

SHEET INDEX	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	SITE DEVELOPMENT PLAN
3	SEDIMENT CONTROL NOTES AND DETAILS
4	NOTES AND DETAILS

Minimum Lot Size Tabulation			
Lot No.	Gross Area	Pipestem Area	Minimum Lot Size
120	22,997 Sq. Ft.	2,033 Sq. Ft.	20,164 Sq. Ft.

MICRO-BIORETENTION									
BIORETENTION FILTER	A	B	C	D	E	F	G	H	I
1 (SIDE)	343.5	343.0	343.0	342.83	341.83	341.50	341.0	339.5	341.0

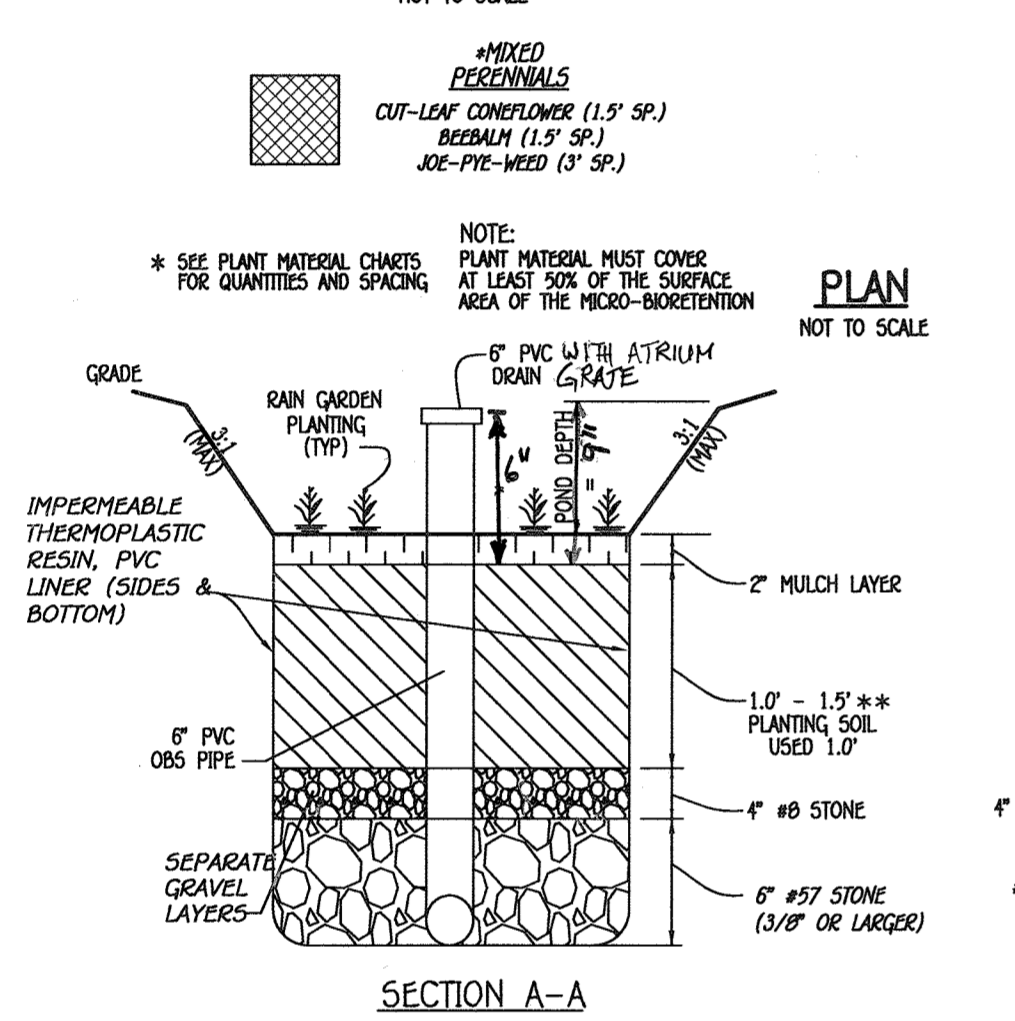
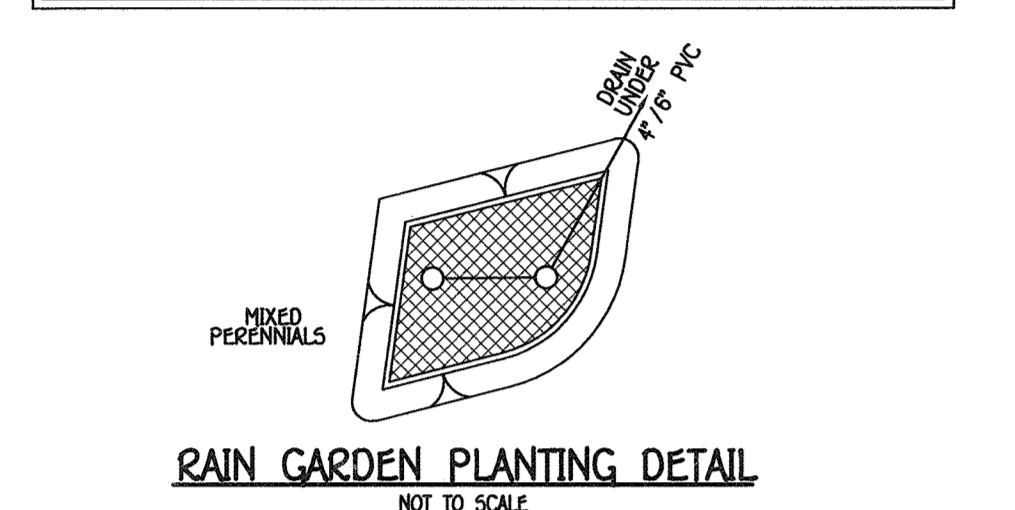


Table B.4. Materials Specifications for Micro-Bioretenion, Rain Gardens & Landscape Infiltration

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%		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
Pea gravel diaphragm	pea gravel: ASTM-D-440	No. 8 or No. 9 (1/8" to 3/8")	
Curtain drain	ornamental stone: washed cobble	stone: 2" to 5"	
Geotextile	n/a	n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	MSHTO M-43	No. 57 or No. 40 Aggregate (3/8" to 3/4")	
Underdrain piping	7.500 Type PS 28 or ASHTO N-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center. 4 holes per foot; minimum of 3" of gravel over pipe; no necessary underdrain pipes. Perforated pipe shall be wrapped with 1/4 inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f = 3500 psi at 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved state or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 308.2R-09; vertical loading 10-10 or H-201 allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	MSHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Gayrette (MSHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

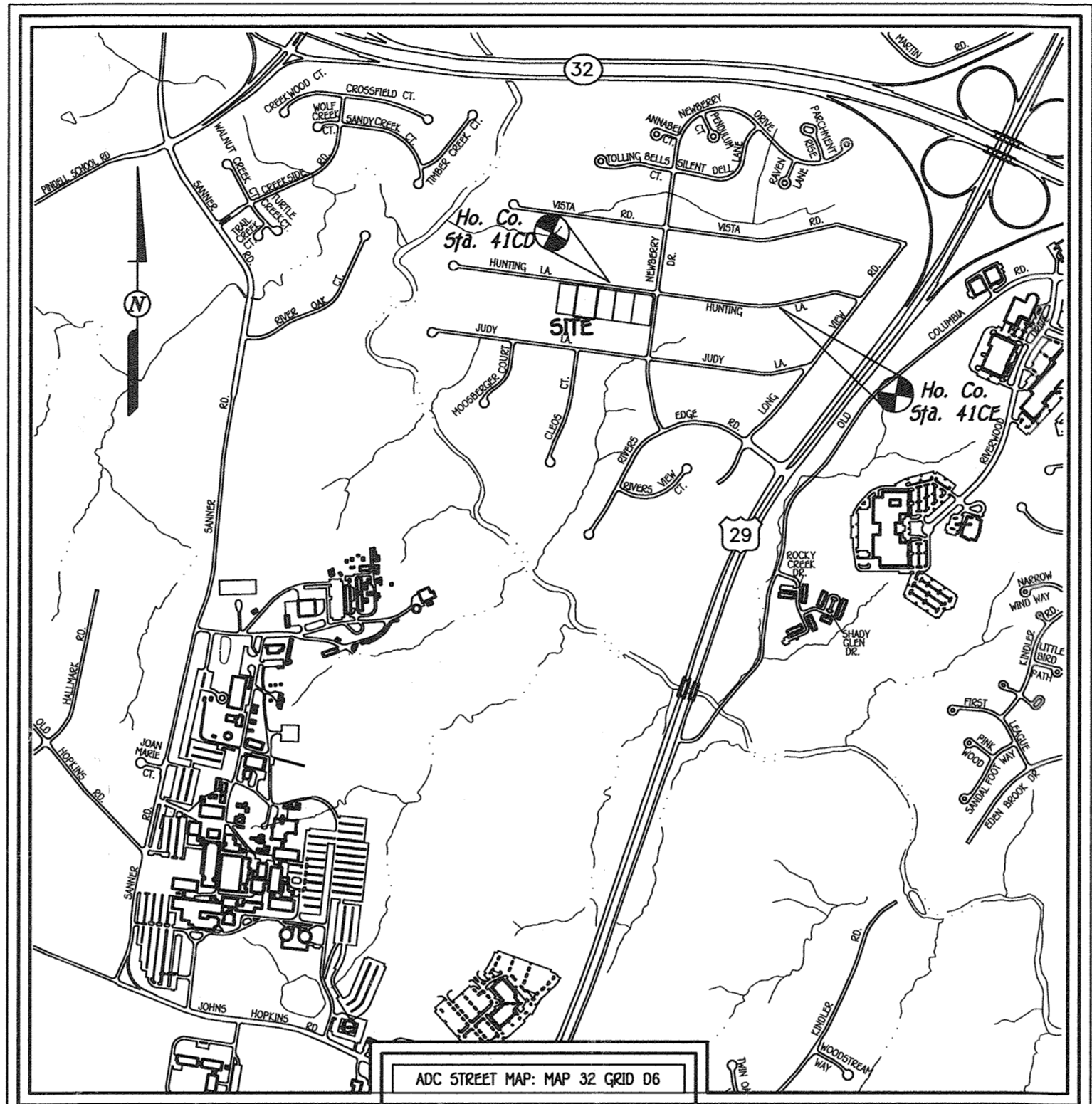
STORMWATER MANAGEMENT SUMMARY			
AREA ID.	ESDV REQUIRED CU.FT.	ESDV PROVIDED CU.FT.	REMARKS
SITE	341	357	DRY WELLS (M-5)
TOTAL	341	357	

GROSS AREA = 1.003 ACRES
LOD = 0.34 ACRES
RCN = 30
TARGET Pe = 1.2"

SITE DEVELOPMENT PLAN HOLIDAY HILLS

LOT 128

TAX MAP No. 41 GRID No. 05 PARCEL NO. 273
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND



VICINITY MAP SCALE: 1" = 1200'

MICRO-BIORETENTION PLANT MATERIAL		
MICRO-BIO 1 QUANTITY	NAME	MAXIMUM SPACING (FT.)
12	MIXED PERENNIALS	1.5 TO 3.0 FT.

BENCHMARK INFORMATION	
B.M.#1 - HOWARD COUNTY CONTROL STATION #41CD - HORIZONTAL - (NAD '83) (LOCATED ON THE NORTH SIDE OF HUNTING LANE WEST OF NEWBERRY DRIVE) N 550,548.6890 E 1,344,368.3090 ELEVATION = 347.74 - VERTICAL - (NAVD '88)	
B.M.#2 - HOWARD COUNTY CONTROL STATION #41CE - HORIZONTAL - (NAD '83) (LOCATED ON THE SOUTH SIDE OF HUNTING LANE) N 550,340.9790 E 1,345,892.2830 ELEVATION = 371.34 - VERTICAL - (NAVD '88)	

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

- THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT.
- 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.
- THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
- 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.
- THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
- ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

SITE ANALYSIS DATA CHART

- TOTAL AREA OF THIS SUBMISSION = 0.53 AC.
- LIMIT OF DISTURBED AREA = 14,800 SQ.FT. OR 0.34 AC.
- PRESENT ZONING DESIGNATION = R-20 (PER 10/06/2013 COMPREHENSIVE ZONING PLAN)
- PROPOSED USE: RESIDENTIAL
- PREVIOUS HOWARD COUNTY FILES: N/A
- TOTAL AREA OF FLOODPLAIN LOCATED ON-SITE = 0.00 AC.
- TOTAL AREA OF MODERATE STEEP SLOPES: 15%-24.9% = 0.00 AC.
- TOTAL AREA OF STEEP SLOPES: 25% OR GREATER = 0.00 AC.
- TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0.00 AC.
- TOTAL AREA OF STREAM (INCLUDING BUFFER) = 0.00 AC.
- TOTAL AREA OF EXISTING FOREST = 0.00 AC.
- TOTAL AREA OF FOREST TO BE RETAINED = 0.00 AC.
- TOTAL AREA OF LOTS / BUILDABLE PARCELS = 0.53 AC.
- TOTAL GREEN OPEN AREA = 0.43 AC.
- NATURAL IMPERVIOUS AREA = 0.10 AC.
- PERCENTAGE OF IMPERVIOUS AREAS = 0.00 AC.
- TOTAL AREA OF ROAD DEDICATION = 0.00 AC.
- NO CEMETERIES EXIST ON THE SUBJECT PROPERTY BASED ON VISUAL OBSERVATION OR LISTED IN AVAILABLE HOWARD COUNTY CEMETERY INVENTORY MAP.
- NO DWELLINGS OR HISTORIC STRUCTURES EXIST ON LOT 128.
- THESE ARE NO FOREST STANDS, WETLANDS, WETLAND BUFFER, STREAM, STREAM BUFFER AND FLOODPLAIN EXISTING ON-SITE. SEE ENVIRONMENTAL FINDINGS LETTER PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. DATED JUNE 4, 2016.
- SITE IS NOT ADJACENT TO A SCENIC ROAD.
- THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT, TO FULFILL THE 0.15 ACRES (6,534 SQ.FT.) OF AFFORESTATION REQUIREMENT, THE DEVELOPER HAS PAID A FEE-IN-LIEU IN THE AMOUNT OF \$1,500.00 UNDER F-17-032.
- WATER AND SEWER SERVICE TO THESE LOTS WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 16.1228 OF THE HOWARD COUNTY CODE.
- PUBLIC UTILITY SERVICE TO THESE LOTS WILL BE GRANTED AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
- STORMWATER MANAGEMENT IS IN ACCORDANCE WITH THE M.D.E. STORM WATER DESIGN MANUAL, VOLUMES I & II, REVISED 2009. NON-STRUCTURAL PRACTICES IN ACCORDANCE WITH CHAPTER 5 ARE BEING UTILIZED.
- THIS PLAN IS IN COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL 45-2003 AND THE 10/06/13 COMPREHENSIVE ZONING PLAN, DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WALKER PETITION APPLICATION OR BUILDING/GRADING PERMIT.
- LANDSCAPING IS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A LANDSCAPE SURVEY IN THE AMOUNT OF \$2,250.00 BASED ON (4) SHADE TREES @ \$300/SHADE TREE AND (7) EVERGREEN TREES @ \$150/EVERGREEN TREE WILL BE BONDED WITH THE BUILDING/GRADING PERMIT AT SDP STAGE.
- THIS DEVELOPMENT IS DESIGNED TO BE IN ACCORDANCE WITH SECTION 16.127 - RESIDENTIAL INFILL DEVELOPMENT OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. THE DEVELOPER OF THIS PROJECT SHALL CREATE COMPATIBILITY WITH THE EXISTING NEIGHBORHOOD THROUGH THE USE OF ENHANCED PERIMETER LANDSCAPING, BERMS, FENCES, SIMILAR HOUSING UNIT TYPES AND THE DIRECTIONAL ORIENTATION OF THE PROPOSED HOUSE. THE ENHANCED LANDSCAPE BUFFER HAS BEEN PROVIDED ON LOT 118 TO MITIGATE VIEWS AND TO ADDRESS PRIVACY AND COMPATIBILITY CONCERNS EXPRESSED BY THE ADJACENT LOT OWNERS AT THE PRE-SUBMISSION COMMUNITY MEETING.
- NO NOISE STUDY IS REQUIRED BECAUSE THE PROJECT DOES NOT FALL WITHIN THE GUIDELINES OF DESIGN MANUAL VOLUME III, ROADS, BRIDGES, SECTION 5.2.F.2.
- SPEED STUDY DATED NOVEMBER 2016 WAS PREPARED BY MARS GROUP, INC. AND SITE DISTANCE APPROVED UNDER F-17-032.
- OPEN SPACE REQUIREMENTS WERE PROVIDED BY A FEE-IN-LIEU PAYMENT OF \$1,500.00 UNDER F-17-032.
- THE TRAFFIC STUDY DATED JUNE 2016 WAS PREPARED BY MARS GROUP UNDER F-17-032.
- THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT AND WILL BE SERVED BY PUBLIC WATER AND SEWER.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- TRASH AND RECYCLABLES COLLECTION WILL BE AT FREDERICK ROAD WITHIN 5' OF THE COUNTY ROADWAY. TRASH / RECYCLE COLLECTION PAD WILL BE MAINTAINED BY THE PROPERTY OWNERS (IF AN HOA IS NOT PROVIDED). THE MAINTENANCE OF THIS COLLECTION AREA SHOULD BE REFERENCED IN THE PRIVATE USE-IN-COMMON ACCESS AGREEMENT.
- DEWEYWAY SHALL BE PROVIDED IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAIL R-6.06 IN THE VOL. IV DESIGN MANUAL.
- SOILS INFORMATION BASED ON NRCS WEB SOIL SURVEY FOR HOWARD COUNTY, MARYLAND.
- IN ACCORDANCE WITH SECTION 128 (OIA)(1)(E) OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS OR EXTENDED STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO THE FRONT OR REAR YARD SETBACK.
- DEWEYWAY SHALL BE PROVIDED IN ACCORDANCE WITH THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
STATE HIGHWAY ADMINISTRATION 410.531.5533
CONTRACTOR SERVICES 410.260.4620
BGE (UNDERGROUND DAMAGE CONTROL) 410.787.9060
MISS UTILITY 1.800.257.7777
COLUMBIA PIPELINE COMPANY 410.799.1590
HOWARD COUNTY, DEPT. OF PUBLIC WORKS, BUREAU OF UTILITIES 410.313.4990
HOWARD COUNTY HEALTH DEPARTMENT 410.313.2640
AT&T 1.800.252.1133
VERIZON 1.800.833.3333/410.224.9210
- ALL DAMAGE TO PUBLIC RIGHT-OF-WAYS, PAVING OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- SUBMISSION IS SUBJECT TO SECTION 104.D.F. OF THE ZONING REGULATIONS. AT LEAST 10% OF THE DWELLING UNITS SHALL BE MODERATE INCOME HOUSING UNITS (M.I.H.U.) OR AN ALTERNATIVE COMPLIANCE WILL BE PROVIDED. THE DEVELOPER SHALL EXECUTE A M.I.H.U. AGREEMENT WITH THE DEPARTMENT OF HOUSING TO INDICATE HOW THE M.I.H.U. REQUIREMENT WILL BE MET. THE M.I.H.U. AGREEMENT AND COVENANTS WILL BE RECORDED SIMULTANEOUSLY WITH THE PLAN IN THE LAND RECORDS OFFICE OF HOWARD COUNTY, MARYLAND. THIS DEVELOPMENT WILL MEET M.I.H.U. ALTERNATIVE COMPLIANCE BY A FEE-IN-LIEU TO THE DEPARTMENT OF HOUSING FOR EACH REQUIRED UNIT.
MODERATE INCOME HOUSING UNIT (M.I.H.U.) TABULATION:
a. M.I.H.U. REQUIRED = (1 LOT x 10%) = 0.1 M.I.H.U.
b. M.I.H.U. PROPOSED = DEVELOPER WILL PURSUE ALTERNATIVE COMPLIANCE BY PAYING A FEE-IN-LIEU TO THE HOWARD COUNTY HOUSING DEPARTMENT FOR THE UNITS REQUIRED BY THE DEVELOPMENT.
c. AN EXECUTED M.I.H.U. AGREEMENT WITH THE HOWARD COUNTY HOUSING DEPARTMENT HAS BEEN RECORDED IN LIBER 17901 AT FOLIO 102.
- TOPOGRAPHY SHOWN HEREON IS BASED ON A TOPOGRAPHIC SURVEY PERFORMED BY FISHER, COLLINS & CARTER, INC. IN JANUARY, 2016 AND SUPPLEMENTED WITH HOWARD COUNTY GS TOPOGRAPHY AT 5' CONTOUR INTERVAL INTERPOLATED FOR 2' CONTOUR INTERVAL.
- THE PRIVATE USE-IN-COMMON DEWEYWAY ACCESS EASEMENT AND MAINTENANCE AGREEMENT FOR SHARED DEWEYWAY ON LOTS 127 AND 128 WAS RECORDED WITH PLAT # 24417 AND LIBER 17901 AT FOLIO 95, F-17-032.
- THIS PLAN IS SUBJECT TO WP-17-070 WHICH ON MARCH 9, 2017 THE PLANNING DIRECTOR APPROVED A REQUEST FOR AN ALTERNATIVE COMPLIANCE OF SECTION 16.134(A)(1)(E), SECTION 16.135 AND SECTION 16.136. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
a. COMPLIANCE WITH THE ATTACHED DEED COVENANTS DATED MARCH 7, 2017 REQUIRING THE PAYMENT OF A FEE-IN-LIEU FOR THE SIDEWALKS AND ROAD IMPROVEMENTS ALONG THE PROPERTY FRONTAGE TO BE DETERMINED AND PROVIDED WITH F-17-032.
b. ADD A GENERAL NOTE STATING THE APPROVAL DATE AND CONDITIONS IN WHICH WP-17-070 WAS APPROVED.
c. ON MARCH 9, 2017 THE DEVELOPMENT ENGINEERING DIVISION APPROVED A FEE-IN-LIEU PAYMENT IN THE AMOUNT OF \$9,160.00 FOR PROVIDING ROAD IMPROVEMENTS UNDER F-17-032.

STORMWATER MANAGEMENT NOTES

- STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH CHAPTER 5, "ENVIRONMENTAL SITE DESIGN" OF THE 2007 MARYLAND STORMWATER MANAGEMENT DESIGN MANUAL, EFFECTIVE MAY 4, 2010.
- MAXIMUM CONTRIBUTING ROOF TOP AREA TO EACH DOWNSPOUT SHALL BE 1,000 SQ. FT. OR LESS.
- DRYWELLS 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.
- FINAL GRADING IS SHOWN ON THIS SITE DEVELOPMENT PLAN.

DRY WELL CHART

DRYWELL NO.	AREA OF ROOF PER DOWN SPOUT	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF TREATMENT	L	W	D
EAST	841 SQ. FT.	80 C.F.	96 C.F.	100%*	9'	7'	5'
S.W.	591 SQ. FT.	57 C.F.	96 C.F.	100%*	9'	7'	5'
N.W.	892 SQ. FT.	85 C.F.	96 C.F.	100%*	8'	6'	5'

* AREA OF TREATMENT EXCEEDS THAT REQUIRED.

SOILS LEGEND

SOIL	NAME	CLASS	K FACTOR
Q1b	Gladstone - Urban land complex, 0 to 8 percent slopes	A	0.20

Please Note That Lots 128 in This Subdivision Is Subject To The Moderate Income Housing Unit (M.I.H.U.) Fee-In-Lieu Requirement That Is To Be Calculated And Paid To The Department of Inspections Licenses And Permits At The Time of Building Permit Issuance By The Permit Applicant.

OWNERS
DANIEL AND MARY DUGAN
10813 HUNTING LANE
COLUMBIA, MD 21044-4207
(202) 359-4259

BUILDER
BHBC
ATTN: DONALD CARTER
6030 DAYBREAK CIRCLE, SUITE 150-103
CLARKSVILLE, MD 21029
443-310-1553

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SOURCE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLCOTT CITY, MARYLAND 21042
(410) 441-3299

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

John R. Robertson 8/20/18
Howard SCD

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. 36386, EXPIRATION DATE: 01/12/2020.

Angela Ann Smith 8/28/18
Signature of Professional Engineer 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.

Donald W. Carter 8/24/18
Signature of Developer DATE

ENGINEER'S CERTIFICATE
I/WE 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.

Angela Ann Smith 8/28/18
Signature of Engineer DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Valeria J. J... 9-25-18
Director - Department of Planning and Zoning DATE

J. Macenhardt 9-25-18
Chief, Development of Land Development DATE

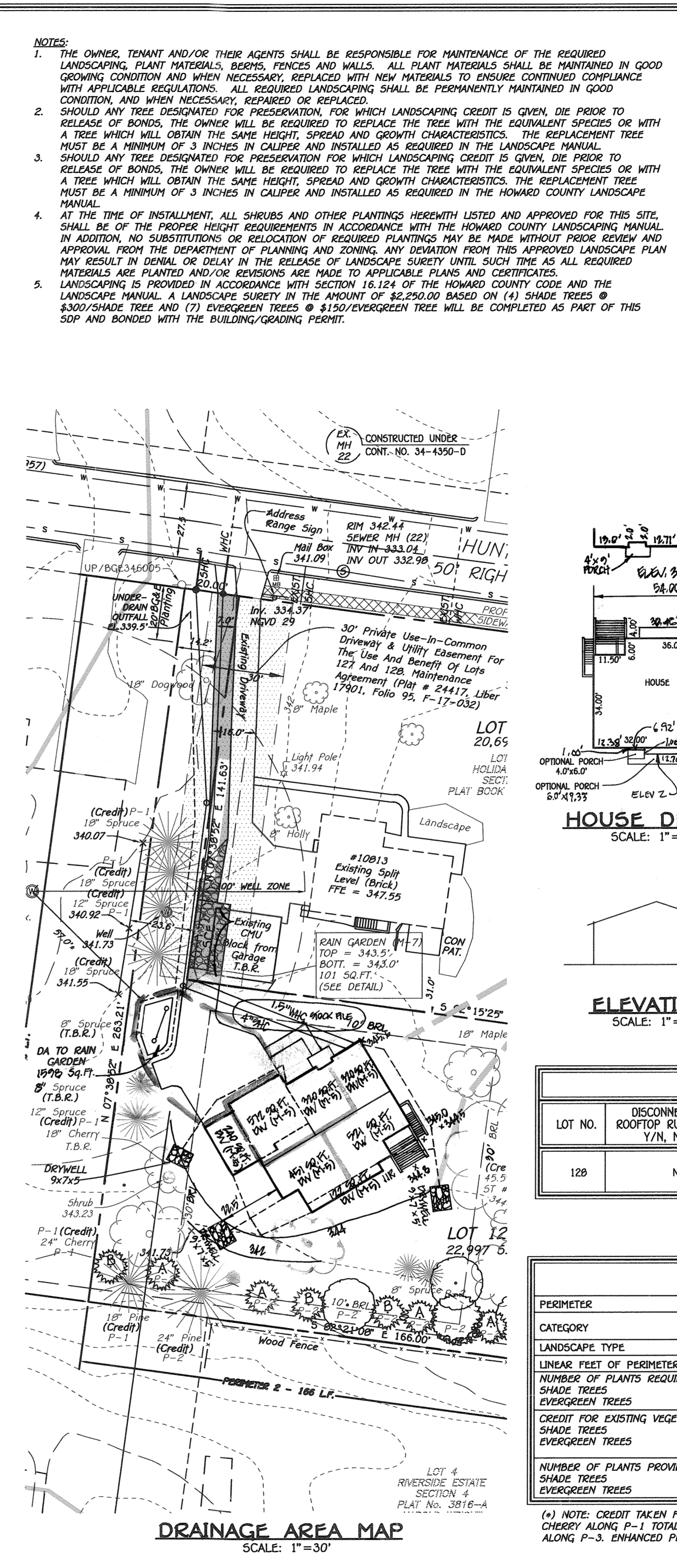
Chad Carter 9-20-18
Chief, Development Engineering Division DATE

PROJECT: HOLIDAY HILLS; LOT 128
SECTION: N/A
PARCEL NO.: 273

PLAT: 24417 BLOCK NO.: 5 ZONE: R-20 TAX/ZONE: 41 ELEC. DIST.: FIFTH CENSUS TR.: 605505

TITLE SHEET
HOLIDAY HILLS
LOT 128
ZONED R-20
TAX MAP No. 41 GRID No. 5 PARCEL NO. 273
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: AUGUST, 2018
SHEET 1 OF 3

SDP-19-007



LEGEND

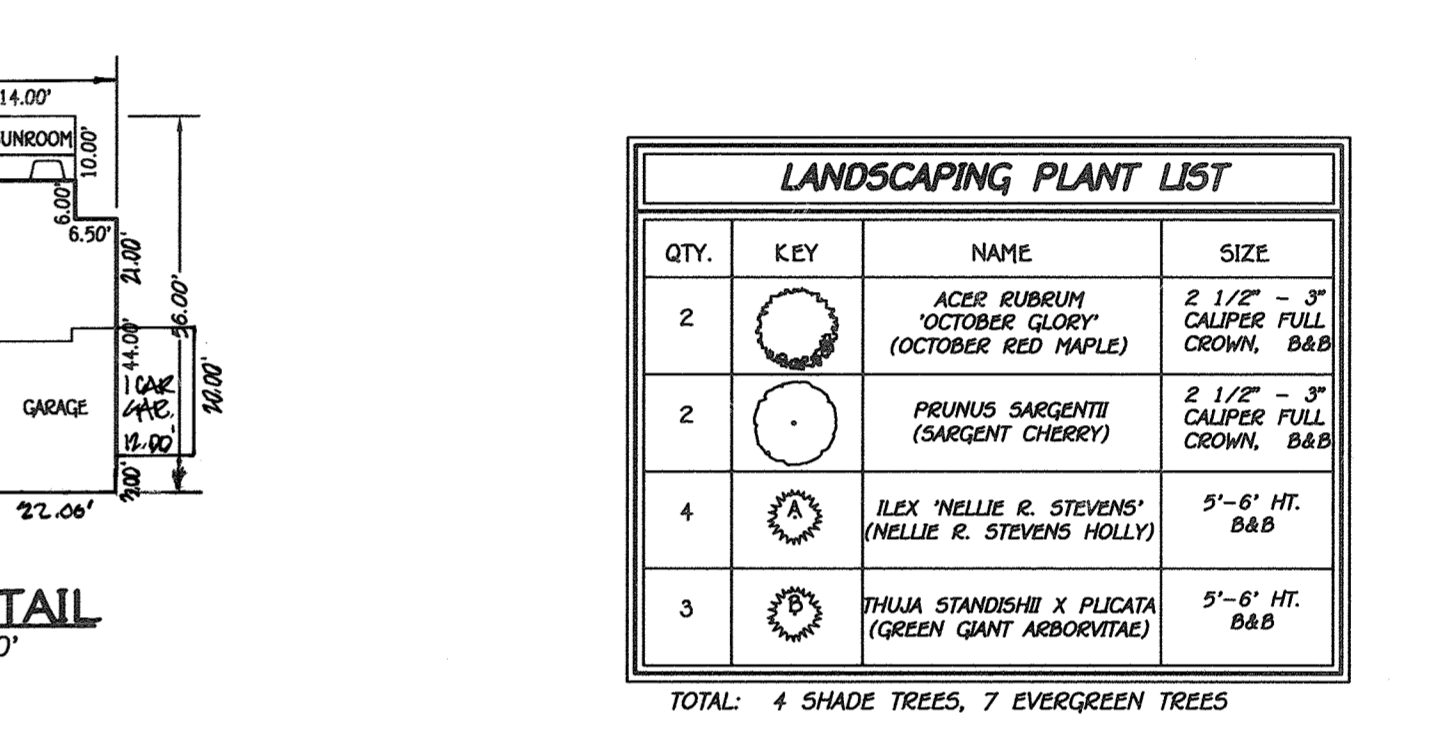
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
---450---	EXISTING 2' CONTOURS	---	PROPOSED CONTOUR
---450---	EXISTING 10' CONTOURS	+	SPOT ELEVATION
G/C	SOILS LINES AND TYPE	---	LIMITS OF DISTURBANCE
G/C	EXISTING TREE LINE	---	DRAINAGE AREA DIVIDE
○	INDIVIDUAL TREES & SHRUBS	---	SILT FENCE
---	EXISTING FENCE LINE	---	EROSION CONTROL MATTING
---	EXISTING & PROPOSED PAVING	---	STABILIZES CONSTRUCTION ENTRANCE
---	NON-ROOFTOP DISCONNECTION	---	TO BE REMOVED

SPECIMEN TREE TABLE

KEY	SPECIES	SIZE (DBH)	CRZ (FT RADIUS)	COMMENTS
1	SILVER MAPLE	45.5"	72'	TO REMAIN

SEWER HOUSE CONNECTION CHART

LOT	ELEVATION AT MAIN	ELEVATION AT ROW	ELEVATION AT CLEANOUT	ELEVATION AT HOUSE	HCE
128	(DHC)332.61	332.99 332.89	334.95 334.55	336.09 335.99	337.27 337.87



SOILS LEGEND

SOIL	NAME	CLASS	K FACTOR
G/CB	Gladstone - Urban land complex, 0 to 8 percent slopes	A	0.28

STORMWATER MANAGEMENT PRACTICES

LOT NO.	DISCONNECTION OF ROOFTOP RUNOFF (N-1) Y/N, NUMBER	DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)	DRY WELLS (M-5) Y/N, NUMBER	RAIN GARDEN (M-7) Y/N, NUMBER
128	NO	NO	YES, THREE (3)	YES, ONE (1)

SCHEDULE A - PERIMETER LANDSCAPE EDGE

PERIMETER	P-1	P-2	P-3	TOTAL
CATEGORY	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	
LANDSCAPE TYPE	A	C	B	
LINEAR FEET OF PERIMETER	263 L.F.	166 L.F.	121 L.F.	
NUMBER OF PLANTS REQUIRED	4	3/4	2	
SHADE TREES	(263'/60' = 4.4 OR 4)	(166'/40' = 4.2 OR 4)	(121'/60' = 2.0 OR 2)	10
EVERGREEN TREES	0	(166'/20' = 8.3 OR 8)	0	8
CREDIT FOR EXISTING VEGETATION	4(+)	0	2*	6
SHADE TREES	0 (EQUIV.=3 SHADE TREES)	1*	0	1
EVERGREEN TREES	0	4	0	4
NUMBER OF PLANTS PROVIDED	0	7	0	7
SHADE TREES	0	4	0	4
EVERGREEN TREES	0	7	0	7

(*) NOTE: CREDIT TAKEN FOR SIX (6) EXISTING EVERGREEN TREES FOR AN EQUIVALENT CREDIT AS THREE (3) SHADE TREES AND ONE (1) CHERRY ALONG P-1. TOTAL CREDIT TAKEN FOR FOUR (4) SHADE TREES, ONE (1) PINE ALONG P-2 AND TWO (2) EXISTING MAPLE TREES ALONG P-3. ENHANCED PERIMETER LANDSCAPING HAS BEEN PROVIDED ON LOT 128 TO MITIGATE VIEWS AND TO ADDRESS PRIVACY.

OWNERS
DANIEL AND MARY DUGAN
10813 HUNTING LANE
COLUMBIA, MD 21044-4207
(202) 359-4259

BUILDER
BHC
ATTN: DONALD CARTER
6030 DAYBREAK CIRCLE, SUITE 150-103
CLARKSVILLE, MD 21029
443-310-1553

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENAL SQUARE OFFICE PARK - 10725 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
(410) 481-2925

NO.	REVISION	DATE
3	REVISE HOUSE ELEV'S PER ASBUILT	11/8/19
2	REV. HSE TO DRAIN & EXPOSE MECHANICAL	3/10/19
1	REV. HSE TO ADD ADDITIONAL ELEV'S & EXPOSE MECHANICAL	4/27/19

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

John R. Rebuton 8/28/18
Howard SCD Date

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. 38386, EXPIRATION DATE: 01/12/2020.

Stephen J. Tait 8/29/18
Signature of Professional Engineer 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."

Donald W. Carter 8/24/18
SIGNATURE OF DEVELOPER DATE

ENGINEER'S CERTIFICATE
"I/WE 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."

Stephen J. Tait 8/29/18
SIGNATURE OF ENGINEER DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Natalia J. Pico 9-25-18
Director - Department of Planning and Zoning Date

S. Maerhand 9-25-18
Chief, Division of Land Development Date

Cheryl 9-20-18
Chief, Development Engineering Division Date

PROJECT: HOLIDAY HILLS: LOT 128
SECTION: N/A
PARCEL NO.: 273

PLAT: 24417 BLOCK NO.: 5 ZONE: R-20 TAX/ZONE: 41 ELEC. DIST.: FIFTH CENSUS TR.: 605505

SITE DEVELOPMENT & LANDSCAPE PLAN

HOLIDAY HILLS
LOT 128
ZONED R-20
TAX MAP No. 41 GRID No. 5 PARCEL No. 273
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: AUGUST, 2018
SHEET 2 OF 3

SDP-19-007

SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS (B-4-2)

A. Soil Preparation

- Temporary Stabilization**
 - Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches 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, disperse smooth or ribbed mulch over the roughened contour. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
 - Apply fertilizer and lime as prescribed on the plans.
 - Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disk or other suitable means.
- Permanent Stabilization**
 - A soil test is required for any earth disturbance of 2 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
 - Soil pH between 6.0 and 7.0.
 - Available nitrate less than 500 parts per million (ppm).
 - 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 loesslike soils will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
 - Soil contains 1.5 percent minimum organic matter by weight.
 - Soil contains sufficient pore space to permit adequate root penetration.
 - Application of amendments or topsoil is required on all-site soils do not meet the above conditions.
 - Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.
 - Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
 - Max soil amendments into the top 3 to 5 inches of soil by disk or other suitable means. Rate item location to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular contour with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

B. Topsoiling

- Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is 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.
- Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
- Topsoiling is limited to areas having 3:1 or flatter slopes where:
 - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
 - The original soil to be vegetated contains material toxic to plant growth.
 - The soil is so acidic that treatment with limestone is not feasible.
 - Areas having slopes steeper than 2:1 require special consideration and design.
- Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
 - Topsoil must be a loam, sandy loam, clay loam, silty loam, silty clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, and coarse fragments, gravel, sticks, roots, or other materials larger than 1 1/2 inches in diameter.
 - Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quick grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
 - Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
- Topsoil Application
 - Erosion and sediment control practices must be maintained when applying topsoil.
 - Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in a such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
 - Topsoil must not be placed if the topsoil or subsoil is in a frozen or overly condition, when the subsoil is excessively wet or in a condition that will otherwise be detrimental to proper grading and seedbed preparation.

C. Soil Amendments (Fertilizer and Lime Specifications)

- Soil tests must be performed to determine the exact rates and application rates for both lime and fertilizer on sites having disturbed areas of 2 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analysis.
- Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Material may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
- Lime materials may be ground limestone (hydrated) or burnt lime may be substituted except when hydroseeding. Limes which contain at least 30 percent total calcium (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 90 to 100 percent will pass through a #20 mesh sieve.
- Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disk or other suitable means.
- Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

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

- The application of seed and mulch to establish vegetation cover.
- Purpose:**
To protect disturbed soils from erosion during and at the end of construction.
- Conditions Where Practice Applies:**
To the surface of all perimeter control, slopes, and any disturbed area not under active grading.
- Criteria:**
- Seeding**
 - Specifications
 - All seed must meet the requirement 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.1 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
 - Mulch 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.
 - Inoculant: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared after the date indicated on the container. Add fresh inoculant to the container. Add fresh inoculant as directed on the package. Use the times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until use. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
 - Soil or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for seed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.
 - Application
 - Drill Seeding: This includes use of conventional drop or broadcast seeders.
 - Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or all-specific seeding summaries.
 - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with weighted roller to provide good seed to soil contact.
 - Drill or Chiselseed Seeding: Mechanized seeders that apply and cover seed with soil.
 - Outplanting seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
 - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
 - Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
 - If 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; P₂O₅ (phosphorus), 200 pounds per acre; K₂O (potassium), 200 pounds per acre.
 - Lime: Use only ground agricultural limestone (up 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.
 - Mix seed and fertilizer on site and apply without interruption.
 - When hydroseeding do not incorporate seed into the soil.
 - Mulching**
 - Which Materials (in order of preference)
 - 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 moldy, matted, coated, decayed, or excessively dirty. Note: Use only clean straw which in areas where one species of grass is desired.
 - Wood Cellulose Fiber Mulch (WCFF) consisting of specially prepared wood cellulose processed into uniform fibrous physical state.

- WCFF is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
 - WCFF, including dye, must contain no germination or growth inhibiting factors.
 - WCFF 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 biodegradable, having moisture absorption and retention properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - WCFF material must not contain elements or compounds at concentration levels that will be phytotoxic.
 - WCFF 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 wood holding capacity of 90 percent minimum.
- Application**
 - Apply mulch to all seeded areas immediately after seeding.
 - 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.
 - Wood cellulose fiber used as mulch must be applied to 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.
 - Anchoring**
 - Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (depending on preference), depending upon the size of the area and erosion hazard:
 - A mulch anchoring tool is a tractor draw implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is limited to factor slopes where equipment can operate safely. If used on a sloping land, this practice should follow the contour.
 - Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - Synthetic binders such as Acrylic DLR (Ago-Tack), DCA-70, Petroseal, Terra Tex 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.
 - Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4-15 feet wide and 300 to 3,000 feet long.

TEMPORARY SEEDING NOTES (B-4-4)

Definition:
To stabilize disturbed soils with vegetation for up to 6 months.

Purpose:
To use fast growing vegetation that provides cover on disturbed soils.

Conditions Where Practice Applies:
Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

Criteria:

- Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate plant hardiness zone (from Figure B.3), 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 plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
- For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
- When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.B and maintain until the next seeding season.

Temporary Seeding Summary

Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depth	Fertilizer Rate (10-20-20)		Lime Rate (2 tons/acre)
				N	P ₂ O ₅	
BARLEY	96	3/1 - 5/15, 8/15 - 10/15	1"	435 lb/acre (10 lb/1000 sf)	2 tons/acre (90 lb/1000 sf)	
OATS	72	3/1 - 5/15, 8/15 - 10/15	1"	435 lb/acre (10 lb/1000 sf)	2 tons/acre (90 lb/1000 sf)	
RYE	112		1"			

PERMANENT SEEDING NOTES (B-4-5)

- General Use**
 - Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
 - Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
 - For sites having disturbed areas over 5 acres, use and show the rates recommended by the soil testing agency. d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 1/2 pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.
- Turfgrass Mixtures**
 - Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which require a medium to high level of maintenance.
 - Select one or more of the species or mixtures listed below based on the site conditions or purposes. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
 - Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Cultivars Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes: Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 2 to 3 pounds per 1000 square feet. One or more cultivars may be blended.
 - Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with blended shade in Bluegrass lawns. For establishment in high quality, intensively managed turf areas. Mixture includes: Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 1/2 to 3 pounds per 1000 square feet.

Notes:
Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland"

Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.

c. Ideal Times of Seeding for Turf Grass Mixtures Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a) Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 6b) Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)

d. Till areas to receive seed by disk or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1 1/2 inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses poses no difficulty.

e. If soil moisture is deficient, apply new seedings with adequate water for plant growth (1/2 to 1 inch over) to 4 days depending on soil texture until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

Permanent Seeding Summary

No.	Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depth	Fertilizer Rate (10-20-20)		Lime Rate (2 tons/acre)
					N	P ₂ O ₅	
B	TALL FESCUE	100	Mar. 1-May 15, Aug. 15-Oct. 15	1/4-1/2 in.	45 lb/acre (2 lb./1000 sf)	90 lb/acre (2 lb./1000 sf)	2 tons/acre (90 lb./1000 sf)

B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).

- General Specifications**
 - Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.
 - Sod must be machine cut at a uniform top thickness of 3/4 inch, plus or minus 1/8 inch, at the time of cutting. Measurement for thickness must exclude soil growth and thatch. Broken pads and torn or uneven ends will not be acceptable.
 - Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
 - Sod must not be harvested or transported when frozen or when the sod is wet. Wet sod will adversely affect its survival.
 - Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transported within this period must be approved by an agronomist or soil scientist prior to its installation.
- Sod Installation**
 - During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
 - Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to granule more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
 - Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, pay off otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.
 - Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping, and irrigating for any piece of sod within eight hours.
- Sod Maintenance**
 - In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the last of the day to prevent wetting.
 - After the first week, sod watering is required as necessary to maintain adequate moisture content.
 - Do not mow until the sod is firmly rooted. No more than 1/8 inch of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

B-4-6 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREAS

A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

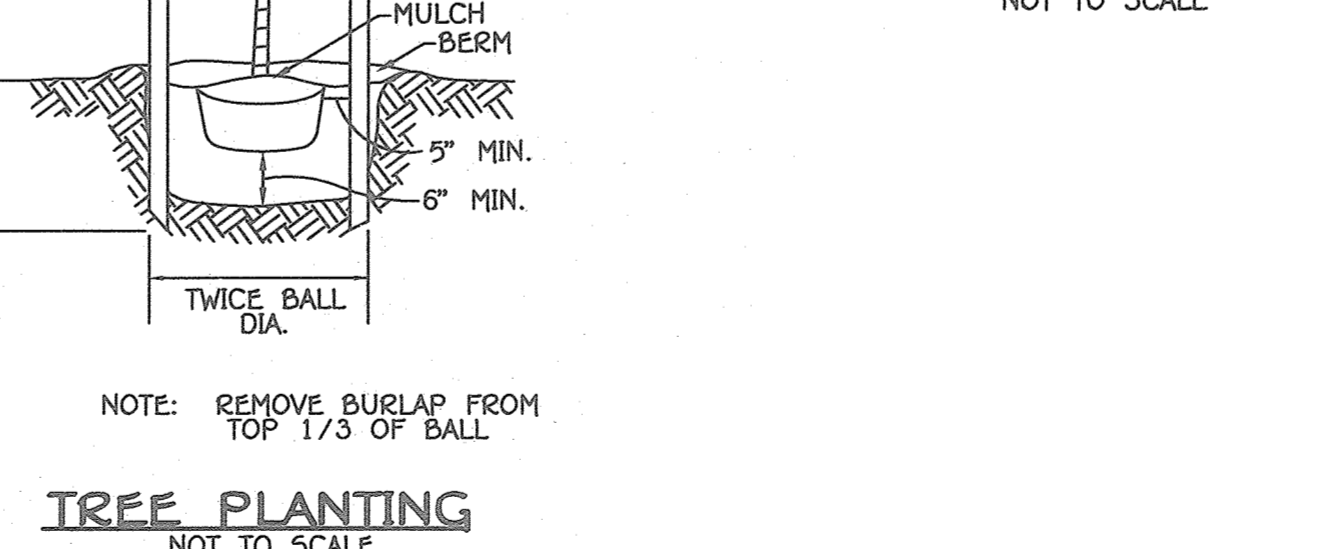
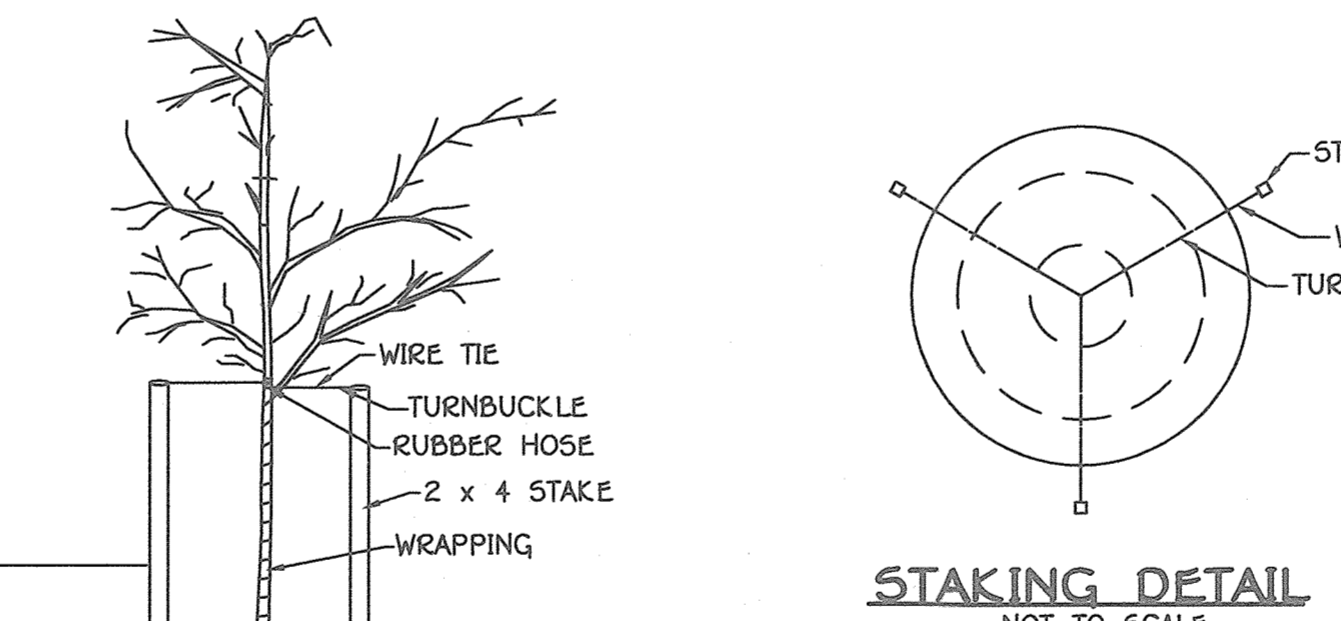
Purpose:
To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

- The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
- 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. Benches must be provided in accordance with Section B-4-3 Land Grading.
- Runoff from the stockpile area must drain to a suitable sediment control practice.
- Access the stockpile area from the updrift side.
- Clear water runoff from the stockpile area must be minimized by use of a diversion device such as an earth dam, temporary culvert or diversion fence. Provisions must be made for discharging concentrated flow in a non-erotic manner.
- Where runoff concentrates along the top of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
- Stockpiles must be established 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.
- 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.

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

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (410-315-1899).
- 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 HAWARD COUNTY STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THEREOF.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a. 30 CALENDAR DAYS FOR ALL PERMITS SEDIMENT CONTROL STRUCTURES, DICES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, b. 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 HAWARD COUNTY STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. B-4-5). TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING RATES DO NOT ALLOW FOR PROPER SEEDING AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSON FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:**
TOTAL AREA OF SITE: 0.53 ACRES
AREA DISTURBED: 0.54 ACRES
AREA TO BE ROOFED OR PAVED: 0.10 ACRES
AREA TO BE VEGETATIVELY STABILIZED: 0.43 ACRES
TOTAL CUT: 350 CU.YDS.
TOTAL FILL: 350 CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION: [blank]
- ANY SEDIMENT CONTROL PRACTICE THAT IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERMITS EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER GRADING DISTURBANCE OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TECHNICALS FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
- ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING.
- A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM AVERAGE OF 20 ACRES FOR GRADING UNIT) AT A TIME. WORK HAS PROCEEDED 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 CONTIGUOUSLY MAY BE DISTURBED AT A GIVEN TIME.



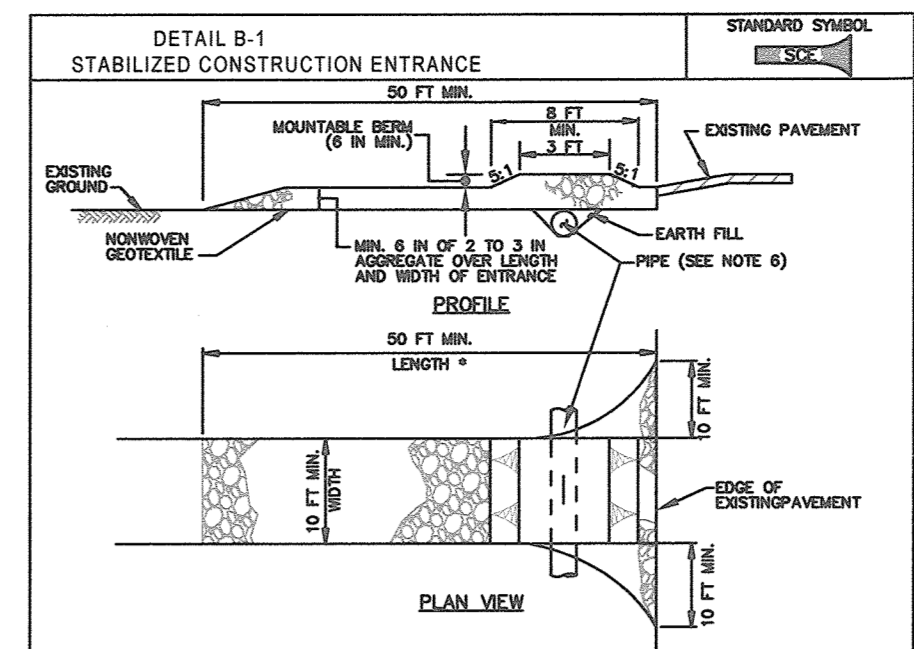
TREE PLANTING
NOT TO SCALE

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 ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Director - Department of Planning and Zoning
Chief, Division of Land Development
Signature of Developer

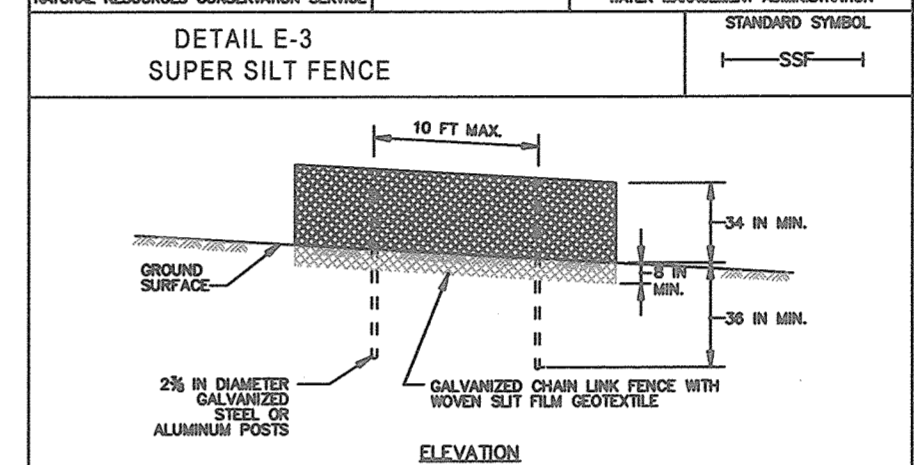
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AN INDULGENT PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 36386, EXPIRATION DATE: 01/12/2020.

ENGINEER'S CERTIFICATE
I/WE 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.



- CONSTRUCTION SPECIFICATIONS**
- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SOE. USE MINIMUM LENGTH OF 50 FEET (MINIMUM 40 FEET FOR SINGLE ROADWAY LOTS). USE MINIMUM WIDTH OF 10 FEET. FLARE SIDE SOE TO FIT EXISTING ROAD TO PROVIDE A TURNING RADIUS.
 - PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SOE UNDER THE ENTRANCE. MAINTAIN POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SOE WITH A MOUNTAINABLE BERM WITH 2:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SOE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTAINABLE BERM IS REQUIRED WHEN SOE IS NOT LOCATED AT A HIGH SPOT.
 - PREPARE SUBGRADE AND PLACE MOUNTAINABLE GEOTEXTILE, AS SPECIFIED IN SECTION M-1 MATERIALS.
 - PLACE CURBED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE.
 - MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRAFFIC OF EQUIPMENT AND STONE OR LIMESTONE REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAR SURFACE. MOUNTAINABLE BERM AND SPOTTED GEOTEXTILE BEHIND ENTRANCE SHALL REMAIN IN PLACE THROUGHOUT CONSTRUCTION. TRUCKED OUT ADJACENT ROADWAY BY MOUNTAINABLE BERM, AND/OR SPOTTED GEOTEXTILE BEHIND ENTRANCE TO REMOVE LANE THROUGHOUT CONSTRUCTION IS NOT ALLOWED UNLESS HIGH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

DETAIL E-1 SILT FENCE



- CONSTRUCTION SPECIFICATIONS**
- INSTALL 2 1/2 INCH DIAMETER GALVANIZED STEEL POSTS OF AT LEAST 1/4 INCH WALL THICKNESS AND 30 FEET IN LENGTH SPACED FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 30 INCHES INTO THE GROUND.
 - FASTEN A GAUGE OR HEAVY GALVANIZED CHAIN LINK FENCE (65 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR ROLL ENDS.
 - FASTEN WOVEN SILT FILL GEOTEXTILE AS SPECIFIED IN SECTION M-1 MATERIALS, SECURELY TO THE UPSIDE SIDE OF CHAIN LINK FENCE WITH TIE SPACES EVERY 6 INCHES AT THE TOP AND MID SECTION. DRIVE GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 6 INCHES INTO THE GROUND. WIRE TIES OR ROLL ENDS OF THE GEOTEXTILE COIL TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
 - COVERED BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF 100 FEET UPSTREAM AND 50 FEET DOWNSTREAM TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM CONCENTRATING AT THE ENDS OF THE SUPER SILT FENCE.

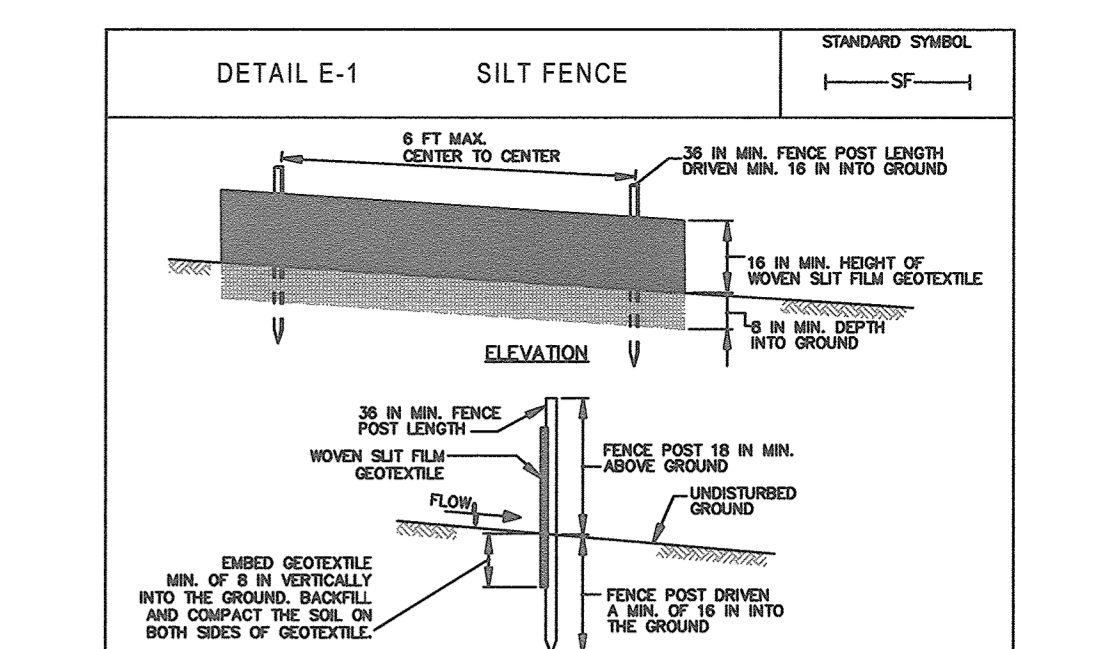
- CONSTRUCTION SPECIFICATIONS**
- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS OBSERVED OR APPROVED.
 - USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC NON-DEGRADABLE FIBERS OR NON-LEACHING AND NON-TOXIC TO VEGETATION AND SOIL SEDIMENTATION AND NON-SOLUBLE TO THE SOIL IF SUFFICIENTLY BONDING OF SEED OR 2 INCH CHERSERS ALONG LONGITUDINAL AXES OF THE MATERIAL TO PREVENT SEPARATION OF SEED AND MULCH.
 - SECURE MATTING USING STEEL STAPLES OR WOOD STAPLES. STAPLES MUST BE "V" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF 10, 11 AND 12, 8 RESPECTIVELY. "V" SHAPED STAPLES MUST AVERAGE TO 1 1/2 INCHES OVER AND BE A MINIMUM OF 6 INCHES LONG. "V" SHAPED STAPLES MUST HAVE A MINIMUM 1/4 INCH BURN END. A MINIMUM 1/2 INCH SECONDARY LEG, AND MINIMUM 4 HIGH LEG. WOOD STAPLES MUST BE 3/4 INCH DIA. Lx 1 1/2 INCH Lx 1/2 INCH DIA. 2 INCH IN CROSS SECTION, AND WEDGE SHANK AT THE BOTTOM.
 - PERFORM FILL GRADING, TOPSOIL APPLICATION, SEEDING PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS. ENDS OF WOVEN MAT STABILIZER IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
 - UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. UNROLL AND STRETCH MATTING BEHIND CHANNEL CUTTERS WITH FLAGGING ROLLS LAY MATTING BROADLY AND FLATLY UPON THE SEEDING SURFACE. AVOID STRETCHING THE MATTING.
 - OVERLAP OR BUTT ENDS OF MATTING ROLLS FOR MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
 - KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES DOWNWARD BY DIGGING A TRENCH, PLACING THE MATTING UNDER FOOTING, FURTHER INCLUDING MAT STAPLES TO HOLD MATTING TO THE SOIL OR GRASSER MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
 - ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
STANDARD SYMBOL		
PSHC - # 01 BY 4" (4" WOOD BERM WIDTH)		
1. $D = (L \cdot V^{0.56} / S^{0.04}) \cdot 0.07$ CFS 2. VELOCITY (10 FT STORM) = 0.9 CFS 3. SHEAR STRESS = 62.1 LBS/FT ² @ 0.9 FT x 0.82 = 0.1 LBS/FT ²		



- CONSTRUCTION SPECIFICATIONS**
- USE WOOD POSTS 1 1/2 X 3 X 3/4 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD, AS AN ALTERNATIVE TO WOODEN POST. USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
 - USE 38 INCH HIGH MOUNTAIN DRIVE 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
 - USE WOVEN SILT FILL GEOTEXTILE AS SPECIFIED IN SECTION M-1 MATERIALS AND FASTEN GEOTEXTILE WITH WIRE TIES OR ROLL ENDS TO THE FENCE POSTS AT TOP AND MID SECTION.
 - PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION M-1 MATERIALS.
 - ENRIDGE GEOTEXTILE A MINIMUM OF 6 INCHES VERTICALLY INTO THE GROUND, BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
 - WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TIGHT, AND STAPLE TO POST IN ACCORDANCE WITH THE APPROVED PLAN.
 - EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSTREAM AT 40 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM CONCENTRATING AT THE ENDS OF THE SILT FENCE.
 - REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 20% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDOING OCCURS, REPAIR OR REPLACE THE ENTIRE SECTION OF FENCE.

DETAIL B-4-6-C PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION

