2 OF THE RATE LISTED ABOVE.
- OATS ARE THE RECOMMENDED NURSE CROP FOR WARM-SEASON GRASSES.
- FOR SANDY SOILS, PLANT SEEDS AT TWICE THE DEPTH LISTED ABOVE.
- THE PLANTING DATES LISTED ARE AVERAGES FOR EACH ZONE AND MAY REQUIRE ADJUSTMENT TO REFLECT LOCAL CONDITIONS, ESPECIALLY NEAR THE BOUNDARIES OF THE ZONE.

(B-4-5) SECTION 5 - PERMANENT STABILIZATION

- EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.
- SEED MIXTURES
 - GENERAL USE
 - SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2, ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
 - ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
 - FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
 - FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.
 - TURFGRASS MIXTURES
 - AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
 - SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE, ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
 - KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT, IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
 - KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

- TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 6 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
- KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA, MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1 1/2 TO 3 POUNDS PER 1000 SQUARE FEET.

- NOTE: SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND" CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.
- IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES
 - WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A)
 - CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)
 - SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)
 - TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1 1/2 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.
 - IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEAR SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

Seed Mixture No. 9 (Hardiness Zone 6b)					** Fertilizer Rate (10-20-20)	** Lime Rate
No.	Species	Application Rate (Lb./Sq.Ft.)	Seeding Dates***	Seeding Depths		
9	* Tall Fescue	6-8 Lb / 1000 Sq.Ft.	3/1 - 5/15	1/2"	1.0 Lb/1000 Sq.Ft. (45 Lb./Ac.)	90 Lb/ 1000 Sq.Ft.
	* Kentucky Bluegrass		8/15 - 10/15			

- BLEND 3 CULTIVARS OF ANY CULTIVAR LISTED ON PAGE B.32 OF THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
 - AT TIME OF FINE GRADING, FERTILIZER AND LIME RATES WILL BE BASED ON SOIL TEST RESULTS; (SEE SECTION 2.C). COPY OF RECOMMENDED RATES TO BE SUPPLIED TO THE SEDIMENT CONTROL INSPECTOR.
 - FOR SEEDING DATES 5/1-8/14 ADD 6 LB/AC. OF EITHER FOXTAIL MILLET OR PEARL MILLET TO PERMANENT SEED MIXTURE #9 ABOVE.
- NOTE: ALL SEED MUST COMPLY WITH THE MARYLAND STATE SEED LAW. SEED MUST BE FREE OF PROHIBITED OR RESTRICTED NOXIOUS WEEDS, AS CURRENTLY LISTED BY THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION.
 - SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

- GENERAL SPECIFICATIONS
 - CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
 - SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH PLUS OR MINUS 1/4 INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH, BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
 - STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
 - SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
 - SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.
- SOD INSTALLATION
 - DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
 - LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
 - WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERED JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPING ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
 - WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.
- SOD MAINTENANCE
 - IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
 - AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
 - DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTINGS OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

(H-1) STANDARDS AND SPECIFICATIONS FOR MATERIALS

TABLE H.1: GEOTEXTILE FABRICS

PROPERTY	TEST METHOD	MINIMUM AVERAGE ROLL VALUE ¹					
		WOVEN SLIT FILM GEOTEXTILE		WOVEN MONOFILAMENT GEOTEXTILE		NONWOVEN GEOTEXTILE	
		MD	CD	MD	CD	MD	CD
Grab Tensile Strength	ASTM D-4632	200 lb	200 lb	370 lb	250 lb	200 lb	200 lb
Grab Tensile Elongation	ASTM D-4632	15%	10%	15%	15%	50%	50%
Trapezoidal Tear Strength	ASTM D-4533	75 lb	75 lb	100 lb	60 lb	80 lb	80 lb
Puncture Strength	ASTM D-6241	450 lb		900 lb		450 lb	
Apparent Opening Size ²	ASTM D-4751	U.S. Sieve 30 (0.59 mm)		U.S. Sieve 70 (0.21 mm)		U.S. Sieve 70 (0.21 mm)	
Permittivity	ASTM D-4941	0.05 sec -1		0.28 sec -1		1.1 sec -1	
Ultraviolet Resistance Retained at 500 hours	ASTM D-4355	70% strength		70% strength		70% strength	

- ALL NUMERIC VALUES EXCEPT APPARENT OPENING SIZE (AOS) REPRESENT MINIMUM AVERAGE ROLL VALUES (MARV). MARV IS CALCULATED AS THE TYPICAL MINUS TWO STANDARD DEVIATIONS. MD IS MACHINE DIRECTION; CD IS CROSS DIRECTION.
 - VALUES FOR AOS REPRESENT THE AVERAGE MAXIMUM OPENING.
- GEOTEXTILES MUST BE EVALUATED BY THE NATIONAL TRANSPORTATION PRODUCT EVALUATION PROGRAM (NTPPE) AND CONFORM TO THE VALUES IN TABLE H.1.
- THE GEOTEXTILE MUST BE INERT TO COMMONLY ENCOUNTERED CHEMICALS AND HYDROCARBONS AND MUST BE ROT AND MILDEW RESISTANT. THE GEOTEXTILE MUST BE MANUFACTURED FROM FIBERS CONSISTING OF LONG CHAIN SYNTHETIC POLYMERS AND COMPOSED OF A MINIMUM OF 95 PERCENT BY WEIGHT OF POLYOLEFINS OR POLYESTERS, AND FORMED INTO A STABLE NETWORK SO THE FILAMENTS OR YARNS RETAIN THEIR DIMENSIONAL STABILITY RELATIVE TO EACH OTHER, INCLUDING SELVAGES.
- WHEN MORE THAN ONE SECTION OF GEOTEXTILE IS NECESSARY, OVERLAP THE SECTIONS BY AT LEAST ONE FOOT. THE GEOTEXTILE MUST BE PULLED TAUT OVER THE APPLIED SURFACE. EQUIPMENT MUST NOT RUN OVER EXPOSED FABRIC. WHEN PLACING RIPRAP ON GEOTEXTILE, DO NOT EXCEED A ONE FOOT DROP HEIGHT.

TABLE H.2: STONE SIZES

	SIZE RANGE	d50	d100	AASHTO	MIDSIZE WEIGHT ¹
NUMBER 57 ¹	1/2 to 1 1/2 in	3/4 in	1 1/2 in	M-43	N/A
NUMBER 1	2 to 3 in	2 1/2 in	3 in	M-43	N/A
RIPRAP ² (CLASS 0)	4 to 7 in	5 1/2 in	7 in	N/A	N/A
CLASS II	N/A	9 1/2 in	15 in	N/A	40 lb
CLASS II	N/A	16 in	24 in	N/A	200 lb
CLASS III	N/A	23 in	34 in	N/A	600 lb

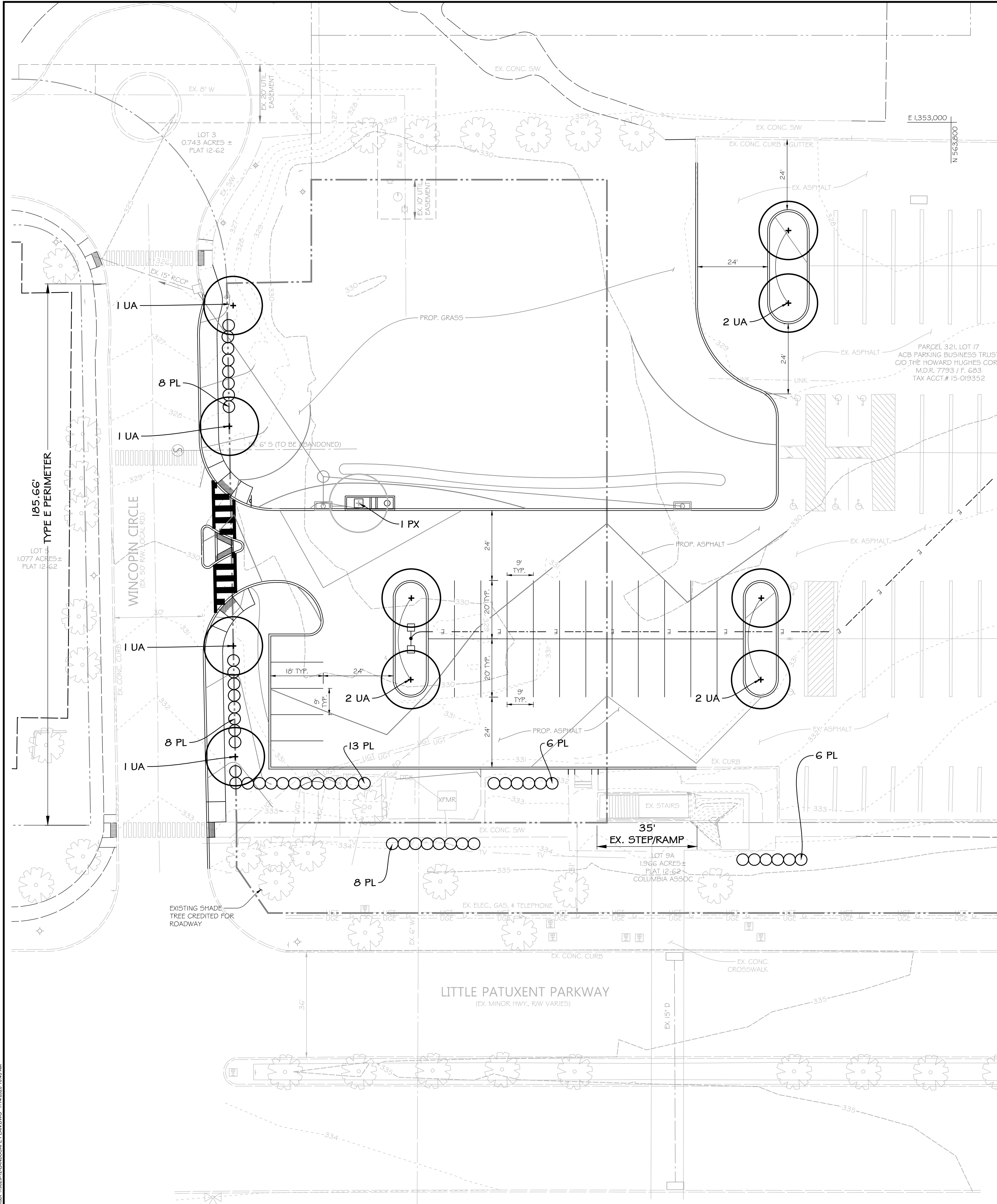
- THIS CLASSIFICATION IS TO BE USED ON THE UPSTREAM FACE OF STONE OUTLETS AND CHECK DAMS.
- THIS CLASSIFICATION IS TO BE USED FOR GABIONS.
- OPTIMUM GRADATION IS 50 PERCENT OF THE STONE BEING ABOVE AND 50 PERCENT BELOW THE MIDSIZE.

STONE MUST BE COMPOSED OF A WELL GRADED MIXTURE OF STONE SIZE SO THAT FIFTY (50) PERCENT OF THE PIECES BY WEIGHT ARE LARGER THAN THE SIZE DETERMINED BY USING THE CHARTS. A WELL GRADED MIXTURE, AS USED HEREIN, IS DEFINED AS A MIXTURE COMPOSED PRIMARILY OF LARGER STONE SIZES BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE SMALLER VOIDS BETWEEN THE STONES. THE DIAMETER OF THE LARGEST STONE IN SUCH A MIXTURE MUST NOT EXCEED THE RESPECTIVE D100 SELECTED FROM TABLE H.2. THE D50 REFERS TO THE MEDIAN DIAMETER OF THE STONE. THIS IS THE SIZE FOR WHICH 50 PERCENT, BY WEIGHT, WILL BE SMALLER AND 50 PERCENT WILL BE LARGER.

NOTE: RECYCLED CONCRETE EQUIVALENT MAY BE SUBSTITUTED FOR ALL STONE CLASSIFICATIONS FOR TEMPORARY CONTROL MEASURES ONLY. CONCRETE BROKEN INTO THE SIZES MEETING THE APPROPRIATE CLASSIFICATION, CONTAINING NO STEEL REINFORCEMENT, AND HAVING A MINIMUM DENSITY OF 150 POUNDS PER CUBIC FOOT MAY BE USED AS AN EQUIVALENT.

TABLE H.3. COMPOST

PARAMETERS ¹	ACCEPTABLE RANGE
pH	5.0 - 8.5
Moisture content	30% - 60%, wet weight basis
Organic matter content	25% - 65%, dry weight basis
Particle size	% passing a selected mesh size, dry weight basis <ul style="list-style-type: none"> 3 in (75 mm), 100% passing 1 in (25 mm), 90 - 100% passing 0.75 in (19 mm), 70 - 100% passing 0.25 in (6.4 mm), 30 - 60% passing 0.04 in (1 mm), 30% min. passing
Physical contaminants (manmade inerts)	<1% dry weight basis



FLP PLANT SCHEDULE

KEY	QTY	BOTANICAL/Common Name	PLANT SIZE	ROOT	REMARKS
TREES					
PX	1	Prunus x cistena / Purpleleaf Sand Cherry	2.5" cal.	B&B	Single Trunk Tree Form
UA	10	Ulmus americana 'Princeton' / Princeton American Elm	2.5" cal.	B&B	Locations Per Plan
	11	Total			
SHRUBS					
PL	49	Prunus laurocerasus 'Schipkaensis' / Cherry Laurel	30"	B&B/cont.	4' o.c.
	49	Total			

SCHEDULE A PERIMETER LANDSCAPE EDGE		
Category	Adjacent to Roadways	Adjacent to Perimeter Properties
Landscape Type	E	A
Linear Feet of Roadway Frontage/Perimeter	185 + 180 = 365	144
Credit for Existing Vegetation (Yes, No, Linear Feet)	Yes, 1 existing trees to remain	Yes, credit for 24 large existing trees
Credit for Existing Screen Wall, Steps, and Ramp	No	
Number of Plants Required:		
Shade Trees (1:40)	5	10
Evergreen Trees	0	0
Shrubs (1:4) 230-35+195	47	36
Number of Plants Provided:		
Shade Trees	4	24 Existing
Evergreen Trees	0	
Shrubs	49	Credit For Shade Trees
Other Trees (2:1 sub.)	0	

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING	
Number of Parking Spaces	29
Number of Trees Req'd (1sh/20sp.)	2.00
Number of Plants Required:	
Shade Trees	2.00
Evergreen Trees	0
Shrubs	0
Number of Plants Provided:	
Shade Trees	6
Evergreen Trees	0
Shrubs	0
Other Trees (2:1 sub.)	0

TOTAL			
Number of Plants :	Provided	Req'd	
Shade Trees	10	6	
Evergreen Trees	0		
Shrubs	49	83	
Other Trees (2:1 sub.)	0	24 Ex. Trees to Remain	

THE LANDSCAPE PAN HAS RECEIVED ALTERNATIVE COMPLIANCE APPROVAL THROUGH THE ARCHITECTURAL REVIEW COMMITTEE.

CERTIFICATION NOTE:
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR ALTERNATIVE COMPLIANCE AND THE LAKEFRONT REDEVELOPMENT DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

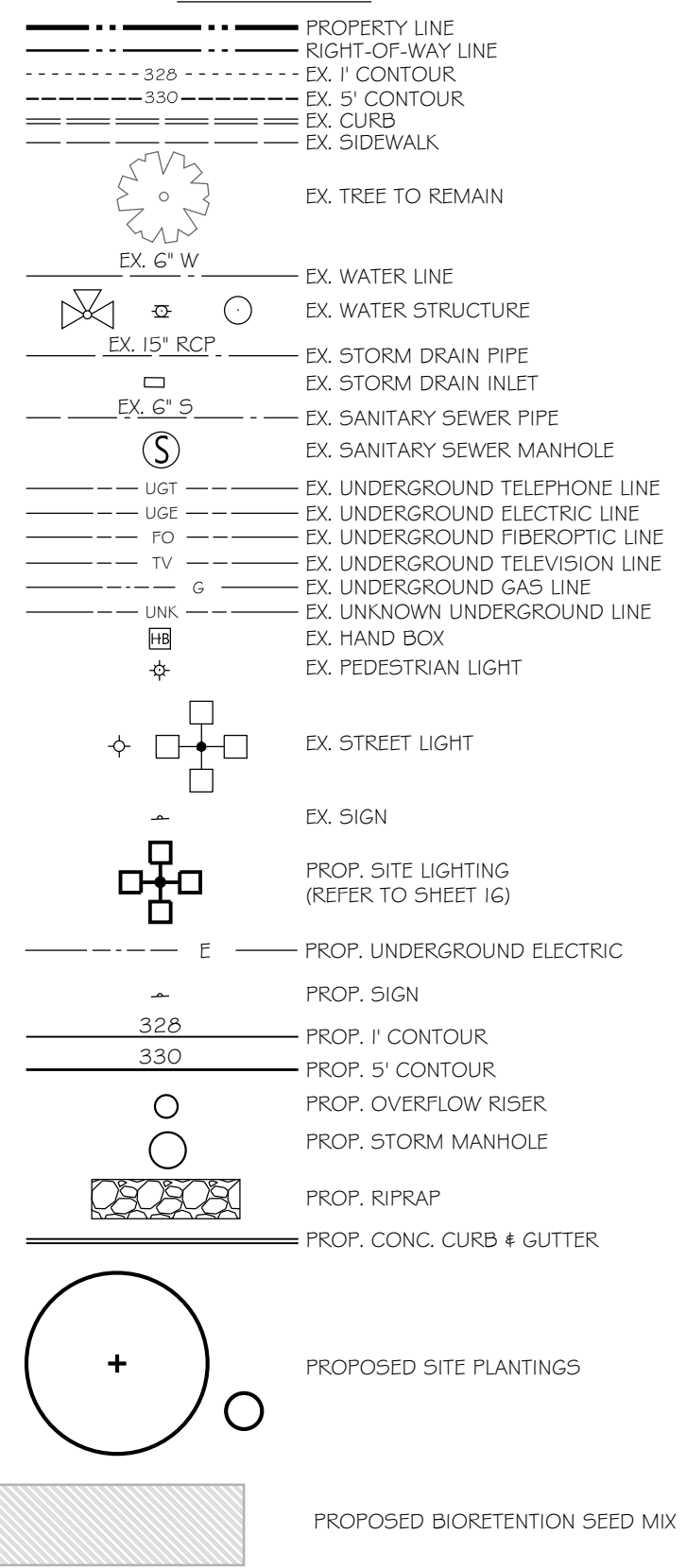
DEVELOPER'S/OWNER'S NAME _____
DEVELOPER'S/OWNER'S NAME _____

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 712, EXPIRATION DATE: 11/10/21.

DATE _____
REGISTERED LANDSCAPE ARCH. NO. 712

APPROVED:
PLANNING BOARD OF HOWARD COUNTY
DATE: _____

LEGEND



PLANTING PLAN NOTES:

- VERIFY LOCATION OF ALL EXISTING AND PROPOSED UTILITIES AND SITE FEATURES PRIOR TO CONSTRUCTION AND PLANT INSTALLATION.
- CONTRACTOR TO REVIEW FINAL LIGHTING PLAN PRIOR TO CONSTRUCTION AND ADJUST PLANTING CONFLICTS ACCORDINGLY.
- ALL PLANT LOCATIONS TO BE APPROVED BY DMW PRIOR TO INSTALLATION.
- ALL GROUNDCOVER, PERENNIAL AND SHRUB PLANTING BEDS SHALL BE EXCAVATED TO DEPTHS SPECIFIED IN THE PLANTING DETAILS AND THE PLANTING SOIL MIX SHALL BE USED TO BACKFILL ALL PLANTING BEDS.
- ALL EXISTING PLANTING WITHIN LOD TO BE REMOVED UNLESS OTHERWISE NOTED.
- REFER TO SWM PLANS FOR SWM PLANTING
- REFER ARCHITECTURE PLANS FOR SIGNAGE LOCATIONS
- EXISTING SITE LIGHTING TO REMAIN PER PLAN. NO NEW SITE LIGHTING IS PROPOSED.
- ALL AREAS NOT SHOWN AS PAVED OR PLANTED SHALL BE SEEDED WITH TURFGRASS PER SPECIFICATIONS.

STANDARD LANDSCAPE NOTES:

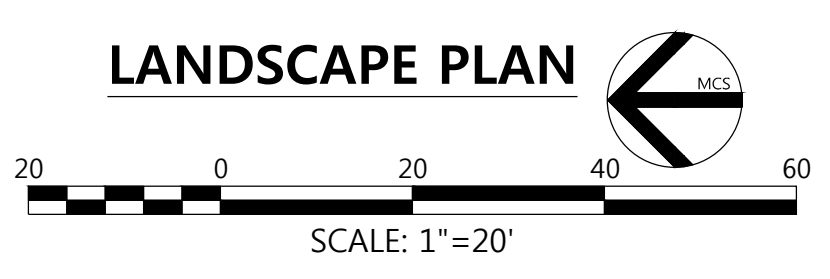
- AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.
- THE OWNER, TENANT'S AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL WITH 10 SHADE TREES, 0 ORNAMENTAL TREES, 0 EVERGREEN TREES, AND 49 SHRUBS PROVIDED WITH LANDSCAPE SURETY IN THE AMOUNT OF \$4,470 WITH THE DPW, DEVELOPER'S AGREEMENT.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

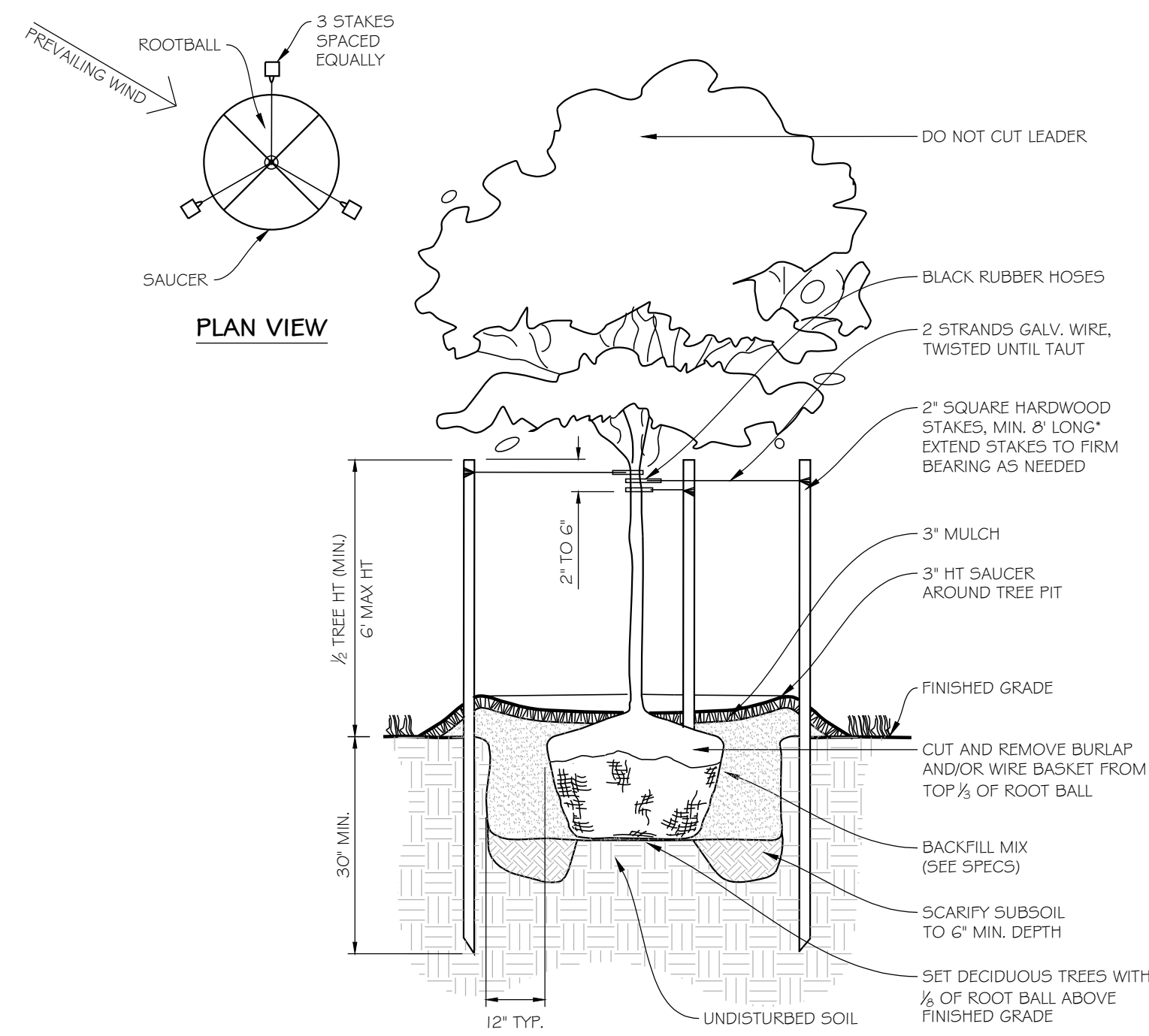
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE _____

CHIEF, DIVISION OF LAND DEVELOPMENT DATE _____

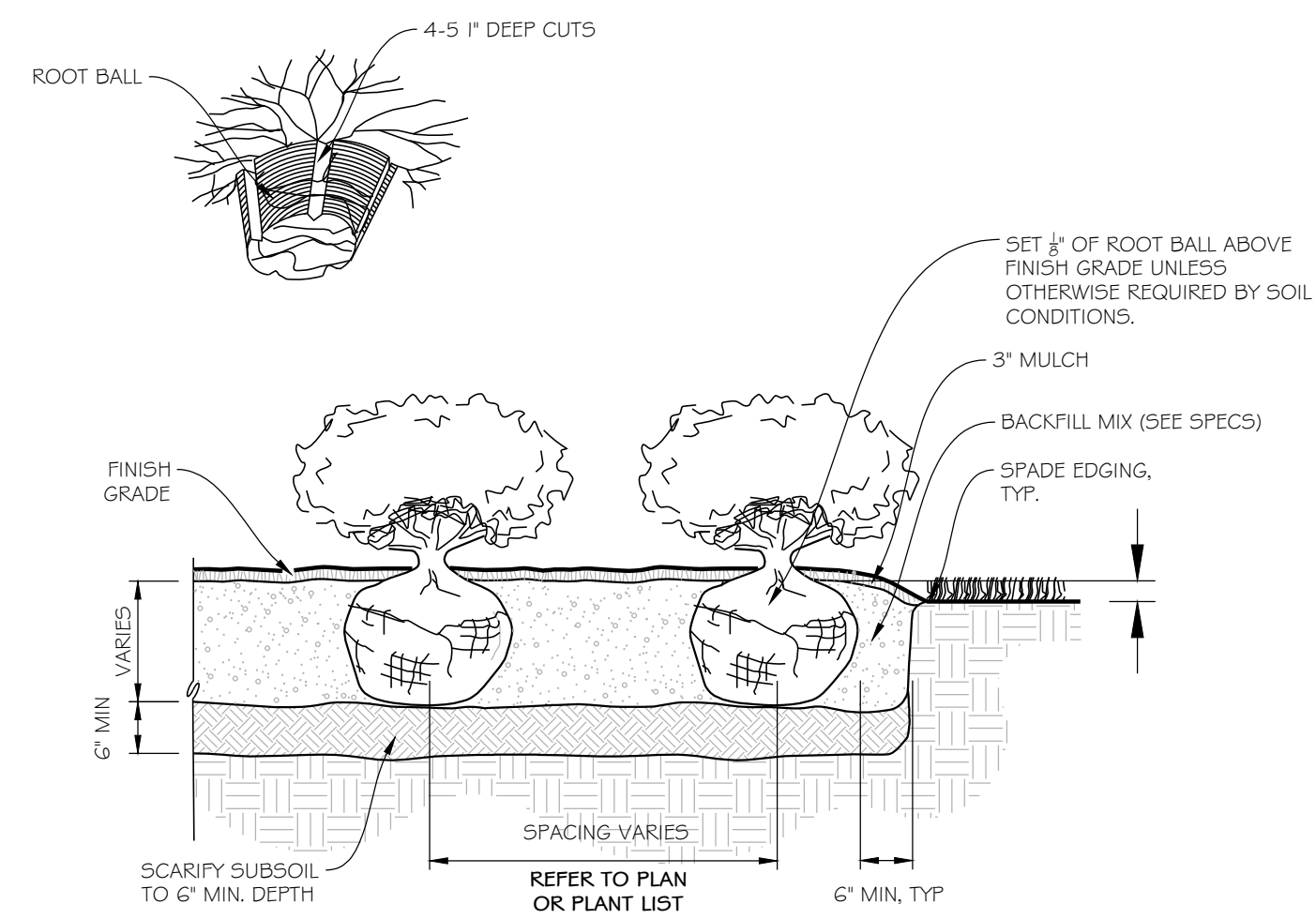
DIRECTOR DATE _____



04/02/20	REPLACEMENT OF ORIGINAL SDP SET WITH TEMPORARY PARKING LOT DESIGN SET
Date	Revision Description
TEMPORARY SURFACE LOT PARCEL 321, LOT 17 10227 WINCOPIN CIRCLE COLUMBIA, MD 21044	
OWNER / DEVELOPER: AMERICAN CITY BUILDING BUSINESS TRUST C/O THE HOWARD HUGHES CORPORATION COLUMBIA REGIONAL OFFICE 10960 GRANTCHESTER WAY, SUITE 110 COLUMBIA, MD 21044 (410) 964-1800	
DAFT MCUNE WALKER INC	
501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286 P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM	
SUBMISSION NAME	SECTION/AREA
COLUMBIA TOWN CENTER	0001
PLAN FOR DPW	LOT/PARCEL #
8-13-E-13	13/0298 & 17/0321
WATER CODE	SEWER CODE
550	LITTLE PATUXENT
TITLE	
LANDSCAPE PLAN	
REVISED SITE DEVELOPMENT PLAN	
Des. By PAB	SCALE: 1"=20'
Dwn. By PAB	Date 04-02-2020
Chk. By RRP	Approved RRP
12 of 14	



1 DECIDUOUS TREE PLANTING
NOT TO SCALE



- NOTES:
- FOR CONTAINER SHRUBS, COMPLETELY REMOVE ALL NON-BIODEGRADABLE CONTAINERS AND SCARIFY ROOTBALL BY USING A SHARP BLADE AND MAKING 4 TO 5 ONE INCH CUTS THE LENGTH OF THE ROOTBALL.
 - FOR B&B SHRUBS, CUT AND REMOVE BURLAP FROM TOP 1/3 OF ROOT BALL.

2 SHRUB PLANTING
NOT TO SCALE

CERTIFICATION NOTE:

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR ALTERNATIVE COMPLIANCE AND THE LAKEFRONT REDEVELOPMENT DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

DEVELOPER'S/OWNER'S NAME

DEVELOPER'S/OWNER'S NAME

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION _____ DATE _____

CHIEF, DIVISION OF LAND DEVELOPMENT _____ DATE _____

DIRECTOR _____ DATE _____


PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 712, EXPIRATION DATE: 11/10/21.

DATE _____

REGISTERED LANDSCAPE ARCH. NO. 712

APPROVED:
PLANNING BOARD OF HOWARD COUNTY

DATE : _____

04/02/20	REPLACEMENT OF ORIGINAL SDP SET WITH TEMPORARY PARKING LOT DESIGN SET
Date	Revision Description
TEMPORARY SURFACE LOT PARCEL 321, LOT 17 10227 WINCOPIN CIRCLE COLUMBIA, MD 21044	
OWNER / DEVELOPER: AMERICAN CITY BUILDING BUSINESS TRUST C/O THE HOWARD HUGHES CORPORATION COLUMBIA REGIONAL OFFICE 10960 GRANTCHESTER WAY, SUITE 110 COLUMBIA, MD 21044 (410) 964-4800	
 DAFT MCCUNE WALKER INC	
501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286 P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM	
SUBMISSION NAME	SECTION/AREA
COLUMBIA TOWN CENTER	0001
PLAN FOR ZIP	LOT/PARCEL #
B-13 E-13	13/0298 & 17/0321
WATER CODE	CENSUS TRACT
550	605402
SEWER CODE	STAGE
LITTLE PATUXENT	1
TITLE	
LANDSCAPE DETAILS	
REVISED SITE DEVELOPMENT PLAN	
Des. By PAB	SCALE: Proj. No. 19029.00
Drn. By PAB	Date 04-02-2020
Chk. By RRP	Approved RRP

LANDSCAPE SPECIFICATIONS

- I. PRODUCTS**
- A. SOILS TESTING:** THE CONTRACTOR IS RESPONSIBLE FOR TESTING ALL PROJECT SOILS. THE CONTRACTOR SHALL PROVIDE A CERTIFIED SOILS REPORT TO THE OWNERS REPRESENTATIVE. SOILS SHALL BE SAMPLED AND TESTED BY AN APPROVED TESTING LABORATORY. THE CONTRACTOR SHALL VERIFY THAT THE SOILS ON SITE ARE ACCEPTABLE FOR THE PROPER GROWTH OF THE PROPOSED PLANT MATERIAL. SHOULD THE SOILS REPORT INDICATE UNSUITABLE SOIL CONDITIONS, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE SOIL AMENDMENTS AS NECESSARY. THESE AMENDMENTS SHALL INCLUDE, BUT NOT BE LIMITED TO, FERTILIZERS, LIME, SOIL, AND TOPSOIL. THE CONTRACTOR SHALL PROVIDE TO THE OWNERS REPRESENTATIVE A LIST OF AMENDMENTS, INCLUDING RATES AND SOURCES.
- B. TOPSOIL:** TOPSOIL SHALL MEET THE ASTM D5268 STANDARD AND SHALL BE ASTM D 5268, FERTILE, FRABLE, NATURALLY LOAMY, PH RANGE OF 5.5 TO 7.4, SOLUBLE SALTS 800 PPM (0.25 MMHOSICM) OR LESS, 3% BY WEIGHT ORGANIC MATTER MINIMUM, CONTAINING NO SUBSTRATE MATERIAL, FREE OF STONES 3/4" OR LARGER IN ANY DIMENSION, NOXIOUS WEED SEEDS, ASPHALT, CONCRETE, CONSTRUCTION DEBRIS, CRUSHED GRAVEL AND OTHER EXTRANEUS MATERIALS HARMFUL TO PLANT GROWTH. THE CONTRACTOR SHALL PROVIDE A CERTIFIED SOILS REPORT TO THE OWNERS REPRESENTATIVE OF IMPORTED AND SALVAGED TOPSOILS, INCLUDING THE SOURCE OF IMPORTED TOPSOIL.
- 1. TOPSOIL SOURCE:** SALVAGED TOPSOIL FROM THE PROJECT SITE. VERIFY SUITABILITY OF SALVAGED TOPSOIL. CLEAN SURFACE SOIL OF ROOTS, PLANTS, SOO, STONES, CLAY LUMPS, AND OTHER EXTRANEUS MATERIALS HARMFUL TO PLANT GROWTH.
- a. MOW OR REMOVE VEGETATION FROM THE AREAS WHERE SOIL IS TO BE SALVAGED:** REMOVE TOPSOIL AND SUBSOIL TO THE DEPTH AS SPECIFIED OR DIRECTED. TRANSPORT SOILS SEPARATELY AND KEEP THEM APART FROM OTHER MATERIALS.
- b. CONSTRUCT SURFACE AREAS ON WELL DRAINED LAND, AWAY FROM STREAMS, DRAINAGE AREAS, AND FLOODPLAINS, BEFORE PLACING STOCKPILES, INSTALL AND MAINTAIN SILT FENCE AROUND THE EDGE OF THE STOCKPILE AREAS FOR ALL SOILS AS SPECIFIED IN THE SEDIMENT AND EROSION CONTROL PLANS.**
- 2. SHOULD ADDITIONAL TOPSOIL BE REQUIRED IN EXCESS OF THAT OBTAINED FROM ON-SITE, THE CONTRACTOR SHALL OBTAIN MATERIAL FROM APPROVED SOURCES OFF SITE TO COMPLETE THE PROJECT AT NO ADDITIONAL COST. TOPSOIL SHALL BE OBTAINED FROM AN AREA THAT HAS NEVER BEEN STRIPPED.**
- B. COMPOST (LEAF MOLDS):** LEAFGRO OR ACCEPTABLE EQUIVALENT. COMPOST SHALL BE FINELY DIVIDED OR GRANULAR TEXTURE, OF PARTIALLY DECOMPOSED LEAVES, WITH A PH RANGE OF 6 TO 7.5, SOLUBLE SALTS SHALL HAVE CONCENTRATION LESS THAN 5.0MMHOSICM, AND SHALL BE FREE OF NOXIOUS WEED SEEDS, AND ROCKS OVER 3/4" IN SIZE. COMPOST SHALL BE BIOLOGICALLY MATURE AND NO LONGER ABLE TO REHEAT TO THERMOPHILIC TEMPERATURES.
- C. SALVAGED AND FURNISHED SUBSOIL FOR PLANTING SOIL BACKFILL:** SHALL BE CLEAN FILL OBTAINED ON SITE FROM TREE AND SHRUB PLANTING PIT EXCAVATIONS ONLY. WELL DRAINED AND CAPABLE OF SUSTAINING HEALTHY PLANT LIFE. EXISTING SOIL BACKFILL SHALL BE FREE OF STONES 3/4" OR LARGER IN ANY DIMENSION, ASPHALTIC CONCRETE, PAVING BASE MATERIAL, CONSTRUCTION DEBRIS AND OTHER EXTRANEUS MATERIALS HARMFUL TO PLANT GROWTH.
- 1. SHOULD ADDITIONAL SOIL BACKFILL FILL BE REQUIRED IN EXCESS OF THAT OBTAINED FROM ON-SITE, THE CONTRACTOR SHALL OBTAIN MATERIAL FROM APPROVED SOURCES OFF SITE TO COMPLETE THE PROJECT AT NO ADDITIONAL COST. CLEAN SUBSOIL AND BACKFILL SHALL BE OBTAINED FROM AN AREA THAT HAS NEVER BEEN MECHANICALLY COMPACTED. TOPSOIL MAY BE SUBSTITUTED FOR SUITABLE BACKFILL.**
- D. PLANTING SOIL MIXTURES:** SHALL BE MIXED MECHANICALLY IN BULK PRIOR TO PLANTING AND BACKFILLED TO SPECIFIED DEPTHS.
- 1. PLANTING MIX RATIOS:**
- EVERGREEN TREES AND SHRUBS: 30% COMPOST, 20%TOPSOIL, 50% EXISTING SOIL BACKFILL
 - DECIDUOUS TREES AND SHRUBS: 15% COMPOST, 10%TOPSOIL, 75% EXISTING SOIL BACKFILL
 - PERENNIALS/ORNAMENTAL GRASSES/GROUNDCOVER PLANTINGS: 75% COMPOST, 25% TOPSOIL PREMIXED AND TILLED INTO TOP SIX INCHES OF EXISTING SOIL
- E. FERTILIZERS:** SHALL PROVIDE LABEL ANALYSIS OF NITROGEN, PHOSPHORUS, AND POTASSIUM CONTENT, AND INCLUDE PLANT MICRONUTRIENTS, CONTAINING, OR MATERIALS THAT AUGMENT THEIR PERFORMANCE.
- 1. 14IN-4IN-4IN FERTILIZER:** POLYMER COATED WITH MINOR NUTRIENTS
- 2. 20-10-5 TABLET FERTILIZER:** MAY BE USED FOR TREES AND SHRUBS WITH PLANTING PITS 28" AND LARGER.
- 3. 20N-16P-12K FOR TURFGRASS ESTABLISHMENT AND OTHER SEEDING**
- 4. APPLY FERTILIZER AT RATES SPECIFIED IN MDSHA TECHNICAL REQUIREMENTS SECTION 710.03.04(C).**
- F. SHREDDED HARDWOOD BARK (SHB) MULCH:** SHALL CONSIST OF NATURAL BARK DERIVED FROM HARDWOOD TREES THAT HAS BEEN MILLED AND SCREENED TO A MAXIMUM 4 IN. PARTICLE SIZE. MULCH SHALL HAVE BEEN SHREDDED WITHIN THE LAST SIX MONTHS.
- G. PLANT MATERIALS**
- 1. PLANT LIST:** THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL PLANT MATERIAL SHOWN ON THE DRAWINGS. THE PLANT LIST IS PROVIDED FOR CONVENIENCE ONLY. THE PLANT QUANTITIES INDICATED ON THE PLANS TAKE PRECEDENCE OVER PLANT LISTS. CONTRACTOR SHALL VERIFY ALL QUANTITIES TO HIS OWN SATISFACTION PRIOR TO BIDDING. ANY DISCREPANCIES SHALL BE REPORTED TO THE LANDSCAPE ARCHITECT IMMEDIATELY.
- 2. SIZE:** ALL PLANTS SHALL CONFORM TO THE MEASUREMENTS SPECIFIED IN THE PLANT LISTS EXCEPT THAT PLANTS LARGER THAN SPECIFIED MAY BE USED IF APPROVED BY THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE. USE OF SUCH PLANTS SHALL NOT INCREASE THE CONTRACT PRICE.
- 3. PROVIDE NURSERY-GROWN PLANTS TRUE TO GENUS, SPECIES, VARIETY, CULTIVAR, STEM FORM, SHEARING, AND OTHER FEATURES INDICATED IN PLANT LIST, PLANT SCHEDULE, OR PLANT LEGEND INDICATED ON DRAWINGS AND COMPLYING WITH APPLICABLE REQUIREMENTS IN THE CURRENT "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z601), BY AMERICAN HORT. PLANT MATERIALS SHALL HAVE HEALTHY ROOT SYSTEMS DEVELOPED BY TRANSPANTING OR ROOT PRUNING. PROVIDE WELL-SHAPED, FULLY BRANCHED, HEALTHY, VIGOROUS STOCK, DENSELY FOLIATED WHEN IN LEAF AND FREE OF DISEASE, PESTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN SCALD, INJURIES, ABRASIONS, AND DISFIGUREMENT.**
- 4. TREES WITH DAMAGED, CROOKED, OR MULTIPLE LEADERS; TIGHT VERTICAL BRANCHES WHERE BARK IS SQUEEZED BETWEEN TWO BRANCHES OR BETWEEN BRANCH AND TRUNK (INCLUDED BARK); CROSSING TRUNKS; CUT-OFF LIMBS MORE THAN 1/4 INCH (9 MM) IN DIAMETER, OR WITH STEM GIRDLING ROOTS ARE UNACCEPTABLE.**
- 5. SHADE AND FLOWERING TREES SHALL BE SYMMETRICALLY BALANCED. MAJOR BRANCH UNIONS SHALL NOT HAVE 'V' SHAPED CROTCHES, OR LIMBS DERIVED FROM WATER SPROUTS CAPABLE OF CAUSING STRUCTURAL WEAKNESS.**
- 6. PLANTS OF A LARGER SIZE MAY BE USED IF ACCEPTABLE TO THE LANDSCAPE ARCHITECT, WITH A PROPORTIONATE INCREASE IN SIZE OF ROOTS OR BALLS.**
- 7. NOTIFY LANDSCAPE ARCHITECT OF SOURCES OF PLANTING MATERIALS FOURTEEN DAYS IN ADVANCE OF DELIVERY TO SITE.**
- 8. ALL PLANTS (B4B OR CONTAINER) SHALL BE PROPERLY IDENTIFIED BY WEATHER-PROOF LABELS SECURELY ATTACHED THERETO BEFORE DELIVERY TO PROJECT SITE. LABELS SHALL IDENTIFY PLANTS BY NAME, SPECIES, AND SIZE. LABELS SHALL NOT BE REMOVED UNTIL AFTER FINAL INSPECTION BY THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE.**
- 9. NO SUBSTITUTIONS SHALL BE MADE WITHOUT WRITTEN CONSENT OF THE LANDSCAPE ARCHITECT. SUBSTITUTION REQUESTS SHALL BE SUBMITTED TO THE LANDSCAPE ARCHITECT 14 DAYS IN ADVANCE OF DELIVERY TO THE SITE.**
- 10. BULBS:** IN ACCORDANCE WITH SECTION I2 OF "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z601), BY AMERICAN HORT.
- H. SOIL**
- SUBMIT TECHNICAL DATA, SAMPLES, AND WARRANTY INFORMATION TO THE OWNERS REPRESENTATIVE 10 DAYS PRIOR TO DELIVERY ON SITE.
 - SUBMIT COPIES OF CURRENT UNIVERSITY OF MARYLAND AGRONOMY MIMEO #77 WITH PROPOSED CULTIVARS HIGHLIGHTED.
 - SUBMIT CERTIFICATION FOR GRASS SPECIES AND LOCATION OF SOURCE.
 - SUBMIT DELIVERY TICKETS TO THE OWNERS REPRESENTATIVE.
 - SOD SHALL BE OBTAINED FROM AREAS HAVING GROWING CONDITIONS SIMILAR TO AREAS TO BE COVERED.
 - SOD SHALL CONSIST OF TURFGRASS CULTIVARS LISTED IN THE UNIVERSITY OF MARYLAND AGRONOMY MIMEO #77, CURRENT EDITION.
 - CULTIVATED GRASS SOD WITH STRONG FIBROUS ROOT SYSTEM, MINIMUM AGE OF 18 MONTHS, FIELD GROWN IN MARYLAND, MARYLAND CERTIFIED GRADE, FREE OF STONES, BURNED OR BARK SPOTS. THE ROOT SYSTEM SHALL SUPPORT ITS OWN WEIGHT, WITHOUT TEARING, WHEN SUSPENDED VERTICALLY BY HOLDING THE UPPER TWO CORNERS.
 - ALL SOD SHALL BE OBTAINED FROM AREAS HAVING GROWING CONDITIONS SIMILAR TO AREAS TO BE COVERED.
 - THE GRASS TYPE SHALL CONSIST OF TURF TYPE TALL FESCUE.
 - SOD SHALL NOT INCLUDE THE FOLLOWING WEEDS: BENT GRASS, BERMOUDA GRASS, BINDWEED, BLACKBERRY, BROME GRASS, CANADIAN THISTLE, CHICKWEED, CRABGRASS, CRESS, DANDELION, HORSETAIL, JIMSONWEED, JOHNSON GRASS, LAMBQUARTER, MORNING GLORY, MUSTARD, NIMBLE WILL, NUT SEDGE, NUTGRASS, PERENNIAL SORELE, POISON IVY, POISON OAK, QUACKGRASS, RUSH GRASS, TANSY RAGWORT, AND WILD GARLIC.
 - MACHINE CUT SOD IN AREA NOT EXCEEDING 1 SQUARE YARD, IN STRIPS A LEAST 14" WIDE WITH A TOPSOIL BASE OF 1/2 INCH, MINIMUM, AND 1 INCH, MAXIMUM.
 - DELIVER SOD IN ROLLS WITH GRASS FOLDED INSIDE. KEEP MOIST. EACH LOAD SHALL BEAR A MARYLAND STATE CERTIFIED LABEL AND BE IN GOOD HEALTH AT TIME OF DELIVERY.
 - PROTECT FROM EXPOSURE TO AIR AND SUN AND FROM FREEZING. SOD THAT HAS DRIED SHALL NOT BE PLACED.
 - ALL DAMAGED SOD WILL BE REJECTED.
 - TURFGRASS AND SPECIAL PURPOSE SEEDS
- I. STANDARDS AND SUBMITTALS:** THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE SHALL BE FURNISHED DUPLICATE SIGNED COPIES OF A STATEMENT FROM A VENDOR, CERTIFYING THAT EACH CONTAINER OF SEED DELIVERED IS FULLY LABELED IN ACCORDANCE WITH THE FEDERAL SEED ACT AND IS AT LEAST EQUAL TO THE REQUIREMENT SPECIFIED HEREIN. THIS CERTIFICATION SHALL APPEAR ON OR WITH ALL COPIES OF INVOICES FOR SEED.
- SPECIES INCLUDED IN TURFGRASS SEED MIX AND SHA SPECIAL PURPOSE SEED MIXES SHALL BE MARYLAND DEPARTMENT OF AGRICULTURES (MDA) CERTIFIED SEED OF APPROVED CULTIVARS.
 - SUBMIT COPIES OF CURRENT UNIVERSITY OF MARYLAND AGRONOMY MIMEO #77 WITH PROPOSED CULTIVARS HIGHLIGHTED.
- 2. SEED MIXES:** PROVIDE GRASS SEED MIX CONFORMING TO THE FOLLOWING REQUIREMENTS:
- TURFGRASS:

TURFGRASS SEED MIX		PURITY	GERM
MIX %	SPECIES	MIN %	MIN %
95	Grass Type Tall Type Tall Fescue Schedonoma phoenicea (Copp) Hobb Kentucky Bluegrass Poa pratensis	Cultivars (Minimum 3 Cultivars Per Grass Type) Kobler IV 30% Blake Runner 35% Penn RK 35% Ares 30% Noble 35% Blue Note 35%	98 98 98 98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
DIRECTOR	DATE

- II. INSTALLATION**
- A. GENERAL CONDITIONS**
- 1.** THE EXECUTION OF LANDSCAPE WORK AND PLANT INSTALLATION SHALL COMPLY WITH ALL APPLICABLE SECTIONS OF THE "THE LANDSCAPE SPECIFICATION GUIDELINES CURRENT EDITION, PARTS 1-B GUIDELINES PREPARED BY THE LANDSCAPE CONTRACTORS ASSOCIATION, MD, DC, VA (LCA) AND ANSI A300 (PART 6-2012, "TREE, SHRUB, AND OTHER WOODY PLANT MANAGEMENT STANDARD PRACTICES (PLANTING AND TRANSPLANTING)."
- 2.** THE CONTRACTOR SHALL EXAMINE THE SITE AND ALL CONDITIONS THEREON, AND TAKE INTO CONSIDERATION ALL SUCH CONDITIONS THAT MAY AFFECT HIS WORK. START OF WORK INDICATES ACCEPTANCE OF CONDITIONS AND FULL RESPONSIBILITY FOR WORK OF THESE PLANS AND SPECIFICATIONS.
- 3.** THE CONTRACTOR SHALL NOTIFY MISS UTILITY (800-257-7777) A MINIMUM OF THREE DAYS PRIOR TO ANY EXCAVATION, PLANTING OR CONSTRUCTION. IF THE CONTRACTOR IS ADVISED OF THE EXISTENCE OF UNDERGROUND UTILITIES ON THE SITE, THEIR EXACT LOCATION SHALL BE VERIFIED IN THE FIELD WITH THE OWNER OR GENERAL CONTRACTOR PRIOR TO THE COMMENCEMENT OF ANY DIGGING OPERATIONS. IN THE EVENT THEY ARE UNCOVERED, THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL DAMAGE TO UTILITIES AND SUCH DAMAGE SHALL NOT RESULT IN ANY ADDITIONAL EXPENSES TO THE OWNER. ANY DAMAGE OF UNREPORTED LINES SHALL NOT BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 4.** IF UTILITY LINES ARE ENCOUNTERED IN EXCAVATION OF TREE PITS, OTHER LOCATIONS FOR TREES SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COMPENSATION. ANY CHANGES OF LOCATION SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT.
- 5.** THE CONTRACTOR SHALL PROTECT EXISTING BUILDINGS AND PROPERTY FROM DAMAGE AND SHALL BE RESPONSIBLE FOR ANY DAMAGE OR INJURY TO PERSON OR PROPERTY WHICH MAY OCCUR AS A RESULT OF HIS NEGLIGENCE IN THE EXECUTION OF HIS WORK.
- 6.** ALL PORTIONS OF THE PROPERTY, WHICH HAVE BEEN DISTURBED OR DAMAGED DUE TO, OR INCIDENTAL TO, WORK PERFORMED UNDER THIS CONTRACT SHALL BE REPAIRED AND RESTORED TO ITS ORIGINAL CONDITION TO THE SATISFACTION OF THE OWNER.
- 7.** THE CONTRACTOR SHALL FULLY AND SATISFACTORILY MAINTAIN AND PROTECT ALL WORK UNTIL COMPLETION AND ACCEPTANCE OF ALL WORK OR PORTIONS THEREOF AND SHALL REPAIR OR REPLACE, AT HIS EXPENSE, ANY WORK DAMAGED DURING THAT PERIOD, TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT AND OWNER.
- 8.** ALL EQUIPMENT AND TOOLS SHALL BE PLACED SO AS NOT TO INTERFERE OR HINDER PEDESTRIAN AND VEHICULAR TRAFFIC FLOW.
- 9.** THE LANDSCAPE ARCHITECT OR OWNER SHALL HAVE THE RIGHT, AT ANY STAGE OF THE OPERATIONS, TO REJECT ANY AND ALL WORK AND MATERIAL WHICH, IN HIS OPINION, DOES NOT MEET THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS. ALL REJECTED MATERIALS SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR.
- 10.** THE CONTRACTOR SHALL COORDINATE WITH LIGHTING AND IRRIGATION CONTRACTORS REGARDING TIMING OF INSTALLATION OF PLANT MATERIAL.
- 11.** PLANTING WORK SHALL NOT BE STARTED UNTIL FINAL GRADES HAVE BEEN ESTABLISHED AND APPROVED BY THE LANDSCAPE ARCHITECT OR THE REPRESENTATIVE.
- 12.** UNDER NO CONDITIONS SHALL ANY WORK BE DONE IF WEATHER OR SOIL CONDITIONS ARE NOT SATISFACTORY.
- B. LANDSCAPE GRADING & DRAINAGE**
- THE CONTRACTOR SHALL ENSURE THAT HIS WORK DOES NOT INTERRUPT ESTABLISHED OR PROPOSED DRAINAGE PATTERNS.
 - THE CONTRACTOR SHALL REVIEW ARCHITECTURAL/ENGINEERING PLANS TO BECOME THOROUGHLY FAMILIAR WITH GRADING AND UTILITIES.
 - THE CONTRACTOR SHALL MAINTAIN SEDIMENT AND EROSION CONTROL MEASURES ACCORDING TO THE REQUIREMENTS AND CONSTRUCTION SEQUENCING AND SCHEDULES.
 - EXISTING SITE CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION BEGINS, ANY DISCREPANCIES IN GRADES OR DIMENSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE.
 - THE CONTRACTOR SHALL PROVIDE ADEQUATE VERTICAL DRAINAGE IN ALL PLANT BEDS AND PLANTERS.
 - PLANTING BEDS 4 PLANTING PITS
- 1. CONTRACTOR SHALL FLAG AND MARK PLANTING BEDS ACCORDING TO PLANS AND OBTAIN APPROVAL BEFORE BED PREPARATION AND INSTALLATION OF PLANTS. PROVIDE 48 HOURS NOTICE TO THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE TO REVIEW LAYOUT.**
- 2. ALL PLANTING BEDS ADJACENT TO LAWN SOD OR SEEDED AREAS SHALL BE SPADE EGGED.**
- D. SOIL PREPARATION OF GROUND COVER AND PERENNIAL PLANTING AREAS**
- GROUND COVER AND PERENNIAL PLANTING AREAS SHALL BE CONDITIONED AND PLANTED IN CONTINUOUSLY PREPARED BEDS.
 - BEFORE BED PREPARATION CONDUCT TREE AND STUMP REMOVAL IF REQUIRED. REMOVE ALL STUMPS, BRANCHES, WOOD CHIPS AND SAWDUST FROM THE WORK SITE. WOOD CHIPS AND SAWDUST SHALL NOT BE USED FOR COMPOST OR MULCHING ON THE WORK SITE.
 - REMOVE UNDESIRABLE VEGETATION: SPRAY EXISTING LAWN AND WEEDS WITH A MIXTURE OF ROUNDUP AND 2-4D PER MANUFACTURERS INSTRUCTIONS.
 - CUT OR MOW DEAD VEGETATION TO A HEIGHT OF 1 IN. AND REMOVE THE DEBRIS INCLUDING ROOTS MASS.
 - LOOSEN PLANTING BED BY TILLING TO 6" DEPTH EXCEPT WITHIN CRITICAL ROOT ZONES OF EXISTING TREES OR WHERE UNDERGROUND UTILITIES ARE PRESENT.
 - SPREAD 14-14-14 FERTILIZER AND CONDITION SOIL FOR PH IF REQUIRED BY SOILS TEST.
 - THOROUGHLY INCORPORATE THE COMPOST/TOPSOIL MIX AND FERTILIZER IN TO THE PLANTING BED TO 6" DEPTH.
 - FINE GRADE AND RAKE PLANTING BED, REMOVE DEBRIS AND ROCK 1" DIA. OR LARGER BEFORE SETTING OUT PLANTS.
- E. PLANTING**
- 1.** PLANTS SHALL BE LOCATED AS SHOWN ON THE DRAWINGS OR AS DESIGNATED IN THE FIELD. THE LANDSCAPE CONTRACTOR SHALL FLAG OR MARK PLANT LOCATIONS FOR REVIEW AND/OR ADJUSTMENT BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING. ALL LOCATIONS ARE TO BE APPROVED BY THE LANDSCAPE ARCHITECT BEFORE EXCAVATION. PROVIDE 48 HOURS NOTICE TO THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE TO REVIEW LAYOUT.
- 2.** THE SEASON FOR PLANTING TREES, SHRUBS AND GROUNDCOVER SHALL BE MARCH 15 TO JUNE 1 AND SEPTEMBER 15 TO NOVEMBER 15, UNLESS OTHERWISE APPROVED BY THE LANDSCAPE ARCHITECT. OUT OF SEASON PLANTING, IF ANY, SHALL BE FULLY GUARANTEED BY THE CONTRACTOR.
- 3.** DURING PLANTING OPERATIONS, EXCESS WASTE MATERIALS SHALL BE PROMPTLY AND FREQUENTLY REMOVED FROM THE SITE.
- F. SETTING TREES ANDS SHRUBS**
- UNLESS OTHERWISE SPECIFIED, ALL TREES AND SHRUBS SHALL BE PLANTED IN PITS, CENTERED AND SET ON UNDISTURBED SOIL TO SUCH DEPTH THAT 1/8 OF THE ROOT BALL IS ABOVE GRADE. PLANTS SHALL BE PLANTED UPRIGHT, ROTATED AND FACED TO GIVE THE BEST APPEARANCE OR RELATIONSHIP TO ADJACENT STRUCTURES, WALKWAYS OR PROMINENT VIEW.
 - ROOT BALL DEPTH: FURNISH TREES AND SHRUBS WITH ROOT BALL DEPTH MEASURED FROM TOP OF ROOT BALL, WHICH BEGINS AT ROOT FLARE ACCORDING TO ANSI Z601. ROOT FLARE SHALL BE VISIBLE BEFORE PLANTING.
 - IDENTIFY THE ROOT FLARE AND REMOVE EXCESS SOIL IF NECESSARY. NEVER COVER TOP OF ROOT BALL WITH SOIL.
 - FOR CONTAINER GROWN TREES AND SHRUBS SLASH THE SIDES OF ROOT BALL FROM TOP TO BOTTOM. MAKE A 4 TO 5 VERTICAL CUTS AT LEAST 1" DEEP.
 - FOR SHRUB SHRUBS, THE PITS SHALL BE DUG 12" WIDER THAN THE DIAMETER OF THE ROOT BALL.
 - FOR SHRUB MASS PLANTING, THE ENTIRE BED SHALL BE TILLED TO 6" DEPTH AND PREPARED AS SPECIFIED IN "D. SOIL PREPARATION OF GROUND COVER AND PERENNIAL PLANTING AREAS" OF THESE SPECIFICATIONS. EACH SHRUB PIT SHALL THEN BE EXCAVATED FOR THE PROPER SETTING DEPTH OF THE ROOT BALL AND BACKFILLED WITH THE SPECIFIED BACKFILL MIX. PLANTS SHALL REST ON UNDISTURBED SOIL OR WELL COMPACTED BACKFILL.
 - THE SIDES AND BOTTOM OF ALL PLANTING BEDS SHALL BE SCARIFIED, IF PLANTING PIT IS PLACED OVER PREVIOUSLY COMPACTED SUBGRADE SCARIFY TO A MINIMUM DEPTH OF 12" BELOW ROOT BALL AND INCORPORATE BACKFILL MIX TAMP BY HAND TO PROVIDE FIRM STABLE BASE FOR ROOT BALL.
 - AT TIME OF INSTALLATION CUT AND REMOVE ROPE OR WIRE TO THE EDGE OF THE ROOT BALL. REMOVE AS MUCH BURLAP, WOVEN PRODUCTS, AS POSSIBLE. ALL SYNTHETIC FILM OR TWINE MUST BE REMOVED FROM ROOT BALL. REMOVE OR PULL BACK ALL MATERIALS 12" FROM TOP OF ROOT BALL.
 - PLANTING PITS SHALL BE BACKFILLED WITH SPECIFIED SOIL MIX AND HAND COMPACTED CAREFULLY TO AVOID INJURY TO ROOTS AND TO FILL ALL VOIDS. WHEN THE HOLE IS NEARLY FILLED, WATER SHALL BE ADDED AS NECESSARY AND ALLOWED TO SOAK IN. THE HOLE SHALL BE FILLED TO FINISHED GRADE AND A SHALLOW SAUCER OR RIDGE SHALL BE FORMED AROUND EACH PLANT BY PLACING A RIDGE OF SOIL AROUND THE EDGE OF EACH PIT. IF THE GROUND SETTLES, ADDITIONAL SOIL SHALL BE FILLED INTO THE PIT TO REACH THE LEVEL OF THE FINISHED GRADE.
- G. SETTING PERENNIALS, GRASSES AND GROUNDCOVERS:** SET OUT GROUNDCOVERS AT SPECIFIED SPACING IN UNIFORM DIAGONAL ROWS AND PLANT.
- SET TOP OF POT OR CROWN EVEN WITH EXISTING GRADE.
 - BACKFILL WITH AMENDED PLANT MIX AND FIRMLY COMPACT BY HAND SO THAT ROOTS ARE SURROUNDED BY SOIL BELOW THE MULCH.
 - APPLY PRE-EMERGENT HERBICIDE WHEN PLANTS ARE DRY TO AVOID BURNING.
 - THOROUGHLY WATER ENTER PLANTING BED.
 - FERTILIZING AT THE TIME OF INSTALLATION, MIX 14-14-14 FERTILIZER INTO THE BACKFILL SOIL OF TREES, SHRUBS, VINES, PERENNIALS AND GRASSES, FERTILIZER SHALL BE MIXED THOROUGHLY INTO THE FULL DEPTH OF ALL PLANTING AREAS.
- H. TREE STAKING AND GUYS:** SHALL COMPLY WITH THE LCA GUIDELINES AND AS SHOWN IN THE PLANTING DETAILS.
- 1.** THE CONTRACTOR SHALL BE WHOLLY RESPONSIBLE FOR STABILITY AND CONDITIONS OF ALL TREES AND SHRUBS AND SHALL BE LIABLE FOR ANY DAMAGE CAUSED BY INSTABILITY OF ANY PLANT MATERIALS.
- J. MULCHING:**
- 1.** PLANTING BEDS SHALL BE TOP DRESSED WITH 2-INCH (NOT TO EXCEED 3-INCHES) SHREDDED HARDWOOD MULCH UNDER SHRUBS AND TREES, AND 1.5 TO 2-INCH DEPTH FOR GROUNDCOVERS, PERENNIALS AND OTHER HERBACEOUS PLANTINGS. DO NOT PLACE MULCH AGAINST TREE TRUNKS. MULCH SHALL BE PLACED IMMEDIATELY AFTER PLANTING AND WATERING.

- K. SEEDING & SODDING**
- 1. SOIL PREPARATION FOR SEEDED AND SODDED AREAS**
- CLEARING: PRIOR TO OR DURING GRADING AND TILLAGE OPERATIONS THE GROUND SURFACE SHALL BE WELL DRAINED, CLEARED OF ALL BRUSH, ROOTS, STONES LARGER THAN 2 INCHES IN DIAMETER, OR ANY OTHER MATERIAL WHICH MAY HINDER PROPER GRADING, TILLAGE, OR SUBSEQUENT MAINTENANCE OPERATIONS.
 - BERMING AND FINE GRADING: AREAS TO BE SEEDD AND/OR SODDED SHALL BE GRADED AS SHOWN ON THE DRAWINGS OR AS DIRECTED AND ALL SURFACES SHALL BE LEFT IN AN EVEN AND PROPERLY COMPACTED CONDITION SO AS TO PREVENT THE FORMATION OF DEPRESSIONS WHERE WATER WILL STAND. AREAS TO BE TOPSOILED SHALL BE GRADED TO A SMOOTH SURFACE AND TO A GRADE THAT WILL ALLOW SEEDING TO FINISH GRADE.
 - SUBGRADE SEEDING AND SODDING AREAS SHALL NOT BE COMPACTED MORE THAN 85% PROCTOR FOR THE TOP 12" OF SUBGRADE.
 - TOPSOILING: THE OWNERS REPRESENTATIVE SHALL INSPECT THE SUB GRADE IMMEDIATELY PRIOR TO PLACING TOPSOIL, THE SUBGRADE, WHERE EXCESSIVELY COMPACTED BY TRAFFIC OR OTHER CAUSES, SHALL BE LOOSENED BY SCARIFYING TO A DEPTH OF AT LEAST 4 INCHES TO PERMIT BONDING OF THE TOPSOIL TO THE SUBGRADE. TOPSOIL SHALL BE UNIFORMLY SPREAD BY APPROVED EQUIPMENT TO A 6" THICKNESS OVER THE DESIGNATED AREAS AND IN SUCH MANNER THAT PLANTING CAN PROCEED WITH LITTLE ADDITIONAL SOIL PREPARATION OR TILLAGE. TOPSOIL SHALL NOT BE PLACED WHEN THE SUBGRADE IS FROZEN, EXCESSIVELY WET, EXTREMELY DRY, OR IN A CONDITION OTHERWISE DETRIMENTAL TO THE PROPOSED PLANTING OR THE PROPER GRADING. TOPSOIL SHALL BE GRADED TO THE LINES INDICATED AND TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED TO PREVENT FORMATIONS OF DEPRESSIONS WHERE WATER WILL STAND.
 - COMPOSTING: SPREAD 1" DEPTH OF COMPOST OVER SODDING AND SEEDING AREAS AND INCORPORATE INTO TOPSOIL.
 - TILLAGE: AFTER TOPSOILED AREAS REQUIRED TO BE SEEDD HAVE BEEN BROUGHT TO THE GRADES SHOWN ON THE PLANS AND AS SPECIFIED, THEY SHALL BE THOROUGHLY TILLED TO A DEPTH OF 8 INCHES BY APPROVED METHODS TO ENSURE THAT THE TOPSOIL AND THE EXISTING SOIL ARE THOROUGHLY MIXED, UNTIL THE CONDITION OF THE SOIL IS ACCEPTABLE TO THE OWNERS REPRESENTATIVE. ANY OBJECTIONABLE UNDULATIONS OR IRREGULARITIES IN THE SURFACE RESULTING FROM TILLAGE OR OTHER OPERATIONS SHALL BE REMOVED BEFORE PLANTING OPERATIONS ARE BEGUN. THE WORK SHALL BE PERFORMED ONLY DURING PERIODS WHEN SATISFACTORY RESULTS ARE LIKELY TO BE OBTAINED. WHEN CONDITIONS ARE SUCH BY REASON OF DROUGHT, EXCESSIVE MOISTURE OR OTHER FACTORS, THAT RESULTS ARE NOT LIKELY TO BE SATISFACTORY, STOP THE WORK AND RESUME ONLY WHEN DESIRED RESULTS ARE LIKELY TO BE OBTAINED.
 - APPLICATION OF FERTILIZER: MEET ALL MARYLAND STATE REQUIREMENTS FOR THE APPLICATION OF NITROGEN=N AND PHOSPHOROUS ON NEW LAWN ESTABLISHMENT. THE FERTILIZER SHALL BE DISTRIBUTED UNIFORMLY AT A RATE OF 2.5 POUNDS OF 20N-16P-12K PER 1,000 SQUARE FEET OVER THE AREAS TO BE SEEDD OR SODDED AND SHALL BE INCORPORATED INTO THE SOIL TO A DEPTH OF 6 INCHES BY METHODS APPROVED BY THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE. THE INCORPORATION OF FERTILIZER MAY BE ACCOMPLISHED AS PART OF THE TILLAGE OPERATIONS SPECIFIED. DISTRIBUTION OF SEED AND FERTILIZER TOGETHER, BY MEANS OF APPROVED EQUIPMENT, WILL BE ACCEPTABLE.
 - APPLICATION OF LIME: IMMEDIATELY FOLLOWING OR SIMULTANEOUSLY WITH THE INCORPORATION OF THE FERTILIZER, LIME SHALL BE DISTRIBUTED AT A RATE OF 50 POUNDS PER 1,000 SQUARE FEET OR AT SUCH RATE AS DETERMINED BY SOIL TESTS, AND SHALL BE INCORPORATED INTO THE SOIL TO A DEPTH OF 8 INCHES BY METHODS WHICH ARE ACCEPTABLE TO THE ENGINEER. THE INCORPORATION OF THE LIME, ALONG WITH THE FERTILIZER, MAY FORM A PART OF THE TILLAGE OPERATION SPECIFIED, PROVIDED GRASS SEED IS NOT INCLUDED IN THE MIXTURE.
- 2. SODDING**
- MOISTEN PREPARED SURFACE IMMEDIATELY PRIOR TO LAYING SOD.
 - LAY SOD IN ACCORDANCE WITH ASPA GUIDELINES.
 - NO SOD SHALL BE PLACED BETWEEN JUNE 1 AND AUGUST 15 OR NOVEMBER 1 AND APRIL 15, UNLESS DIRECTED BY OWNER/DMW.
 - IMMEDIATELY AFTER LAYING, SPRINKLE SOD THOROUGHLY WITH WATER AND HAND TAMP.
 - LAY SOD SMOOTH JOINTS WITHIN 24 HOURS OF LAYING. JOINTS 12 INCHES, MINIMUM. DO NOT STRETCH OR OVERLAP SOD PIECES. ALIGN WITH ADJOINING GRASS AREAS.
 - ON 2:1 SLOPES AND STEEPER, LAY SOD PERPENDICULAR TO SLOPE STARTING AT THE BOTTOM OF THE SLOPE. SECURE EVERY ROW WITH WOODEN PEGS AT MAXIMUM 2 FEET ON CENTER. DRIVE PEGS FLUSH WITH SOIL PORTION OF SOD.
 - AFTER SOD AND SOIL HAVE DRIED FROM INITIAL WATERING, ROLL SODDED AREAS TO ENSURE GOOD BOND BETWEEN SOD AND SOIL AND TO REMOVE MINOR DEPRESSIONS AND IRREGULARITIES.
 - WATERING: WATER SODDED AREAS A MINIMUM OF THREE TIMES AFTER LAYING, TO A DEPTH OF 4 INCHES.
- 1) FIRST WATERING:** WITHIN 4 HOURS OF PLACEMENT.
- 2) SECOND AND THIRD WATERINGS:** WATER WHEN SOD BEGINS TO APPEAR DRY, BUT NOT LATER THAN 2 WEEKS OF FIRST OR SECOND WATERING.
- 3. SEEDING**
- GENERAL: ALL SEEDING SHALL BE DONE IN THE SPRING BETWEEN MARCH 1 AND MAY 15 OR IN THE FALL BETWEEN AUGUST 1 AND OCTOBER 15. THE CONTRACTOR SHALL EMPLOY A METHOD OF SOWING, MAKING USE OF APPROVED MECHANICAL POWER DRAWN DRILLS AND SEEDERS, MECHANICAL HAND SEEDERS OR OTHER APPROVED METHODS. WHEN DRILLS ARE USED, PROVISIONS SHALL BE MADE BY MARKERS OR OTHER MEANS TO ASSURE THAT SUCCESSIVELY SEEDING STRIPS WILL BE SEPARATED BY A SPACE NOT GREATER THAN THE SPACE BETWEEN ROWS PLANTED BY THE EQUIPMENT BEING USED. IF INSPECTION REVEALS, DURING PLANTING OPERATIONS OR AFTER, THAT STRIPS WIDER THAN THE SPACE BETWEEN THE ROWS PLANTED HAVE BEEN LEFT UNPLANTED, OR THAT OTHER AREAS HAVE BEEN SKIPPED, THE ENGINEER WILL REQUIRE THE SOWING OF ADDITIONAL SEED ON THESE AREAS. WHEN CONDITIONS ARE SUCH, BY REASON OF DROUGHT, HIGH WINDS, EXCESSIVE MOISTURE, OR OTHER FACTORS, THAT SATISFACTORY RESULTS ARE NOT LIKELY TO BE OBTAINED, STOP THE WORK AND RESUME ONLY WHEN CONDITIONS ARE FAVORABLE.
 - AREAS TO BE SEEDD: ALL GRADED AREAS, EXCEPT THOSE TO BE RECEIVING PLANTING BEDS AND SODDING, SHALL BE SEEDD IN ACCORDANCE WITH THESE SPECIFICATIONS. SEE THE DRAWINGS FOR LOCATION OF EACH SEED MIX.
 - METHOD AND RATE OF SEEDING:
 - LAWN SEEDING AND UPLAND SEEDING: ON SLOPING LAND, SEEDING OPERATION SHALL BE ON THE CONTOUR, WHERE FEASIBLE. APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER OR HYDROSEEDER. GULFURRY SHALL INCLUDE SEED AND FERTILIZER. SEED BED SHALL BE FIRM AND MOIST. SEED SHALL BE APPLIED AT THE RATE OF 7 LBS. PER 1,000 SQUARE FEET ON SLOPES GREATER THAN 6 TO 1, AND AT THE RATE OF 5 TO 8 LBS. PER 1,000 SQUARE FEET ON SLOPES AND FLAT AREAS LESS THAN 6 TO 1. THE SEED SHALL BE UNIFORMLY DISTRIBUTED OVER THE DESIGNATED AREAS AND SHALL BE COVERED TO A DEPTH OF 1/4 INCH BY MEANS OF BRUSH HARROW, SPIKETooth HARROW, CULTIPACKER OR OTHER APPROVED METHODS. BROADCAST SEEDING SHALL NOT BE DONE DURING WINDY WEATHER. DRILL SEEDING SHALL BE DONE WITH APPROVED EQUIPMENT BEST SUITED TO PERFORM THE WORK UNDER THE CONDITIONS EXISTING AT THE SITE.
 - WETLAND SEEDING: SEED BED SHALL BE FIRM AND MOIST. SEED SHALL BE APPLIED AT THE RATE OF 5 TO 8 LBS. PER 1,000 SQUARE FEET WITH A CYCLONE SPREADER. THE SEED SHALL BE UNIFORMLY DISTRIBUTED OVER THE DESIGNATED AREAS AND SHALL BE COVERED TO A DEPTH OF 1/4 INCH BY MEANS OF HAND RAKING.
 - CLEAN UP: AFTER THE SEEDING HAS BEEN COMPLETED, AND PRIOR TO COMPACTION, THE SURFACE SHALL BE CLEANED OF ALL STONES LARGER THAN 2 INCHES IN DIAMETER AND OF ALL ROOTS, BRUSH, TRASH, OR OTHER OBJECTS THAT MAY INTERFERE WITH MAINTENANCE OPERATIONS.
- 4. MULCHING**
- LAWN SEEDD AREAS SHALL BE MULCHED WITH STRAW AND SECURED BY THE ASPHALT MIX METHOD, IN ACCORDANCE WITH ARTICLE 36.04, SECTION 3, MULCHING OF THE MDSHA STANDARD SPECIFICATIONS.
 - UPLAND SEEDD AREAS AND WETLAND SEEDD AREAS SHALL BE MULCHED WITH STRAW AND SECURED BY THE PEG AND STRING METHOD, IN ACCORDANCE WITH ARTICLE 36.05, SECTION 3, MULCHING OF THE STANDARD SPECIFICATIONS.
 - MAINTENANCE
 - IT IS THE INTENTION OF THE CONTRACT TO PROVIDE THE GREATEST QUANTITY OF ATTRACTIVE LAWN WITHIN THE CONSTRUCTION AREA AT ALL TIMES. THE CONTRACTOR SHALL COOPERATE BY CONTROLLING HIS ACTIVITIES TO PROTECT AND MAINTAIN AS MUCH AREA IN LAWN AS POSSIBLE WITHIN THESE LIMITS.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER CARE AND MAINTENANCE OF THE SEEDD AREAS

- UNTIL THE WORK UNDER THE ENTIRE CONTRACT HAS BEEN COMPLETED AND ACCEPTED BY THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE. MAINTENANCE SHALL CONSIST OF REPAIR AND REPLACEMENT OF ERODED AREAS, WATERING, RE-FERTILIZING, RE-LIMING, RESEEDING AND RE-MULCHING AS NECESSARY TO PRESE AN EVEN, FIRM GROWTH OF GRASS. IN ADDITION, THE CONTRACTOR SHALL PROVIDE PROTECTION AGAINST TRAFFIC AND SHALL ERECT THE NECESSARY BARRICADES AND WARNING SIGNS REQUIRED. IMMEDIATELY AFTER PLANTING IS COMPLETED, SEEDD AREAS SHALL BE WATERED AND MAINTAINED UNTIL A THICK STAND OF GRASS IS ESTABLISHED.
- c. MOWING:** THE SEEDD LAWN AREAS SHALL BE MOWED WITH APPROVED MOWING EQUIPMENT. IF WEEDS OR OTHER UNDESIRABLE VEGETATION THREATEN TO SMOOTH THE PLANTED SPECIES, SUCH VEGETATION SHALL BE MOWED OR IN THE FRESH GROWTH OF GRASS. IN ADDITION, THE CONTRACTOR SHALL PROVIDE PROTECTION AGAINST TRAFFIC AND SHALL ERECT THE NECESSARY BARRICADES AND WARNING SIGNS REQUIRED. THE FIRST MOWING SHALL NOT BE ATTEMPTED UNTIL THE SOD IS FIRMLY ROOTED AND SECURED IN PLACE. NOT MORE THAN 1/3 OF THE GRASS LEAF SHALL BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 1/2 AND 2 1/2 INCHES UNLESS OTHERWISE SPECIFIED. UPLAND AND WETLAND SEED AREAS SHALL NOT BE MOWED.
- d. WATERING:**
- 1) FIRST WATERING:** THE CONTRACTOR SHALL PROVIDE ALL LABOR AND FURNISH ALL WATERING NECESSARY FOR ESTABLISHMENT OF THE SEED. IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHALL BE PERFORMED DAILY OR AS OFTEN AS NECESSARY DURING THE FIRST WEEK AND IN SUFFICIENT QUANTITIES TO MAINTAIN MOIST SOIL TO A DEPTH OF AT LEAST 4 INCHES. WATERING SHOULD BE DONE DURING THE HEAT OF THE DAY TO HELP PREVENT WILTING.
- 2) SECOND AND SUBSEQUENT WEEKS:** THE CONTRACTOR SHALL WATER THE LAWN AS REQUIRED TO MAINTAIN ADEQUATE MOISTURE IN THE UPPER 4 INCHES OF SOIL NECESSARY FOR THE PROMOTION OF DEEP ROOT GROWTH.
- 6. REPAIR OF SEEDD AREAS**
- AFTER THE GRASS IN SEEDD AREAS HAS APPEARED, ALL AREAS AND PARTS OF AREAS WHICH, IN THE OPINION OF THE OWNERS REPRESENTATIVE, FAIL TO SHOW A UNIFORM STAND OF GRASS, FOR ANY REASON WHATSOEVER, SHALL BE RESEEDD, FERTILIZED AND MULCHED AND SUCH AREAS AND PARTS OF AREAS SHALL BE SEEDD REPEATEDLY UNTIL ALL AREAS ARE COVERED WITH A SATISFACTORY GROWTH OF GRASS. RESEEDING TOGETHER WITH NECESSARY GRADING, FERTILIZING, AND TRIMMING SHALL BE DONE AT THE EXPENSE OF THE CONTRACTOR BY SPREADING THE SEED BY A METHOD APPROVED BY THE OWNERS REPRESENTATIVE. AND DURING AN APPROVED SEASON, RESEEDING SHALL BE ACCOMPLISHED WITHIN THE PLANTING SEASON WHEN POSSIBLE.
 - IF STAND IS INADEQUATE, RE-APPLY SEED AND FERTILIZE, USING HALF OF THE RATES ORIGINALLY APPLIED.
 - IF STAND IS OVER 60% DAMAGED, RE-ESTABLISH, FOLLOWING ORIGINAL LIME, FERTILIZER, SEED BED PREPARATION AND SEEDING RECOMMENDATIONS.
- 7. FINAL ACCEPTANCE SODDING, LAWNS AND UPLAND SEEDING**
- EXCEPT AS OTHERWISE INDICATED, LAWNS SHALL BE MAINTAINED UNTIL ALL SEEDD AREAS HAVE A CLOSE STAND OF GRASS WHICH HAS RECEIVED TWO MOWINGS AND HAS NO BARE SPOTS GREATER THAN TWO INCHES (2") IN DIAMETER OR SUBSTANTIAL CONPLETION, WHICHEVER DATE IS LATER.
 - THE OWNERS REPRESENTATIVE SHALL INSPECT THE LAWNS UPON WRITTEN REQUEST BY THE CONTRACTOR. THE REQUEST SHALL BE RECEIVED AT LEAST TWO WEEKS BEFORE THE ANTICIPATED DATE OF INSPECTION.

- L. CLEANUP AND CLOSEOUT**
- THE CONTRACTOR SHALL DISPOSE OF STUMPS AND MAJOR ROOTS OF ALL PLANTS TO BE REMOVED.
 - ANY DEPRESSIONS CAUSED BY REMOVAL OPERATIONS SHALL BE REFILLED WITH FERTILE, FRABLE SOIL PLACED AND COMPACTED SO AS TO RE ESTABLISH PROPER GRADE FOR NEW PLANTING AND/OR LAWN AREAS.
 - ALL DISTURBED AREAS OF THE SITE NOT PLANTED WITH SHRUBS OR GROUND COVER SHALL BE FINE GRADED AND SODDED OR SEEDD ACCORDING TO PLANTING AND CONSTRUCTION SPECIFICATIONS AND NOTES.
- M. WARRANTY AND MAINTENANCE AGREEMENT**
- ALL PLANTS SHALL BE GUARANTEED TO REMAIN ALIVE AND HEALTHY FOR ONE FULL YEAR AFTER INITIAL ACCEPTANCE.
 - INSPECTION AND INITIAL ACCEPTANCE:
 - INITIAL ACCEPTANCE SHALL BE DEFINED AS APPROVAL, BY THE OWNERS REPRESENTATIVE OF THE COMPLETE LANDSCAPE INSTALLATION.
 - CONTRACTOR SHALL NOTIFY THE OWNERS REPRESENTATIVE IN WRITING, OF PROJECT COMPLETION AND REQUEST AN INSPECTION WITHIN TWO WEEKS OF COMPLETION.
 - IF THE PLANT MATERIAL AND WORKMANSHIP ARE SATISFACTORY, THE OWNERS REPRESENTATIVE WILL GIVE WRITTEN NOTICE TO THAT EFFECT. THIS WILL CONSTITUTE THE CERTIFICATE OF ACCEPTANCE, AND THE WARRANTY PERIOD WILL BEGIN FROM THAT DATE.
 - MAINTENANCE SHALL BEGIN AFTER EACH PLANT HAS BEEN SATISFACTORILY INSTALLED AND SHALL CONTINUE UNTIL 90 DAYS AFTER INITIAL ACCEPTANCE BY THE OWNERS REPRESENTATIVE. DURING THIS TIME, THE CONTRACTOR SHALL DO ALL WORK WHICH IS NECESSARY TO ESTABLISH AND KEEP THE PLANTS ALIVE AND HEALTHY.
 - MAINTENANCE INCLUDES MOWING OF TURF, WATERING, PRUNING, WEEDING, FERTILIZING, MULCHING, REPLACEMENT OF SICK OR DEAD PLANTS, AND ANY OTHER CARE NECESSARY FOR THE PROPER GROWTH OF THE PLANT MATERIAL. THE CONTRACTOR MUST BE ABLE TO PROVIDE CONTINUED MAINTENANCE IF REQUESTED BY THE OWNER.
- N. FINAL INSPECTION**
- THE CONTRACTOR WILL CONDUCT A FINAL INSPECTION WITH THE OWNERS REPRESENTATIVE AT THE END OF THE ONE YEAR PERIOD. IT WILL BE THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE DMW LANDSCAPE ARCHITECT TWO WEEKS PRIOR TO THE ANTICIPATED MEETING.
 - ANY MATERIAL THAT IS 25% DEAD OR MORE SHALL BE CONSIDERED DEAD AND MUST BE REPLACED AT NO CHARGE. A TREE SHALL BE CONSIDERED DEAD WHEN THE MAIN LEADER HAS DIED BACK, OR THERE IS 25% OF THE CROWN DEAD.
 - DECIDUOUS MATERIAL WILL BE GUARANTEED TO BREAK DORMANCY IF PLANTED IN DORMANT SEASON.
- P. REPLACEMENTS AND CORRECTIONS**
- REPLACEMENTS WILL BE MADE DURING THE NEXT APPROPRIATE PLANTING PERIOD.
 - REPLACEMENT PLANTS USED AFTER FINAL INSPECTION SHALL BE GUARANTEED FOR AN ADDITIONAL 90 DAYS.
 - REPLACEMENTS WILL BE OF THE SAME SIZE AND SPECIES AS THE ORIGINAL WITH NO ADDITIONAL SOIL AMENDMENTS.
 - THE CONTRACTOR WILL NOT BE RESPONSIBLE FOR PLANT MATERIAL THAT HAS BEEN DAMAGED DUE TO VANDALISM, FIRE, RELOCATION OR OTHER ACTIVITIES BEYOND THE CONTRACTORS CONTROL.
 - PLANT LOSSES DUE TO ABNORMAL WEATHER CONDITIONS SUCH AS FLOODS, EXCESSIVE WIND, OR SEVERE FREEZING WILL NOT BE THE RESPONSIBILITY OF THE CONTRACTOR.

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 712 , EXPIRATION DATE: 11/10/21.

DATE _____

REGISTERED LANDSCAPE ARCH. NO. 712

APPROVED:
PLANNING BOARD OF HOWARD COUNTY

DATE : _____

CERTIFICATION NOTE:

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16-124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR ALTERNATIVE COMPLIANCE AND