#### I. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK. 2. THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS: BELL ATLANTIC TELEPHONE CO: HOWARD COUNTY BUREAU OF UTILITIES: 313-2366 VERIZON CABLE LOCATION DIVISION: B.G.&E. CO. CONTRACTOR SERVICES: 850-4620 B.G.&E. CO. UNDERGROUND DAMAGE CONTROL: 787-4620 3. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/ BUREAU OF ENGINEERING/ CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK. 4. ANY DAMAGE TO PUBLIC RIGHT-OF-WAY, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE 5. EXISTING UTILITIES LOCATED FROM ROAD CONSTRUCTION PLANS AND AVAILABLE RECORD DRAWINGS. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. 6. SHC ELEVATIONS SHOWN ARE LOCATED AT THE PROPERTY LINE. 7. FOR DRIVEWAY ENTRANCE DETAILS REFER TO THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD DETAIL R-6.03. 8. THE PROJECT BOUNDARY IS BASED ON A FIELD RUN BOUNDARY SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC. IN FEBRUARY 2010. 9. THE TOPOGRAPHY SHOWN HEREON IS BASED ON FIELD RUN TOPOGRAPHY PERFORMED BY ROBERT H. VOGEL ENGINEERING, INC. IN 10. PUBLIC WATER AVAILABLE THROUGH CONTRACT 34-1810-D AND PUBLIC SEWER AVAILABLE THROUGH CONTRACT 30-3123-D. WATER AND SEWER SERVICE WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 18.122B 11. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 41C2N AND 0057N WERE USED FOR THIS 12. THIS PROJECT IS EXEMPT FROM Cpv STORM WATER MANAGEMENT SINCE THE SITE Pe IS LESS THAN 1" 13. THIS SITE IS NOT LOCATED IN A HISTORIC DISTRICT. 14. NO STREAMS EXIST ON SITE 15. NO 100-YEAR FLOODPLAIN EXIST ON SITE. 16. SUBJECT PROPERTY ZONED R-20 PER 2/02/04 COMPREHENSIVE ZONING ZONING PLAN AND AMENDED BY THE COMPREHENSIVE LITE 17. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY IN THE AMOUNT OF \$6,300.00 FOR THE REQUIRED LANDSCAPE TREES WILL BE POSTED AS PART OF THE BUILDER'S GRADING PERMIT. THE REQUIRED LANDSCAPING IS AS FOLLOWS: PERIMETER LANDSCAPE FOR INFILL DEVELOPMENT (3 SHADE, 4 ORNAMENTAL AND 16 EVERGREEN TREES IN THE AMOUNT OF \$3,900.00; REPLACEMENT TREES (4 SHADE TREES SUBSTITUTED FOR THE REMOVAL OF 2 SPECIMEN TREES IN THE AMOUNT OF \$1,200.00); AND, STREET TREES (4 SHADE TREES IN THE AMOUNT OF \$1,200.00). 18. THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS (COUNCIL BILL 45-2003). 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, WAIVER PETITION APPLICATION OR BUILDING/GRADING PERMIT 19. "DRIVEWAY(S) SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS a) WIDTH- 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE). b) SURFACE - 6 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CLIP COATING. c) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% CHANGE AND MINIMUM OF 45-FOOT DEPTH TURNING RADIUS. d) STRUCTURES (CULVERT/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING). e) DRAINAGE ELEMENTS-CAPABLE OF SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY f) STRUCTURE CLEARANCES-MINIMUM 12 FEET. a) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE. 20. DPZ FILE NUMBERS: WP-10-151, ECP-11-013, F-10-111. 21. 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 OF AFFORESTATION REQUIREMENT, THE DEVELOPER HAS PAID A FEE-IN-LIEU IN THE AMOUNT OF \$4,900.50, UNDER F-10-111. 22. STORM WATER MANAGEMENT HAS BEEN ADDRESSED FOR SITE USING 2007 MARYLAND STORMWATER DESIGN MANUAL (CHAPTER 5) APPROVED UNDER F-10-111. A. CHANNEL PROTECTION VOLUME (CPv) IS NOT REQUIRED (Pe FOR B. WATER QUALITY VOLUME (WQv) AND RECHARGE VOLUME (REV) TO BE PROVIDED BY MICRO BIORETENTION FACILITIES, RAIN GARDENS OPEN CHANNEL FLOW (WHEN IMPERVIOUS AREAS CAN NOT BE DIRECTED TO ONE OF THE MICRO BIORETENTION FACILITIES), DRY WELLS AND (N-2) DISCONNECT 23. THIS DEVELOPMENT IS DESIGNED TO BE IN ACCORDANCE WITH SECTION 16.127 RESIDENTIAL INFILL DEVELOPMENT OF 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 24. NO CLEARING OF EXISTING VEGETATION IS PERMITTED WITHIN THE LANDSCAPE EDGE FOR WHICH CREDIT IS BEING TAKEN, HOWEVER, LANDSCAPE MAINTENANCE IS AUTHORIZED. 25. SHOULD ANY TREE DESIGNATED FOR PRESERVATION, FOR WHICH CREDIT IS GIVEN, DIE PRIOR TO 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 INCHES IN CALIPER AND INSTALLED A REQUIRED IN THE LANDSCAPE MANUAL. 26. AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTING MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING, ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES. 27. REFERENCE WAIVER PETITION WP 10-151 APPROVED 09/13/2010 A. SECTION 16.1205(a) TO ALLOW REMOVAL OF 2 SPECIMEN TREES AND REPLACE THEM WITH B. SECTION 16.134(b)(2) TO ALLOW A FEE-IN-LIEU OF SIDEWALK CONSTRUCTION (\$2368.00) C. SECTION 16.132(a)(2)(i)(a) TO ALLOW A FEE-IN-LIEU OF ROAD CONSTRUCTION (\$2324.00) D. SECTION 16.135(a) TO NOT PROVIDE STREET LIGHTING 28. A FOREST STAND DELINEATION WAS PERFORMED BY ROBERT H. VOGEL ENGINEERING, INC., DATED MAY 2010 FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1202 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL SHALL BE COMPLIED WITH. 29. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100-YEAR FLOODPLAIN. 30. IN ACCORDANCE WITH SECTION 128 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS, OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS. PORCHES OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK. 31. A TEST PIT FOR THE MICRO-BIORETENTION FACILITIES WAS CONDUCTED ON MARCH 2011, NO ROCK OR WATER WAS ENCOUNTERED TO A DEPTH OF 4' BELOW THE BOTTOM OF THE FACILITIES. SITE DATA OCATION: TAX MAP 41, GRID 6, PARCEL 220 DEED REFERENCE : L.3563 F.341 5TH ELECTION DISTRICT EXISTING ZONING: R-20 PER THE COMPREHENSIVE ZONING PLAN DATED 2/02/04. GROSS AREA OF PARCEL: 1.0031 AC. LIMIT OF DISTURBANCE: 0.7297 AC AREA TO BE ROOFED OR PAVED: 0.1874 AC APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING AREA TO BE VEGETATIVELY STABILIZED: 0.5423 AC AREA OF RIGHT OF WAY: 0.00000 AC.

DEVELOPMENT ENGINEERING DIVISION

AREA OF FLOODPLAIN: N/A
AREA OF STEEP SLOPES: N/A

NET AREA OF PROJECT: 1.0031 AC

NUMBER OF RESIDENTIAL LOTS PROPOSED: 2 LOTS

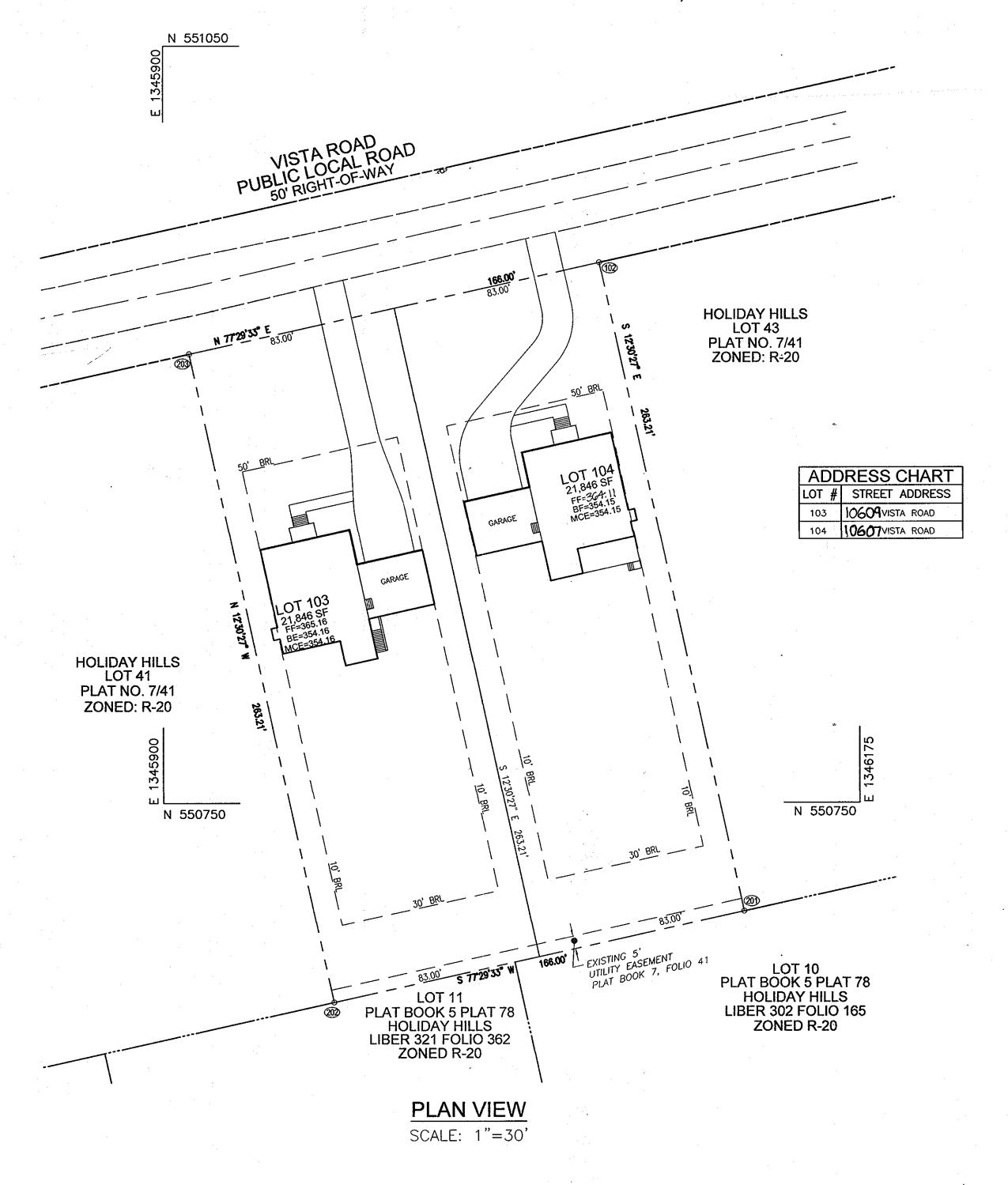
NUMBER OF PROPOSED OPEN SPACE LOTS: 0 NUMBER OF NON-BUILDABLE BULK PARCELS : 0

AREA OF PROPOSED RESIDENTIAL LOTS: 43,692 SF (1.00 AC) AREA OF SMALLEST BUILDABLE LOT PROPOSED: 21,846 SF

## SITE DEVELOPMENT PLAN

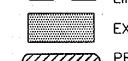
# HOLIDAY HILLS LOTS 103 & 104

A RESUBDIVISION LOT 42 SECOND ADDITION TO HOLIDAY HILLS SUBDIVISION PLAT BOOK 7, FOLIO 41





LIMIT OF DISTURBANCE



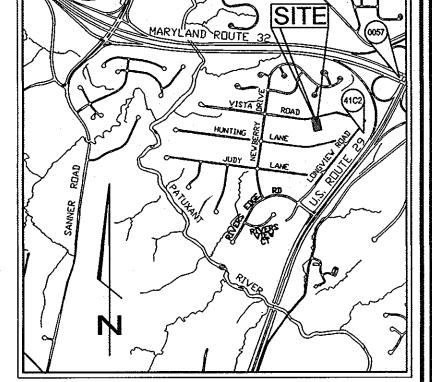
EX. DRIVEWAY TO BE REMOVED PROPOSED MICRO BIORETENTION

PROPOSED EROSION CONTROL MATTING

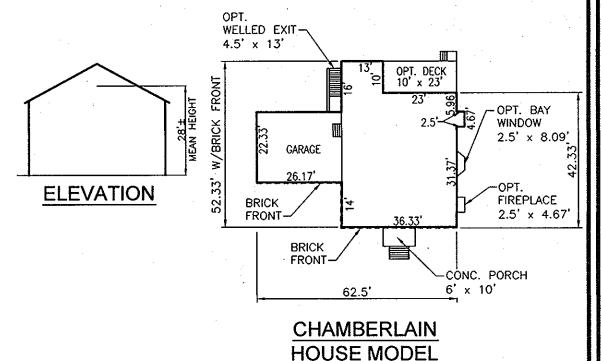
**BENCHMARKS** 

HOWARD COUNTY BENCHMARK 41C2N N 551,616.4187 E 1,348,104.2341 HOWARD COUNTY BENCHMARK 0057N N 550.835.2139 E 1.347,017.6897

· · · · · · · · · · · · · · · · · · ·	COORDINATE TABLE				
NUMBER	NORTHING	EASTING			
102	550963.9756	1346072.3252			
201	550707.0123	1346129.3282			
202	550671.0619	1345967.2678			
203	550928 0253	1345910 2649			



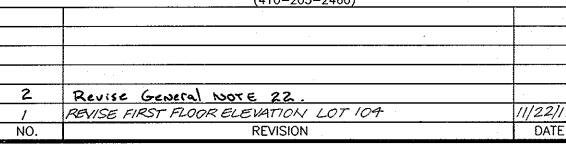
SCALE: 1"=2000' ADC MAP 5052, J-2



SHEET INDEX					
ESCRIPTION	SHEET NO.				
OVER SHEET	1 OF 3				
TE LAYOUT, GRADING, SEDIMENT AND EROSION CONTROL, LANDSCAPE, ND SOILS PLAN	2 OF 3				
EDIMENT AND EROSION CONTROL, LANDSCAPE NOTES AND DETAILS	3 OF 3				

								· · · · · · · · · · · · · · · · · · ·
	PERM	ЛIT	INFOF	RMA	<b>NTIO</b>	N CH	ART	
SUBDIVISION	NAME	SEC.	TION/ A	REA		LOT	/ PAR	RCEL
HOLIDAY I	HILLS					LOT 42	/ PAR	CEL 220
PLAT REF.	BLOCK	NO	ZONE	TAX	MAP	ELECT	DIST.	CENSUS TR.
21619	6		R-20		11	5T	Н	ੇ 6051.02

SD PROPERTIES 3138 ROGERS AVENUE ELLICOTT CITY, MARYLAND 21043 (410-203-2460)



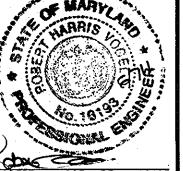
## SITE DEVELOPMENT PLAN **COVER SHEET**

HOLIDAY HILLS LOTS 103 & 104 A RESUBDIVISION OF LOT 42 OF

HOLIDAY HILLS, PLAT BOOK 7 FOLIO 41 DPZ FILES: WP-10-151, ECP-11-013, F-10-111 TAX MAP 41, GRID 6 5TH ELECTION DISTRICT

ROBERT H. VOGEL Engineering, Inc. ENGINEERS • SURVEYORS • PLANNERS

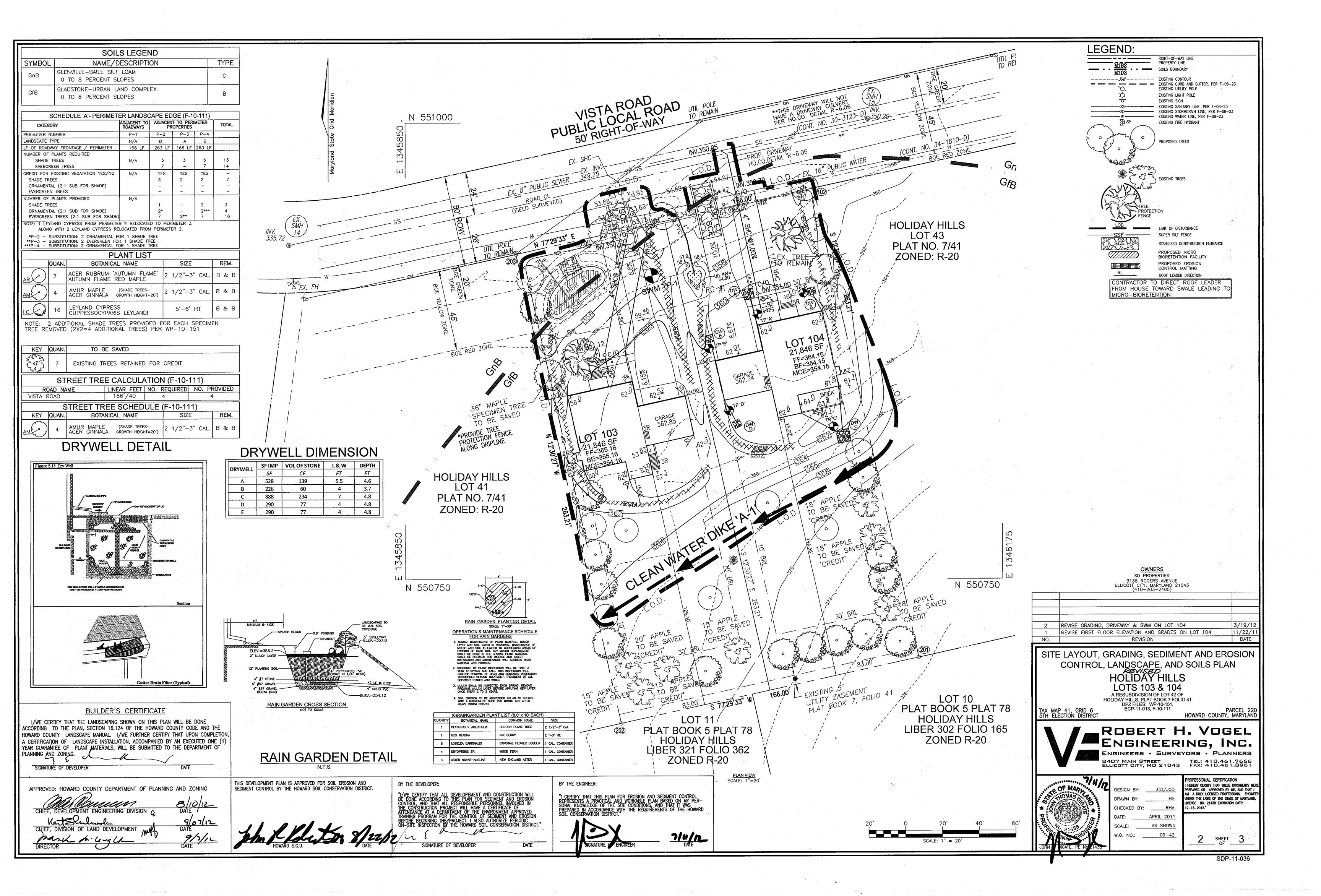
8407 MAIN STREET TEL: 410.461.7666 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

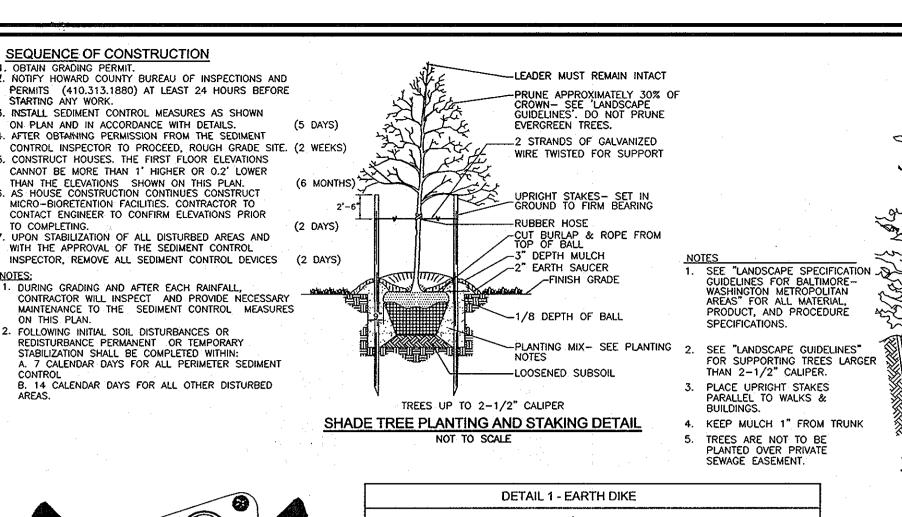


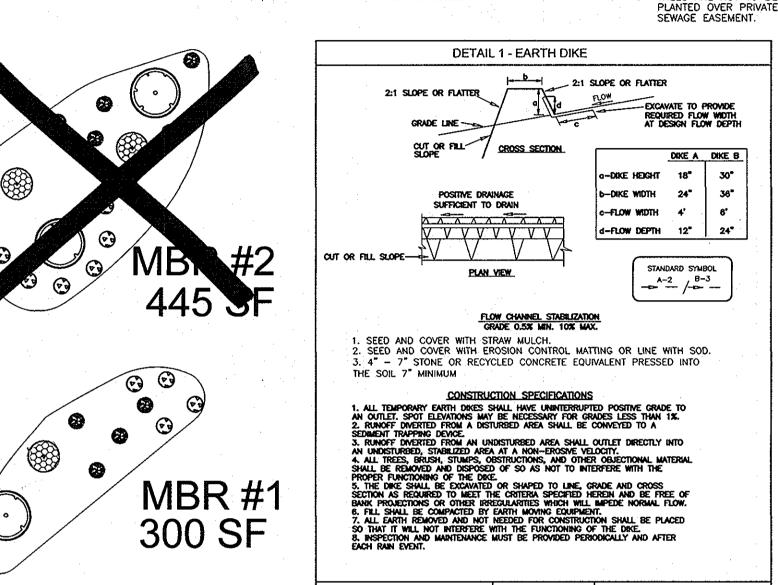
ESIGN BY:	JTD/JCO
RAWN BY:	HS_
HECKED BY:	RHV
ATE:	APRIL 2011
CALE:	AS SHOWN
/.O. NO.: _	09-42

PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE DOCUMENTS WER PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEE UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE:

PARCEL 220 HOWARD COUNTY, MARYLAND







TYPIC	AL MIC	RO-BIORETENTION PLANTING SCHE	DULE PER 250 SF A	REA	PER F	ACILITY
KEY	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS	MBR 1	<del>MBR−</del> 2
$\odot$	1	ACER RUBRUM RED MAPLE	1 1/2"-2" CAL	B & B	1	2
	11	ILEX GLABRA INKBERRY	3 GALLON	CONT	1	2
<b>©</b>	3	VACCINIUM CORYMBOSUM HIGHBUSH BLUEBERRY	3 GALLON	CONT	4	6
<b>8</b>	3	LOBELIA SIPHILITICA GREAT BLUE LOBELIA	3 GALLON	CONT	4	6
<b>S</b>	50	LIRIOPE MUSCARI 'MAJESTIC' MAJESTIC LILY TURF	2" POT	1' O.C.	65	100

I∣A MINIMUM DENSITY OF 1000 STEMS PER PLANTED BIORETENTION AREAS ARE TO BE PLANTED BASED ON ACRE (.0229 STEMS PER SQUARE FOOT). ABOVE PLANTING RATIOS ARE TO BE APPLIED TO THE AREAS PROVIDED IN THE ESDY SUMMARY. ROUND UP FOR

### MICRO-BIORETENTION PLANTING SCHEDULE NOTES:

MICRO-BIORETENTION PLANTING

LAYOUT

N.T.S.

ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HRD PLANTING SPECIFICATIONS. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.

FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM

LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

THIS SHEET FOR TYPICAL PLANTING DE	ETAILS.				
STORMWA	TER MANA	GEMENT CA	LCULATIONS	PER (F-10-1	11)
DRAINAGE AREA	METHOD	VOL. REQUIRED	VOL. PROVIDED	REv. REQUIRED	REv PROVIDED
MBR #1	M-6	243 CF	299 CF	62 CF	62 CF
-MBR-#2-	<del>-M-6 -</del>	<del>-272 CF-</del>	<del>-294 CF-</del>	<del>-72 CF-</del>	-90-CF-

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

M-6 IS A MICRO BIORETENTION FACILITY. SEE DETAIL THIS SHEET

A CERTIFICATION OF LANDSCAPE INSTALLATION. ACCOMPANIED BY AN EXECUTED ONE (1 YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING. APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

PMENT ENGINEERING DIVISION

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

MBR FACILITY

MBR #1

UNDISTURBED -

TYPICAL SPILLWAY PROFILE

NOT TO SCALE

354.3 355.0 353.6 350.8

TYPICAL SPILLWAY SECTION

NOT TO SCALE

BY THE DEVELOPER: "I/WE CERTIFY THAT ALL DEVELOPEMENT 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. GNATURE OF DEVELOPER

B.4.C Specifications for Micro-Bioretention. Rain Gardens, Landscape Infiltration &

1. Material Specifications

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

2. Filtering Media or Planting Soil

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

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

• Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification) Organic Content - Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy sand (60%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%). Clay Content - Media shall have a clay content of less than 5%.

• pH Range - Should be between 5.5 - 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

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

3. Compaction

It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoes to remove original soil. If practices are

**DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE** 

PROFILE

PLAN VIEW

1. LENGTH - MINIMUM OF 50' (\* 30' FOR A SINGLE RESIDENCE LOT).

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE RE-DISTURBED WHERE A

DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2

IBS/1000 SQ, FT.), FOR THE PERIOD MAY 1 -- AUGUST 14, SEED WITH 3

IBS/ACRE OF WEEPING LOVEGRASS (.07 IBS/1000 SQ. FT.). FOR THE PERIOD

NOVEMBER 16 -- FEBRUARY 28. PROTECT SITE BY APPLYING 2 TONS/ACRE OF

WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING,

MULCHING: APPLY L-1/2 TO 2 TONS/ACRE (70 TO 90 IBS/1000 SQ. FT.) OF UNROTTED WEED-FREE, SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR

MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218

GAL. PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS.

REFER TO THE 1994 MAR4AND STANDARDS AND SPECIFICATIONS FOR SOIL

EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER

DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

IBS/ACRE 30-0-0 UREAFORM FERTILIZER (9 IBS/1000 SQ. FT.)

SEÉDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY:

MAINTENANCE: INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE

2. ACCEPTABLE: APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92 IBS/1000 SQ.

FT.) AND 1000 IBS/ACRE 10-10-10 FERTILIZER (23 IBS/1000 SQ. FT.) BEFORE

SEEDING: FOR THE PERIODS MARCH 1 THUR APRIL 30, AND AUGUST 1 THRU OCTOBER

FOR THE PERIOD MAY 1 THRU JULY 31. SEED WITH 60 IBS KENTUCKY 31 TALL FESCUE

PER ACRE AND 2 IBS/ACRE (.05 IBS/100() SQ. FT.) OF WEEPING LOVEGRASS. DURING

OPTION 1: TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON

15, SEED WITH 60 IBS/ACRE (1.4 IBS/1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE.

OPTION 3: SEER: WITH 60 IBS/ACRE KENTUCKY 30 TALL FESCUE AND MULCH WITH 2

. PREFERRED: APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92 IBS/1000 SQ. FT.)

AND 600 IBS/ACRE 10-10-10 FERTILIZER (14 IBS/1000 SQ. FT.) BEFORE SEEDING.

HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400

SFEDRED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR

ON SLOPE 8 FT. OR HIGHER, USE 348 GAL. PER ACRE (8 GAL/1000 SQ. FT.) FOR

2. WIDTH - 10' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.

4. STONE - CRUSHED AGGREGATE (2" TO 3") OR RECLAIMED OR RECYCLED CONCRETE THE ENTRANCE.

3. GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE. \*\* THE PLAN APPROVAL AUTHORITY MAY NOT REQUIRE SINGLE FAMILY RESIDENCES TO USE GEOTEXTILE.

5. SURFACE WATER - ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERN WITH 5:1 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE, PIPE HAS TO BE SIZED ACCORDING TO THE DRAINAGE. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE WILL NOT BE NECESSARY, PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED, A 6" MINIMUM WILL BE REQUIRED.

\*\* GEOTEXTILE CLASS-

- EXISTING GROUND

SCE SCE

CONSTRUCTION SPECIFICATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

TEMPORARY SEEDING NOTES

PERMANENT SEEDING NOTES

FOLLOWING SCHEDULES:

AS POSSIBLE IN THE SPRING.

TONS/ACRE WELL ANCHORED STRAW.

OPTION 2: USE SOD.

LOOSENED.

SQ. FT.).

OR USE SOD.

WEIR GRADE DEPTH BELOW) 2" -3" MUL<u>CH</u> 24" PLANTING SOIL (SEE PLANTING SOIL CHARACTERISTICS) 3" ABOVE UNDER DRAIN 4" UNDER DRAIN 4" SLOTTED HDPE UNDER DRAIN — (SOLID OUTSIDE THE IN BOTTOM TO PREVENT COMPACTION MICROBIORETENTION FACILITY)

- PRUNE AS DIRECTED RUBBER HOSE

NOTE : ALL MATERIALS AS SPECIFIED

- REMOVE BURLAP FROM TOP

2"X4"X3" WOOD STAKES

- BACKFILL MATERIAL

MATERIAL 6" MIN.

- 1'-0" ALL SIDES

TYPICAL EVERGREEN TREE PLANTING DETAIL

- COMPACTED\_BACKFILL

2 MULCH

"LANDSCAPE GUIDELINES"

- PLANT SAUCER

- WIRE GUYS

- TURNBUCKLES

 MICRO-BIORETENTION PER (F-10-111 NOT TO SCALE

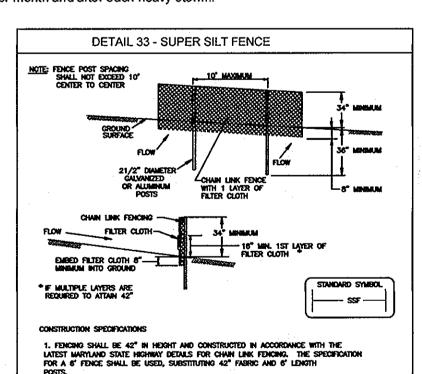
#### **IOPERATION AND MAINTENANCE SCHEDULE FOR** LANDSCAPE INFILTRATION (M-3) MICRO-BIORETENTION (M-6), RAIN GARDENS (M-7), BIORETENTION SWALE (M-8), ENHANCED FILTERS (M-9)]

The Owner shall maintain the plant material, mulch layer and soil layer annually. Maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning. Acceptable replacement plant material is limited to the following: 2000 Maryland Stormwater Design Manual Volume II, Table A.4.1 and

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 wires.

The Owner shall inspect the mulch each spring. The mulch shall be replaced SHORT-TERM VEGETATIVE COVER IS NEEDED. every two to three years. The previous mulch layer shall be removed before the SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING,

The Owner shall correct soil erosion on an as needed basis, with a minimum of SOIL AMENDMENTS: APPLY 600 IBS/ACRE 10-10-10 FERTILIZER (14 IBS/1000 once per month and after each heavy storm...



2. Chain link fence shall be fastened securely to the fence posts with wire ties. 4. FILTER CLOTH SHALL BE EMBEDDED A MINIMUM OF 8" INTO THE GROUND. 5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED. 6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SILT BUILDUPS REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE, OR WHEN SILT REACHES 50% OF FENCE HEIGHT 7. FLITER CLOTH SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TES OR STAPLES AT TOP AND MID SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR

> 50 LBS/IN (MINL)
> 20 LBS/IN (MINL)
> 0.3 GAL/FT /MINUTE (MAX.)
> 75% (MINL) MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 IBS/1000 SQ. FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING, ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPE 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

> > BY THE ENGINEER: "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."

don's SIGNATURE OF ENGINEER Appendix B.4. Construction Specifications for Environmental Site Design Practices

excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design

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

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

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

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

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

#### 5. Plant Installation

-- MOUNTABLE BERM (6" MIN.)

EXISTING PAVEMEN

EARTH FILL

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

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

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

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

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

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

#### Underdrains

Underdrains should meet the following criteria:

- Pipe- Should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTMF 758, Type PS 28, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).
- Perforations If perforated pipe is used, perforations should be %" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a 1/4" (No. 4 or 4x4) galvanized hardware cloth
- Gravel The gravel layer (No. 57 stone preferred) shall be at least 3" thick above and below the
- The main collector pipe shall be at a minimum 0.5% slope. . A rigid, non-perforated observation well must be provided (one per every 1,0000 square feet) to
- provide a clean-out port and monitor performance of the filter. • A 4" layer of pea gravel (1/4" to 1/4" stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24".

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

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

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

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil [2' to 4' deep]	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f° = 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350.R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AASHTO-M-6 & ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand

B.4.7

NATURAL TOPSOIL.

TOPSOIL APPLICATION

HIGHER IN ELEVATION.

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: THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.

B. 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.
C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.

D. THE SOIL IS SO ACIDIO THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE. FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

I. 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 EXPERIMENTAL STATION.

TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL 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 A SOIL SCIENTIST AND APPROVED BY

AGRONOMIST OR A 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 CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAT 1 AND 1/2" IN DIAMETER.

1. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.

11. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED

III. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPEAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 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.

III. 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 I—

VEGETATIVE STABILIZATION METHODS AND MATERIALS. NOTE: TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL. II. PLACE TOPSOIL (IF REQURED) AND APPLY SOIL AMENDMENTS

AS SPECIFIED IN AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION — SECTION 1 — VEGETATIVE STABILIZATION METHODS AND MATERIALS.

LTERNATIVE TO PERMANENT SEEDING - INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND COMMERCIAL FERTILIZER.
COMPOSTED SLUDGE AND AMENDMENTS MAY BE APPLIED AS COMPOSTED SELOW:

COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER
FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES SHALL BE
TESTED TO PRESCRIBE AMENDMENTS AND FOR SITES HAVING
DISTURBED AREAS UNDER 5 ACRES SHALL CONFORM TO THE
FOLLOWING REQUIREMENTS:

Supp. 1

IV. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:
I. ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST

O BRING THE SOIL INTO COMPLIANCE WITH THE FO

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

D. NO SOID 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 DISSIPATION OF
PHYTO—TOXIC MATERIALS.

OTE: TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDE

BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY

HE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF

PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS

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"

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 SEEDING 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.

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

V. TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL I

SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

1.5 PERCENT BY WEIGHT.
C. TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN

RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED

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 COMAR 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 REQUIRMENTS PRIOR TO USE. COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000 SQUARE FEET. 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.

SD PROPERTIES 3138 ROGERS AVENUE ELLICOTT CITY, MARYLAND 21043 (410-203-2460)

6/14/12 REVISE DRIVEWAY LOCATION ON LOT 104; ADD DRYWELLS AND RAIN EARDEN LOTIOA REVISION

**DETAIL 30 - EROSION CONTROL MATTING** 

TYPICAL STAPLES NO. 11 GAUGE WIRE

MARYLAND DEPARTMENT OF ENVIRON
WATER MANAGEMENT ADMINISTRAT

1. Key-in the matting by placing the top ends of the matting in a

narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples

about 4" down slope from the trench. Spacing between staples is 6

2. Stople the 4" overlap in the channel center using an 18" spacing

3. Before stapling the outer edges of the matting, make sure the

4. Staples shall be placed 2' apart with 4 rows for each strip, 2

5. Where one roll of matting ends and another begins, the end of

6. The discharge end of the matting liner should be similarly

the top strip shall overlap the upper end of the lower strip by 4, shiplap fashion. Reinforce the overlap with a double row of staples

Note: If flow will enter from the edge of the matting then the area

matting is smooth and in firm contact with the soil.

spaced 6" apart in a staggered pattern on either side.

secured with 2 double rows of staples

effected by the flow must be keyed-in.

PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND

SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES, AND ALL SLOPES GREATER

ROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7, HOWARD COUNTY

, (B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE

U.S. DEPARTMENT OF AGRICULTURE

A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSE AND PERMITS SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (410-313-1855).

2. ALL VEGETATION AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE

STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: (A) 7 CALENDAR DAYS FOR ALL PERIMETER

4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED

DESIGN MANUAL, STORM DRAINAGE.

5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR

SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOD, TEMPORARY

6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE

ANY SÉDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FO PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF

ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE

PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER

WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER

\* TO BE DETERMINED BY CONTRACTOR, WITH PRE-APPROVAL OF THE SEDIMENT CONTROL INSPECTOR WITH AN APPROVED AND ACTIVE GRADING PERMIT

EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT

ND ESTABLISHMENT OF GRASSES.

AREA TO BE VEGETATIVELY STABILIZED

WASTE/BORROW LOCATION -

7. SITE ANALYSIS :

TOTAL AREA\_\_\_\_\_ AREA DISTURBED

SEEDING, AND MULCHING (SEC. G). TEMPORARY STABILIZATION WITH MILL CH. ALONE SHALL

MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

E DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION

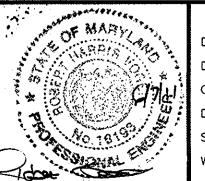
CROSS-SECTION

SEDIMENT AND EROSION CONTROL LANDSCAPE NOTES AND DETAILS

> **HOLIDAY HILLS** LOTS 103 & 104

A RESUBDIVISION OF LOT 42 OF HOLIDAY HILLS, PLAT BOOK 7 FOLIO 41 DPZ FILES: WP-10-151, ECP-11-013, F-10-111 PARCEL 220 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC. Engineers • Surveyors • Planners 8407 MAIN STREET TEL: 410.461.7666 ELLICOTT CITY, MD 21043 FAX: 410.461.8961



ROBERT H. VOGEL, PE No.1619

TAX MAP 41, GRID 6 5TH ELECTION DISTRICT

DESIGN BY: DRAWN BY: RHV CHECKED BY: SCALE:

PROFESSIONAL CERTIFICATION HEREBY CERTIFY THAT THESE DOCUMENTS WE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEE Under the laws of the state of Maryland, License no. 16193 expiration date: 09-27-2012. SHEET \_\_ OF \_

SDP-11-036