

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY STANDARDS AND SPECIFICATIONS. ALL WORK AND MATERIALS SHALL COMPLY WITH U.S.A. STANDARDS.
2. EXISTING UTILITIES LOCATED FROM ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND AND SEWER EXTENSION PLANS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTOR'S INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
3. THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON FIELD RUN TOPOGRAPHICAL SURVEY PROVIDED BY ROBERT H. VOGEL, ENGINEERING, INC. DATED JULY 2007, UPDATED OCTOBER 2014.
4. COORDINATES AND ELEVATIONS ARE BASED ON MARYLAND COORDINATE SYSTEM - NAD83(1991) AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 4849 AND 4795.
5. THE PROPERTY LINES SHOWN HEREON IS BASED ON A FIELD-RUN BOUNDARY SURVEY PERFORMED BY ROBERT H. VOGEL, ENGINEERING, INC. DATED JULY 12, 2013.
6. THE GEOTECHNICAL ENGINEER TO CONFIRM PAVING SECTION PRIOR TO CONSTRUCTION. ALL PAVING TO BE PAVING PER GEOTECHNICAL RECOMMENDATIONS.
7. THE SUBJECT PROPERTY IS ZONED CE-CL-CR IN ACCORDANCE WITH THE 10/06/13 COMPREHENSIVE ZONING PLAN.
8. ALL ELEVATIONS ARE TO FLOWLINE/BOTTOM OF CURB UNLESS OTHERWISE NOTED.
9. PUBLIC WATER AVAILABLE THROUGH CONTRACT 652-W. PUBLIC SEWER AVAILABLE THROUGH CONTRACT 24-3533-D.
10. THERE ARE NO WETLANDS, STREAMS, FLOODPLAINS, BURIAL GROUNDS, COMETRIES, OR HISTORIC STRUCTURES LOCATED ON THIS PROPERTY.
11. THIS PROJECT IS SUBJECT TO COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS (DEVELOPMENT OR CONSTRUCTION ON THIS PROPERTY 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 APPLICATIONS).
12. THIS SITE IS NOT LOCATED IN A HISTORIC DISTRICT.
13. ENVIRONMENTAL ANALYSIS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC., DATED 02/26/15.
14. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAMS OR THEIR BUFFERS, FOREST CONSERVATION AREAS AND 100 YEAR FLOODPLAIN.
15. THERE ARE NO SPECIMEN TREES LOCATED ON THE SUBJECT PROPERTY.
16. NO RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED ON THE PROPERTY.
17. IF ANY EXISTING STREET TREES DAMAGED OR DESTROYED DURING CONSTRUCTION WILL BE REPLACED BY THE CONTRACTOR.
18. THE FOREST CONSERVATION OBLIGATION FOR THIS PROJECT HAS BEEN PREVIOUSLY SATISFIED UNDER SDP-86-098 WITH THE RETENTION OF 1.98 ACRES WHICH MEETS OR EXCEEDS THE BREW-EVEN POINT OBLIGATION OF 0.89 ACRES FOR THIS SITE. PLAT 23546 (F-14-150) ABANDONED 0.61 ACRES OF THE EXISTING FOREST CONSERVATION EASEMENT, OF WHICH 0.24 ACRES IS BEING RETAINED WITHIN A FOREST CONSERVATION EASEMENT ON THE DAY RESOURCE CENTER SUBDIVISION, PARCEL A (PLAT 23547; F-14-150). THE REMAINING 0.37 ACRES IS SATISFIED BY RETENTION OF 0.74 ACRES (2.1) IN THE FOREST BANK ESTABLISHED INCORPORATION WITH THE GLENS OF GUILFORD (F-09-112). THE RETENTION EASEMENT IS PROVIDED ON TAX MAP 42, PARCEL 136, LOTS 8 & 9 (PLAT 21417).
19. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
20. ALL EXTERIOR LIGHTING TO COMPLY WITH THE REQUIREMENTS FOUND IN ZONING SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS. (DETAILS ON SHEET 2 AND 3).
21. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006), SECTION 5.5.A. A MINIMUM OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
22. STORMWATER MANAGEMENT FOR THIS PROJECT IS BEING PROVIDED BY ENVIRONMENTAL SITE DESIGN UTILIZING A GRAVEL INFILTRATION TRENCH (M-5) TO ACCOMMODATE THE TOTAL ESD VOLUME REQUIRED. THE SWM FACILITY TO BE PRIVATELY OWNED AND MAINTAINED.
23. TRASH AND RECYCLING COLLECTION TO BE PRIVATE.
24. APPROVAL OF THIS ESD DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN AND/OR REE-LINE REVISION PLAN. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS SHALL OCCUR AT THE SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN STAGES AND/OR REE-LINE REVISION PROCESS. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED REVIEW COMMENTS INCLUDING COMMENTS THAT MAY ALTER THE OVERALL SITE DESIGN) AS THIS PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.

ENVIRONMENTAL SITE DESIGN NARRATIVE

1. THE PROPERTY IS CURRENTLY VACANT AND PREDOMINANTLY WOODED. THE SUBJECT PROPERTY DOES NOT CONTAIN WETLANDS, STREAMS OR FLOODPLAIN. THE TOPOGRAPHY DOES NOT RESULT IN ANY STEEP SLOPES. THIS SITE CONSISTS OF URBAN LAND SOILS AND ALLUVAL SILT LOAM CLASSIFIED AS HYDROLOGIC SOIL GROUP "D", AND A SMALL AREA OF SASSAFRAGS LOAM SOILS CLASSIFIED AS HYDROLOGIC SOIL GROUP "B". THERE ARE NO NATURAL RESOURCES THAT WILL REQUIRE PROTECTION.
2. THE SITE NATURALLY SLOPES FROM NORTHWEST TO SOUTHEAST. THE SITE HAS BEEN DESIGNED TO MAINTAIN THESE NATURAL FLOW PATTERNS.
3. THE CONCEPTUAL REDUCTION IN IMPERVIOUS AREA THROUGH BETTER SITE DESIGN IS ACHIEVED THROUGH THE ENVIRONMENTAL SITE DESIGN (ESD) FOR THE PROJECT TO THE MAXIMUM EXTENT PRACTICABLE. THE ESD CALCULATION HAS BEEN BROKEN INTO TWO SEPARATE AREAS (ON-SITE AND GUILFORD ROAD IMPROVEMENTS). THE SWM REQUIREMENT FOR THE GUILFORD ROAD IMPROVEMENTS SHALL BE SATISFIED BY A PAYMENT OF FEE-IN-LIEU AS THE CAPITAL PROJECT FOR THE GUILFORD ROAD IMPROVEMENTS WILL BE PROVIDING STORMWATER MANAGEMENT FOR THIS DRAINAGE AREA. THE ON-SITE ESD CONCEPT PROPOSES THE USE OF MICRO-BIORETENTION FACILITIES (M-5) TO SATISFY THE ESD REQUIREMENT. THESE FACILITIES WILL DISCHARGE TO THE STORM DRAIN SYSTEM WHICH ULTIMATELY OUTFALLS TO THE STREAM SOUTHEAST OF THE SITE. THE PROPOSED ESD PRACTICES SHALL BE PRIVATELY OWNED AND MAINTAINED.
4. SEDIMENT CONTROL FOR THIS SPECIFIC SITE PLAN WILL BE PROVIDED THROUGH THE USE OF PERIMETER CONTROLS (SILT FENCE, AND SUPER SILT FENCE, EARTH DIKES AND SWALES) AND INLET PROTECTION. SEDIMENT CONTROL SHALL BE IN ACCORDANCE WITH THE CURRENT REQUIREMENTS AND SHALL BE APPROVED BY THE HOWARD COUNTY CONSERVATION DISTRICT.
5. AS STATED IN #3 ABOVE, STORMWATER MANAGEMENT FOR THE PROJECT SHALL BE MET THROUGH THE USE OF MICRO-BIORETENTION FACILITIES (M-6).
6. NO WAIVERS ARE ANTICIPATED TO FULFILL THIS CONCEPT.

LEGEND

	EXISTING CONTOUR		SOILS BOUNDARY
	PROPOSED CONTOUR		PROPOSED SIDEWALK
	EXISTING CURB AND GUTTER		EXISTING TREELINE
	PROPOSED CURB AND GUTTER		PROPOSED TREELINE
	EXISTING UTILITY POLE		PROPOSED STORM DRAIN
	EXISTING LIGHT POLE		PROPOSED STORM DRAIN INLET
	EXISTING MAILBOX		LIMIT OF DISTURBANCE
	EXISTING SIGN		SILT FENCE
	EXISTING SANITARY MANHOLE		SUPER SILT FENCE
	EXISTING SANITARY LINE		EARTH DIKE
	EXISTING CLEANOUT		EARTH DIKE
	EXISTING FIRE HYDRANT		AT CURB INLET PROTECTION
	EXISTING WATER LINE		STABILIZED CONSTRUCTION ENTRANCE
	EXISTING FENCE		
	EXISTING STORM DRAIN LINE		
	EXISTING GAS LINE		
	PROPERTY LINE		
	RIGHT-OF-WAY LINE		
	EXISTING STREAM BUFFER		
	EXISTING WETLAND		
	EXISTING WETLAND BUFFER		
	PROPOSED SPOT ELEVATION		

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION **3-30-17**
 DATE

 CHIEF, DIVISION OF LAND DEVELOPMENT **3-28-17**
 DATE

HOWARD COUNTY PARKING

DAY RESOURCE CENTER

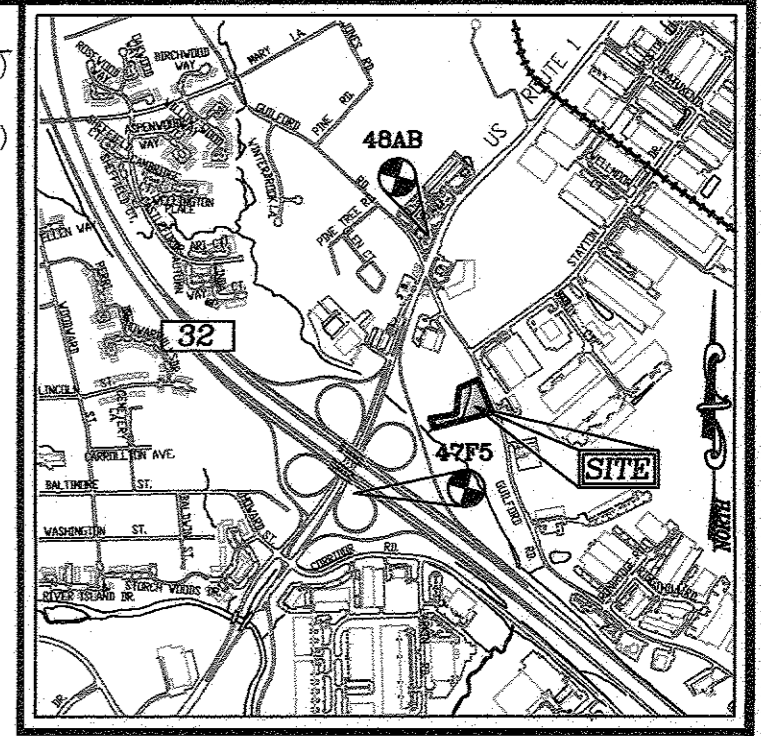
VOLUNTEERS OF AMERICA - HOWARD COUNTY HOUSING COMMISSION

ENVIRONMENTAL CONCEPT PLAN



PLAN VIEW
SCALE: 1"=30'

BENCHMARKS
 HOWARD COUNTY BENCHMARK - 4795 (CONC. MONUMENT)
 N 535985.0412 E 1366563.4555 ELEV. 234.996
 HOWARD COUNTY BENCHMARK - 4848 (CONC. MONUMENT)
 N 538384.4474 E 1366415.7904 ELEV. 225.653



SITE DATA

LOCATION : LAUREL, MD.; TAX MAP 48, BLOCK 7, PARCEL 95, PARCEL B-2
 6TH ELECTION DISTRICT
 PRESENT ZONING : CE-CL-CR
 SITE AREA : 0.61 AC.
 DPZ REFERENCES: BA-95-38E, F-83-41, SDP-96-098 & ZB-96-3R, F-15-015 (PLAT 23546), F-14-150 (PLAT 23547), PLAT 5342, PLAT 21417, F-09-112
 USE OF STRUCTURES: N/A (NO STRUCTURES PROPOSED)
 TOTAL BUILDING COVERAGE: 0 SF (0 AC. OR 0% OF GROSS AREA)
 PAVED PARKING LOT/AREA ON SITE: 22,512 SF (0.52 AC. OR 85.2% OF GROSS AREA)
 AREA OF LANDSCAPE ISLAND: 1,931 SF (0.04 AC. OR 6.6% OF GROSS AREA)
 LIMIT OF DISTURBED AREA (ON-SITE; NOT INCLUDING GUILFORD RD IMPROVEMENTS): 0.81 AC
 WETLANDS ON SITE: 0.00 AC.
 WETLAND BUFFERS ON SITE: 0.00 AC.
 STREAMS AND THEIR BUFFERS ON SITE: 0.00 AC.
 AREA OF ON-SITE 100 YEAR FLOODPLAIN: 0.00 AC.
 AREA OF EXISTING FOREST ON SITE: 0.61 AC.
 AREA OF STEEP SLOPES (15% OR GREATER): 0.00 AC.
 AREA OF ERODIBLE SOILS: 0.66 AC. (WITHIN LOD)
 AREA MANAGED BY ESDV (THIS PLAN): 0.50 AC.
 *IMPERVIOUS AREA : 0.43 AC.
 *GREEN AREA: 0.08 AC.

SHEET INDEX

DESCRIPTION	SHEET NO.
COVER SHEET AND ESDv PLAN	1 OF 2
SWM DRAINAGE AREA MAP, SWM DETAILS	2 OF 2

OWNER
 HOWARD COUNTY, MD
 DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DR
 ELLICOTT CITY, MD 21043
 (410) 313-4401

DEVELOPER
 HOWARD COUNTY HOUSING COMMISSION
 6751 COLUMBIA GATEWAY DR., 3RD FLOOR
 COLUMBIA, MD 21046
 (410) 313-6320

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN
 COVER SHEET AND ESDv PLAN
 HOWARD COUNTY PARKING
 DAY RESOURCE CENTER
 VOLUNTEERS OF AMERICA & HOWARD COUNTY HOUSING COMMISSION
 TAX MAP 48, GRID 7
 L-16570/F-66, PLAT 23546
 ZONED: CE-CL-CR
 PARCEL 95, PARCEL B-2
 HOWARD COUNTY, MARYLAND

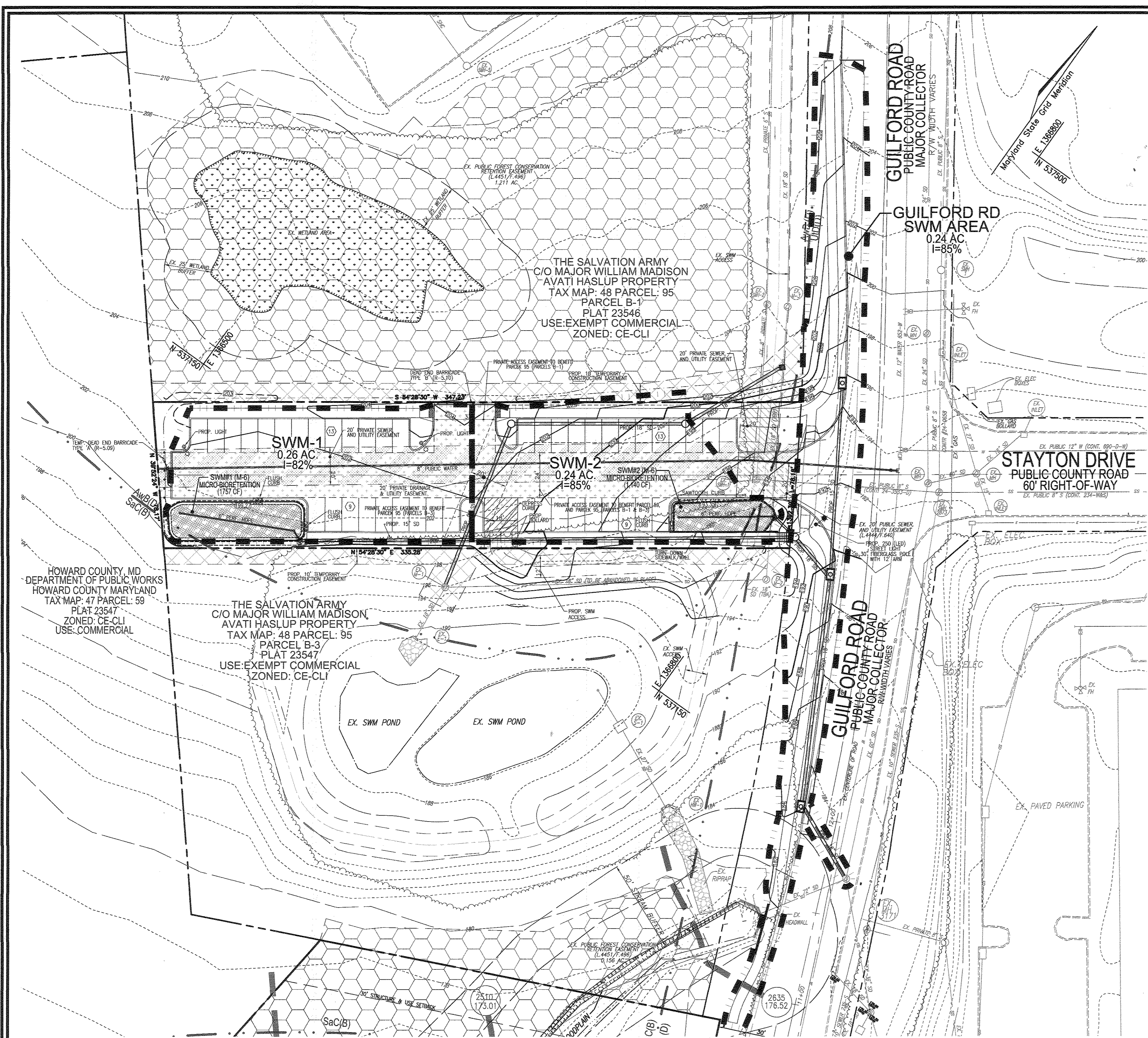
ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

DESIGN BY: RHW/DZE
 DRAWN BY: DZE
 CHECKED BY: RHW
 DATE: MARCH 2017
 SCALE: AS SHOWN
 W.O. NO.: 06-72.01

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. 16193 EXPIRES 08-27-2018

1 SHEET OF 2



APPENDIX B.4.C SPECIFICATIONS FOR MICRO-BIORETENTION, RAIN GARDEN, LANDSCAPE INFILTRATION & INFILTRATION BERMS

1. MATERIAL SPECIFICATIONS

1.1. **MATERIAL SPECIFICATIONS**

1.2. **FILTERING MEDIA OR PLANTING SOIL**

1.3. **COMPACTION**

1.4. **PLANT MATERIAL**

1.5. **PLANT INSTALLATION**

1.6. **UNDERDRAINS**

1.7. **MISCELLANEOUS**

Table B.4.1 Materials Specifications for Micro-Bioretenation, Rain Gardens & Landscape Infiltration

Material	Specification	Size	Notes
Planting soil	see Appendix A, Table A.1	n/a	plantings are site-specific
Planting soil (2" to 4" deep)	loamy sand (60-69%) & compost (35-40%) or sandy loam (50%), coarse sand (20%) & 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	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel/drainage	pea gravel, ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone, washed cobble	stone: 2" to 5"	
Geotextile	AASHTO M-43	n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)		NO. 57 OR NO. 6 AGRICULTURE (3/8" TO 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipe; not necessary underdrain pipes. Perforated pipe shall be wrapped with 1/2-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f'c = 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 308.2R-99; vertical loading [11-10 or 11-20]; allowable horizontal loading (based on soil pressure); and analysis of potential cracking. Sand substitutions such as Diabase and Gneiss (AASHTO #10 are not acceptable. No calcium carbonate or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	

ENVIRONMENTAL SITE DESIGN PRACTICE

DRAINAGE AREA #	AREA TREATED	FACILITY NUMBER	PERMEABLE PAVEMENT	STONE UNDER PERM. PAVE	LANDSCAPE INFILTRATION	PERVIOUS SIDEWALK	BIO SWALE	GRAVEL TRENCH	MICRO BIO RETENTION	STONE UNDER MBR	STONE UNDER MBR	ESDv VOLUME
SWM-1	11,436	SWM1	0	0	0	0	0	0	1,520	255	1,520	255
		SUBTOTAL 1	0	0	0	0	0	0	1,520	255	1,520	255
SWM-3	10,537	SWM3	0	0	0	0	0	0	789	166	789	166
		SUBTOTAL 3	0	0	0	0	0	0	789	166	789	166
GUILFORD RD	0		0	0	0	0	0	0	0	0	0	0
		SUBTOTAL 4	0	0	0	0	0	0	0	0	0	0
		TOTALS	0	0	0	0	0	0	2,506	421	2,506	421

TOTAL AREA: 21,973 SF
0.50 AC

TOTAL ESDv PROVIDED (cf): 2,927

* Fee-in-lieu for quantity for the Guilford Road SWM requirements shall be paid as the Capital Project for the Guilford Road Improvements will be providing stormwater management for the associated development area.

Target On-Site ESDv = 2,923 cf.
Pe = 1.80 in.

ESDv = (PexRvxA)/12
Rv = 0.05 + 0.009xI
V min = 1.0" rainfall
V max = 1yr rainfall = 2.6"

DA	% IMPERV	Rv	DA	ESDv REQ.	MINIMUM VOLUME	MAXIMUM VOLUME	TOTAL VOL PROVIDED
SWM-1	82	0.79	0.26	1,359	753	1,775	1,775
SWM-2	85	0.81	0.24	1,288	714	1,856	1,856
GUILFORD RD	46	0.46	0.31	936			

TOTAL ESDv BY SUBAREA* 0.50 2,647
*Totals do not include area for Guilford Road SWM

SWM PRACTICE	SURFACE AREA	STORAGE DEPTH (FT)	MBR VOLUME	STONE DEPTH BELOW MBR	STONE VOLUME	AREA SF	PERV AREA	IMP AREA
MICRO-BIORETENTION	1,216	1.00	1,520	0.70	255	11,436	2,028	9,408
MICRO-BIORETENTION	789	1.00	986	0.70	166	10,537	1,606	8,931
						13,472	7,302	6,170

2,506.25 421 21,973 3,634 18,338
0.50 0.08 0.42

ECP NOTES:

- APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED BUILDING AND/OR GRADING PERMIT.
- REVIEW OF THIS PLAN FOR COMPLIANCE WITH ZONING AND SUBDIVISION AND LAND DEVELOPMENT REGULATIONS SHALL OCCUR AT THE PERMIT STAGES; AND THEREFORE, THIS PLAN IS SUBJECT TO ADDITIONAL AND MORE DETAILED COMMENTS AS THE PLAN PROGRESSES THROUGH THE PERMIT PROCESS.
- THERE IS A CLASS INTERMITTENT STREAM WHICH CROSSES THE NORTHWEST CORNER OF THE SITE AND HAS A 50' STREAM BUFFER. A WETLAND ASSESSMENT FOUND NO WETLANDS ON SITE. THE TOPOGRAPHY DOES NOT RESULT IN ANY STEEP SLOPES. ACCORDING TO CURRENT DFRM APPROVED BY FEMA AND HOWARD COUNTY, THERE IS NO 100YR FLOODPLAIN LOCATED ON THIS PROPERTY.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division 3-30-17
Chief, Division of Land Development 3-29-17

PLAN VIEW
SCALE: 1" = 30'

OPERATION AND MAINTENANCE SCHEDULE FOR LANDSCAPE INFILTRATION (M-3), MICRO-BIORETENTION (M-6), RAIN GARDENS (M-7), BIOTENTION SWALE (M-8), AND ENHANCED FILTERS (M-9)

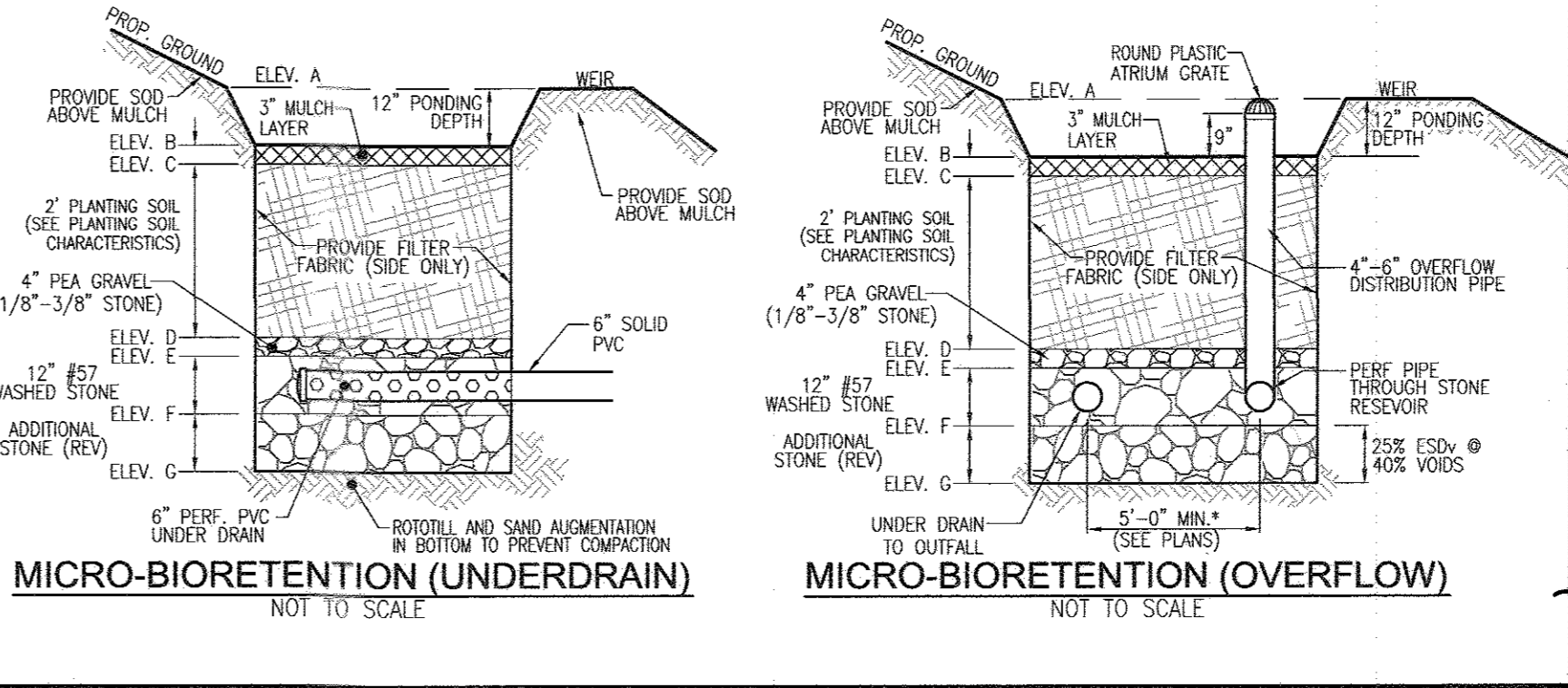
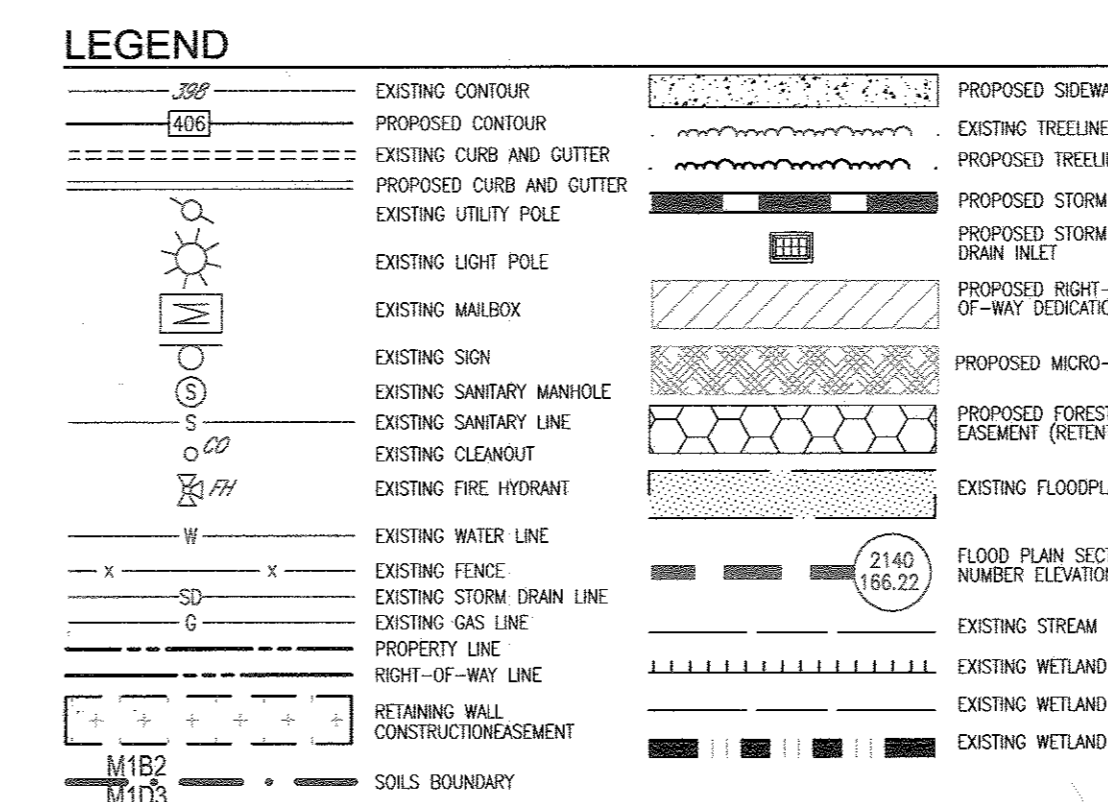
- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND PEST INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME II, TABLE A.4.1 AND 2.
- THE OWNER SHALL PERFORM A PLANT 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 WEEDS AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
- THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

SOILS LEGEND
HOWARD COUNTY SOILS MAP #25

SYMBOL	NAME / DESCRIPTION	GROUP	K	ERODIBLE
AwB	ALLOWAY SILT LOAM, 2-5 PERCENT SLOPES	D	4.5	YES
S4C	SAKSARFAS LOAM, 5 TO 10 PERCENT SLOPES	B	24	NO
U1D	URBAN LAND-UDORHENT'S COMPLEX, 0 TO 15 PERCENT SLOPES	D	-	NO

MICRO BIO RETENTION NOTES:

- ONLY THE SIDES OF MICROBIORETENTION ARE TO BE WRAPPED IN FILTER FABRIC. FILTER FABRIC BETWEEN LAYER OR AT THE BOTTOM OF THE MICROBIORETENTION WILL CAUSE THE MBR TO FAIL, AND THEREFORE SHALL NOT BE INSTALLED.
- WRAP THE PERFORATED MBR UNDERDRAIN PIPE WITH 1/4" MESH (4x4) OR SMALLER GALVANIZED HARDWARE CLOTH.
- PROVIDE 5" MINIMUM SPACING BETWEEN UNDER DRAIN AND PERFORATED PIPE THROUGH STONE RESERVOIR OR SPACE PIPE EQUALLY ACROSS BOTTOM FOR SMALL BIOS. (SEE PLANS)



OWNER
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6751 COLUMBIA GATEWAY DR. 3RD FLOOR
COLUMBIA, MD 21046
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ENVIRONMENTAL CONCEPT PLAN
STORMWATER MANAGEMENT DRAINAGE AREA MAP; SWM DETAILS

HOWARD COUNTY PARKING
DAY RESOURCE CENTER
VOLUNTEERS OF AMERICA & HOWARD COUNTY HOUSING COMMISSION
TAX MAP 48, GRID 7
6TH ELECTION DISTRICT

L.16570/F 66, PLAT 23546
ZONED: CE-CL-CR

PARCEL 95, PARCEL B-2
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8966

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 09-27-2018

DESIGN BY: RHW/DZE
DRAWN BY: DZE
CHECKED BY: RHW
DATE: FEBRUARY 2017
SCALE: AS SHOWN
W.O. NO.: 06-72.01

2 SHEET OF 2