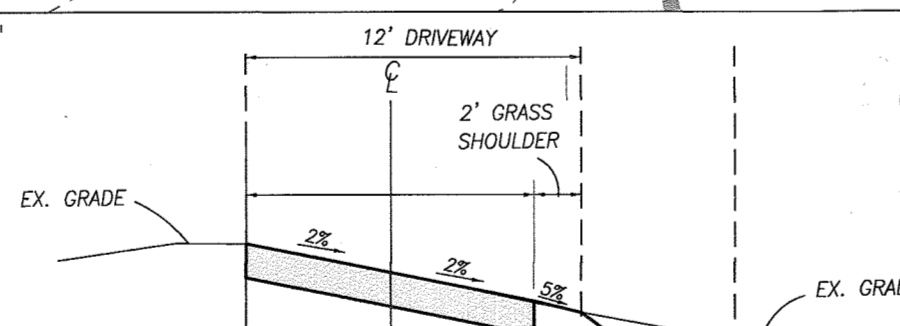
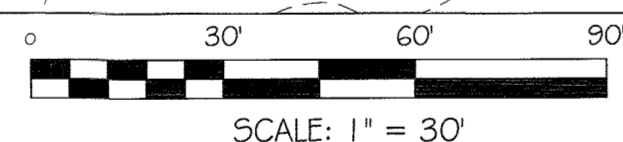


- GENERAL NOTES**
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
 - THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HRS. PRIOR TO ANY EXCAVATION WORK BEING DONE.
 - TOPOGRAPHY FROM HOWARD COUNTY GIS DATA, SUPPLEMENTED BY FIELD-RUN ELEVATIONS BY VANMAR ASSOCIATES, INC. CONTOUR INTERVAL IS 2' VERTICAL DATUM IS NAVD 88.
 - THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLAN COORDINATE SYSTEM, AS PROJECTED BY HOWARD COUNTY SURVEY CONTROL STATIONS: 47HB N. 531895.744 E. 1356076.346 47HG N. 531085.007 E. 1357060.425
 - STORMWATER MANAGEMENT FOR THIS LOT WILL BE PROVIDED VIA A DRYWELL (M-5), AND MICRO BIO-RETENTION (M-6) TO BE CONSTRUCTED BY THE DEVELOPER UNDER PLAN SDP-19-064 AND THE FACILITY WILL BE PRIVATELY OWNED AND MAINTAINED BY THE HOME OWNER.
 - EXISTING WATER AND SEWER PER HARMONY LANE WATER AND SEWER AS-BUILT PLAN CP-W-8131& S-6125.
 - ANY DAMAGE TO THE COUNTY'S RIGHT OF WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
 - SHC ELEVATIONS SHOWN ARE LOCATED AT THE PROPERTY LINE
 - FOR DRIVEWAY ENTRANCE DETAILS REFER TO THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD DETAIL R-6.05
 - PROPERTY OWNER: ELLINGER HARRY L. & LEAH M. ADDRESS: 10351 SCAGGSVILLE ROAD, LAUREL, MD 20723 PH. (301) 498-5858
 - PROPERTY INFORMATION: TAX MAP 47, GRID 22, PARCEL 729 TAX ACCOUNT # 06-40826 DEED REFERENCE L. 7098 E. 695. TOTAL SITE AREA: 0.42 ACRES +/-
 - THE SUBJECT PROPERTY IS ZONED R-SC PER OCTOBER 6TH 2013 COMPREHENSIVE ZONING PLAN.
 - NO HISTORIC STRUCTURES, CEMETERIES OR ENVIRONMENTAL FEATURES (I.E. STREAMS OR THEIR BUFFERS, FLOODPLAIN, STEEP SLOPES, WETLANDS ETC.) WERE FOUND ON THIS SITE.
 - DRIVEWAY(S) SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER TO FOLLOWING MINIMUM REQUIREMENTS:
 - Width - 12' (16' serving more than one residence).
 - Surface - 6" of compacted crusher run base with tar and chip coating (1-1/2" min.).
 - Geometry - Maximum 15% grade, maximum 10% grade change and minimum 45-foot turning radius.
 - Structures (culvert/bridges) - Capable of supporting 25 gross tons (H25 loading).
 - Drainage Elements - Capable of safely passing 100-year flood with no more than 1 foot depth over driveway surface.
 - Structure clearances - minimum 12 feet.
 - Maintenance - sufficient to ensure all weather use.
 - THE EXISTING UTILITIES SHOWN HEREON ARE BASED ON EXISTING UTILITY PLANS OF RECORD, INCLUDING CONTRACT NO.24-1226.
 - TOTAL LIMIT OF DISTURBANCE = 17,766 S.F. / 0.42 AC.±.
 - SITE DEVELOPMENT PLAN APPROVAL BY THE DEPARTMENT OF PLANNING AND ZONING IS REQUIRED PRIOR TO BUILDING PERMITS BEING ISSUED FOR THE CONSTRUCTION OF RESIDENTIAL DWELLINGS ON LOT.
 - A PRIVATE ADDRESS SIGN ASSEMBLY SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPER'S/OWNER'S EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATE.
 - NO GRADING, REMOVAL OF VEGETATIVE COVER, TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS.
 - IN ACCORDANCE WITH SECTION 128.0A.1 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS OR EXTERIOR STAIRWAYS NOT MORE THAN 18 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 BACK YARD SETBACK.
 - THIS PROPERTY IS EXEMPT FROM FOREST CONSERVATION BASED ON SEC.16.1202(b)(1)(i) FROM FOREST CONSERVATION MITIGATION BECAUSE PARCEL IS LESS THAN 40,000 SF.
 - GRAVITY SEWER SERVICE, FIRST FLOOR ONLY, NO GRAVITY SEWER TO BASEMENT SERVICE APPROVED PER DESIGN MANUAL WAWER DMV2-20-004.
 - LANDSCAPING IS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL FINANCIAL SURETY IN THE AMOUNT OF \$4,200 FOR 14 SHADE TREES HAS BEEN POSTED AS PART OF THE GRADING PERMIT.

EXISTING TREES (KINGS WOODS SECTION 3 DEVELOPMENT PLAN)

SYMBOL	BOTANICAL NAME
⊙	ACER RUBRUM RED MAPLE
○	PINUS STROBUS WHITE PINE



ADDRESS CHART

LOT/PARCEL #	STREET ADDRESS
1/729	9450, ROYAL PATH COVE, NORTH LAUREL MD. 20723

PERMIT INFORMATION CHART

PROPERTY	SECTION/AREA	LOT/PARCEL No.
ELLINGER PROPERTY	10230	47

HOWARD COUNTY BENCH MARKS

1 # 47HB DISK SET ON TOP OF CONCRETE MONUMENT. N 531895.744 E 1356076.346 EL = 296.82
 2 # 47HG DISK SET ON TOP OF CONCRETE MONUMENT. N 531085.007 E 1357060.425 EL = 294.550

BENCH MARKS

#1	CAPPED REBAR N. 531561.503 E. 1359301.106 EL = 254.213
#2	CAPPED REBAR N. 531605.293 E. 1359217.128 EL = 260.282

STORMWATER MANAGEMENT PRACTICES

Parcel No.	ADDRESS	DRY WELLS (NUMBER)	MICRO-BIORETENTION (NUMBER)
729	9450 Royal Path Cove	1	1

SWM TREATMENT SUMMARY

PRACTICE	DRAINAGE AREA	IMPERVIOUS AREA TREATED	METHODOLOGY	VOLUME (ESDv) REQUIRED	VOLUME (ESDv) PROVIDED
M-5 DRYWELL (10' X 8' X 4')	620 S.F.	620 S.F.	ESDv=Pe * Rv * A/12 where Pe=1.2 & Rv=0.95	59 c.f.	128 c.f.
M-6 MICRO BIO-RETENTION (34' X 8')	7,370 S.F.	3,568 S.F.	ESDv=Pe * Rv * A/12 where Pe=1.2 & Rv=0.49	358 c.f.	363 c.f.
TOTAL ESDv PROVIDED				417 c.f.	491 c.f.
ESDv REQUIRED				483 c.f.	

APPROVED
 HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief
 CHIEF, DEVELOPMENT ENGINEERING DIVISION **11/25/19** DATE

Chief
 CHIEF, DIVISION OF LAND DEVELOPMENT & ZONING **11/21/19** DATE

Director
 DIRECTOR **12-6-19** DATE

SOIL LEGEND

MAP SYMBOL	MAPPING UNIT	HYDROLOGIC SOIL GROUP	HYDRIC COMPONENTS	Kw	SLOPE
UcB	Urban land-Chillum-Beltsville complex	C	NO	0.43	0-5%
FaaA	Fallington Sandy Loams	C	NO	0.44	0-2%

HOWARD COUNTY SOILS MAP NO. 27

SITE ANALYSIS DATA SHEET

PROPOSED SITE USE	SF
WETLANDS	0.00
FLOODPLAIN	0.00
EXISTING FORESTS	17,120
STEEP SLOPES (15-24%)	0.00
STEEP SLOPES (25% OR GREATER)	0.00
TOTAL PROJECT AREA	17,766
LOD AREA	17,766
GREEN OPEN SPACE AREA	0.00
EX. IMPERVIOUS AREA	0.00
PROP. IMPERVIOUS AREA	4,188
HIGHLY ERODIBLE SOILS IN PROJECT AREA	0.00
ZONING	R-SC
TOTAL UNITS ALLOWED	1
TOTAL UNITS PROPOSED	1
PARKING REQUIRED	2.5
PARKING PROVIDED	2.5
ZONING	FCP-19-031
DPZ FILE REFERENCES	DMV2-20-004

LEGEND

SILT FENCE
 SUPER SILT FENCE
 DIVERSION FENCE
 EXISTING WELL
 TEST PIT LOCATION
 PROPOSED HOUSE SITE
 EXISTING TREE LINE
 PROPOSED TREE LINE
 SOIL LINE
 FLOODPLAIN
 75' STREAM BUFFER
 WETLAND
 25' WETLAND BUFFER
 STABILIZED CONSTRUCTION ENTRANCE
 PROPOSED DRIVEWAY
 EX. SEWER LINE
 EX. WATER LINE

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. 19417, Expiration Date: 9/1/21.

Professional Engineer
 DATE: 11/25/19

CALL "MISS UTILITY" AT 1-800-257-7777 48 HOURS BEFORE START OF CONSTRUCTION

SHEET INDEX

NO.	TITLE
1	GRADING, STORMWATER MANAGEMENT, SEDIMENT & EROSION CONTROL PLAN
2	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
3	PRIVATE MICRO-BIORETENTION & DRYWELL & LANDSCAPE PLAN NOTES, DETAILS AND SPECIFICATIONS

REVISIONS

DATE	REVISIONS
08/01/19	COUNTY COMMENTS
09/05/19	COUNTY COMMENTS
10/01/19	COUNTY COMMENTS

DEVELOPER'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 ANY 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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Leah M. Ellinger **10/28/19** DATE
 DEVELOPER

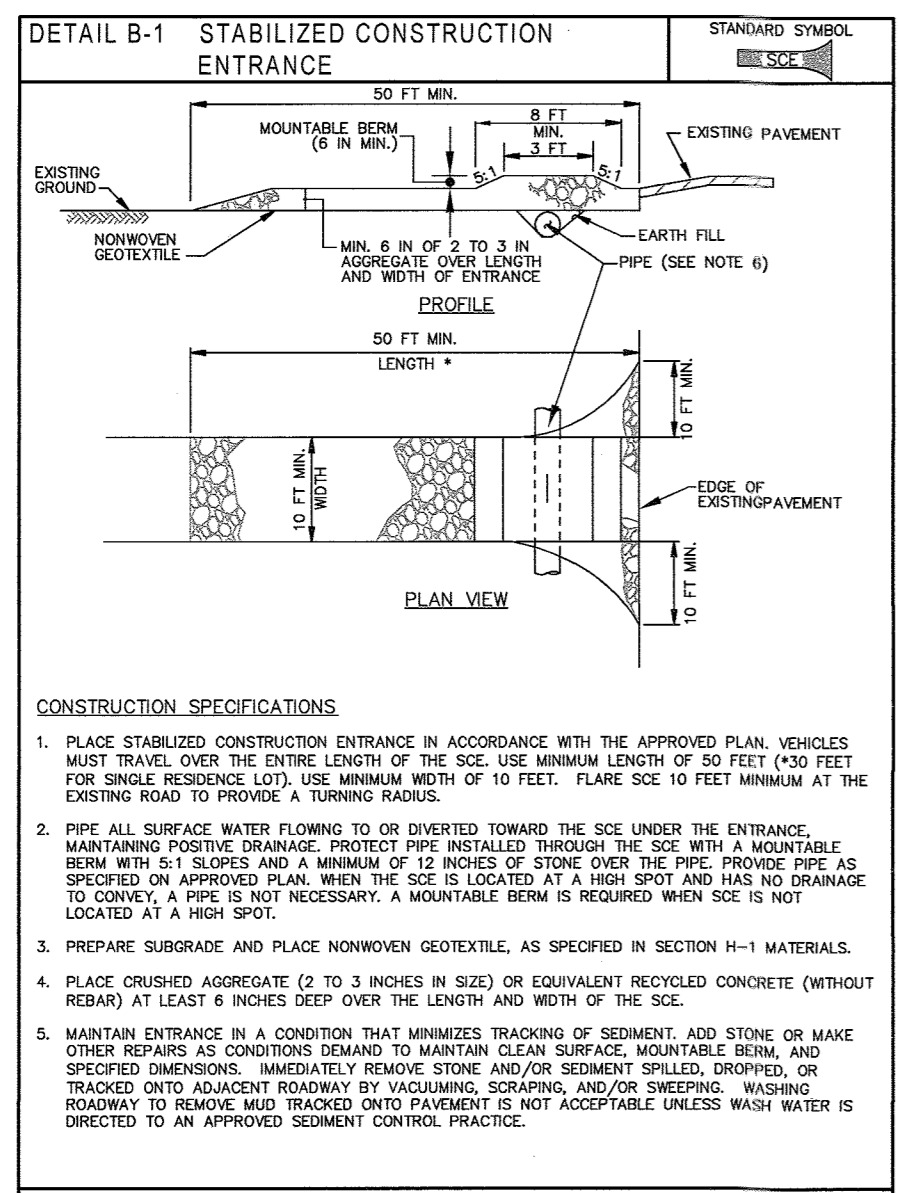
ENGINEER'S CERTIFICATE:
 I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT AND THE 2011 MARYLAND STANDARDS & SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

Ronald E. Thompson, P.E. **10/28/2019** DATE
 HOWARD SOIL CONSERVATION DISTRICT

SITE DEVELOPMENT PLAN GRADING & STORMWATER MANAGEMENT & SEDIMENT AND EROSION CONTROL PLAN ELLINGER PROPERTY

TAX MAP: 47 GRID NO: 22 PARCEL NO: 729 ELECTION DISTRICT: SIXTH HOWARD COUNTY, MARYLAND EX. ZONING: R-SC SCALE: AS SHOWN DATE: MAY, 2019 SHEET 1 OF 3 RELATED DPZ FILES: ECP-19-031, DMV2-20-004

VANMAR ASSOCIATES, INC.
 Engineers Surveyors Planners
 310 South Main Street Mount Airy, Maryland 21771 (301) 829-2890 (301) 831-5515 (410) 549-2751 ©Copyright, Latest Date Shown

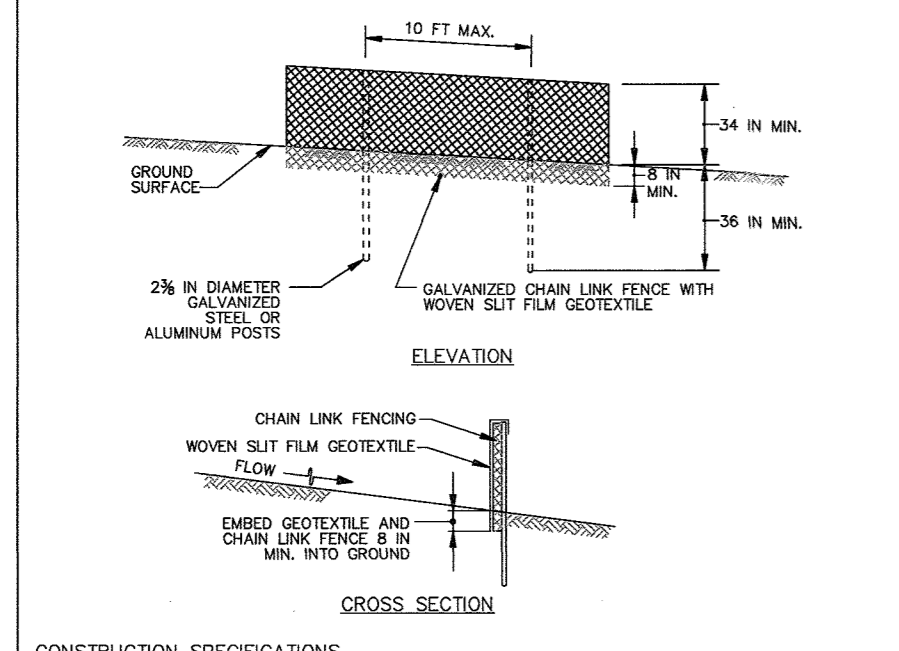


CONSTRUCTION SPECIFICATIONS

1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SEE. USE MINIMUM LENGTH OF 50 FEET (40 FEET FOR SINGLE RESURFACE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SIDE TO FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PREPARE SURFACE AND PLACE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS. MAINTAIN FLOW OF WATER THROUGH THE SEE UNDER THE ENTRANCE. MAINTAIN FLOW OF WATER THROUGH THE SEE UNDER THE ENTRANCE. MAINTAIN FLOW OF WATER THROUGH THE SEE UNDER THE ENTRANCE. MAINTAIN FLOW OF WATER THROUGH THE SEE UNDER THE ENTRANCE.
3. PREPARE SURFACE AND PLACE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) ON EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 4 INCHES DEEP AND WITH THE SEE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE. MAINTAINABLE BERM, AND REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE. MAINTAINABLE BERM, AND REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE. MAINTAINABLE BERM, AND REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT AND WATER MANAGEMENT ADMINISTRATION



CONSTRUCTION SPECIFICATIONS

1. INSTALL 2 1/2 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. OVER THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 8 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2% MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR RIVETS.
3. FASTEN WOVEN SIFT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS. SECURELY TO THE UPRIGHT SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 12 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WIRE ENDS OF THE GEOTEXTILE END TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 8 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSTREAM AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE AGGREGATE TOP SEDIMENT AND DEBRIS WHEN RAISED ABOVE 10 INCHES OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT AND WATER MANAGEMENT ADMINISTRATION

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

Definition: The process of preparing the soils to sustain adequate vegetative stabilization.

Purpose: To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies: Where vegetative stabilization is to be established.

- Criteria:
1. Temporary Stabilization
 - a. Seeded preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable equipment or by hand. Seeding must be done immediately after soil is loosened. Seeding must be done immediately after soil is loosened. Seeding must be done immediately after soil is loosened.
 - b. Apply fertilizer and lime as specified on the plans.
 - c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
 2. Permanent Stabilization
 - a. All lands disturbed by any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
 - i. Soil pH between 6.0 and 7.0.
 - ii. Soluble salts less than 500 parts per million (ppm).
 - iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lowlands will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
 - iv. Soil contains 1.5 percent minimum organic matter by weight.
 - v. Soil contains 1.5 percent pore space to permit adequate aeration.
 - b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.

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

Definition: The application of seed and mulch to establish vegetative 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.

- Criteria:
1. Seeding
 - a. 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 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rates.
 - b. Much alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
 - c. Incubants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
 - d. Soil or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.
 2. Application
 - a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
 - b. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1.
 - c. Limb seeding: This includes use of conventional drop or broadcast spreaders.
 - d. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate to each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.
 - e. Drill or Outdragger Seeding: Mechanized seeders that apply and cover seed with soil.
 - f. Outdragger seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm after planting.
 - g. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
 - h. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
 - i. Fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P2 O5 (phosphorous), 200 pounds per acre; K2 O (potassium), 200 pounds per acre.
 - ii. WCM is to be applied at a rate of 3 tons per acre may be applied by hydroseeding. Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
 - iii. Mix seed and fertilizer on site and seed immediately and without interruption.
 - iv. When hydroseeding do not incorporate seed into the soil.
 3. Anchoring
 - a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
 - b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - c. WCFM is to be dyed green or colored a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
 - d. WCFM, including dye, must contain no germination or growth inhibiting factors.
 - e. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blatter-like growth cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - f. WCFM material must not contain elements or compounds at concentration levels that will be phytotoxic.
 - g. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum. B.17
 4. Application
 - a. Apply mulch to all seeded areas immediately after seeding.
 - 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. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
 - c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - d. Synthetic binders such as Acrylic DLR (Agra-Tack), DCA-70, Petrosel, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
 - e. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

SUPER SILT FENCE IS TO BE INSTALLED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR

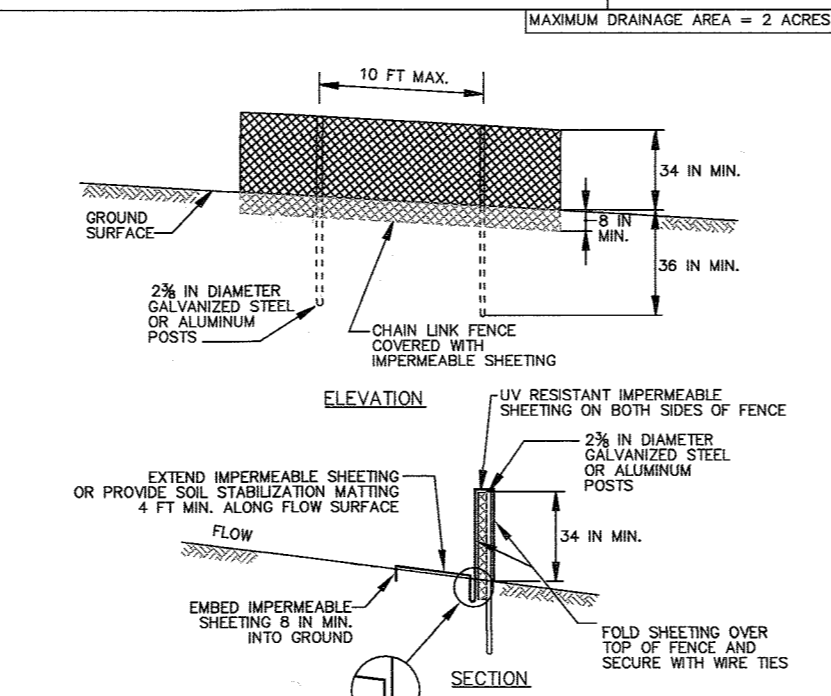
TEMPORARY STOCKPILE NOTE

SITE EARTHWORK HAS BEEN BALANCED SUCH THAT A TEMPORARY STOCKPILE SHOULD NOT BE NECESSARY. SHOULD CONTRACTOR DECIDE TO USE A STOCKPILE, CONTRACTOR SHALL PLACE STOCKPILE ON SUITABLE AREA OF THE SITE AND FOLLOW TEMPORARY STABILIZATION NOTES.

TEMPORARY STABILIZATION SPECIFICATIONS TABLE						
		Hardiness Zone (from Figure B.3):		Fertilizer Rate (10-20-20)		Lime Rate
		Seed Mixture (from Table B.3):				
No.	Species	Application Rate (lb/oc)	Seeding Dates	Seeding Depths	N	P2O5
40	ANNULAR PERGRASS	40	MAR 1 - MAY 15 AUG 1 - OCT 15	0.5 INCHES	436 lb/oc	2 tons/oc
30	FOWAL WHEAT	30	JUNE 1 - JULY 31	0.5 INCHES	(10 lb/1000 sf)	(90 lb/1000 sf)

PERMANENT STABILIZATION SPECIFICATIONS TABLE						
		Hardiness Zone (from Figure B.3):		Fertilizer Rate (10-20-20)		Lime Rate
		Seed Mixture (from Table B.3):				
No.	Species	Application Rate (lb/oc)	Seeding Dates	Seeding Depths	N	P2O5
20	Kentucky Bluegrass	20	Mar 1 - May 15 Aug 1 - Oct 15	1/4 - 1/2 in	45 pounds per acre	90 lb/oc (90 lb/1000 sf)
				1/4 - 1/2 in	(10 lb/1000 sf)	(90 lb/1000 sf)

DETAIL C-9 DIVERSION FENCE



CONSTRUCTION SPECIFICATIONS

1. USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2% INCH MAXIMUM OPENING).
2. USE 2 1/2 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
3. FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
4. SECURE 1/2 IN. OR THICKER IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
5. EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
6. WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM TOWARD FLOW SURFACE.
7. KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT AND WATER MANAGEMENT ADMINISTRATION

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

Definition: 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.

Conditions Where Practice Applies: Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

Criteria:

1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
3. Runoff from the stockpile area must drain to a suitable sediment control practice.
4. Access the stockpile area from the upgrade side.
5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
7. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 incremental Stabilization and Standard B-4-4 Temporary Stabilization.
8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

Maintenance: The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

1) A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1855 after the future LOD and protected area marked clearly in the field. A minimum of 48 hour notice to CID must be given a 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.

Other building or grading inspection approvals may not be authorized until this initial approval by inspection agency is made. Other related state and federal permits shall be referenced, to ensure coordination and to avoid conflicts with this plan. If a permit is required, the applicant shall be responsible for obtaining the permit. The provisions of this plan and are to be in conformance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR THE SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.

- 2) All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR THE SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.
- 3) Following initial soil disturbance or re-disturbance, permanent or temporary stabilization is required within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed areas on the project site except for those areas under active grading.
- 4) All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (Sec. B-4-2), permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization (Sec. B-4-8) in excess of 20 ft. must be benched with stable cutters. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).
- 5) All sediment control structures are to remain in place and are to be maintained in good condition until permission for their removal has been obtained from the CID.
- 6) Site Analysis:

Total Area of Site	0.42 Acres
Area Disturbed	0.42 Acres
Area to be roofed or paved	0.10 Acres
Area to be vegetatively stabilized	0.32 Acres
Total Cut	200 Cu. Yds.
Total Fill	0 Cu. Yds.
Offsite waste/borrow area location	N/A

- 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
 - * Name and title of inspector
 - * Weather and wind 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 discharges
 - * Identification of plan deficiencies
 - * Identification of sediment controls that require maintenance
 - * Identification of missing or improperly installed sediment controls
 - * Compliance status regarding the sequence of construction and stabilization requirements
 - * Photographs
 - * Monitoring sampling
 - * Maintenance and/or corrective action performed
 - * Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE).
- 9) Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back-filled and stabilized by the end of each workday, whichever is shorter.
- 10) Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction. Minor revisions may be allowed by the CID per the list of HSCD-approved field changes.
- 11) Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit at a time). Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the CID. Unless otherwise specified and approved by the HSCD, no more than 30 acres cumulatively may be disturbed at a given time.
- 12) Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.
- 13) Top soil shall be stockpiled and preserved on-site for redistribution onto final grade.
- 14) All Silt Fence and Super Silt Fence shall be placed on-the-contour, and be imbricated at 25' minimum interval, with lower ends curled uphill by 2' in elevation.
- 15) Stream channels must not be disturbed during the following restricted time periods (inclusive):
 - * Use I and IP March 1 - June 15
 - * Use III and IIIIP October 1 - April 30
 - * Use IV March 1 - May 31
- 16) A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.

DUST CONTROL

DUST CONTROL METHOD FOR THIS SITE TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES: CALCIUM CHLORIDE SHALL BE APPLIED TO EXPOSED SURFACES AT A RATE THAT WILL KEEP SURFACE MOIST UNTIL SOIL IS STABILIZED ACCORDING TO VEGETATIVE SPECIES FOR THIS SITE AND AREAS TO BE PAVED ARE COMPLETED.

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

1. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
2. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS.

OWNER/DEVELOPER
HARRY L. & LEX M. ELLINGER
10351 SCAGSVILLE ROAD
LAUREL, MARYLAND 20723
301-498-5858

CALL "MISS UTILITY" AT
1-800-257-7777
48 HOURS BEFORE START OF CONSTRUCTION

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

John P. Blanton 11/25/19
HOWARD SOIL CONSERVATION DISTRICT DATE

SITE DEVELOPMENT PLAN
SEDIMENT AND EROSION CONTROL, NOTES AND DETAILS
ELLINGER PROPERTY

TAX MAP: 47 ELECTION DISTRICT: SIXTH SCALE: AS SHOWN
GRID NO: 22 HOWARD COUNTY, MARYLAND DATE: MAY, 2019
PARCEL NO: 229 EX. ZONING: R-SC SHEET 2 OF 3

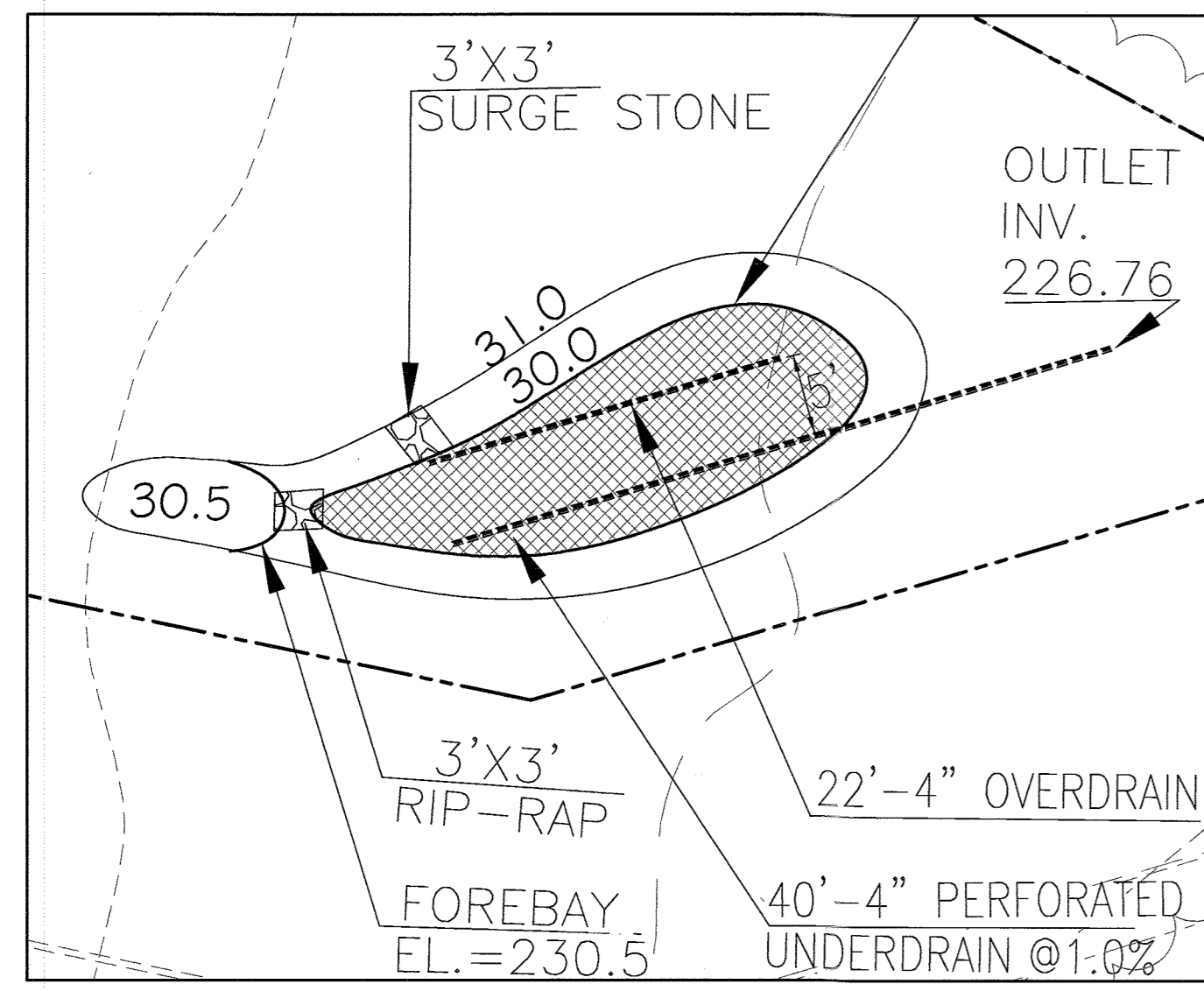
RELATED DPZ FILES: ECP-19-031, DMV2-20-004

VANMAR ASSOCIATES, INC.
Engineers Surveyors Planners
310 South Main Street Mount Airy, Maryland 21771
(301) 829-2880 (301) 831-3015 (410) 549-2751
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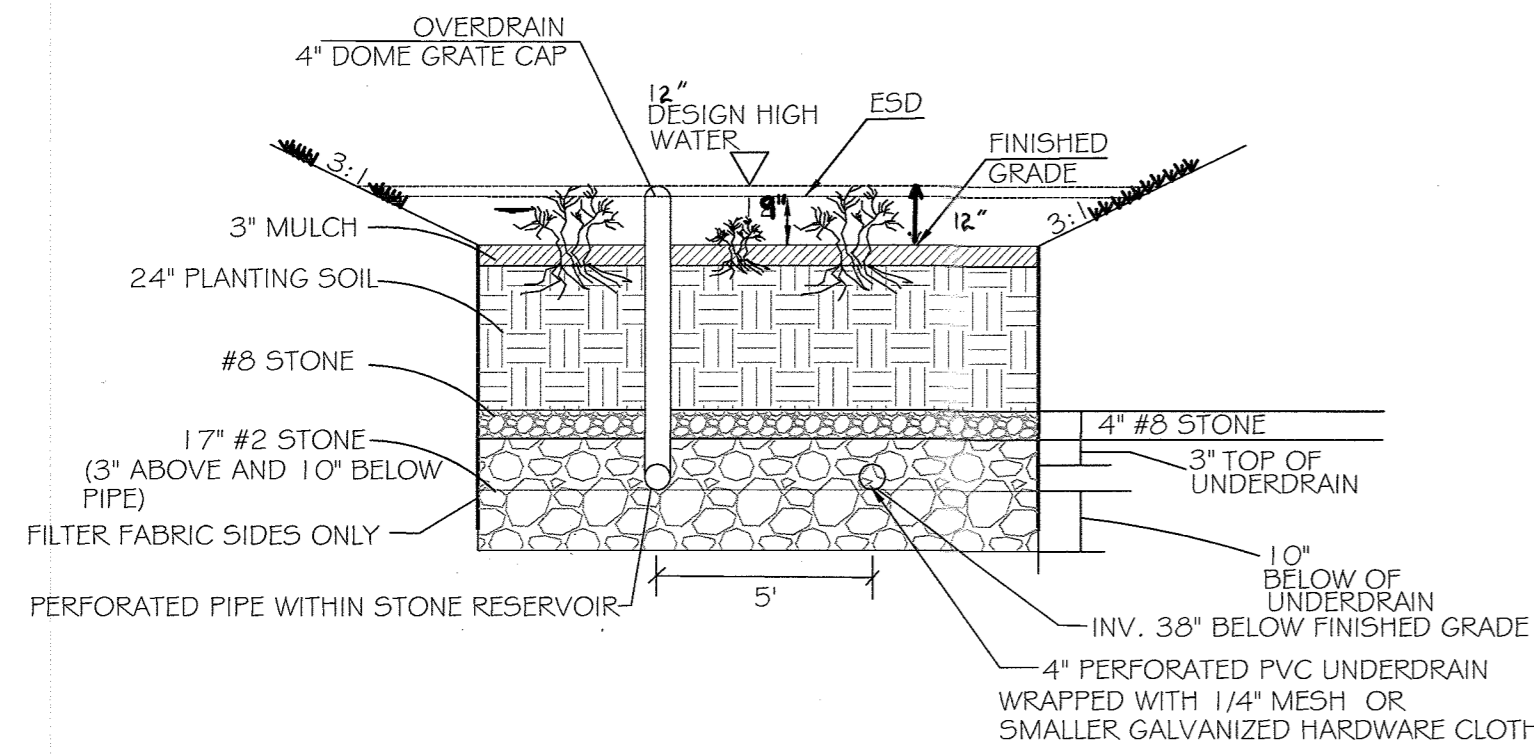
APPROVED
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
John P. Blanton 11-25-19
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Donald E. Thompson 11/27/19
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
John P. Blanton 12-6-19
DIRECTOR DATE

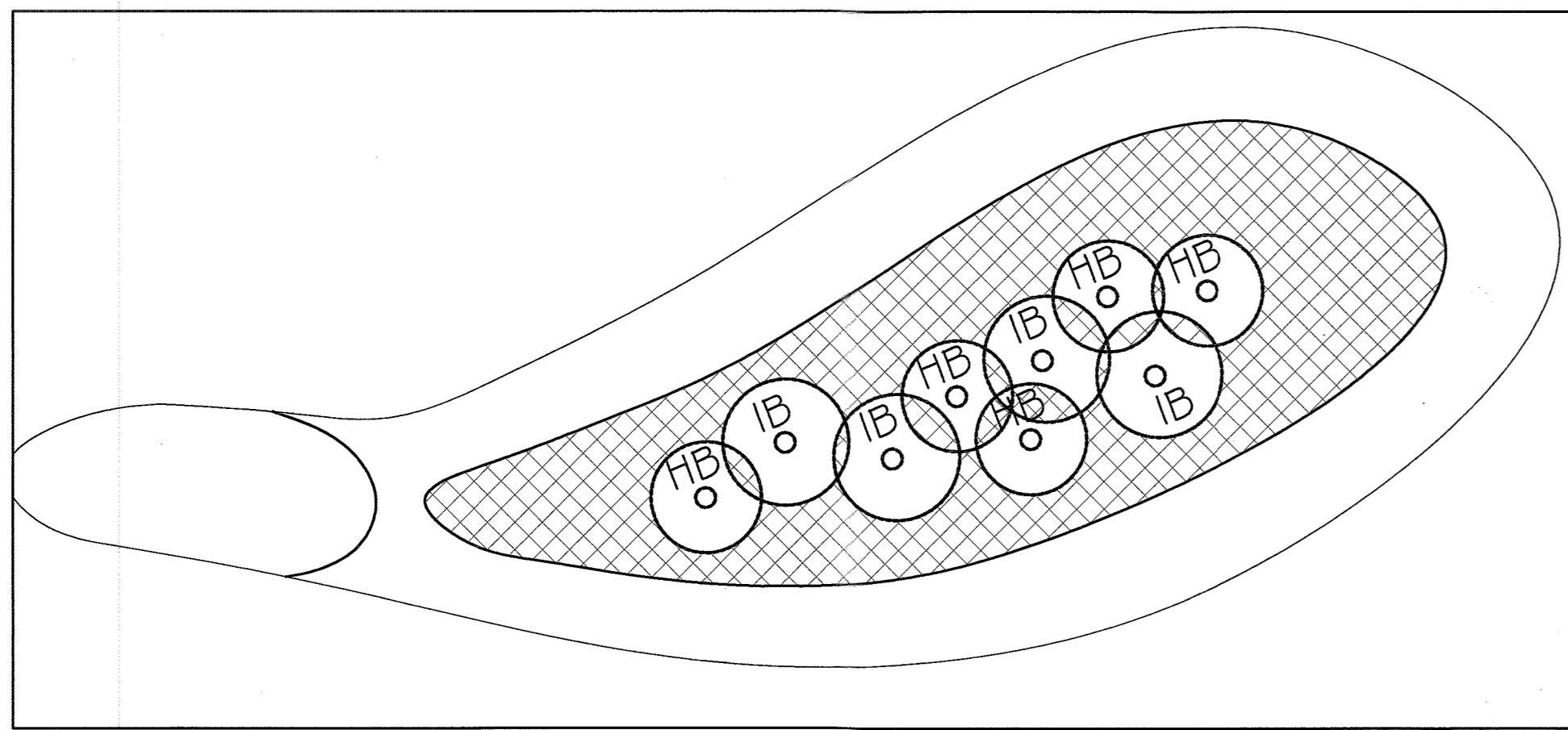
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18417, EXPIRATION DATE: 9/1/21
Donald E. Thompson 10/28/2019
RONALD E. THOMPSON, P.E. DATE



(M-6) PRIVATE MICRO-BIORETENTION FACILITIES
SCALE= 1":10'



(M-6) PRIVATE MICRO-BIORETENTION FACILITIES (24" DEPTH)
N.T.S.



PRIVATE MICRO-BIORETENTION LANDSCAPE
SCALE= 1":5'

OPERATION AND MAINTENANCE SCHEDULE FOR MICRO BIO-RETENTION (M-6)

- The Owner shall maintain the plant material, mulch layer and soil layer annually. Maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. 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 before the new layer is applied.
- The Owner shall correct soil erosion on an as needed basis, with a minimum of once per month and after each heavy storm. Inspect clean outs and observation wells along with overflow/outfall/exit pipes.

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	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" TO 3/4")	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)			
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 underneath pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth.
Poured in place concrete (if required)	MSHA Mix No. 3; $F_c = 3500$ psi @ 28 days, normal weight, air-entrained, reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350.R.8.9; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Gneiss (AASHTO #10) are not acceptable. No calcium carbide or dolomite sand substitutions are acceptable. No "rock dust" can be used for sand.

SWM#1	M-5 DRYWELL	10'x8'x4'
SWM#2	M-6 MICRO BIO-RETENTION	34' x 8' - 12" PONDING

MAXIMUM DEPTH 12"

KEY	QUANTITY	BOTANICAL NAME	SIZE
FB	5	HIGHBUSH BLUEBERRY VACCINIUM CORYMBOSUM	18"
IB	4	INKBERRY ILEX GLABRA	18"
	15	DWARF FOUNTAIN GRASS PENNISETUM ALOPECURADES 'HAMELIN'	12" POTS 2" O.C.

CATEGORY	ADJACENT TO ROADWAY	ADJACENT TO PERIMETER PROPERTIES
LANDSCAPE TYPE	N/A	A
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	N/A	790'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	N/A	N/A
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	N/A	N/A
NUMBER OF PLANTS REQUIRED		
SHADE TREES	N/A	14
EVERGREEN TREES	N/A	0
SHRUBS	N/A	0
NUMBER OF PLANTS PROVIDED		
SHADE TREES	N/A	14
EVERGREEN TREES	N/A	0
OTHER TREES (2:1 SUBSTITUTION) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	N/A	0

COMMENTS:
NOTES: COMPLEX PROJECTS MAY REQUIRE EXPANSION OF THE SCHEDULE TO ACCOMMODATE MULTIPLE LAND USES ON-SITE OR ON ADJACENT PROPERTIES.

KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	SYMBOL
AR	7	ACER RUBRUM 'ARMSTRONG'	'ARMSTRONG' RED MAPLE	2.5'-3'	AR
PA	7	PLATANUS X ACERIFOLIA 'BLOODGOOD'	BLOODGOOD LONDON PLANE	2.5'-3'	PA

FACILITY NO.	LOCATION	LENGTH	WIDTH	SQUARE FT.	DEPTH INV.	STONE INV.	INV. OUT	TOP MULCH ELEV.	GROUND ELEV. OUTFLOW SIDE	GROUND WATER DEPTH
1	ELLINGER PROPERTY	34'	8'	272	38"	10"	226.76	229.7	231	GREATER THAN 10'

* DEPTH OF FACILITY FROM TOP OF THE MULCH TO INVERT OF 6" UNDER DRAIN
** DEPTH OF STONE BELOW UNDER DRAIN

Specifications for Micro-Bioretentation, 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.
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-bioretentation 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 sand (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.

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 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.

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.

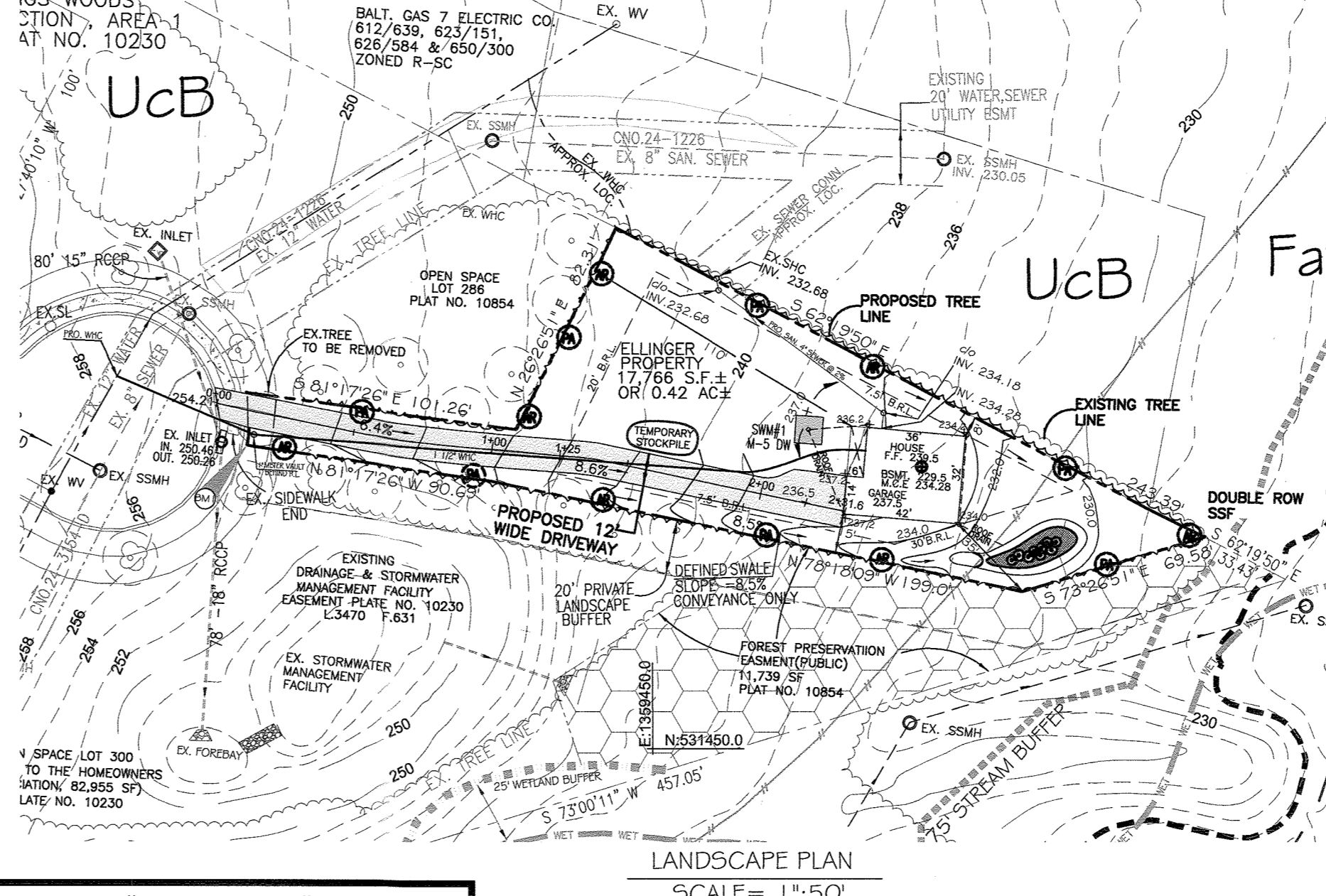
Rootstock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/8th of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain 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, defects, 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.

- MAINTENANCE CRITERIA**
- The following items should be addressed to ensure proper maintenance and long-term performance of landscape infiltration:
 - Privately owned practices shall have a maintenance plan and shall be protected by easement, deed restriction, ordinance, or other legal measures preventing its neglect, adverse alteration, and removal.
 - During the first year of operation, inspection frequency should be after every major storm and poorly established areas revegetated.
 - Sediment accumulation on the surface of the facility should be removed and the top two to three inches of surface layer replaced as needed.
 - The top few inches of the planting soil should be removed and replaced when water ponds for more than 48 hours or there is algal growth on the surface of the facility.
 - If standing water persists after filter media has been maintained, the gravel, soil, and sand may need to be cleaned and/or replaced.
 - Occasional pruning and replacement of dead vegetation is necessary. If specific plants are not surviving, more appropriate species should be used. Watering may be required during prolonged dry periods.

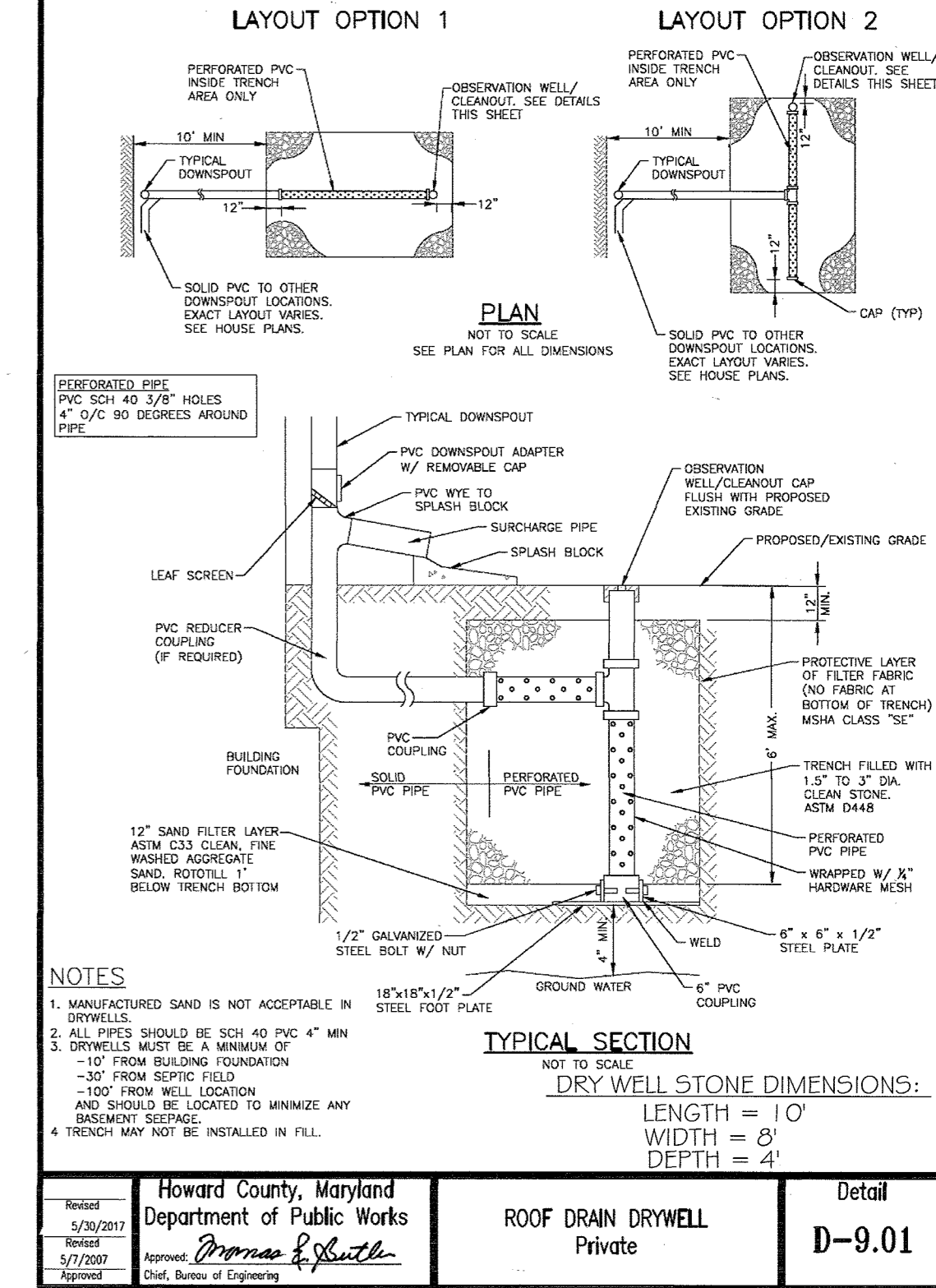


LANDSCAPE PLAN
SCALE= 1":50'

CALL "MISS UTILITY" AT
1-800-257-7777
48 HOURS BEFORE START OF CONSTRUCTION

OWNER/DEVELOPER
HARRY L. & LEAH M. ELLINGER
10351 SCAOYVILLE ROAD
LAUREL, MARYLAND 20723
301-498-5858

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. 18417, EXPIRATION DATE: 9/18/21.
SIGNED: *Ronald E. Thompson* DATE: 10/28/2019
RONALD E. THOMPSON, P.E.



ROOF DRAIN DRYWELL
Private
D-9.01

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER DRYWELLS (M-5)

- 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 MORNING WELLS SHALL BE RECORDED OVER 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 THE IT DOES NOT DRAIN DOWN WITHIN 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 INDICATED THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

DEVELOPER'S/OWNER'S LANDSCAPE CERTIFICATE:

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

Leah M. Ellinger 10/28/19
DEVELOPER/OWNER DATE

APPROVED
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Chad Plank 1/25/19
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
Jim Morris 1/27/19
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
John G... 12-6-19
DIRECTOR DATE

DATE	REVISIONS
09/05/19	COUNTY COMMENTS
09/05/19	COUNTY COMMENTS
10/01/19	COUNTY COMMENTS

SITE DEVELOPMENT PLAN
PRIVATE MICRO-BIORETENTION FACILITY - DRYWELL & LANDSCAPE PLAN
NOTES, DETAILS AND SPECIFICATIONS
ELLINGER PROPERTY
TAX MAP: 47 ELECTION DISTRICT: SIXTH SCALE: AS SHOWN
GRID NO: 22 HOWARD COUNTY, MARYLAND DATE: MAY, 2019
PARCEL NO: 729 EX. ZONING: R-5C SHEET 3 OF 3
RELATED DP2 FILES: ECP-19-031, DMV2-20-004
VANMAR ASSOCIATES, INC.
Engineers Surveyors Planners
310 South Main Street Mount Airy, Maryland 21771
(301) 829-2880 (301) 831-5015 (410) 549-2751
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