

**PLAN VIEW**  
 SCALE: 1"=30'

- LEGEND:**
- EXISTING CURB AND GUTTER
  - PROPOSED CURB AND GUTTER
  - EXISTING TREELINE
  - PROPERTY LINE
  - RIGHT-OF-WAY LINE
  - EXISTING PAVING
  - PROPOSED PAVING
  - PROPOSED CONCRETE SIDEWALK/PAVING
  - EXISTING VEGETATION
  - PROPOSED VEGETATION

**OWNER/DEVELOPER**  
 HOWARD COUNTY HOUSING COMMISSION  
 9770 PATUXENT WOODS DRIVE  
 COLUMBIA, MD 21046  
 410-730-3725

NO.	REVISION	DATE

**SITE DEVELOPMENT PLAN**  
**RENDERED SITE PLAN**

**ELLICOTT GARDENS II**  
 HOUSING COMMISSION HOUSING DEVELOPMENT: 70 APARTMENTS  
 5511 & 5513 WATERLOO ROAD  
 ZONED: POR  
 TAX MAP 31 BLOCK 19 BA-08-005V, SDP-07-038, F-08-084, BA-08-042V PARCEL 428 & 467  
 1ST ELECTION DISTRICT SDP-07-038, WF-08-111, WF-09-085 HOWARD COUNTY, MARYLAND

**VOGEL ENGINEERING**  
 +  
**TIMMONS GROUP**  
 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043  
 P. 410.461.7666 F. 410.461.8961 www.timmons.com

**PROFESSIONAL CERTIFICATE**  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2022

DESIGN BY: RHV  
 DRAWN BY: MP/KG/LC/JT  
 CHECKED BY: RHV  
 DATE: MARCH 2021  
 SCALE: AS SHOWN  
 W.O. NO.: 06-01/

1 SHEET OF 1

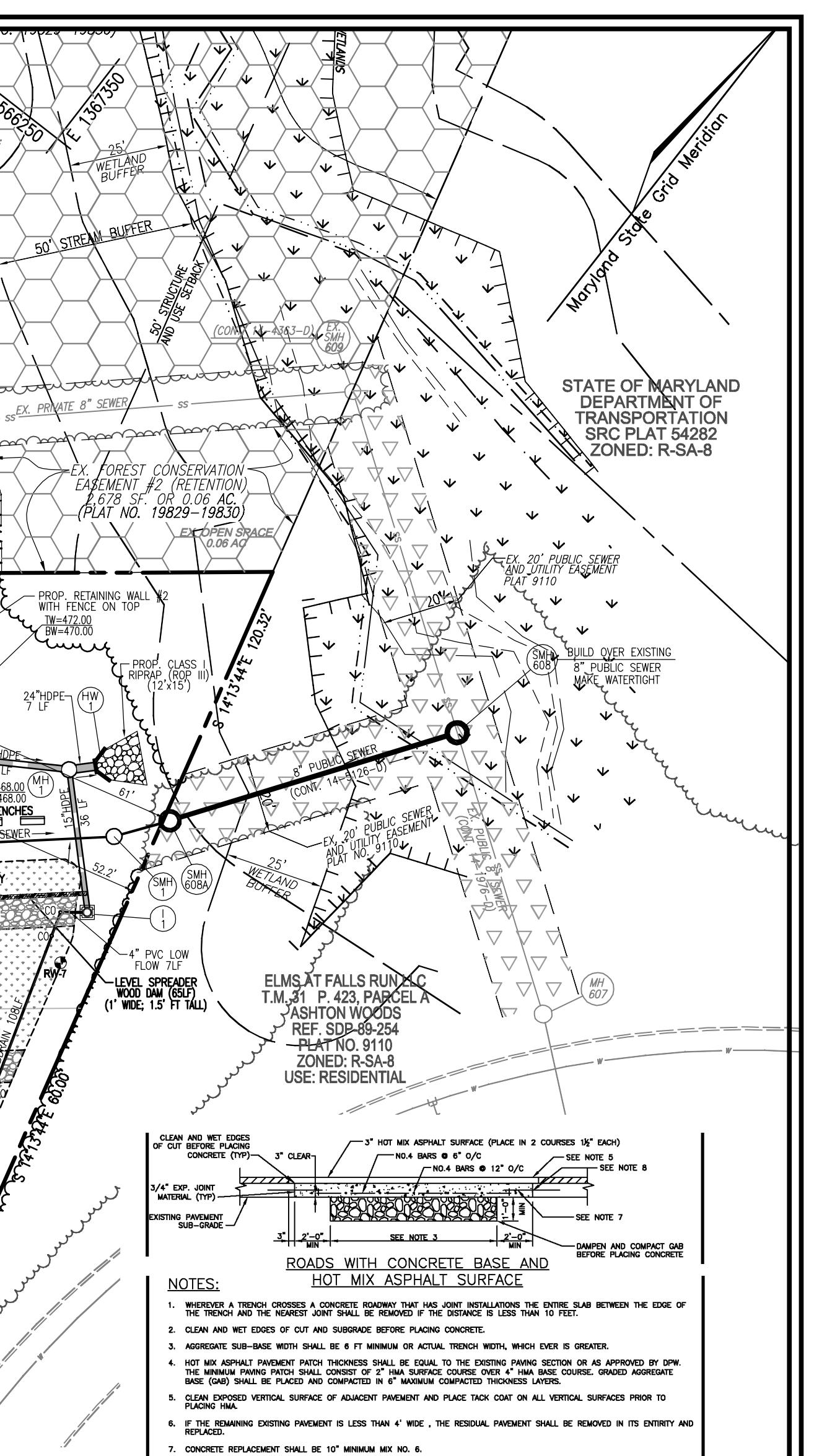
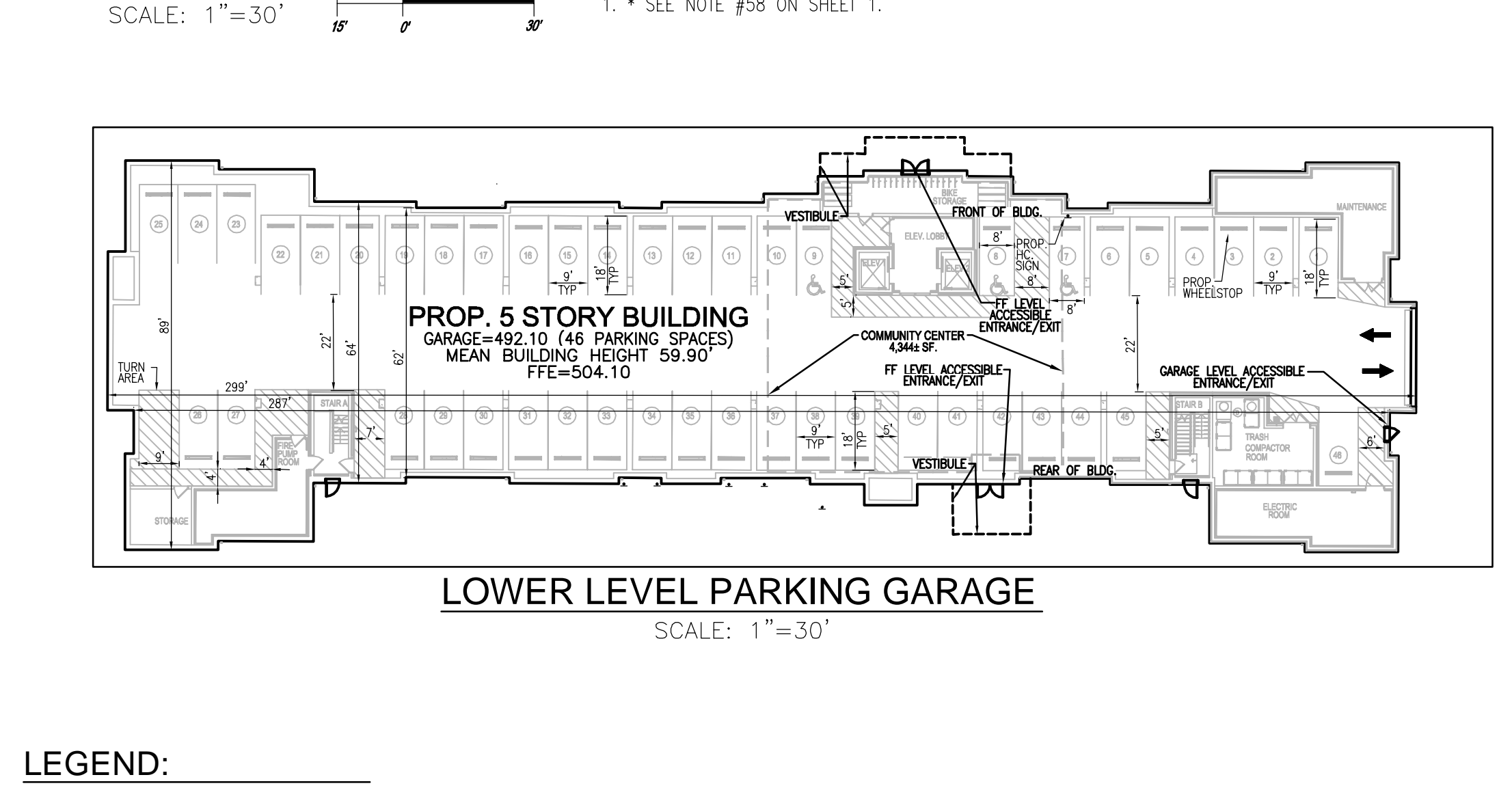
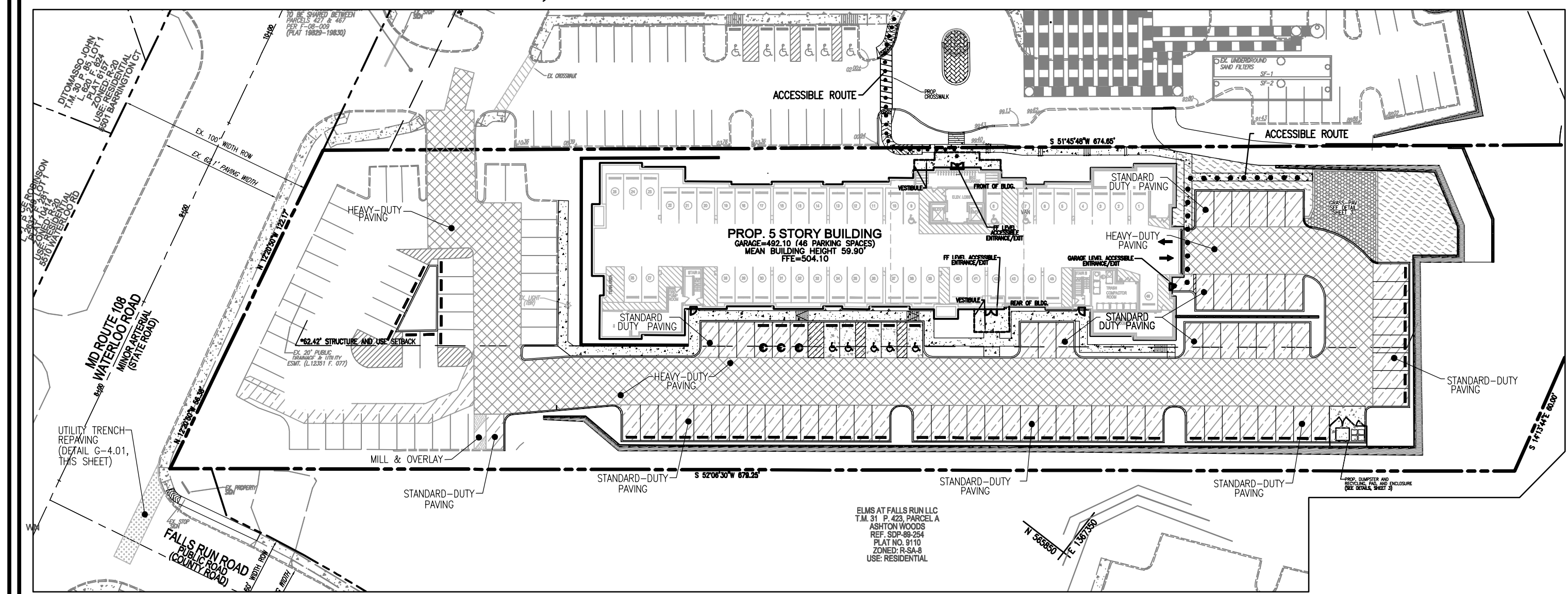
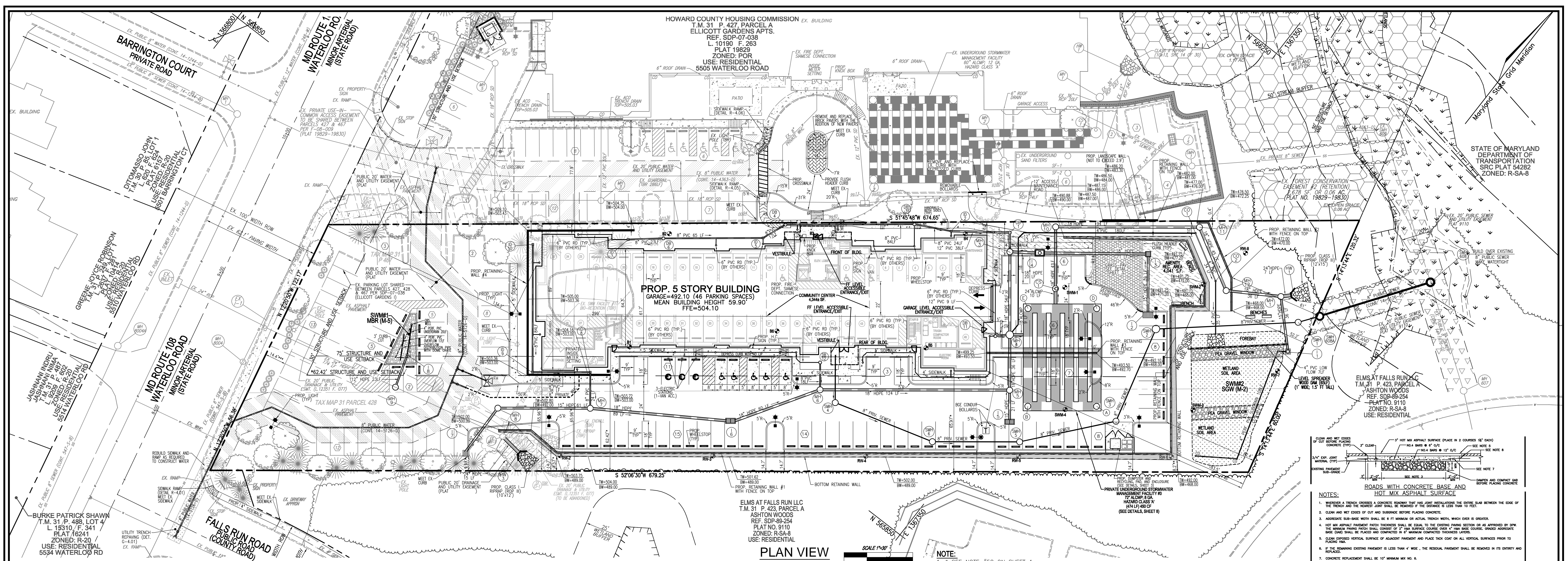


ROBERT H. VOGEL, PE No.16193









**CONCRETE PAVING SECTIONS**

Section	Thickness (in.)
Light Duty Concrete (if needed)	4.0
Heavy-Duty Concrete (if needed)	6.0

**PAVEMENT AND ACCESSIBLE ROUTE PLAN**  
 SCALE: 1"=50'

**PAVING/ACCESSIBLE ROUTE LEGEND:**

- HEAVY-DUTY PAVING
- STANDARD-DUTY PAVING
- CONCRETE PAVING
- MILL AND OVERLAY
- UTILITY TRENCH REPAIRING
- ACCESSIBLE ROUTE

**LEGEND:**

- EXISTING CURB AND GUTTER
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING FENCE
- EXISTING TREES
- EXISTING TREELINE
- EXISTING WETLAND BUFFER
- EXISTING STREAM
- EXISTING STREAM BANK
- EXISTING WETLANDS
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- SEWER/STORM
- PROPOSED CURB AND GUTTER
- PROPOSED SIDEWALK
- PROPOSED SIDEWALK RAMP
- PROPOSED TREELINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- PROPOSED FIRE HYDRANT
- PROPOSED WATER TEE & VALVE
- PROPOSED WATER MAIN
- PROPOSED SEWER MAIN
- MICRO-BIORETENTION
- SUBMERGED GRAVEL WETLAND
- EXISTING 20' PUBLIC SEWER AND UTILITY EASEMENT
- 20' PUBLIC WATER AND UTILITY EASEMENT
- 20' PUBLIC DRAINAGE AND UTILITY EASEMENT
- EXISTING PRIVATE USE-IN-COMMON EASEMENT
- EXISTING 20' PUBLIC WATER AND UTILITY EASEMENT
- EXISTING FOREST CONSERVATION EASEMENT
- PROPOSED STREET LIGHT
- PROPOSED STREET SIGN

**NOTES:**

- IF THE REMAINING EXISTING PAVEMENT IS LESS THAN 4" WIDE, THE RESIDUAL PAVEMENT SHALL BE REPAVED IN ITS ENTIRETY AND REPLACED.
- CONCRETE REPLACEMENT SHALL BE 10" MINIMUM WID. & 6".
- NEW CUT SHALL REPAIR ALL JOINTS OF EXISTING CONCRETE, REPAIRING AND MAKE IMPROVEMENTS.
- REINFORCEMENT OF CONCRETE PAVING SHALL BE ACCORDANCE BY DRAWING.
- CONCRETE SHALL BE ORDERED IN PAGES UNLESS NEW REPAIRS SHALL BE TIED TO EXISTING.
- TOTAL REPAIR WIDTH SHALL BE EQUAL TO THE LANE WIDTH IN ACCORDANCE WITH THE SPECIFICATIONS.

**ROADS WITH CONCRETE BASE AND HOT MIX ASPHALT SURFACE**

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**TIMMONS GROUP**  
 PROFESSIONAL CERTIFICATE

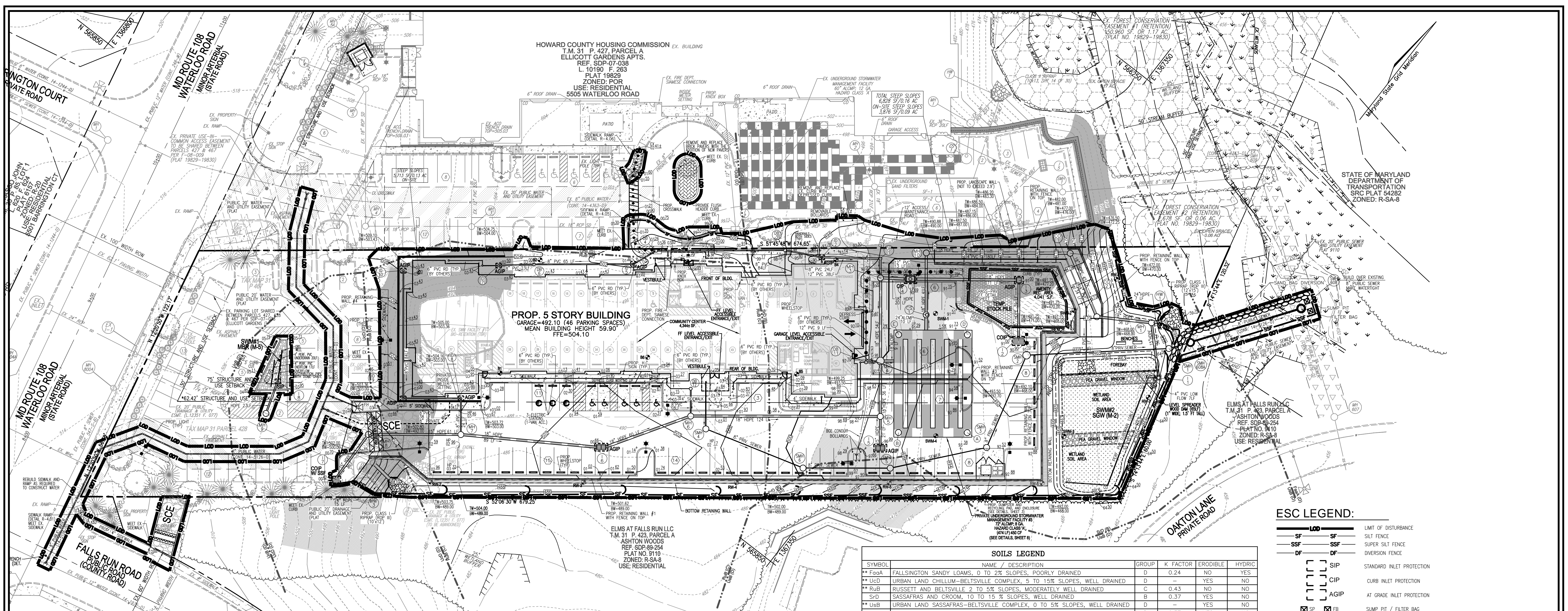
**DESIGN BY:** RHY  
**DRAWN BY:** MP/KG/LJ  
**CHECKED BY:** RHY  
**DATE:** FEBRUARY 2021  
**SCALE:** AS SHOWN  
**W.O. NO.:** 06-01/

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**2 SHEET OF 28**

**ROBERT H. VOGEL, PE No. 16193**





**PLAN VIEW**  
SCALE: 1"=30'

**NOTE:**  
1. \* SEE NOTE #63 ON SHEET 1.

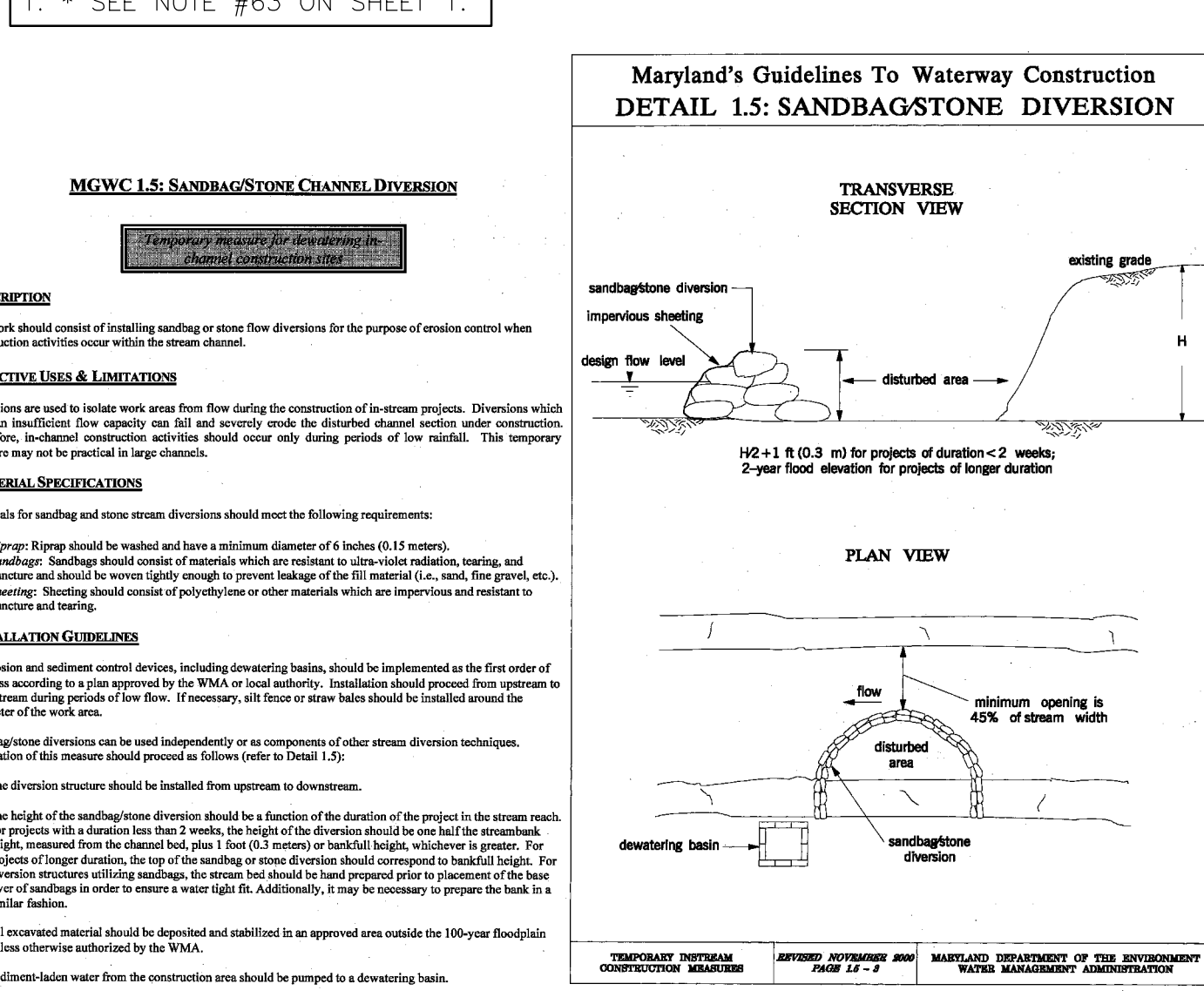
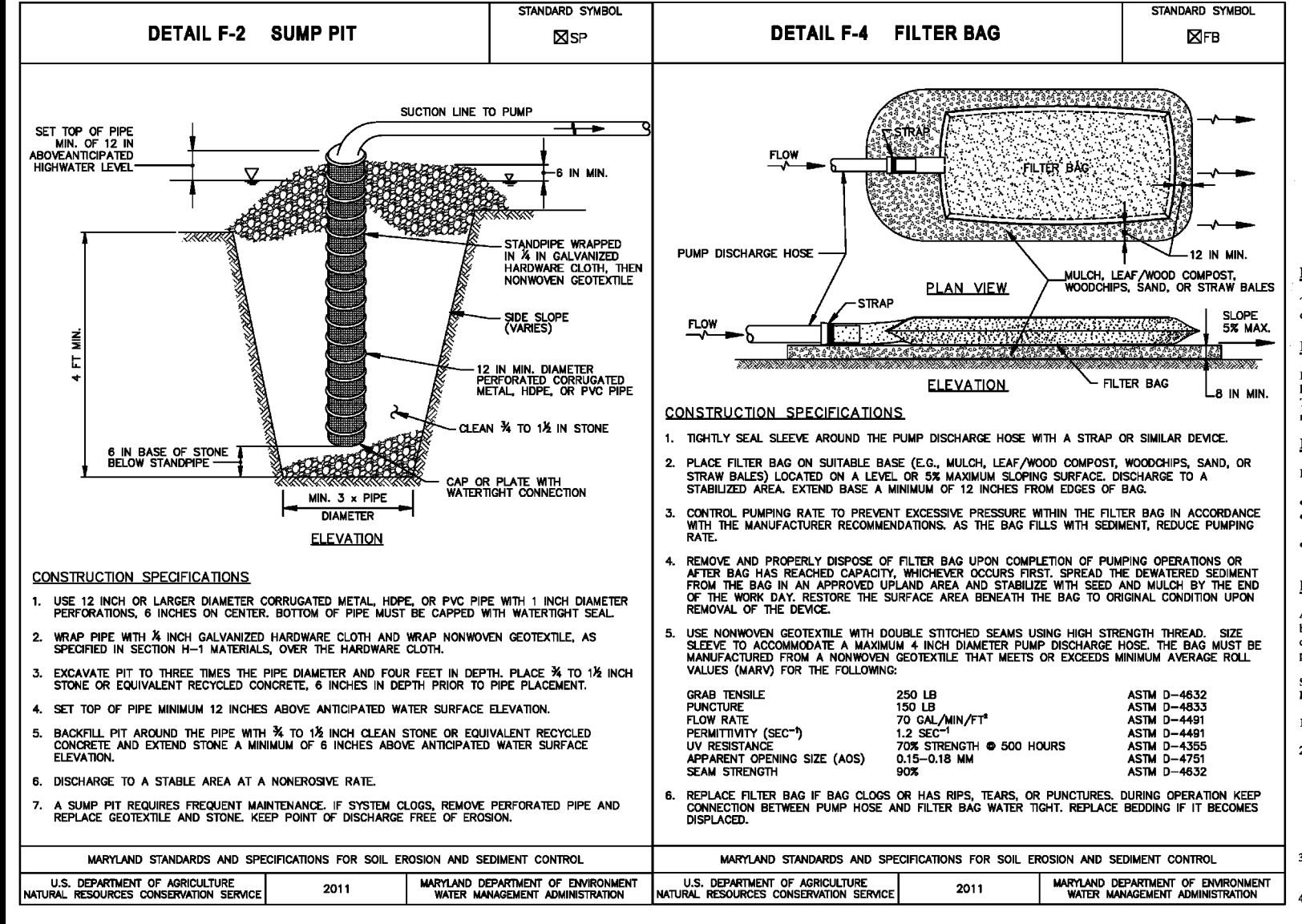
**SOILS LEGEND**

SYMBOL	NAME / DESCRIPTION	GROUP	K FACTOR	ERODIBLE	HYDRIC
FqgA	FALLSINGTON SANDY LOAMS, 0 TO 2% SLOPES, POORLY DRAINED	D	0.24	NO	YES
UcD	URBAN LAND CHILLUM-BELTSVILLE COMPLEX, 5 TO 15% SLOPES, WELL DRAINED	D	-	YES	NO
RuB	RUSSETT AND BELTSVILLE 2 TO 5% SLOPES, MODERATELY WELL DRAINED	C	0.43	NO	NO
SrD	SASSAFRAS AND CROOM, 10 TO 15 % SLOPES, WELL DRAINED	B	0.37	YES	NO
UsB	URBAN LAND SASSAFRAS-BELTSVILLE COMPLEX, 0 TO 5% SLOPES, WELL DRAINED	D	-	YES	NO
UcB	URBAN LAND CHILLUM-BELTSVILLE COMPLEX, 0 TO 5% SLOPES, WELL DRAINED	D	0.37	YES	NO

- TAKEN FROM: SCS-WEB SOIL SURVEY, HOWARD COUNTY.  
- K VALUES PER <http://www.howardscd.org/documents>  
- HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

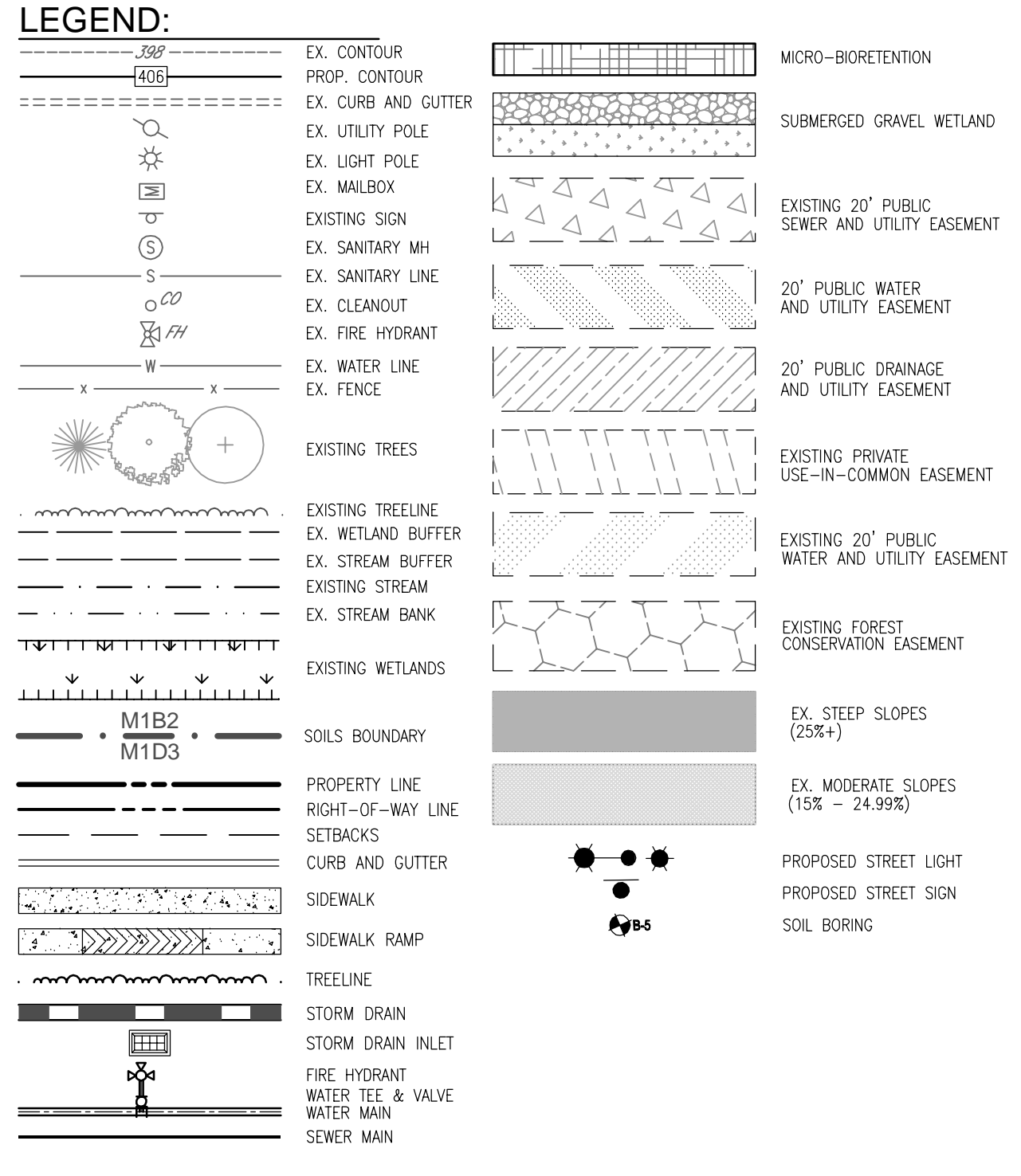
**ESC LEGEND:**

LOD	LIMIT OF DISTURBANCE
SF	SILT FENCE
SSF	SUPER SILT FENCE
DF	DIVERSION FENCE
SIP	STANDARD INLET PROTECTION
CIP	CURB INLET PROTECTION
AGIP	AT GRADE INLET PROTECTION
SP	SUMP PIT / FILTER BAG
FB	SAND BAG DIVERSION
SC	STABILIZED CONSTRUCTION ENTRANCE



**BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS**

- NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIALS FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
- PLACE HEAVY EQUIPMENT ON MATS OR SUITABLE OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
- RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
- ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (LOLIUM MULTIFLORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM SP.), OATS (Avena sativa), AND RYE (SECALE CEREALE). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE CROPPED AND MAINTAINED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
- AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST CONSTRUCTION GRADINGS AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
- TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES.
  - USE I WATER (WITHOUT YELLOW PERCH); IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE DURING ANY YEAR.
  - USE II WATER (WITH YELLOW PERCH); IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD FEBRUARY 15 THROUGH JUNE 15, INCLUSIVE DURING ANY YEAR.
  - USE III WATER; IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD OCTOBER 1 THROUGH APRIL 30, INCLUSIVE, DURING ANY YEAR.
  - USE IV WATER; IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH MAY 31, INCLUSIVE, DURING ANY YEAR.
- STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
- CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.



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9770 PATUXENT WOODS DRIVE  
COLUMBIA, MD 21046  
410-730-3725

NO.	REVISION	DATE

**SITE DEVELOPMENT PLAN**  
**GRADING, SEDIMENT AND EROSION CONTROL PLAN AND SOILS MAP**  
**ELLCOTT GARDENS II**  
HOUSING COMMISSION HOUSING DEVELOPMENT: 70 APARTMENTS  
5511 & 5513 WATERLOO ROAD  
BA-08-0059, SDP-07-038, F-08-084, BA-08-042V  
SDP-07-038, WF-08-111, WF-09-085  
ZONED: POR  
PARCEL 428 & 467  
HOWARD COUNTY, MARYLAND

**VOGEL ENGINEERING**

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DATE: FEBRUARY 2021  
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ROBERT H. VOGEL, PE No.16193

4 SHEET OF 28

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DIRECTOR DATE

**OWNER/DEVELOPER CERTIFICATION:**  
I 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 ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF 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.

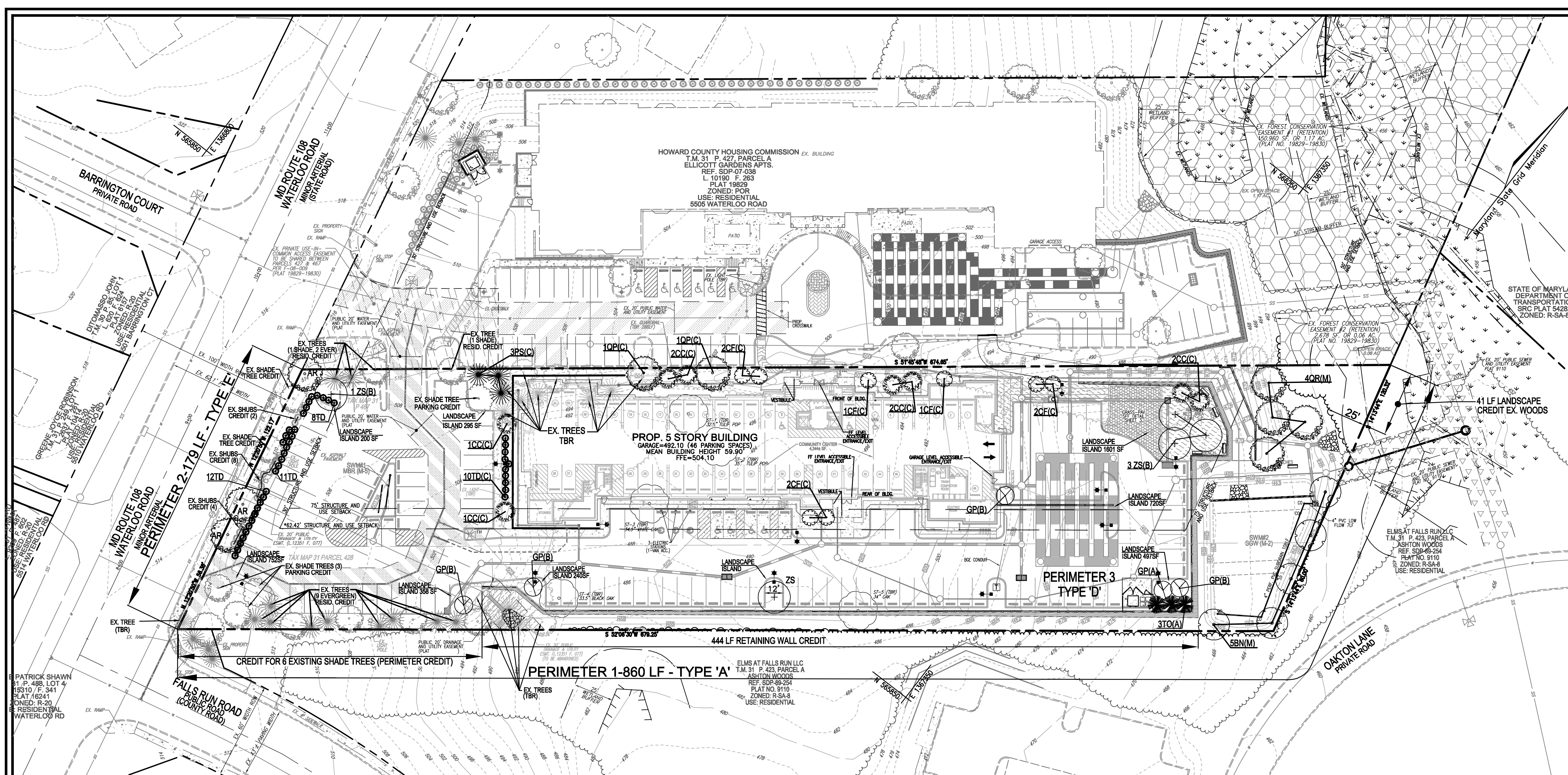
OWNER/DEVELOPER SIGNATURE DATE  
PRINTED NAME & TITLE

**DESIGNER 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.

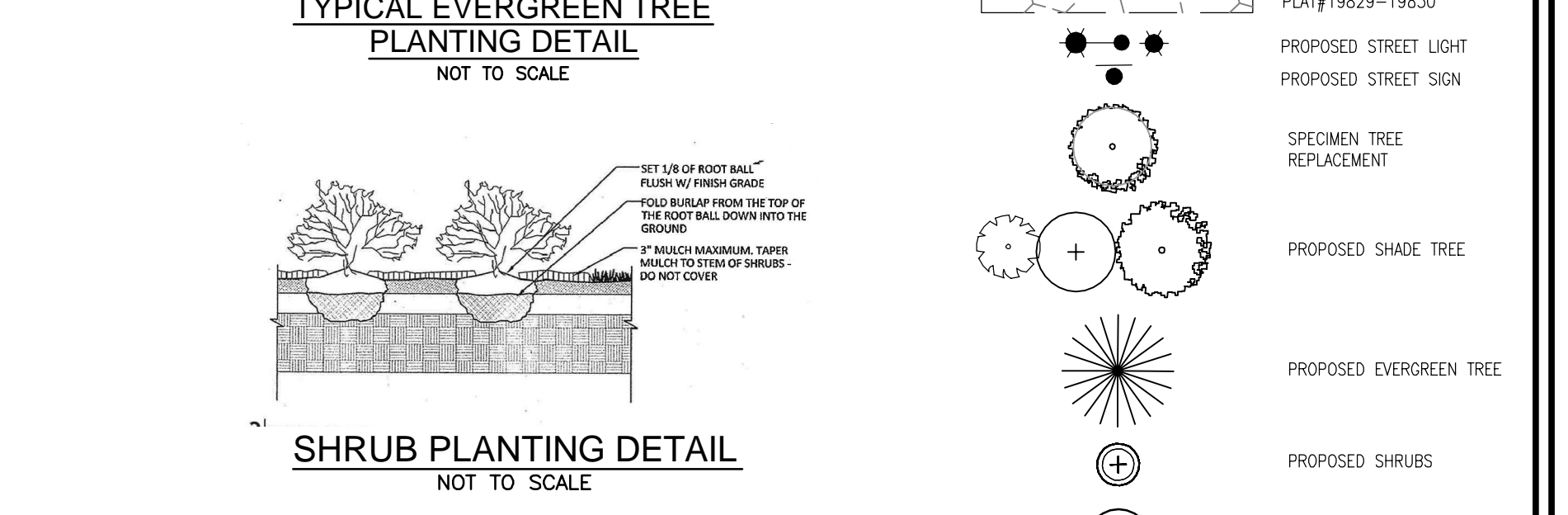
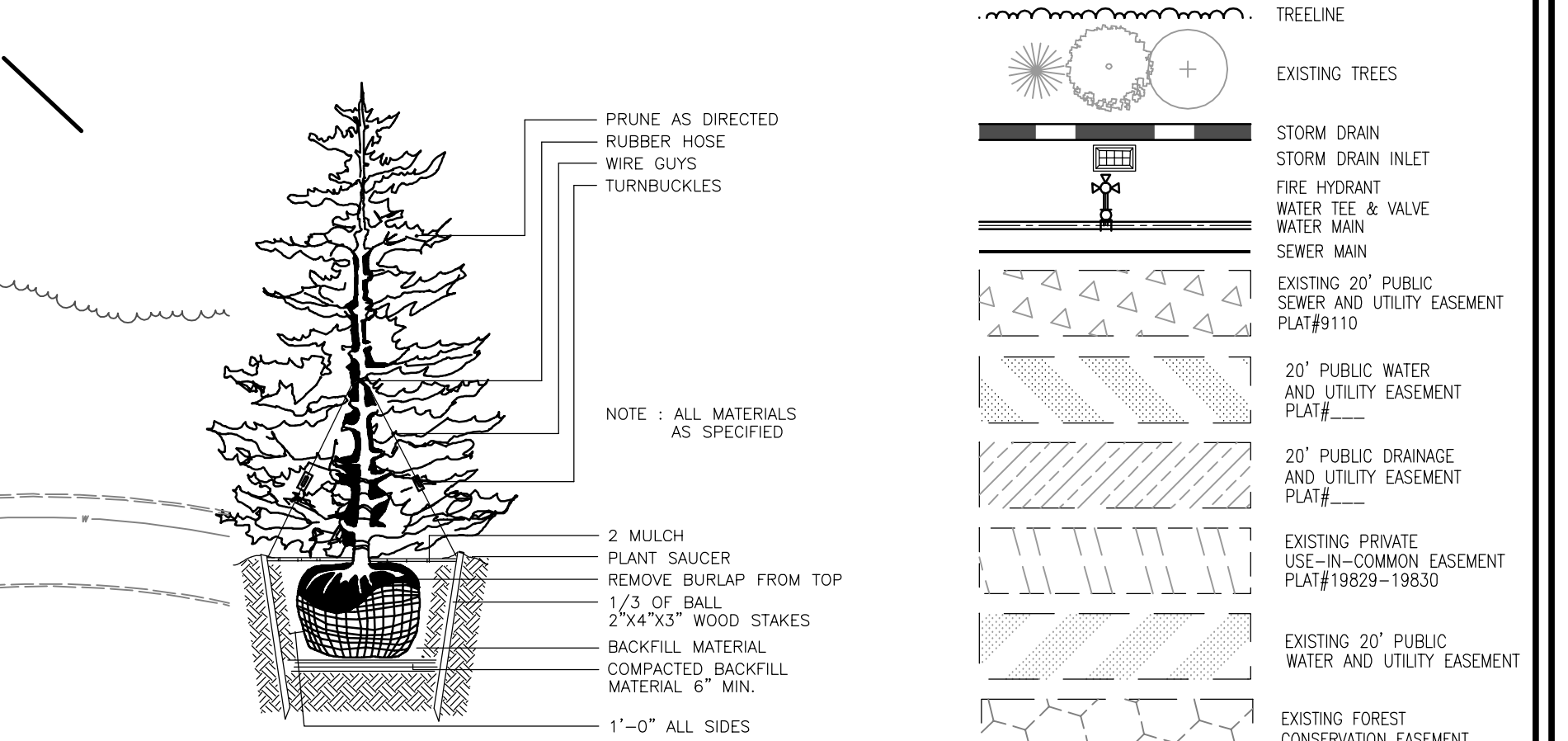
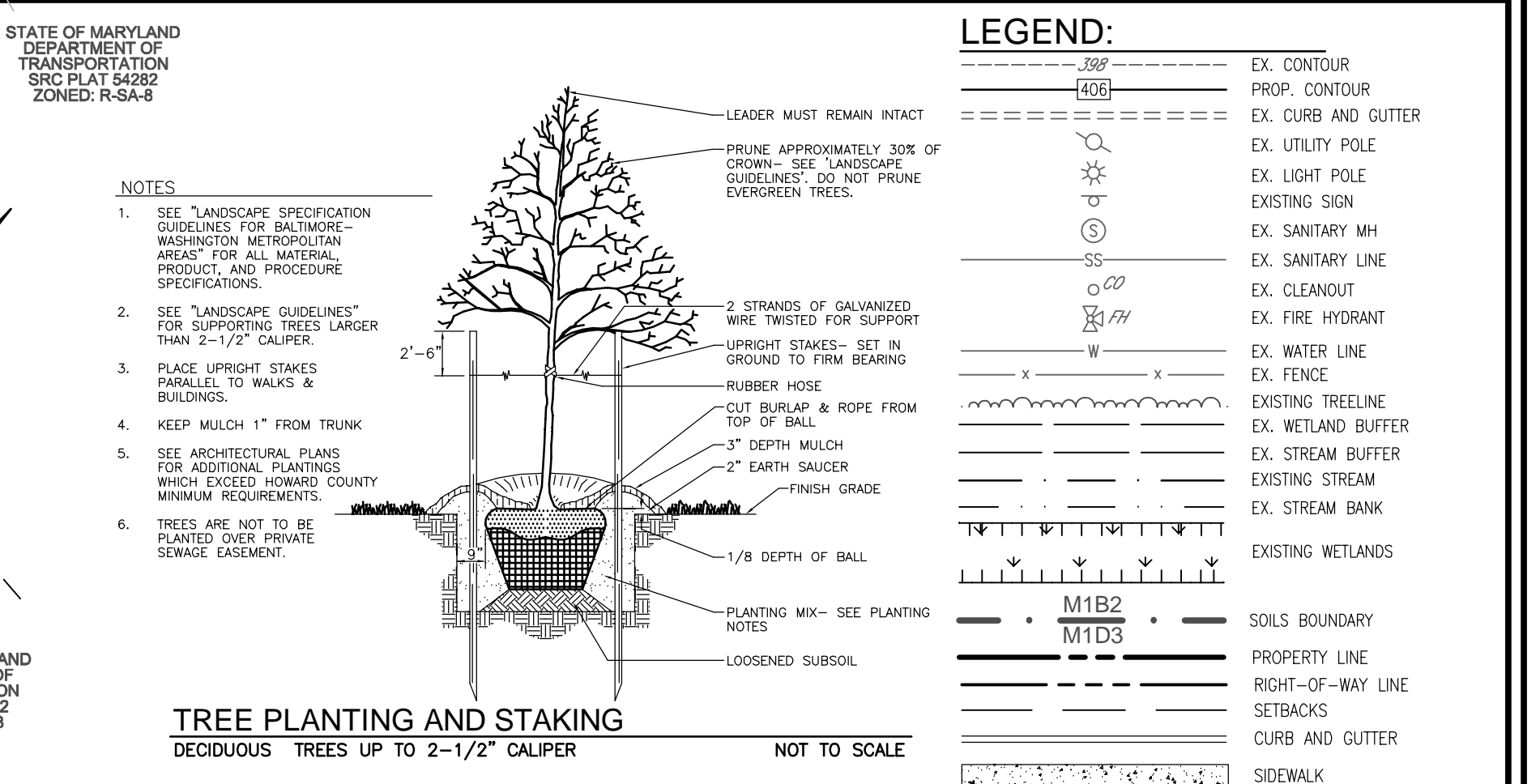
DESIGNER'S SIGNATURE DATE  
ROBERT H. VOGEL MD REGISTRATION NO. 16193  
PRINTED NAME R.H.S. OR R.L.A. (circle one) HOWARD S.C.D. DATE

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





SCALE: 1"=40'  
PLAN VIEW



**LEGEND:**

- EX. CONTOUR
- PROP. CONTOUR
- EX. CURB AND GUTTER
- EX. UTILITY POLE
- EX. LIGHT POLE
- EXISTING SIGN
- EX. SANITARY MH
- EX. SANITARY LINE
- EX. CLEANOUT
- EX. FIRE HYDRANT
- EX. WATER LINE
- EX. FENCE
- EXISTING TREELINE
- EX. WETLAND BUFFER
- EX. STREAM BUFFER
- EXISTING STREAM
- EX. STREAM BANK
- EXISTING WETLANDS
- SOILS BOUNDARY
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- SETBACKS
- CURB AND GUTTER
- SIDEWALK
- TREELINE
- EXISTING TREES
- STORM DRAIN
- STORM DRAIN INLET
- FIRE HYDRANT
- WATER TEE & VALVE
- WATER MAIN
- SEWER MAIN
- EXISTING 20" PUBLIC SEWER AND UTILITY EASEMENT PLAT#19110
- 20" PUBLIC WATER AND UTILITY EASEMENT PLAT#
- 20" PUBLIC DRAINAGE AND UTILITY EASEMENT PLAT#
- EXISTING PRIVATE CONSERVATION EASEMENT PLAT#19229-19830
- EXISTING 20" PUBLIC WATER AND UTILITY EASEMENT
- EXISTING FOREST CONSERVATION EASEMENT PLAT#19229-19830
- PROPOSED STREET LIGHT
- PROPOSED STREET SIGN
- SPECIMEN TREE REPLACEMENT
- PROPOSED SHADE TREE
- PROPOSED EVERGREEN TREE
- PROPOSED SHRUBS
- LANDSCAPE PERIMETER

**Summary Table**

Tree No.	Common Name/Scientific Name	Size (DBH)	Condition	Notes
1	Tulip Poplar (Liriodendron tulipifera)	35"	Poor	Double lead. Small crown (<15% live crown ratio). Measured at narrowest point below stem junction - feet above ground. Tree in decline. Both leads have loose bark on one side near the majority of the length of the trunk, likely from lightning damage. Secondary stem is broken at about 50 feet height and has no scaffold branches remaining. The main stem has an old seasonal canopy with a lightening strike about 2' wide, with missing or loose bark the entire length of the trunk. Reaction wood at the edges indicates an unsuccessful effort to close the large wound. Wind cut and insect damage are visible in the wound, compromising the trunk. Where bark is still attached on this wound, fungus is growing on a section of bark about 7' wide by 5 feet tall. The canopy is very small relative to the size of the trunk and the remaining canopy is 30% dead wood. The stemwater outfall to the southwest is emitting a breath. Small roots are exposed and dry and frayed roots are damaged by the erosion.
2	Tulip Poplar (Liriodendron tulipifera)	35"	Poor to Fair	Tree is stressed. Bark is cracked from the SW edge and peeling to the SW within the CRZ. Tulip poplars are intolerant of root disturbance. Small crown (<15% live crown ratio). Trunk intact with good root ball. Fit on Critical Root Zone on SE side. 25% of crown is deadwood. Diameter of dead wood includes pieces ranging from 3.6" diameter to 3.8" length.
3	White Oak (Quercus alba)	34.5"	Good	Tree performing well considering that the forest adjacent was removed, there is fill within the critical root zone to the southwest and the buried root ball. Live crown ratio 10%. One dead branch is less than 5% of the canopy. Old well healed root cracks. Aerial report that White Oak has moderate tolerance to fill and is a common survivor of construction activity.
4	Black Oak (Quercus velutina)	33.5"	Fair	Tree is stressed. 15% dead branches, including scaffold branches. Live crown ratio 10%. Good root ball. When black oak is stressed it often succumbs to secondary insects and diseases so the observed decline is a concern. The tree is moderately tolerant of development impacts.
5	Chestnut Oak (Quercus montana)	34"	Good	This tree is a good forest specimen currently at the maximum height for the species. Live crown ratio 40%. Less than 10% dead wood. 3' dia. 4' long. Stems from exposure due to the removal of adjacent forest may be less than the other four specimens because the exposure is East facing and the tree is more tolerant to the forest. The species is also tolerant of dry conditions. The species tolerance to development impacts is moderate to good.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DIRECTOR DATE

**DEVELOPER'S/BUILDER'S CERTIFICATE**

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 HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXHIBIT ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

SIGNATURE OF DEVELOPER DATE

**GENERAL NOTES:**

- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. THE REQUIRED PARKING AND PERIMETER LANDSCAPING WILL BE BONDED PER THIS SUBMISSION.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPERS AGREEMENT WITH THIS PLAN, IN THE AMOUNT OF \$26,680.00 FOR THE REQUIRED 60 SHADE TREES (\$300 PER TREE), 3 EVERGREEN TREES (\$150 PER TREE), AND 45 SHRUBS (\$30 PER SHRUB), 444 FT. OF RETAINING WALL (\$20 PER LF OF WALL).
- IN ACCORDANCE WITH SDP-10-0211, THE PLANNING DIRECTOR HAS DETERMINED THAT THIS SITE AND ADJACENT TM PARCEL #427, ELLICOTT GARDENS (SDP-07-038), ARE "PART OF THE SAME DEVELOPMENT" FOR DEVELOPMENT AND ZONING SETBACK PURPOSES PER ZONING REGULATION SECTION 128A.10.

**LANDSCAPE SCHEDULE NOTE:**

- AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENTS, BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, 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 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.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
- CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

**SCHEDULE A PERIMETER LANDSCAPE EDGE**

CATEGORY	ADJACENT TO ROADWAYS AND PERIMETER PROPERTIES	ADJACENT TO DUMPSTER	TOTAL
PERIMETER/FRONTAGE DESIGNATION	1	2	3
LANDSCAPE TYPE	A	B	D
LINEAR FEET OF ROADWAY	860'	179'	21'
FRONTAGE/PERIMETER	YES	NO	NO
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	41'	(SEE BELOW)	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	444'	NO	NO
NUMBER OF PLANTS REQUIRED	375	1:40 5	1:60 1 13
SHADE TREES	1:60 7	1:40 5	1:60 1 13
EVERGREEN TREES	-	14 45	3
SHRUBS	-	-	45
NUMBER OF PLANTS PROVIDED	0*	3	3
SHADE TREES	-	3	4
EVERGREEN TREES	-	-	-
OTHER TREES (2:1 SUBSTITUTION)	-	31	31
SHRUBS (10:1 SUBSTITUTION)	-	2*	7
EX. SHADE TREE (CREDIT)	5*	2*	4
EX. EVERGREEN TREE (SUBSTITUTION/CREDIT)	4*	-	4
EX. SHRUBS	-	14**	-
DESCRIBE PLANT SUBSTITUTION CREDITS (BELOW IF NEEDED)	-	-	14

\* CREDIT FOR 5 EXISTING SHADE TREES, AND 4 EXISTING EVERGREEN TREES  
\*\* CREDIT FOR 2 EXISTING SHADE TREES AND 14 EXISTING SHRUBS

**SCHEDULE B PARKING LOT INTERNAL LANDSCAPING**

NUMBER OF PARKING SPACES	128
NUMBER OF TREES REQUIRED	13
SHADE TREES	9
OTHER TREES (2:1 SUBSTITUTION)	4
EX. SHADE TREES (CREDIT)	-

**SCHEDULE C RESIDENTIAL DEVELOPMENT INTERNAL LANDSCAPING**

NUMBER OF DWELLING UNITS	70
NUMBER OF TREES REQUIRED (1:3)	24
NUMBER OF TREES PROVIDED	-
SHADE TREES	10 3
EVERGREEN TREES (2:1 SUBSTITUTION)	3
OTHER TREES (2:1 SUBSTITUTION)	8
SHRUBS (10:1 SUBSTITUTION)	10
EX. SHADE TREES (CREDIT)	2
EX. EVERGREEN TREES (CREDIT/2:1 SUBSTITUTION)	11

\* CREDIT FOR 3 SHADE AND 8 EVERGREEN TREES.

**SCHEDULE D - SPECIMEN TREE MITIGATION**

NUMBER OF SPECIMEN TREES TO BE REMOVED	5
NUMBER OF SHADE TREES REQUIRED (2:1)	10
NUMBER OF SHADE TREES PROVIDED	10

**PLANT LIST - SCHEDULE A (PERIMETER)**

KEY	QUAN.	BOTANICAL NAME	SIZE	CAT.
AR	3	ACRE RIBBIM 'ARMSTRONG' ARMSTRONG COLUMBIAN RED MAPLE	2.5"-3" CAL	B & B
GP	1	QUERCUS PALUSTRIS 'GREEN PILLAR' FASTIGIATE PIN OAK	12" HGT. MIN.	B & B
TO	3	THUJA OCCIDENTALIS 'GREEN EMERALD' WHITE CEDAR	6'-8" HT.	B & B
TD	31	TAXUS MEDIA 'DENSIFORMIS' DENSIFORMIS YEW	2.5"-3" HT.	B & B

**PLANT LIST - SCHEDULE B (PARKING LOT)**

KEY	QUAN.	BOTANICAL NAME	SIZE	CAT.
ZS	5	ZELKOVA SERRATA 'VILLAGE GREEN' VILLAGE GREEN JAPANESE ZELKOVA	2.5"-3" CAL	B & B
GP	4	QUERCUS PALUSTRIS 'GREEN PILLAR' FASTIGIATE PIN OAK	12" HGT. MIN.	B & B

**PLANT LIST - SCHEDULE C (RESIDENTIAL)**

KEY	QUAN.	BOTANICAL NAME	SIZE	CAT.
QP	2	QUERCUS PALUSTRIS/PIN OAK	2.5"-3" CAL	B & B
CC	8	CERES CANADENSIS EASTERN REDBUD	2.5"-3" CAL	B & B
CF	8	CORNUS FLORIDA WHITE FLOWERING DOGWOOD	8'-10" HGT.	B & B
PS	3	PNUS STROBUS EASTERN WHITE PINE	6'-8" HT.	B & B
TD	10	TAXUS MEDIA 'DENSIFORMIS' DENSIFORMIS YEW	2.5"-3" HT.	B & B

**PLANT LIST - SCHEDULE D (SPECIMEN TREE MITIGATION)**

KEY	QUAN.	BOTANICAL NAME	SIZE	CAT.
QR	4	QUERCUS RUBRA NORTHERN RED OAK	2.5"-3" CAL	B & B
BN	5	BETULA NIGRA 'BNIT' DURA-HEAT RIVER BIRCH	2.5"-3" CAL	B & B

**OWNER/DEVELOPER**  
HOWARD COUNTY HOUSING COMMISSION  
9770 PATUXENT WOODS DRIVE  
COLUMBIA, MD 21046  
410-730-3725

**SITE DEVELOPMENT PLAN**  
**LANDSCAPE PLAN**

**ELLICOTT GARDENS II**  
HOUSING COMMISSION HOUSING DEVELOPMENT: 70 APARTMENTS  
5511 & 5513 WATERLOO ROAD  
5511 & 5513 WATERLOO ROAD  
TAX MAP 31 BLOCK 19  
1ST ELECTION DISTRICT

**VOGEL ENGINEERING**  
**TIMMONS GROUP**  
3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043  
P. 410.461.7666 F. 410.461.8961 www.timmons.com

**PROFESSIONAL CERTIFICATE**  
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. 16183 EXPIRATION DATE: 09-27-2022

DESIGN BY: RHY  
DRAWN BY: MP/KG/LC/JT  
CHECKED BY: RHY  
DATE: FEBRUARY 2021  
SCALE: AS SHOWN  
W.O. NO.: 06-01/

13 SHEET OF 28

ROBERT H. VOGEL, PE No.16193