

U.S. ROUTE 40
150' R/W PUBLIC ROAD
INTERMEDIATE ARTERIAL

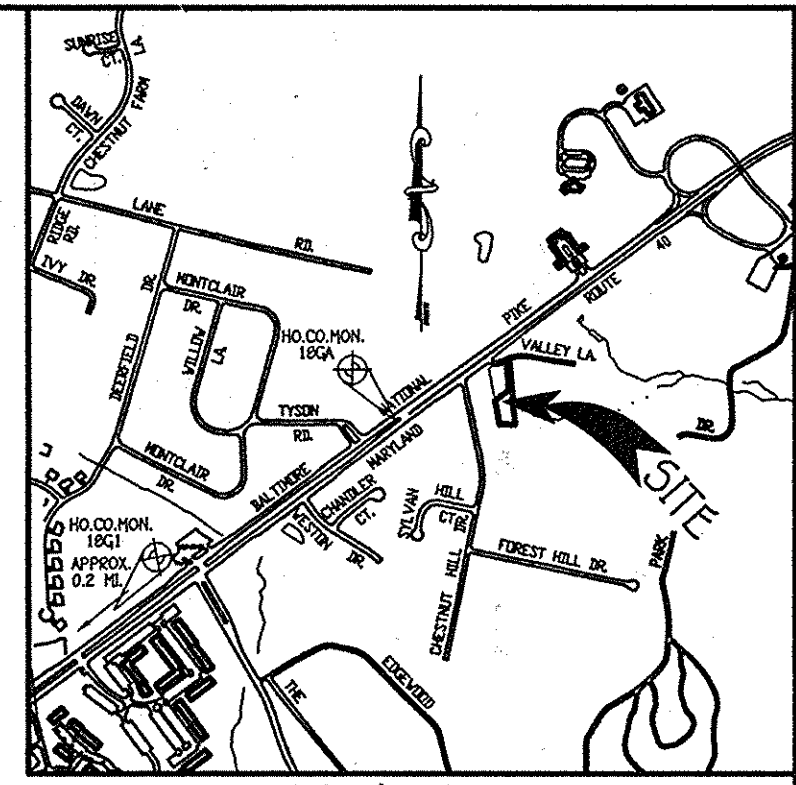
VALLEY LANE
R/W VARIES AS INDICATED ON
PLAT BK. NO. 5 FOLIO 44
PUBLIC ROAD

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
- - - -	PROPOSED CONTOUR 2' INTERVAL
•	SPOT ELEVATION
---	WALK-OUT BASEMENT
---	NON ROOFTOP DISCONNECT
---	SILT FENCE
---	LOD
---	LIMIT OF DISTURBANCE
---	PROPOSED LANDSCAPING PER THIS SITE PLAN
---	EXISTING TREES
---	SOIL BORING

BENCHMARKS

BENCHMARK 18Q1 ELEV. 407.734
N. 179827.7906 MTS. 599989.0097 SFT.
E. 416891.1053 MTS. 1367750.2346 SFT.
LOCATED: RTE. 40 0.1 MI EAST OF NORKHANDY SHOPPING CENTER

BENCHMARK 18QA ELEV. 445.769
N. 180402.9474 MTS. 591872.0034 SFT.
E. 417692.7904 MTS. 1370329.4237 SFT.
LOCATED: IN MEDIAN OF RTE. 40 BY #8175



VICINITY MAP
SCALE: 1"=2000'
ADC MAP COORDINATES
PAGE 21, C5

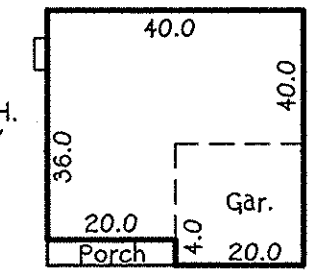
SCHEDULE A - PERIMETER LANDSCAPE EDGE				
PERIMETER	P-1	P-2	P-3	TOTAL NUMBER OF PLANTS PROVIDED
ADJACENT TO PERIMETER PROPERTIES	A	A	A	
LANDSCAPE TYPE				
LINEAR FEET OF PERIMETER	151.99 LF.	98.25 LF.	395.42 LF.	
NUMBER OF PLANTS REQUIRED				
SHADE TREES	(152/60' = 2.5) = 3	(99/60' = 1.65) = 2	(214/60' = 3.5) = 3	
CREDIT FOR WALL, FENCE OR BERM	0	0	NO	
CREDIT FOR EXISTING VEGETATION	NO	NO	YES	
SHADE TREES	0	0	182	
EVERGREEN TREES	0	0	0	
NUMBER OF PLANTS PROVIDED	3	2	3	
SHADE TREES				(465/60' = 7.75) = 3 PER SUPPLEMENTAL PLAN

LANDSCAPING PLANT LIST (THIS SHEET)				
QTY.	KEY	NAME	SIZE	
8	☉	ACERUBRUM/RED MAPLE	2 1/2" - 3" CALIPER FULL CROWN, B&B	

GENERAL NOTES

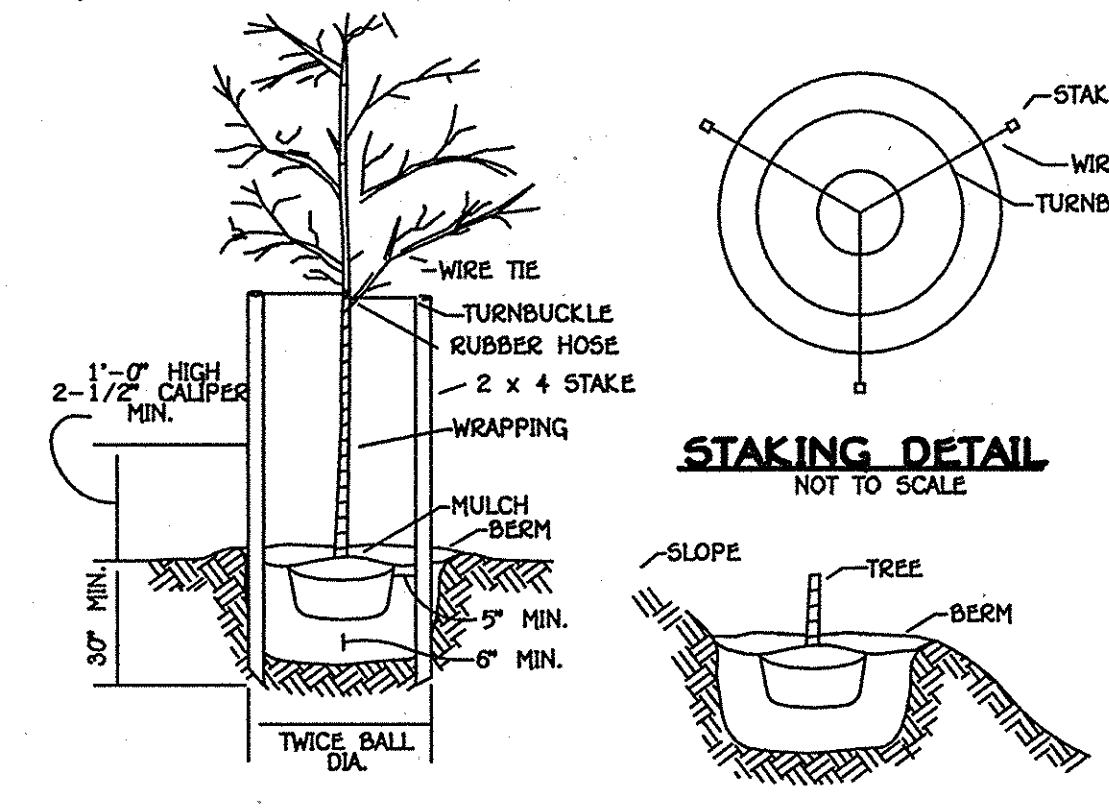
- THE SUBJECT PROPERTY IS ZONED R-20 IN ACCORDANCE WITH THE FEBRUARY 2, 2004 COMPREHENSIVE ZONING REGULATIONS AND THE COMP-LITE ZONING REGULATIONS EFFECTIVE ON JULY 28, 2006.
- TOTAL AREA OF LOT: 0.4596 ACRES.
- NUMBER OF LOTS SUBMITTED: 1 SFDU
- THE COORDINATES ARE BASED UPON NAD '83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 18QA AND 18Q1.
- THIS PLAN IS BASED UPON A FIELD RUN BOUNDARY SURVEY PERFORMED BY MARKS & ASSOCIATES, LLC IN SEPTEMBER OF 2009.
- THE TOPOGRAPHY IS BASED UPON A FIELD SURVEY CONDUCTED BY MARKS & ASSOCIATES, LLC IN MAY OF 2009.
- ALL AREAS ARE MORE OR LESS.
- IN ACCORDANCE WITH SECTION 16.1202(B)(1)(VIII) OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION ACT, A FEE-IN-LIEU OF \$3,267.00 WAS PAID UNDER F-06-055 TO SATISFY FOREST CONSERVATION REQUIREMENTS.
- A FEE-IN-LIEU OF \$1500.00 WAS PAID UNDER F-06-055 TO SATISFY OPEN SPACE REQUIREMENTS.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLE PER THE FOLLOWING MINIMUM REQUIREMENTS:
 - WIDTH - 12' (16' IF SERVING MORE THAN ONE RESIDENCE)
 - SURFACE - SIX (6) INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1 1/2" MINIMUM)
 - GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND 45 FOOT TURNING RADIUS
 - STRUCTURES (BRIDGES/CULVERTS) - 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 15 FEET
 - MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE
- PUBLIC WATER AND SEWER SERVICE TO LOT 2 WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 16-122 B OF THE HOWARD COUNTY CODE. PUBLIC WATER AND SEWER ALLOCATIONS WILL BE GRANTED AT THE TIME OF THE ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THE TIME.
- THIS PROPERTY IS LOCATED IN THE METROPOLITAN DISTRICT. WATER SERVICE FOR LOT 2 WILL BE PROVIDED UNDER CONTRACT NO. 9-W AND SEWER SERVICE WILL BE PROVIDED UNDER CONTRACT NO. 10-1133.
- THIS PLAN IS SUBJECT TO THE AMENDED 5TH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE ZONING REGULATIONS AS AMENDED UNDER COUNCIL BILL #45-2008 AS AMENDED BY COUNCIL BILL #75-2008 AND THE JULY 26, 2008 UPDATES OF THE HOWARD COUNTY ZONING REGULATIONS. DEVELOPMENT OR CONSTRUCTION ON THIS LOT MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION OR BUILDING AND/OR GRADING PERMIT APPLICATIONS.
- STEEP SLOPES 25% OR GREATER WITH A CONTIGUOUS AREA OVER 20,000 SQ.FT. DO NOT EXIST ON THIS PROPERTY.
- THERE ARE NO FORESTS, STREAMS, WETLANDS, FLOODPLAINS OR BUFFERS LOCATED ON THIS SITE AS CERTIFIED BY A REPORT PREPARED BY LYNN SCILLIPAN GUILLEY IN APRIL OF 2009.
- THE USE-IN-COMMON DRIVEWAY MAINTENANCE AGREEMENT WAS RECORDED UNDER PLAT NO. 19173.
- FOR FLAG OR PIPESTEM LOTS, RESOLVE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE WILL BE PROVIDED AT THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY AND NOT UNDER THE PIPESTEM LOT DRIVEWAY.
- A WAIVER DATED JULY 3, 2006 FROM THE DEPARTMENT OF PUBLIC WORKS WAS APPROVED FOR BASEMENT GRAVITY SEWER SERVICE FOR LOT 2.
- STORMWATER MANAGEMENT REQUIREMENTS FOR THE PROPOSED HOUSE AND DRIVEWAY ON LOT 2 WILL BE MET USING ENVIRONMENTAL SITE DESIGN TO THE MAXIMUM EXTENT POSSIBLE IN ACCORDANCE WITH UPDATE CHAPTER 5 OF THE MARYLAND STORMWATER MANAGEMENT DESIGN MANUAL, VOLUMES I AND II, EFFECTIVE IN MAY OF 2010. THE PROPOSED PRACTICES ARE AS FOLLOWS:
 - DRYWELLS (M-5) AND MICRO-BIORETENTION (M-6) FOR THE PROPOSED HOUSE.
 - MICRO-BIORETENTION (M-6) AND NON-ROOFTOP DISCONNECT (N-2) FOR THE PROPOSED DRIVEWAY.
- PREVIOUS DEPARTMENT OF PLANNING AND ZONING FILE NUMBERS: F-06-055, 9-W, LIBER 7391 FOLIO 375 & CONWAGT NO. 10-1133.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. A SURETY AMOUNT OF \$2,400.00 FOR EIGHT (8) SHADE TREES WILL BE POSTED AS PART OF THE BUILDER'S GRADING PERMIT.
- IN ACCORDANCE WITH SECTION 12B 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 OR DECKS, PORCH OR ENCLOSED PORCH MAY PROJECT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACKS.
- TO ACCOMMODATE A SPRINKLER SYSTEM ALL RESIDENTIAL DWELLING UNITS SHALL HAVE A 1-1/2" WATER HOUSE CONNECTION WITH A 1" OUTSIDE METER SETTING STANDARD DETAIL W-3.22B.
- ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-313-1800 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO THE RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3" IN CALIPER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.
- THE 65 DBA NOISE CONTOUR LINE DRAWN ON THIS PLAN IS ADVISORY AS REQUIRED BY THE HOWARD COUNTY DESIGN MANUAL, CHAPTER 5, REVISED FEB. 1992, AND CANNOT BE CONSIDERED TO EXACTLY LOCATE THE EXCESS NOISE EXPOSURE. THE EXCESS NOISE LINE WAS ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS, BUILDERS AND FUTURE RESIDENTS THAT AREAS BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVELS ESTABLISHED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT.
- THE BASEMENT WILL NOT BE SERVING BY GRAVITY AND SHALL REQUIRE A PUMP TO SERVE THE BASEMENT. THE SFC ELEVATION SHOWN ON THIS PLAN IS LOCATED AT THE PROPERTY LINE.
- KURUMBA PERMITTED HEIGHT IS 34' PER THE HOWARD COUNTY ZONING REGULATIONS.

A Total Landscape Surety For 8 Shade Trees @ \$300/each = 2,400.00 Will be Provided With The Builder's Garding Permit.



PATUXENT
Elevation 4

SOILS LEGEND		
SOIL	NAME	CLASS
Mac	MOUNT LUCAS SILT LOAM, STONEY, 8 TO 15% SLOPES	C



NOTE: REMOVE BURLAP FROM TOP 1/3 OF BALL.
TREE PLANTING
NOT TO SCALE
ON SLOPES
NOT TO SCALE

DEVELOPER'S / BUILDER'S LANDSCAPE 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, 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.

NAME: *[Signature]* DATE: 4/22/13

"At the time of plant installation, all trees listed and approved on the Landscape Plan, shall comply with the proper height requirement in accordance with the Howard County Landscape Manual. In addition, no substitutions or relocations of the required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviations from the approved Landscape Plan may result in denial or delay in the release of landscape surety until such time as all required materials are planted and/or revisions are made to the road drawing plans".

"The Owner, tenants and/or their agents shall be responsible for maintenance of the required perimeter landscaping. 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 the other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced".

SITE ANALYSIS DATA

- TOTAL AREA OF SUBJECT PROPERTY = 0.4596 ACRES OR 23,563 Sq. Ft.
- TOTAL AREA OF SUBMISSION = 0.4596 ACRES OR 23,563 Sq. Ft.
- LIMIT OF DISTURBANCE = 0.3451 ACRES OR 21,947 Sq. Ft.
- PRESENT ZONING DESIGNATION: R-20.
- PROPOSED USES FOR SITE: RESIDENTIAL.
- APPLICABLE DPZ FILE REFERENCES: F-06-055, 9-W AND SEWER CONTR. NO. 10-1133. L 7391 F.375

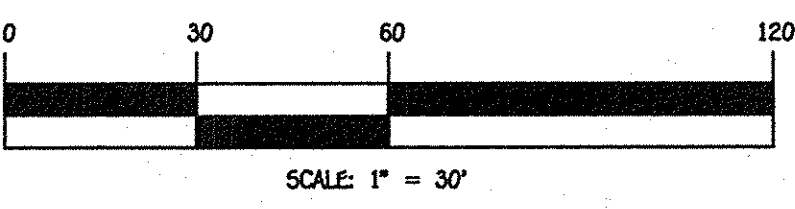
PROFESSIONAL CERTIFICATION

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. 9753, EXPIRATION DATE: 2/28/14.
[Signature] EARL D. COLLINS DATE: 4-19-13

SHEET INDEX CHART	
SHEET NO.	DESCRIPTION
SHEET 1	SITE DEVELOPMENT, SWM, LANDSCAPE PLAN LANDSCAPE AND GENERAL NOTES
SHEET 2	SEDIMENT AND EROSION CONTROL DETAILS
SHEET 3	STORMWATER MANAGEMENT NOTES

STORMWATER MANAGEMENT PRACTICES				
LOT NO.	STREET ADDRESS	MICRO-BIORETENTION (M-6) NUMBER	GRASS SWALE (M-8) Y/N	DRYWELLS (M-5) NUMBER
2	8111 VALLEY LANE	1	YES	3

ADDRESS CHART	
LOT NUMBER	STREET ADDRESS
2	8111 VALLEY LANE



PARCEL 185
ELMAR EINBERG AND
LAINE EINBERG
LIBER 322, FOLIO 593
ZONED: R-20.



ENGINEER'S CERTIFICATE
"I 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."

[Signature] EARL D. COLLINS DATE: 4-19-13
Signature of Engineer

BUILDER/DEVELOPER'S CERTIFICATE
"I/We certify that all development and construction will be done according to this plan, 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 inspection by the Howard Soil Conservation District."
[Signature] MICHAEL B. DATE: 4/22/13
OWNER

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
[Signature] 9/26/13
Howard SCD Date

OWNER
MICHAEL HART & LIBBY A. SOBIECHOWSKI
2929 GREENBRIAR HILL DRIVE
BULLGOTT CTR., MARYLAND 21043
410-299-3030

BUILDER/DEVELOPER
TIM BURKHARD
5900 DORSEY HALL DRIVE
SUITE 102
BULLGOTT CTR., MARYLAND 21042
443-367-0422

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] Chief, Division of Land Development DATE: 10/20/13
[Signature] Chief, Development Engineering Division DATE: 10/9/13
[Signature] Director - Department of Planning and Zoning DATE: 10/9/13

PROJECT	SECTION	LOTS NO.			
MICHAEL HART PROPERTY	N/A	2			
PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
19173	14	R-20	18	FIFTH	602100

SITE DEVELOPMENT, SWM, LANDSCAPE SEDIMENT & EROSION CONTROL PLAN

SINGLE FAMILY DETACHED
MICHAEL HART PROPERTY
LOT 2
PLAT No. 19173
TAX MAP NO.: 18 P/O PARCEL NO.: 249 GRID NO.: 14
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' DATE: MARCH, 2013
SHEET 1 OF 3 **SDP-13-044**

20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION DEFINITION

Using vegetation as cover for barren soil to protect it from forces that cause erosion.

PURPOSE

Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and run-off to downstream areas, and improving wildlife habitat and visual resources.

CONDITIONS WHEN PRACTICE APPLIES

This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration (0 to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary soil stockpiles, cleared areas being left idle between construction phases, earth dikes, and areas; and for Permanent Seeding are lawns, dunes, cut and fill slopes, and other areas at final grade, former stockpile and staging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, transpiration, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone. Sediment control devices must remain in place during grading, seeded preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

- A. Site Preparation
 - i. Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
 - ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
 - iii. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed areas over 5 acres.
 - iv. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analysis.
- B. Soil Amendment Specifications
 - i. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Phosphate may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or tradename, and warranty of the producer.
 - ii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 80% calcium (calcium oxide or calcium hydroxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98-100% will pass through a #20 mesh sieve. Incomplete lime and fertilizer into the top 3-5" of soil by disk or other suitable means.
 - iii. Seedbed Preparation
 - a. Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
 - b. Apply fertilizer and lime as prescribed on the plans.
 - c. Incorporate lime and fertilizer into the top 3-5" of soil by disk or other suitable means.
 - iv. Minimum soil conditions required for permanent vegetative establishment:
 1. Soil pH shall be between 6.0 and 7.0.
 2. Soluble salts shall be less than 500 parts per million (ppm).
 3. The soil shall contain less than 40% organic matter (soil with fine grained material (>30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if low organic or sandy inorganic soils are planned, then a sandy soil (<30% silt plus clay) would be acceptable.
 4. Soil shall contain 1.5% minimum organic matter by weight.
 5. Soil must contain sufficient pore space to permit adequate root penetration.
 6. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
 - v. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
 - vi. Apply soil amendments as per soil test or as included on the plans.
 - vii. Mix soil amendments into the top 3-5" of topsoil by disk or other suitable means. Lawn areas should be rolled to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seeded preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in irregular ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seeded loosening may not be necessary on newly disturbed areas.
- C. Seed Specifications
 - i. All seed must meet the requirements of the Maryland Seed Law. All seed shall be subject to re-testing by a recognized seed lab if seed use will have been tested within the 6 months immediately preceding the date of sowing such material on this job.
 - ii. Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.
 - iii. Incubation - The incubator for treating incoculum seed and the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Incoculants shall not be used later than the date indicated on the container. Add fresh incoculum as directed on package. Use four times the recommended rate when hydroseeding. Note: It is not important to keep incoculum as cool as possible until used. Temperatures above 75-80° F. can weaken bacteria and make the incoculum less effective.
 - D. Methods of Seeding
 - i. Hydroseeding - Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a catapult seeder.
 - a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen; maximum of 100 lbs. per acre total of soluble nitrogen; P2O5 (phosphorus); 200 lbs./ac. E2O (potassium); 200 lbs./ac.
 - b. Lime - use only ground agricultural limestone, (10 to 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.
 - c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
 - ii. Dry Seeding - This includes use of conventional drop or broadcast seeders.
 - a. Seed spreader dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summary or Tables 26 or 28. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
 - b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
 - iii. Drill or Catapult Seeding - Mechanized seeders that apply and cover seed with soil.
 - a. Catapulting 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 in firm planting.
 - b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
 - F. Mutch Specifications (In order of preference)
 - i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable firm in color, and shall not be rusty, moldy, caked, decayed, or excessively dry and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
 - ii. Wood Cellulose Fiber Mutch (WCFM)
 - a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical slurry.
 - b. WCFM shall be dried green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
 - c. WCFM, including dye, shall contain no germination or growth inhibiting factors.
 - d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber much will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The much material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - e. WCFM material shall contain no elements or compounds at concentration levels that will be phytotoxic.
 - f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.

- ii. Note: Only sterile straw much should be used in areas where one species of grass is desired.

- G. Mulching Seeded Areas - Mutch shall be applied to all seeded areas immediately after seeding.
 - i. Grading completed outside of the seeding season, mutch shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
 - ii. When straw much is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mutch shall be applied to a uniform loose depth of between 1" and 2". Mutch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a much anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
 - iii. Wood cellulose fiber much as a much shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
- H. Securing Straw Mutch (Mutch Anchoring): Mutch anchoring shall be performed immediately following much application to minimize loss by wind or water. This may be done by one of the following methods listed by the manufacturer to anchor mutch.
 - i. A much anchoring tool is a tractor draw implement designed to punch and anchor mutch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to filter slopes where equipment can operate safely. If used on sloping lands, this practice should be used on the contour if possible.
 - ii. Wood cellulose fiber much anchoring slurry: The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - iii. Application of liquid binders should be heavier at the edges where wind catches much, such as in valleys and crests of banks. The remainder of area should be applied uniform after binder application. Synthetic binders - As Acrylic DLR (Aqua-Tack), UCA-70 Pepproc, Terra Tex II, Terra Tack AC or other approved equal may be used at rates recommended by the manufacturer to anchor mutch.
 - iv. Lightweight plastic netting may be stapled over the much according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

- I. Incremental Stabilization - Cut Slopes
 - i. All cuts slopes shall be dressed prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.
 - ii. Construction sequence (Refer to Figure 3 below):
 - a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.
 - b. Perform Phase 1 excavation, dress, and stabilize.
 - c. Perform Phase 2 excavation, dress and stabilize. Overseed Phase 1 areas as necessary.
 - d. Perform final phase excavation, dress and stabilize. Overseed previously seeded areas as necessary.
- Note: Once excavation has begun the operation should be continuous from grubbing through the completion and placement of topsoil (if required) and permanent seed and much. Any interruptions in the operation or completion of the seeding season will necessitate the application of temporary stabilization.
- J. Incremental Stabilization of Embankments - Fill Slopes
 - i. Embankments shall be constructed in lifts as prescribed on the plans.
 - ii. Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 12' or when the grading operation ceases as prescribed in the plans.
 - iii. At the end of each day, temporary berms and pipe slope drains shall be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to sediment trapping devices.
 - iv. Construction sequence: Refer to Figure 4 (below).
 - a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct slope silt fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area.
 - b. Perform Phase 1 embankment, dress and stabilize.
 - c. Place Phase 2 embankment, dress and stabilize.
 - d. Place final phase embankment, dress and stabilize. Overseed previously seeded areas as necessary.
- Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion and placement of topsoil (if required) grading and permanent seed and much. Any interruptions in the operation or completion of the seeding season will necessitate the application of temporary stabilization.

SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSING AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1895).
- 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 MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 8-4-5), TEMPORARY SEEDING (SEC. 8-4-4), AND MULCHING (SEC. 8-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- 3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DICES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, b) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- 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 PERMANENT SEEDING (SEC. 8-4-5), TEMPORARY SEEDING (SEC. 8-4-4), AND MULCHING (SEC. 8-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- 5) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED BY OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 6) SITE ANALYSIS:

SOIL	NAME	CLASS
MAC	MOUNT LUCAS SILT LOAM, STONEY, 8 TO 15% SLOPES	B
G&D	GLEBE URBAN LAND COMPLEX, LOAMY, 0-8% SLOPES	B
- 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 CONTROLS MUST BE PROVIDED, IF DEEPLY NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 9) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING, OTHER BUILDING OR GRADING. INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- 10) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- 11) ANY CHANGED OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.
- 12) A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM AREA 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 ENFORCEMENT AUTHORITY, UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

SOILS LEGEND		
SOIL	NAME	CLASS
MAC	MOUNT LUCAS SILT LOAM, STONEY, 8 TO 15% SLOPES	B
G&D	GLEBE URBAN LAND COMPLEX, LOAMY, 0-8% SLOPES	B

SECTION 2 - TEMPORARY SEEDING

Vegetation - annual grass or grain used to provide cover on disturbed areas for up to 12 months. For longer duration of vegetative cover, Permanent Seeding is required.

A. Seed mixtures - Temporary Seeding

- i. Select one or more of the species or mixtures listed in Table 26 for the appropriate Plant Hardness Zone (from Figure 5) and enter them in the Temporary Seeding summary below, along with application rates, seeding dates and seeding depths. If this summary is not put on the plans and completed, then Table 26 must be put on the plans.
- ii. For sites having disturbed area over 5 acres, the rates shown on this table shall be deleted and the rates recommended by the testing agency shall be written in. Soil tests are not required for Temporary Seeding.

Seed Mixture (Hardness Zone - 6b -) From Table 26		Fertilizer Rate (10-10-10)	Lime Rate					
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depth	N	P2O5	K2O	Rate
1	BARELY	122	3/1 - 5/15	1" - 2"	600 lb/ac	2 tons/ac		
	OATS	96	8/15 - 10/15	1" - 2"	(15 lb/1000sf)	(100 lb/1000sf)		
	RYE	140						

ENGINEER'S CERTIFICATE

"I 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."

Signature of Engineer: *Earl D. Collins* Date: 4-19-13
Signature of Builder/Developer: _____ Date: _____

BUILDER/DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan, 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 inspection by the Howard Soil Conservation District."

Signature of Builder/Developer: *Earl D. Collins* Date: 7/22/13
Signature of Owner: _____ Date: _____

STANDARDS AND SPECIFICATIONS FOR TOPSOIL

Definition

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

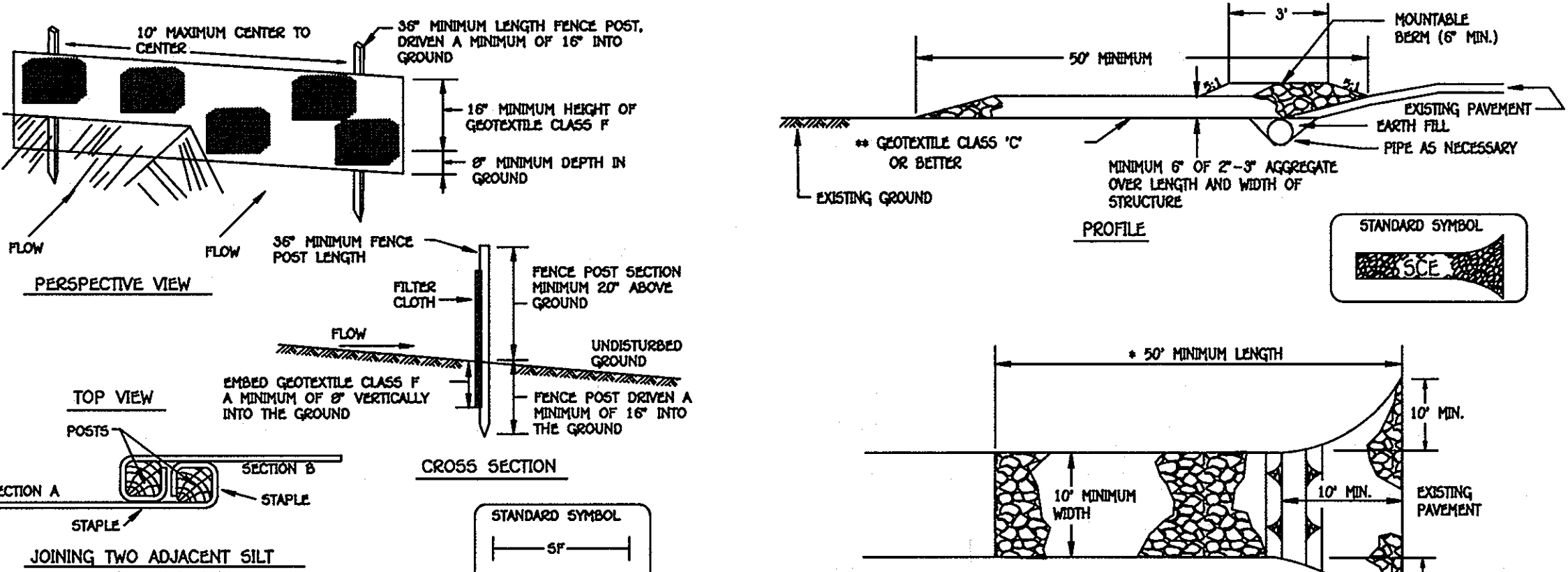
Purpose

To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies

- I. This practice is limited to areas having 2:1 or flatter slopes where:
 - a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - b. The soil material is so subsoil that the rooting zone is not deep enough to support plants or turfgrass, depending upon size of moistening plant nutrients.
 - c. The original soil to be vegetated contains material toxic to plant growth.
 - d. The soil is so acidic that treatment with limestone is not feasible.
- II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate application. Areas having slopes steeper than 2:1 shall have the appropriate application method specified.

- III. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experiment Station.
- IV. Topsoil Specifications - Soil to be used as topsoil must meet the following:
 - i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of stones, cobbles, silt, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
 - ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, johnsongrass, nutcracker, poison ivy, thistle, or others as specified.
 - iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 2,000-400 pounds/acre (200 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
- V. For sites having disturbed areas under 5 acres:
 - i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
 - ii. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
 - a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
 - b. Organic content of topsoil shall be not less than 1.5 percent by weight.
 - c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
 - d. No soil or seed shall 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 desiccation of phytotoxic material.
- VI. Topsoil Application:
 - i. When topsoiling, maintain needed erosion and sediment control practices such as diversions, grade stabilization structures, earth dikes, slope silt fence and sediment traps and basins.
 - ii. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.
 - iii. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seedine can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
 - iv. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.
- VII. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
 - i. Composted sludge material for use as a soil conditioner for sites having disturbed areas over 5 acres shall conform to the following requirements:
 - a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMW 26.04.06.
 - b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
 - c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
 - d. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.
 - ii. References: Guidelines Specifications, Soil Preparation and Sowing, MD-VA, Pub. # Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes, Revised 1973.



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 18" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

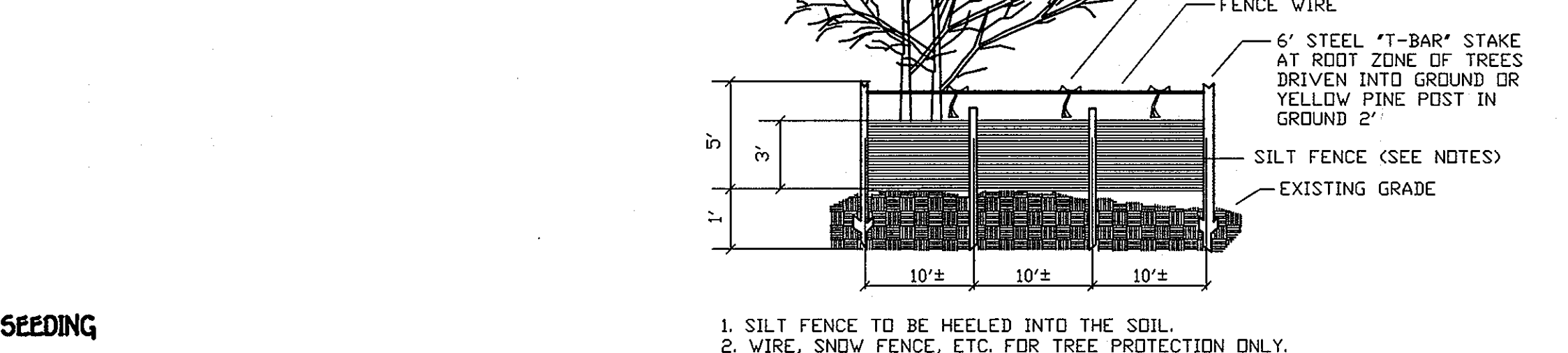
Tensile Strength	50 lbs/in (min)	Test: HMT 509
Tensile Modulus	250 lbs/in (min)	Test: HMT 509
Flow Rate	0.3 gal ft / minute (max)	Test: HMT 322
Filtering Efficiency	75% (min)	Test: HMT 322
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silts Fences shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

Slope Steepness	Silt Fence Length	
	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) the slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

SILT FENCE

NOT TO SCALE



1. SILT FENCE TO BE HEELD INTO THE SOIL.
2. WIRE, SNOW FENCE, ETC. FOR TREE PROTECTION ONLY.
3. BOUNDARIES OF RETENTION AREA WILL BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
4. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
5. AVOID ROOT DAMAGE WHEN PLACING ANCHOR POSTS.
6. DEVICE SHOULD BE PROPERLY MAINTAINED THROUGHOUT CONSTRUCTION.
7. PROTECTION SIGNS ARE ALSO REQUIRED, SEE FIGURE C-4. 8. LOCATE FENCE OUTSIDE THE CRITICAL ROOT ZONE.

SILT FENCE AND TREE PROTECTION

NOT TO SCALE

SEDIMENT & EROSION CONTROL DETAILS

SINGLE FAMILY DETACHED

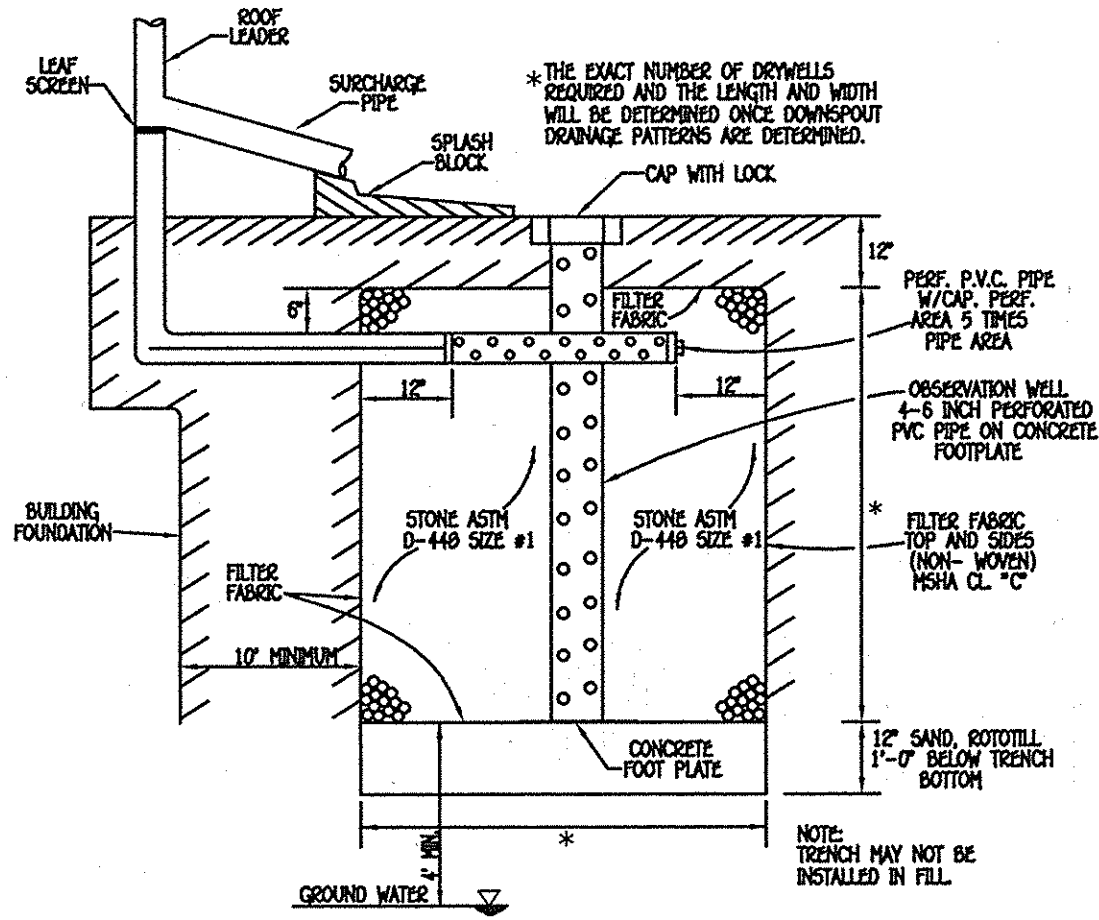
MICAH HART PROPERTY

LOT 2
PLAT No. 19173

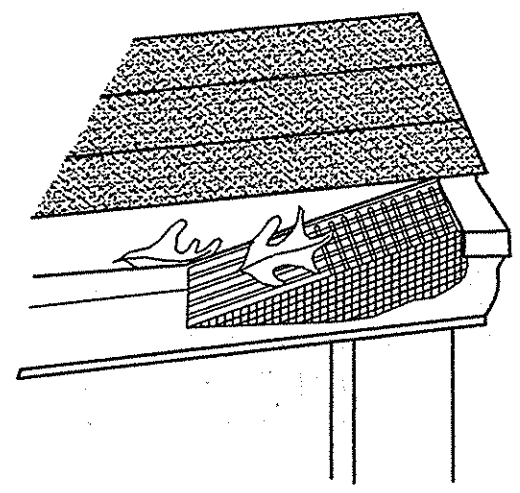
TAX MAP NO.: 18 P/O PARCEL NO.: 249 GRID NO.: 14
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' DATE: MARCH, 2013

SHEET 2 OF 3

SDP-13-044



DRY WELL DETAIL (M-5)
NOT TO SCALE



GUTTER DRAIN FILTER DETAIL
NOT TO SCALE

STORMWATER MANAGEMENT NOTES

1. STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH CHAPTER 5, "ENVIRONMENTAL SITE DESIGN" OF THE 2007 MARYLAND STORMWATER MANAGEMENT DESIGN MANUAL, EFFECTIVE MAY 4, 2010.
2. MAXIMUM CONTRIBUTING ROOF TOP AREA TO EACH DOWNSPOUT SHALL BE 500 SQ. FT. OR LESS.
3. DOWNSPOUTS SHALL BE PROVIDED AT LOCATIONS WHERE THE LENGTH OF DISCONNECTION IS LESS THAN 75' AT 5% THE SIZE AND CONSTRUCTION OF THE DRYWELL SHALL BE IN ACCORDANCE WITH THE DETAIL SHOWN ON THIS SHEET.
4. FINAL GRADING IS SHOWN ON THIS SITE DEVELOPMENT PLAN.

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

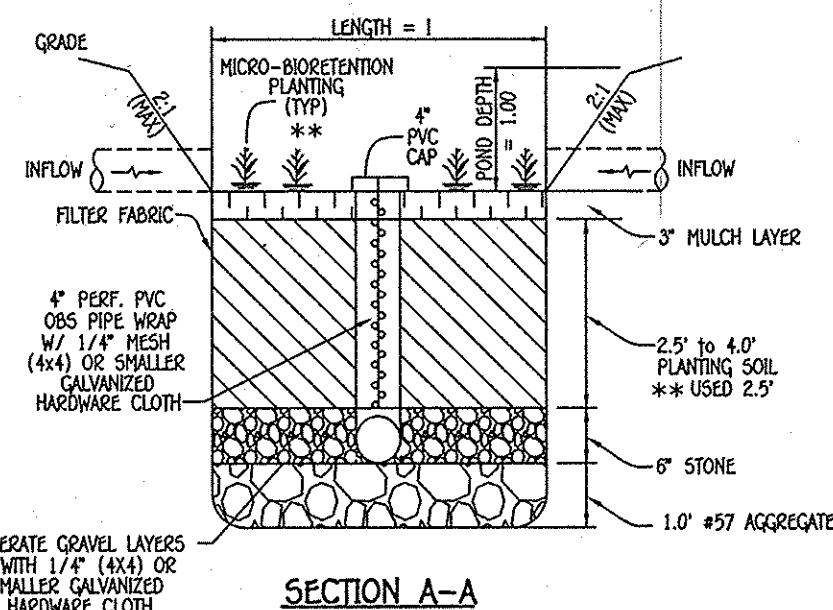
- A. THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT.
- B. THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO ENSURE TRENCH DRAINAGE.
- C. THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
- D. WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN A SEVENTY-TWO (72) HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
- E. THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
- F. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

DRY WELL CHART

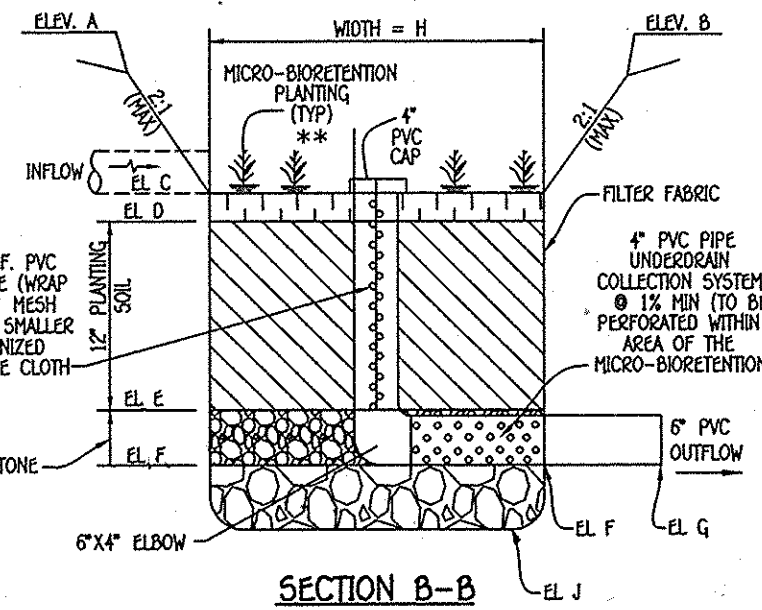
DRYWELL NO.	AREA OF ROOF PER DOWN SPOUT	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF TREATMENT	L x W x D
1	400 SQ. FT.	45 C.F.	50 C.F.	100%	7' x 6' x 5'
2	400 SQ. FT.	45 C.F.	50 C.F.	100%	7' x 6' x 5'
3	400 SQ. FT.	45 C.F.	50 C.F.	100%	7' x 6' x 5'

OPERATION & MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)

- A. 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 BY 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 2, TABLE A-1.1 AND 2.
- B. THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS AND REPLACE ALL DEFICIENT STAKES AND WOODS.
- C. 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.
- D. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

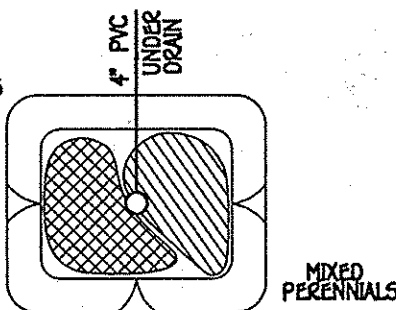


SECTION A-A

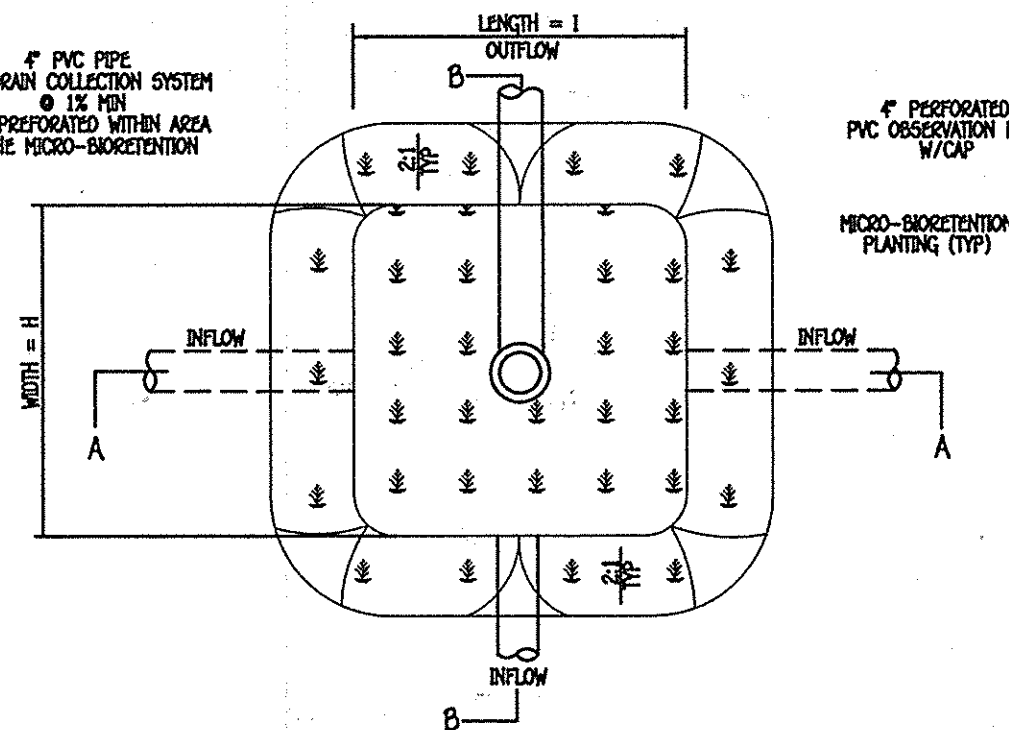


SECTION B-B

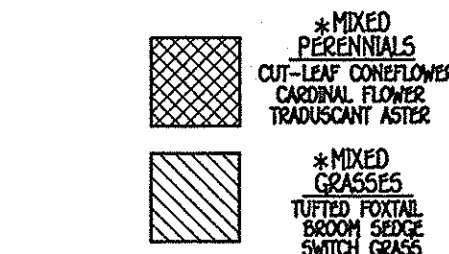
MICRO-BIORETENTION DETAIL (M-6)
NOT TO SCALE



MICRO-BIORETENTION PLANTING DETAIL
NOT TO SCALE



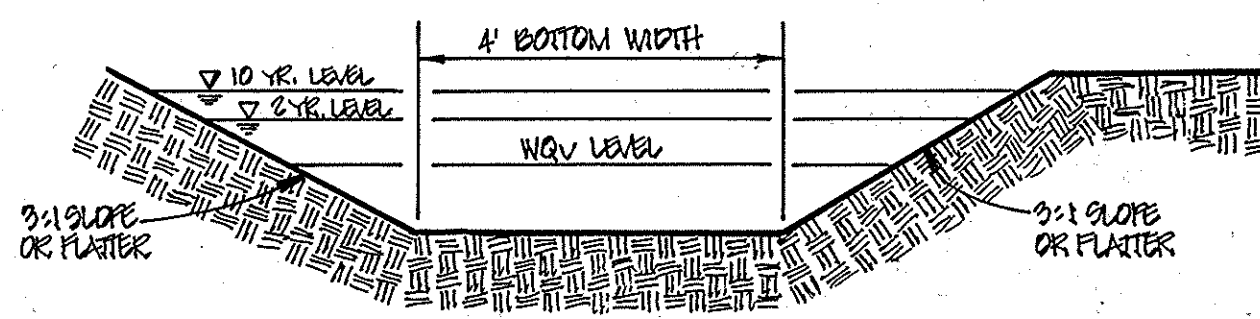
PLAN
NOT TO SCALE



NOTE: PLANT MATERIAL MUST COVER AT LEAST 50% OF THE SURFACE AREA OF THE MICRO-BIORETENTION

MICRO-BIORETENTION PLANT MATERIAL		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
50	MIXED PERENNIALS	1 FT.
50	MIXED GRASSES	1 FT.

MICRO-BIORETENTION										
BIORETENTION FILTER	A	B	C	D	E	F	G	H	I	J
1	428.00	428.00	427.00	428.75	424.25	423.50	423.00	10'	20'	422.50

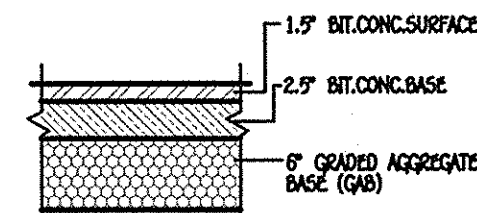


DRY SWALE CROSS SECTION

SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'

DRY SWALE MAINTENANCE CRITERIA

1. FOR OPENED SWALES: REGULAR MOWING (AT LEAST BI-ANNUALLY) IS CRITICAL IN ORDER TO REDUCE COMPETITION FROM WEEDS AND RECREATIONAL MAY BE NEEDED DURING DRY WEATHER TO ESTABLISH VEGETATION. SPARSELY VEGETATED AREAS NEED TO BE RE-SEED TO MAINTAIN DEEVE COVERAGE.
2. INSPECTIONS SHOULD BE PERFORMED ONCE A YEAR TO ASSESS SLOPE INTEGRITY, VEGETATIVE HEALTH, SOIL STABILITY, CORROSION, EROSION, POUNDING AND SEDIMENTATION. PERIODIC REMOVAL OF SEDIMENT, LIMBS, OR OBSTRUCTIONS SHOULD BE DONE AS NEEDED. ERODED SLOPE SLOPES AND THE SWALE BOTTOM SHOULD BE REPAIRED AND STABILIZED WHERE NEEDED.



P-1 DRIVEWAY PAVING SECTION
NOT TO SCALE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21046
(410) 461-2295



ENGINEER'S CERTIFICATE

"I 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."

Signature of Engineer: *Earl D. Collins* Date: 4/19/13
EARL D. COLLINS

BUILDER/DEVELOPER'S CERTIFICATE

"I/we certify that all development and construction will be done according to this plan, 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 inspection by the Howard Soil Conservation District."

Signature of Owner: *John R. Roberts* Date: 4/22/13
OWNER

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Signature of Engineer: *John R. Roberts* Date: 4/26/13
HOWARD SCD

OWNER

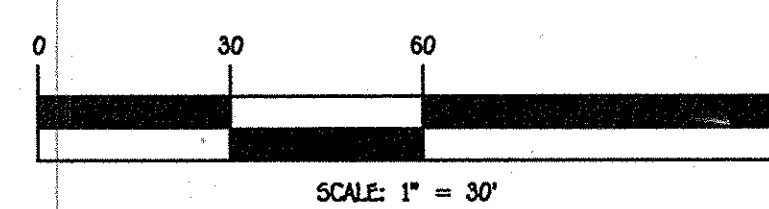
MICAH E. HART & LEIGH A. SORENTINO
2029 CHESTNUT HILL DRIVE
BELLGATE CITY, MARYLAND 21043
410-299-3090

BUILDER/DEVELOPER

TIM BURKHARDT
8300 DORSEY HALL DRIVE
SUITE 102
BELLGATE CITY, MARYLAND 21042
443-327-0482

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Signature of Chief: *Kevin J. O'Connell* Date: 10/09/13
Chief, Division of Land Development
Signature of Chief: *David J. ...* Date: 10/9/13
Chief, Development Engineering Division
Signature of Director: *Marsha A. ...* Date: 10/9/13
Director - Department of Planning and Zoning



SCALE: 1" = 30'

STORMWATER MANAGEMENT DETAILS

SINGLE FAMILY DETACHED
MICAH HART PROPERTY
LOT 2
PLAT No. 19173

TAX MAP NO.: 18 P/O PARCEL NO.: 249 GRID NO.: 14
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: MARCH, 2013

SHEET 3 OF 3

SDP-13-044