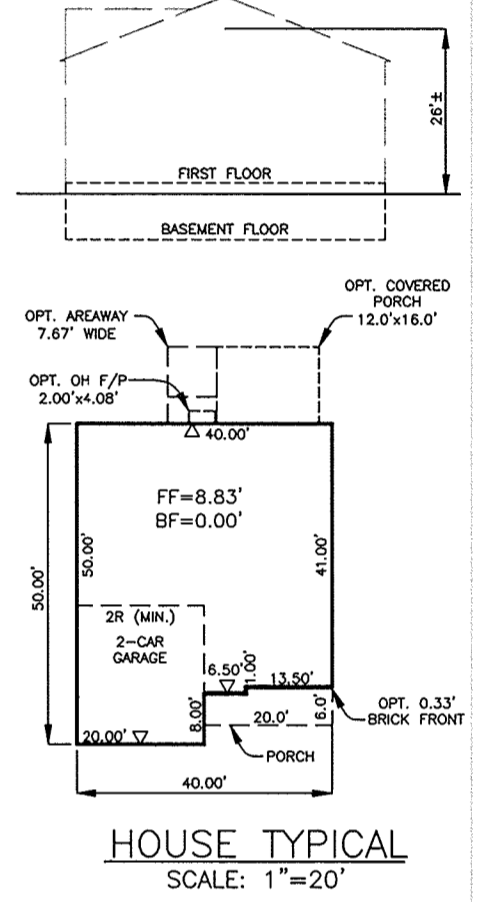


**BENCH MARKS (NAD '83)**

HO. CO. #3805 STAMPED (BRASS OR ALUMINUM) DISC SET ON TOP OF A CONCRETE COLUMN 1" OR 2" BELOW GRADE N 558,378.575 E 1,386,524.158	ELEV. 193.726
HO. CO. #3806 STAMPED (BRASS OR ALUMINUM) DISC SET ON TOP OF A CONCRETE COLUMN 1" OR 2" BELOW GRADE N 557,155.459 E 1,384,992.262	ELEV. 175.228

NOTE: UTILITY WORK WITHIN EXISTING ROADWAYS SHALL BE LIMITED TO THAT WHICH CAN BE BACKFILLED AND/OR STABILIZED BY THE END OF THE DAY'S CONSTRUCTION ACTIVITIES

NOTE: CONTRACTORS TO EXERCISE EXTREME CAUTION WHEN WORKING IN THE AREA OF EXISTING OVERHEAD LINES



**PROJECT BACKGROUND INFORMATION**  
 PRESENT ZONING: R-12  
 LOCATION: TAX MAP 38 - GRID 14 - PARCEL 815  
 APPLICABLE DPZ FILE REFERENCES: ECP-17-021; WP-16-003; AA-12-019; WP-20-060; WP-20-080; AA-20-006  
 DEED REFERENCE: (L16587 / F.00164)  
 PROPOSED USE OF SITE: RESIDENTIAL (SFD)  
 PROPOSED WATER AND SEWER SYSTEMS: PUBLIC WATER & SEWER

**SITE DATA TABULATION**

1) TOTAL PROJECT AREA.....	0.47 AC.±
2) AREA OF 100-YR. FLOODPLAIN.....	0.00 AC.
3) AREA OF MODERATE SLOPES (15%-24.99%).....	0.00 AC.±
3a) AREA OF STEEP SLOPES (25% OR GREATER).....	0.00 AC.
4) AREA OF EXISTING FOREST.....	0.00 AC.
5) AREA OF ERODIBLE SOILS.....	0.00 AC.
6) AREA OF WETLANDS (INCLUDING BUFFER).....	0.00 AC.
7) AREA OF STREAM BUFFER (OUTSIDE WETLANDS & BUFFER).....	0.00 AC.
8) NET AREA OF SITE(S).....	0.47 AC.±
9) NUMBER OF UNITS ALLOWED.....	1
10) NUMBER OF RESIDENTIAL UNITS PROPOSED.....	1
11) AREA OF PLAN SUBMISSION.....	0.47 AC.±
12) APPROXIMATE LIMIT OF DISTURBANCE.....	0.34 AC.±
13) PRESENT ZONING DESIGNATION.....	R-12
14) PROPOSED USES FOR THE SITE & STRUCTURES.....	RESIDENTIAL-SFD
15) MINIMUM LOT SIZE.....	12,000 SF
16) OPEN SPACE REQUIRE.....	N/A
17) OPEN SPACE PROVIDED (CREDITED).....	0.00 AC.
18) OPEN SPACE PROVIDED (TOTAL).....	0.00 AC.
19) RECREATIONAL OPEN SPACE REQUIRED.....	N/A
20) RECREATIONAL OPEN SPACE PROVIDED.....	N/A
21) NUMBER OF PARKING SPACES REQUIRED.....	2.5
22) TOTAL NUMBER OF PARKING SPACES PROVIDED.....	3 (2 GAR./1 DRWY.)
23) BUILDING COVERAGE AREA (IMPERVIOUS).....	0.05 AC.(±11%)
24) TOTAL IMPERVIOUS AREA.....	0.07 AC.(±15%)
25) TOTAL NUMBER OF MIHU UNITS REQUIRED.....	0.10 UNITS
26) TOTAL NUMBER OF MIHU UNITS PROVIDED.....	FEE-IN-LIEU

**GENERAL NOTES**

- 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 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.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY.
- SUBJECT PROPERTY IS ZONED R-12 PER THE 10-6-2013 COMPREHENSIVE ZONING PLAN.
- THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, DATED OCTOBER 7, 2007.
- PROPERTY BOUNDARY WAS PREPARED BY PAUL K. MILLER & ASSOCIATES, INC. AND IS DATED JULY, 2014.
- TOPOGRAPHY SHOWN HEREON IS BASED ON A FIELD RUN SURVEY PREPARED BY BENCHMARK ENGINEERING, INC. DATED FEBRUARY 2015, AND HOWARD COUNTY 2011 GIS. CONTOUR INTERVAL IS TWO FEET (2').
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN STREAMS, WETLANDS OR THEIR REQUIRED BUFFERS AND FLOODPLAIN AND FOREST CONSERVATION EASEMENTS AREAS.
- THERE ARE NO STEEP SLOPES (25% OR GREATER) IN EXCESS OF 20,000 SF OR MODERATE SLOPES RANGING FROM 15%-24.99% LOCATED ON THIS SITE.
- THERE ARE NO FLOODPLAINS, WETLANDS, FORESTS, SPECIMEN TREES, AND STREAMS, OR THEIR BUFFERS, LOCATED ON-SITE BASED ON ONSITE OBSERVATIONS BY ECO-SCIENCE PROFESSIONALS, INC. UNDER ECP-17-021.
- TO THE BEST OF OUR KNOWLEDGE THERE ARE NO CEMETERIES, HISTORIC STRUCTURES OR SITES LOCATED ON THIS PROJECT. THIS PROJECT DOES NOT ABUT A SCENIC ROAD.
- A NOISE STUDY IS NOT REQUIRED FOR THIS PLAN.
- A GEOTECHNICAL REPORT PREPARED BY GEOTECHNICAL LABORATORIES, INC., DATED APRIL, 2015, WAS SUBMITTED UNDER ECP-17-021.
- THIS SITE IS LOCATED WITHIN THE METROPOLITAN DISTRICT AND THE PLANNED SERVICE AREA. WATER AND SEWER WILL BE PUBLIC CONNECTING INTO EX. CONTRACTS #44-1937(WHC) & #3041(SHC) RESPECTIVELY.
- THIS PROJECT IS EXEMPT FROM THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BECAUSE THE PROPERTY IS LESS THAN 40,000SF IN SIZE, IN ACCORDANCE WITH SECTION 16.1202(b)(1)(i).
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. THE FINANCIAL SURVEY FOR THE REQUIRED LANDSCAPING SHALL BE POSTED AS PART OF THE GRADING PERMIT IN THE AMOUNT OF \$8,100 FOR THE REQUIRED 15 SHADE TREES & 24 EVERGREEN TREES.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO INSURE SAFE ACCESS 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 TAR AND CHIP COATING (1-1/2" MIN).  
 C) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM 45' TURNING RADIUS.  
 D) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H2S LOADING).  
 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 INSURE ALL WEATHER USE.
- IN ACCORDANCE WITH SECTION 128.0 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS, OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS, PORCHES OR DECKS, OPEN OR ENCLOSED, MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK.
- THE PRE-SUBMISSION COMMUNITY MEETING FOR THIS PROJECT OCCURRED AT THE ELK RIDGE BRANCH OF THE HOWARD COUNTY LIBRARY SYSTEM ON AUGUST 29, 2019, PER SECTION 16.128 OF THE HO.CO. SUBDIVISION & LAND DEVELOPMENT REGULATIONS.
- EXISTING UTILITIES SHOWN ARE BASED ON A FIELD SURVEY, HOWARD COUNTY GIS, AND INFORMATION OF RECORD.
- ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE BUILDER'S EXPENSE. CONTRACTOR SHALL ADJUST ELEVATIONS OF UTILITIES & STRUCTURES AS NECESSARY.
- STORMWATER MANAGEMENT ENVIRONMENTAL DESIGN (ESD) HAS BEEN PROVIDED FOR THIS PROJECT IN ACCORDANCE WITH THE GUIDELINES ESTABLISHED BY THE MDE STORMWATER MANAGEMENT ACT OF 2009, AND THE HO.CO. DESIGN MANUAL VOL.1, CHAPTER 5, TO THE MAXIMUM EXTENT POSSIBLE (MEP). SWM FOR THIS PROJECT SHALL BE PROVIDED BY UTILIZING A SINGLE (M-6) MICRO-BIORETENTION FACILITY. THIS PRACTICE SHALL BE OWNED AND MAINTAINED BY LOT OWNER.
- THIS PROJECT IS LOCATED WITHIN THE DEEP RIVER WATERSHED, A TRIBUTARY TO THE PATAPSCO RIVER/LOWER NORTH BRANCH (02-13-09-06). THIS SITE IS LOCATED IN AN AREA OF SPECIAL CONCERN AND WILL REQUIRE 10-YR & 100-YR PEAK MANAGEMENT CONTROL. THE 100-YEAR EVENT HAS BEEN MANAGED BY RETENTION OF THE CALCULATED VOLUME. THE 10-YEAR EVENT IS MANAGED BY DEFAULT SINCE IT WILL FLOW TO THE SAME FACILITY. THESE REQUIREMENTS ARE MET BY A STONE CHAMBER BELOW THE (M-6) MICRO-BIORETENTION FACILITY.
- BRL INDICATES ZONING BUILDING RESTRICTION LINE, OTHER RESTRICTIONS MAY APPLY.

- UNLESS OTHERWISE NOTED AS "PRIVATE", ALL EASEMENTS ARE "PUBLIC".
- ALL AREAS ON THESE PLANS ARE "MORE OR LESS".
- ADMINISTRATIVE ADJUSTMENT AA-12-019 WAS APPROVED BY DECISION & ORDER DATED FEBRUARY 27, 2013 FROM THE BULK REQUIREMENT GIVEN IN SECTION 109(D)(4)(b)(1)(g) AND SECTION 109(D)(4)(c)(1)(b) OF THE ZONING REGULATIONS TO REDUCE THE REQUIRED SETBACK FROM THE SIDE PROPERTY LINE ON THE NORTHEAST SIDE OF THE LOT FROM 20 FEET TO 16 FEET AND TO REDUCE THE REQUIRED SETBACK FROM THE SIDE LINE ON THE SOUTHWEST SIDE OF THE LOT FROM 7.5 FEET TO 6 FEET IS GRANTED, SUBJECT TO THE FOLLOWING CONDITIONS, THIS AA HAS BEEN SUPERCEDED BY AA-20-006 DUE TO THE RELOCATION OF THE PROPOSED RESIDENTIAL UNIT:  
 a) THE PETITIONER SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND COUNTY LAWS AND REGULATIONS.  
 b) THE GRANTED ADMINISTRATIVE ADJUSTMENT SHALL APPLY SOLELY TO THE PROPOSED SINGLE FAMILY DETACHED DWELLING AS DEPICTED ON THE ADMINISTRATIVE ADJUSTMENT PLAN SUBMITTED BY THE PETITIONER AND NOT TO ANY OTHER STRUCTURE, ADDITION, BUILDING, OR USE.  
 c) THIS DECISION & ORDER SHALL BE MAINTAINED IN THE OWNER'S PROPERTY RECORDS AND SHALL BE SUBMITTED TO ANY SUCCEEDING OWNER OF THE PROPERTY.
- MAA HEIGHT APPROVAL LETTER WAS ISSUED SEPTEMBER 13, 2019.
- THE LANDSCAPING ALONG WINTERS LANE RECEIVED BOE APPROVAL BY CORRESPONDENCE ON 9/17/19.
- AN APFO TRAFFIC STUDY IS NOT REQUIRED IN ACCORDANCE WITH SECTION 16.1107(b) OF THE HO.CO. SUBDIVISION REGULATIONS.
- ALTERNATIVE COMPLIANCE WP-20-060 WAS APPROVED JANUARY 30, 2020 TO WAIVE SECTION 16.156(g)(2) TO ALLOW A TIME EXTENSION TO THE RE-SUBMISSION A.P.F.O. DEADLINE. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:  
 1) A REVISED PLAN SUBMISSION FOR SDP-20-010 AND ALL REQUIRED DOCUMENTATION MUST BE SUBMITTED THROUGH PROJECTDOX TO THE DEPARTMENT OF PLANNING AND ZONING WITHIN 180 DAYS OF THE CURRENT DUE DATE OF DECEMBER 22, 2019 (ON OR BEFORE JUNE 19, 2020).
- ALTERNATIVE COMPLIANCE WP-20-080 WAS APPROVED MARCH 19, 2020 TO WAIVE SECTION 16.147 TO WAIVE THE RECORDATION OF A FINAL SUBDIVISION PLAT AS THE OFFICIAL RECORD OF THE DIVISION OF LAND. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:  
 1) THE ALTERNATIVE COMPLIANCE APPROVAL FROM THE FINAL SUBDIVISION PLAT REQUIREMENT IN THIS CASE IS ONLY A MECHANISM FOR THE DEPARTMENT OF PLANNING AND ZONING TO RECOGNIZE THE PRESENT PROPERTY CONFIGURATION FOR PARCEL 815, CONTAINING 0.47 ACRES OF LAND, AS A SEPARATE BUILDING LOT.  
 2) A SITE DEVELOPMENT PLAN WILL BE REQUIRED PRIOR TO ISSUANCE OF BUILDING OR GRADING PERMITS FOR CONSTRUCTION OF A SINGLE-FAMILY DWELLING ON PARCEL 815.
- ADMINISTRATIVE ADJUSTMENT AA-20-006 WAS APPROVED BY DECISION & ORDER DATED AUGUST 27, 2020 FROM THE BULK REQUIREMENT GIVEN IN SECTION 109(D)(4)(b)(1)(g) AND SECTION 109(D)(4)(c)(1)(b) OF THE ZONING REGULATIONS TO REDUCE THE REQUIRED 20' SETBACK FROM THE RIGHT-OF-WAY TO 16 FEET AND TO REDUCE THE REQUIRED 7.5' SETBACK TO 6 FEET FOR THE CONSTRUCTION OF A SINGLE-FAMILY DETACHED DWELLING, AS AUTHORIZED UNDER THE ADMINISTRATIVE ADJUSTMENT PROCEDURE, SECTION 100.0.1.1, BULK REGULATION ADJUSTMENTS, IS GRANTED.
- THE RESIDENTIAL LOT ON THIS PLAN IS NOT SUBJECT TO SECTION 13.402(C)(6) OF THE COUNTY CODE FOR THE MODERATE INCOME HOUSING UNIT (MIHU) AS THERE IS NO SUBDIVISION OF THIS PROPERTY UNDER THIS PLAN.
- A FEE-IN-LIEU OF ROAD FRONTAGE IMPROVEMENTS IN THE AMOUNT OF \$19,259.25 SHALL BE PAID AT THE TIME OF BUILDING PERMIT APPLICATION, IN ACCORDANCE WITH SECTION 16.132.a.2.b AND SECTION 16.134.a.1.i OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.

MIHU NOTE: PLEASE NOTE THAT THE RESIDENTIAL LOT ON THIS PLAN IS NOT SUBJECT TO SECTION 13.402(C)(6) OF THE COUNTY CODE FOR THE MODERATE INCOME HOUSING UNIT (MIHU) AS THERE IS NO SUBDIVISION OF THIS PROPERTY UNDER THIS PLAN.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 3.10.21 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 [Signature] 3/17/21 DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 [Signature] 3/17/21 DATE  
 DIRECTOR

**ADDRESS CHART**

PARCEL	STREET ADDRESS
815	6310 WINTERS LANE

**SHEET INDEX**

SHEET	TITLE
1	SITE DEVELOPMENT AND GRADING PLAN
2	ESD-SWM NOTES & DETAILS
3	SEDIMENT & EROSION CONTROL PLAN, NOTES & DETAILS
4	SEDIMENT & EROSION CONTROL PLAN, NOTES, AND DETAILS
5	LANDSCAPING PLAN, NOTES, AND DETAILS

**PERMIT INFORMATION CHART**

SUBDIVISION NAME:	SECTION/AREA:	PARCEL:
NEWBURN PROPERTY	-	815
DEED:	BLOCK No:	ZONE:
L16587 F.00164	14	R-12
TAX MAP:	ELECTION DISTRICT:	CENSUS TRACT:
38	1	-

**BENCHMARK ENGINEERING, INC.**  
 ENGINEERS • LAND SURVEYORS • PLANNERS  
 8480 BALTIMORE NATIONAL PIKE A SUITE 315  
 ELLICOTT CITY, MARYLAND 21043  
 PHONE: 410-465-6105 FAX: 410-465-6644  
 E-MAIL: 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. 22394-Expirey Date: 6-30-2021.  
 [Signature]

OWNER:	JAMES L. NEWBURN 6378 WINTERS LANE HANOVER, MD 21076-1013	
DEVELOPER:	THE ESTATE OF JAMES L. NEWBURN 9469 HICKORY LIMB COLUMBIA, MD 21045	
DES: MCR	DRAFT: MCR	CHECK: CAM
PROJECT:	SITE DEVELOPMENT PLAN SINGLE-FAMILY DETACHED DWELLING NEWBURN PROPERTY	
LOCATION:	TAX MAP-38 GRID-14 PARCEL-815 L16587/F.00164 1st ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE:	SITE DEVELOPMENT AND GRADING PLAN	
DATE:	SEPTEMBER, 2019 FEBRUARY, 2021	
SCALE:	1" = 20'	
PROJECT NO.:	2528	
DRAWING	1 OF 5	



**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 textual 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 hoers 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 restructure 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 staking 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, defaults, 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 1/4" (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

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND					
SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALTERNATE GROUP	NAME	K-VALUE
RsC		C		RUSSETT FINE SANDY LOAM, 5 TO 10 PERCENT SLOPES	0.24
CrD		C		CROOM AND EVESBORO SOILS, 10 TO 15 PERCENT SLOPES	0.28

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

Table B.4.1. Materials Specifications for Micro-Bioretenion, Rain Gardens & Landscape Infiltration				
Material	Specification	Site	Notes	
Planting soil	see Appendix A, Table A.2.3	n/a	plantings are site-specific	
Filtering soil (2" to 4" deep)	heavy sand (60-40%) & compost (35-40%) or sandy loam (30%), coarse sand (30%), and compost (40%)	n/a	USDA soil types heavy sand or sandy loam, clay content < 5%	
Organic content	Min. 10% by dry weight (ASTM D 2974)			
Mulch	shredded hardwood	n/a	aged 6 months, minimum no pine or wood chips	
Pea gravel diaphragm	see gravel: ASTM D-443	NO. 8 OR NO. 9 (1/8" TO 3/8")		
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"		
Geotextile	n/a	n/a	PE Type I nonwoven	
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (1/2" to 3/4")		
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or HDPE	Slotted or perforated pipe, 3/4" perf. @ 6" on center, 4 holes per row, minimum of 2" of gravel over pipe; 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, conforming to most 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) and using previously approved State or local standards; requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland -designs to include meeting ACI Code 308.8R; vertical loading (F1-10 or F1-20); allowable horizontal loading (based on soil pressure); and analysis of potential cracking.	
Sand	AASHTO-M-6 or ASTM-C-33	0.075" to 0.04"	Sand substitutions such as Dabas and Gypstone (AASHTO) #10 are not acceptable. No calcium carbonate or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.	

**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.

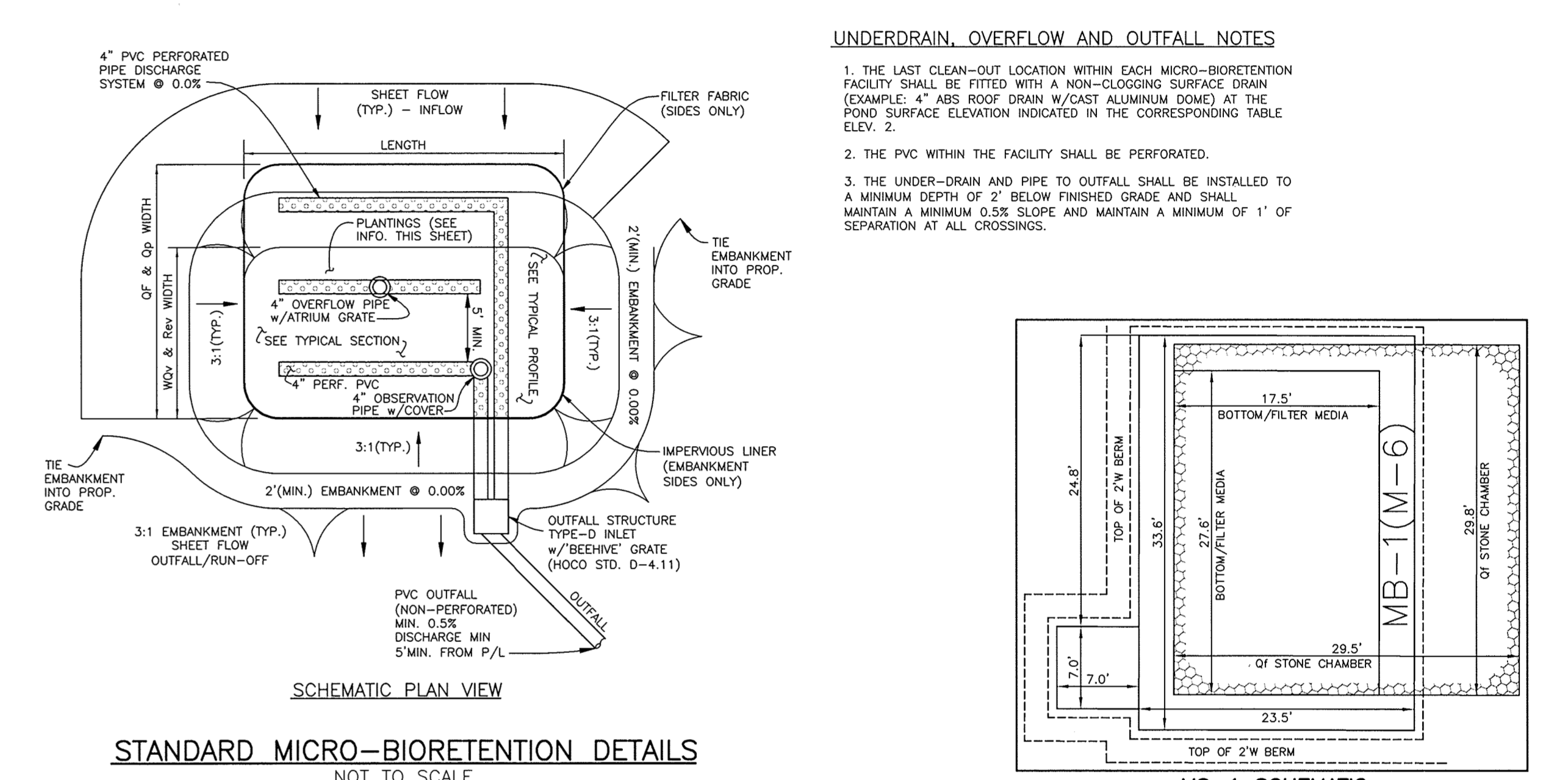
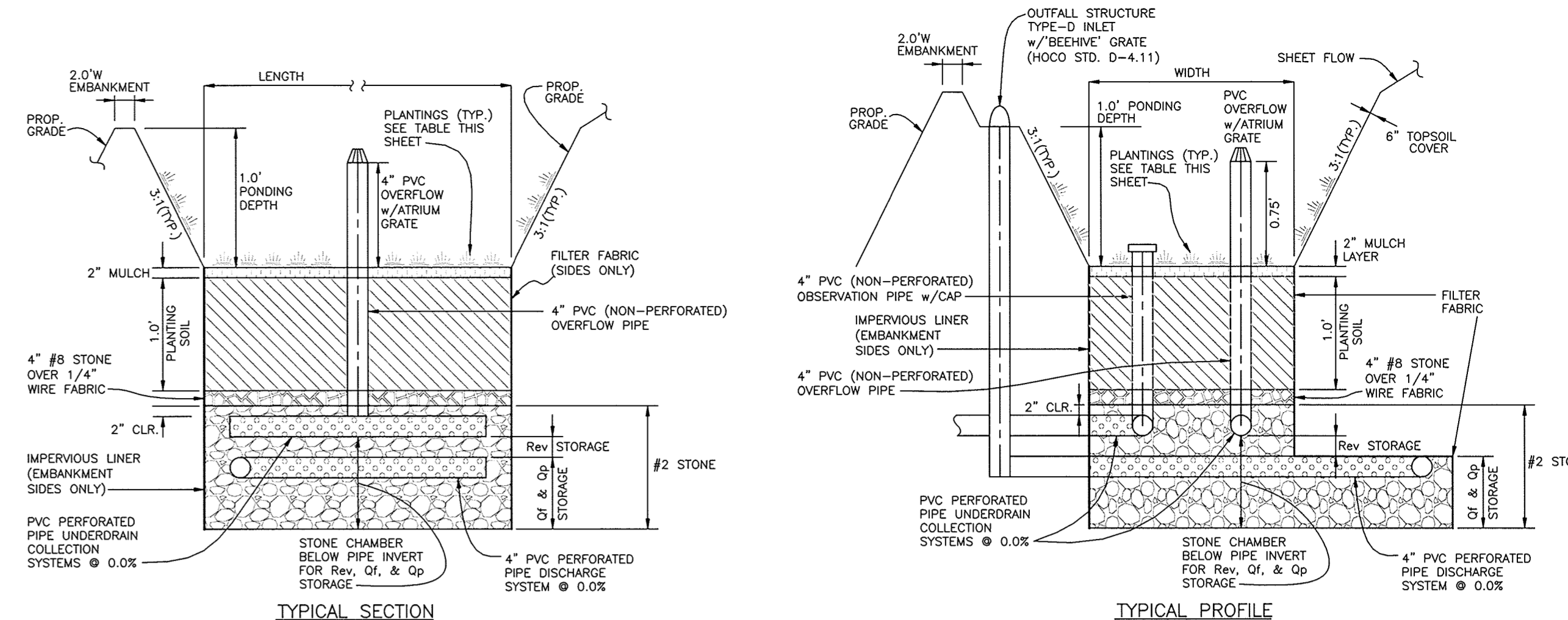
**PLANTING LEGEND**

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

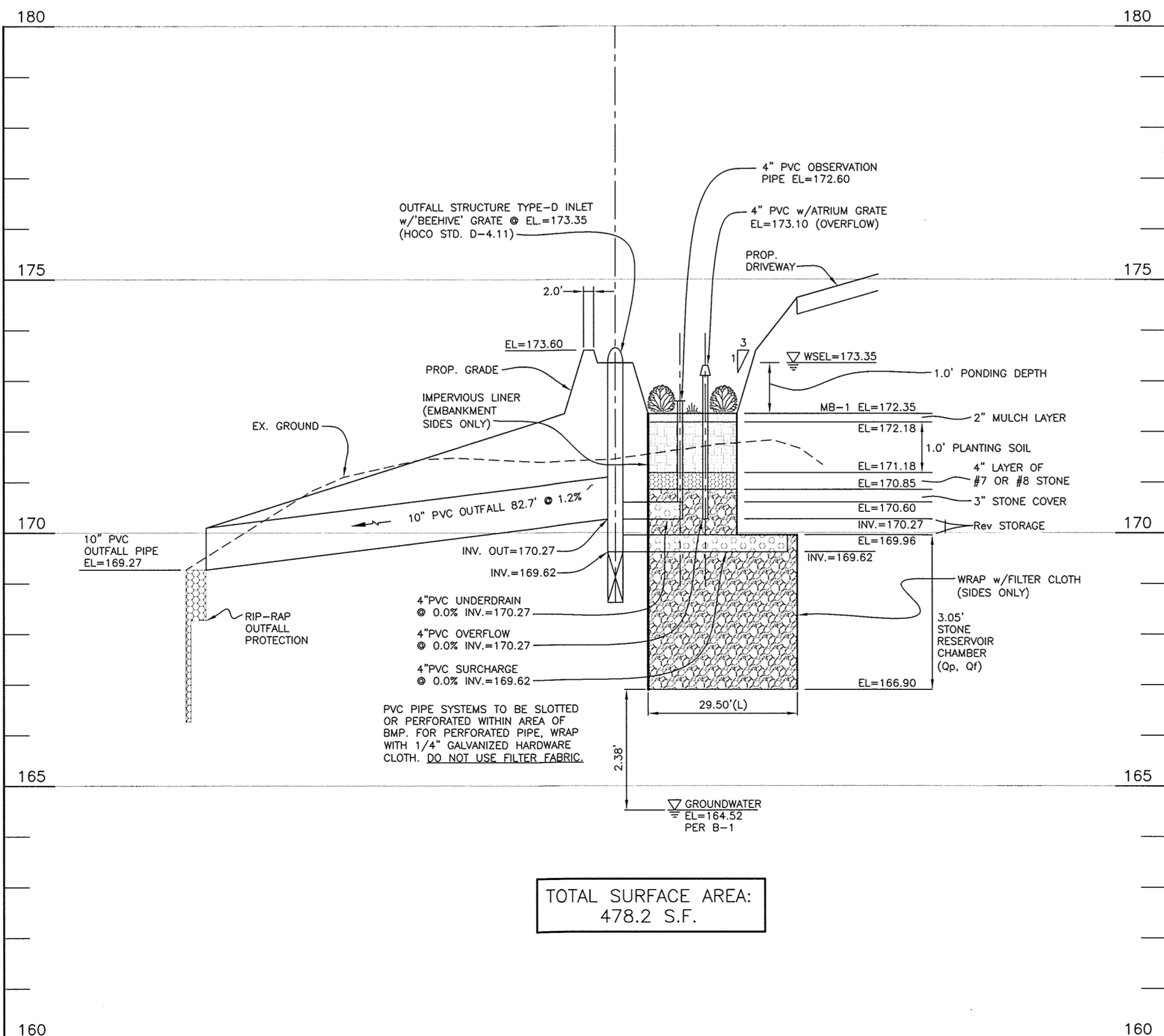
**SCHEMATIC PLANTING DETAIL FOR (M-6) PRACTICES**  
NOT TO SCALE

**(M-6) Micro Bio-Retention Landscaping Chart**

PLANT NAME	COMMON NAME	SURFACE AREA	SIZE	QUANTITY	MB-1
Ilex verticillata	Common Winterberry		2.5'-3' shrub	5	478
Lobelia cardinalis	Cardinal flower		perennial herbaceous plant	32	
Lobelia siphilitica	Great Blue Lobelia		perennial herbaceous plant	32	
Carex stricta	Uplight Sedge		grass	32	
Iris versicolor	Blue Water Iris		perennial herbaceous plant	32	
Liatris spicata	Prairie Gay Feather		perennial herbaceous plant	32	



**STANDARD MICRO-BIORETENTION DETAILS**  
NOT TO SCALE



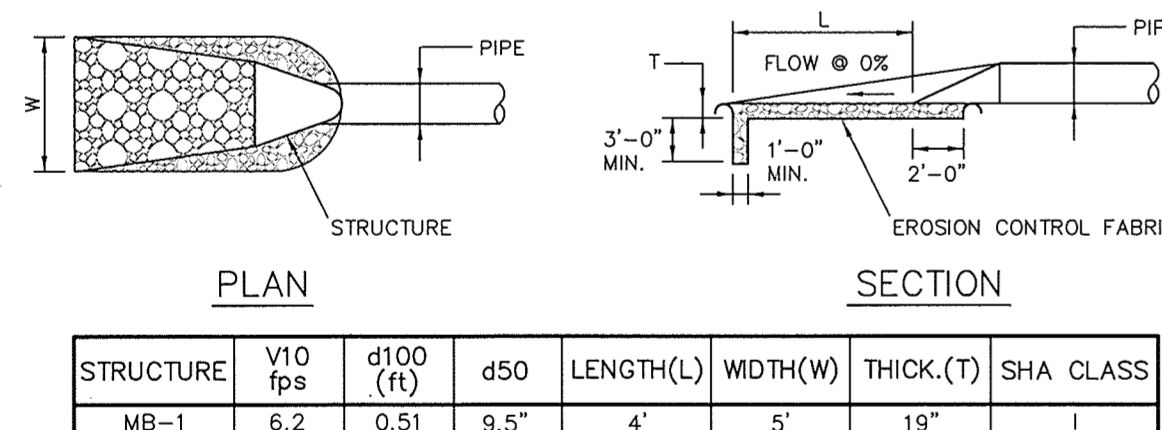
TOTAL SURFACE AREA: 478.2 S.F.

**MICRO-BIORETENTION PROFILE (SECTION A-A)**

HORIZONTAL SCALE: 1"=20'  
VERTICAL SCALE: 1"=2'

**ESD STORMWATER MANAGEMENT SUMMARY TABLE**

MDE	Practice Type	No.	DA (sf)	Imp Area (sf)	% Imp	Rv	Pe required	At (sf)		ESDv (cf)		Pe	Rev (cf)		Qf (cf)		Ownership	
								Required	Provided	Required	Provided		Required	Provided	Required	Provided		
(M-6)	Micro-Bioretenion	MB-1	9,495	5,530	58%	0.57	1.8	190	478	PASS	818	883	1.9	59	59	1075	1075	Private
<b>Totals per individual Drainage Area</b>			9,495	5,530	58%	0.57					818	883				1075	1075	
<b>Totals per Overall Site</b>			9,495	5,530	100%	0.95	1.8				818	883				1075	1075	



**OUTLET PROTECTION DETAIL**  
NOT TO SCALE

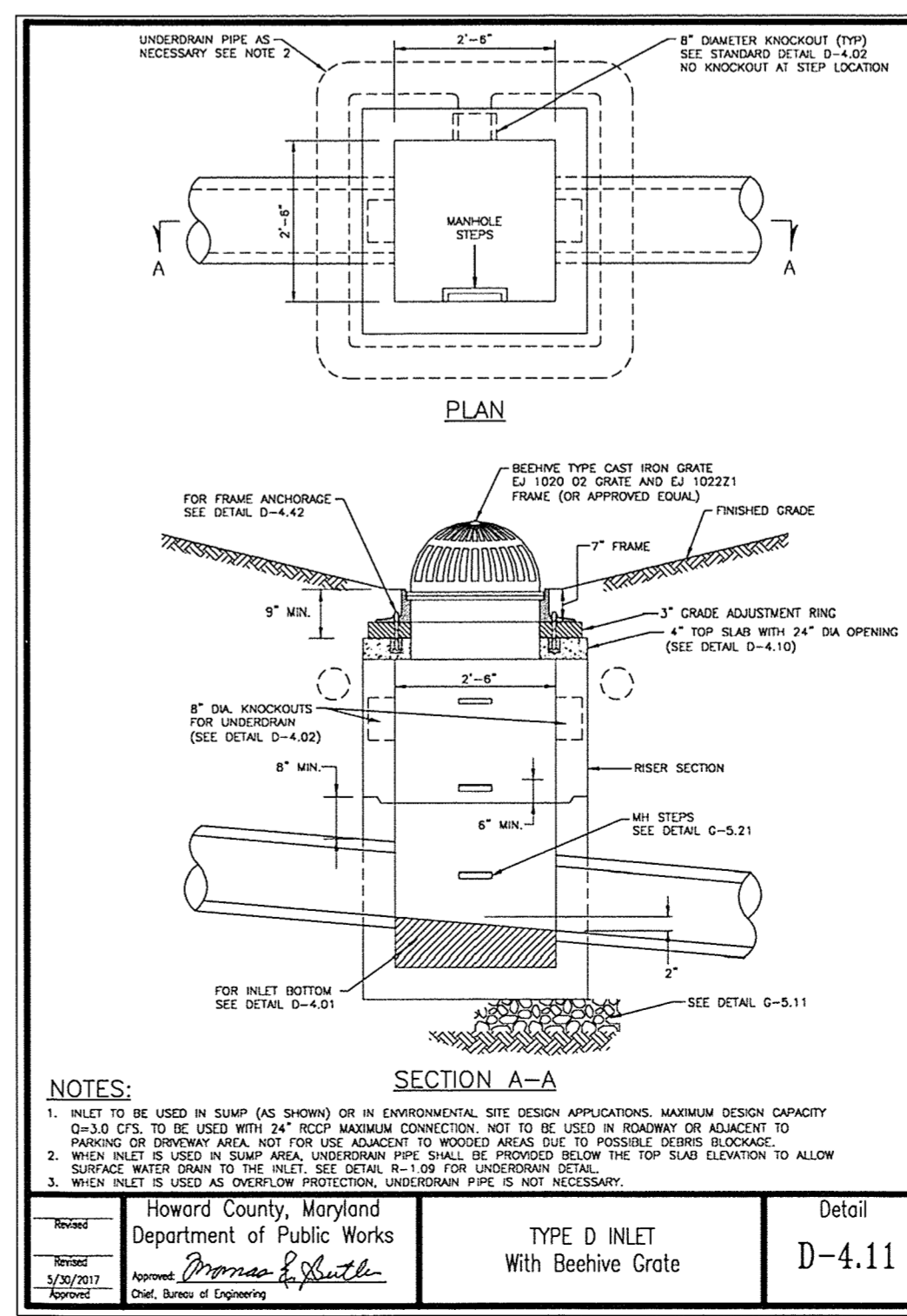
**CONSTRUCTION SPECIFICATIONS**

- THE SUBGRADE FOR THE FILTER, RIP-RAP, OR GABION SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
- THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED RESPECTIVELY IN THE RIP-RAP OR FILTER.
- GEOTEXTILE CLASS C28 OR BETTER SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE PREPARED BY PLACING ANOTHER PIECE OF GEOTEXTILE FABRIC OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE FABRIC. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC SHALL BE A MINIMUM OF ONE FOOT.
- STONE FOR THE RIP-RAP OR GABION OUTLETS MAY BE PLACED BY EQUIPMENT. THEY SHALL BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. THE STONE FOR THE RIP-RAP OR GABION OUTLETS SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. RIP-RAP SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE FABRIC. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.
- THE STONE SHALL BE PLACED SO THAT IT BLENDS IN WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN THE FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Chad Phelan*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 3/10/21

*Chad Phelan*  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE: 3/17/21



**NOTES:**

- INLET TO BE USED IN SWAMP (AS SHOWN) OR IN ENVIRONMENTAL SITE DESIGN APPLICATIONS. MAXIMUM DESIGN CAPACITY Q=1.0 CFS. TO BE USED WITH 24\"/>
- INLET TO BE USED IN SWAMP AREA. UNDERDRAIN PIPE SHALL BE PROVIDED BELOW THE TOP SOIL ELEVATION TO ALLOW SURFACE WATER DOWN TO THE INLET. SEE DETAIL B-1.0 FOR UNDERDRAIN DETAIL.
- INLET TO BE USED AS OVERFLOW PROTECTION. UNDERDRAIN PIPE IS NOT NECESSARY.

Project	Howard County, Maryland	Department of Public Works	Detail
Sheet	ESD-4.11	TYPE D INLET With Beehive Grate	D-4.11
Drawn	3/26/21	Approved: <i>Chad Phelan</i>	Checked: <i>Chad Phelan</i>
Scale	As Shown	Checked: <i>Chad Phelan</i>	Checked: <i>Chad Phelan</i>

NOTE: CONTRACTORS TO EXERCISE EXTREME CAUTION WHEN WORKING IN THE AREA OF EXISTING OVERHEAD LINES

NOTE: UTILITY WORK WITHIN EXISTING ROADWAYS SHALL BE LIMITED TO THAT WHICH CAN BE BACKFILLED AND/OR STABILIZED BY THE END OF THE DAY'S CONSTRUCTION ACTIVITIES

NO.	DATE	REVISION

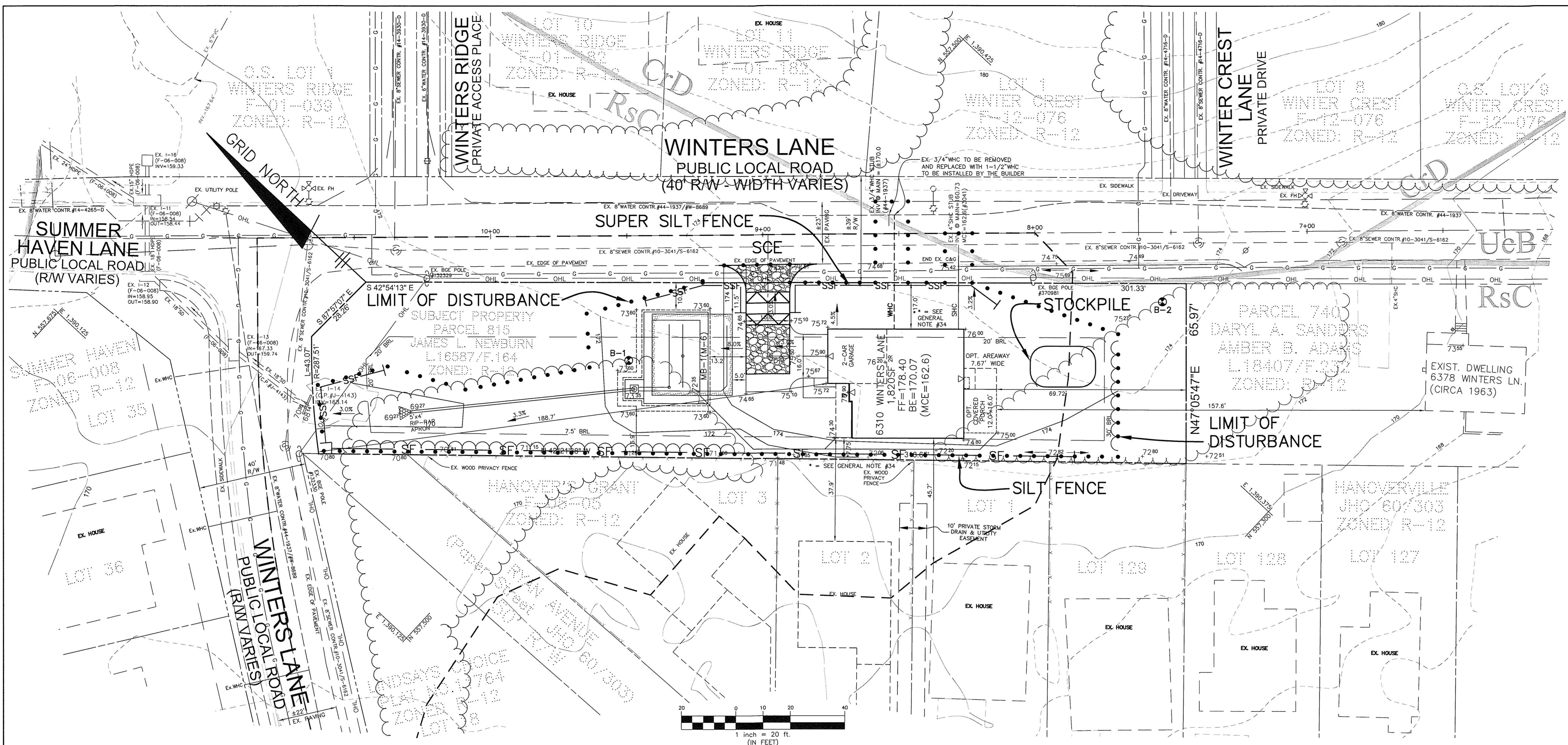
**BENCHMARK ENGINEERING, INC.**  
8480 BALTIMORE NATIONAL PIKE A SUITE 315  
ELLCOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 FAX: 410-465-6644  
E-MAIL: BE-CIVIL@ENGINEERING.COM

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. 23376, effective 06/30/2021.

*Chad Phelan*  
Professional Engineer  
No. 23376  
06/30/2021

OWNER:	JAMES L. NEWBURN 6378 WINTERS LANE HANOVER, MD 21076-1013	PROJECT:	SITE DEVELOPMENT PLAN SINGLE FAMILY DETACHED DWELLING <b>NEWBURN PROPERTY</b>
DEVELOPER:	THE ESTATE OF JAMES L. NEWBURN 9469 HICKORY LIMB COLUMBIA, MD 21045	LOCATION:	TAX MAP-38 GRID-14 PARCEL-B15 1st ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DES: MCR	DRAFT: MCR	CHECK: CAM	TITLE: <b>ESD-SWM NOTES &amp; DETAILS</b>
DATE:	SEPTEMBER, 2019 FEBRUARY, 2021	PROJECT NO.:	2528
SCALE:	1" = 20'	DRAWING:	2 OF 5





**LEGEND**

SOILS CLASSIFICATION	46C
SOILS DELINEATION	---
EXISTING CONTOURS	999
PROPOSED CONTOURS	999
EXISTING WOODS LINE	~
PROPOSED WOODS LINE	~
EXISTING STRUCTURE	[ ]
PROPOSED STRUCTURE	[ ]
PROPOSED SHC	[ ]
PROPOSED WHC	[ ]
PROPOSED ESD-SWM PRACTICE	[ ]
PROPOSED IMPERVIOUS AREAS	[ ]
LIMIT OF DISTURBANCE	.....
SUPER SILT FENCE	SSF
TEMPORARY STOCKPILE	[ ]
STABILIZED CONSTRUCTION ENTRANCE	[ ]

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

*Alexander Bruchis* 02/23/2021  
 HOWARD SCD DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Alfred Chubb* 3-10-21  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*John Goss* 3/17/21  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*John Goss* 3/17/21  
 DIRECTOR DATE

**ENGINEER'S CERTIFICATE**

I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*Christopher A. Malagari* 2-9-21  
 ENGINEER - CHRISTOPHER A. MALAGARI DATE

**OWNER'S CERTIFICATE**

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

*James L. Newburn* 2-9-2021  
 OWNER DATE

NOTE: UTILITY WORK WITHIN EXISTING ROADWAYS SHALL BE LIMITED TO THAT WHICH CAN BE BACKFILLED AND/OR STABILIZED BY THE END OF THE DAY'S CONSTRUCTION ACTIVITIES

NOTE: CONTRACTORS TO EXERCISE EXTREME CAUTION WHEN WORKING IN THE AREA OF EXISTING OVERHEAD LINES

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND

SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALTERNATE GROUP	NAME	K-VALUE
RsC		C		RUSSETT FINE SANDY LOAM, 5 TO 10 PERCENT SLOPES	0.24
C/D		C		CROOM AND EVESBORO SOILS, 10 TO 15 PERCENT SLOPES	0.28

NO.	DATE	REVISION

**BENCHMARK ENGINEERING, INC.**

ENGINEERS • LAND SURVEYORS • PLANNERS

8480 BALTIMORE NATIONAL PIKE A SUITE 315  
 ELIJACOTT CITY, MARYLAND 21043  
 PHONE: 410-465-6105 FAX: 410-465-6644  
 E-MAIL: BEJ-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. 22390, Expiration Date, 6-30-2021.

*Christopher A. Malagari*  
 PROFESSIONAL ENGINEER

OWNER: JAMES L. NEWBURN  
 6378 WINTERS LANE  
 HANOVER, MD 21076-1013

PROJECT: SITE DEVELOPMENT PLAN  
 SINGLE FAMILY DETACHED DWELLING  
 NEWBURN PROPERTY

LOCATION: TAX MAP-38 GRID-14 PARCEL-815  
 L16587/F.00184  
 1st ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

DEVELOPER: THE ESTATE OF JAMES L. NEWBURN  
 9469 HICKORY LIMB  
 COLUMBIA, MD 21045

TITLE: SEDIMENT & EROSION CONTROL PLAN, AND ESD-SWM NOTES & DETAILS

DATE: SEPTEMBER, 2019  
 FEBRUARY, 2021 PROJECT NO. 2528

DES: MCR DRAFT: MCR CHECK: CAM SCALE: 1" = 20' DRAWING 3 OF 5



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

The application of seed and mulch to establish vegetation cover. Purpose: To protect disturbed soils from erosion during and at the end of construction. Conditions Where Practice Applies: To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

- 1. Specifications: All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 12 months prior to the date of seeding... 2. Application: Dry Seeding: This includes use of conventional dry or broadcast seeders. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1.

- 3. Anchoring: a. Perform much anchoring immediately following application of mulch to minimize loss by wind or water. b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. c. Wood cellulose fiber mulch: Apply the fiber binder at a net dry weight of 1500 pounds per acre. d. Synthetic binders: Apply the fiber binder at a net dry weight of 1500 pounds per acre.

NOTE: UTILITY WORK WITHIN EXISTING ROADWAYS SHALL BE LIMITED TO THAT WHICH CAN BE BACKFILLED AND/OR STABILIZED BY THE END OF THE DAY'S CONSTRUCTION ACTIVITIES

NOTE: CONTRACTORS TO EXERCISE EXTREME CAUTION WHEN WORKING IN THE AREA OF EXISTING OVERHEAD LINES

NOTE: ALL SUPER SILT FENCES TO BE CHECKED DAILY TO ENSURE COMPLIANCE AND REPAIRED IMMEDIATELY AS REQUIRED

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT. APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

HOWARD SOIL CONSERVATION DISTRICT. APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. CHIEF, DIVISION OF LAND DEVELOPMENT. DATE: 3/17/21

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

To stabilize disturbed soils with vegetation for up to 18 months. Purpose: To use fast growing vegetation that provides cover on disturbed soils. Conditions Where Practice Applies: Exposed soils where ground cover is needed for a period of 6 months or less.

- 1. Select one or more of the species or mixtures listed in Table B.1 for the appropriate Plant Hardness Zone (from Figure B.3) and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. 2. For sites having soil tests performed, use and show the recommended rates by the testing agency. 3. Soil tests are not required for Temporary Seeding. 4. When stabilizing grasses, use a seeding sequence, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3-A.1 and maintain until the next seeding season.

B-4-4 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

To stabilize disturbed soils with permanent vegetation for 18 months or longer. Purpose: To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

- 1. General Use: a. Seed one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. b. Additional plantings for special purposes such as windbreak, stream banks, or dunes. 2. Turfgrass Mixtures: a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites.

NOTE: UTILITY WORK WITHIN EXISTING ROADWAYS SHALL BE LIMITED TO THAT WHICH CAN BE BACKFILLED AND/OR STABILIZED BY THE END OF THE DAY'S CONSTRUCTION ACTIVITIES

NOTE: CONTRACTORS TO EXERCISE EXTREME CAUTION WHEN WORKING IN THE AREA OF EXISTING OVERHEAD LINES

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HOWARD SOIL CONSERVATION DISTRICT. APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. CHIEF, DIVISION OF LAND DEVELOPMENT. DATE: 3/17/21

HOWARD SOIL CONSERVATION DISTRICT. APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. CHIEF, DIVISION OF LAND DEVELOPMENT. DATE: 3/17/21

B-4-4 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT

To promote the establishment of vegetation on disturbed soils. Purpose: To stabilize disturbed soils with permanent vegetation for 18 months or longer. Conditions Where Practice Applies: Exposed soils where ground cover is needed for a period of 6 months or less.

- 1. Select one or more of the species or mixtures listed in Table B.1 for the appropriate Plant Hardness Zone (from Figure B.3) and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. 2. For sites having soil tests performed, use and show the recommended rates by the testing agency. 3. Soil tests are not required for Temporary Seeding. 4. When stabilizing grasses, use a seeding sequence, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3-A.1 and maintain until the next seeding season.

B-4-4 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

To stabilize disturbed soils with permanent vegetation for 18 months or longer. Purpose: To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

- 1. General Use: a. Seed one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. b. Additional plantings for special purposes such as windbreak, stream banks, or dunes. 2. Turfgrass Mixtures: a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites.

NOTE: UTILITY WORK WITHIN EXISTING ROADWAYS SHALL BE LIMITED TO THAT WHICH CAN BE BACKFILLED AND/OR STABILIZED BY THE END OF THE DAY'S CONSTRUCTION ACTIVITIES

NOTE: CONTRACTORS TO EXERCISE EXTREME CAUTION WHEN WORKING IN THE AREA OF EXISTING OVERHEAD LINES

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HOWARD SOIL CONSERVATION DISTRICT. APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. CHIEF, DIVISION OF LAND DEVELOPMENT. DATE: 3/17/21

HOWARD SOIL CONSERVATION DISTRICT. APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. CHIEF, DIVISION OF LAND DEVELOPMENT. DATE: 3/17/21

STANDARD SEDIMENT CONTROL NOTES

- 1. A PRE-CONSTRUCTION MEETING SHALL BE HELD WITH THE HOWARD COUNTY PUBLIC WORKS DEPARTMENT PRIOR TO THE START OF EARTH DISTURBANCE. 2. UPON COMPLETION OF THE INSTALLATION OF PERMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE THE START OF EARTH DISTURBANCE, THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY PUBLIC WORKS DEPARTMENT. 3. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT, THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY PUBLIC WORKS DEPARTMENT. 4. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES, THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY PUBLIC WORKS DEPARTMENT.

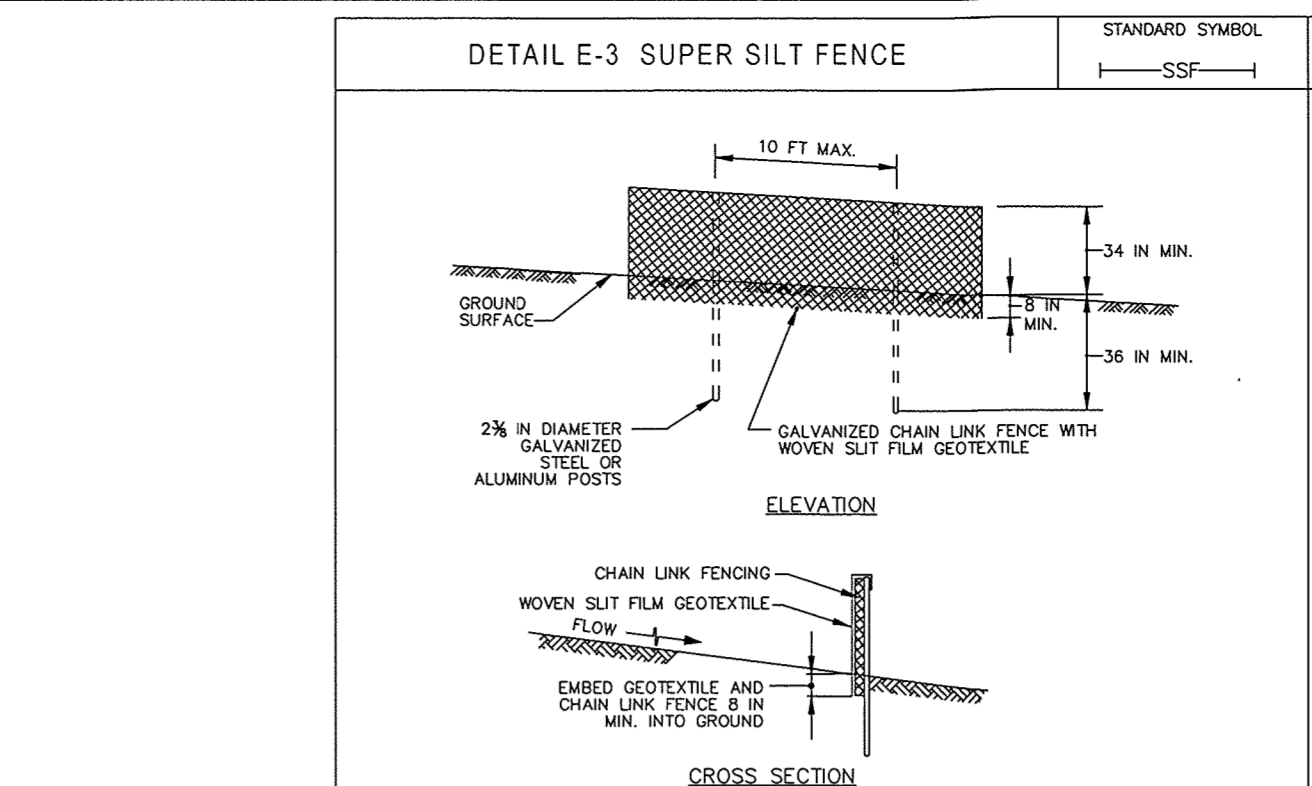
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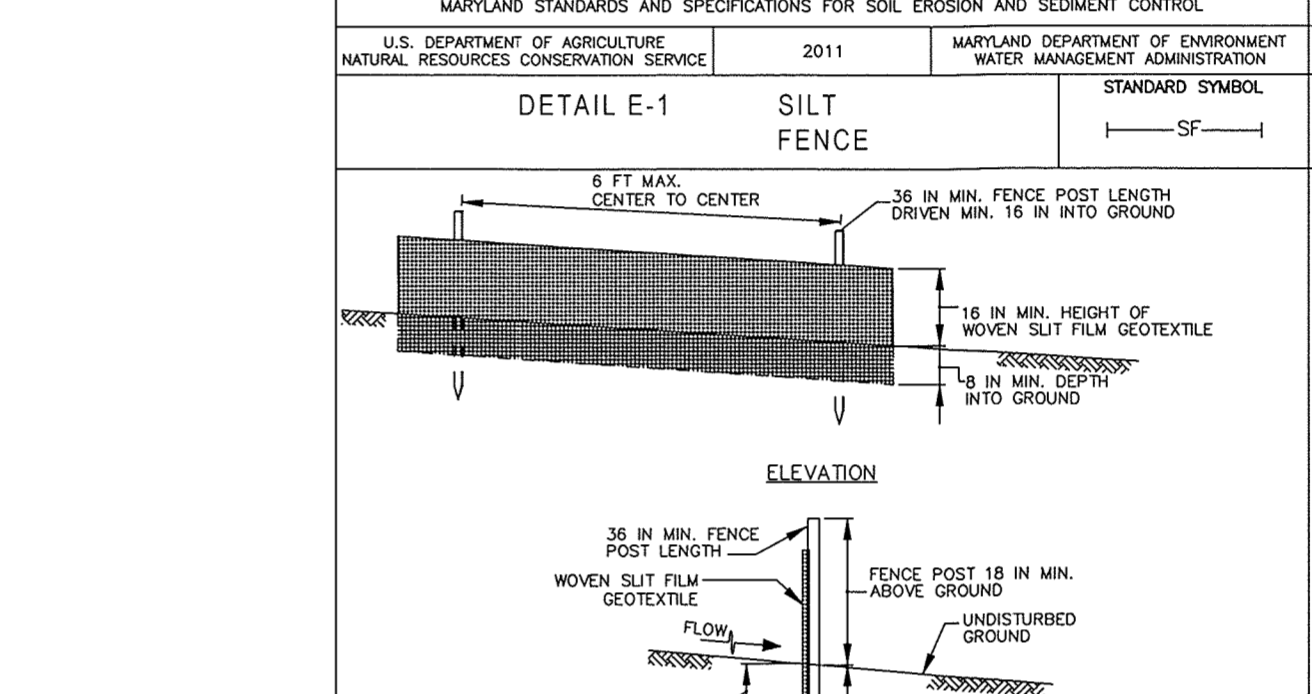
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HOWARD SOIL CONSERVATION DISTRICT. APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. CHIEF, DIVISION OF LAND DEVELOPMENT. DATE: 3/17/21

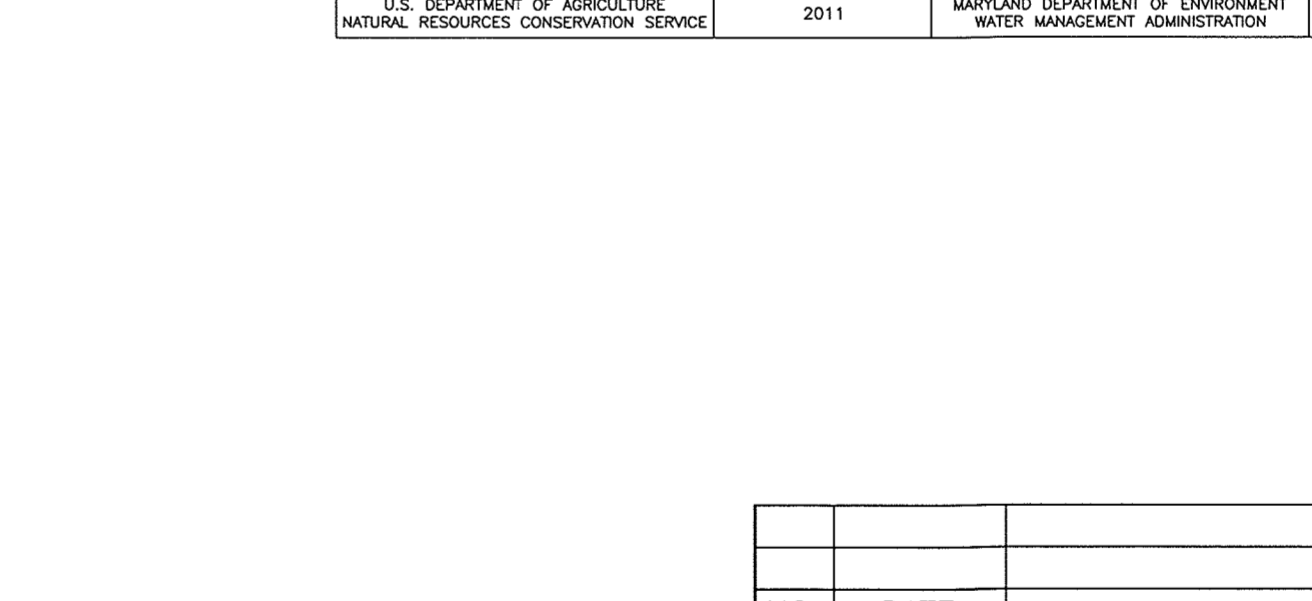
HOWARD SOIL CONSERVATION DISTRICT. APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. CHIEF, DIVISION OF LAND DEVELOPMENT. DATE: 3/17/21



CONSTRUCTION SPECIFICATIONS: 1. INSTALL 2x4 DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. 2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2x6 MINIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND BOTTOM.



CONSTRUCTION SPECIFICATIONS: 1. USE WOOD POSTS 1x4 x 1 1/2 INCH MINIMUM SQUARE CUT OF SOUND QUALITY HARDWOOD. 2. USE 36 INCH MINIMUM POSTS DRIVEN 18 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET INTO GROUND. 3. USE WOVEN SILT FENCE GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSIDE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND BOTTOM.



CONSTRUCTION SPECIFICATIONS: 1. USE WOOD POSTS 1x4 x 1 1/2 INCH MINIMUM SQUARE CUT OF SOUND QUALITY HARDWOOD. 2. USE 36 INCH MINIMUM POSTS DRIVEN 18 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET INTO GROUND.

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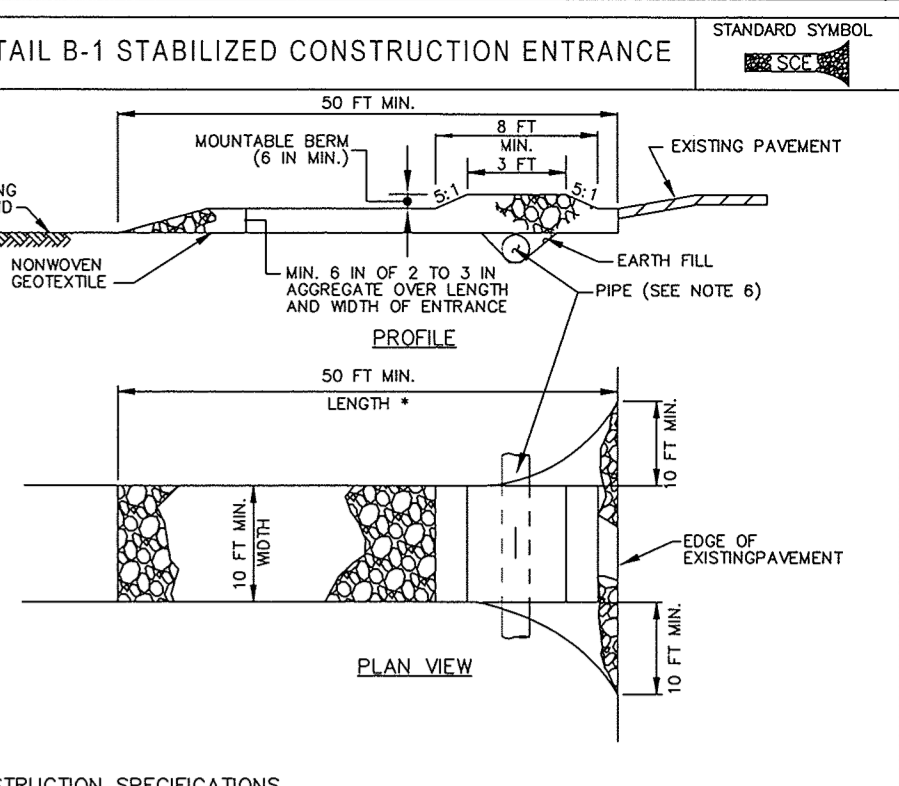
SEQUENCE OF CONSTRUCTION - INDIVIDUAL HOUSE

- DAY 1: HOLD A PRE-CONSTRUCTION MEETING; APPLY FOR GRADING PERMIT; AND OBTAIN GRADING PERMIT STEP DURATION 1 DAY. DAY 2: THE CONTRACTOR(S) ARE TO IDENTIFY AND MARK ANY HAZARDOUS CONDITIONS THAT MAY EXIST ON-SITE, SUCH AS OVERHEAD POWERLINES, OLD WELLS, GAS LINES, ETC. STEP DURATION 1 DAY. DAY 3-4: CLEAR AND GRUB AS NECESSARY FOR THE INSTALLATION OF PERMETER CONTROLS, INSTALL STABILIZED CONSTRUCTION ENTRANCE AND PERMETER CONTROLS. STEP DURATION 2 DAYS.

Permanent Seeding Summary table with columns for Hardness Zone, Species, Application Rate, Seeding Dates, Seeding Depth, and Lime Rate.

Table B.1: Temporary Seeding for Site Stabilization table with columns for Plant Species, Seeding Rate, Seeding Dates, and Recommended Seeding Dates by Plant Hardness Zone.

ENGINEER'S CERTIFICATE: I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.



CONSTRUCTION SPECIFICATIONS: 1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTRANCE AT ALL TIMES. 2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2x6 MINIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND BOTTOM.

CONSTRUCTION SPECIFICATIONS: 1. USE WOOD POSTS 1x4 x 1 1/2 INCH MINIMUM SQUARE CUT OF SOUND QUALITY HARDWOOD. 2. USE 36 INCH MINIMUM POSTS DRIVEN 18 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET INTO GROUND.

CONSTRUCTION SPECIFICATIONS: 1. USE WOOD POSTS 1x4 x 1 1/2 INCH MINIMUM SQUARE CUT OF SOUND QUALITY HARDWOOD. 2. USE 36 INCH MINIMUM POSTS DRIVEN 18 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET INTO GROUND.

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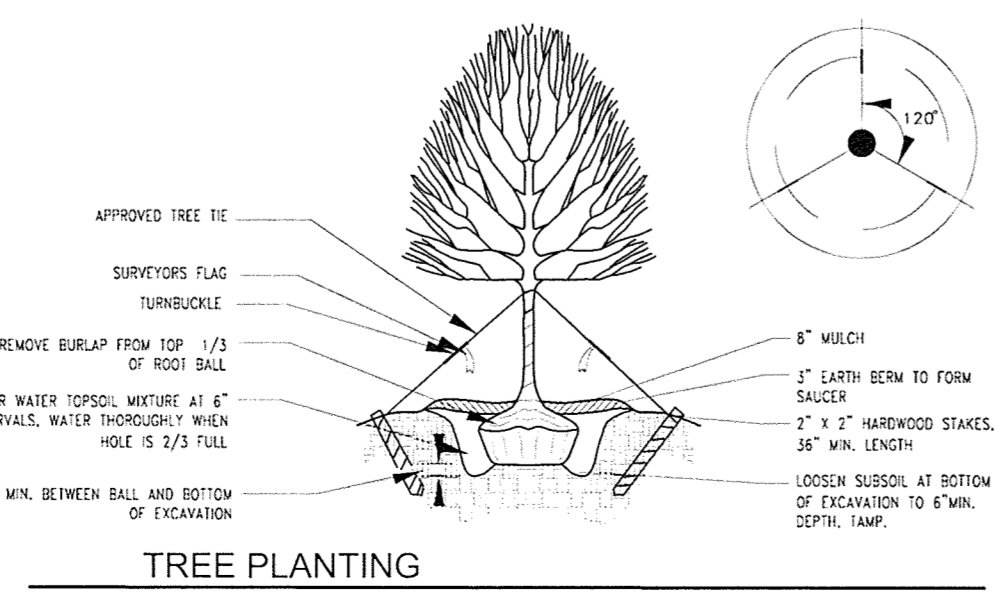
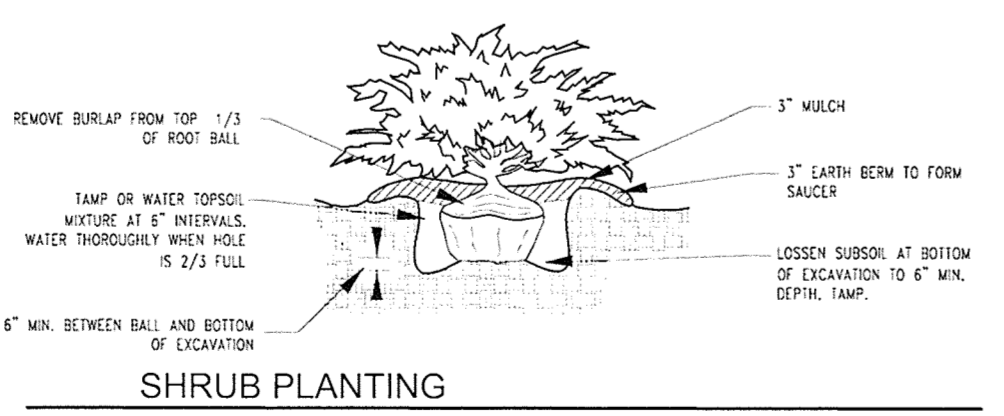
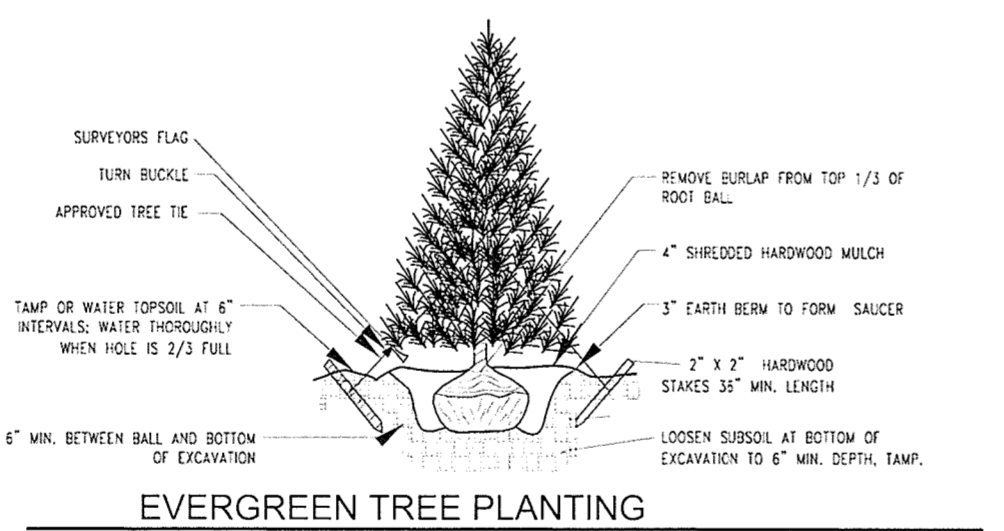
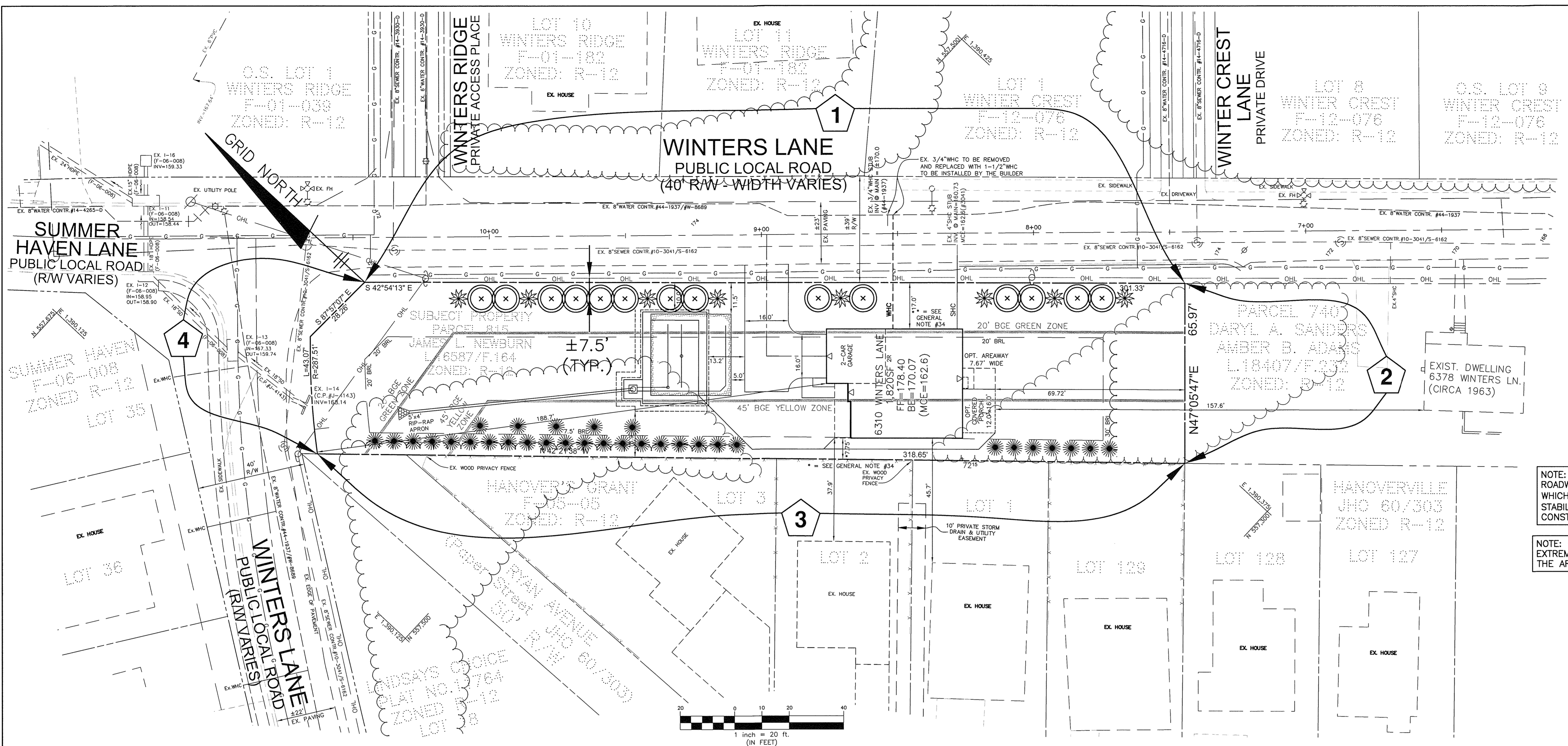


**LANDSCAPING NOTES**

1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
2. THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL HAVE BEEN ADDRESSED BY THE LANDSCAPING PLAN APPROVED UNDER THIS SDP. THE FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING SHALL BE POSTED AS PART OF THE GRADING PERMIT IN THE AMOUNT OF \$8,100 FOR THE REQUIRED 15 SHADE TREES & 24 EVERGREEN TREES.
3. THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION AND WHEN NECESSARY, REPAIRED OR REPLACED.
4. 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 MAY 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 CERTIFICATES.
5. THE LANDSCAPING ALONG WINTERS LANE RECEIVED BGE APPROVAL BY CORRESPONDENCE ON 9/17/19.

NOTE: UTILITY WORK WITHIN EXISTING ROADWAYS SHALL BE LIMITED TO THAT WHICH CAN BE BACKFILLED AND/OR STABILIZED BY THE END OF THE DAY'S CONSTRUCTION ACTIVITIES

NOTE: CONTRACTORS TO EXERCISE EXTREME CAUTION WHEN WORKING IN THE AREA OF EXISTING OVERHEAD LINES



**SCHEDULE A PERIMETER LANDSCAPE EDGE**

CATEGORY	ADJACENT TO ROADWAY		ADJACENT TO PERIMETER PROPERTIES			
	YES	NO	YES	NO		
PERIMETER NO.	1	2	3	4		
LANDSCAPE TYPE	B	A	C	N/A		
	SHADE TREES	1:50	1:60	1:40	-	
EVERGREEN TREES	1:40	-	1:20	-		
LINEAR FEET OF PERIMETER (FRONTAGE/ROADWAY)	301.3	66.0	318.7	71.3		
CREDIT FOR EXISTING VEGETATION: NO OR YES (w/LINEAR FEET) DESCRIBE BELOW IF NEEDED	NO	NO	NO	NO		
CREDIT FOR WALL, FENCE OR BERM: NO OR YES (w/LINEAR FEET) DESCRIBE BELOW IF NEEDED	NO	NO	NO	NO		
NUMBER OF PLANTS REQUIRED:	SHADE TREES	6	1	8	0	15
	EVERGREEN TREES	8	0	16	0	24
OTHER TREES (2:1 SUBSTITUTE)	0	0	0	0	0	
SHRUBS	0	0	0	0	0	
NUMBER OF PLANTS PROVIDED:	SHADE TREES	6	1	0	0	7
	EVERGREEN TREES	8	0	32**	0	40
OTHER TREES (2:1 SUBSTITUTE)	0	0	0	0	0	
SHRUBS (10:1 SUBSTITUTE) DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED	0	-	-	-	0	
TOTALS	-	-	-	-	-	-

\* \* THE PROPOSED SFD HOUSE WILL FACE (FRONT) TOWARDS THIS PERIMETER; THEREFORE NO LS OBLIGATION  
 \*\* \* DUE TO SIDE PROXIMITY TO ADJOINING P/L, EVERGREENS ARE SUBSTITUTED @ 2:1 RATIO FOR SHADE TREES.

**PERIMETER LANDSCAPE PLANTING LIST**

SYMBOL	QUANTITY	NAME	REMARKS
☼	8	ILEX 'NELLIE R. STEVENS' (Nellie R. Stevens Holly)	5' - 6' HL.
⊕	14	ACER BURGERIANUM (Trident Maple)	2-1/2" - 3" col.
☼	32	ILEX OPACA (American Holly)	5' - 6' HL.

**OWNER'S CERTIFICATE**

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION 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 Newburn* 2.9.2021  
OWNER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Chief, Development Engineering Division* 3.10.21  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Chief, Division of Land Development* 3/17/21  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Director* 3/17/21  
DIRECTOR DATE

**BENCHMARK ENGINEERING, INC.**

ENGINEERS • LAND SURVEYORS • PLANNERS

8490 BALTIMORE NATIONAL PIKE & SUITE 315  
ELLCOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 FAX: 410-465-6644  
E-MAIL: 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. 22390, valid through 12/31/2021.

*Alan Land* 2-9-21  
Professional Engineer

OWNER: JAMES L. NEWBURN  
6378 WINTERS LANE  
HANOVER, MD 21076-1013

DEVELOPER: THE ESTATE OF JAMES L. NEWBURN  
9469 HICKORY LIMB  
COLUMBIA, MD 21045

DESIGN: MCR DRAFT: MCR CHECK: CAM

PROJECT: SITE DEVELOPMENT PLAN  
SINGLE FAMILY DETACHED DWELLING  
NEWBURN PROPERTY

LOCATION: TAX MAP-38 GRID-14 PARCEL-815  
1st ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

TITLE: LANDSCAPE PLAN  
NOTES, AND DETAILS

DATE: SEPTEMBER, 2019  
FEBRUARY, 2021 PROJECT NO. 2528

SCALE: 1" = 20' DRAWING 5 OF 5