

SHEET INDEX	
No.	DESCRIPTION
1	TITLE SHEET
2	PROPOSED CONDITIONS, GRADING, EROSION AND SEDIMENT CONTROL PLAN
3	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
4	EROSION AND SEDIMENT CONTROL DETAILS AND SOIL BORING LOGS
5	STORMWATER MANAGEMENT PLAN
6	STORMWATER MANAGEMENT DETAILS
7	LANDSCAPE PLAN

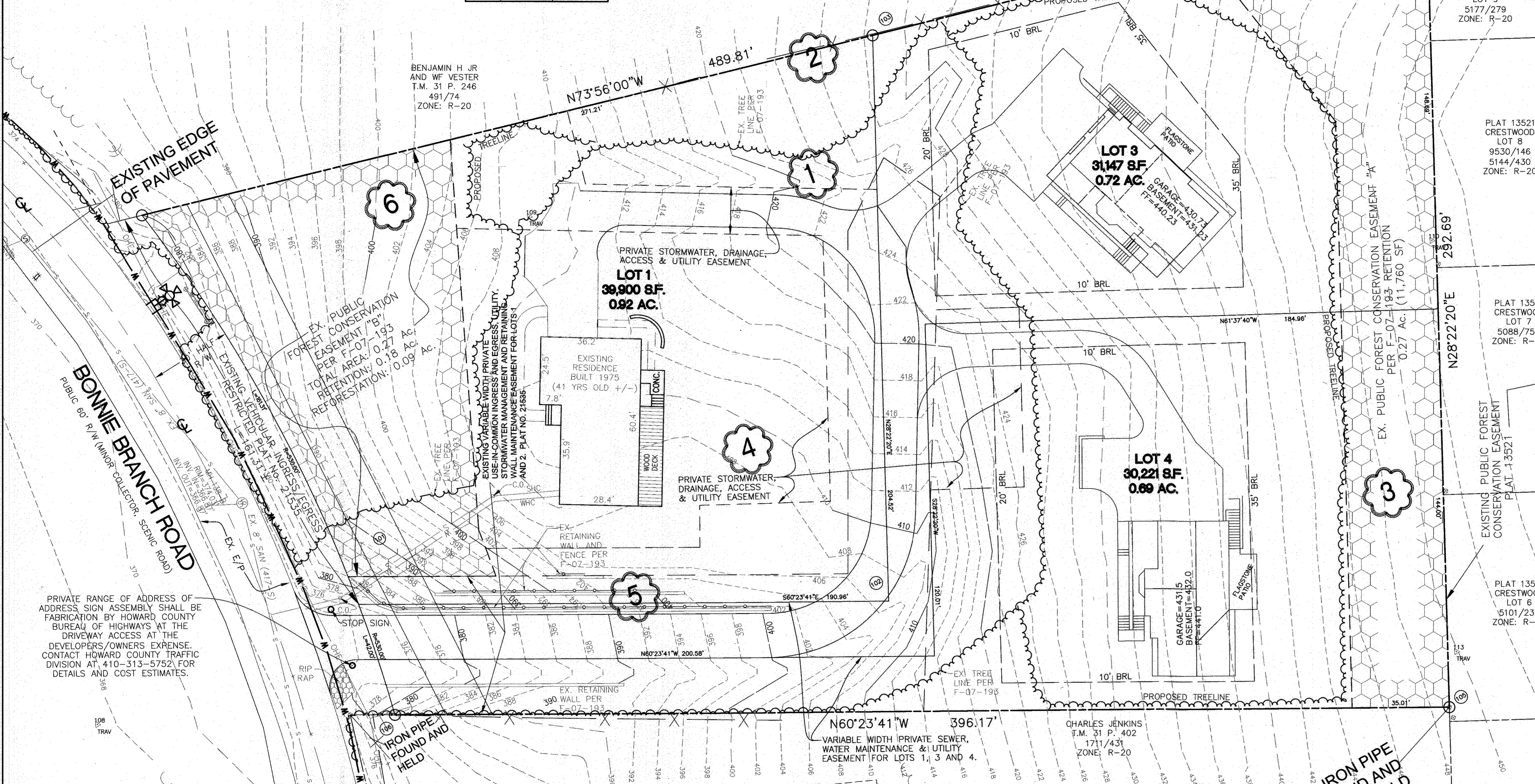
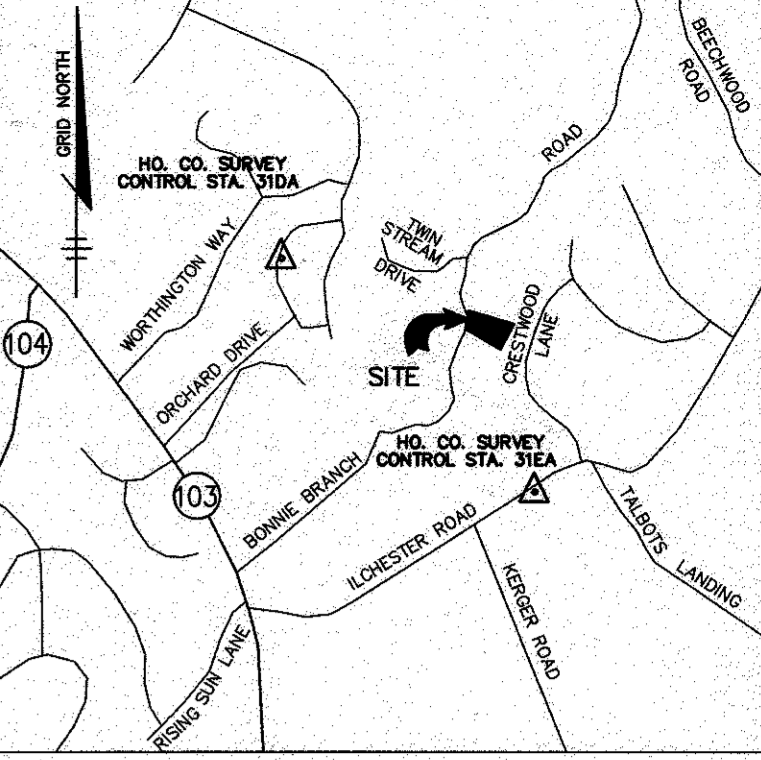
BOUNDARY COORDINATES		
POINT #	NORTHING	EASTING
101	571334.1513	1374136.3922
102	571239.8103	1374302.4263
103	571419.7593	1374399.6112
104	571362.8340	1374597.2650
105	571105.3040	1374458.1810
106	571293.0709	1374127.7232

MINIMUM LOT SIZE CHART			
LOT NO.	GROSS AREA	PIPESTEM AREA	MINIMUM LOT SIZE
1	39,900 S.F.	0 S.F.	39,900 S.F.
3	31,147 S.F.	5,672 S.F.	25,475 S.F.
4	30,221 S.F.	3,952 S.F.	26,269 S.F.

STORMWATER MANAGEMENT PRACTICE(S)			
LOT NUMBER	ADDRESS	MICRO-BIORETENTION FACILITY M-6 (QUANTITY)	DRY-WELL FACILITY M-5 (QUANTITY)
LOT 1	4941 BONNIE BRANCH ROAD	2" MBR 2'S	1" DW 7'S
LOT 3	4949 BONNIE BRANCH ROAD	1" MBR 2'S	2" DW 2'S
LOT 4	4953 BONNIE BRANCH ROAD	1" MBR 2'S	2" DW 2'S

\* SOME FACILITIES ARE SHARED.  
 # LOT 1 MBR 2'S MBR 3 SHARED, DW-7 SHARED  
 \* LOT 4 MBR 1' AND DW 5'-DW 6 SHARED

BENCHMARKS NAD' 83 HORIZONTAL	
HO. CO. #310A STAMPED BRASS DISK SET ON TOP OF CONCRETE BASE, ILICESTER ROAD, 1/10 MILES NORTH OF ORCHARD ROAD. N 571982.652 E 1372145.08 ELEVATION: 481.646'	
HO. CO. #31EA STAMPED BRASS DISK SET ON TOP OF CONCRETE BASE, ILICESTER ROAD, 3/4 MILE NE OF RT-103. N 589641.124' E 1374816.03' ELEVATION: 468.888'	



**SITE ANALYSIS DATA SHEET:**  
 TOTAL GROSS AREA OF SITE: 2.325 AC OR 101,268 SF  
 TOTAL NET AREA OF LOTS: 2.325 AC OR 101,268 SF  
 TOTAL AREA OF RIGHT OF WAY DEDICATION: 0.000 AC OR 0 SF  
 TOTAL NUMBER OF LOTS TO BE RECORDED: 2 LOTS TO BE RECORDED, LOT 1 EXISTING PER F-07-193  
 AREA OF 25% SLOPES PER F-07-193 ON SITE: 16,380 SF  
 AREA OF 25% SLOPES PER F-07-193 ON SITE & CONTIGUOUS PARCELS: 18,727 SF

ZONING: R-20  
 DENSITY: 1 DU/20,000 SF  
 EXISTING USE: RESIDENTIAL, 2 DU  
 PROPOSED USE: RESIDENTIAL, 3 DU

PER F-07-193 THE SOIL TYPES SHOWN ON THIS SITE ARE AS SHOWN IN THE "HOWARD COUNTY SOILS SURVEY", AND ARE GLADSTONE LEGORE COMPLEX, AND SASSAFRAS AND CROOM, AND ARE HSG TYPE B.

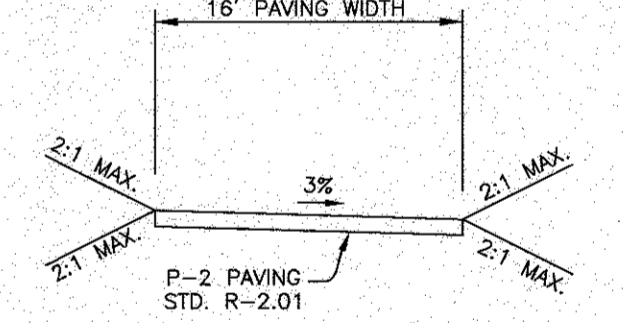
THERE ARE NO WETLANDS ON THIS SITE PER F-07-193. WETLAND RE-CERTIFICATION WAS COMPLETED BY BENCHMARK ENGINEERING, INC., DATED 3/21/17.

THERE ARE NO FLOODPLAINS ON THIS SITE PER F-07-193 PER FEMA FIRM PANEL 240044 0029 B REVISED 3/21/17.

A FEE-IN-LIEU OF OPEN SPACE OF \$1,500 HAS BEEN PROVIDED FOR LOT 3 PER F-07-193. A FEE-IN-LIEU OF OPEN SPACE OF \$1,500.00 WILL BE REQUIRED FOR LOT 4.

DISTURBED AREA = 58,781 SF OR 1.35 AC  
 IMPERVIOUS AREA = 9,674 SF OR 0.22 AC  
 BUILDING COVERAGE AREA = 6,647 SF OR 0.15 AC = 6.5% OF SITE.

PREVIOUS FILE NUMBERS:  
 WP-06-107 (APPEAL DENIED 7/21/06)  
 WP-07-115 (WAVIERS TO SECTION 16.116(b)(1) AND SECTION 16.117(b) DENIED 5/9/07)  
 BA-607-D (DENIED 11/15/07)  
 WP-10-111 (WAVIERS TO SECTION 16.144(r)(3), SECTION 16.120(b)(4)(iii), SECTION 16.1205(a) APPROVED 3/25/10)  
 BA-10-010 (VARIANCE TO ZONING SECTION 108.D.4.(1)(a)(ii) APPROVED 6/15/10)  
 ALTERNATIVE COMPLIANCE TO DESIGN MANUAL VOL IV, DETAIL R-6.06 (APPROVED 7/12/10)  
 F-07-193  
 ECP-16-046



PRIVATE RANGE OF ADDRESS OF ADDRESS SIGN ASSEMBLY SHALL BE FABRICATED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DRIVEWAY ACCESS AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES.

**GENERAL NOTES:**

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- TRAFFIC CONTROL DEVICES:
  - THE R-1 ("STOP") SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
  - THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE 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" (MUMUCD).
  - 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.
  - A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
  - THE EXISTING TOPOGRAPHY BASED ON A FIELD RUN SURVEY WITH TWO FOOT CONTOUR INTERVALS PREPARED BY THE RBA GROUP, INC DATED FEBRUARY 15, 2005, PER F-07-193.
  - THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM PER F-07-193. HOWARD COUNTY MONUMENT NOS. 31DA AND 31EA WERE USED FOR THIS PROJECT.
- THE WATER AND SEWER IS PUBLIC. THE WATER CONTRACT NUMBER IS 266-W. THE SEWER CONTRACT NUMBER IS 417-S. THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT. THE DRAINAGE AREA IS THE MIDDLE PATUXENT.
- STORMWATER MANAGEMENT WILL BE PROVIDED BY ENVIRONMENTAL SITE DESIGN TO THE MAXIMUM EXTENT PRACTICABLE. STORMWATER MANAGEMENT RESPONSIBILITY OF ALL STORMWATER MANAGEMENT DEVICES IS PRIVATE TO THE LOT OWNERS.
- THE GEOTECHNICAL REPORT WAS PREPARED BY GEOLABS, INC. IN FEBRUARY, 2016.
- THERE ARE NO FLOODPLAINS ON THIS SITE PER F-07-193, PER FEMA FIRM PANEL 240044 0029 B REVISED 12/4/86.
- THERE ARE NO WETLANDS ON THIS SITE PER F-07-193 AND PER WETLAND CERTIFICATION LETTER DATED MARCH 21, 2017.
- NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT BECAUSE SUBDIVISION IS LESS THAN 4 LOTS; NO NOISE STUDY IS REQUIRED PER DESIGN MANUAL.
- PROJECT BACKGROUND INFORMATION:
  - TAX MAP 31, GRID 9, PARCEL 321, ZONING R-20.
  - TOTAL GROSS AREA OF SITE: 2.325 AC OR 101,268 SF
  - 1ST ELECTION DISTRICT, NUMBER OF PROPOSED LOTS = 3
  - DPZ REFERENCE NUMBER F-07-193, ECP-16-046, F-17-058.
  - REFER TO SITE DATA ANALYSIS, THIS SHEET, FOR WAVIERS AND VARIANCES.
  - THIS PLAN CONFORMS TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- LANDSCAPING FOR LOTS 3 AND 4 SHALL BE PROVIDED IN ACCORDANCE WITH THIS CERTIFIED LANDSCAPE PLAN AND IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. POSTING OF SURETY FOR 10 EVERGREEN TREES AND 30 SHRUBS IN THE AMOUNT OF \$2,400.00 SHALL BE DEFERRED UNTIL SITE DEVELOPMENT PLAN APPROVAL.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
  - WIDTH = 12' (SERVING MORE THAN ONE RESIDENCE);
  - SURFACE = 6" OF COMPACTED CRUSHER RUN BASE W/ TAR AND CHIP COATING (1-1/2" MIN.);
  - GEOMETRY = MAX 18% GRADE, MAX 10% GRADE CHANGE AND MIN. 45' TURNING RADIUS;
  - STRUCTURES = CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING);
  - DRAINAGE ELEMENTS-CAPABLE OF SAFELY PAVING 100-YEAR FLOOD WITH NO MORE THAN 1-FOOT DEPTH OVER DRIVEWAY SURFACE;
  - MAINTENANCE-SUFFICIENT TO INSURE ALL WEATHER USE.
- A USE-IN-COMMON MAINTENANCE AGREEMENT FOR LOTS 1, 3, AND 4 WILL NOT BE RECORDED SIMULTANEOUSLY WITH THIS PLAN. THE EASEMENT WAS PREVIOUSLY RECORDED IN THE LAND RECORDS OFFICE OF HOWARD COUNTY, MD., AS LIBER 13135, FOLIO 341.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES AND PLACEMENT OF NEW STRUCTURES IS PERMITTED WITHIN THE LIMITS OF THE FOREST CONSERVATION EASEMENTS OR STEEP SLOPES EXCEPT AS SHOWN ON THE SUPPLEMENTAL PLAN ON FILE WITH THIS PLAN FOR THE CONSTRUCTION OF THE SHARED DRIVEWAY.
- NO FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY LINE AND NOT ONTO THE PIPESTEM LOT DRIVEWAY.
- WATER AND SEWER SERVICE TO THESE LOTS WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 16.125.B OF THE HOWARD COUNTY CODE. PUBLIC WATER AND SEWER ALLOCATION WILL BE GRANTED AT THE TIME OF ISSUANCE OF BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
- THERE ARE NO EXISTING DWELLING/STRUCTURE(S) LOCATED ON LOTS 3 OR 4 TO REMAIN EXISTING DWELLING ON LOT 1 IS TO REMAIN.
- THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT UNDER F-07-193. NO NEW FOREST CONSERVATION IS REQUIRED. NO FOREST CONSERVATION PLAN IS NECESSARY FOR THIS SUBMISSION. FOREST STAND DELINEATION WAS APPROVED UNDER F-07-193.
- A PRE-SUBMISSION COMMUNITY MEETING WAS HELD ON JANUARY 6, 2016, PER SECTION 16.128 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- A PRIVATE RANGE OF ADDRESS SIGN SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPER'S EXPENSE.
- THIS DEVELOPMENT IS DESIGNED TO BE IN ACCORDANCE WITH SECTION 16.127 - RESIDENTIAL INFILL DEVELOPMENT OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. THE DEVELOPER OF THIS PROJECT SHALL CREATE COMPATIBILITY WITH THE EXISTING NEIGHBORHOOD THROUGH THE USE OF ENHANCED PERIMETER LANDSCAPING, BERMS, FENCES, SIMILAR HOUSING UNIT TYPES AND THE DIRECTIONAL ORIENTATION OF THE PROPOSED HOUSES.
- THE MODERATE INCOME HOUSING UNIT REQUIREMENT (COUNCIL BILL 35-2013) SHALL BE FULFILLED BY PAYMENT OF A FEE-IN-LIEU 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 LOT/RESIDENTIAL UNIT 4 ONLY WITHIN THIS SUBDIVISION AT TIME OF BUILDING PERMIT ISSUANCE.
- THERE IS NO RECREATIONAL OPEN SPACE REQUIREMENT FOR THIS PROJECT SINCE THERE ARE LESS THAN 10 LOTS.
- TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO CEMETERY OR HISTORIC LOCATIONS ON-SITE.
- CONTRACTOR AND OWNER TO BRACE ANY AND ALL UTILITY POLES WITHIN 50' OF CONSTRUCTION AND ALL UTILITY POLES THAT COULD FALL DUE TO THIS CONSTRUCTION. CONSULTATION WITH THE OWNER OF THE UTILITY IS REQUIRED, FOLLOW THEIR GUIDELINES.

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 T. Mauch, P.E. 8-3-17  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE

CH. P. 7-22-17  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE

NO.	DATE	REVISION

**BENCHMARK ENGINEERING, INC.**  
 8480 BALTIMORE NATIONAL PIKE SUITE 313A ELLICOTT CITY, MARYLAND 21043  
 (P) 410-466-8105 (F) 410-466-8644  
 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. 45571, Expiration Date: 06-08-2018.

**FAWCETT PROPERTY - LOTS 1, 3 & 4**  
 ELLICOTT CITY, MARYLAND 21043

TAX MAP: 31 - GRID- 9 - PARCEL: 321  
 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND  
 ZONED: R-20 (SINGLE FAMILY DETACHED)

**TITLE SHEET**

DATE: JUNE, 2017 BEI PROJECT NO. 2735  
 SCALE: AS SHOWN SHEET 1 OF 7

DESIGN: JC DRAFT: JC/DBT



B-4 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

Using vegetation to cover to protect exposed soil from erosion. Purpose: To promote the establishment of vegetation on exposed soil.

B-4-1 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

Establishment of vegetative cover on cut and fill slopes. Purpose: To provide timely vegetative cover on cut and fill slopes as work progresses.

B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

The process of preparing the soils to sustain adequate vegetative stabilization. Purpose: To provide a suitable soil medium for vegetative growth.

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

The application of seed and mulch to establish vegetative cover. Purpose: To protect disturbed soils from erosion during and at the end of construction.

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

To stabilize disturbed soils with permanent vegetation. Purpose: To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

To stabilize disturbed soils with vegetation for up to 6 months. Purpose: To use fast growing vegetation that provides cover on disturbed soils.

B-4-6 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

A mound or pile of soil protected by appropriately designed erosion and sediment control measures. Purpose: To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

- 1. A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-3123-1855 after the future LOO and protected areas are marked clearly in the field. A minimum of 48 hours notice to CID must be given at the following stages:
a. Prior to the start of earth disturbance.
b. Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading.
c. Prior to the start of another phase of construction or opening of another grading unit.
d. Prior to the removal or modification of sediment control practices.

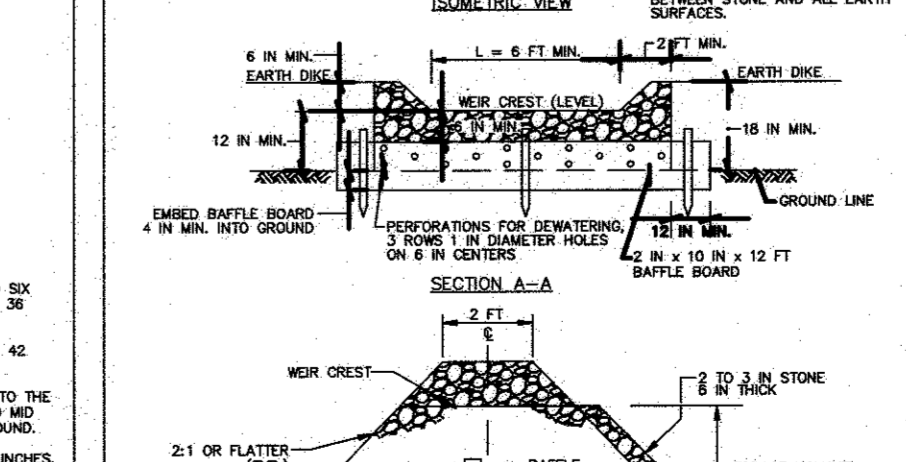
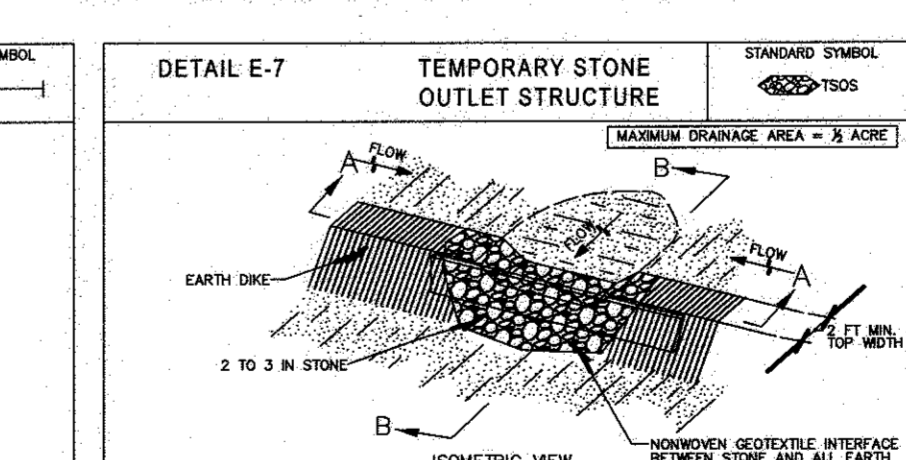
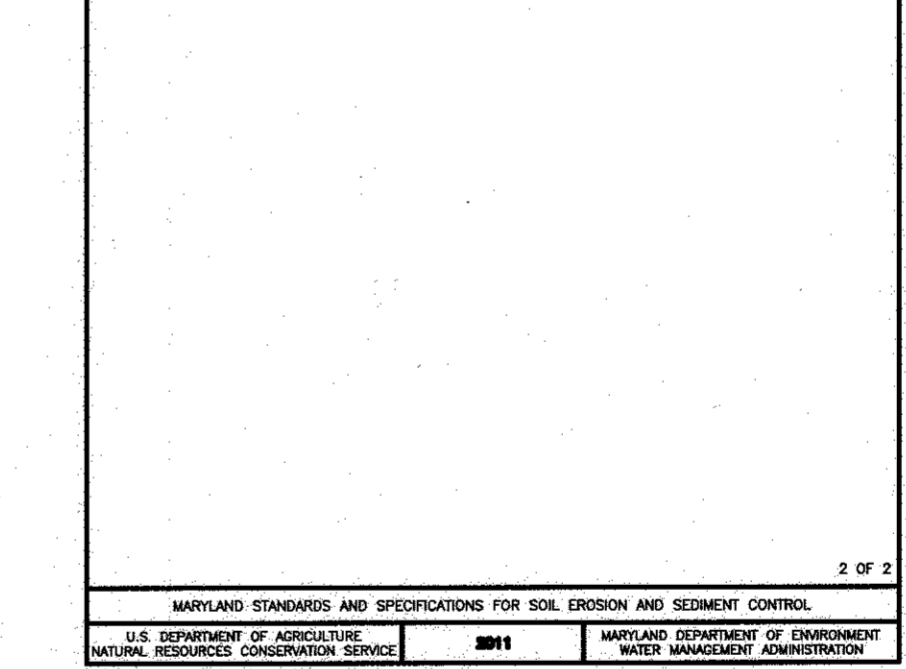
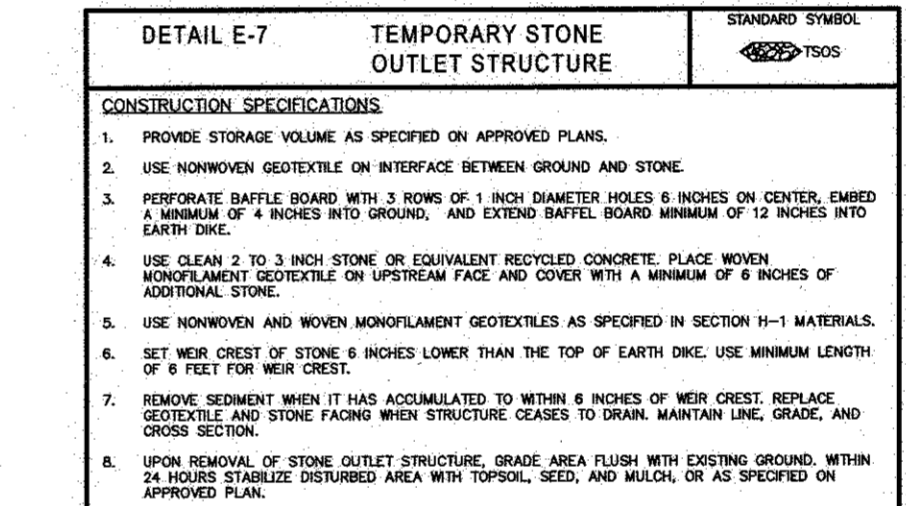
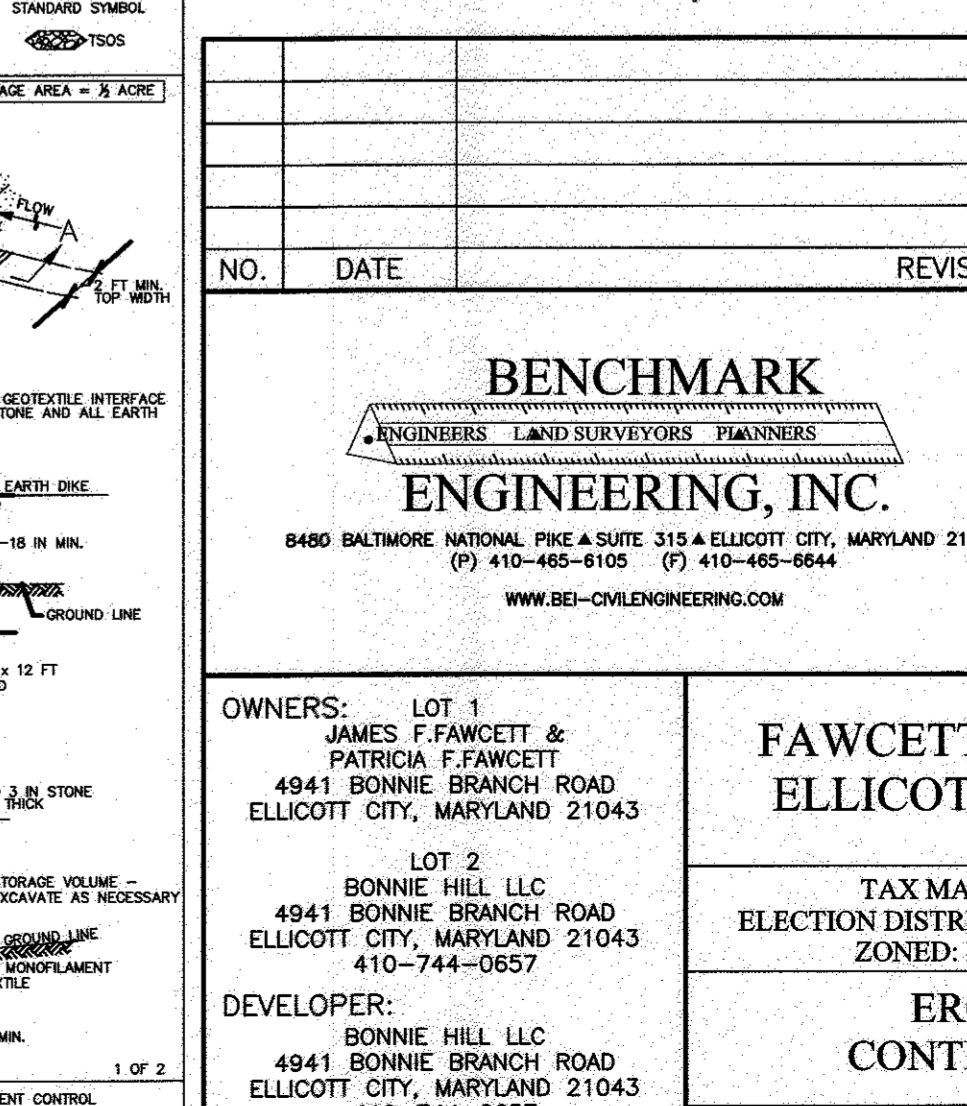
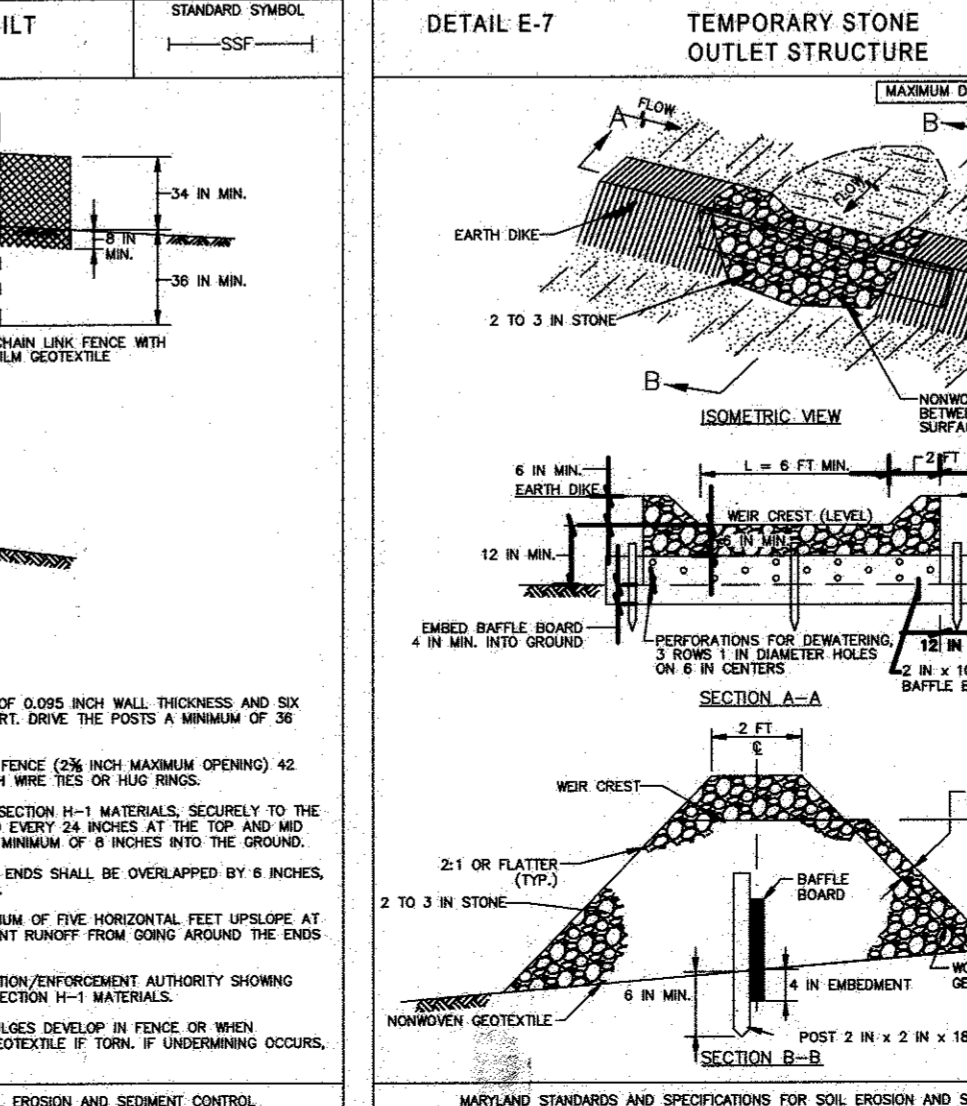
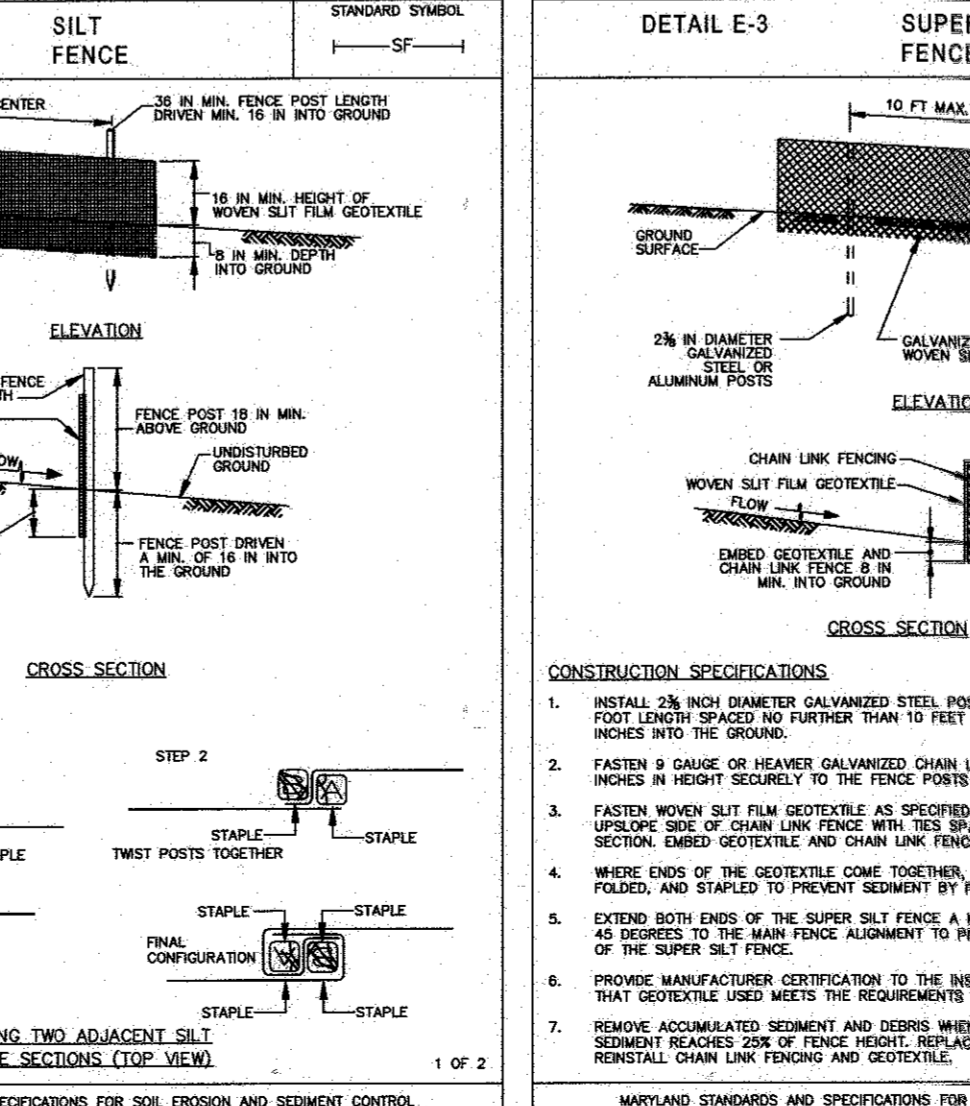
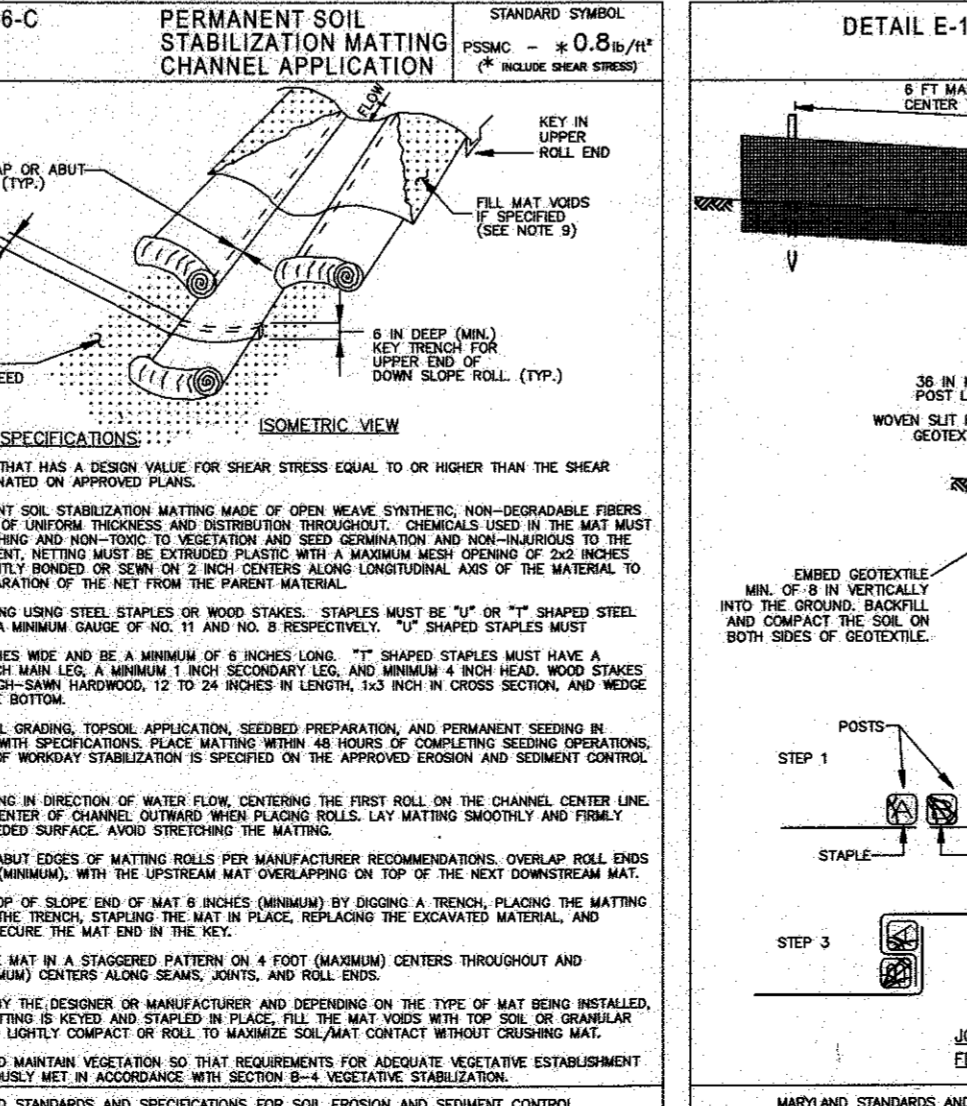
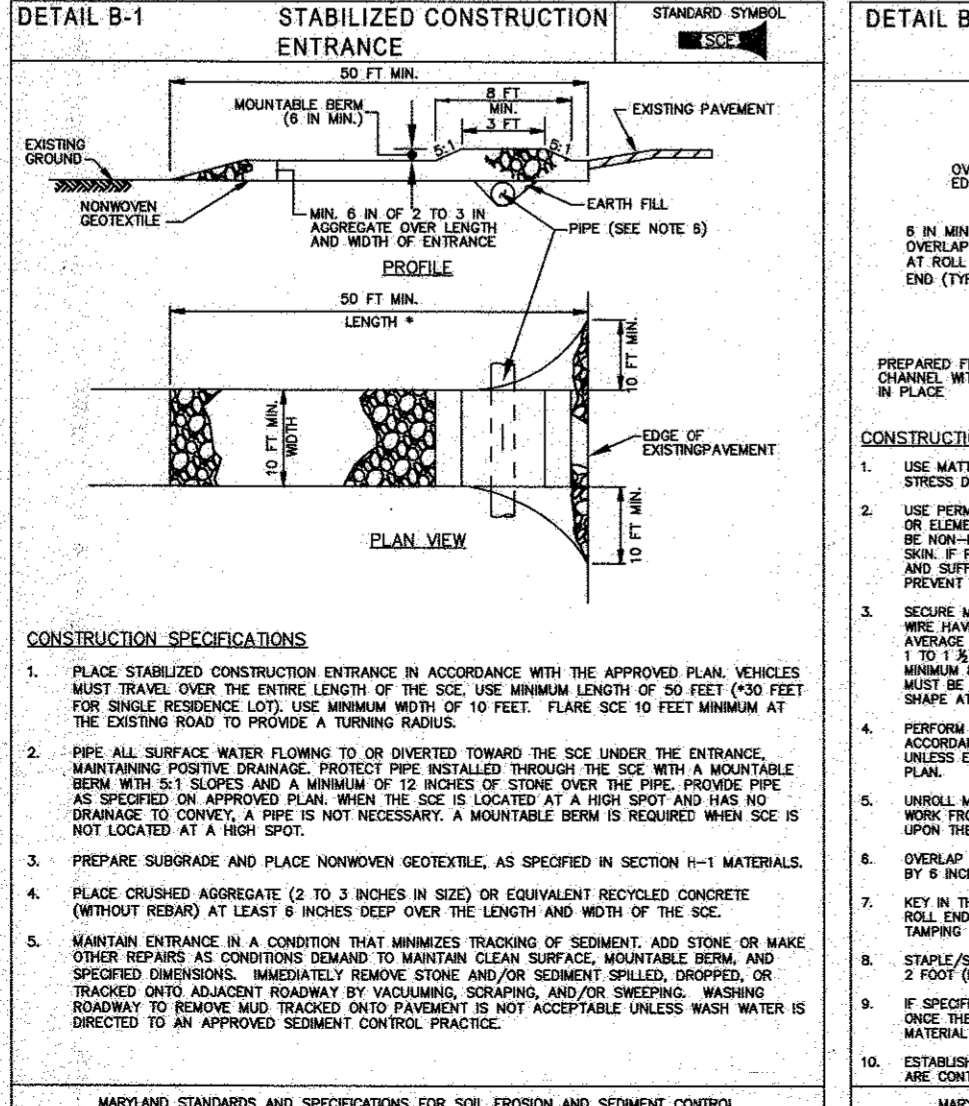


Table with 2 columns: Description and Value. Includes Total Area of Site (2.33 Acres), Area Disturbed (1.35 Acres), Area to be roofed or paved (0.22 Acres), Area to be vegetatively stabilized (1.13 Acres), Total cut (800 Cu Yds), and Off-site waste/borrow area location (SITE WITH AN ACTIVE GRADING PERMIT).

- 7. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
8. 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 should 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)
• Brief description of project's status (e.g. percent complete) and/or current activities
• Evidence of sediment discharge
• 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
• Identify any corrective action performed
• Other Inspection Items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE).

ENGINEER'S CERTIFICATE and DEVELOPER'S CERTIFICATE. Includes signatures of John M. Carney and Janice M. Fawcett, dated 6/26/17 and 6/28/17 respectively. Approved by the Department of Planning and Zoning.



BENCHMARK ENGINEERING, INC. logo and contact information. Includes address: 8450 BALTIMORE NATIONAL PIKE & SUITE 315A ELLICOTT CITY, MARYLAND 21043. Phone: (410) 465-0105. Website: WWW.BE-CIVILENGINEERING.COM.



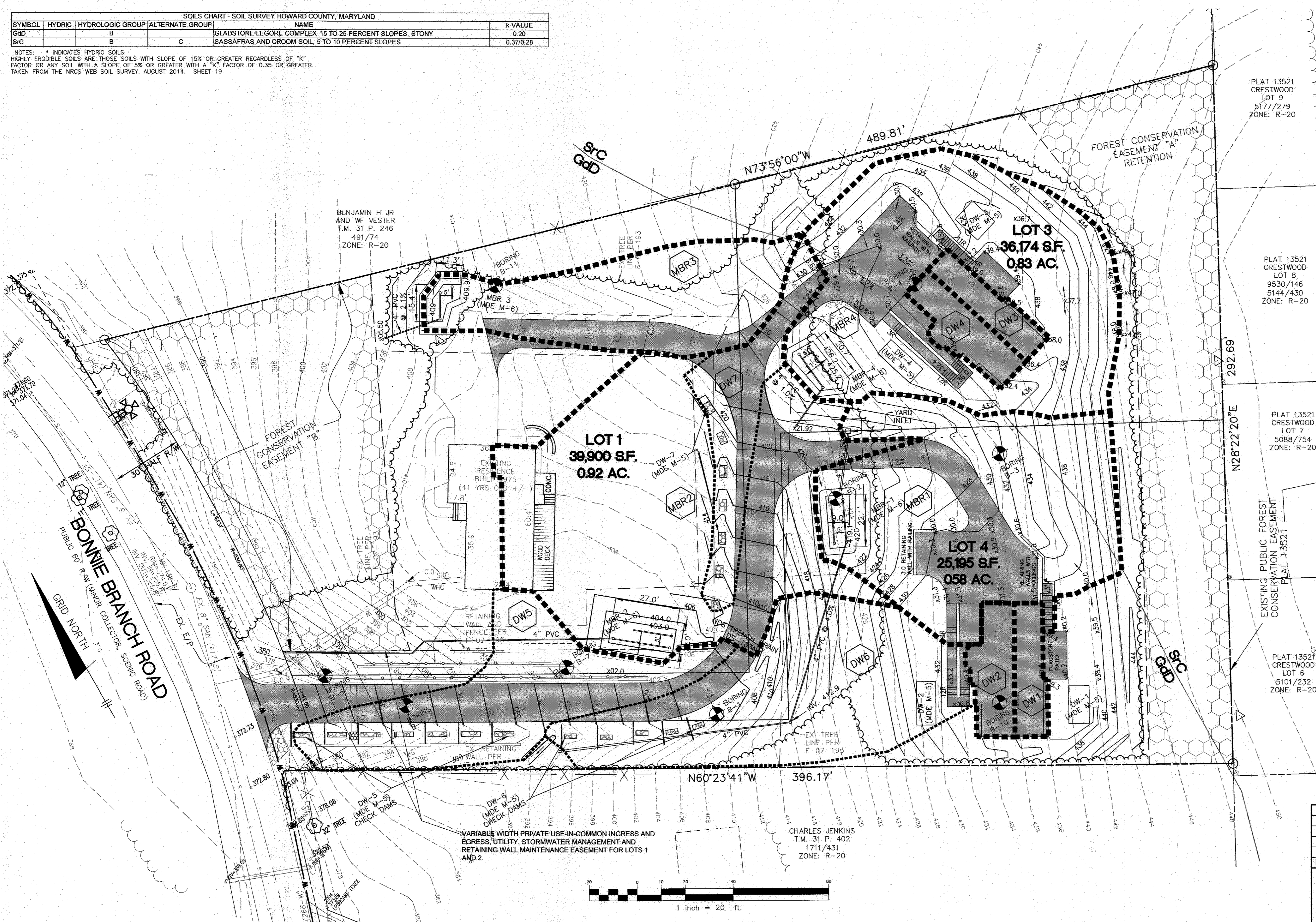
SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND

SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALTERNATE GROUP	NAME	K-VALUE
GdD	B			GLADSTONE-LEGORE COMPLEX 15 TO 25 PERCENT SLOPES, STONY	0.20
SrC	B		C	SASSAFRAS AND CROOM SOIL 5 TO 10 PERCENT SLOPES	0.37/0.28

NOTES: \* INDICATES HYDRIC SOILS.  
HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH SLOPE OF 15% OR GREATER REGARDLESS OF "K" FACTOR OR ANY SOIL WITH A SLOPE OF 5% OR GREATER WITH A "K" FACTOR OF 0.35 OR GREATER.  
TAKEN FROM THE NRCS WEB SOIL SURVEY, AUGUST 2014. SHEET 19

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED TREELINE
- SOIL SERIES BOUNDARY
- GRASS SWALE WITH TRENCHES
- FOREST CONSERVATION EASEMENT
- PROPOSED IMPERVIOUS SURFACES
- ESD DRAINAGE AREA
- DRAINAGE AREA TO DW #5, 6, & 7
- INDICATES MICRO BIO-RETENTION
- INDICATES DRY-WELL
- SOIL BORING TEST LOCATION
- DRAINAGE AREA DESIGNATION



PLAT 13521  
CRESTWOOD  
LOT 9  
5177/279  
ZONE: R-20

PLAT 13521  
CRESTWOOD  
LOT 8  
9530/146  
5144/430  
ZONE: R-20

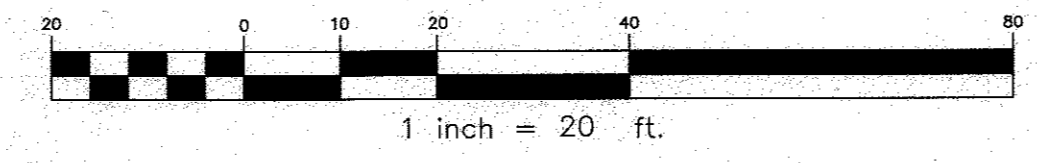
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CRESTWOOD  
LOT 7  
5088/754  
ZONE: R-20

PLAT 13521  
CRESTWOOD  
LOT 6  
5101/232  
ZONE: R-20

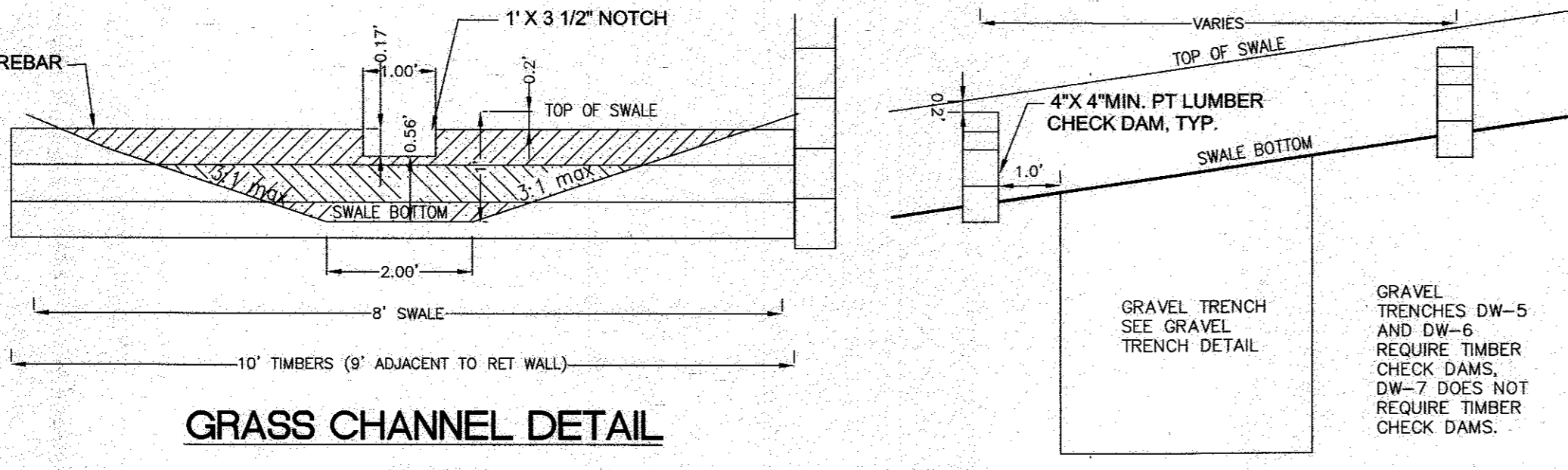
BENJAMIN H JR  
AND WF VESTER  
T.M. 31 P. 246  
491/74  
ZONE: R-20

CHARLES JENKINS  
T.M. 31 P. 402  
1711/431  
ZONE: R-20

VARIABLE WIDTH PRIVATE USE-IN-COMMON INGRESS AND  
EGRESS, UTILITY, STORMWATER MANAGEMENT AND  
RETAINING WALL MAINTENANCE EASEMENT FOR LOTS 1  
AND 2.



APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*T. Manhan for KS* 8-3-17  
CHIEF, DIVISION OF LAND DEVELOPMENT  
*Chick* 7-24-17  
CHIEF, DEVELOPMENT ENGINEERING DIVISION



SWM SUMMARY TABLE													
Pa=	1.6	inches											
D.A.	MDE Type	Total DA	Impervious Area	Qe	Required	Provided	Af	2% DA	Depth	Required	Volume Treated	ESDv Test	Rev
MBR-1	(M-6)	9,793	2,310	0.42	196	198	ok	0.90	0.90	342	354	PASS	0.2248
MBR-2	(M-6)	12,669	1,821	0.29	270	528	ok	1.00	1.00	303	532	PASS	0.2908
MBR-3	(M-6)	5,132	1,196	0.42	103	112	ok	0.80	0.80	178	192	PASS	0.1178
MBR-4	(M-6)	10,559	2,252	0.39	237	237	ok	0.80	0.80	341	345	PASS	0.2424
DW-1	(M-5)	715	715	1.52	NA	NA	NA	NA	NA	91	272	100%	0.0000
DW-2	(M-5)	917	917	1.52	NA	NA	NA	NA	NA	116	291	100%	0.0000
DW-3	(M-5)	715	715	1.52	NA	NA	NA	NA	NA	91	289	100%	fail
DW-4	(M-5)	917	917	1.52	NA	NA	NA	NA	NA	116	291	100%	fail
DW-5	(M-5)	5,593	1,895	0.57	NA	NA	NA	NA	NA	298	236	fail	fail
DW-6	(M-5)	7,716	861	0.20	NA	NA	NA	NA	NA	82	100	100%	fail
DW-7	(M-5)	2,555	1,237	0.77	NA	NA	NA	NA	NA	186	210	100%	fail
<b>Totals</b>		<b>87,294</b>	<b>14,838</b>		<b>906</b>	<b>1,974</b>				<b>2,143</b>	<b>3,111</b>		<b>0.0980</b> <b>0.8789</b>

ESDv for the drainage area containing practice MBR-3 and DW-7 is met by the combination of the practices.  
ESDv for the drainage areas DW-5 is provided to the MEP and is overcompensated for in other areas as the total ESDv provided exceeds the Target.

NO.	DATE	REVISION

**BENCHMARK ENGINEERING, INC.**  
REGISTERED LAND SURVEYORS & PLANNERS  
6480 BALTIMORE NATIONAL PIKE # SUITE 315 • ELLICOTT CITY, MARYLAND 21043  
(P) 410-485-8105 (F) 410-485-9644  
WWW.BM-CVLENGINEERING.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: 06-08-2018.

OWNERS: LOT 1 JAMES F. FAWCETT & PATRICIA F. FAWCETT 4941 BONNIE BRANCH ROAD ELLICOTT CITY, MARYLAND 21043  
LOT 2 BONNIE HILL LLC 4941 BONNIE BRANCH ROAD ELLICOTT CITY, MARYLAND 21043  
DEVELOPER: BONNIE HILL LLC 4941 BONNIE BRANCH ROAD ELLICOTT CITY, MARYLAND 21043 410-744-0657

**FAWCETT PROPERTY - LOTS 1, 3 & 4 ELLICOTT CITY, MARYLAND 21043**

TAX MAP: 31 - GRID: 9 - PARCEL: 321  
ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND  
ZONED: R-20 (SINGLE FAMILY DETACHED)

**STORMWATER MANAGEMENT PLAN**

DATE: JUNE, 2017 BEI PROJECT NO. 2735  
SCALE: AS SHOWN SHEET 5 OF 7  
DESIGN: JC DRAFT: JC/DBT

**CONSTRUCTION SPECIFICATIONS**

**B.4.C Specifications for Micro-Bioretenion, Rain Gardens, Landscape Infiltration & Infiltration Berms**

**1. Material Specifications:**

The allowable materials to be used in these practices are detailed in Table B.4.1.

**2. Filtering Media or Planting Soil:**

The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the micro-bioretenion practice that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.

The planting soil shall be tested and shall meet the following criteria:

- Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification)
- Organic Content - Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy and(60%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%).
- Clay Content - Media shall have a clay content of less than 5%.
- pH Range - Should be between 5.5 - 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated.

**3. Compaction:**

It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoes to remove original soil. If practices are excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.

Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to refracture the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the optional sand layer. Pump any ponded water before preparing (rototilling) base.

When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.

When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.

**4. Plant Material:**

Recommended plant material for micro-bioretenion practices can be found in Appendix A, Section A.2.3.

**5. Plant Installation:**

Compost is a better organic material source, is less likely to float, and should be placed in the invert and other low areas. Mulch should be placed in surrounding to a uniform thickness of 2" to 3". Shredded or chipped hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

Rootstock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/8th of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed cover after installation.

Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers, de-fats, or at a minimum, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds per 1000 square feet.

**6. Underdrains:**

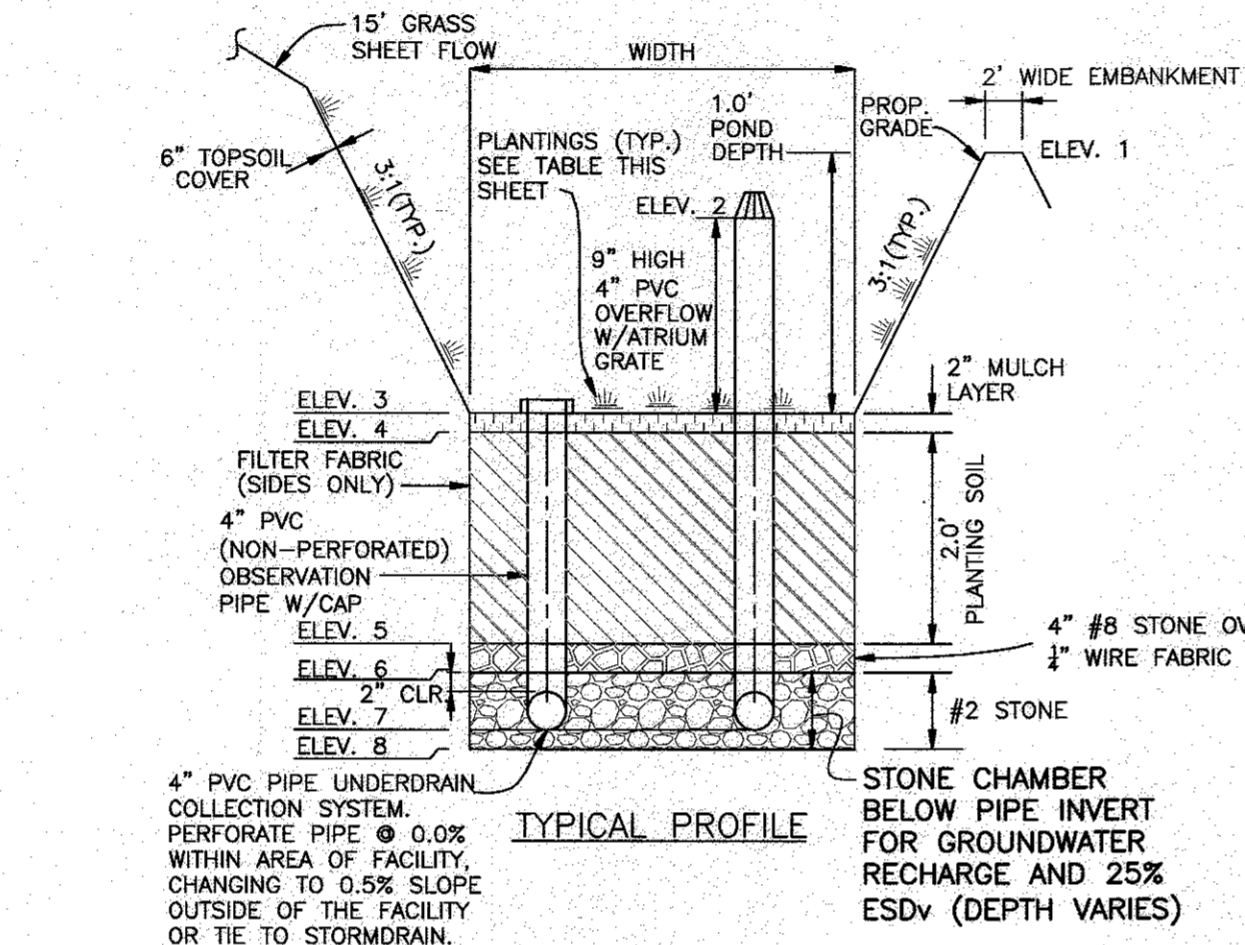
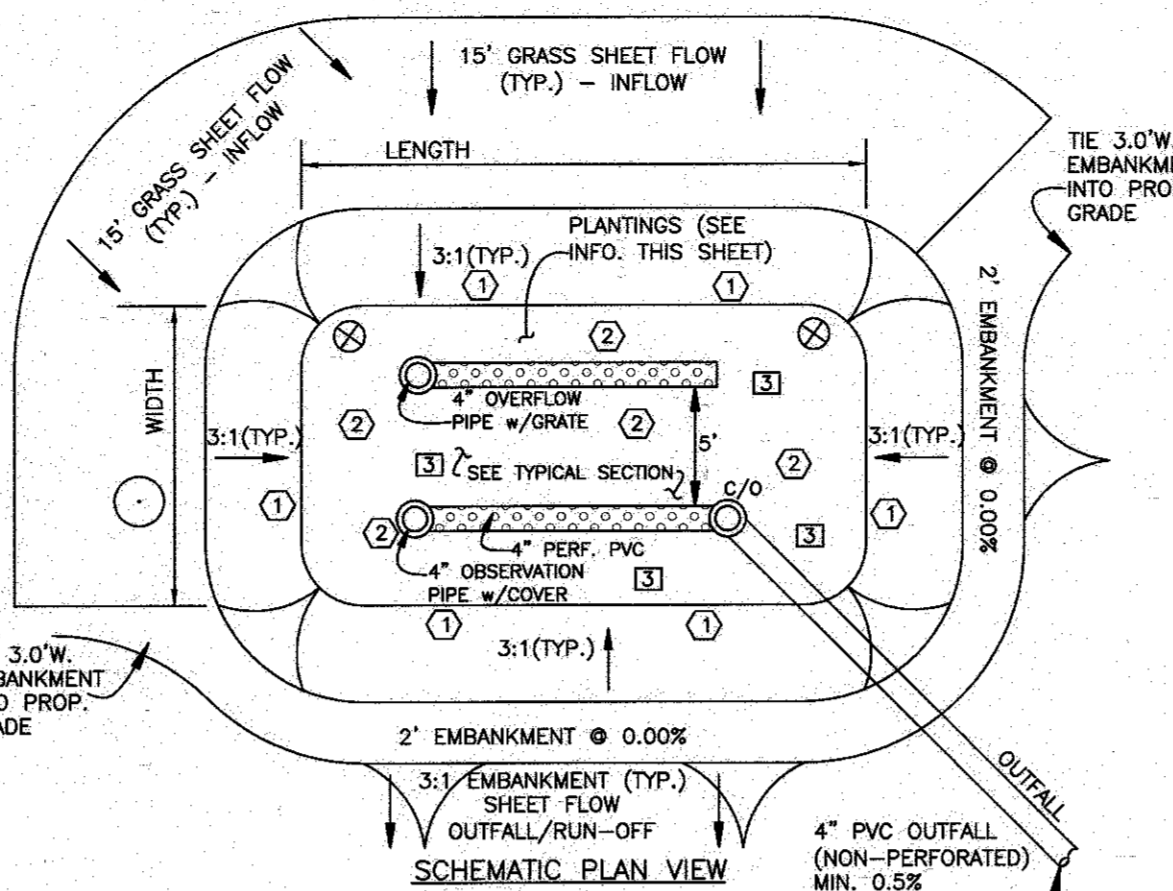
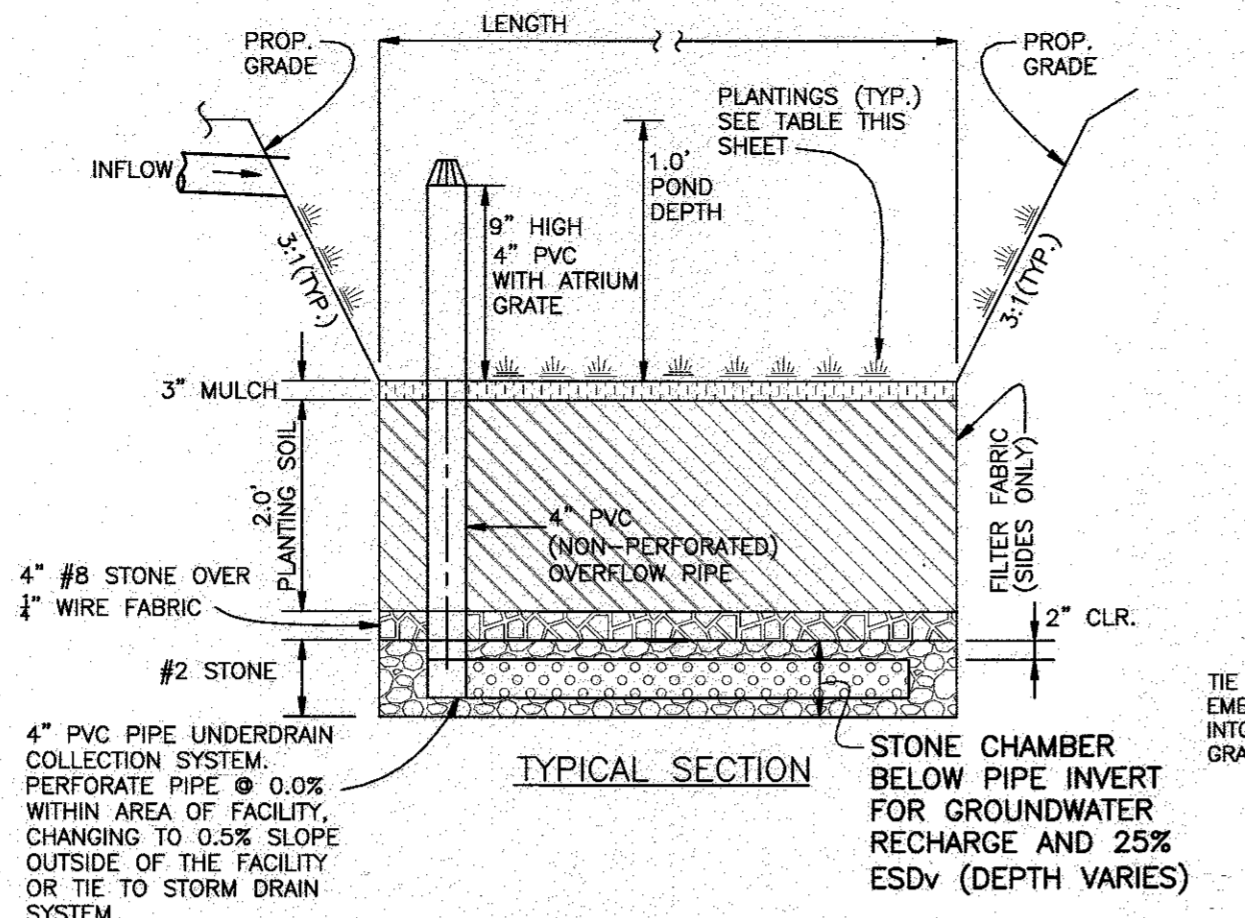
Underdrains should meet the following criteria:

- Pipe- Should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTM F 758, Type PS 28, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).
- Perforations - If perforated pipe is used, perforations should be 3/4" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a 1/2" (No. 4 or 4x4) galvanized hardware cloth.
- Gravel - The gravel layer (No. 57 stone preferred) shall be at least 3" thick above and below the underdrain
- The main collector pipe shall be at a minimum 0.5% slope.
- A rigid, non-perforated observation well must be provided (one per every 1,000 square feet) to provide a clean-out port and monitor performance of the filter.
- A 4" layer of pea gravel (1/4" to 3/8" stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24".

The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).

**7. Miscellaneous:**

These practices may not be constructed until all contributing drainage area has been stabilized



**MICRO-BIORETENTION DESIGN TABLES**

MBR #	Elev. 1	Elev. 2	Elev. 3	Elev. 4	Elev. 5	Elev. 6	Elev. 7	Elev. 8	Surface Area
MBR #1	420.00	419.85	419.10	418.93	416.93	416.60	416.02	415.77	198.1 SF
MBR #2	404.00	404.00	403.00	402.83	400.83	400.50	399.92	399.67	270 SF
MBR #3	409.90	409.75	409.00	408.83	406.83	406.50	405.92	405.67	111.5 SF
MBR #4	426.20	425.95	425.20	425.03	423.03	422.70	422.12	421.87	236.8 SF

NOTE: SEE SHEET 2 FOR SURFACE AREA DIMENSIONS

**TYPICAL MICRO-BIORETENTION DETAILS**

**UNDERDRAIN, OVERFLOW AND OUTFALL NOTES**

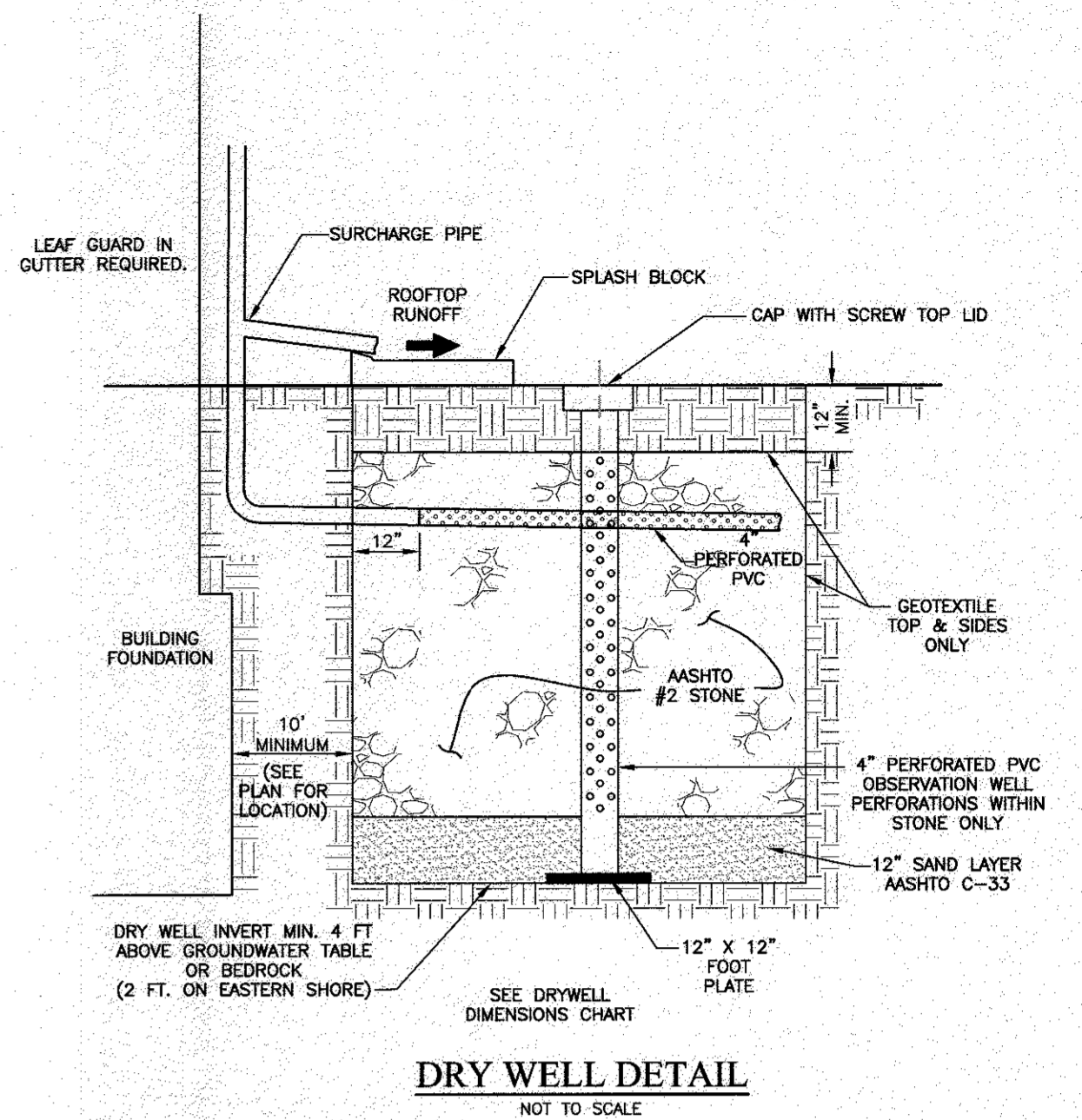
1. THE LAST CLEAN-OUT LOCATION WITHIN EACH MICRO-BIORETENTION FACILITY SHALL BE FITTED WITH A NON-CLOGGING SURFACE DRAIN (EXAMPLE: 4" ABS ROOF DRAIN W/CAST ALUMINUM DOME) AT THE POND SURFACE ELEVATION INDICATED IN THE CORRESPONDING TABLE ELEV. 2.
2. THE PVC WITHIN THE FACILITY SHALL BE PERFORATED.
3. THE UNDER-DRAIN AND PIPE TO OUTFALL SHALL BE INSTALLED TO A MINIMUM DEPTH OF 2' BELOW FINISHED GRADE AND SHALL MAINTAIN A MINIMUM 1% SLOPE AND MAINTAIN A MINIMUM OF 1' OF SEPARATION AT ALL CROSSINGS.

**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED (M-3) LANDSCAPE INFILTRATION (M-6) MICRO-BIORETENTION**

- 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 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 II, Table A.4.1 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 vegetation considered beyond treatment, replace dead plant material with acceptable replacement plant material, treat diseased trees and shrubs, and replace all deficient stakes and wires.
- The Owner shall inspect the mulch each spring. The mulch shall be replaced every two to three years. The previous mulch layer shall be removed 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.

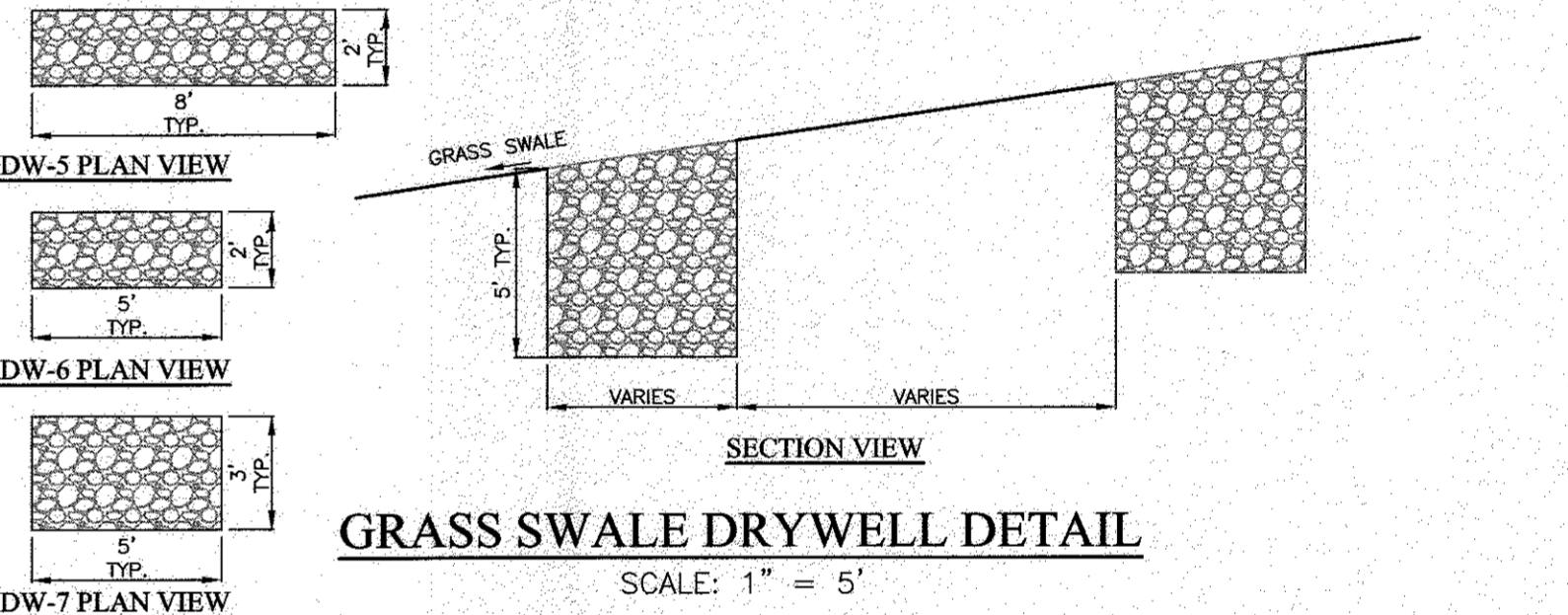
**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED (M-5) DRY WELLS**

- 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 down 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.



**Dry Well Dimension Chart**

Dry Well	Length (ft)	Width (ft)	Depth of Stone (ft)	Top of Stone Elevation	Bottom of Stone Elevation	Bottom of Sand Elevation
#1	15.8	8.8	5.0	437.5	433.50	432.50
#2	18.2	8.0	5.0	428.5	424.50	423.50
#3	12.8	10.6	5.0	433.5	429.50	428.50
#4	18.2	8.0	5.0	429.0	425.00	424.00



**GRASS SWALE DRYWELL DETAIL**

Gravel Trench Designation	Drainage Area (sf)	Impervious (sf)	Percent Impervious	Soils	Target Fe (Inches)	Volumetric Runoff	Target ESDv (cf)	Volume per Trench (cf)	Number of Trenches	Total Volume
DW-5	5593	1895	34%	B	1.80	0.35	298	32	7	236
DW-6	7716	661	9%	B	1.00	0.13	82	20	5	100
DW-7	2568	1237	48%	B	1.80	0.48	186	30	7	210

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 T. Mauldin for KS 8-3-17  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
 D. I. Chas 7-24-17  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Appendix B.4. Construction Specifications for Environmental Site Design Practices

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil [2' to 4' deep]	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (30%), coarse sand (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	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (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 pipes; not necessary underdrain pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3, f <sub>c</sub> = 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 350.R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil permeability) and analysis of potential cracking
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO #10) are not acceptable. No calcium carbonate or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

NO. DATE REVISION

**BENCHMARK ENGINEERING, INC.**  
 8480 BALTIMORE NATIONAL PIKE A SUITE 315 A ELLICOTT CITY, MARYLAND 21043  
 (P) 410-465-9100 (F) 410-465-9944  
 WWW.BE-CAVLEENGINEERING.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: 06-08-2018.

**FAWCETT PROPERTY - LOTS 1, 3 & 4 ELLICOTT CITY, MARYLAND 21043**

LOT 1  
 JAMES F. FAWCETT & PATRICIA F. FAWCETT  
 4941 BONNIE BRANCH ROAD ELLICOTT CITY, MARYLAND 21043

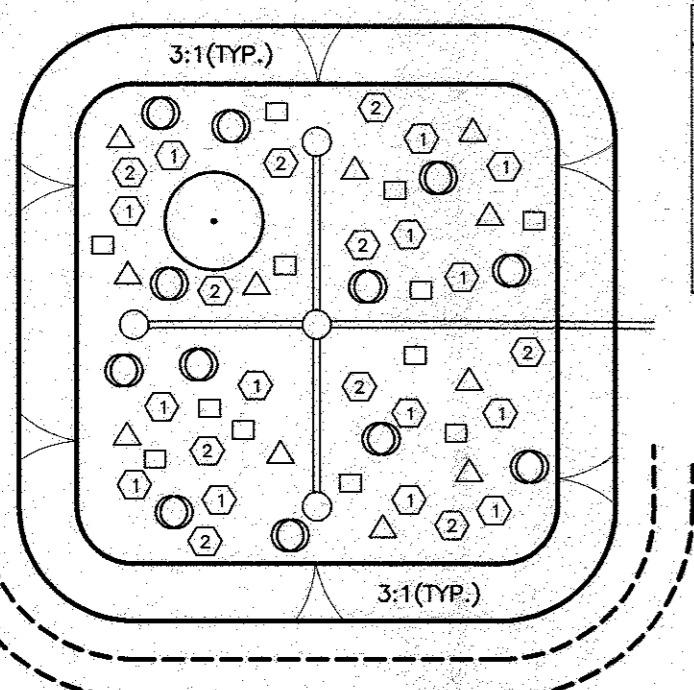
LOT 2  
 BONNIE HILL LLC  
 4941 BONNIE BRANCH ROAD ELLICOTT CITY, MARYLAND 21043  
 410-744-0657

TAX MAP 31 - GRID: 9 - PARCEL: 321  
 ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND  
 ZONED: R-20 (SINGLE FAMILY DETACHED)

**STORMWATER MANAGEMENT DETAILS**

DATE: JUNE, 2017  
 BEI PROJECT NO. 2735  
 SCALE: AS SHOWN  
 SHEET 6 OF 7

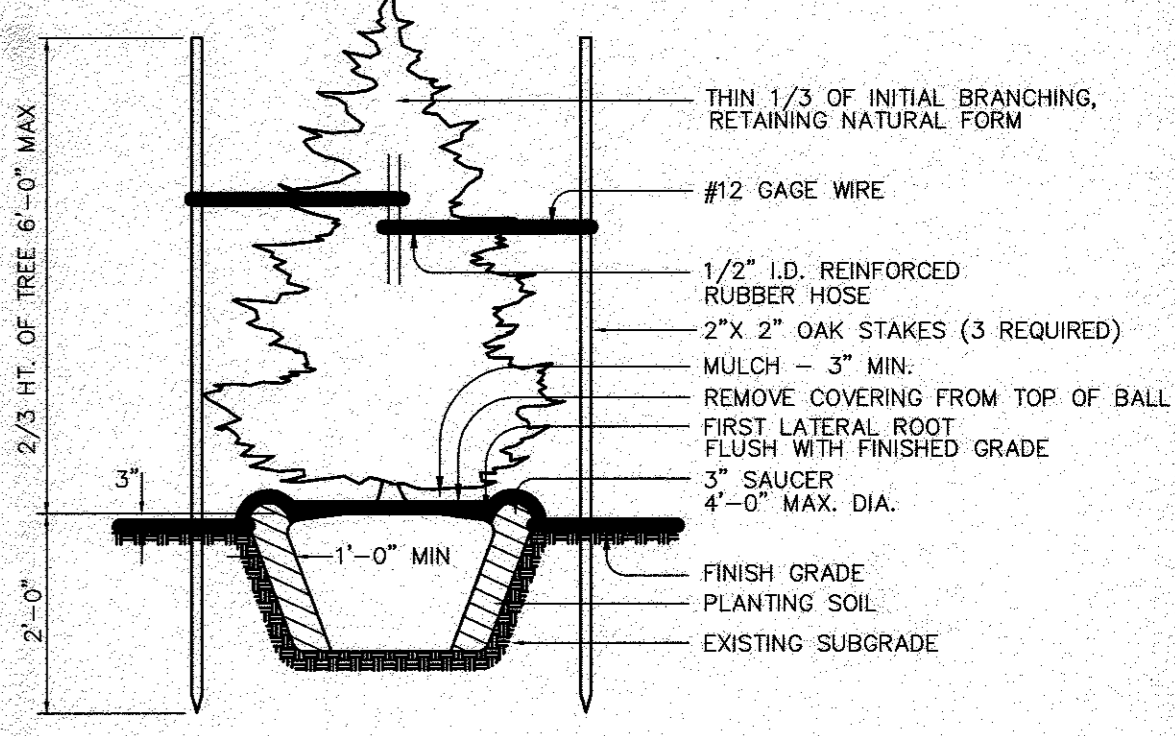
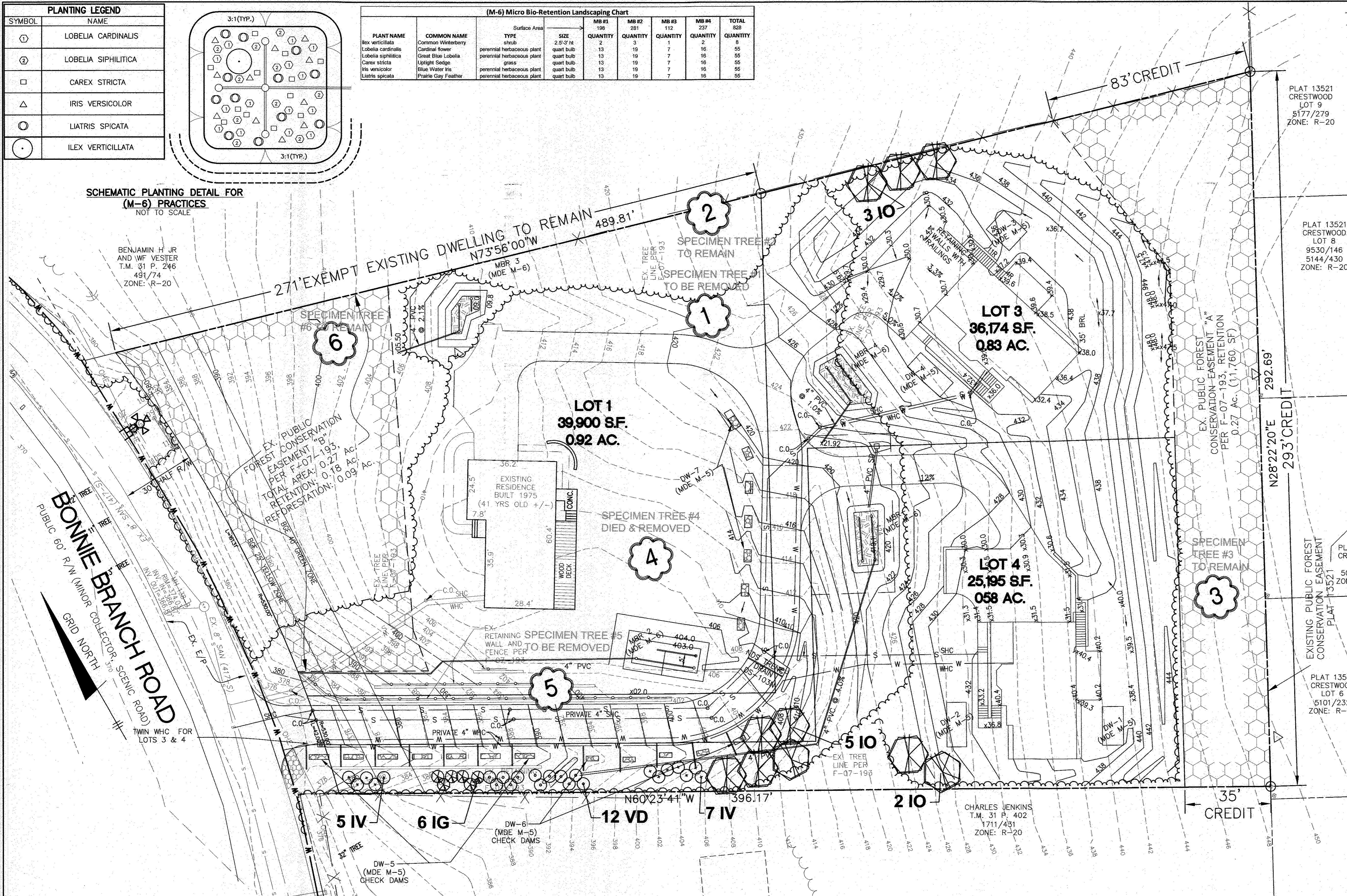
PLANTING LEGEND	
SYMBOL	NAME
①	LOBELIA CARDINALIS
②	LOBELIA SIPHILITICA
□	CAREX STRICTA
△	IRIS VERSICOLOR
○	LIATRIS SPICATA
●	ILEX VERTICILLATA



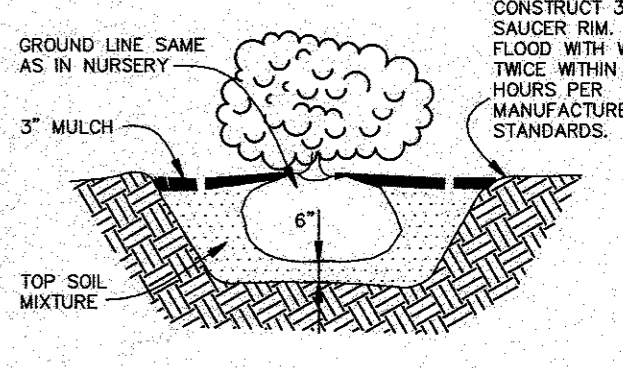
(M-6) Micro Bio-Retention Landscaping Chart									
PLANT NAME	COMMON NAME	TYPE	SIZE	MB #1	MB #2	MB #3	MB #4	TOTAL	
Ilex verticillata	Common Winterberry	shrub	2.5'-3' ht	198	281	112	237	828	QUANTITY
Lobelia cardinalis	Cardinal flower	perennial herbaceous plant	quart bulb	2	3	1	2	8	QUANTITY
Lobelia siphilitica	Great Blue Lobelia	perennial herbaceous plant	quart bulb	13	19	7	16	55	QUANTITY
Carex stricta	Uplight Sedge	grass	quart bulb	13	19	7	16	55	QUANTITY
Iris versicolor	Blue Water Iris	perennial herbaceous plant	quart bulb	13	19	7	16	55	QUANTITY
Liriodendron tulipifera	Prairie Gay Feather	perennial herbaceous plant	quart bulb	13	19	7	16	55	QUANTITY

LEGEND	
	EXISTING CONTOUR
	PROPOSED CONTOUR
	PROPOSED TREELINE
	FOREST CONSERVATION EASEMENT
	MICRO-BIO SURFACE AREA TO BE PLANTED (SEE DETAIL)
	SPECIMEN TREE
	WATER HOUSE CONNECTION
	SEWER HOUSE CONNECTION
	LANDSCAPE SHRUBS
	LANDSCAPE EVERGREEN TREES

**SCHEMATIC PLANTING DETAIL FOR (M-6) PRACTICES**  
NOT TO SCALE



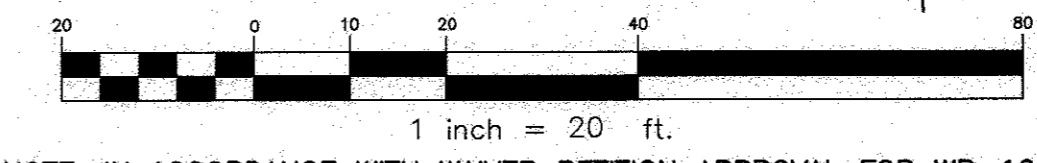
**EVERGREEN PLANTING DETAIL**  
NOT TO SCALE



**SHRUB PLANTING DETAIL**  
NOT TO SCALE

SCHEDULE A PERIMETER LANDSCAPE EDGE			
CATEGORY	ADJACENT TO ROADWAYS	ADJACENT TO PERIMETER PROPERTY	TOTALS
LANDSCAPE TYPE		A - LIGHT 1.00 shade	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	NA	1,179**	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	YES 411'	
EXEMPT EXISTING DWELLING TO REMAIN	NA	271'	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	
NUMBER OF PLANTS REQUIRED		497 LF**	8
SHADE TREES	0	0	0
EVERGREEN TREES	0	0	0
OTHER TREES (2:1 SUBSTITUTE)	0	0	0
SHRUBS	0	0	0
NUMBER OF PLANTS PROVIDED		10*	10
SHADE TREES	0	10*	10
EVERGREEN TREES	0	0	0
OTHER TREES (2:1 SUBSTITUTE)	0	0	0
SHRUBS (10:1 SUBSTITUTE)	0	30	30

PERIMETER LANDSCAPE PLANTING LIST				
SYMBOL	QUANTITY	NAME	REMARKS	DESCRIPTION
	10	ILEX OPACA 'JERSEY PRINCESS' AMERICAN HOLLY	6' - 8' B & B	EVERGREEN TREES ALONG PERIMETER EDGES. PROVIDED BY THE BUILDER.
	6	ILEX GLABRA 'SHAMROCK' SHAMROCK INKERRY	30" - 36"	SHRUBS TO BE PLANTED ALONG PERIMETER BY USE-IN-COMMON DRIVE. PROVIDED BY THE BUILDER.
	12	ILEX VERTICILLATA 'WINTER RED' WINTERBERRY	36" - 42"	
	12	VIBURNUM DENTATUM SOUTHERN ARROWWOOD	36" - 42"	



NOTE: IN ACCORDANCE WITH WAIVER PETITION APPROVAL FOR WP-10-111, SPECIMEN TREES NOS. 1 AND 5 MAY BE REMOVED IN CONJUNCTION WITH CONSTRUCTION OF THE SHARED DRIVEWAY. SPECIMEN TREE NO. 4 DIED AND REMOVED SINCE F-07-193 APPROVAL AND HAS BEEN REMOVED.

- LANDSCAPE NOTES:**
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL.
  - AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN WILL RESULT IN DENIAL OR DELAY IN RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATIONS.
  - THE OWNER, TENANTS 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.
  - FINANCIAL SURETY IN THE AMOUNT OF \$2,400.00 FOR THE REQUIRED PERIMETER LANDSCAPING SHALL BE DEFERRED UNTIL SITE DEVELOPMENT PLAN APPROVAL.

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 SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION OF A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

*James M. Fawcett* 6/28/17  
JAMES FAWCETT, MEMBER BONNIE HILL LLC

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*T. Marshall* 8-3-17  
CHIEF, DIVISION OF LAND DEVELOPMENT

*OLP* 7-24-17  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

NO.	DATE	REVISION

**BENCHMARK ENGINEERING, INC.**  
8480 BALTIMORE NATIONAL PIKE & SUITE 315 • ELLICOTT CITY, MARYLAND 21043  
(P) 410-485-8100 (F) 410-485-8844  
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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. 45572, Expiration Date: 06-08-2018.

*James M. Fawcett*  
JAMES FAWCETT, P.E.  
PROFESSIONAL ENGINEER

OWNERS: LOT 1 JAMES F. FAWCETT & PATRICIA F. FAWCETT 4941 BONNIE BRANCH ROAD ELLICOTT CITY, MARYLAND 21043

DEVELOPER: LOT 2 BONNIE HILL LLC 4941 BONNIE BRANCH ROAD ELLICOTT CITY, MARYLAND 21043 410-744-0657

**FAWCETT PROPERTY - LOTS 1, 3 & 4 ELLICOTT CITY, MARYLAND 21043**

TAX MAP: 31 - GRID: 9 - PARCEL: 321  
ELECTION DISTRICT NO. 1 - HOWARD COUNTY, MARYLAND  
ZONED: R-20 (SINGLE FAMILY DETACHED)

**LANDSCAPE PLAN**

DATE: JUNE, 2017 BEI PROJECT NO. 2735  
DESIGN: JC DRAFT: JC/DBT SCALE: AS SHOWN SHEET 7 OF 7