

PRELIMINARY PLAN HUNTINGTON POINT LOTS 1-8, OPEN SPACE LOT 9 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SHEET INDEX	
NO.	DESCRIPTION
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2	EXISTING CONDITIONS PLAN
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GENERAL NOTES

- THIS PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- SUBJECT PROPERTY ZONED R-SC PER THE 10-06-2013 COMPREHENSIVE ZONING PLAN.
- THE EXISTING TOPOGRAPHY ON-SITE IS TAKEN FROM FIELD SURVEY WITH 2 FOOT CONTOUR INTERVALS PREPARED BY BENCHMARK ENGINEERING, INC. DATED FEBRUARY, 2019. SURROUNDING TOPOGRAPHY IS TAKEN FROM HOWARD COUNTY GIS. THE EXISTING UTILITIES SHOWN ARE TAKEN FROM FIELD SURVEY, CONTRACT DRAWINGS, AND COUNTY GIS INFORMATION.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM AS ESTABLISHED FROM GIS OBSERVATION. MONUMENTS "TRAV.1" & "TRAV.2" WERE USED FOR THIS PROJECT.
- PROJECT BOUNDARY IS BASED ON A SURVEY BY BENCHMARK ENGINEERING, INC. DATED FEBRUARY, 2019.
- A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT AS IT DOES NOT MEET ANY OF THE REQUIREMENTS FOR A NOISE STUDY AS DEFINED IN SECTION 5.2.F.2 OF THE HOWARD COUNTY DESIGN MANUAL, VOLUME III.
- THE FOREST STAND DELINEATION REPORT AND THE WETLANDS CERTIFICATION LETTER WERE PREPARED BY ECO-SCIENCE PROFESSIONALS, INC., DATED MARCH, 2019 AND APPROVED UNDER S-19-008.
- TRAFFIC STUDY WAS PREPARED BY MARS GROUP FEBRUARY, 2019 AND APPROVED UNDER THE REVIEW OF S-19-008 ON 6/19/19.
- THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY GEOTECHNICAL LABORATORIES, INC., DATED SEPTEMBER, 2019.
- TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO CEMETERY LOCATIONS ON-SITE.
- THERE ARE NO HISTORIC SITES/STRUCTURES LOCATED ON THIS SITE. THERE ARE EXISTING STRUCTURES ON-SITE TO BE REMOVED. THIS WILL BE DONE PRIOR TO FINAL PLAT APPROVAL.
- THERE ARE NO WETLANDS, WETLANDS BUFFERS, STREAMS, 100-YR FLOODPLAIN, OR STEEP SLOPES 25% AND GREATER THAT ARE MORE THAN 20,000 SF OF CONTIGUOUS AREA LOCATED ON THIS SITE PER THE WETLAND CERTIFICATION & FOREST STAND DELINEATION REPORT PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. DATED MARCH, 2019 AND APPROVED UNDER S-19-008.
- THERE APPEARS TO BE EXISTING WELLS ON THE PROPERTY. THOSE SHALL BE PROPERLY ABANDONED IN ACCORDANCE WITH THE HOWARD COUNTY BUREAU OF ENVIRONMENTAL HEALTH. THIS WILL BE DONE PRIOR TO FINAL PLAT APPROVAL.
- THE REQUIRED PRE-SUBMISSION COMMUNITY MEETING WAS HELD ON FEBRUARY 28, 2019 AT 6:00PM IN THE HOWARD COUNTY PUBLIC LIBRARY EAST COLUMBIA BRANCH.
- THIS LOT WILL UTILIZE A CUSTOM SEDIMENT AND EROSION PLAN SINCE THE LIMIT OF DISTURBANCE IS FOR MORE THAN ONE LOT.
- THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT. PUBLIC WATER & SEWER MAIN WILL CONNECT TO EX. CONTRACT 24-0833-D. DRAINAGE IS LITTLE PATUXENT WSP.
- FREE FLOW SPEED STUDY WAS PREPARED BY MARS GROUP ON MARCH, 2019 AND THE SIGHT DISTANCE ANALYSIS WAS APPROVED UNDER S-19-008.
- FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND THE ROAD RIGHT-OF-WAY ONLY AND NOT ONTO THE FLAG OR PIPESTEM LOT DRIVEWAY.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
A) WIDTH - 12' (16' SERVING MORE THAN ONE RESIDENCE).
B) SURFACE - 6" OF COMPACT CRUSHER RUN BASE WITH 1-1/2" MIN. TAR & CHIP COATING.
C) GEOMETRY - MAX. 15% GRADE, MAX. 10% GRADE CHANGE & MIN. 45' TURNING RADIUS.
D) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOAD).
E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOODPLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY.
F) STRUCTURE CLEARANCES - MINIMUM 12 FEET.
G) MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE.
- A PRIVATE RANCE OF ADDRESS SIGN ASSEMBLY SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-2430 FOR DETAILS AND COST ESTIMATES.
- THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE BASE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
- ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD).
- ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED ("QUICK PUNCH"), SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- THE FOREST CONSERVATION REQUIREMENTS FOR THIS SUBDIVISION SHALL BE ADDRESSED PRIOR TO RECORDATION OF THE FINAL SUBDIVISION PLAT AND SHALL BE PROVIDED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.1200 OF THE SUBDIVISION REGULATIONS AND FOREST CONSERVATION MANUAL. THE FOREST CONSERVATION OBLIGATION FOR THIS SUBDIVISION SHALL BE SATISFIED BY THE USE OF ON-SITE RETENTION OF 0.38 ACRES WITHIN A FOREST CONSERVATION EASEMENT, REFORESTATION OF 0.06 ACRES WITHIN A FOREST CONSERVATION EASEMENT AND A FEE-IN-LIEU PAYMENT OF \$4,573.80 FOR 0.14 ACRES OF REMAINING OBLIGATIONS.
- THIS DEVELOPMENT IS DESIGNED TO BE IN ACCORDANCE WITH SECTION 16.127 - RESIDENTIAL INFILL DEVELOPMENT - OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. THIS PROJECT IS COMPATIBLE WITH THE ADJACENT RESIDENTIAL NEIGHBORHOOD BY CONSISTING OF THE SAME UNIT TYPES (SFD). THIS PROJECT IS INTEGRATED WITH THE SURROUNDING RESIDENTIAL DEVELOPMENT BY INTERCONNECTING SIDEWALKS & OPEN SPACE WITH THOSE LOCATED OFF-SITE, AND BY INCORPORATING & PRESERVING THE FOREST CONSERVATION & SPECIMEN TREE PROTECTION ALONG THE NORTHWESTERN BOUNDARY LINE. LOTS, BUILDINGS, & SITE IMPROVEMENTS ARE CONFIGURED TO PROVIDE PRIVACY BY THE LOCATION OF THE FOREST CONSERVATION EASEMENT, NON-CREDITED FOREST RETENTION, OPEN SPACE, ORIENTATION OF THE HOUSES, PERIMETER LANDSCAPING, AND MITIGATION TREE PLANTING ALONG THE BOUNDARY.
- THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL 45-2003 AND THE ZONING REGULATIONS, AS AMENDED BY COUNCIL BILL 75-2003. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION, OR BUILDING/GRADING PERMIT.
- THE PERIMETER LANDSCAPING REQUIREMENTS SHALL BE ADDRESSED PRIOR TO RECORDATION OF THE FINAL SUBDIVISION PLAT AND SHALL BE PROVIDED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- THE LANDSCAPING SHOWN ON THIS PLAN IS PICTORIAL FOR REQUIREMENT PURPOSES ONLY. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING IN THE AMOUNT OF \$14,700 FOR 49 SHADE TREES, SHALL BE POSTED IN ACCORDANCE WITH THE APPROVED FINAL LANDSCAPE PLAN, UNDER THE SUBSEQUENT FINAL PLAN OR SITE DEVELOPMENT PLAN. SURETY FOR STREET TREES SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT.
- THIS PROJECT IS SUBJECT TO SECTION 13.402 OF THE COUNTY CODE FOR MODERATE INCOME HOUSING UNITS (MIHU). PER SECTION 13.402C, THIS REQUIREMENT SHALL MET BY A FEE-IN-LIEU PAYMENT IN AN AMOUNT THAT IS TO BE CALCULATED BY THE DEPARTMENT OF INSPECTIONS LICENSES AND PERMITS AT THE TIME OF BUILDING PERMIT. THE FEE-IN-LIEU SHALL BE PAID FOR ALL LOTS/RESIDENTIAL UNITS WITHIN THIS SUBDIVISION AT TIME OF BUILDING PERMIT ISSUANCE.
- PER SECTION 16.121.a.2, THIS PROJECT IS SUBJECT TO 25% OPEN SPACE OR 21,998 SF. THERE IS NO RECREATIONAL OPEN SPACE REQUIREMENT FOR THIS PROJECT, SINCE THERE ARE LESS THAN 10 LOTS PER SECTION 16.121.a.1 OF THE SUBDIVISION REGULATIONS.
- STORMWATER MANAGEMENT ENVIRONMENTAL SITE DESIGN (ESD) HAS BEEN PROVIDED IN ACCORDANCE WITH THE "MARYLAND DEPARTMENT OF THE ENVIRONMENT STORMWATER MANAGEMENT ACT OF 2007" AND THE "HOWARD COUNTY DESIGN MANUAL VOLUME I, CHAPTER 5" TO THE MAXIMUM EXTENT PRACTICAL. STORMWATER MANAGEMENT IS PROVIDED BY ONE (M-6) MICRO-BIORETENTION PRACTICES, NINE (M-5) DRY WELLS, AND FOUR (N-2) NON-ROOFTOP DISCONNECTION. ALL FACILITIES ARE PRIVATELY OWNED AND PRIVATELY MAINTAINED. THE STORMWATER MANAGEMENT SYSTEM SHOWN ON THESE PLANS IS AN APPROXIMATION OF SIZE, SHAPE, AND LOCATION. IT IS UNDERSTOOD THAT THIS SYSTEM HAS NOT BEEN FINALIZED AND THE ACTUAL DESIGN MAY CHANGE ALTERING THE NUMBER OF UNITS ALLOCATED FOR THIS PROJECT.
- MODIFIED CURB & GUTTER AND ROADWAY IMPROVEMENTS SHALL BE INSTALLED APPROXIMATELY 250' TO THE WEST THRU THE CURVE ALONG VOLLMERHAUSEN DRIVE FROM THE SUBJECT SITE. THE DEVELOPMENT'S SIDEWALK IMPROVEMENTS SHALL EXTEND FROM THE BOUNDARY APPROXIMATELY 30' TO THE EAST AT THE INTERSECTION OF VOLLMERHAUSEN ROAD, AND APPROXIMATELY 127' TO THE WEST UNTIL THE DRIVEWAY OF REVELLE, ESTATES LOT 1.
- ALTERNATIVE COMPLIANCE, WP-19-081, WAS APPROVED BY THE DIRECTOR ON MAY 30, 2019, TO SECTION 16.1205(g)(7), WHICH ALLOWS FOR REMOVAL OF 22 SPECIMEN TREES. TO COMPENSATE FOR SPECIMEN TREE REMOVAL, THE MITIGATION PLANTING WAS PLANTING OF LANDSCAPE TREES AT A 2:1 RATIO. THE ALTERNATIVE COMPLIANCE WAS APPROVED SUBJECT TO THE FOLLOWING CONDITION:
- REMOVAL OF THE TWENTY-TWO (22) SPECIMEN TREES WILL REQUIRE REPLACEMENT MITIGATION AT A RATIO OF TWO (2) LARGE CALIPER NATIVE TREE SPECIES (AT LEAST THREE (3) INCHES DBH) FOR EACH SPECIMEN TREE REMOVED (44 TREES TOTAL). THE MITIGATION PLANTING CAN BE PROVIDED AS PART OF THE REQUIRED LANDSCAPING FOR THIS PROJECT. YOU MUST SUBMIT A REVISED LANDSCAPE PLAN WITH YOUR FINAL SUBDIVISION PLAN FOR THIS PROPERTY, THAT SHOWS HOW YOU PLAN TO ADDRESS THIS ALTERNATIVE FOREST CONSERVATION MITIGATION.
- DESIGN MANUAL WAWER DMV2-20-006 WAS APPROVED BY LETTER DATED NOVEMBER 21, 2019, TO HOWARD COUNTY DESIGN MANUAL, VOL. II, SECTION 5.4.B.5 TO ALLOW FOR PERMANENT STRUCTURE TO BE WITHIN 10' OF A SHARED PUBLIC WATER, SEWER, & UTILITY EASEMENT.
- IN REVIEW OF THE PROPOSED WEAVER, IT WAS NOTED THAT WHILE THE FULL 30' WATER & SEWER EASEMENT WILL BE PROVIDED FOR ACCESS TO THE UTILITIES, ACCESS WILL HAVE TO BE PERFORMED CAUTIOUSLY BECAUSE STRUCTURES WILL ONLY BE 7' FROM HEAVY CONSTRUCTION EQUIPMENT, HOWEVER, IN CONSIDERATION OF THE BUILDING CONSTRAINTS CITED, CONSIDERING THE UTILITIES ARE SMALL DIAMETER AND THE SEWER IS NOT EXCESSIVELY DEEP (APPROXIMATELY 13' MAXIMUM) AND THAT THE PROPOSED UTILITIES WILL BE NEW WITH A DESIGN LIFE OF 50 YEARS OR MORE, THIS WEAVER REQUEST IS APPROVED.
- THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT. PUBLIC WATER & SEWER MAIN WILL CONNECT TO EX. CONTRACT 24-0833-D.
- STREET LIGHT PLACEMENT, POLES, AND FIXTURES SHALL CONFORM TO HOWARD COUNTY DESIGN MANUAL, VOL. III (2006), SECTION 5.5.A. A MINIMUM OF 20 FT SHALL BE MAINTAINED BETWEEN TREES AND STREET LIGHTS.

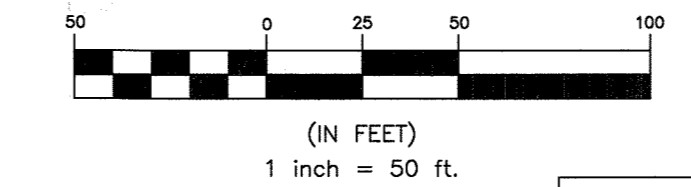
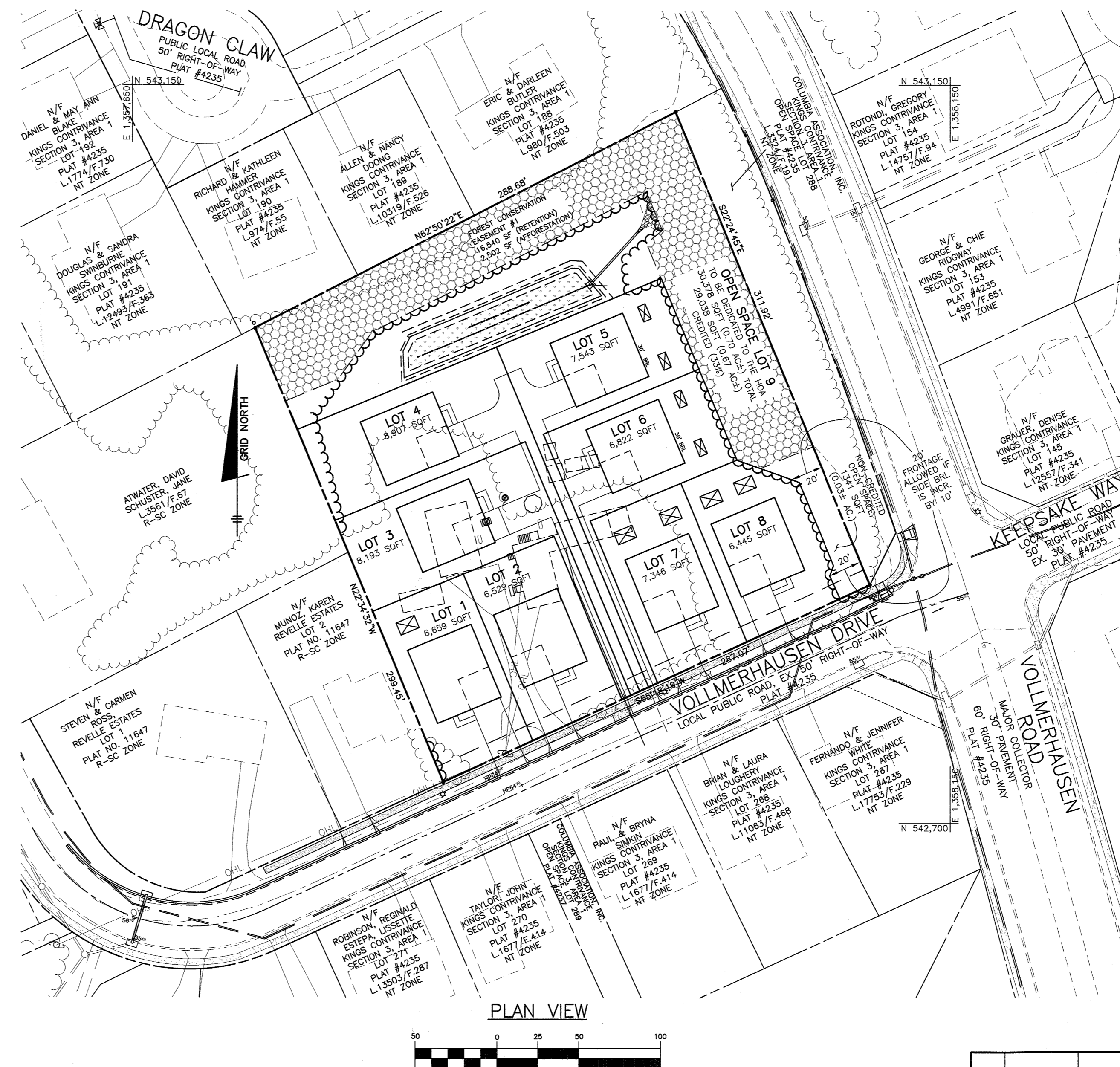
Lot	Total Area (sf)	Flagstem Area (sf)	Min Lot Area (sf)
3	8,193	646	7,547
4	8,907	1,005	7,902
5	7,543	1,003	6,540
6	6,822	642	6,180

Note: Minimum lot size per zoning regulations (Section 110.0.D.2) is 6,000 sf.

SITE DATA TABULATION

- GENERAL SITE DATA
 - PRESENT ZONING: R-SC
 - LOCATION: TAX MAP 42 - GRID 22 - PARCEL 167
 - APPLICABLE DPZ FILE REFERENCES: ECP-19-042, S-19-08, WP-19-081
 - DEED REFERENCE: L18641, F.320
 - PROPOSED USE OF SITE: 8 SINGLE FAMILY DETACHED RESIDENCES, & 1 OPEN SPACE LOT
- AREA TABULATION
 - TOTAL AREA OF SITE 2.02 AC±
 - AREA OF 100 YEAR FLOODPLAIN (APPROX.) 0.00 AC
 - AREA OF STEEP SLOPES (25% OR GREATER) 0.00 AC
 - NET AREA OF SITE 2.02 AC±
 - AREA OF THIS PLAN SUBMISSION 2.02 AC±
 - LIMIT OF DISTURBANCE (APPROX.) 1.73 AC±
 - AREA OF PROPOSED BUILDABLE LOTS 0.72 AC±
 - AREA OF OPEN SPACE LOTS 0.70 AC±
 - AREA OF PROPOSED PUBLIC ROAD 0.00 AC
 - AREA OF PROPOSED PUBLIC R/W DEDICATION 0.00 AC
- DENSITY TABULATION
 - NET AREA OF SITE 2.02 AC±
 - TOTAL NUMBER OF LOTS ALLOWED PER ZONING 8
 - 4 UNITS PER NET ACRE ALLOWED BY RIGHT
- UNIT/LOT TABULATION
 - REQUIRED OPEN SPACE (FULL OBLIGATION) 0.51 AC±
 - OPEN SPACE PROVIDED 0.70 AC±
 - NON-CREDIT OPEN SPACE 0.03 AC±
 - PERCENT OF CREDITED OPEN SPACE PROVIDED 34%
 - FEE-IN-LIEU OF OPEN SPACE REQUIREMENT NA

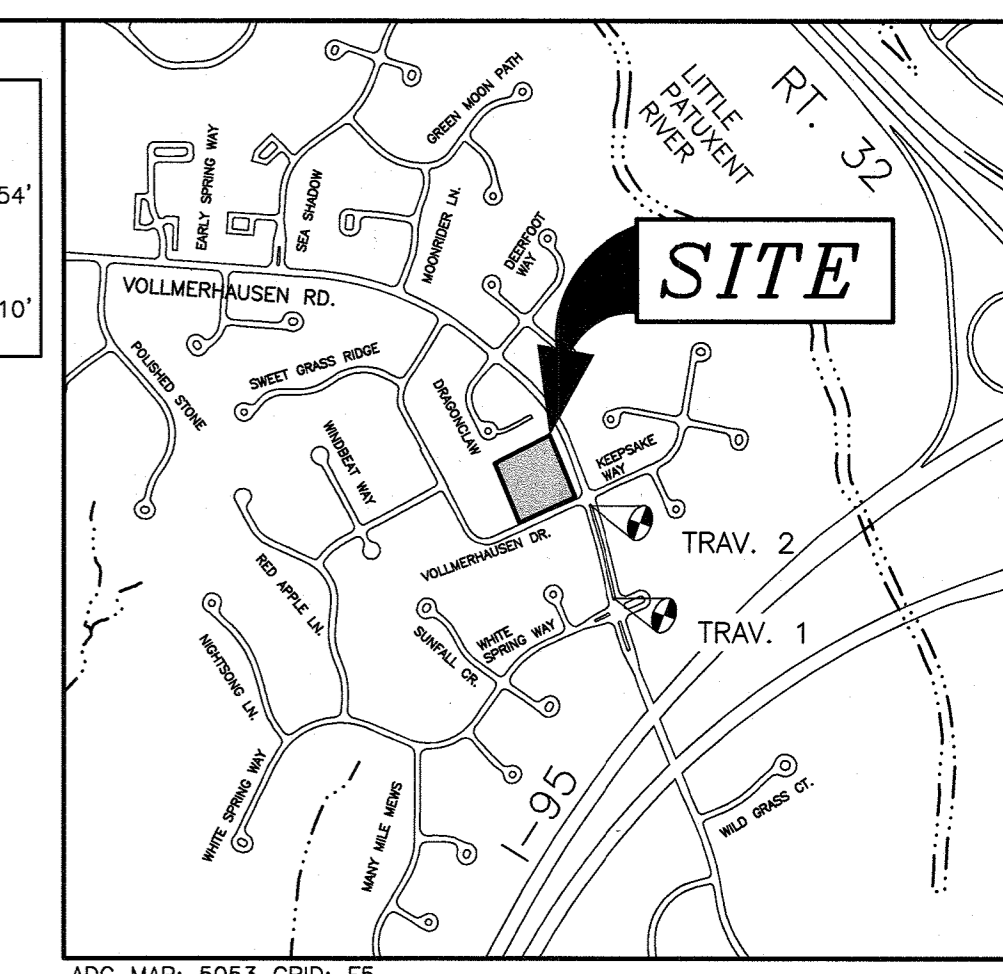
TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY
PLANNING DIRECTOR
2-3-2020
66 DATE



Total Number of Lots/Units Proposed	8
Total Number of MIHUs Required	1
Number of MIHUs Provided Onsite (Exempt from APFO allocations)	0
Number of APFO Allocations Required (Remaining Lots/Units)	7
MIHU Fee-in-Lieu (Indicate Lot/Unit numbers)	YES LOTS 1-8

ESD SWM PRACTICES				
LOT NO.	ADDRESS	MICRO-BIORETENTION (M-6) QUANTITY	DRY WELL (M-5) QUANTITY	NON-ROOFTOP DISCONNECT (N-2) QUANTITY
1	VOLLMERHAUSEN DR. COLUMBIA, MD 21046	0	1	1
2	VOLLMERHAUSEN DR. COLUMBIA, MD 21046	0	0	1
3	VOLLMERHAUSEN DR. COLUMBIA, MD 21046	0	0	0
4	VOLLMERHAUSEN DR. COLUMBIA, MD 21046	0	0	0
5	VOLLMERHAUSEN DR. COLUMBIA, MD 21046	0	2	0
6	VOLLMERHAUSEN DR. COLUMBIA, MD 21046	0	2	0
7	VOLLMERHAUSEN DR. COLUMBIA, MD 21046	0	2	1
8	VOLLMERHAUSEN DR. COLUMBIA, MD 21046	0	2	1
O.S. 9	VOLLMERHAUSEN DR. COLUMBIA, MD 21046	1	0	0

TRAV. 1 REBAR AND CAP	N542370.1616', E1358287.1054'	ELEVATION: 361.128'
TRAV. 2 REBAR AND CAP	N542808.3770', E1358170.8510'	ELEVATION: 356.841'



VICINITY MAP
SCALE: 1" = 2000'

LEGEND

- EXISTING CONTOURS
- SOILS DELINEATION LINE
- SOILS TYPE
- PROPOSED BOUNDARY
- ADJACENT PROPERTY OWNER
- EXISTING TREELINE
- EXISTING STRUCTURES
- SPECIMEN TREE TO REMAIN
- SPECIMEN TREE TO BE REMOVED
- SPECIMEN TREE TO REMAIN CRITICAL ROOT ZONE
- PROPOSED CONTOURS
- PROPOSED TREELINE
- PROPOSED SEWER
- PROPOSED WATER
- PROPOSED MICRO-BIORETENTION FACILITY (M-6)
- PROPOSED DRYWELL (M-5)
- NON-ROOFTOP DISCONNECTION AREA (N-2)
- SWM DRAINAGE AREA TO MBR-1
- SWM DRAINAGE AREA TO DRYWELLS
- DRAINAGE AREA DESIGNATION
- PROPOSED BORING LOCATION

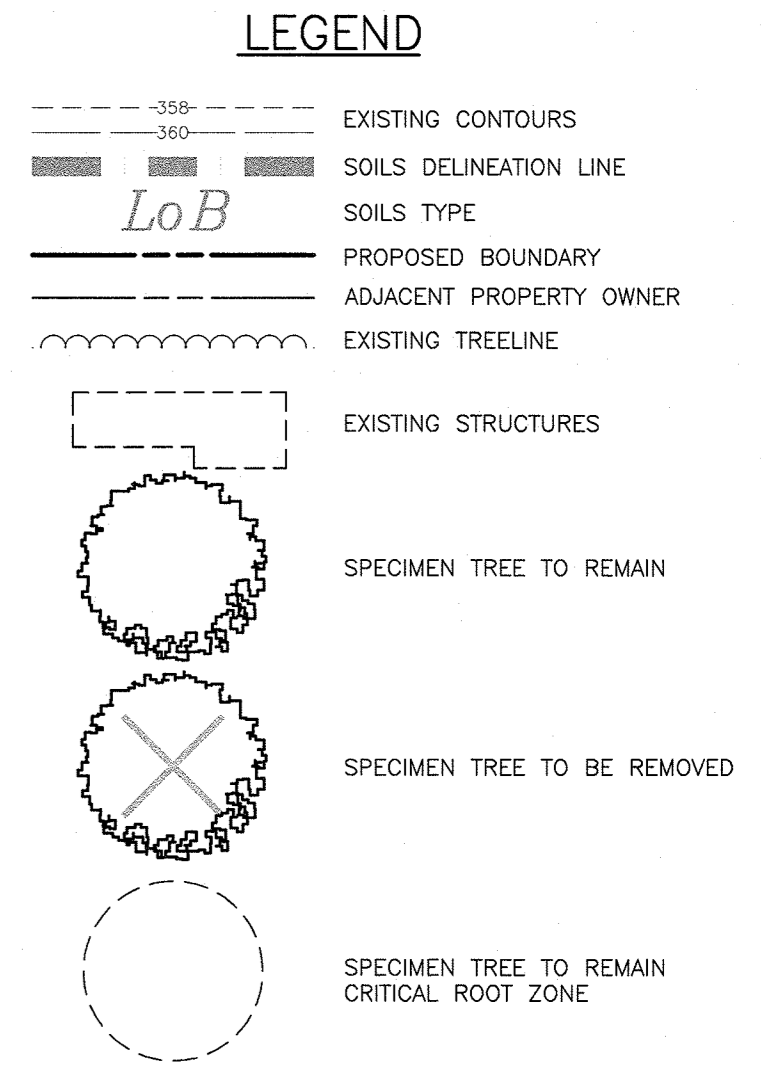
NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC.

8450 BALTHORE NATIONAL PIKE SUITE 3154 ELLICOTT CITY, MARYLAND 21043
(P) 410-465-8105 (F) 410-465-8644
WWW.BE-CIVILENGINEERING.COM

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. 45577, Expiration Date: 6-08-2020.

OWNER/DEVELOPER: DEVELOPMENT PARTNERS, LLC 9693 GERWIG LANE SUITE L COLUMBIA, MARYLAND 21046 410-792-2565	HUNTINGTON POINT LOTS 1 thru 8 and OPEN SPACE LOT 9
9454 VOLLMERHAUSEN DR. COLUMBIA, MARYLAND 21046 TAX MAP: 42 - GRID: 22 - PARCEL: 167 ZONED: R-SC ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND	
PRELIMINARY PLAN COVER SHEET	
RELEVANT FILE NUMBERS: ECP-19-042, S-19-008, WP-19-081, DMV2-20-006	DATE: JANUARY, 2020 BEI PROJECT NO. 2952
DESIGN: MP/MR DRAFT: MP/MR	SCALE: AS SHOWN SHEET 1 OF 9



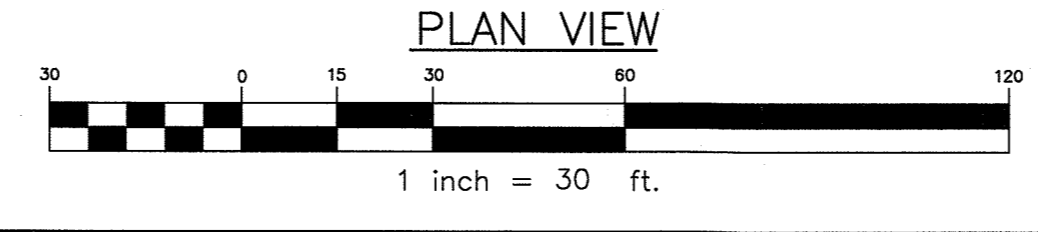
Specimen Tree Chart

No.	Species	Size (in. dbh)	CRZ (ft. radius)	Condition	Status
1	Tulip Poplar	55	82.5	Fair, Some Dieback	TBR
2	Tulip Poplar	38	57	Fair, Limited Crown	TBR
3	Tulip Poplar	34	51	Fair, Limited Crown	TBR
4	Tulip Poplar	32	48	Fair, Limited Crown	TBR
5	Tulip Poplar	35	52.5	Fair, Limited Crown	TBR
6	Tulip Poplar	33	49.5	Fair, Limited Crown	SAVE
7	Tulip Poplar	30	45	Fair, Limited Crown	TBR
8	Tulip Poplar	31	46.5	Fair, Limited Crown	TBR
9	Tulip Poplar	43	64.5	Fair, Limited Crown	TBR
10	Tulip Poplar	31.5	47.25	Fair, Limited Crown	TBR
11	Tulip Poplar	39	58.5	Fair, Limited Crown	TBR
12	Tulip Poplar	34.5	51.75	Fair, Limited Crown	TBR
13	Tulip Poplar	46.5	69.75	Fair, Limited Crown	TBR
14	Tulip Poplar	32	48	Fair, Limited Crown	TBR
15	Tulip Poplar	35.5	53.25	Fair, Limited Crown	TBR
16	Tulip Poplar	37	55.5	Fair, Limited Crown	TBR
17	Tulip Poplar	30	45	Fair, Limited Crown	TBR
18	Tulip Poplar	48	72	Fair, Limited Crown	SAVE
19	Tulip Poplar	32.5	48.75	Fair, Limited Crown	SAVE
20	Tulip Poplar	31.5	47.25	Fair, Limited Crown	SAVE
21	Tulip Poplar	34	51	Fair, Limited Crown	SAVE
22	Tulip Poplar	30	45	Fair, Limited Crown	TBR
23	Tulip Poplar	39.5	59.25	Fair, Limited Crown	TBR
24	Tulip Poplar	30	45	Fair, Limited Crown	TBR
25	Willow Oak	38	57	Fair, Some Dieback, CRZ Impact	TBR
26	Tulip Poplar	39.5	59.25	Fair, Some Dieback, CRZ Impact	TBR
27	Tulip Poplar	47	70.5	Fair, Some Dieback, CRZ Impact	TBR

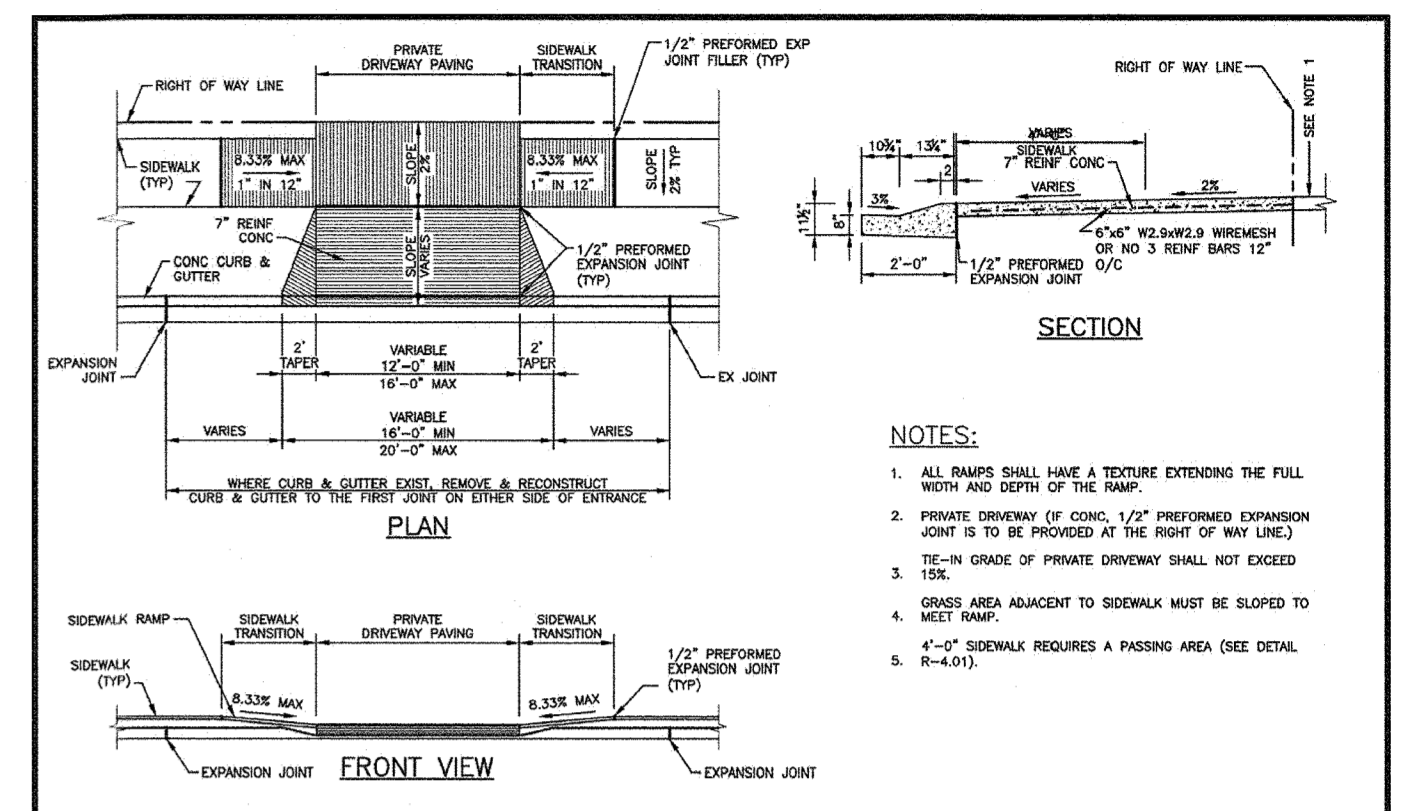
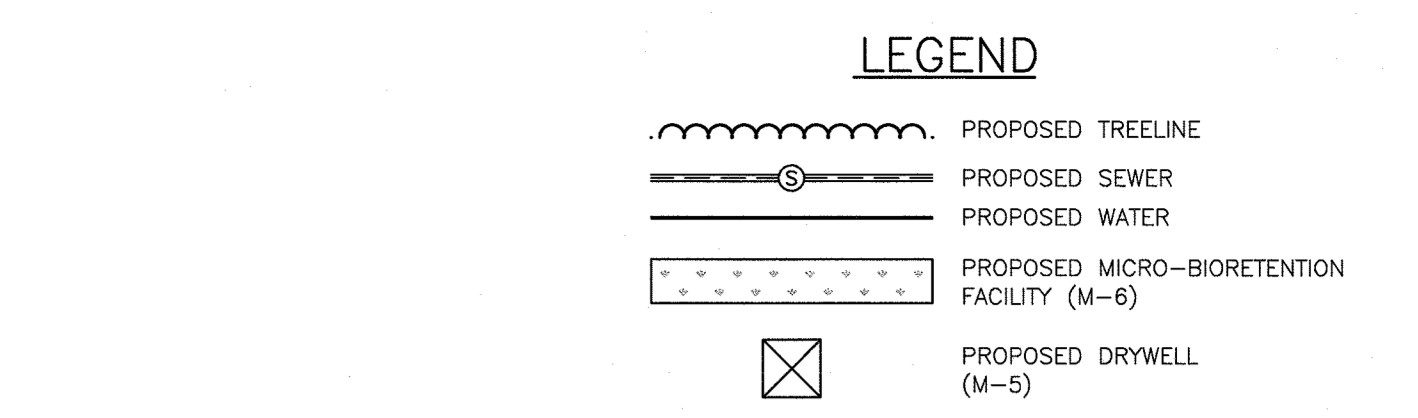
SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND

SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALT. GROUP	NAME	K-VALUE
LoB		B		LEGORE-MONTALTO-URBAN LAND COMPLEX 0 TO 8 PERCENT SLOPES	0.64

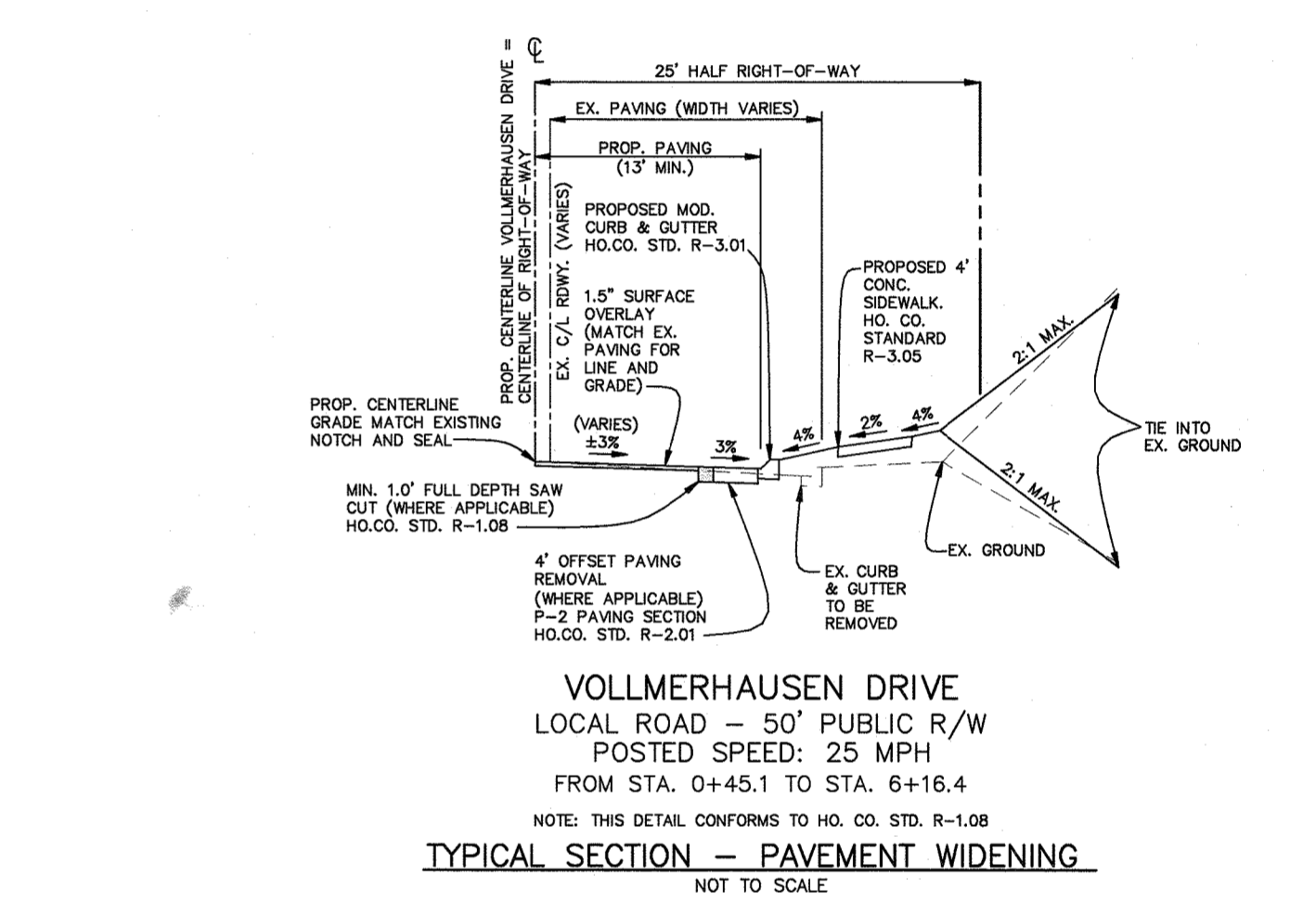
HIGHLY ERODIBLE SOILS ON SITE.
THE ENTIRE SITE IS THE SAME SOIL (LoB).
HIGHLY ERODIBLE SOILS: K>0.35 AND >5% SLOPES, OR SOILS >15% SLOPES.



NO.		DATE		REVISION	
BENCHMARK ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE SUITE 3154 ELLICOTT CITY, MARYLAND 21043 (P) 410-485-8105 (F) 410-485-8644 WWW.BEI-CIVILENGINEERING.COM					
OWNER/DEVELOPER: DEVELOPMENT PARTNERS, LLC 9693 GERWIC LANE SUITE L COLUMBIA, MARYLAND 21046 410-792-2565					
HUNTINGTON POINT LOTS 1 thru 8 and OPEN SPACE LOT 9 9454 VOLLMERHAUSEN DR. COLUMBIA, MARYLAND 21046 TAX MAP: 42 - GRID: 22 PARCEL: 167 ZONED: R-SC ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND					
PRELIMINARY PLAN EXISTING CONDITIONS PLAN					
RELEVANT FILE NUMBERS: ECP-19-042, S-19-008, WP-19-081, DMV2-20-006		DATE: JANUARY, 2020		BEI PROJECT NO. 2952	
DESIGN: MP/MR DRAFT: MP/MR		SCALE: AS SHOWN		SHEET 2 OF 9	



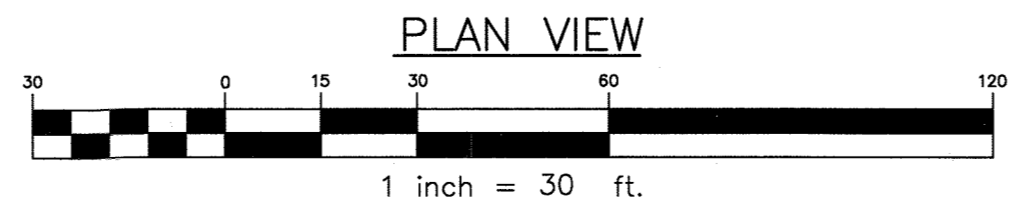
Howard County, Maryland
Department of Public Works
RESIDENTIAL DRIVEWAY ENTRANCE
Modified Combination Curb and Gutter
Sidewalk Setback from Curb
Detail
R-6.03



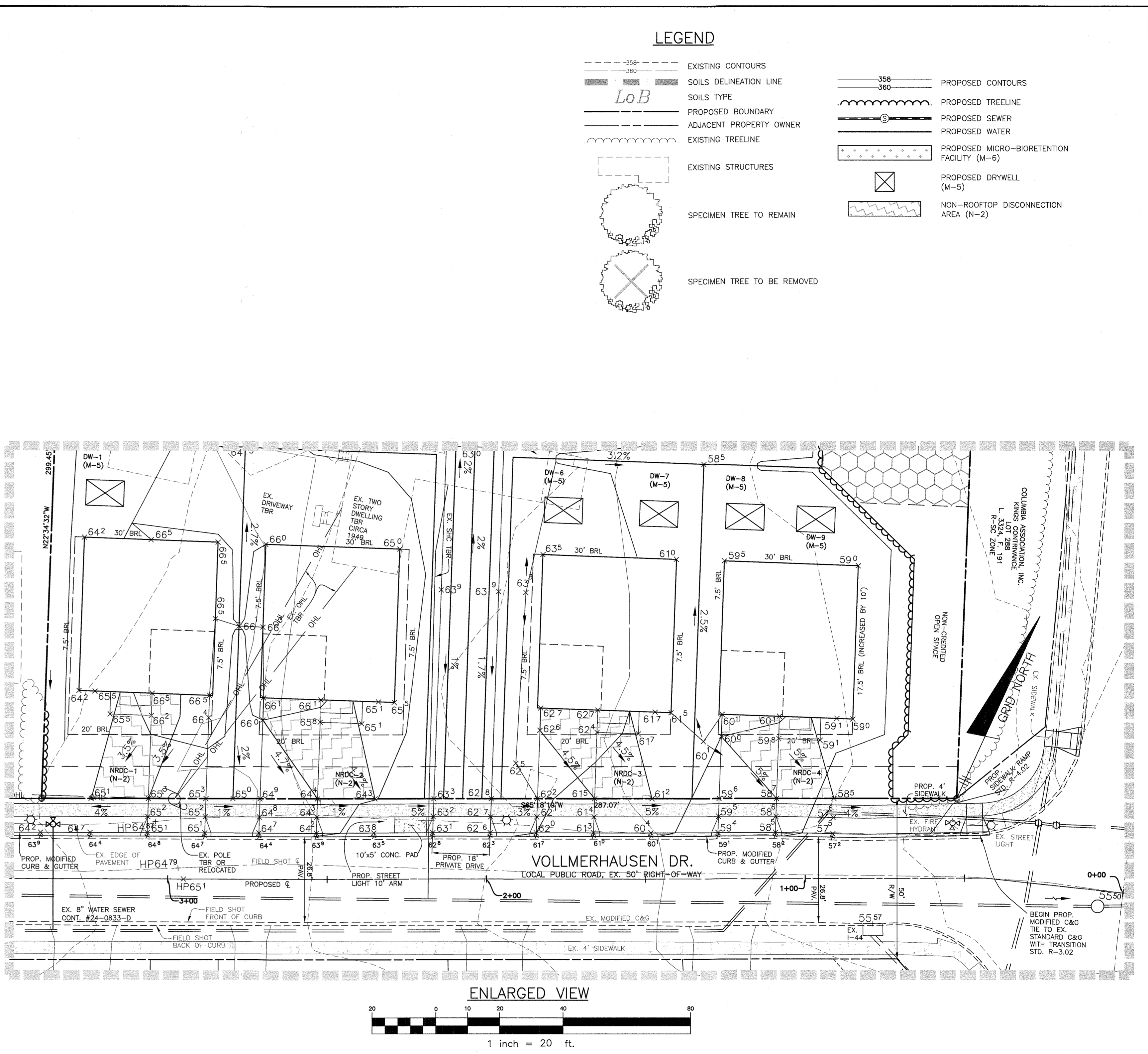
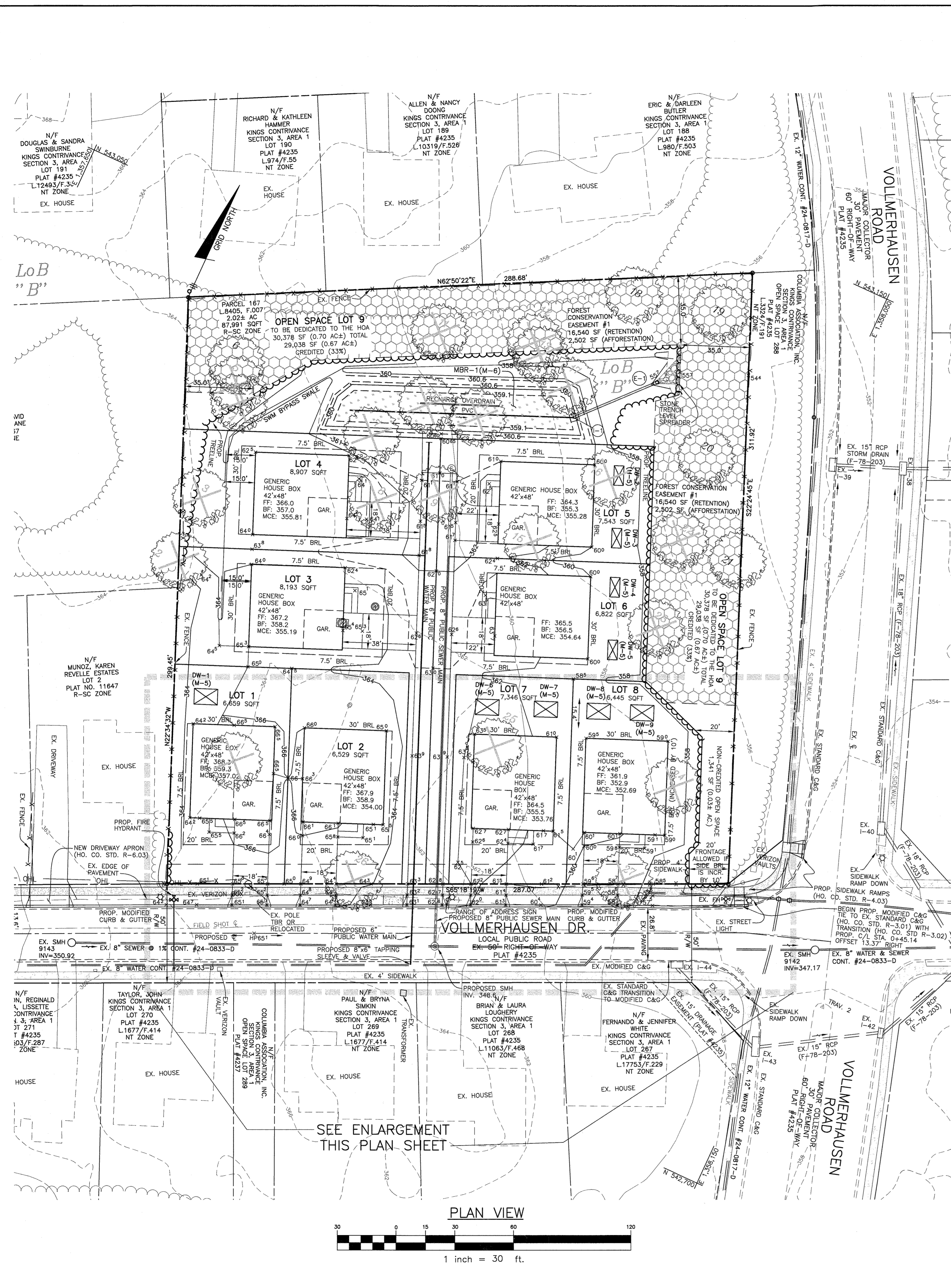
STREET LIGHT SCHEDULE			
SYMBOL	STREET	LOCATION	NOTES
☀	VOLLMERHAUSEN DRIVE	(EXISTING) C/L STA. 0+43.3' 16.6' OFFSET RT.	LED 100 COLONIAL POST TOP FIXTURE MOUNTED ON A 14" BLACK FIBERGLASS POLE
☀	VOLLMERHAUSEN DRIVE	C/L STA. 1+93.8 18.4' OFFSET RT.	LED 100 COLONIAL POST TOP FIXTURE MOUNTED ON A 14" BLACK FIBERGLASS POLE
☀	VOLLMERHAUSEN DRIVE	C/L STA. 3+44.9 16.4' OFFSET RT.	LED 100 COLONIAL POST TOP FIXTURE MOUNTED ON A 14" BLACK FIBERGLASS POLE

<p>NO. DATE REVISION</p>	
<p>BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE SUITE 3154 ELICOTT CITY, MARYLAND 21043 (P) 410-485-6105 (F) 410-485-8644 WWW.BEI-CIVILENGINEERING.COM</p>	
<p>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. 45577, Expiration Date: 6-08-2020.</p>	
<p>OWNER/DEVELOPER: DEVELOPMENT PARTNERS, LLC 9693 GERWIG LANE SUITE L COLUMBIA, MARYLAND 21046 410-792-2565</p>	<p>HUNTINGTON POINT LOTS 1 thru 8 and OPEN SPACE LOT 9 9454 VOLLMERHAUSEN DR. COLUMBIA, MARYLAND 21046 TAX MAP: 42 - GRID: 22 - PARCEL: 167 ZONED: R-5C ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND</p>
<p>PRELIMINARY PLAN LAYOUT PLAN</p>	
<p>RELEVANT FILE NUMBERS: ECP-19-042, S-19-008, WP-19-081, DMV2-20-006</p>	<p>DATE: JANUARY, 2020 BEI PROJECT NO. 2952</p>
<p>DESIGN: MP/MR DRAFT: MP/MR</p>	<p>SCALE: AS SHOWN SHEET 3 OF 9</p>

SEE SHEET 8 FOR
MAINTENANCE OF
TRAFFIC DETAILS



TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY
PLANNING DIRECTOR
DATE: 2-3-2020



LEGEND

	EXISTING CONTOURS		PROPOSED CONTOURS
	SOILS DELINEATION LINE		PROPOSED TREELINE
	SOILS TYPE		PROPOSED SEWER
	PROPOSED BOUNDARY		PROPOSED WATER
	ADJACENT PROPERTY OWNER		PROPOSED MICRO-BIORETENTION FACILITY (M-6)
	EXISTING TREELINE		PROPOSED DRYWELL (M-5)
	EXISTING STRUCTURES		NON-ROOFTOP DISCONNECTION AREA (N-2)
	SPECIMEN TREE TO REMAIN		
	SPECIMEN TREE TO BE REMOVED		

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY

[Signature]
PLANNING DIRECTOR

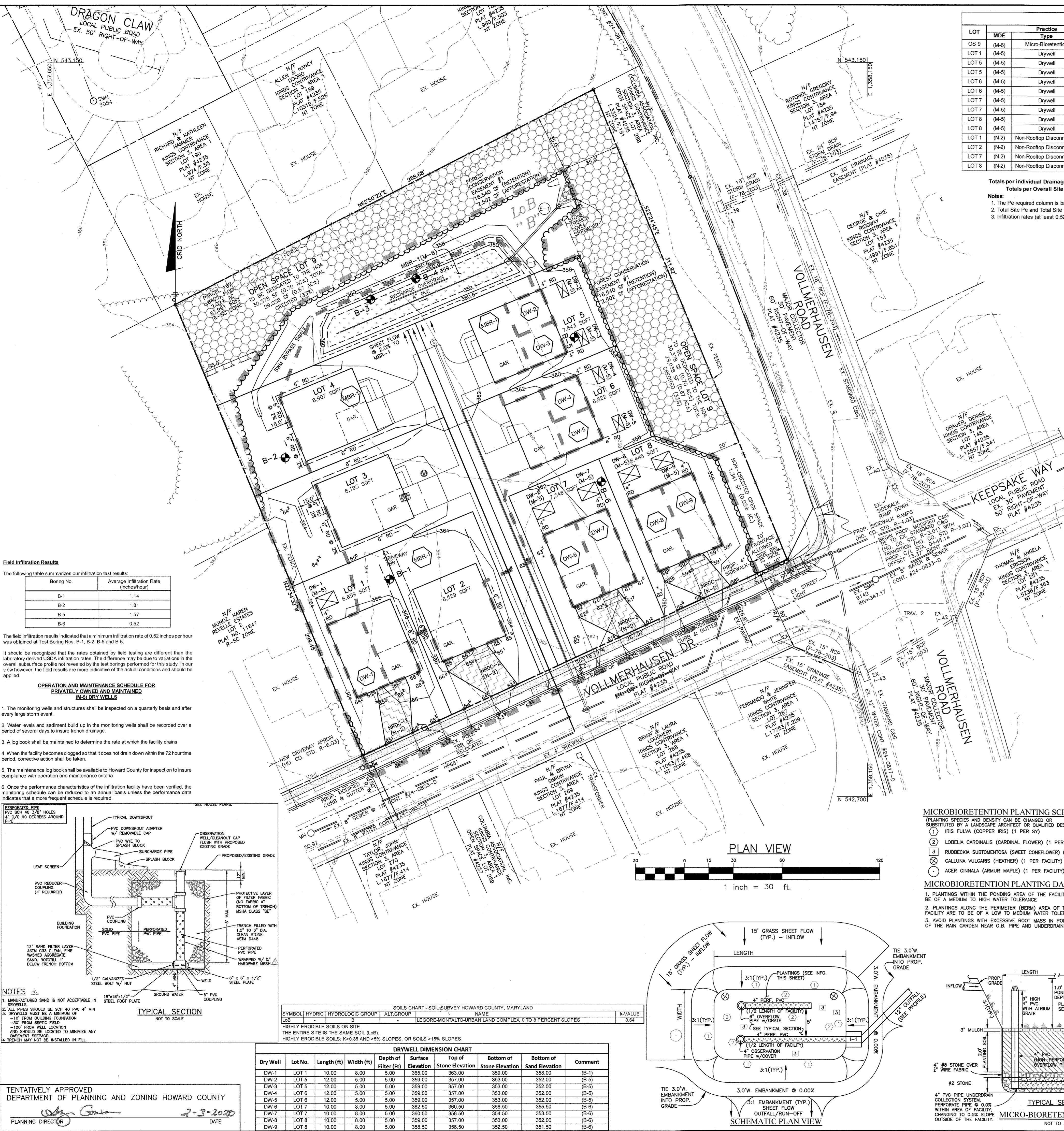
2-3-2020
DATE

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND

SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALT.GROUP	NAME	k-VALUE
LoB		B		LEGORE-MONTALTO-URBAN LAND COMPLEX 0 TO 8 PERCENT SLOPES	0.64

HIGHLY ERODIBLE SOILS ON SITE
THE ENTIRE SITE IS THE SAME SOIL (LoB).
HIGHLY ERODIBLE SOILS: K>0.35 AND >5% SLOPES, OR SOILS >15% SLOPES.

NO.	DATE	REVISION
<p>BENCHMARK ENGINEERING, INC. 840 BALTIMORE NATIONAL PIKE SUITE 3154 ELLICOTT CITY, MARYLAND 21043 (P) 410-485-8105 (F) 410-485-6844 WWW.BE-CIVLENGINEERING.COM</p>		<p>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. 45577, Expiration Date: 6-08-2020.</p> <p><i>[Signature]</i> PROFESSIONAL ENGINEER 1/29/20</p>
<p>OWNER/DEVELOPER: DEVELOPMENT PARTNERS, LLC 9693 GERWIG LANE SUITE 100 COLUMBIA, MARYLAND 21046 410-792-2565</p>		<p>HUNTINGTON POINT LOTS 1 thru 8 and OPEN SPACE LOT 9</p> <p>9454 VOLLMERHAUSEN DR. COLUMBIA, MARYLAND 21046 TAX MAP: 42 - GRID: 22 - PARCEL: 167 ZONED: R-SC ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND</p>
<p>RELEVANT FILE NUMBERS: ECP-19-042, S-19-008, WP-19-081, DMV2-20-006</p>		<p>PRELIMINARY PLAN GRADING PLAN</p>
DESIGN: MP/MR	DRAFT: MP/MR	<p>DATE: JANUARY, 2020 SCALE: AS SHOWN</p> <p>BEI PROJECT NO. 2952 SHEET 4 OF 9</p>

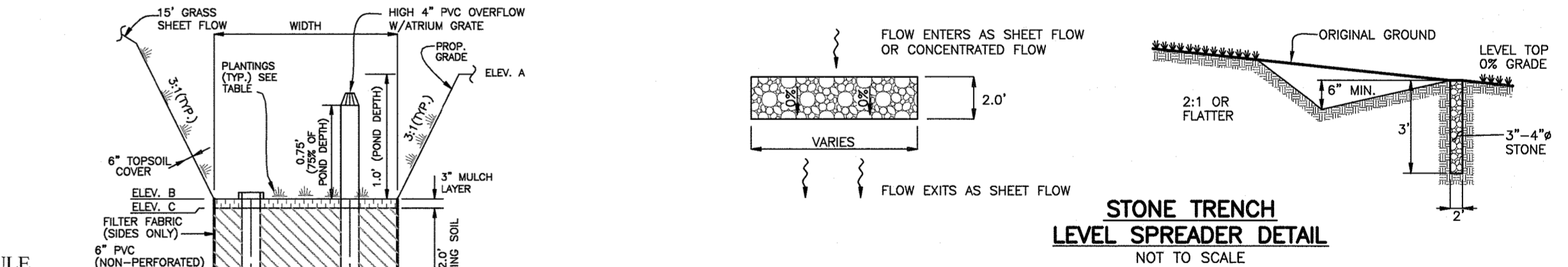
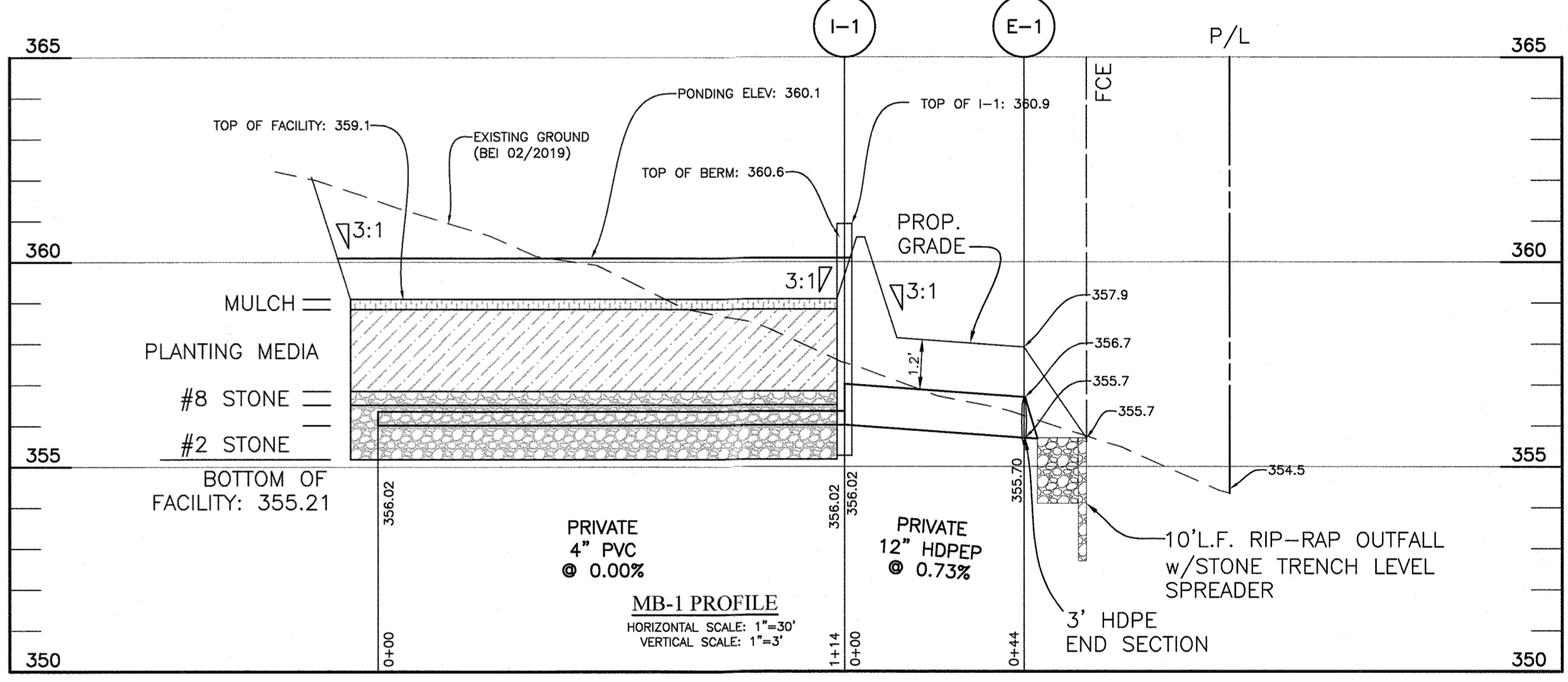
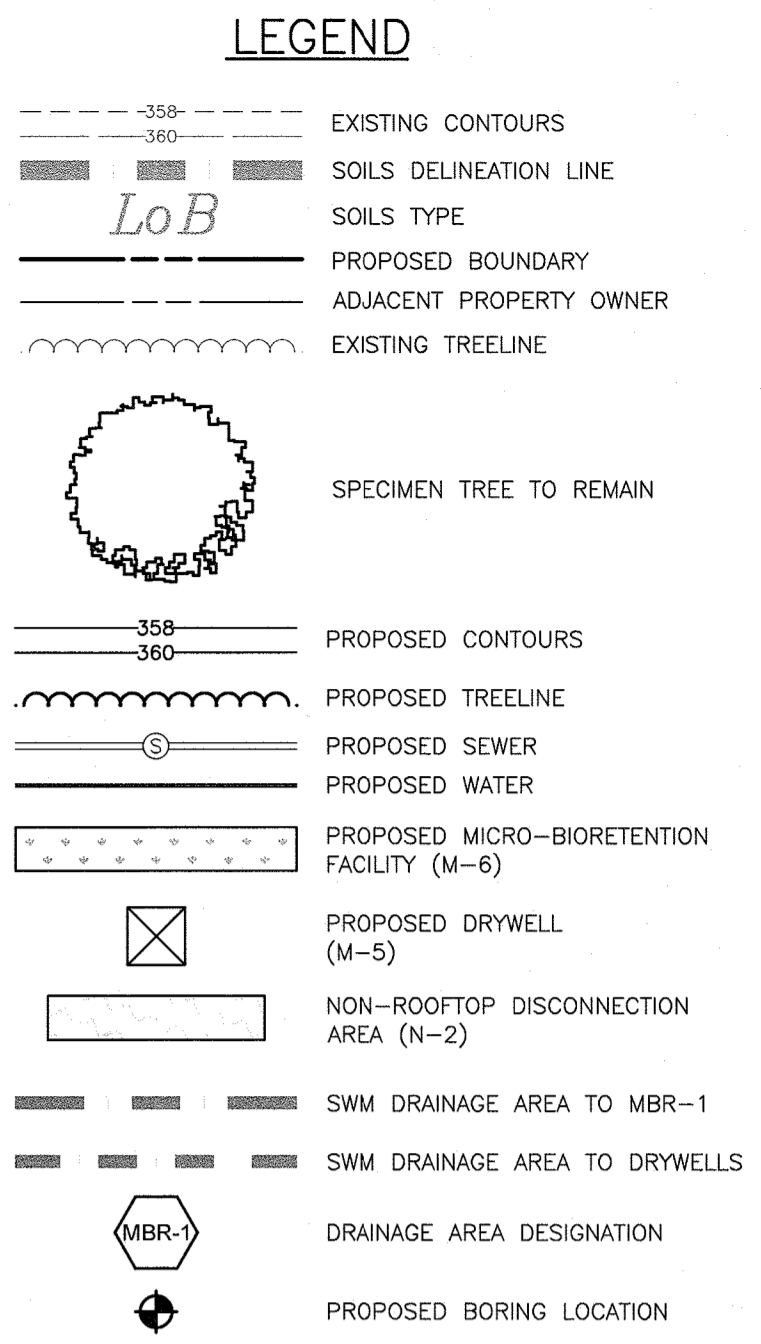


LOT	MDE	Practice Type	No.	DA (sf)	Imp Area (sf)	% Imp	Rv	Pe Required	A1 (sf)		ESDv (cf)		Pe Provided	Rev		Ownership	
									Required	Provided	Required	Provided		Required	Provided		
OS 9	(M-6)	Micro-Bioretentation	MB-1	28,421	14,057	49%	0.50	1.8	568.42	1833.3	PASS	2111	2,857	2.4	593	609	H.O.A.
LOT 1	(M-5)	Drywell	DW-1	1,008	1,008	100%	0.95	1.8	0	96	PASS	144	192	2.4			Private
LOT 5	(M-5)	Drywell	DW-2	504	504	100%	0.95	1.8	0	50	PASS	72	100	2.5			Private
LOT 5	(M-5)	Drywell	DW-3	504	504	100%	0.95	1.8	0	50	PASS	72	100	2.5			Private
LOT 6	(M-5)	Drywell	DW-4	504	504	100%	0.95	1.8	0	50	PASS	72	100	2.5			Private
LOT 6	(M-5)	Drywell	DW-5	504	504	100%	0.95	1.8	0	50	PASS	72	100	2.5			Private
LOT 7	(M-5)	Drywell	DW-6	1,008	1,008	100%	0.95	1.8	0	96	PASS	144	192	2.4			Private
LOT 7	(M-5)	Drywell	DW-7	1,008	1,008	100%	0.95	1.8	0	96	PASS	144	192	2.4			Private
LOT 8	(M-5)	Drywell	DW-8	1,008	1,008	100%	0.95	1.8	0	96	PASS	144	192	2.4			Private
LOT 8	(M-5)	Drywell	DW-9	1,008	1,008	100%	0.95	1.8	0	96	PASS	144	192	2.4			Private
LOT 1	(N-2)	Non-Rooftop Disconnection	NRDC-1	644	180	28%	0.30	1.8	180	464	N/A	16	12	1.0			Private
LOT 2	(N-2)	Non-Rooftop Disconnection	NRDC-2	773	342	44%	0.45	1.8	342	431	N/A	29	16	1.0			Private
LOT 7	(N-2)	Non-Rooftop Disconnection	NRDC-3	699	313	45%	0.45	1.8	313	386	N/A	26	15	1.0			Private
LOT 8	(N-2)	Non-Rooftop Disconnection	NRDC-4	650	293	45%	0.45	1.8	293	357	N/A	25	14	1.0			Private

Totals per Individual Drainage Area	38,243	22,241	58%	0.57								3212	4273				
Totals per Overall Site	70,208	26,534	38%	0.39	1.8							4109	4273				

- Notes:
- The Pe required column is based on total site Pe calculation. The Rv is based on individual drainage area percent impervious (per DCD).
 - Total Site Pe and Total Site ESDv numbers are based on the LOD within the Effective Area.
 - Infiltration rates (at least 0.52 inches/hour) in borings B-1, B-2, B-5 and B-6 suggest infiltration practices are acceptable, see Geotechnical Report.

MATERIAL	SPECIFICATION	SIZE	NOTES:
PLANTINGS	SEE APPENDIX A; TABLE A.4	N/A	PLANTINGS ARE SITE SPECIFIC
PLANTING SOIL (2.0' TO 4.0' DEEP)	LOAMY SAND 60-65% COMPOST 35-40% OR SANDY LOAM 30% COMPOST 30% & COMPOST 40%	N/A	USDA SOIL TYPES: LOAMY SAND OR SANDY LOAM; CLAY CONTENT <5%
ORGANIC CONTENT	MIN 10% BY DRY WEIGHT ASTM D 2974		
MULCH	SHREDED HARDWOOD	N/A	AGED 6 MONTHS, MINIMUM, NO PINE OR WOOD CHIPS
GEOTEXTILE (CLASS "C")		N/A	PE TYPE 1 NONWOVEN
GEOTEXTILE (1/4" WIRE MESH)		1/4" WIRE MESH	1/4" WIRE MESH
UNDERDRAIN GRAVEL	ASTM M-43	NO. 57 OR NO. 6 0.375" TO 0.750"	
UNDERDRAIN PIPING	7588 TYPE PC38 OR AHS10 M-278	1" TO 4" RIGID SCH. 40 PVC, SDR35 OR HDPE	3/8" PEPP @ 6" O/C, 4 HOLES PER ROW, MINIMUM OF 3" OF GRAVEL OVER PIPES, NOT NECESSARY UNDERDRAIN PIPES SHALL BE WRAPPED WITH 1/4-INCH GALVANIZED HARDWARE CLOTH
IMPERVIOUS LINER	ASTM-D-4833 (THICKNESS) ASTM-D-412 (TENSILE STRENGTH 1,100 LB.; ELONGATION 200%) ASTM-D-624 (TEAR RESISTANCE - 150 LB./IN) ASTM-D-471 (WATER ADSORPTION: +8 TO +25 MASS)	30 MIL THICK	LINER TO BE ULTRAVIOLET RESISTANT, A GEOTEXTILE FABRIC SHOULD BE USED TO PROTECT THE LINER FROM PUNCTURE.
GEOTEXTILE (BELOW IMPERV. LINER)	ASTM-D-4833 (PUNCTURE STRENGTH 1250 LB) ASTM-D-4832 (TENSILE STRENGTH 300 LB)		



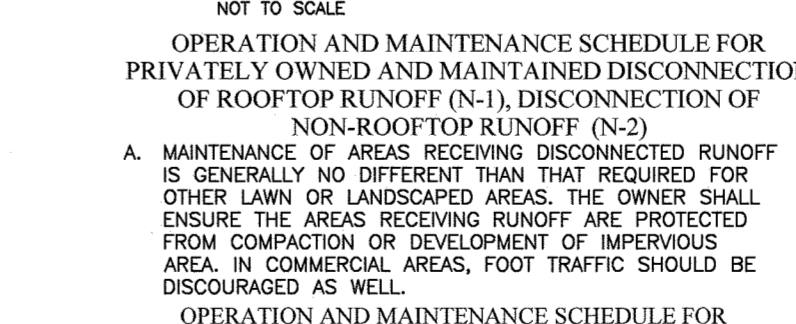
MICROBIORETENTION PLANTING SCHEDULE

- PLANTING SPECIES AND DENSITY CAN BE CHANGED OR SUBSTITUTED BY A LANDSCAPE ARCHITECT OR QUALIFIED DESIGNER
- IRIS FULVA (COPPER IRIS) (1 PER SY)
 - LOBELIA CARDINALIS (CARDINAL FLOWER) (1 PER SY)
 - RUBRICKA SUBTANTOSA (SWEET CONEFLOWER) (1 PER 2 SY)
 - CALLUNA VULGARIS (HEATHER) (1 PER FACILITY)
 - ACER GINNALA (ARMOUR MAPLE) (1 PER FACILITY)

MICROBIORETENTION PLANTING DATA

- PLANTINGS WITHIN THE PONDING AREA OF THE FACILITY ARE TO BE OF A MEDIUM TO HIGH WATER TOLERANCE.
- PLANTINGS ALONG THE PERIMETER (BERM) AREA OF THE FACILITY ARE TO BE OF A LOW TO MEDIUM WATER TOLERANCE.
- AVOID PLANTINGS WITH EXCESSIVE ROOT MASS IN POND AREA OF THE RAIN GARDEN NEAR O.B. PIPE AND UNDERDRAIN.

TYPICAL PROFILE MICRO-BIORETENTION DETAILS



OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OF ROOFTOP RUNOFF (N-1), DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)

- MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE OWNER SHALL ENSURE THE AREAS RECEIVING RUNOFF ARE PROTECTED FROM COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREAS, FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.
- OPERATION AND MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)
 - THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANTING 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 FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME 6, TABLE A-1 AND 2.
 - 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 PLANTING MATERIAL. MATERIAL BEYOND TREATMENT SHALL BE REPLACED WITH PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL. TREAT DISEASED TREES AND SHRUBS, AND DISPLACE ALL DEFICIENT STAKES AND WIRES.
 - THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PERFORATE PIPE @ 0.06\"/>
- THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS WITHIN 30 DAYS OF OCCURRENCE PER MONTH AND AFTER EACH HEAVY STORM.

Field Infiltration Results

The following table summarizes our infiltration test results:

Boring No.	Average Infiltration Rate (inches/hour)
B-1	1.14
B-2	1.81
B-5	1.57
B-6	0.52

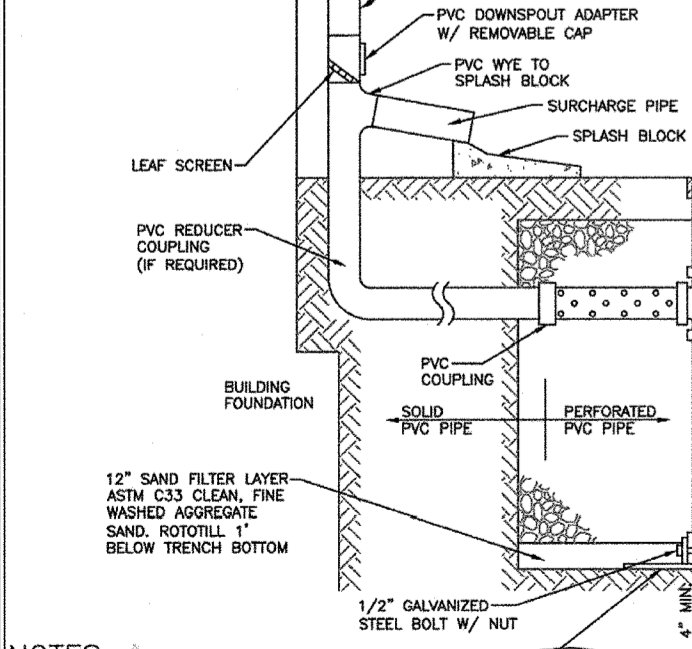
The field infiltration results indicated that a minimum infiltration rate of 0.52 inches per hour was obtained at Test Boring Nos. B-1, B-2, B-5 and B-6.

It should be recognized that the rates obtained by field testing are different than the laboratory derived USDA infiltration rates. The difference may be due to variations in the overall subsurface profile not revealed by the test borings performed for this study. In our view however, the field results are more indicative of the actual conditions and should be applied.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED (M-6) DRY WELLS

- The monitoring wells and structures shall be inspected on a quarterly basis and after every large storm event.
- Water levels and sediment build up in the monitoring wells shall be recorded over a period of several days to insure trench drainage.
- A log book shall be maintained to determine the rate at which the facility drains.
- When the facility becomes clogged so that it does not drain within the 72 hour time period, corrective action shall be taken.
- The maintenance log book shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria.
- Once the performance characteristics of the infiltration facility have been verified, the monitoring schedule can be reduced to an annual basis unless the performance data indicates that a more frequent schedule is required.

PERFORATED PIPE



NOTES

- MANUFACTURED SAND IS NOT ACCEPTABLE IN DRYWELLS.
- ALL PIPES SHOULD BE SCH 40 PVC 4\"/>

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND

SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALTIORQUIN	NAME	K VALUE
LOB	B			LEGOMONTALTOURBAN LAND COMPLEX 0 TO 8 PERCENT SLOPES	0.64

DRYWELL DIMENSION CHART

Dry Well	Lot No.	Length (ft)	Width (ft)	Depth of Filter (ft)	Surface Elevation	Top of Stone Elevation	Bottom of Stone Elevation	Bottom of Sand Elevation	Comment
DW-1	LOT 1	10.00	8.00	5.00	365.00	363.00	359.00	358.00	(B-1)
DW-2	LOT 5	12.00	5.00	5.00	369.00	367.00	363.00	362.00	(B-5)
DW-3	LOT 4	12.00	5.00	5.00	369.00	367.00	363.00	362.00	(B-5)
DW-4	LOT 6	12.00	5.00	5.00	359.00	357.00	353.00	352.00	(B-6)
DW-5	LOT 6	12.00	5.00	5.00	359.00	357.00	353.00	352.00	(B-5)
DW-6	LOT 7	10.00	8.00	5.00	362.50	360.50	356.50	355.50	(B-6)
DW-7	LOT 7	10.00	8.00	5.00	362.50	360.50	356.50	355.50	(B-6)
DW-8	LOT 8	10.00	8.00	5.00	359.00	357.00	353.00	352.00	(B-6)
DW-9	LOT 8	10.00	8.00	5.00	358.50	356.50	352.50	351.50	(B-6)

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY
PLANNING DIRECTOR: [Signature] DATE: 2-3-2020

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HUNTINGTON POINT
LOTS 1 thru 8 and OPEN SPACE LOT 9
9454 VOLLMERHAUSEN DR. COLUMBIA, MARYLAND 21046
TAX MAP: 42 - GRID: 22 - PARCEL: 167
ZONED: R-5C
ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND

PRELIMINARY PLAN
STORMWATER MANAGEMENT PLAN

RELEVANT FILE NUMBERS:
ECP-19-042, S-19-008,
WP-19-081, DW2-20-006

DATE: JANUARY, 2020
SCALE: AS SHOWN

BEI PROJECT NO. 2952
SHEET 5 OF 9



LEGEND

- 358 --- 360 --- EXISTING CONTOURS
- LoB --- SOILS DELINEATION LINE
- SOILS TYPE
- PROPOSED BOUNDARY
- ADJACENT PROPERTY OWNER
- EXISTING TREELINE
- SPECIMEN TREE TO REMAIN
- 358 --- 360 --- PROPOSED CONTOURS
- PROPOSED TREELINE
- PROPOSED SEWER
- PROPOSED WATER
- PROPOSED MICRO-BIORETENTION FACILITY (M-6)
- ⊗ PROPOSED DRYWELL (M-5)
- PROPOSED DRAINAGE DIVIDE

AREA AND "C" FACTOR TABULATION

PROJECT: HUNTINGTON POINT P-20-004 DATE: 10/17/2019 BY: MCR

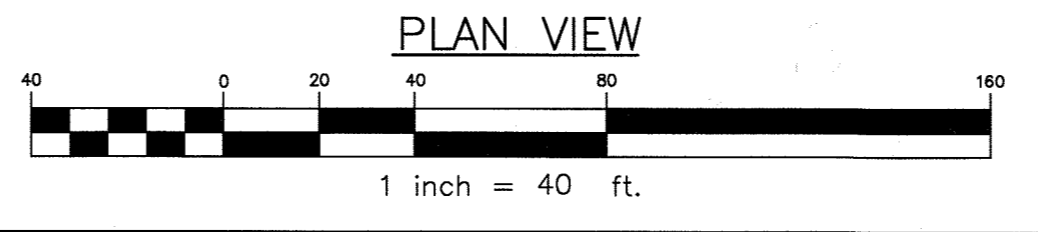
PHASE	INLET #	ZONING (Z)	SUBAREA (B)	AREA (Ac) (A)	"C" FACTOR <25 YEAR	"C" FACTOR >25 YEAR	% IMPERVIOUS
I-1		R-SC		0.84	0.30		65.0
I-2		R-SC		2.25	0.36		47.7
I-39		R-SC		4.54	0.30		65.0
I-94		R-SC		0.37	0.64		71.9

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY
PLANNING DIRECTOR: *[Signature]* DATE: 2-3-2020

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND

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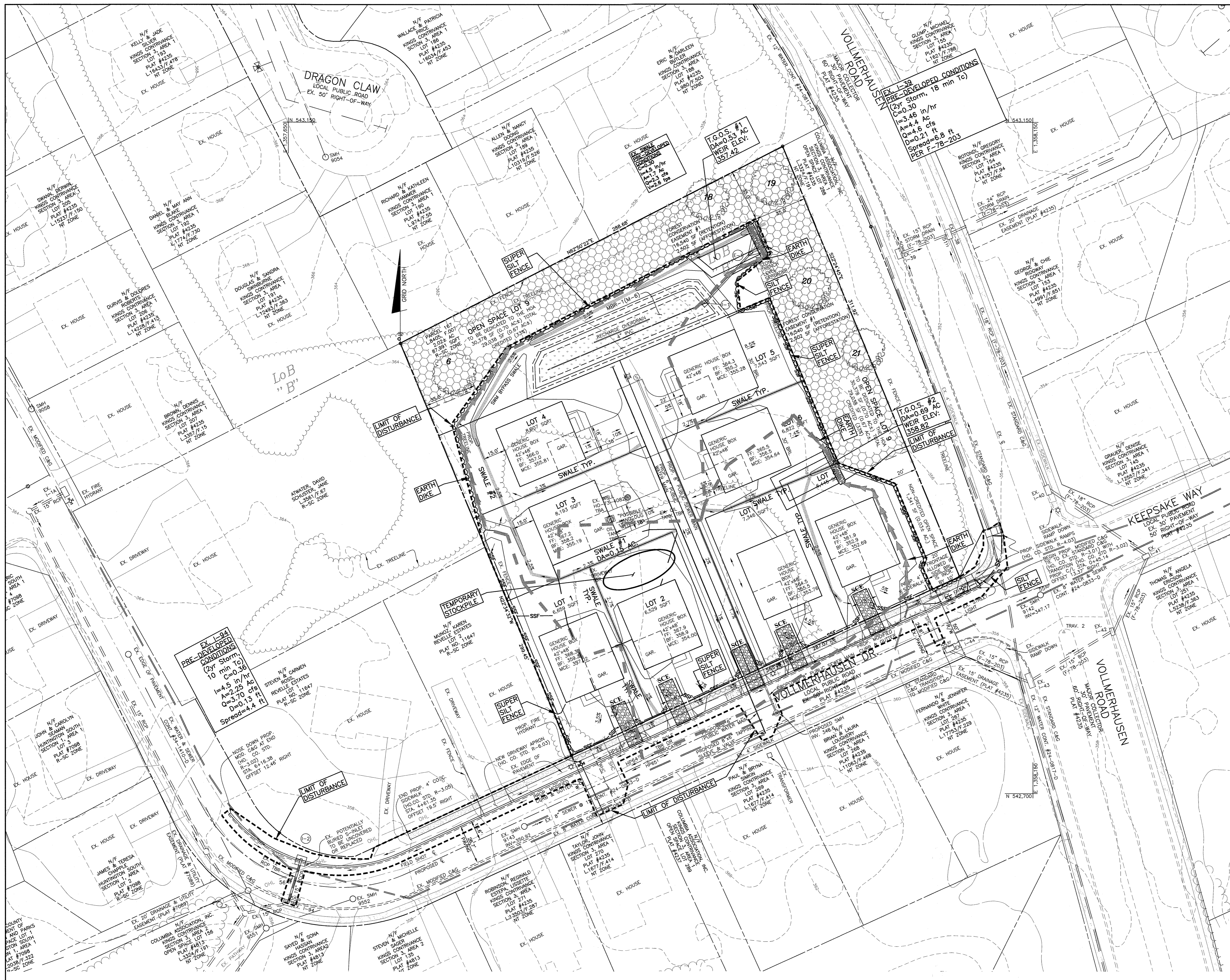
NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC.
9490 BALTIMORE NATIONAL PIKE SUITE 3154 ELICOTT CITY, MARYLAND 21043
(P) 410-485-6105 (F) 410-485-6644
WWW.BE-CIVLENGINEERING.COM

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. 45577, Expiration Date: 6-08-2020.

[Signature]
PROFESSIONAL ENGINEER

<p>OWNER/DEVELOPER: DEVELOPMENT PARTNERS, LLC 9693 GERWIG LANE SUITE L COLUMBIA, MARYLAND 21046 410-792-2565</p>	<p>HUNTINGTON POINT LOTS 1 thru 8 and OPEN SPACE LOT 9</p> <p>9454 VOLLMERHAUSEN DR. COLUMBIA, MARYLAND 21046 TAX MAP: 42 - GRID: 22 - PARCEL: 167 ZONED: R-SC ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND</p> <p>PRELIMINARY PLAN STORM DRAIN DRAINAGE AREA PLAN</p>
<p>RELEVANT FILE NUMBERS: ECP-19-042, S-19-008, WP-19-081, DMV2-20-006</p>	<p>DATE: JANUARY, 2020 BEI PROJECT NO. 2952</p>
<p>DESIGN: MP/MR DRAFT: MP/MR</p>	<p>SCALE: AS SHOWN SHEET 6 OF 9</p>



LEGEND

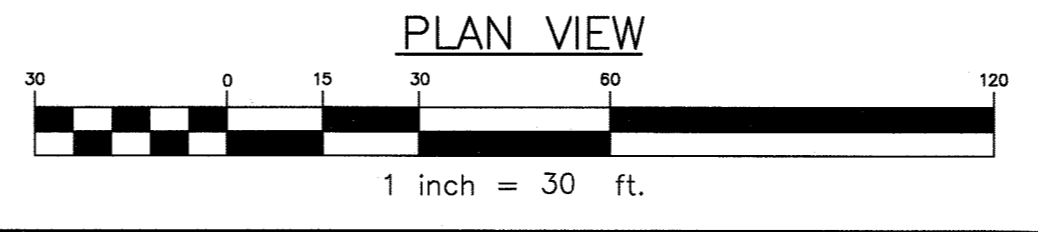
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	PROPOSED CONTOURS
	PROPOSED TREELINE
	PROPOSED SEWER
	PROPOSED WATER
	PROPOSED MICRO-BIORETENTION FACILITY (M-6)
	SWM DRAINAGE AREA TO MBR-1
	LIMIT OF DISTURBANCE
	EROSION CONTROL MATTING
	TGOS DRAINAGE AREA DIVIDE
	SWALE DRAINAGE AREA DIVIDE
	SILT FENCE
	SUPER SILT FENCE
	PROPOSED EARTH DIKE
	STABILIZED CONSTRUCTION ENTRANCE
	TEMPORARY STONE/GABION OUTLET STRUCTURE

TEMPORARILY APPROVED
DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY
PLANNING DIRECTOR: *[Signature]* DATE: 2-3-2020

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND

SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALT. GROUP	NAME	K-VALUE
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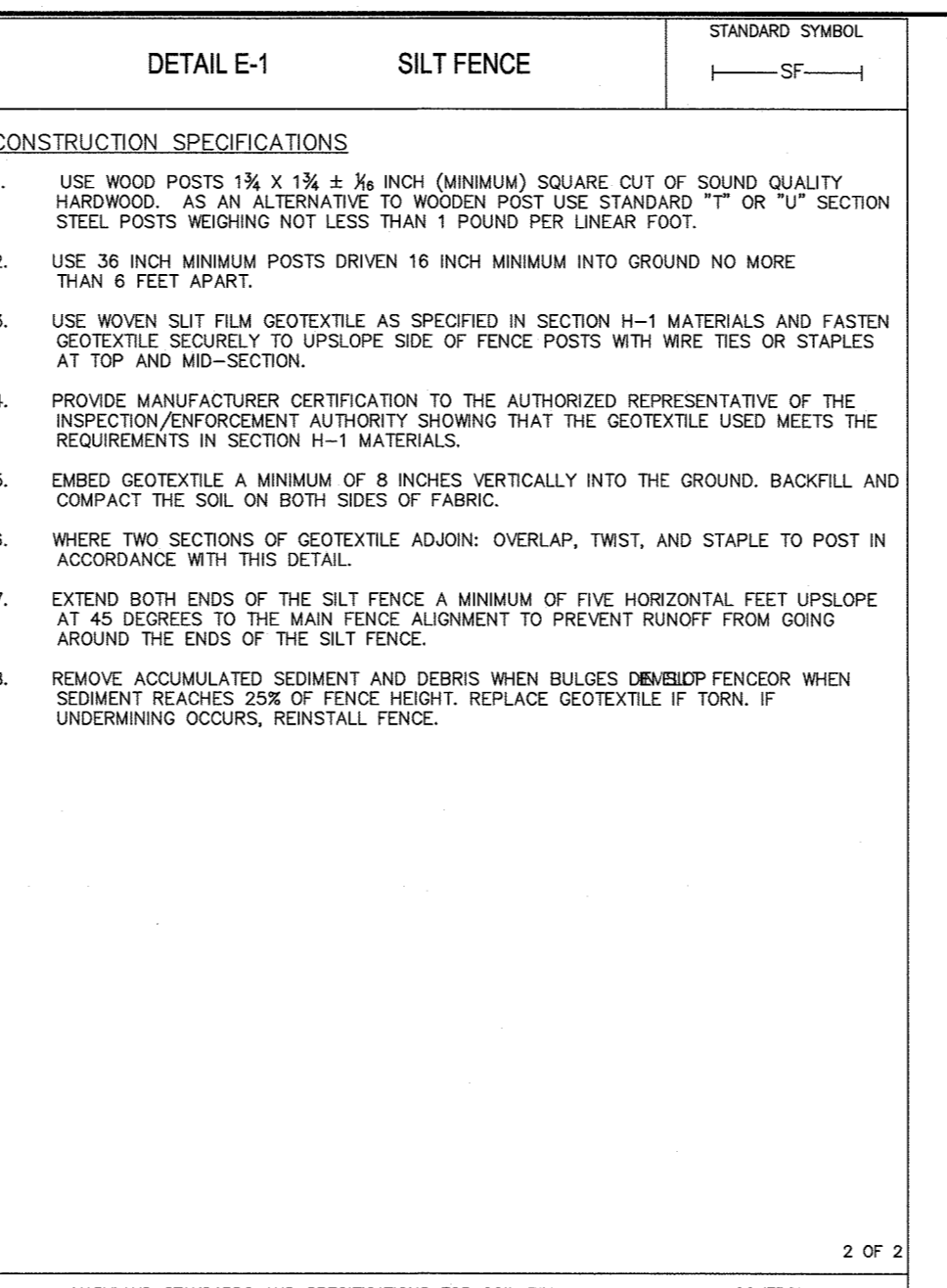
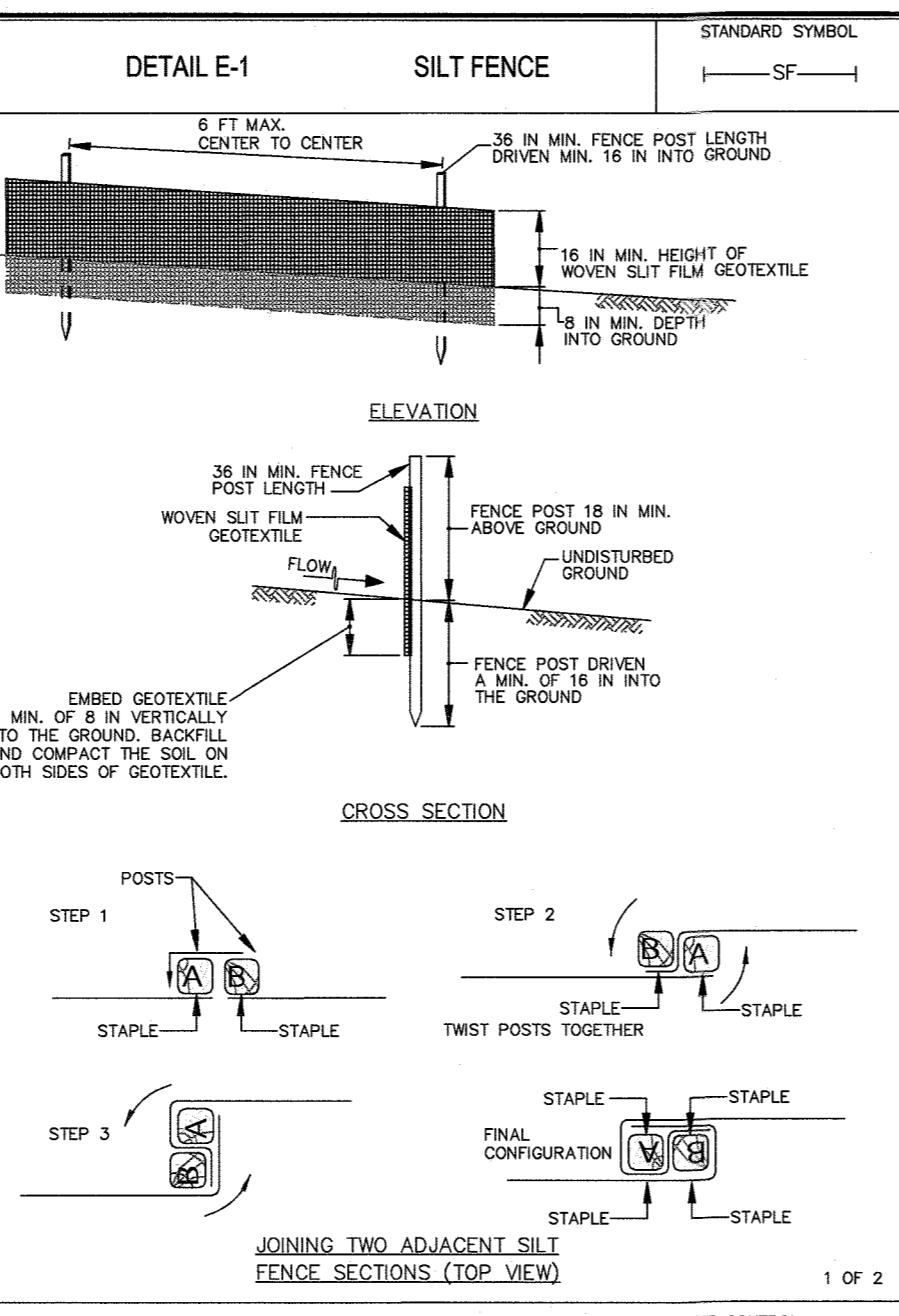
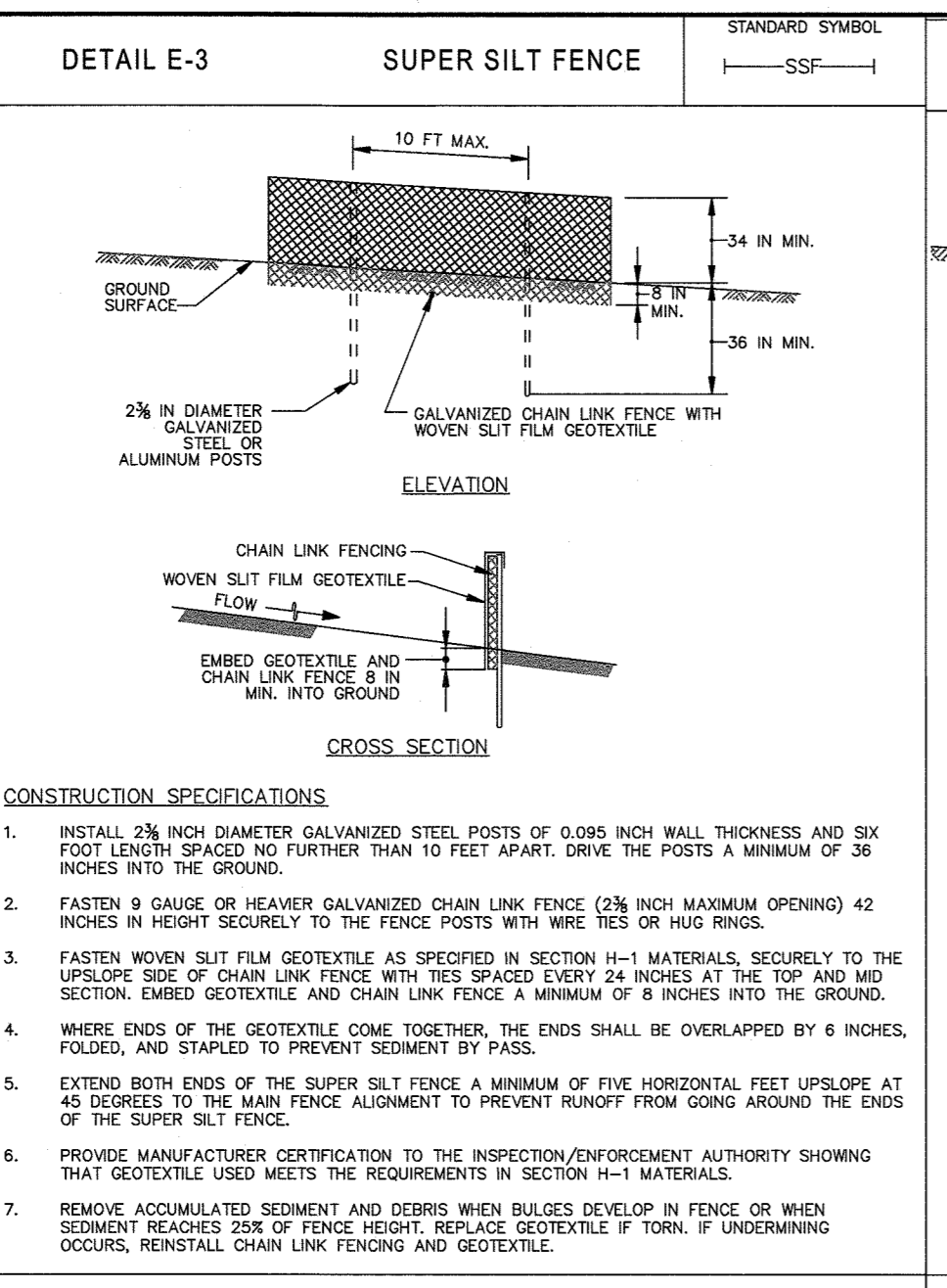
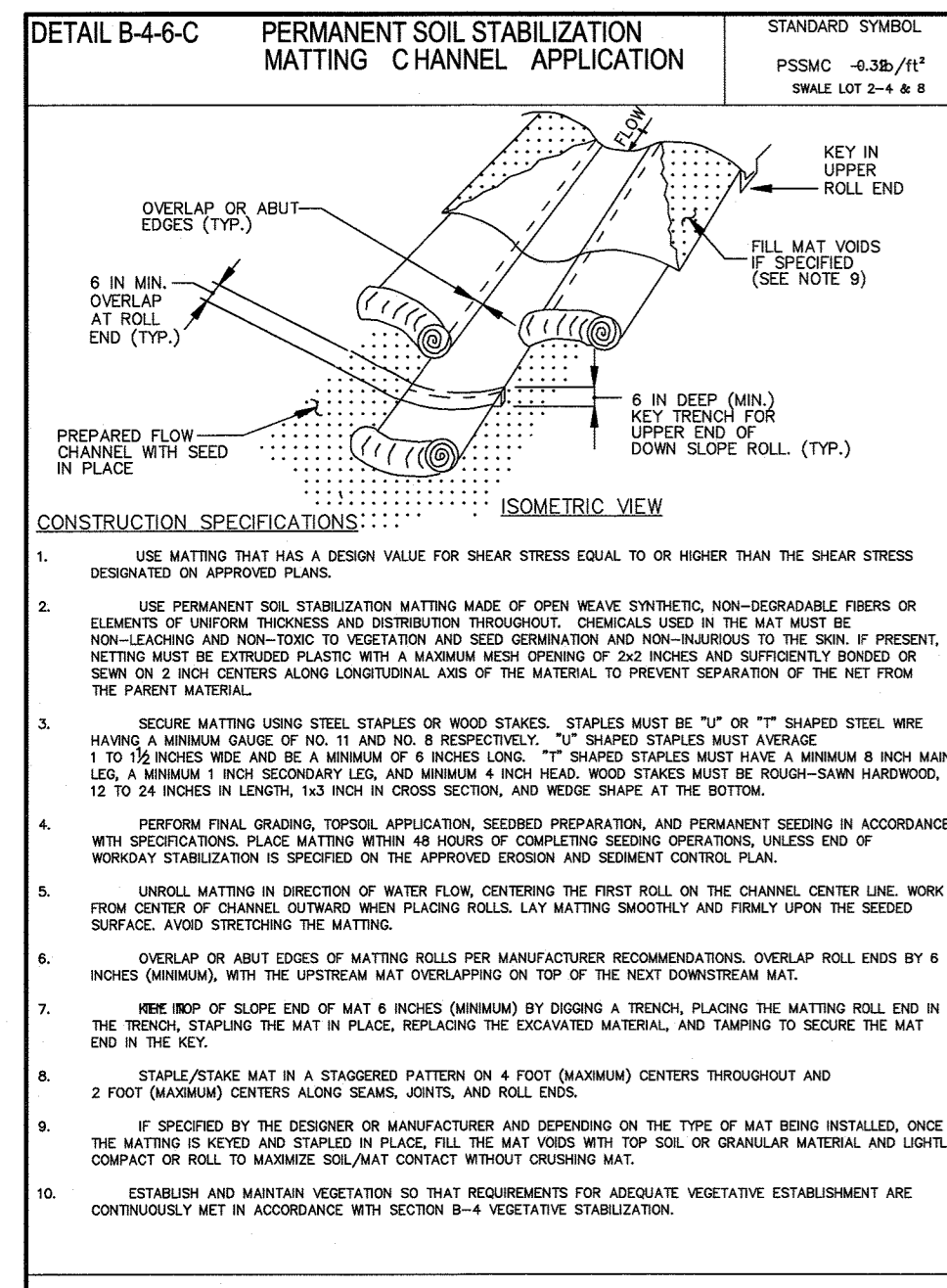
NO.	DATE	REVISION

BENCHMARK
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8460 BALTIMORE NATIONAL PIKE SUITE 315A ELLICOTT CITY, MARYLAND 21043
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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. 45597, Expiration Date: 6-08-2020.

[Signature]
PROFESSIONAL ENGINEER

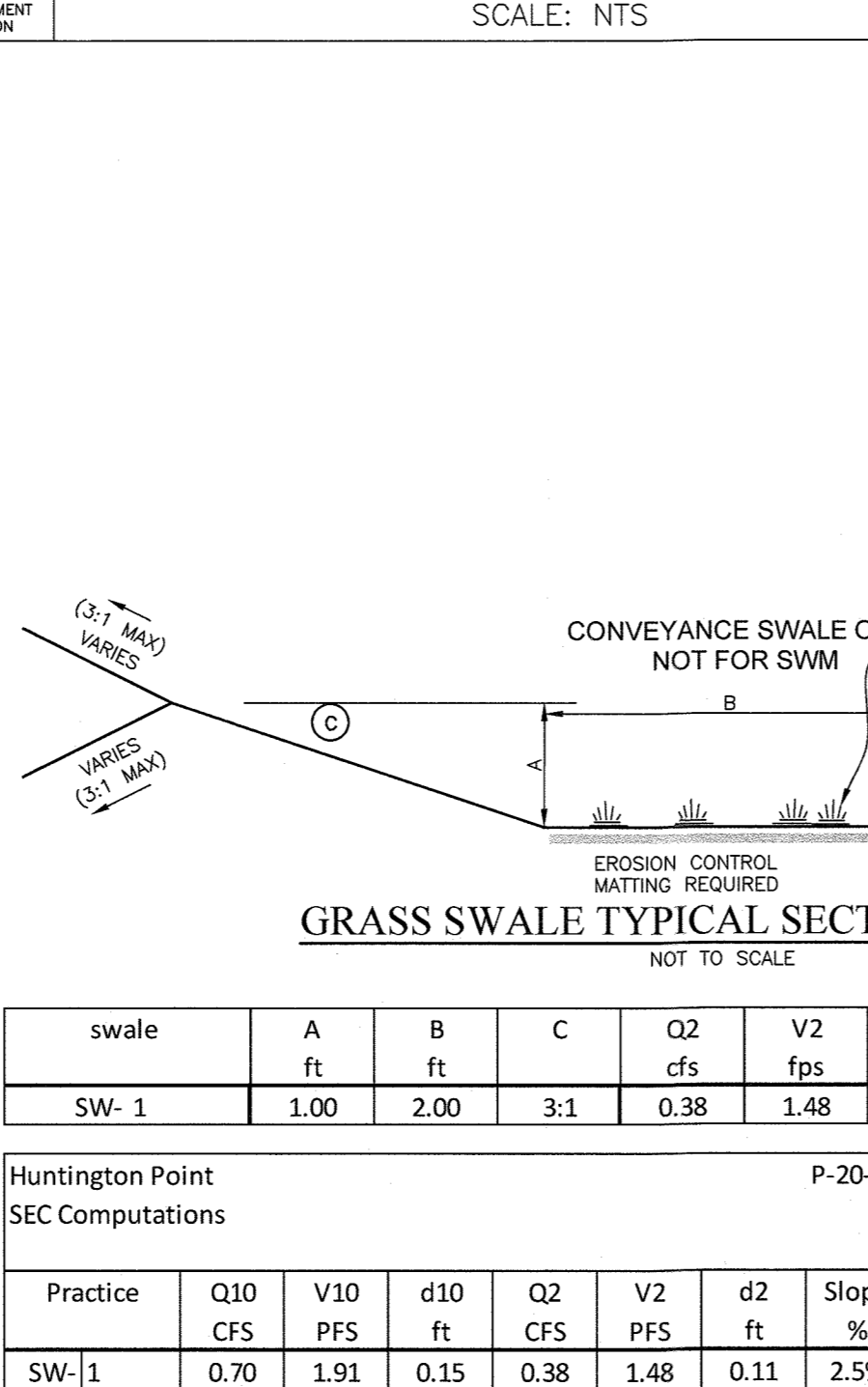
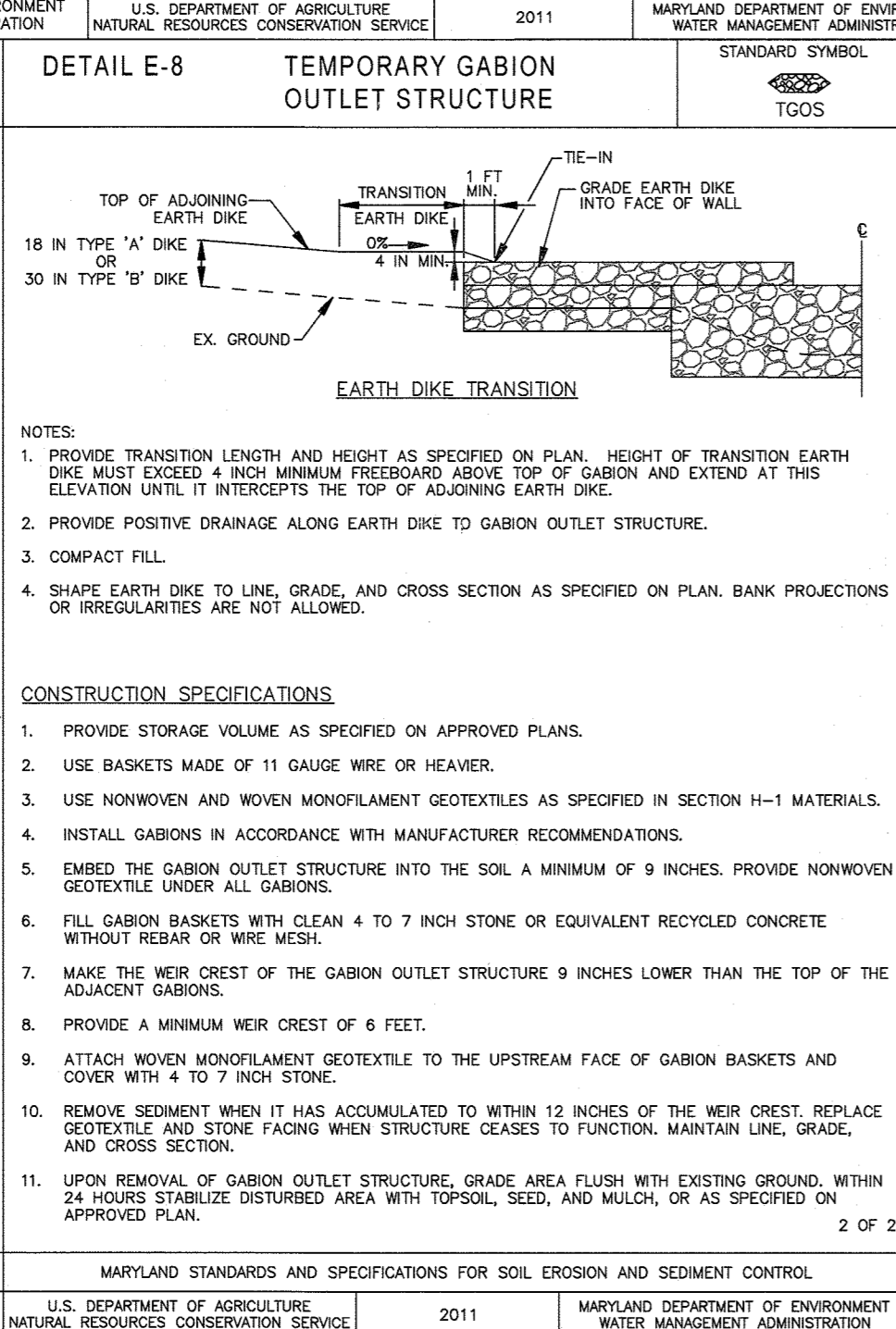
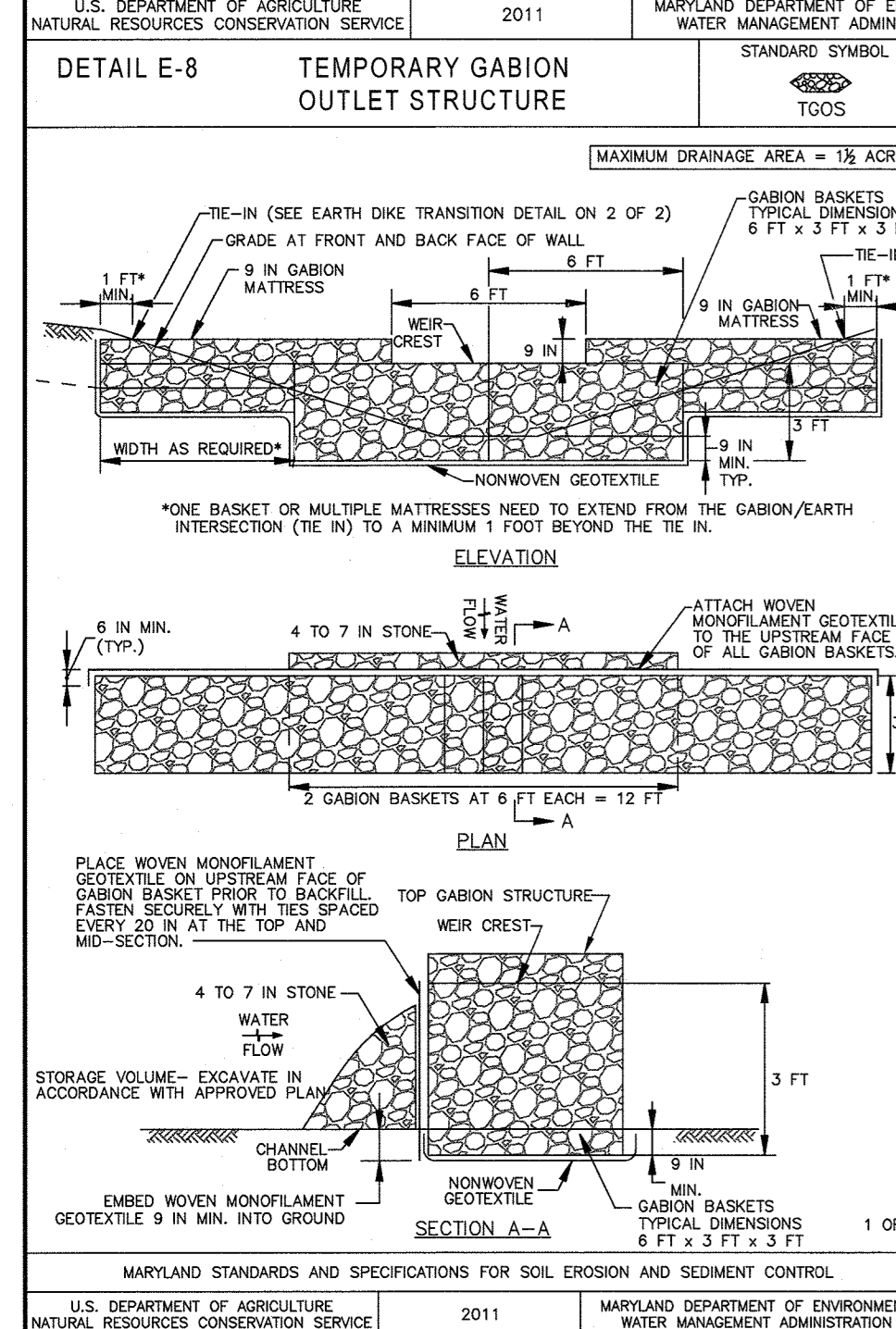
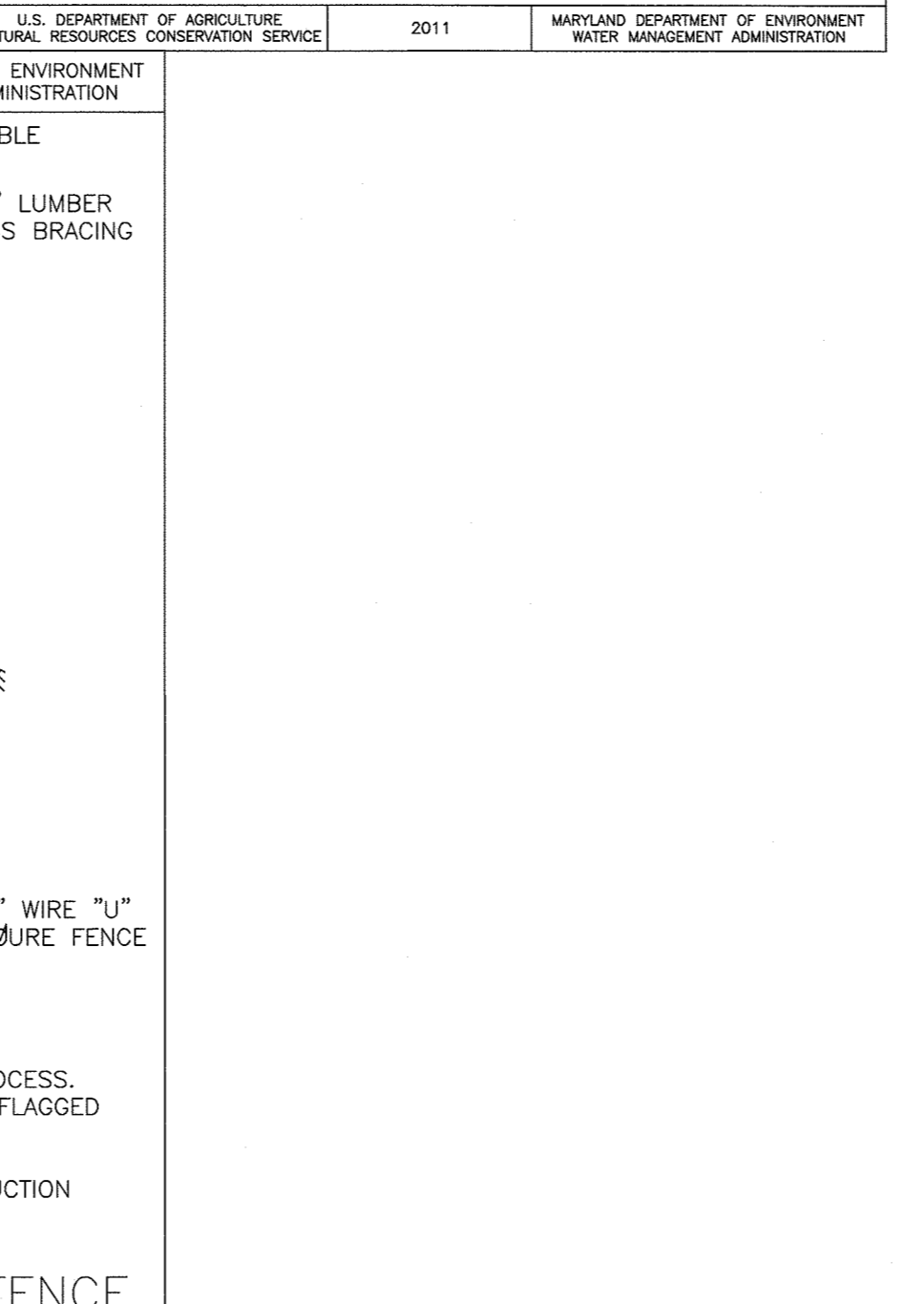
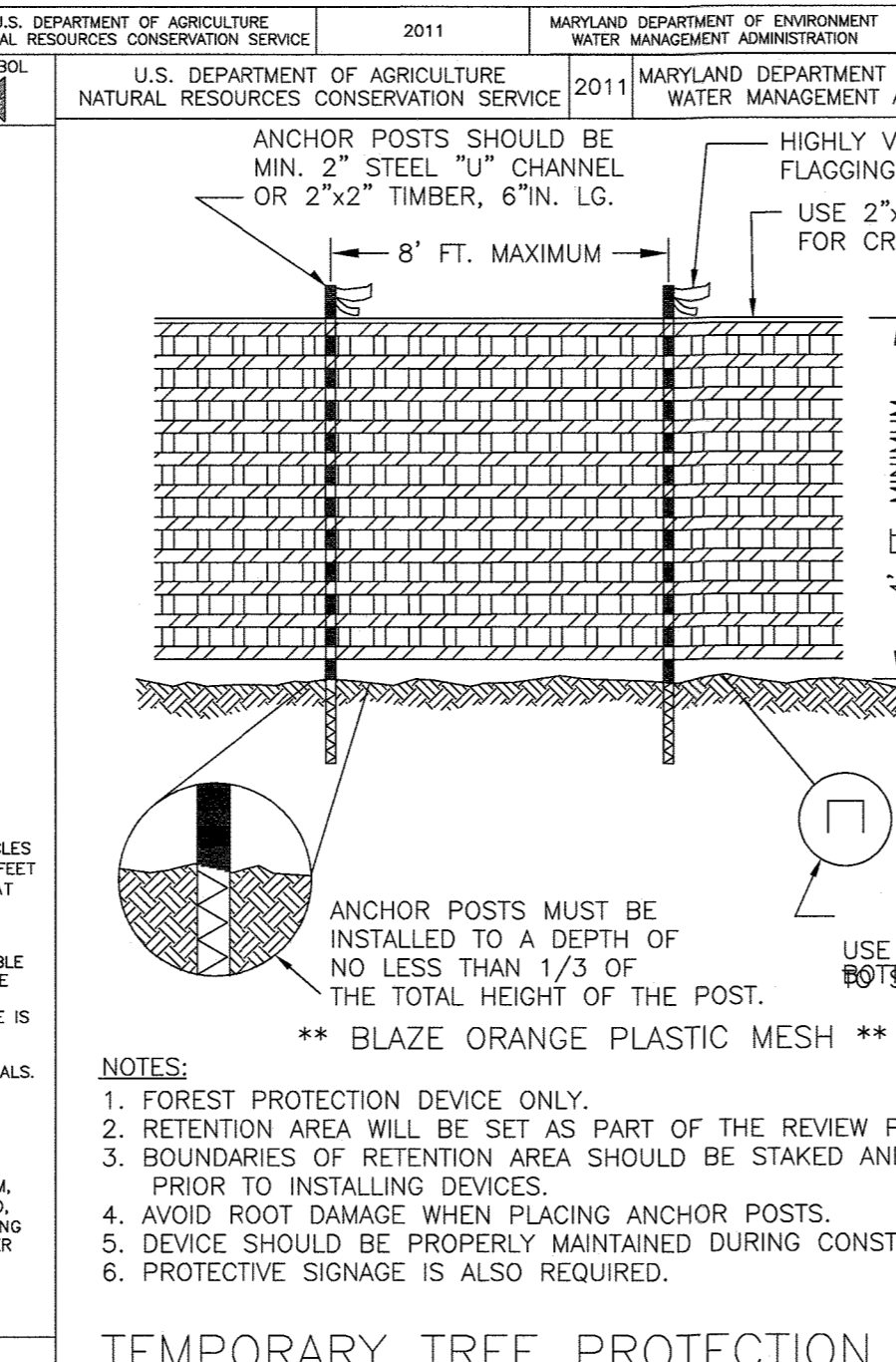
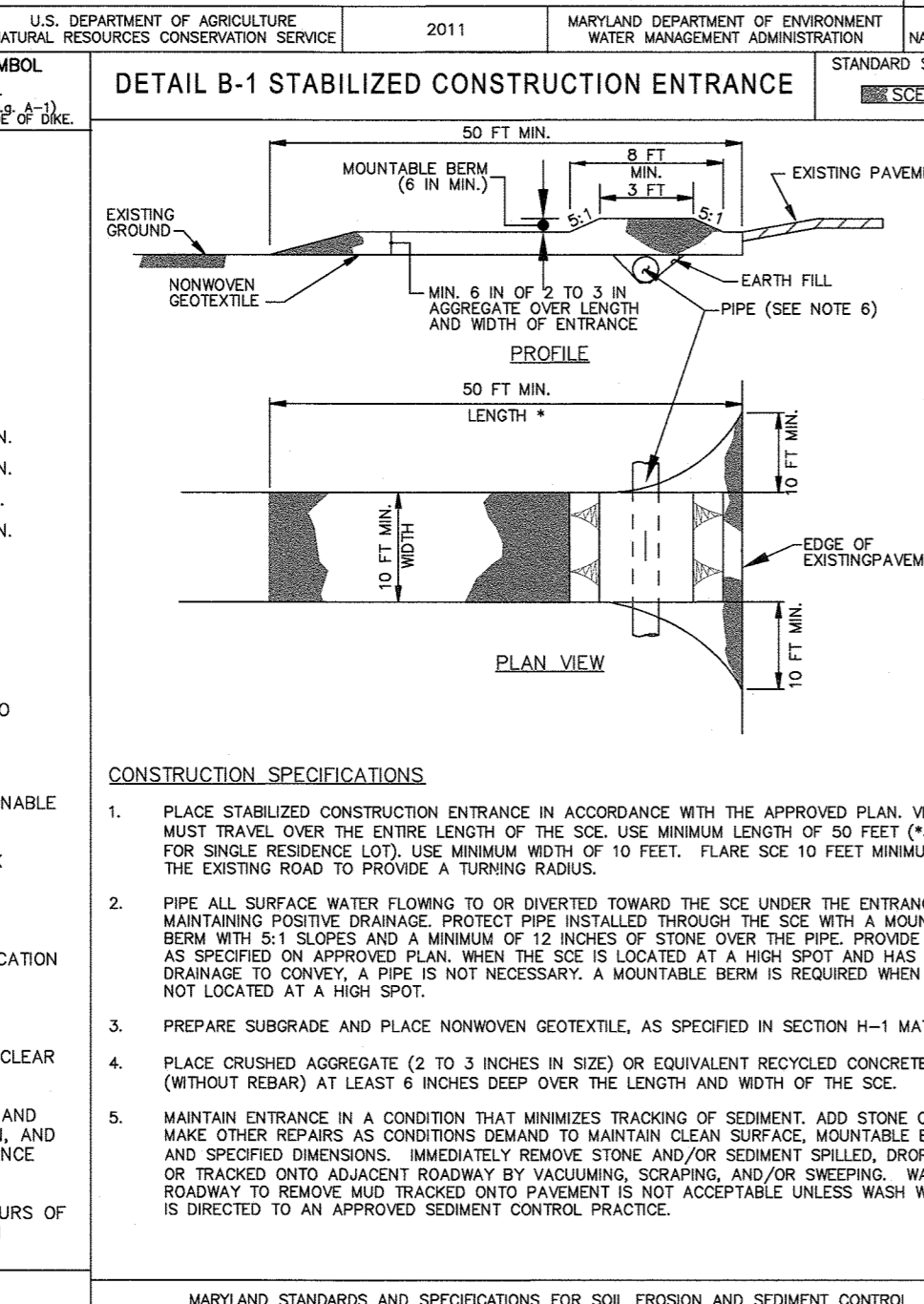
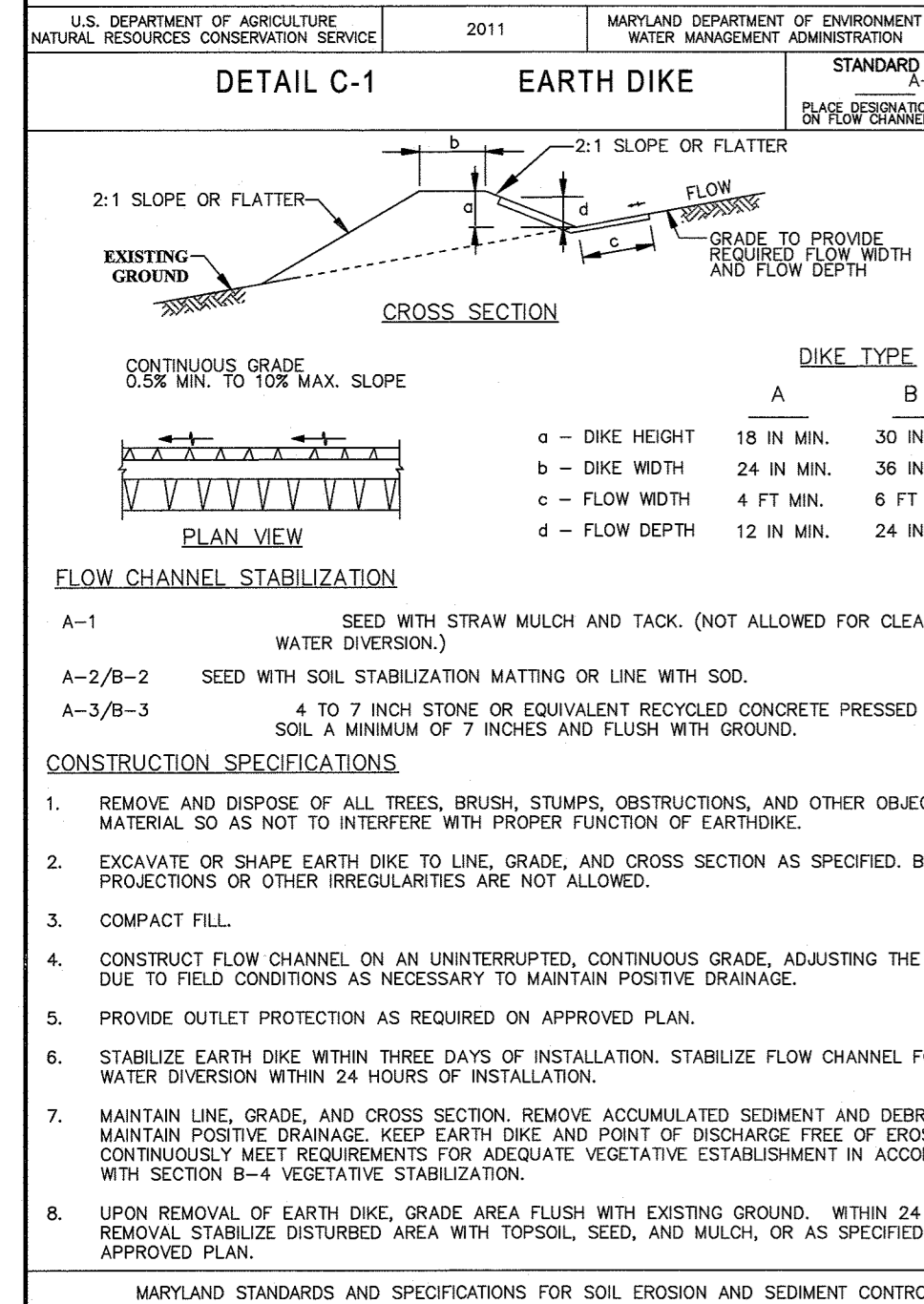
OWNER/DEVELOPER: DEVELOPMENT PARTNERS, LLC 9693 GERWIG LANE SUITE L COLUMBIA, MARYLAND 21046 410-792-2565	<p>HUNTINGTON POINT LOTS 1 thru 8 and OPEN SPACE LOT 9</p> <p>9454 VOLLMERHAUSEN DR. COLUMBIA, MARYLAND 21046 TAX MAP: 42 - GRID: 22 - PARCEL: 167 ZONED: R-5C ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND</p> <p>PRELIMINARY PLAN SEDIMENT & EROSION CONTROL PLAN</p>
RELEVANT FILE NUMBERS: ECP-19-042, S-19-008, WP-19-081, DMV2-20-006	<p>DATE: JANUARY, 2020</p> <p>BEI PROJECT NO. 2952</p> <p>SCALE: AS SHOWN</p> <p>SHEET 7 OF 9</p>



HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

- A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-3133-1855 after the future LOD and protected areas are marked clearly in the field. A minimum of 48 hours notice to CID must be given at the following stages:
 - Prior to the start of earth disturbance.
 - Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading.
 - Prior to the start of another phase of construction or opening of another grading unit.
 - Prior to the removal or modification of sediment control practices.
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.
- Following initial soil disturbance or re-disturbance, permanent or temporary stabilization is required within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed areas on the project site except for those areas under active grading.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, for topsoil (Sec. B-4-2), permanent seeding (Sec. B-4-3), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-5). Temporary stabilization with mulch alone can only be applied between the fall and spring seeding dates if the ground is frozen.
- Incremental stabilization (Sec. B-4-1) specifications shall be enforced in areas with >1% of cut and/or fill. Stockpiles (Sec. B-4-8) in excess of 20 feet must be benched with stable outlet. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).
- All sediment control structures are to remain in place, and are to be maintained in operative condition until permission for their removal has been obtained from the CID.
- Site Analysis:

Total Area of Site:	2.02 Acres
Area to be roofed or paved:	1.73 Acres
Area to be vegetatively stabilized:	1.13 Acres
Total cut:	— Cu Yds
Total fill:	— Cu Yds
Off-site waste/borrow area location:	N/A
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control must be provided, if deemed necessary by the CID. The site and all controls shall be inspected by the contractor weekly, and the next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and shall include:
 - Inspection date
 - Inspection type (routine, pre-storm event, during rain event)
 - Name and title of inspector
 - Weather information (current conditions as well as time and amount of last recorded precipitation)
 - Evidence of sediment discharges
 - Identification of plan deficiencies
 - Identification of sediment controls that require maintenance
 - Identification of missing or improperly installed sediment controls
 - Compliance status regarding the sequence of construction and stabilization requirements
 - Photographs
 - Monitoring/sampling
 - Maintenance and/or corrective action performed
 - Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE).
- Trenches for the construction of utilities are limited to three pipe lengths or that which can and shall be back filled and stabilized by the end of each work day, whichever is shorter.
- Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the CID. Unless otherwise specified and approved by the HSCD, no more than 30 acres cumulatively may be disturbed at a given time.
 - Use I and IP March 1 - June 15
 - Use III and IIP October 1 - April 30
 - Use IV March 1 - May 31
- A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.



NOTE: ELEVATIONS LISTED IN CHART ARE ELEVATIONS AT BOTTOM OF THE SWALE. THIS SWALE DOES NOT PROVIDE STORMWATER MANAGEMENT.

swale	A	B	C	Q2	V2	d2	Q10	V10	d10
	ft	ft	ft	cfs	fps	ft	cfs	fps	ft
SW-1	1.00	2.00	3:1	0.38	1.48	0.11	0.70	1.91	0.15

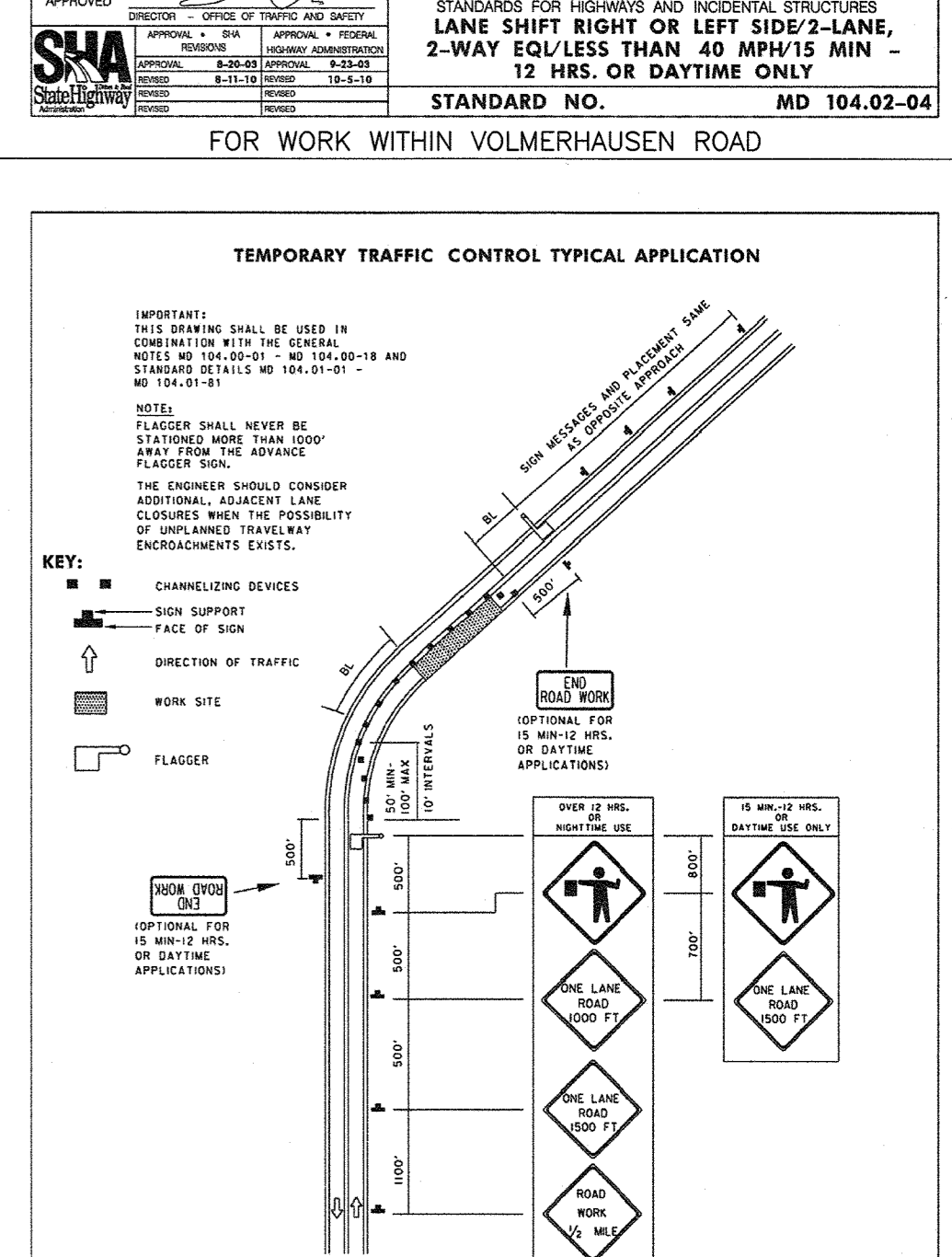
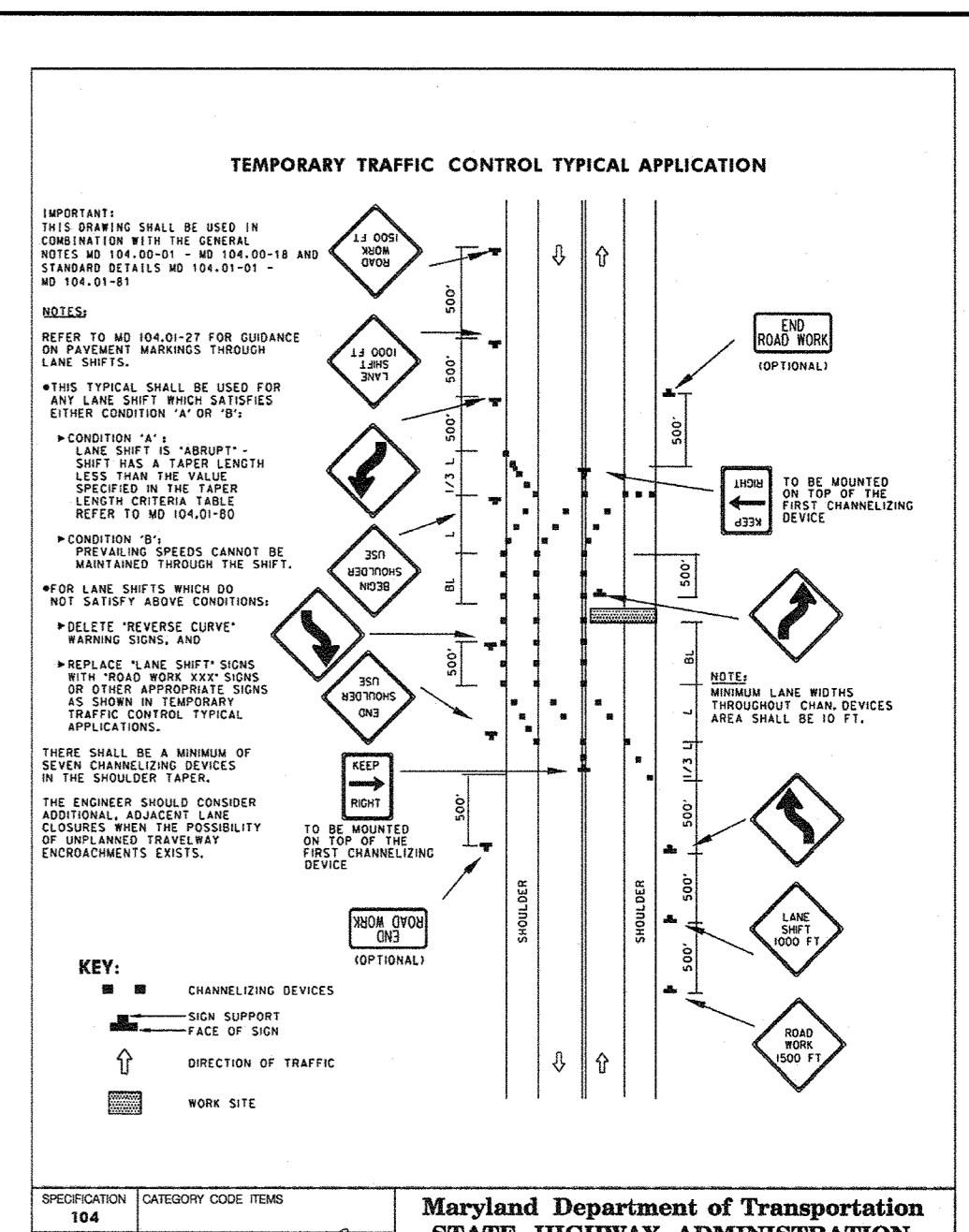
Huntington Point SEC Computations	Practice	Q10 CFS	V10 PFS	d10 ft	Q2 CFS	V2 PFS	d2 ft	Slope %	Mannings 'n'	Width feet	Bank Slope	Channel Depth feet	Shear Stress	V10 less than 8.5?	V2 less than 2.0?	Shear Stress less than 2.0?
SW-1	0.70	1.91	0.15	0.38	1.48	0.11	2.5%	0.03	2	3:1	1.0	0.23	okay	okay	okay	

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY
PLANNING DIRECTOR: [Signature]
DATE: 2-3-2020

Temporary Stone/Gabion Outlet Structure												
Designation	Drainage Area SF	Area Acres	Practice	Volume Required	Ground Elev.	Facility Inv. Elev.	Embankment Elev.	Weir Length	Uphill Length	Volume Provided	Adequate Volume?	
#1	24872	0.57	TGOS	1028	356.5	355.67	358.67	357.92	18	24	1034	Yes
#2	30062	0.69	TGOS	1242	357.4	356.57	359.57	358.82	20	27	1283	Yes

swale	A	B	C	Q2	V2	d2	Q10	V10	d10
	ft	ft	ft	cfs	fps	ft	cfs	fps	ft
SW-1	1.00	2.00	3:1	0.38	1.48	0.11	0.70	1.91	0.15

Practice	Q10 CFS	V10 PFS	d10 ft	Q2 CFS	V2 PFS	d2 ft	Slope %	Mannings 'n'	Width feet	Bank Slope	Channel Depth feet	Shear Stress	V10 less than 8.5?	V2 less than 2.0?	Shear Stress less than 2.0?
SW-1	0.70	1.91	0.15	0.38	1.48	0.11	2.5%	0.03	2	3:1	1.0	0.23	okay	okay	okay



MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES CONSERVATION SERVICE

DETAIL C-1 EARTH DIKE

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES CONSERVATION SERVICE

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES CONSERVATION SERVICE

TEMPORARY TREE PROTECTION FENCE

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES CONSERVATION SERVICE

DETAIL E-8 TEMPORARY GABION OUTLET STRUCTURE

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GRASS SWALE TYPICAL SECTION DETAIL

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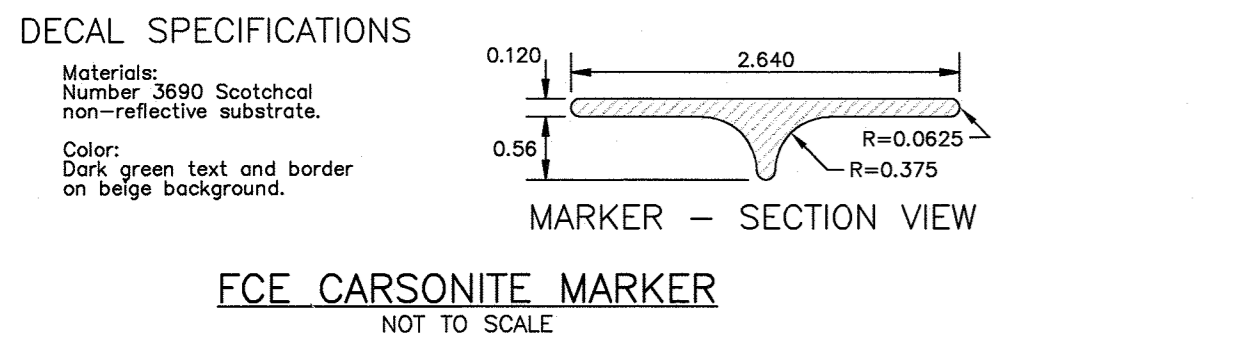
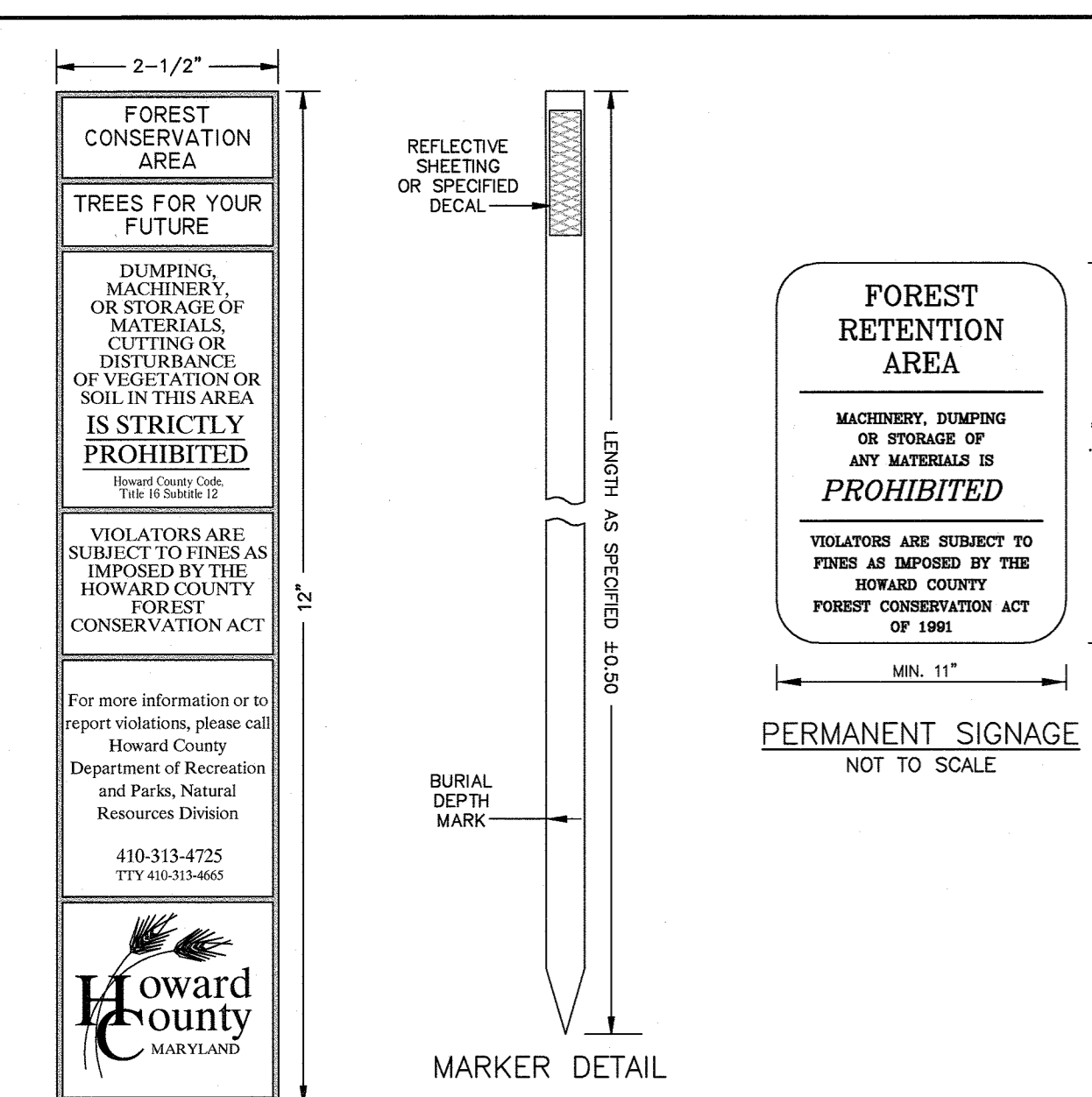
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U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND



- FCP NOTES:**
- ANY FOREST CONSERVATION EASEMENT (FCE) AREA SHOWN HEREON IS SUBJECT TO PROTECTIVE COVENANTS WHICH MAY BE FOUND IN THE LAND RECORDS OF HOWARD COUNTY WHICH RESTRICT THE DISTURBANCE AND USE OF THESE AREAS.
 - FORESTED AREAS OCCURRING OUTSIDE OF THE FCE SHALL NOT BE CONSIDERED PART OF THE FCE AND SHALL NOT BE SUBJECT TO PROTECTIVE LAND COVENANTS.
 - LIMITS OF DISTURBANCE SHALL BE RESTRICTED TO AREAS OUTSIDE THE LIMIT OF TEMPORARY FENCING OR THE FCE BOUNDARY, WHICHEVER IS GREATER.
 - THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENT, EXCEPT AS PERMITTED BY HOWARD COUNTY DPZ.
 - NO STOCKPILES, PARKING AREAS, EQUIPMENT CLEANING AREAS, ETC. SHALL OCCUR WITHIN AREAS DESIGNATED AS FOREST CONSERVATION EASEMENTS.
 - TEMPORARY FENCING SHALL BE USED TO PROTECT FOREST RESOURCES DURING CONSTRUCTION. THE FENCING SHALL BE PLACED ALONG ALL FCE RETENTION BOUNDARIES WHICH OCCUR WITHIN 15 FEET OF THE PROPOSED LIMITS OF DISTURBANCE AND ARE NOT ALREADY PROTECTED WITH SUPER SILT FENCE.
 - PERMANENT SIGNAGE SHALL BE PLACED 50-100' APART ALONG THE BOUNDARIES OF ALL AREAS INCLUDED IN FOREST CONSERVATION EASEMENTS. SIGNS SHALL BE MOUNTED ON A PERMANENT WOOD POST OR METAL STAKE. FCE SIGNS SHALL NOT BE ATTACHED TO TREES.
 - AFFORESTATION BY LANDSCAPING IS LIMITED TO 20% OF THE FOREST CONSERVATION OBLIGATION (20% OF 0.6 AC. = 5,227 SF) PLANT THE AFFORESTATION AREA IN FCE #1 WITH MITIGATION TREES REQUIRED BY WP-19-081 AT 20' x 20' SPACING.

FOREST CONSERVATION WORKSHEET
VERSION 2.0
(Enter in Yellow Cells)

Project Name: HUNTINGTON POINT Date: JAN. 2020

NET TRACT AREA:

A. Total tract area	2.0
B. Area within 100 year floodplain	0.0
C. Area to remain in agricultural production	0.0
D. Net tract area	2.0

LAND USE CATEGORY: (from table 3.2.1, page 40, Manual)

Input the number "1" under the appropriate land use zoning, and limit to only one entry.

ARA	MDR	IDA	HDR	MPD	CIA
0	0	0	1	0	0

E. Afforestation Threshold: 15% x D = 0.3
F. Conservation Threshold: 20% x D = 0.4

EXISTING FOREST COVER:

G. Existing forest cover (excluding floodplain)	1.3
H. Area of forest above afforestation threshold	1.0
I. Area of forest above conservation threshold	0.9

BREAK EVEN POINT (BEP):

J. Forest retention above threshold with no mitigation (BEP)	0.6
K. Clearing permitted without mitigation	0.7

PROPOSED FOREST CLEARING:

L. Total area of forest to be cleared	0.9
M. Total area of forest to be retained	0.4

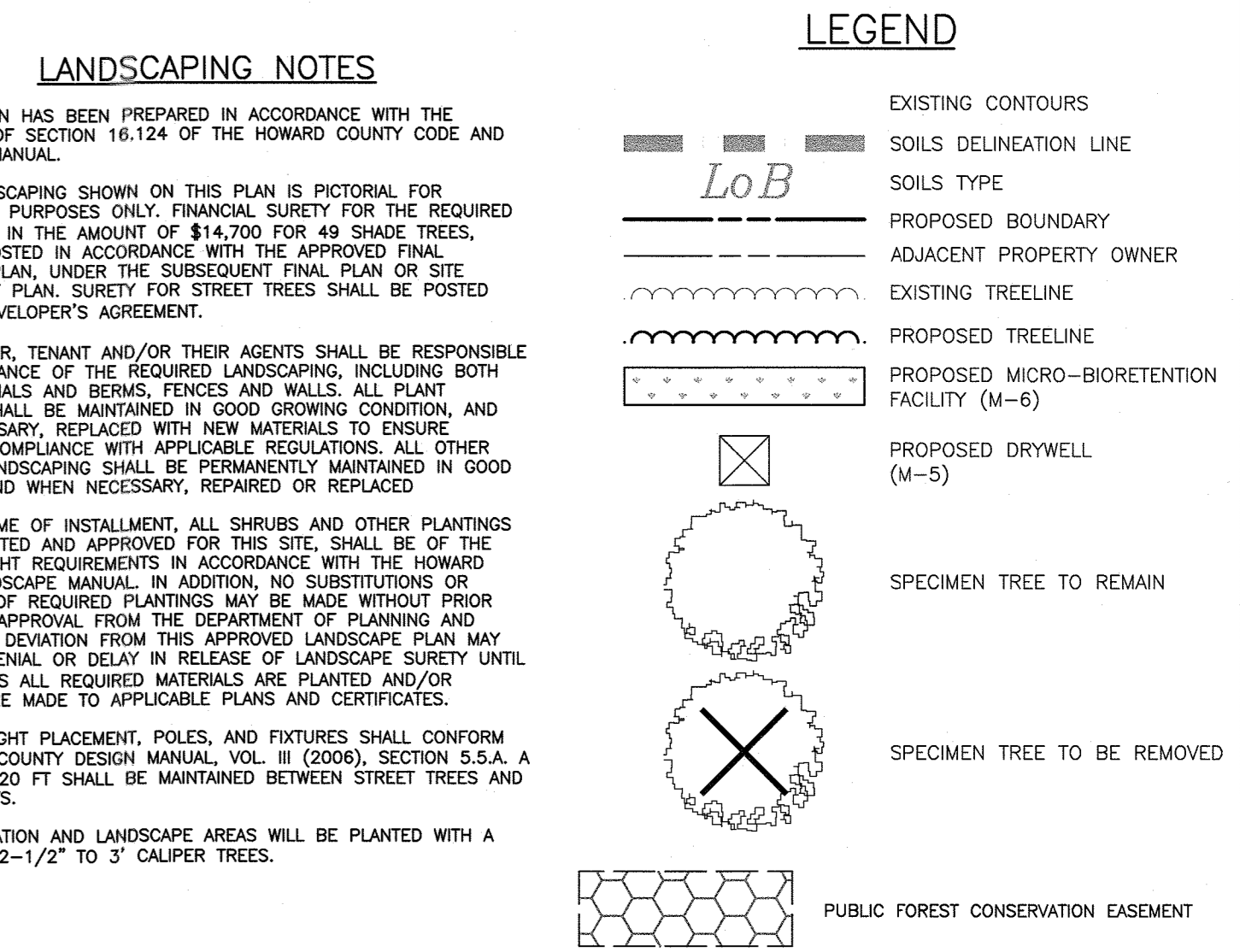
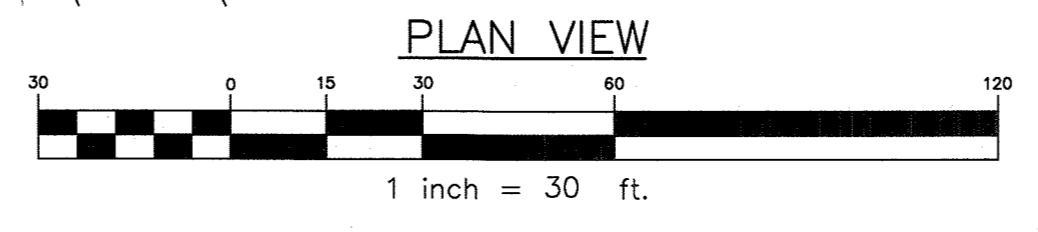
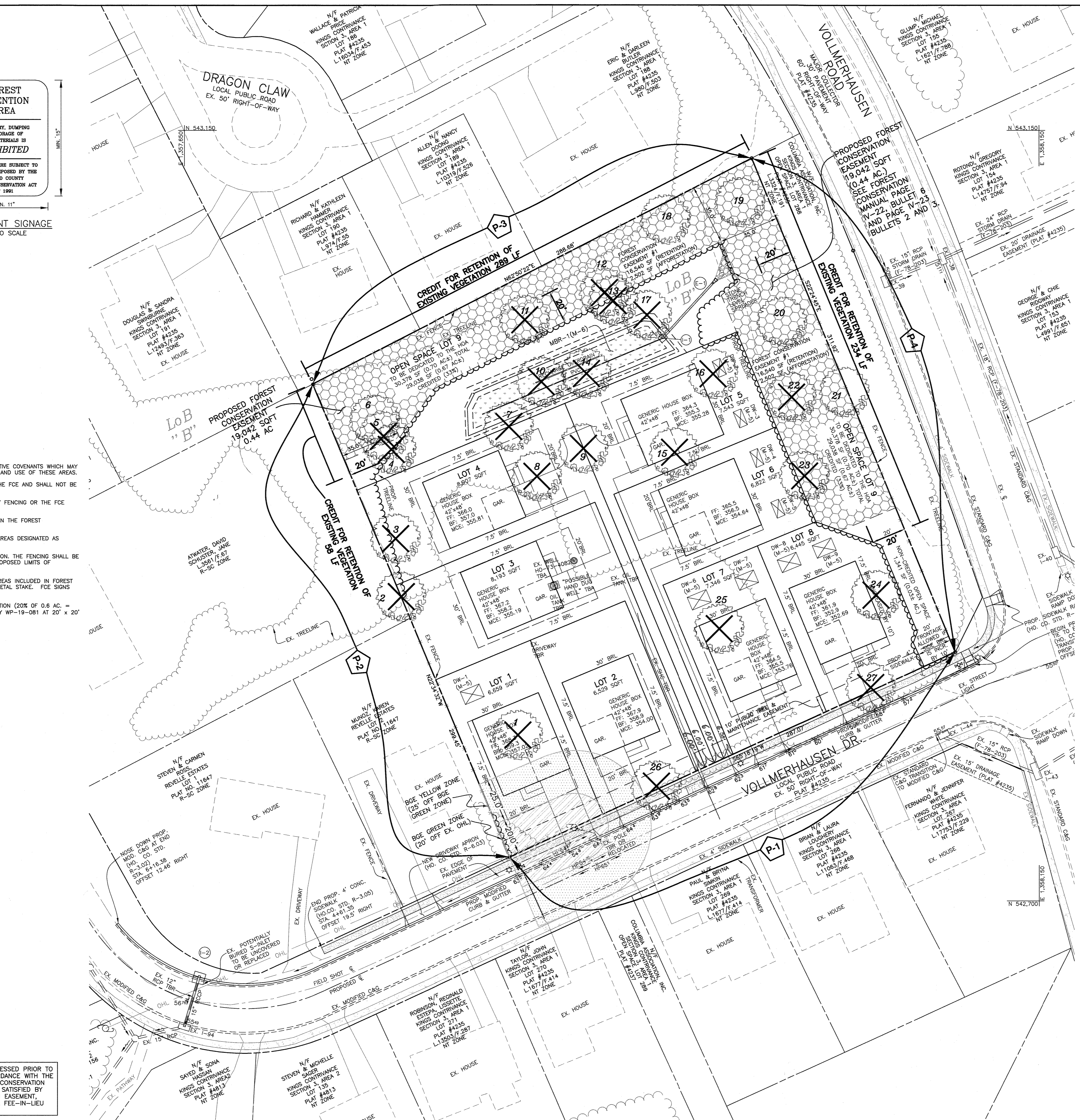
PLANTING REQUIREMENTS:

N. Reforestation for clearing above conservation threshold	0.2
P. Reforestation for clearing below conservation threshold	0.0
Q. Credit for retention above conservation threshold	0.0
R. Total reforestation required	0.2
S. Total afforestation required	0.0
T. Total reforestation and afforestation required	0.2

THE FOREST CONSERVATION REQUIREMENTS FOR THIS SUBDIVISION SHALL BE ADDRESSED PRIOR TO RECORDATION OF THE FINAL SUBDIVISION PLAN AND SHALL BE PROVIDED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.1200 OF THE SUBDIVISION REGULATIONS AND FOREST CONSERVATION MANUAL. THE FOREST CONSERVATION OBLIGATION FOR THIS SUBDIVISION SHALL BE SATISFIED BY THE USE OF ON-SITE RETENTION OF 0.36 ACRES WITHIN A FOREST CONSERVATION EASEMENT, REFORESTATION OF 0.06 ACRES WITHIN A FOREST CONSERVATION EASEMENT AND A FEE-IN-LIEU PAYMENT OF \$4,573.50 FOR 0.14 ACRES OF REMAINING OBLIGATIONS.

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY

PLANNING DIRECTOR: [Signature] DATE: 7-3-2020



Specimen Tree Chart

No.	Species	Size (in. dbh)	CRZ (ft. radius)	Condition	Status
1	Tulip Poplar	55	82.5	Fair, Some Dieback	TBR
2	Tulip Poplar	38	57	Fair, Limited Crown	TBR
3	Tulip Poplar	34	51	Fair, Limited Crown	TBR
4	Tulip Poplar	32	48	Fair, Limited Crown	TBR
5	Tulip Poplar	35	52.5	Fair, Limited Crown	TBR
6	Tulip Poplar	33	49.5	Fair, Limited Crown	SAVE
7	Tulip Poplar	30	45	Fair, Limited Crown	TBR
8	Tulip Poplar	31	46.5	Fair, Limited Crown	TBR
9	Tulip Poplar	43	64.5	Fair, Limited Crown	TBR
10	Tulip Poplar	31.5	47.25	Fair, Limited Crown	TBR
11	Tulip Poplar	39	58.5	Fair, Limited Crown	TBR
12	Tulip Poplar	34.5	51.75	Fair, Limited Crown	TBR
13	Tulip Poplar	46.5	69.75	Fair, Limited Crown	TBR
14	Tulip Poplar	32	48	Fair, Limited Crown	TBR
15	Tulip Poplar	35.5	53.25	Fair, Limited Crown	TBR
16	Tulip Poplar	37	55.5	Fair, Limited Crown	TBR
17	Tulip Poplar	30	45	Fair, Limited Crown	TBR
18	Tulip Poplar	48	72	Fair, Limited Crown	SAVE
19	Tulip Poplar	32.5	48.75	Fair, Limited Crown	SAVE
20	Tulip Poplar	31.5	47.25	Fair, Limited Crown	SAVE
21	Tulip Poplar	34	51	Fair, Limited Crown	SAVE
22	Tulip Poplar	30	45	Fair, Limited Crown	TBR
23	Tulip Poplar	39.5	59.25	Fair, Limited Crown	TBR
24	Tulip Poplar	30	45	Fair, Limited Crown	TBR
25	Willow Oak	38	57	Fair, Some Dieback, CRZ Impact	TBR
26	Tulip Poplar	39.5	59.25	Fair, Some Dieback, CRZ Impact	TBR
27	Tulip Poplar	47	70.5	Fair, Some Dieback, CRZ Impact	TBR

SCHEDULE A PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAY	YES	NO	NO	NO
ADJACENT TO PERIMETER PROPERTIES	NO	P-1	P-2	YES	YES
PERIMETER NO.					
LANDSCAPE TYPE	NONE	A	A	A	A
SHADE TREES	0	1-60	1-60	1-60	1-60
EVERGREEN TREES	0	0	0	0	0
LINEAR FEET OF PERIMETER (FRONTAGE/ROADWAY)	N/A	300	289	312	312
CREDIT FOR EXISTING VEGETATION: NO OR YES (W/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	N/A	YES	YES	YES	YES
CREDIT FOR WALL FENCE, OR BERM: NO OR YES (W/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	N/A	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED:					TOTALS
SHADE TREES	0	4	0	1	5
EVERGREEN TREES	0	0	0	0	0
OTHER TREES (2:1 SUBSTITUTE)	0	0	0	0	0
SHRUBS	0	0	0	0	0

* A CONDITION OF THE APPROVAL OF WP-19-081 REQUIRES THE REPLACEMENT MITIGATION OF 22 SPECIMEN TREES AT A RATIO OF 2:1, FOR A TOTAL OF 44 TREES MITIGATION.

STREET TREE SCHEDULE

LINEAR FEET OF R.O.W. / ROADWAY	VOLLMERHAUSEN DRIVE
LINEAR FEET OF CREDIT	287
LINEAR FEET OF REQUIRED PLANTING	287
TREE SIZE	*SMALL 1-30 LF
STREET TREES REQUIRED	10

* SMALL TREES ARE REQUIRED DUE TO THE BGE GREEN AND YELLOW ZONES.

NO. DATE REVISION

BENCHMARK ENGINEERING, INC.
840 BALTIMORE NATIONAL PIKE SUITE 315A ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6844
WWW.BE-ENGINEERING.COM

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. 45577, Expiration Date: 6-08-2020.

HUNTINGTON POINT
LOTS 1 thru 8 and OPEN SPACE LOT 9

9454 VOLLMERHAUSEN DR. COLUMBIA, MARYLAND 21046
TAX MAP: 42 - GRID: 22 - PARCEL: 167
ZONED: R-SC
ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND

PRELIMINARY PLAN
LANDSCAPE PLAN & FOREST CONSERVATION PLAN

RELEVANT FILE NUMBERS:
ECP-19-042, S-19-008,
WP-19-081, DM2-20-006

DATE: JANUARY, 2020 BEI PROJECT NO. 2952
SCALE: AS SHOWN SHEET 9 OF 9