

PRIVATE RAINGARDEN OPERATION & MAINTENANCE SCHEDULE

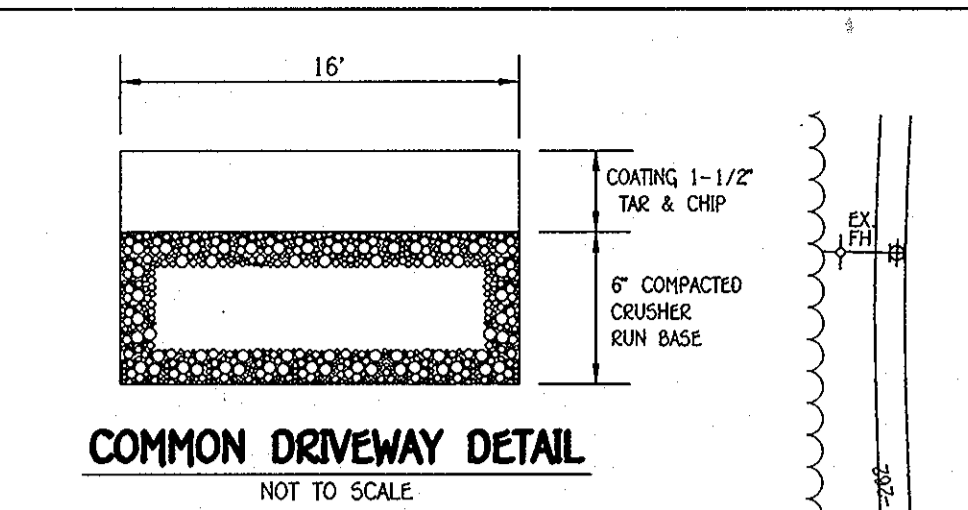
- 1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.
- 2. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDER BEYOND TREATMENT. TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STALKS AND WEEDS.
- 3. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER EVERY 2 TO 3 YEARS.
- 4. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

BIORETENTION FILTER PLANT MATERIAL

QUANTITY	NAME	MAXIMUM SPACING (FT.)
45	MIXED PERENNIALS	1 FT.
45	MIXED GRASSES	1 FT.
1	DOGWOOD	PLANT AWAY FROM INFLOW LOCATION

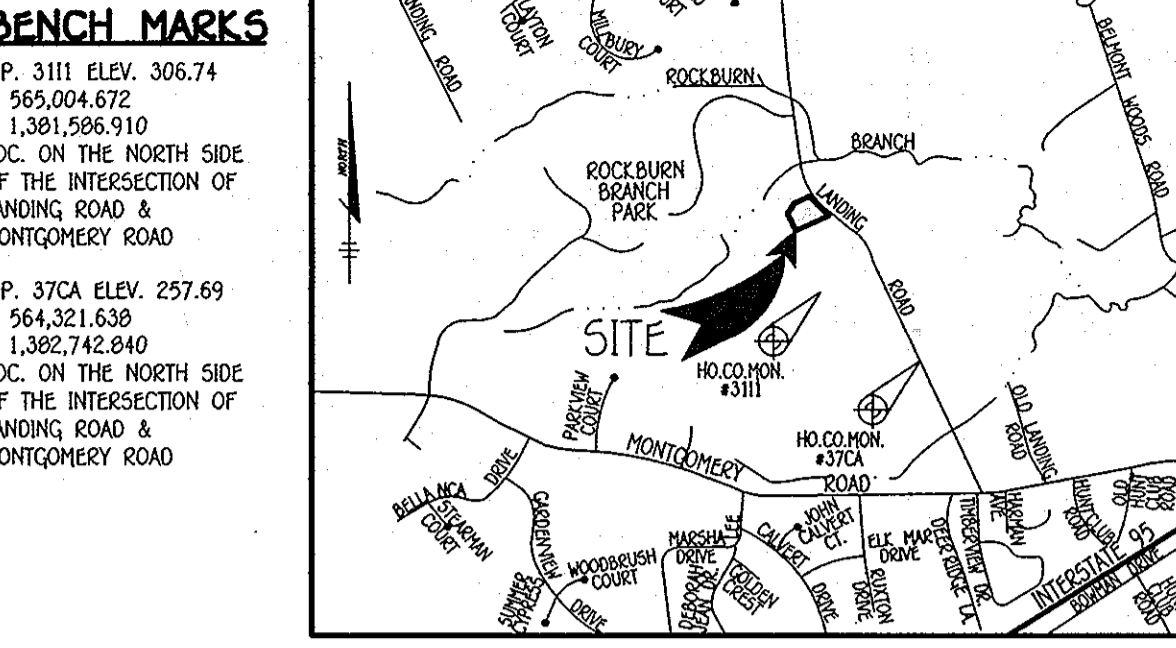
STORMWATER MANAGEMENT NOTES

- 1. WATER QUALITY VOLUME (WQV) AND GROUNDWATER RECHARGE VOLUME (REV) WILL BE PROVIDED IN ACCORDANCE WITH THE 2000 MARYLAND STORMWATER MANAGEMENT PLAN, CHAPTER 5.1 & CHAPTER 5.2. STORMWATER FILTERING SYSTEMS, SPECIFICALLY "BIORETENTION" AND CHAPTERS 5.3, DISCONNECTION OF NON-ROOFTOP RUNOFF CREDIT AND THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING MEMORANDUM ENTITLED "RESIDENTIAL RAINGARDENS - CHANNEL PROTECTION VOLUME (CPV) IS NOT REQUIRED BECAUSE THE POST DEVELOPMENT PEAK DISCHARGE FROM THIS SITE IS LESS THAN 2.0 CFS.
- 2. STORMWATER MANAGEMENT REQUIREMENTS FOR LOT 6 WILL BE MET USING ENVIRONMENTAL SITE DESIGN TO THE MAXIMUM EXTENT POSSIBLE IN ACCORDANCE WITH THE HOWARD COUNTY STORMWATER DESIGN MANUAL, CHAPTERS 1 & II, EFFECTIVE MAY, 2000. PROPOSED PRACTICES WILL BE LOCATED ON LOT 6 AS FOLLOWS:
- 3. STORMWATER REQUIREMENTS WILL BE MET BY USING DRY WELLS (M-5) FOR ROOFTOP RUNOFF. THE DRYWELL RUNOFF WILL BE TREATED BY USING NON-ROOFTOP DISCONNECTION (N-2). THE DRYWELL RUNOFF WILL BE TREATED BY USING NON-ROOFTOP DISCONNECTION (N-2) THROUGHOUT THE ENTIRE PROJECT. THESE PRACTICES SHALL BE PROMPTLY OWNED AND MAINTAINED BY ACCORDANCE WITH INDIVIDUAL DECLARATION OF COVENANTS.



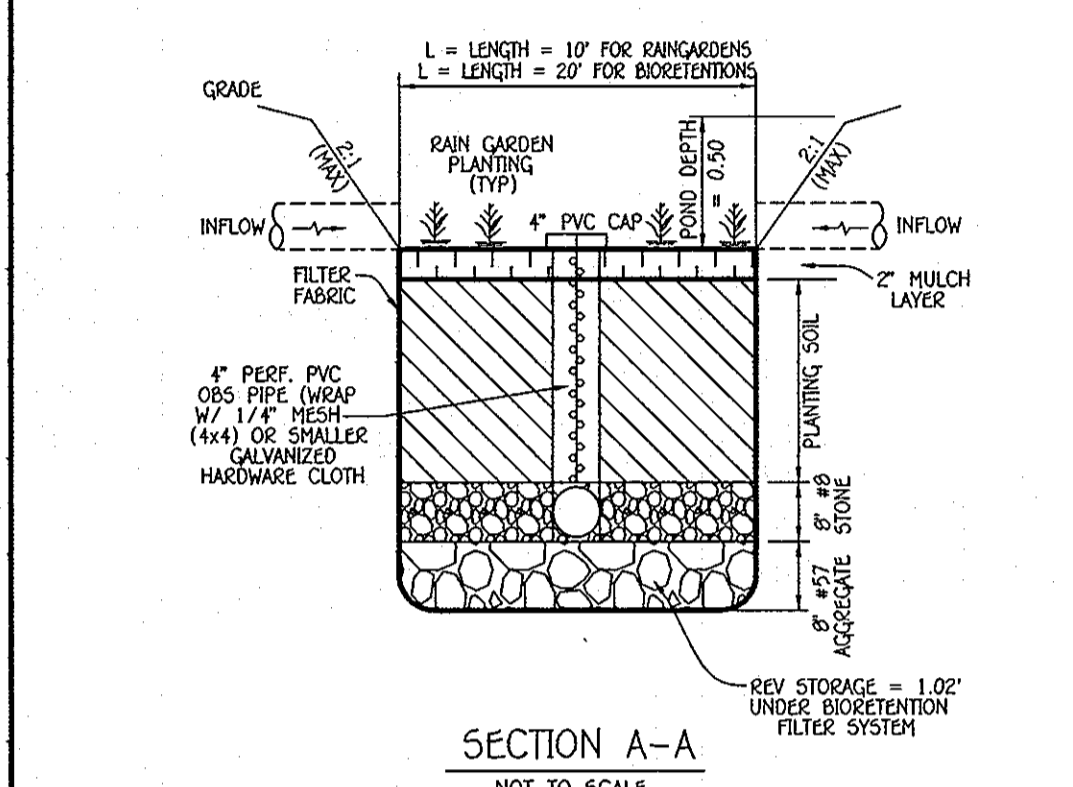
LEGEND

SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
- - - -	PROPOSED CONTOUR 2' INTERVAL
106.2	SPOT ELEVATION
WB	WALKOUT BASEMENT
TP	TREE PROTECTION
SSP/TIP	SUPER SILT/TREE PROTECTION FENCE
SSP	SUPER SILT FENCE
EM	EROSION CONTROL MATTING
100	LIMIT OF DISTURBANCE
A-1 ED	A-1 TYPE EARTH DIKE
(Diagonal lines)	LEVEL AREA FOR NON-ROOFTOP DISCONNECT
(Circle with cross)	EXISTING TREES TO REMAIN
(Circle with dot)	PERIMETER LANDSCAPE TREES

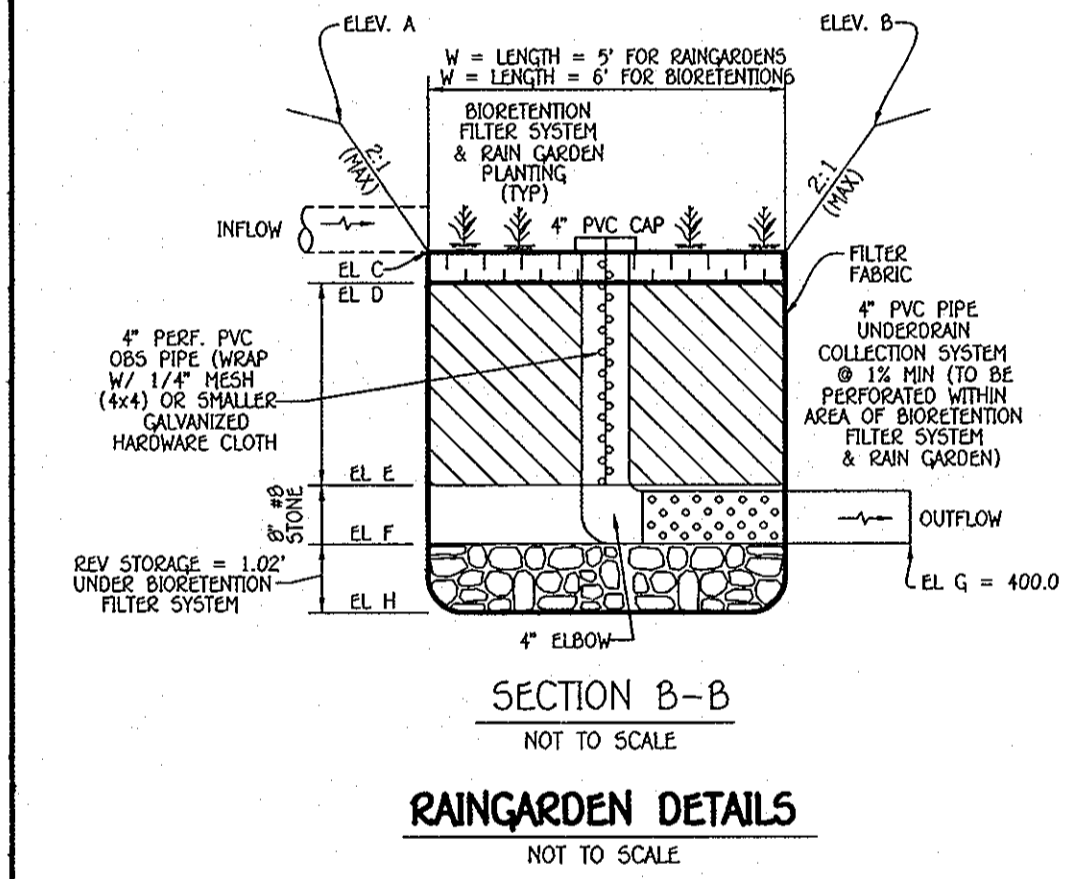
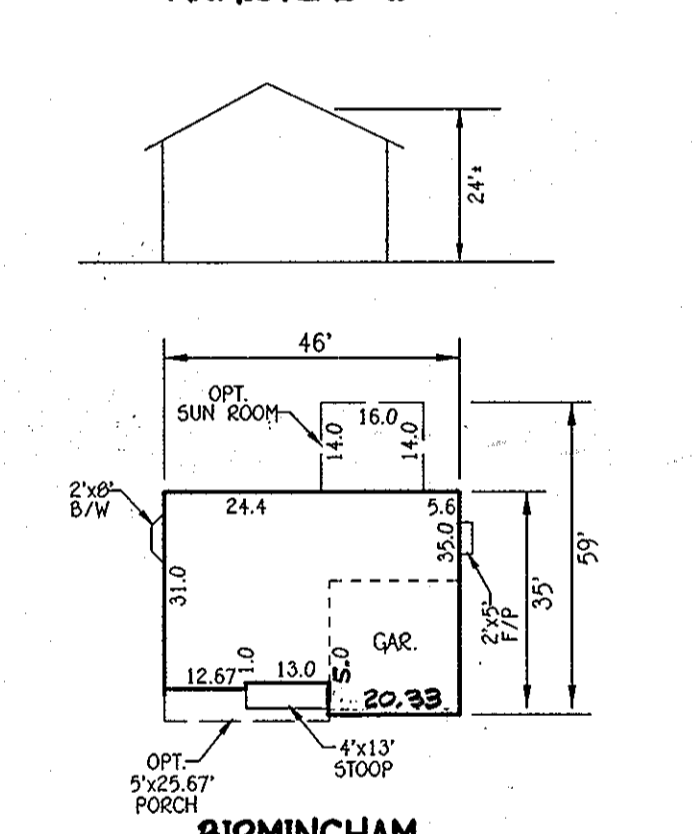


GENERAL NOTES

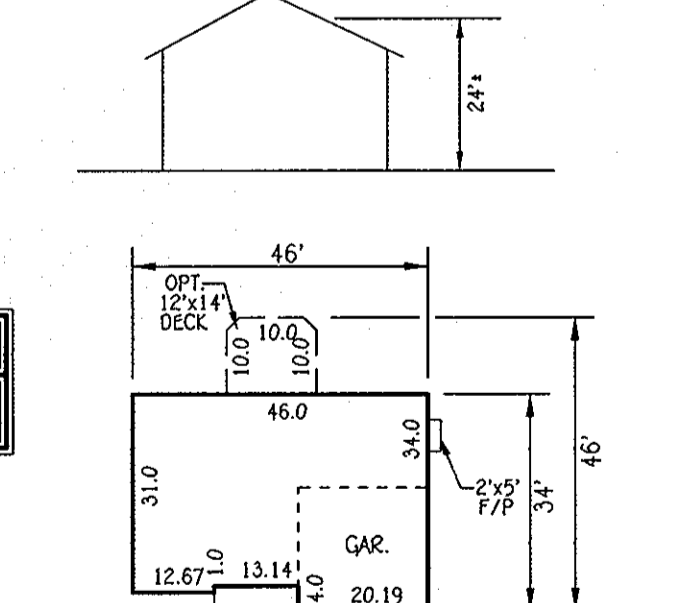
- 1. SUBJECT PROPERTY ZONED R-20 PER THE COMPREHENSIVE ZONING PLAN DATED 2/2/04 AND THE COMPTITLE ZONING AMENDMENT EFFECTIVE 7/28/05.
- 2. TOTAL AREA OF SITE: 0.930 ACRES
- 3. TOTAL NUMBER OF LOTS SUBMITTED: 3 SFD. THE HOUSE ON LOT 1 IS TO REMAIN.
- 4. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST FIVE WORKING DAYS PRIOR TO START OF WORK.
- 5. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- 6. THIS PREVIOUS DEPARTMENT OF PLANNING AND ZONING FILE NUMBERS: F-04-192, F-06-07, F-11-080 AND WAS CONT. NO. 14-4256-0.
- 7. THIS PLAN IS BASED ON A FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED ON OR ABOUT FEBRUARY, 2009 BY FISHER, COLLINS AND CARTER, INC.
- 8. ALL LOT AREAS ARE MORE OR LESS (+ OR -).
- 9. PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT. PUBLIC WATER AND SEWER IS UTILIZED IN THIS SUBDIVISION.
- 10. HORIZONTAL AND VERTICAL CONTROL DATUM IS BASED ON NAD 83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS. HOWARD COUNTY MONUMENT 3111 N 565,004.672 E 1,381,586.910 HOWARD COUNTY MONUMENT 37CA N 562,321.630 E 1,382,742.840
- 11. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
- 12. ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTING.
- 13. SEWER SERVICE FOR LOTS 4, 5 AND 6, IS PROVIDED BY GRINDER PUMP SYSTEM.
- 14. FOR DRIVEWAY ENTRANCE DETAILS REFER TO HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD DETAIL E.6.03.
- 15. DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR THE FOLLOWING (MINIMUM) REQUIREMENTS:
 - A.) WIDTH = 12' (16' IF SERVING MORE THAN ONE RESIDENCE)
 - B.) SURFACE = 6" OF COMPACTED CRUSHER RUN BASE W/TAR AND CHIP COATING (1-1/2" MIN) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND 45 FOOT TURNING RADIUS.
 - C.) STRUCTURES (BRIDGES/CULVERTS) CAPABLE OF SUPPORTING 25 GROSS TONS (H25-LOADING)
 - D.) DRAINAGE ELEMENTS CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE.
 - E.) MAINTENANCE SUFFICIENT TO INSURE ALL WEATHER USE.
- 16. NO CEMETERIES EXIST ON THIS SITE BASED ON A VISUAL SITE VISIT AND ON AN EXAMINATION OF THE HOWARD COUNTY CEMETERY INVENTORY MAP.
- 17. NO 100 YEAR FLOOD PLAN EXISTS ON-SITE.
- 18. THIS PLAN IS IN COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL 45-2003 AND THE ZONING REGULATIONS AS AMENDED BY COUNCIL BILL 75-2003. 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 AND PER THE COMPTITLE ZONING REGULATIONS DATED JULY 29, 2006.
- 19. IN ACCORDANCE WITH SECTION 120 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 BAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR WAD SETBACKS.
- 20. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION EASEMENT; HOWEVER MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALL FACILITIES SHALL BE PROMPTLY OWNED AND MAINTAINED.
- 21. THE FOREST CONSERVATION REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT FOR THIS SUBDIVISION, HAS BEEN FULFILLED BY PAYMENT OF FEE-IN-LIEU OF AFForestation OF 0.32 ACRES (13,939.2 SQ.FT.) IN THE AMOUNT OF \$6,969.60 WITH KESSLER PROPERTY, LOT 1 AND NON-BUILDABLE BULK PARCEL "X", F-06-07.
- 22. LANDSCAPING WILL BE PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FINANCIAL SURETY IN THE AMOUNT OF \$3,900.00 FOR THE 13 SHADE TREES SHALL BE POSTED WITH THE OPN DEVELOPERS AGREEMENT UNDER THIS SITE DEVELOPMENT PLAN.
- 23. NO GRADING, REMOVAL OF VEGETATION COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE WELANDS, STREAMS OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100 YEAR FLOODPLAIN.
- 24. OPEN SPACE REQUIREMENTS ARE PROVIDED BY A FEE-IN-LIEU PAYMENT OF \$4,500.00.
- 25. 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, BEAMS, FENCES, SIMILAR HOUSING UNIT TYPES AND THE DIRECTIONAL ORIENTATION OF THE PROPOSED HOUSES.
- 26. APPROVAL OF A SITE DEVELOPMENT PLAN IS REQUIRED FOR THE DEVELOPMENT OF LOTS 2 THRU 4 PRIOR TO THE ISSUANCE OF ANY GRADING PERMITS FOR THE NEW HOUSE CONSTRUCTION IN ACCORDANCE WITH SECTION 16.155 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- 27. THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BEAMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO INSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION AND WHEN NECESSARY, REPAIRED OR REPLACED.
- 28. IN ACCORDANCE WITH SECTION 16.125(3), AREAS WITH OPEN VIEWS, THIS DEVELOPMENT HAS BEEN DESIGNED AS MUCH AS POSSIBLE TO INSURE THE OPEN CHARACTER OF THE SITE AND HAS DEMONSTRATED THAT THERE WILL BE MINIMAL INTERFERENCE OF THE PANORAMIC VIEWS FROM THE ROAD.



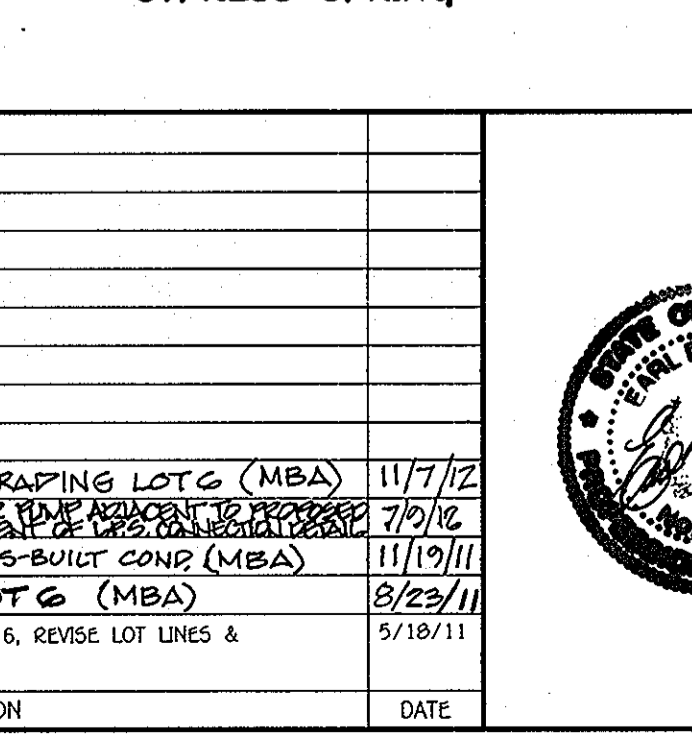
ARMISTEAD II



BIRMINGHAM



CYPRESS SPRING

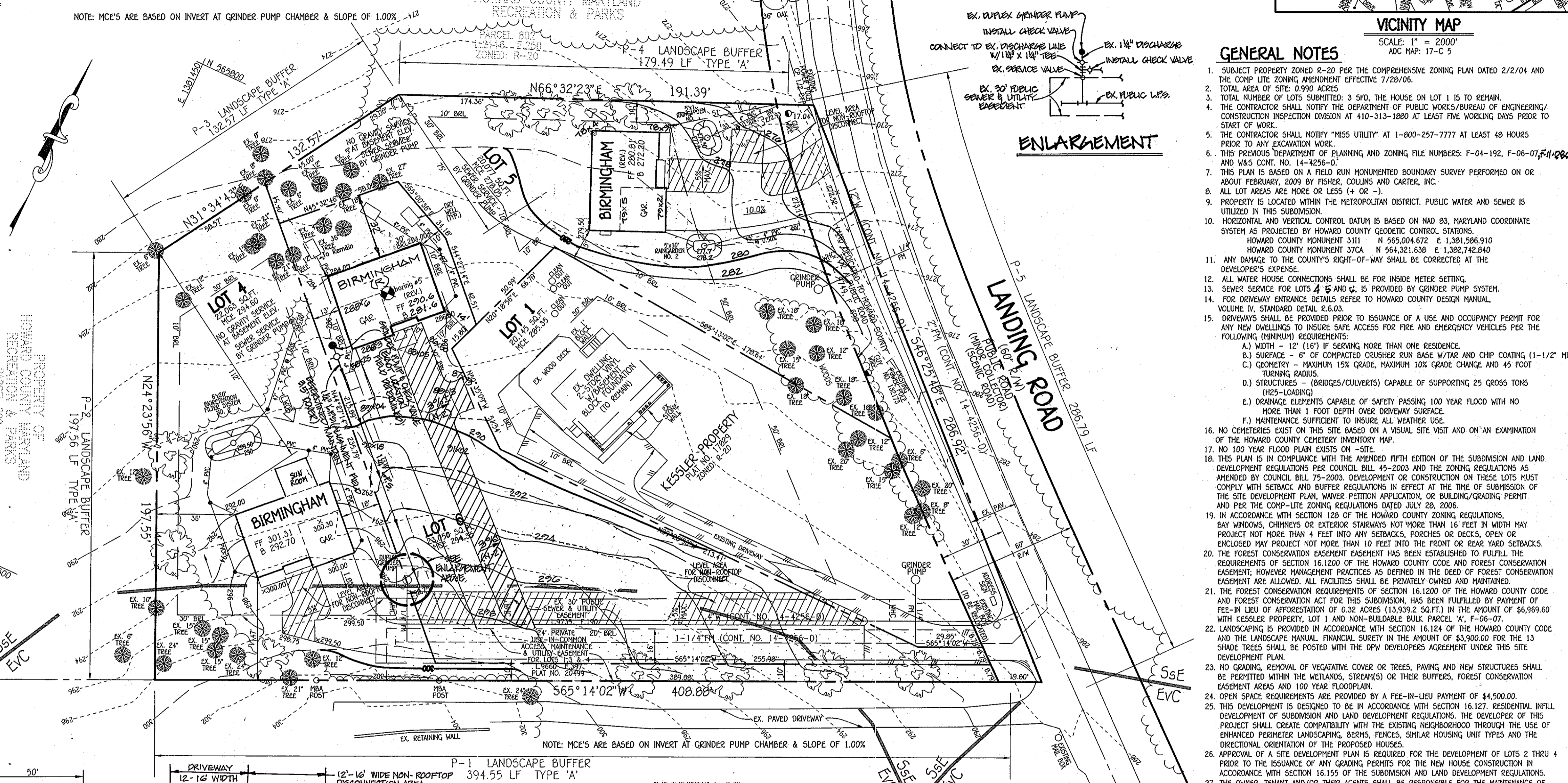
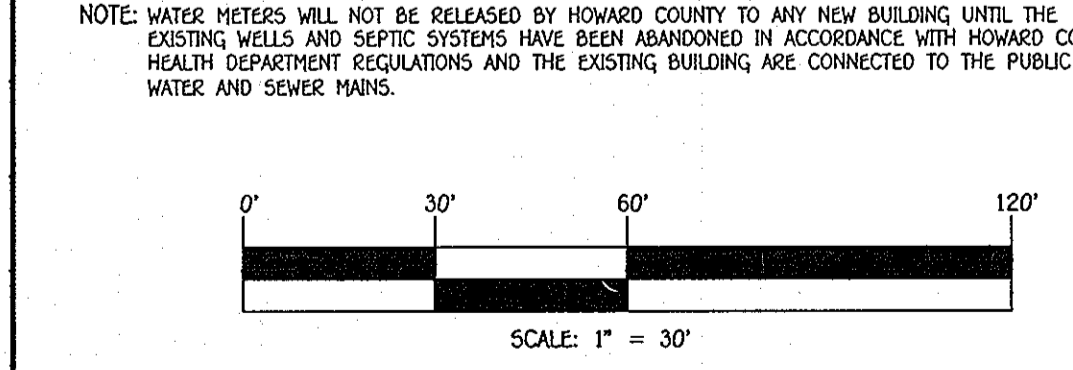


RAINGARDEN DATA

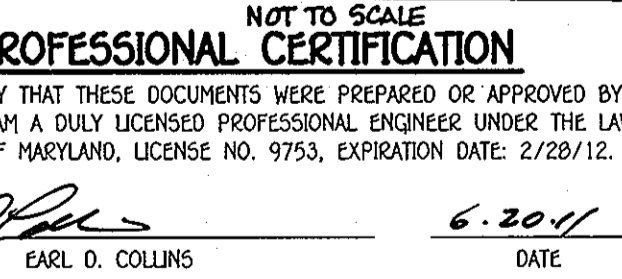
RAINGARDEN	A	B	C	D	E	F	G
1	277.00	277.00	276.50	276.25	273.75	273.08	272.93
2	278.2	278.2	277.7	277.4	274.9	274.2	274.0

PRIVATE WELL & PRIVATE SEPTIC SYSTEM CHART

PARCEL NO.	ADDRESS	OWNER	ABANDON WELL	ABANDON SEPTIC
45	5540 LANDING ROAD	LADON & REBECCA BOITHOIT	YES	YES



LOT 6 NON-ROOFTOP DISCONNECTION AREA (N-2) DETAIL



PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 9753, EXPIRATION DATE: 2/28/12.

EARL D. COLLINS DATE: 6/20/11

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. 40091, Exp Date 2/13/13.

BUILDER/DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT THE REQUIRED LANDSCAPING WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT, UPON COMPLETION OF THE PROJECT, A LETTER OF NOTICE ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Prof: DONALD R. REUWER, JR. DATE: 6/22/11

INDEX CHART

SHEET	DESCRIPTION
1	SITE DEVELOPMENT PLAN, LOTS 4, 5 & 6, NOTES, DETAILS & HOUSE TYPES
2	SEDIMENT/EROSION CONTROL NOTES & DETAILS
3	SEDIMENT/EROSION CONTROL NOTES & DETAILS

ADDRESS CHART

LOT NUMBER	STREET ADDRESS
4	5548 LANDING ROAD
5	5536 LANDING ROAD
6	5544 LANDING ROAD

SITE ANALYSIS DATA CHART

ITEM	DESCRIPTION
A	TOTAL PROJECT AREA: 1.447 ACRES OR 62,130 SQUARE FEET
B	AREA OF SUBDIVISION: 1.447 ACRES OR 62,130 SQUARE FEET
C	LIMITS OF DISTURBANCE: 1.038 ACRES OR 45,120 SQUARE FEET
D	LANDSCAPING: 1.038 ACRES OR 45,120 SQUARE FEET
E	PROPOSED USES FOR SITE: RESIDENTIAL, F-11-080
F	APPLICABLE OPZ FILE REFERENCES: F-06-07, F-04-192 & W&S CONT. NO. 14-4256-0

Purpose Statement

The purpose of this revised plan is to revise lot lines to move proposed dwelling on old lot 3 (new lot 6) to the north and revise stormwater management for new lot 6.

REVISIONS

NO.	REVISION	DATE
5	REV. D/W ALIGNMENT & GRADING LOTS 6 (MBA)	11/7/12
4	INDICATE INSTALLATION OF CONCRETE CURB AND GUTTER 12" HIGH	7/10/12
3	REV. GRP. LOT 5 TO REFLECT AS-BUILT COND. (MBA)	11/19/11
2	ADD BIRMINGHAM TO LOT 6 (MBA)	8/29/11
1	RENUMBER LOTS 2 & 3 TO LOTS 5 & 6, REVISE LOT LINES & MOVE HOUSE LOCATION ON LOT 6	5/18/11

ENGINEER'S CERTIFICATE

"I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Signature of Engineer: EARL D. COLLINS DATE: 6/20/11

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."

Signature of Developer: DONALD R. REUWER, JR. DATE: 6/22/11

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief of Planning and Development: [Signature] DATE: 7-20-11

Chief of Development Engineering Division: [Signature] DATE: 7/13/11

Director - Department of Planning and Zoning: [Signature] DATE: 7/25/11

PROJECT

PROJECT	SECTION	LOTS NO.
KESSLER PROPERTY	N/A	2, 3 & 4

PLAT

PLAT	BLOCK NO.	ZONE	TAX CODE	ELEC. DISF.	CENSUS TR.
21G14	24	R-20	31	FIRST	6069.02

WATER CODE

WATER CODE	SEWER CODE
B-01	2150562

REVISED SITE DEVELOPMENT PLAN NOTES, DETAILS & HOUSE TYPES

SINGLE FAMILY DETACHED

KESSLER PROPERTY

LOTS 4 THRU 6

TAX MAP NO.: 31 PARCEL NO.: 555 GARY NO.: 24
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' DATE: MARCH, 2009

SHEET 1 OF 3

PLANTING SPECIFICATIONS

Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein. All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and shall conform to the species, size, root and shape shown on the planting list and the American Association of Nurserymen (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, dieback, root rot, stem or trunk injuries, abrasions of the bark, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable disfigurements. Plant material that is weak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All plants shall be freshly dug, no heated-in plants from cold storage will be accepted. Unless otherwise specified, all general conditions, planting operations, details and planting specifications shall conform to "Landscape Specification Guidelines for Baltimore-Washington Metropolitan Area", (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architects, latest edition, including all addenda.

Contractor shall be required to guarantee all plant material for a period of one year after date of acceptance in accordance with the appropriate section of the Landscape Guidelines. Contractor's attention is directed to the maintenance requirements found within the one year specifications including watering and replacement of specified plant material.

Contractor is responsible for notifying utility companies, utility contractors and "Miss Utility" a minimum of 48 hours prior to beginning any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.

Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence or blaze orange safety fence at the drip line.

Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within the growing season of completion of site construction.

Bid shall be based on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications.

Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the planting list, the quantities on the plan take precedence.

All shrubs shall be planted in continuous trenches or prepared planting beds and mulched with composted hardwood mulch as details and specified except where noted on plans.

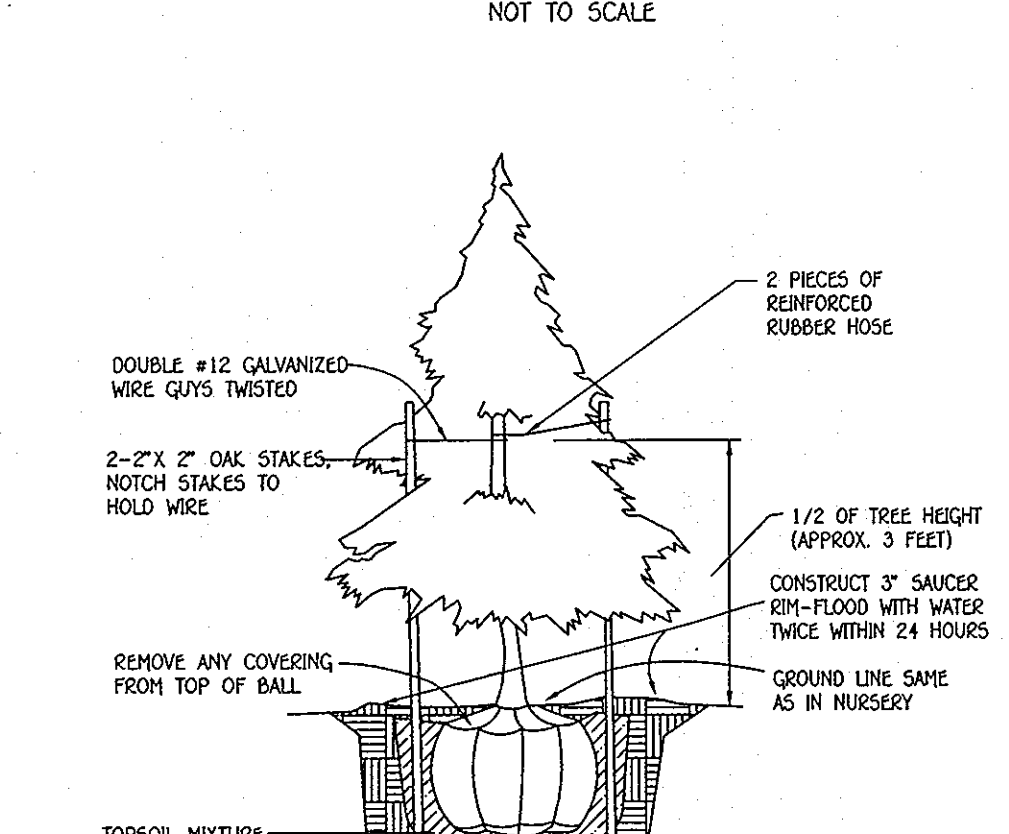
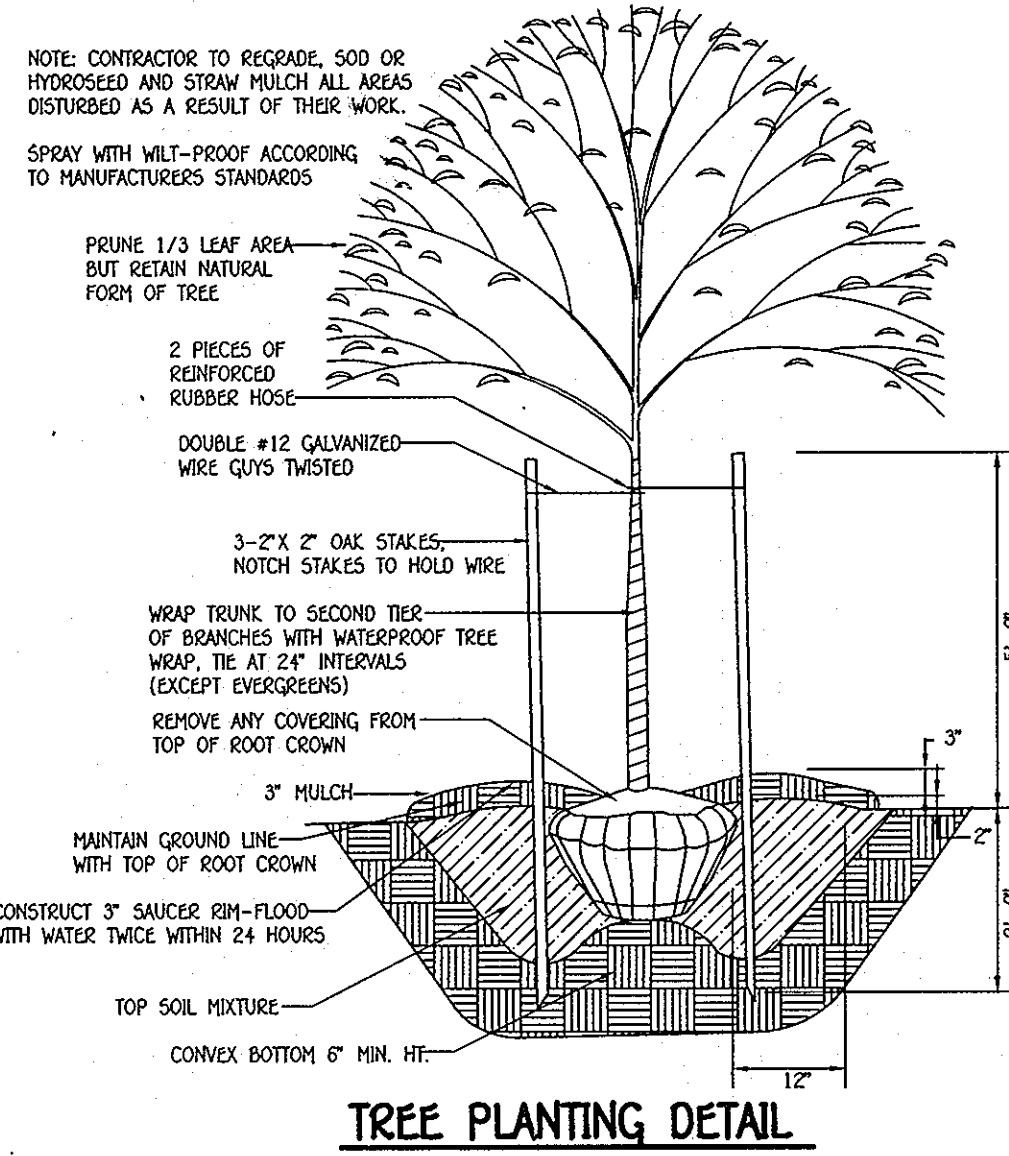
Positive drainage shall be maintained in planting beds 2 percent slope.

Planting mix shall be as follows: Deciduous Plants - two parts topsoil, one part well-rotted cow or horse manure. Add 3 lbs. of standard fertilizer per cubic yard of planting mix. Evergreen Plants - two parts topsoil, one part humus or other approved organic material. Add 3 lbs. of evergreen (acidic) fertilizer per cubic yard of planting mix. Topsoil shall conform to the Landscape Guidelines.

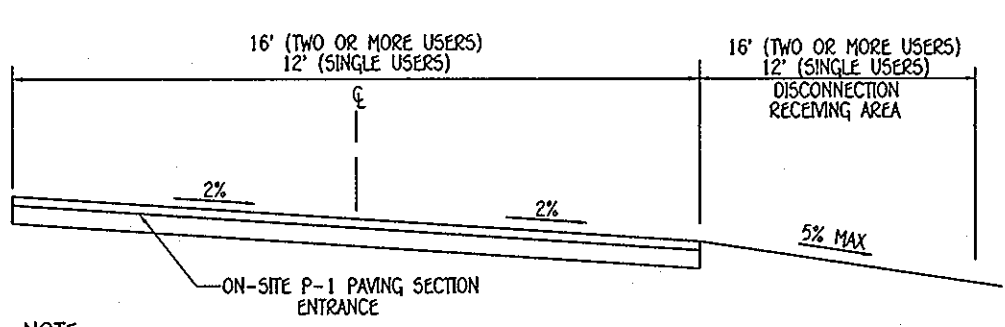
Weed Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Caution: Be sure to carefully check the chemical used to assure its adaptability to the specific ground cover to be treated.

All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded and seeded.

This plan is intended for landscape use only. See other plan sheets for more information on grading, sediment control, layout, etc.



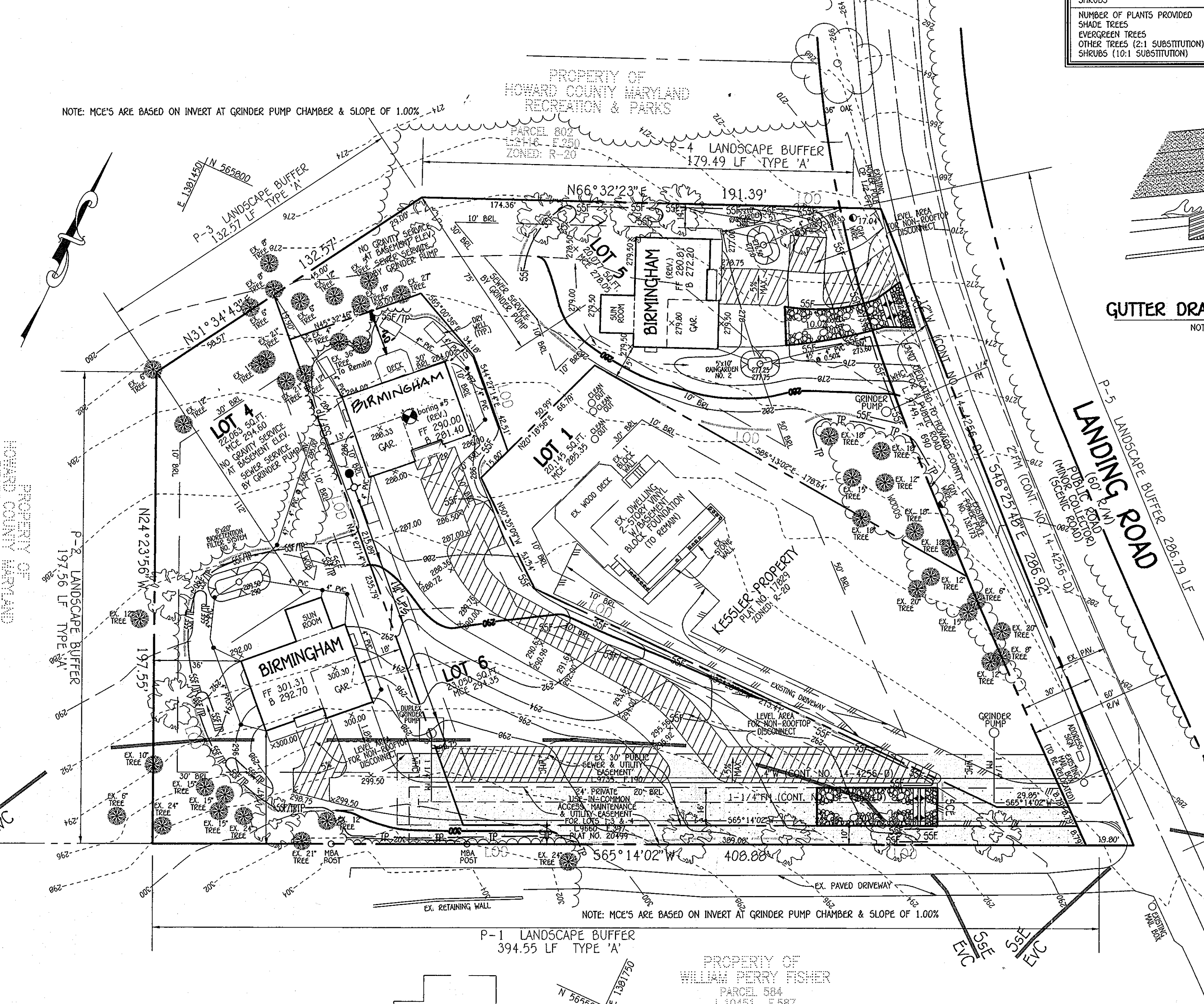
LANDSCAPE PLANT SCHEDULE			
QTY.	KEY	NAME	SIZE
13		ACER RUBRUM 'RED SUNSET' RED SUNSET RED MAPLE	2'-3' CALIPER FULL CROWN B/B



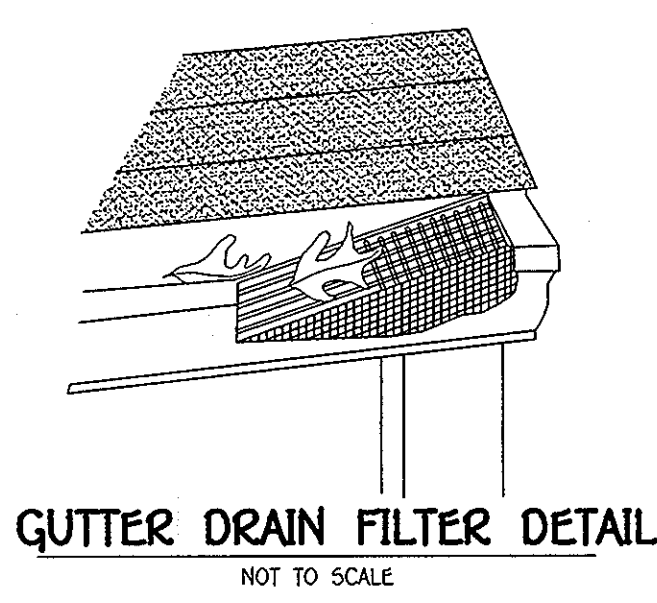
TYPICAL PRIVATE DRIVE CROSS SLOPE SECTION
NOT TO SCALE

DRY WELL CHART						
LOT NO.	AREA OF ROOF PER DOWN SPOUT REQUIRED STORAGE TREATMENT	VOLUME	AREA OF STORAGE TREATMENT	NO. OF DRYWELLS	* D	L W
6	400.50 SQ. FT.	75 C.F.	100%	100%	4	5' x 8' x 5'

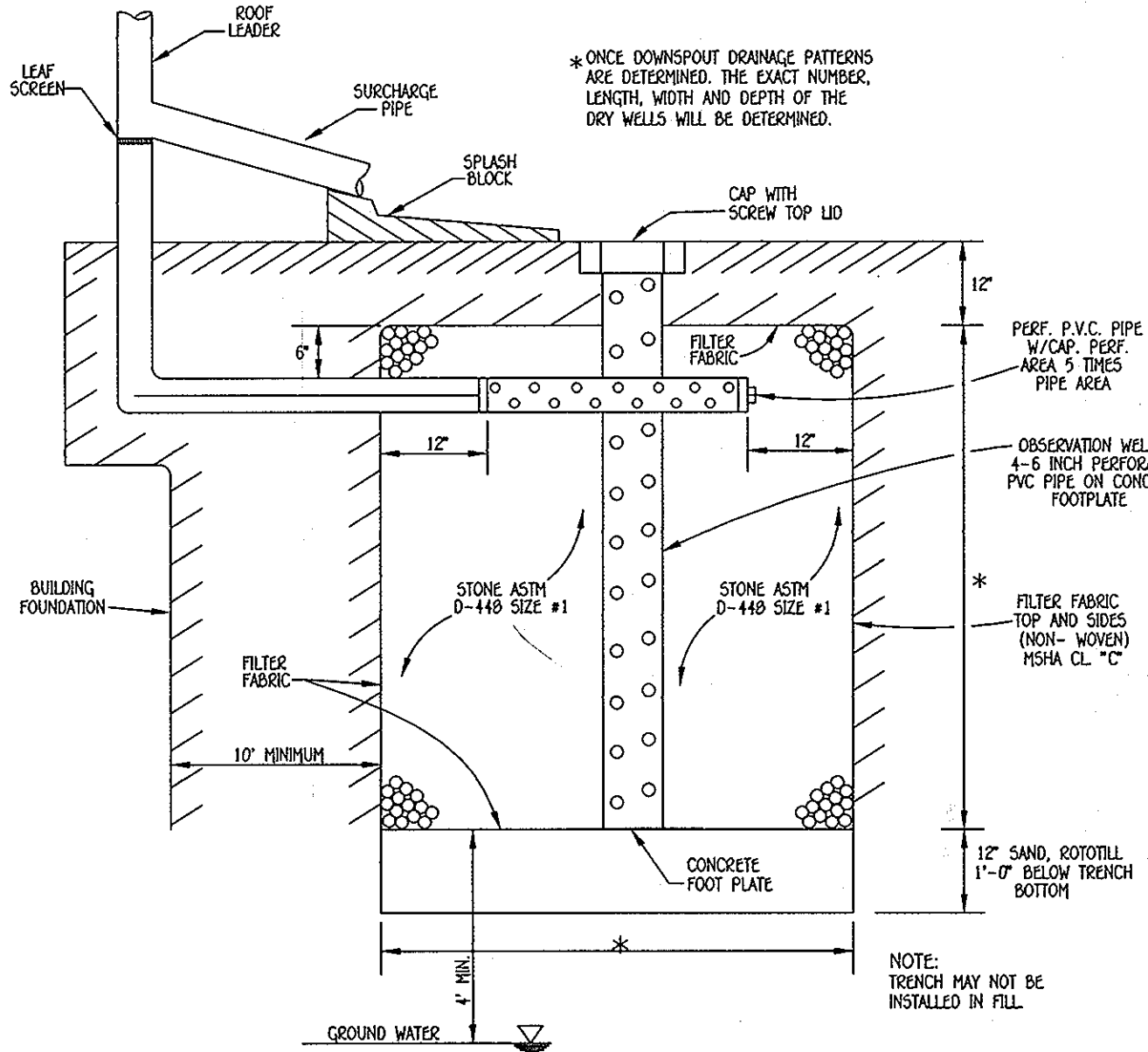
SOILS LEGEND		
SOIL	NAME	CLASS
EVC	EVEBORO LOAMY SAND, 5 TO 15 PERCENT SLOPES	A
SSE	SASSAFRAS SOILS, 15 TO 40 PERCENT SLOPES	B



CATEGORY	ADJACENT TO PERIMETER PROPERTIES					ADJACENT TO ROADWAY	TOTAL
	'X' (PERIMETER 1)	'X' (PERIMETER 2)	'X' (PERIMETER 3)	'X' (PERIMETER 4)	'X' (PERIMETER 5)		
LANDSCAPE TYPE	394.55 LF	197.56 LF	132.57 LF	179.49 LF	286.79 LF		
LINEAR FEET OF PERIMETER							
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	N/A	YES, CREDIT FOR EX. TREES TO REMAIN 90 LF	YES, CREDIT FOR EX. TO REMAIN 110 LF	N/A	N/A		
NUMBER OF PLANTS REQUIRED	6 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	1 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	1 SHADE TREE 0 EVERGREEN TREES 0 SHRUBS	3 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	2 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	13 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	
NUMBER OF PLANTS PROVIDED	6 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS (2:1 SUBSTITUTION)	1 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	1 SHADE TREE 0 EVERGREEN TREES 0 SHRUBS	3 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	2 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	13 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	



GUTTER DRAIN FILTER DETAIL
NOT TO SCALE



DRY WELL DETAIL
NOT TO SCALE

STORMWATER MANAGEMENT NOTES

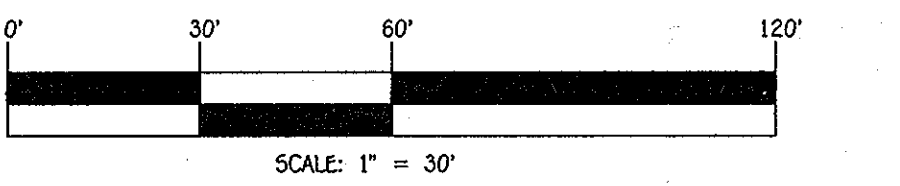
1. STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH CHAPTER 5, "ENVIRONMENTAL SITE DESIGN" OF THE 2007 MARYLAND STORMWATER MANAGEMENT DESIGN MANUAL, EFFECTIVE MAY 4, 2010.
2. MAXIMUM CONTRIBUTING ROOF TOP AREA TO EACH DOWNSPOUT SHALL BE 1,000 SQ. FT. OR LESS.
3. DRYWELLS SHALL BE PROVIDED AT LOCATIONS WHERE THE LENGTH OF DISCONNECTION IS LESS THAN 15' AT 5%. THE SIZE AND CONSTRUCTION OF THE DRYWELL SHALL BE IN ACCORDANCE WITH THE DETAIL SHOWN ON THIS SHEET.
4. FINAL GRADING IS SHOWN ON THIS SITE DEVELOPMENT PLAN.

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED, DISCONNECTION OF NONROOFTOP RUNOFF (N-2)

1. MAINTENANCE OF AREAS RECEIVING DISCONNECTION RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTON OR DEVELOPMENT OF IMPERVIOUS AREA IN COMMERCIAL AREAS FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

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

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



PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 9753, EXPIRATION DATE: 2/28/10.

Earl D. Collins
EARL D. COLLINS DATE: 6-20-11

Purpose Statement
The purpose of this revised plan is to revise lot lines to move proposed dwelling on old lot 3 (new lot 6) to the north and revise stormwater management for new lot 6.

NO.	REVISION	DATE
1	RENUMBER LOTS 4 & 5 TO LOTS 5 & 6, REVISE LOT LINES & MOVE HOUSE LOCATION ON LOT 6	5/18/11
2	INDICATE INSTALLATION OF GRINDER PUMP AND PUMP ROOM, PUMP ROOM ON LOT 6, ADD ANIMALS AT THE END OF CONNECTION	7/9/12

ENGINEER'S CERTIFICATE
"I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Earl D. Collins
Signature of Engineer EARL D. COLLINS DATE: 6-20-11

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 process 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 R. Reuwer, Jr.
Signature of Developer DONALD R. REUWER, JR. DATE: 6/22/11

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

John R. Kolbert
John R. Kolbert DATE: 7/13/11

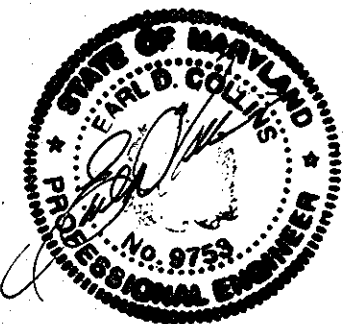
OWNER
KESSLER PROPERTY, LLC
5300 DORSEY HALL DRIVE
ELLCOTT CITY, MARYLAND 21042
443-367-0422

BUILDER/DEVELOPER
WAVERLY BUILDERS & DEVELOPERS, LLC
5300 DORSEY HALL DRIVE
ELLCOTT CITY, MARYLAND 21042
443-367-0422

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING				
<i>Victor Shelton</i> Chief, Division of Land Development	7-20-11			
<i>John Williams</i> Chief, Development Engineering Division	7/19/11			
<i>Thomas S. Switzer</i> Director - Department of Planning and Zoning	7/25/11			
PROJECT: KESSLER PROPERTY	SECTION: N/A	LOTS NO.: 2, 3 & 4		
PLAT: 21014 4 20499	BLOCK NO.: 24	ZONE: R-20	TAX/ZONING: 31	ELECT. DIST.: 6069.02
WATER CODE: B-01	SEWER CODE: 2150562			

REVISED SEDIMENT/EROSION CONTROL PLAN LANDSCAPE NOTES & DETAILS
SINGLE FAMILY DETACHED
KESSLER PROPERTY
LOTS 4 THRU 6
TAX MAP NO.: 31 PARCEL NO.: 555 GRID NO.: 24
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' DATE: MARCH, 2009
SHEET 2 OF 3

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALDORNE NATIONAL FREE
ELLCOTT CITY, MARYLAND 21042
410-481-2295



20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION DEFINITION

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

PURPOSE
Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas, and avoiding visible and small reservoirs.

CONDITIONS WHERE PRACTICE APPLIES
This practice shall be used on denuded areas specifically on areas that are highly erodible or critically eroding areas. This specification is intended to promote Seeding to quickly establish vegetative cover for short duration (30 to one year), and Permanent Seeding for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary soil stabilization, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are dams, dunes, cut bank fill slopes and other areas at final grade, former stockpiles and staging areas, etc.

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

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

- Site Preparation**
 - Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
 - Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
 - Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed areas over 5 acres.
 - Soil Test and Line Specifications**
 - Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analysis.
 - Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall be delivered to the site fully bagged according to the applicable state fertilizer laws and shall bear the trade name, trade mark or trademark and warranty of the producer.
 - Lime materials shall be ground limestone (hydrated or burnt lime) may be substituted which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 90-100% will pass through a #20 mesh sieve.
 - Incorporate lime and fertilizer into the top 3-5" of soil by disk or other suitable means.
 - Seeded Preparation**
 - Temporary Seeding**
 - Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or disped smooth, but left in the roughened condition. Seed breaks (greater than 30) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
 - Apply fertilizer and lime to the soil.
 - Incorporative lime and fertilizer into the top 3-5" of soil by disk or other suitable means.
 - Permanent Seeding**
 - Minimum soil conditions required for permanent vegetative establishment:
 - Soil pH shall be between 6.0 and 7.0.
 - Suitable soils shall be less than 500 parts per million (ppm) of total salts. The soil shall contain less than 400 clay, but enough fine grained material (0.075 to 0.425) to provide the capacity to hold a moderate amount of moisture. An exception is if loesslike or loesslike loesslike is to be planted, then a sandy soil (0.075 to 0.425) plus clay would be acceptable.
 - Soil shall contain 15% minimum organic matter by weight.
 - Soil must contain sufficient pore space to permit adequate root penetration.
 - If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
- Soil Specifications**
 - All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to retesting by a recognized seed laboratory. Seed must have been tested within six months immediately preceding the date of sowing such material on this job.
 - Note: Seed tests shall be made available to the inspector to verify type and rate of seed used.
 - Inoculant - The inoculant for tree and shrub seedlings shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant at seeding on grade. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75-80° F. can weaken bacteria and make the inoculant less effective.

- Methods of Seeding**
 - Hydroseeding** Apply seed uniformly with hydroseeder (carry seeds and fertilizer), broadcast or drop seeds or a calibrator seeder.
 - If fertilizer is being added at the time of seeding, the application rates amounts will not exceed the following: nitrogen maximum of 100 lbs. per acre total of soluble nitrogen (F025 phosphorus, 200 lbs./acre, 120 lbs./acre) 400 lbs/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.
 - Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
 - Dry Seeding** This includes use of conventional drop or broadcast spreaders.
 - Seed spreads dry shall be incorporated into the soil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 265 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
 - Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
 - Drill or Calibrator Seeding** Mechanized seeders that apply and cover seed with soil.
 - Outspacing seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm after planting.
 - Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
- Mulch Specifications (in order of preference)**
 - Straw shall consist of through threshed wheat, rye or oat straw, reasonable light in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
 - Wood Cellophane Fiber Mulch (WCF)
 - WCF shall consist of specially prepared wood cellophane processed into a uniform fibrous plastic sheet.
 - WCF shall be dried green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniform spread stratum.
 - WCF including dye shall contain no germination or growth inhibiting factors.
 - WCF material shall be manufactured and processed in such a manner that the wood cellophane 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 shall form a better-inked ground cover, on application having moisture absorption and permeation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - WCF material shall contain no chemicals or components at concentrations levels that will be phytotoxic.
 - WCF must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 10% maximum, and water absorbency of 100 to 300 times its own weight.

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

Slope	Stepness	Slope Length (Maximum)	Silt Fence Length (Maximum)
0 - 10%	0 - 101'	Unlimited	Unlimited
10 - 20%	101 - 51'	200 feet	1500 feet
20 - 33%	51 - 31'	100 feet	1000 feet
33 - 50%	31 - 21'	100 feet	500 feet
50% +	21 +'	50 feet	250 feet

STANDARDS AND SPECIFICATIONS FOR TOPSOIL

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

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

Conditions Where Practice Applies
This practice is limited to areas having 2:1 or flatter slopes where:

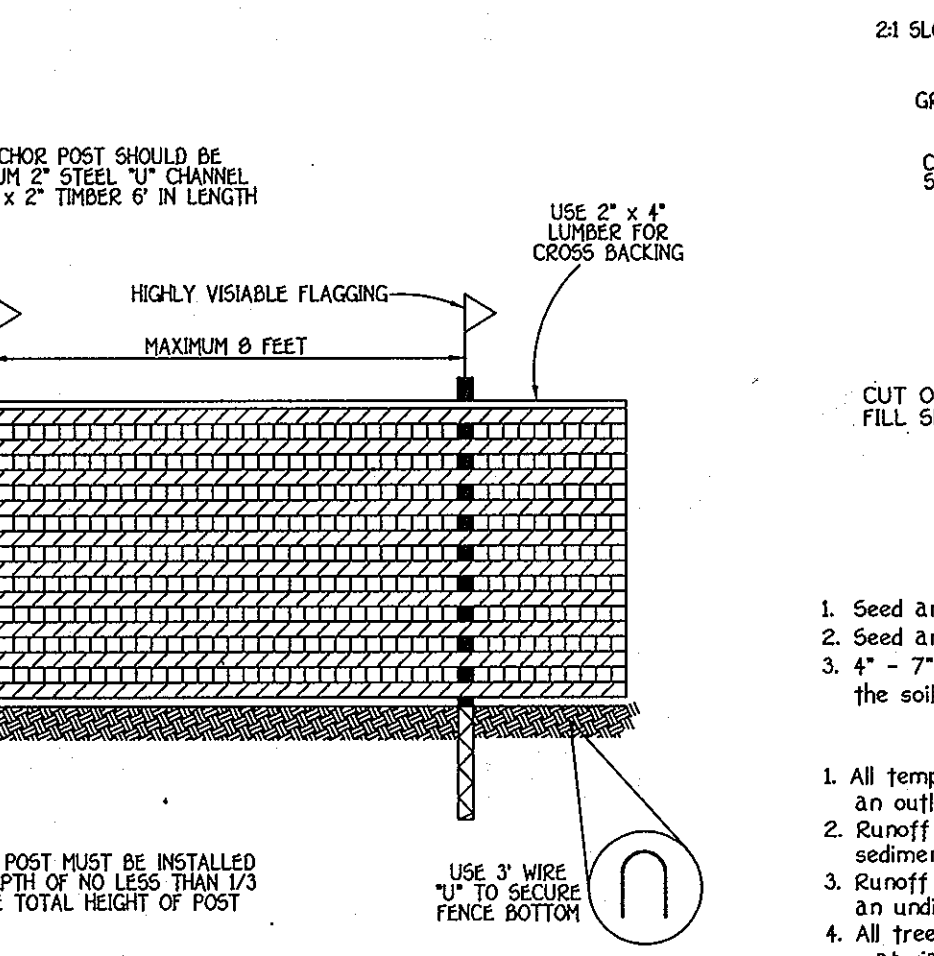
- The texture of the exposed subsoil material is not adequate to produce vegetative growth.
- The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
- The original soil to be replaced contains material toxic to plant growth.
- The soil is so acidic 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.

Construction and Material Specifications

- 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 USNR-SCS in cooperation with Maryland Agricultural Experiment Station.
 - Topsoil Specifications - Soil to be used as topsoil must meet the following:**
 - Topsoil shall be a loam, sandy loam, clay loam, silty loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
 - Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutgrass, poison ivy, thistle, or others as specified.
 - Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1000 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:
For sites having disturbed areas under 5 acres:
i. Embedments shall be constructed in lifts as prescribed on the plans.
ii. Soil shall be stabilized immediately when the vertical height of the multiple lifts reaches 12" or when this depth is topsoiled, whichever is the shaller of the two.
iii. At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embedment to intercept surface runoff and convey it down the slope in a non-erodible manner to a sediment trap or other suitable means.
iv. Construction sequence: Refer to Figure 4 (below).
a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the excavation.
b. Organic content of topsoil shall be not less than 1.5 percent by weight.
c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
d. No acid or acid soil shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control with sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.
- Note: Topsoil specifications 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.

- Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.** For sites having disturbed areas under 5 acres:
 - On soil meeting Topsoil Specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:**
 - 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.
 - Organic content of topsoil shall be not less than 1.5 percent by weight.
 - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
 - No acid or acid soil shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control with sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.
- Note: Topsoil specifications 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.
- Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.**
- Topsoil Application**
 - 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.
 - Grading on the areas to be topsoiled, which have been previously established, shall be maintained at least 4" or higher in elevation.
 - Topsoil shall be uniformly distributed in a 4" - 6" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that seeding or sodding 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 other pockets.
 - Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seeding preparation.
 - Alternative for Permanent Seeding -** Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
 - Composted sludge material 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 08.04.02.04.
 - Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
 - 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 a normal lime application rate.
- References: Guideline Specifications, Soil Preparation and Soddling, MD-VA, Pub. #, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institute, Revised 1973.



NOTES:

- FOOT PROTECTION DEVICE ONLY.
- RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
- BOUNDARIES OR RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
- ROOT DAMAGE SHOULD BE AVOIDED.
- PROTECTIVE SIGNAGE MAY ALSO BE USED.
- DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

BLAZE ORANGE PLASTIC MESH TREE PROTECTION DETAIL NOT TO SCALE

EARTH DIKE NOT TO SCALE

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas that need to be redistributed where a short-term vegetative cover is needed.

Seeding Preparation: Loosen upper three inches of soil by rolling, discing or other acceptable means before seeding, if not previously loosened.

Soil Amendments: Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq.ft.)

Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-7/2 bushels per acre of annual rye (3.2 lbs. per 1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.07 lbs. per 1000 sq.ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well-anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seeding. Another mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seeded Preparation: Loosen upper three inches of soil by rolling, discing or other acceptable means before seeding, if not previously loosened.

Soil Amendments: In lieu of soil test recommendations use one of the following schedules:

- Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 500 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 40 lbs. per acre 30-0-0 ureaform fertilizer (9 lbs. per 1000 sq.ft.).
- Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 1000 lbs. per acre 10-10-10 fertilizer (23 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil.

Seeding: For the period March 1 thru April 30 and from August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs. per 1000 sq.ft.) of Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.05 lbs. per 1000 sq.ft.) of weeping lovegrass. During the period October 16 thru February 28, protect site by one of the following options:

- 2 tons per acre of well-anchored mulch straw and seed as soon as possible in the spring.
- Use sod.
- Seed with 60 lbs. per acre Kentucky 31 Tall Fescue per acre with 2 tons per acre well-anchored straw.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seeding. Another mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

Maintenance: Inspect all seeded areas and make needed repairs, replacements and reseedings.

SEDIMENT CONTROL NOTES

A minimum of 48 hours notice must be given to the HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING for SEDIMENT CONTROL. DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (3-18-95).

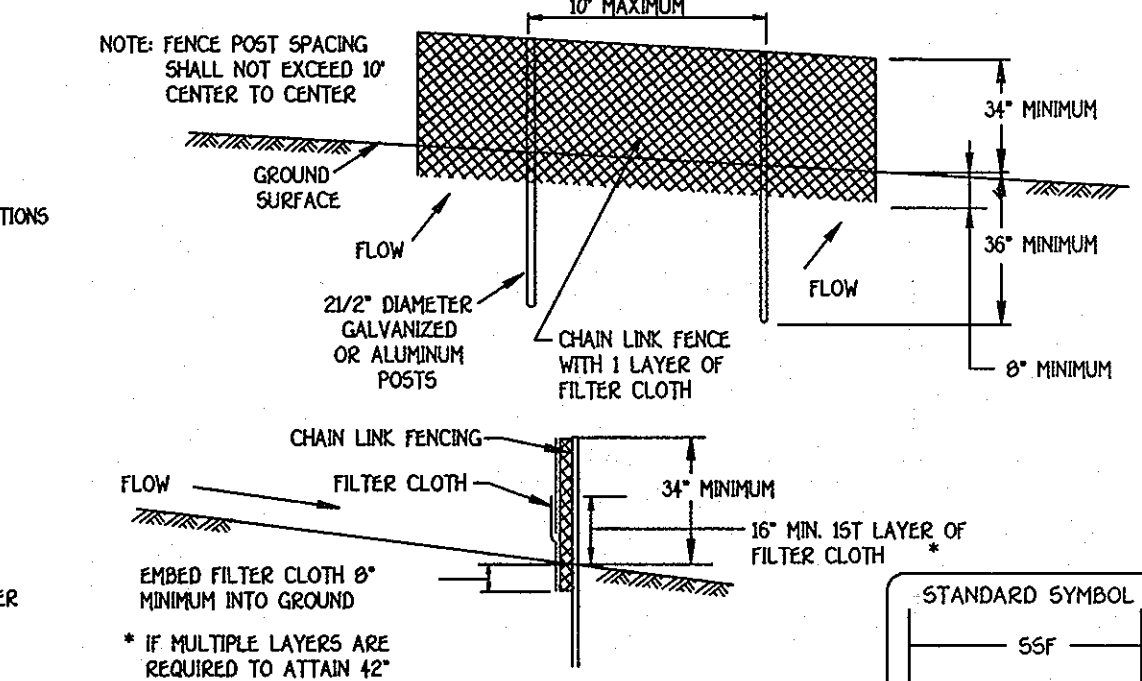
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THEREOF.
- FOLLOWING INSTALLATION OF SEDIMENT CONTROL STRUCTURES, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN 47 CALENDAR DAYS FOR ALL PERMITS EXCEPT CONSTRUCTION STRUCTURES, DICES, PERMITS SLOPES AND ALL SLOPES STEEPER THAN 3:1 BY 14 DAYS.
- 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 SEC. 50, SDC SEC. 50. TEMPORARY SEEDING SEC. 50, AND MULCHING SEC. 50. TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE USED WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:**
 - TOTAL AREA OF SITE: 1497 ACRES
 - AREA DISTURBED: 0.960 ACRES
 - AREA TO BE ROOPED OR PAVED: 0.257 ACRES
 - AREA TO BE VEGETATIVELY STABILIZED: 0.603 ACRES
 - TOTAL CUT: 0 CUTS
 - TOTAL FILL: 0 CUTS
- OFFSITE WASTE/DORROW AREA LOCATION STOCKPILING WILL NOT BE PERMITTED ON SITE.
- ANY SEDIMENT CONTROL PRACTICE SHALL BE INSTALLED UNDER GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS 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 PERMITTED EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITH ONE WORKING DAY, WHICHEVER IS SHORTER.

Design Criteria

Slope	Slope Stepness	Slope Length (Maximum)	Silt Fence Length (Maximum)
0 - 10%	0 - 101'	Unlimited	Unlimited
10 - 20%	101 - 51'	100 feet	1500 feet
20 - 33%	51 - 31'	100 feet	1000 feet
33 - 50%	31 - 21'	100 feet	500 feet
50% +	21 +'	50 feet	250 feet

SEQUENCE OF CONSTRUCTION

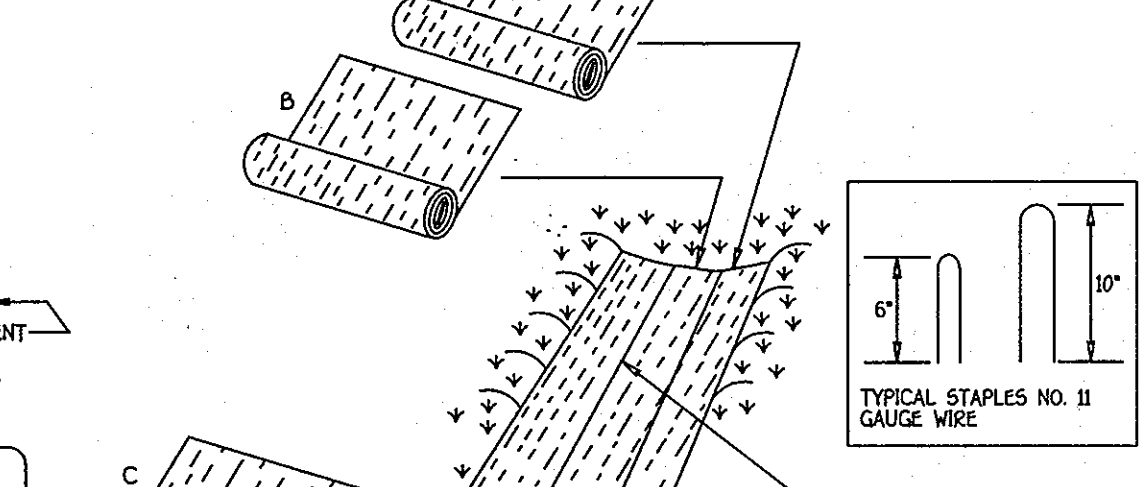
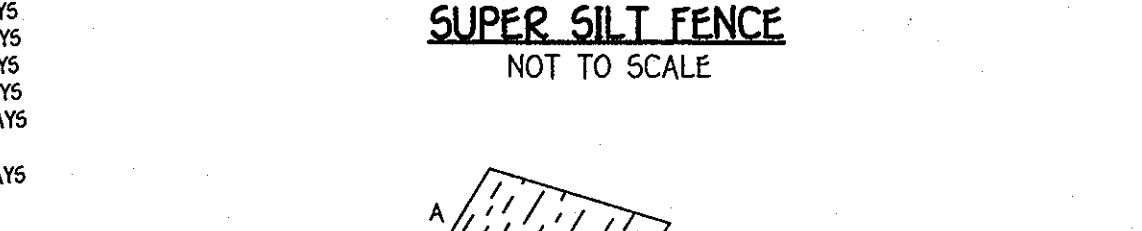
- OBTAIN GRADING PERMIT 7 DAYS
- INSTALL SEDIMENT AND EROSION CONTROL DEVICES AS SHOWN ON PLAN 2 DAYS
- CLEAR AND GROUND TO LIMITS OF DISTURBANCE 4 DAYS
- INSTALL TEMPORARY SEEDING 4 DAYS
- CONSTRUCT BLASTING 60 DAYS
- CONSTRUCT BIO-RETENTION FACILITY/RAIN GARDEN/INSTALL S.F.F. 2 DAYS
- FINE GRADE SITE AND INSTALL PERMANENT SEEDING AND LANDSCAPE 14 DAYS
- REMOVE SEDIMENT CONTROL DEVICES AS UPLAND AREAS ARE STABILIZED AND PERMITS IS GRANTED BY E/S CONTROL INSPECTOR. 7 DAYS



- Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6" fence shall be used, substituting 42" fabric and 6" length posts.
 - Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
 - Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid sections.
 - Filter cloth shall be embedded a minimum of 6" into the ground.
 - When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
 - Maintenance shall be performed as needed and silt buildups removed when 'badges' develop in the silt fence, or when silt reaches 50% of fence height.
 - Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:
- | Tensile Strength | Tensile Modulus | Flow Rate | Filtering Efficiency | Test: MSMT 509 | Test: MSMT 509 | Test: MSMT 322 | Test: MSMT 322 |
|------------------|-----------------|-------------------------|----------------------|----------------|----------------|----------------|----------------|
| 50 lb/in (min) | 20 lb/in (min) | 0.3 gal/ft (minute) max | 75% (min) | | | | |
- Design Criteria**
- | Slope | Slope Stepness | Slope Length (Maximum) | Silt Fence Length (Maximum) |
|----------|----------------|------------------------|-----------------------------|
| 0 - 10% | 0 - 101' | Unlimited | Unlimited |
| 10 - 20% | 101 - 51' | 100 feet | 1500 feet |
| 20 - 33% | 51 - 31' | 100 feet | 1000 feet |
| 33 - 50% | 31 - 21' | 100 feet | 500 feet |
| 50% + | 21 +' | 50 feet | 250 feet |

SUPER SILT FENCE

NOT TO SCALE



- Length - minimum of 50' (30' for single slope lot).
 - Width - 10' minimum, should be flared at the existing road to provide a turning radius.
 - 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.
 - Stone - crushed aggregate (1" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
 - 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 mounded berm 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.
- Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

- Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Staple the matting to the trench and drive firm 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".
- Staple the 4" overlap in the channel center using an 18" spacing between staples.
- Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
- Staples shall be placed 24" apart with 1 row for each strip, 2 outer rows, and 2 alternating rows down the center.
- Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", slipstaple Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.
- The discharge end of the matting line should be similarly secured with 2 double rows of staples. Note: If flow will enter from the slope of the matting then the area affected by the flow must be kepted.

STABILIZED CONSTRUCTION ENTRANCE NOT TO SCALE

EROSION CONTROL MATTING NOT TO SCALE

FLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
20499	24	R-20	31	FIRST	6059.02

WATER CODE B-01 SEWER CODE 2190562

SEDIMENT/EROSION CONTROL NOTES & DETAILS

SINGLE FAMILY DETACHED
KESSLER PROPERTY
LOTS 4 THRU 6

TAX MAP NO. 31 PARCEL NO.: 555 GRID NO.: 24
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' DATE: MARCH, 2009

SHEET 3 OF 3

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CONTINENTAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
410-481-2555

REVISION

NO.	REVISION	DATE
1	Reumber Lots 2 & 3 to Lots 5 & 6. Revise Lot lines, & move hsc location on Lot 6	6-19-11

ENGINEER'S CERTIFICATE

"I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

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 person 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/We authorize periodic on-site inspection by the Howard Soil Conservation District."

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

OWNER
KESSLER PROPERTY, LLC
5300 DORSEY HALL DRIVE
ELICOTT CITY, MARYLAND 21042
443-367-0422

BUILDER/DEVELOPER
WAVERLY BUILDERS & DEVELOPERS, LLC
5300 DORSEY HALL DRIVE
ELICOTT CITY, MARYLAND 21042
443-367-0422

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development
Chief Development Engineering Division
Director - Department of Planning and Zoning

DATE: 6/21/09

SDP 09-046