	50ILS LEGEND								
50IL	NAME	CLA55	K FACTOR						
GbB	Gladstone loam, 3 to 8 percent slopes	В	0.20						
GbC	Gladstone loam, 8 to 15 percent slopes	В	0.20						
GmC	Glenville silt loam, 8 to 15 percent slopes	С	0.37						
GnB	Glenville—Bàile silt loàms. O to 8 percent slopes	C	0.37						
MaD	Manor loam, 15 to 25 percent slopes		0.24						
MgD	Manor-Bannertown sandy loams, 15 to 25 percent slopes, rocky	8	0.24						

- \* Hydric soils and/or contains hydric inclusions
- \*\* May contain hydric inclusions
- t Generally only within 100-year floodplain areas

### DESIGN NARRATIVE

This report will demonstrate how the criteria set forth in the Maryland Stormwater Design Manual, Volumes I and II (effective October 2000, revised May 2009) will be satisfied on this project. The goal of creating hydrology similar to that of "Woods in Good Condition" will be accomplished through the use of the practices contained within Chapter 5 of said manual. The achievement of this goal will remove the requirement of providing Channel Protection Volume.

The River Hill Overlook project is zoned R—ED and is located on Tax Map 35, Grid 8, Parcel No. 66 of the Howard County, Maryland Tax Map Database System. The property consists of eight proposed buildable lots and one open space lot that combine to create a site of approximately 5.01 acres. Proposed lots will be served by public water and sewer. The property is located in the Clarksville area of Howard County in the Middle Patuxent River wateshed (02131106). This property is rectangular in shape and has ridge in the middle of the property with the site sloping to the west to Trotter Road and the remainder of the property sloping to the east toward an unnamed tributary of the Middle Patuxent River. An existing house and accessory structures, located on the western portion of the property, are accessed by an existing driveway that enters directly onto Trotter Road. Three specimen trees exist on-site, two of which are located within Open Space Lot 9 and one (non-native) specimen tree that is located near the property line between Lots 3 and 4, all of which are proposed to be retained. Also according to a field inspection conducted by Eco-Science Professionals (ESP) in July 2013, which states, "Wetlands were noted along the stream side terraces on the adjacent property. These wetlands are dominated by skunk cabbage, sensitive fern and spicebush. The wetland boundary was not delineated because it is offsite and the buffer from the wetlands will fall within the required stream buffers." The Web Soil Survey shows soils on the site area consist of Gladstone loam (GbB, GbC), Manor loam (MaD), and Manor-Bannertown sandy loadms (MgD) Type "B" soils and Glenville silt loam (GmC) & Glenville-Baile silt loams (GnB) Type "C" The portion of property that slopes to the west drains to ar existing ditch along the east side of Trotter Road, which is where a portion of site runoff will be directed. The remainder will drain onto existing grade and then to the stream.

#### I. Natural Resource Protection: Environmentally sensitive areas (stream, stream buffers, steep slopes, and floodplain) exist on-site. To ensure the protection of natural resources located on this site, all buffers will be honored by locating improvements awary from these areas which will be located within forest conservation

and floodplain easements. II. Maintenance of Natural Flow Patterns: It is the intent of the proposed design to discharge runoff similar to the

# characteristics and direction of this site prior to any of the proposed

III. <u>Reduction of impervious areas through better site design. alternative</u> surfaces and Nonstructural Practices The design of this project utilizes an use-in-common driveway. allowing a reduction in the necessary paving needed to access to the proposed buildings. Non-Structural practices as permitted in Chapter 5, four (4) Micro-Bioretention Areas (M-6) will be used to address ESD to the MEP requirements. Alternative Surfaces were not incorporated into this design.

#### IV. Integration of Erosion and Sediment Controls into Stormwater Strategy: Since small drainage areas are proposed under this plan, silt fence, super silt fence, and erosion control matting will be utilized for erosion & sediment control. There is no direct discharge of runoff to a stream. All site runoff will discharge to existing ground prior to entering the existing stream channel and eventually to the Middle Patuxent River. No drainage easements will be required. It is anticipated that all cut will be utilized on-site for construction at time of SDP.

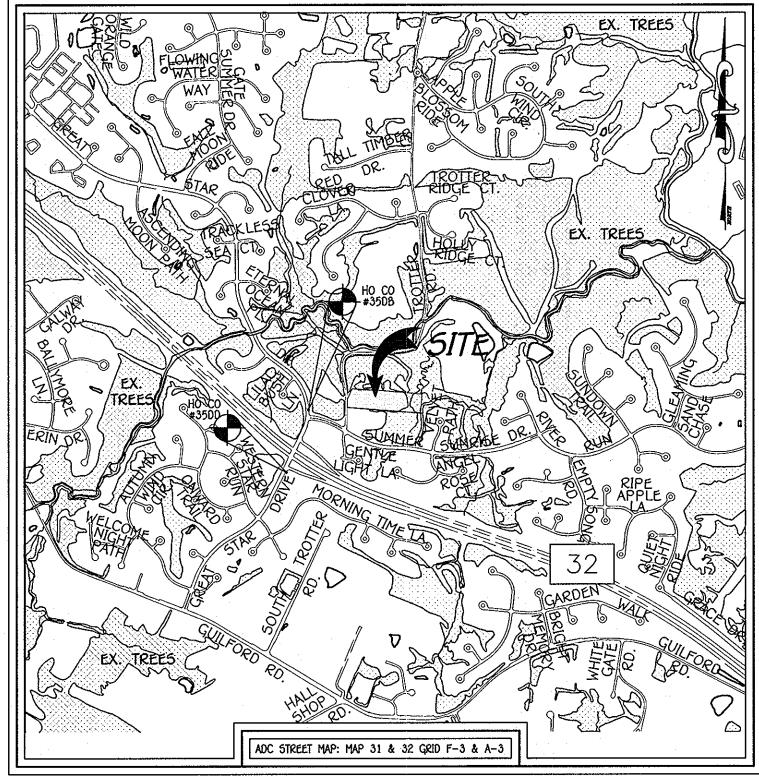
#### V. Implementation of ESD Planning Techniques and practices to the Maximum Extent Practicable (MEP) ESD planning techniques will be utilized to the maximum extent practicable to satisfy the SWM requirements put forth in Chapter 5 of the Maryland Department of the Environment's SWM Design Manual. All non-structural practices are being utilized to treat stormwater runoff. The full required ESD volume is being provided.

VI. <u>Request for a Design Manual Waiver:</u> No Waivers related to stormwater management are being requested in

Note: All on-site Micro-Bioretention facilities are to be privately owned and maintained by the individual lot owners.

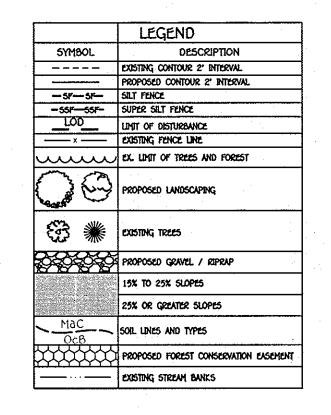
# ENVIRONMENTAL CONCEPT PLAN RIVER HILL OVERLOOK, LOTS 1 THRU 8 AND OPEN SPACE LOT 9

TAX MAP No. 35 GRID No. 8 PARCEL NO. 66 HOWARD COUNTY, MARYLAND FIFTH ELECTION DISTRICT



VICINITY MAP 5CALE: 1" = 1200'

BENCHMARK INFORMATION
B.M.#1 - HOWARD COUNTY CONTROL STATION #3500 - HORIZONTAL - NAD '83)  (ALONG GREAT STAR DRIVE WHERE THE EASTBOUND RAMP TO MD RT 32 TURNS OFF TO THE EAST, 52' NORTHEAST OF A BELL MANHOLE ALONG GREAT STAR DRIVE, 36.4' NORTH OF THE CORNER OF A CHAIN LINK FENCE, 10.5' NORTHWEST OF AN ELECTRIC BOX, AND 55' WEST OF A LIGHT POLE ALONG THE EASTBOUND RAMP TO MD RT 32 FROM GREAT STAR DRIVE.)  N 556,936.5472  E 1,333,705.5052  ELEVATION = 424.21 - VERTICAL - (NAVD '80)
B.M.#2 - HOWARD COUNTY CONTROL STATION #350B - HORIZONTAL - (NAD '03) (LOCATED 7.3' EAST OF THE FACE OF CURB ALONG GREAT STAR DRIVE, 46.9' NORTH OF A LIGHT POLE NORTHEAST OF THE INTERSECTION OF GREAT STAR DRIVE AND SUMMER SUNRISE DRIVE, 21' NORTHWEST OF AN OAK TREE, AND 10' SOUTHEAST OF AN OAK TREE) N 557,696.1674 E 1,333,974.5506 ELEVATION = 400.94 - VERTICAL - (NAVD '00)



### GENERAL NOTES

- I. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK. THE CONTRACTOR SHALL NOTIFY (MISS UTILITY) AT 1-800-257-7777 AT LEAST 40 HOURS PRIOR TO ANY EXCAVATION WORK BEING
- 3. BOUNDARY SHOWN HEREON IS BASED ON DEED. TOPOGRAPHY SHOWN IS FROM HOWARD COUNTY GIS TOPOGRAPHY AT 5' CONTOUR INTERVAL INTERPOLATED FOR 2' CONTOUR INTERVAL.

  4. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLA
- STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 3500 AND 3508 WERE USED FOR THIS PROJEC
- 6. STORM WATER MANAGEMENT IS IN ACCORDANCE WITH THE M.D.E. STORM WATER DESIGN MANUAL, VOLUMES I & II, REVISED 2009. NON-STRUCTURAL PRACTICES IN ACCORDANCE WITH CHAPTER 5 ARE BEING UTILIZED.
- 7. LOTS TO BE SERVED PUBLIC WATER AND PRIVATE SEWERAGE. EXISTING WELL AND SEPTIC SYSTEMS TO BE ABANDONED IN
- ACCORDANCE WITH HEALTH DEPARTMENT REQUIREMENTS. 8. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.

  9. THE SUBJECT PROPERTY IS ZONED R-ED PER EFFECTIVE DATE 10/06/2013 COMPREHENSIVE ZONING PLAN.
- 10. STEEP SLOPES, STREAM AND 115 BUFFERS, AND 100 YEAR FLOODPLAIN EXIST ON-SITE.
  11. NO WETLANDS OR WETLAND BUFFERS EXIST ON-SITE.
- 2. SOILS DELINEATION SHOWN BASED ON NRCS WEBSOIL SURVEY.
- 13. NO CLEARING, GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF STREAM BUFFERS AND FOREST CONSERVATION EASEMENT AREAS.
- 14. LANDSCAPING WILL BE PROVIDED AT THE FINAL PLAN STAGE OF THIS PROJECT. TREES SHOWN ARE EXISTING ON-SITE TR 15. FOREST CONSERVATION OBLIGATIONS WILL BE MET BY ON-SITE RETENTION OF EXISTING FOREST AT THE FINAL PLAN STAGE OF
- 16. NO SOIL BORINGS ARE REQUIRED FOR THIS PROJECT, ONLY VERIFICATION OF DEPTH TO GROUNDWATER WILL BE REQUIRE 17. APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBDIMISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN AND/OR RED-LINE REVISION PLAN. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY 5ubdivision and land development regulations and the Howard County Zoning regulations shall occur at the subdivision PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN STAGES AND/OR RED-LINE REVISION PROCESS. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED REVIEW COMMENTS (INCLUDING COMMENTS THAT MAY ALTER THE OVERALL SITE DESIGN) AS HIS PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.

### SITE ANALYSIS DATA CHART

- TOTAL AREA OF THIS SUBMISSION = 5.01 AC. \*. LIMIT OF DISTURBED AREA = 2.53 Ac. \*
- PRESENT ZONING DESIGNATION = R-ED
- (PER 02/02/04 COMPREHENSIVE ZONING PLAN AND THE COMP-LITE ZONING AMENDMENTS DATED 07/20/06) PROPOSED USE: RESIDENTIAL
- BUILDING COVERAGE OF SITE: N/A. PREVIOUS HOWARD COUNTY FILES: N/A.
- TOTAL AREA OF FLOODPLAIN LOCATED ON SITE 0.35 AC+ TOTAL AREA OF SLOPES IN EXCESS OF 15% = 1.50 AC± (25% SLOPES OR GREATER = 0.40 AC±)
- TOTAL AREA OF ERODIBLE SOILS = 1.0 AC+ TOTAL AREA OF STREAMS AND STREAM BUFFERS = AC+ (LOCATED WITHIN OPEN SPACE LOT 10)
- TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0 AC. ± TOTAL AREA OF FOREST = 0.91 AC\* (EXCLUDES FLOODPLAIN), 0.91 ACRES PLACED IN FOREST CONSERVATION
- TOTAL GREEN OPEN AREA = 3.21 AC+ (2.505 ACRES IN OPEN SPACE LOT 9)
- TOTAL IMPERVIOUS AREA = 0.74 AC±
- O. DENSITY TABULATION  $5.01 \text{ AC} \pm - 0.35 \text{ AC} \pm - 0.40 \text{ AC} \pm = 4.26 \text{ AC} \pm \text{ NET}$

3101 /(D= 0103 /(D= 01/0 //D" 11.E0 /(D 11.E)	
4.26 AC X 2 LOTS/ACRE = 0 LOTS MAXIMUM.	
MINIMUM OPEN SPACE REQUIRED = 5.01 AC+ X 0.50 = 2	.50
OPEN SPACE PROVIDED = 2.505 AC+ (2.505 AC+ CREDITE	0)
LOT PROPOSED = 8 LOTS.	
AREA OF PROPOSED LOTS = 2.73 AC±.	-

FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MARYLAND 21042  (410) 461 - 2855				
	NO	OFVISION .	NATE	X

# ATTN: DOUG DIERINGER & RICHARD DEMMITT

PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER

OWNERS JACQUELINE RANA REVOCABLE TRUST 6301 TROTTER ROAD CLARKSVILLE, MARYLAND 21029 410-533-5380 ATTN: CHRISTOPHER B EMERY, TRUSTEE & YASMIN NATASHA GAJEWSKI, TRUSTEE

RIVER HILL OVERLOOK, LLC 5034 DORSEY HALL DRIVE ELLICOTT CITY, MARYLAND 21042 410-740-0522

#### DEVELOPER / CONTRACT PURCHASER 10-23-13 SECTION PARCEL NO. RIVER HILL OVERLOOK, LOTS 1 THRU 8 AND OPEN SPACE LOT 9 BLOCK NO. ZONE TAX/ZONE ELEC. DIST. CENSUS TR. R-ED FIFTH SEWER CODE WATER CODE

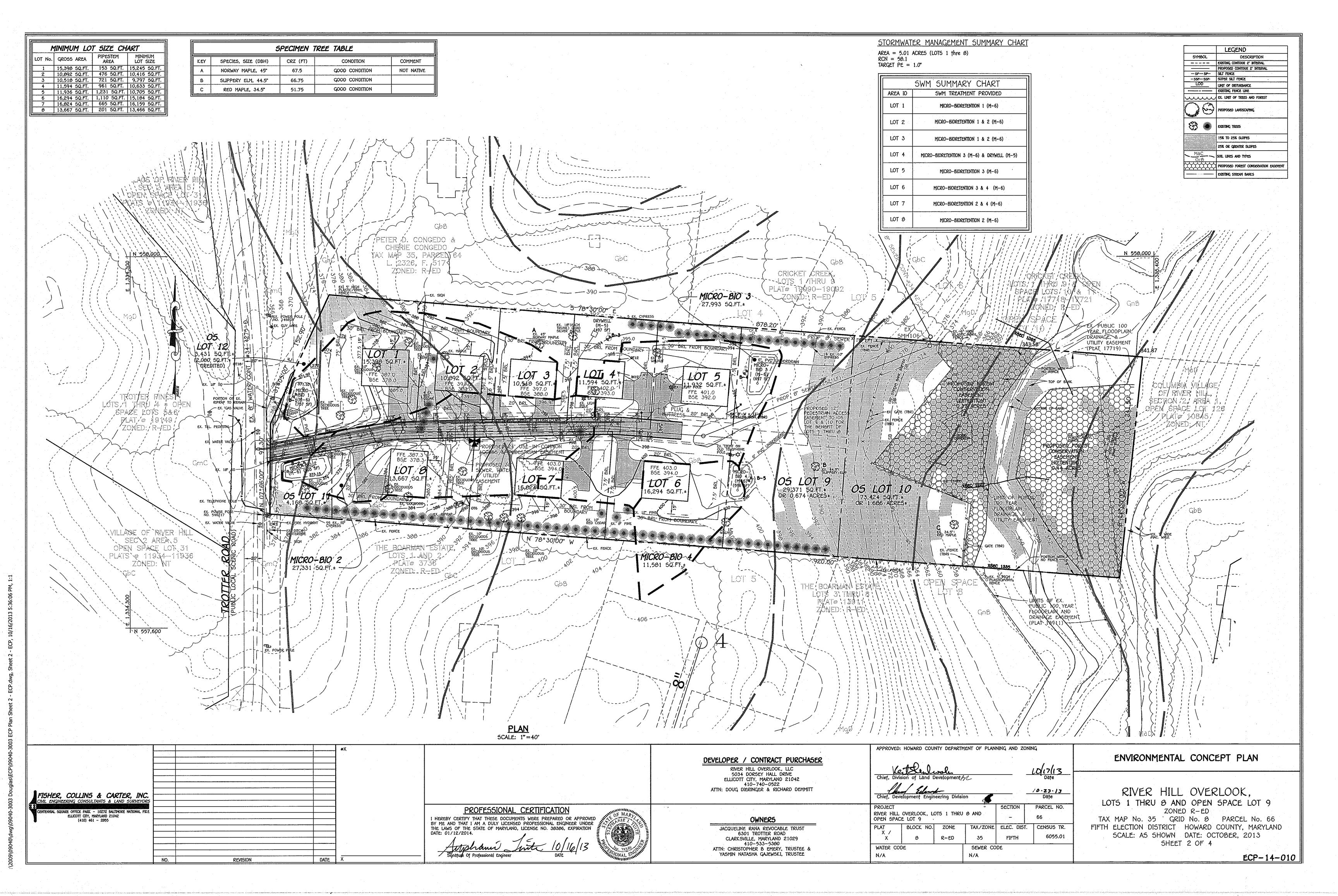
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

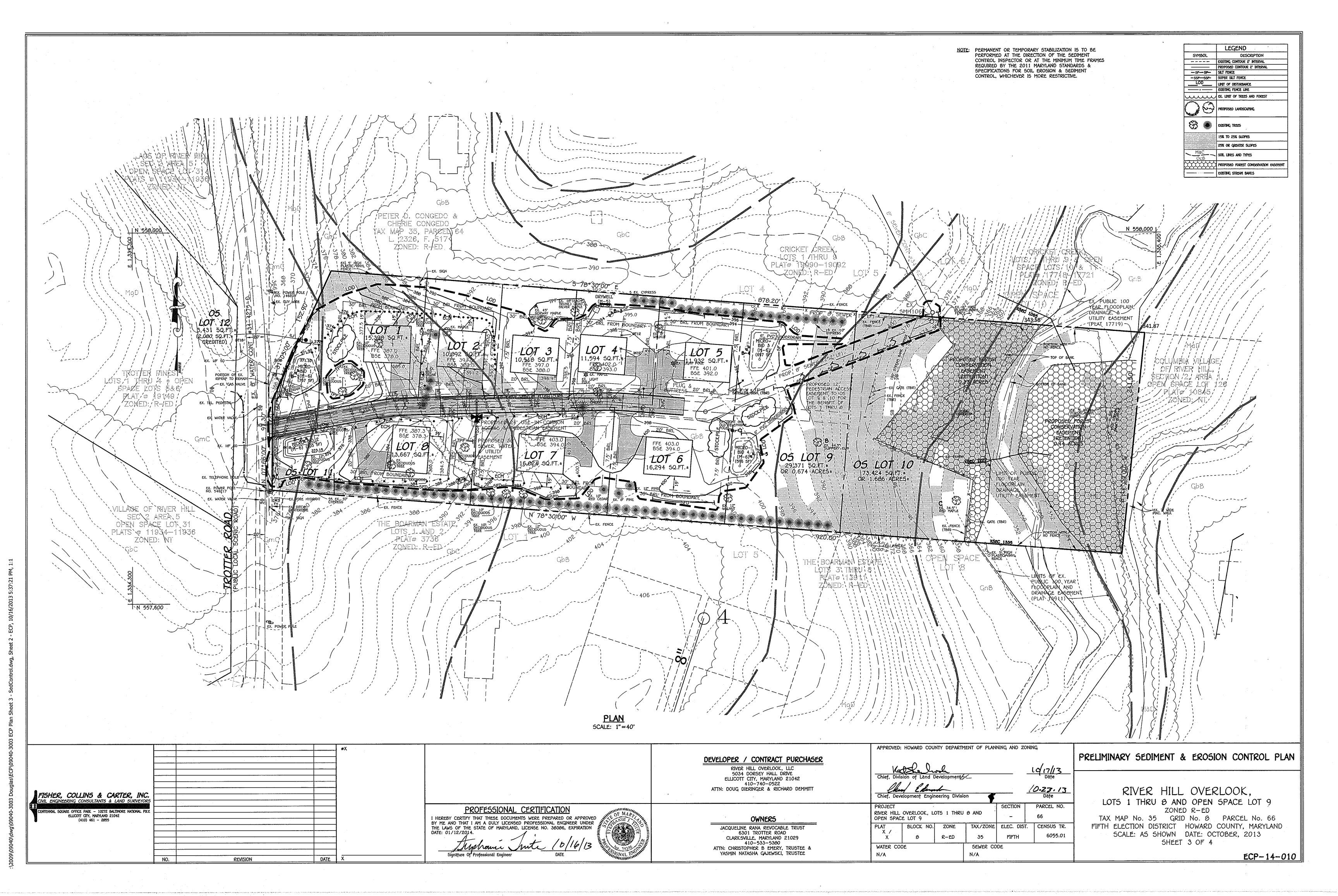
### TITLE SHEET

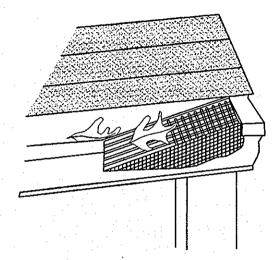
RIVER HILL OVERLOOK, LOTS 1 THRU 8 AND OPEN SPACE LOT 9

ZONED R-ED TAX MAP No. 35 GRID No. 8 PARCEL No. 66 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: OCTOBER, 2013 SHEET 1 OF 4

ECP-14-010







## GUTTER DRAIN FILTER DETAIL

#### STORMWATER MANAGEMENT NOTES

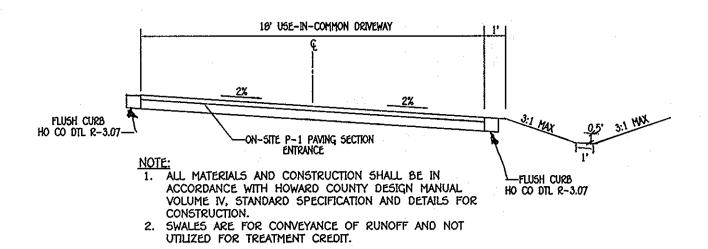
- 1. STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH WITH CHAPTER 5, "ENVIRONMENTAL SITE DESIGN" OF THE 2007 MARYLAND STORMWATER MANAGEMENT DESIGN MANUAL, EFFECTIVE MAY 4, 2010.
- 2. MAXIMUM CONTRIBUTING ROOF TOP AREA TO EACH DOWNSPOUT SHALL BE 1,000 5Q. FT. OR LESS.
- 3. DRYWELLS SHALL BE PROVIDED AT LOCATIONS WHERE THE LENGTH OF DISCONNECTION IS LESS THAN 75' AT 5%. THE SIZE AND CONSTRUCTION OF THE DRYWELL SHALL BE IN ACCORDANCE WITH 4. FINAL GRADING IS SHOWN ON THIS SITE DEVELOPMENT PLAN.

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

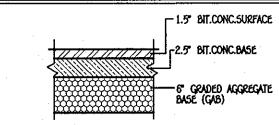
- A. THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS and after every heavy storm event.
- B. THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO ENSURE TRENCH DRAINAGE.
- C. THE OWNER SHALL MAINTAIN A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

DRY WELL CHART							
DRYWELL. NO.	AREA OF ROOF PER DOWN SPOUT	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF TREATMENT	L.	0	W
1	497 5Q. FT.	40 C.F.	45 C.F.	100%*	5.5'x	5.5'	x 5'

\* AREA OF TREATMENT EXCEEDS THAT REQUIRED.



16' USE-IN-COMMON DRIVEWAY & SWALE CROSS SLOPE SECTION

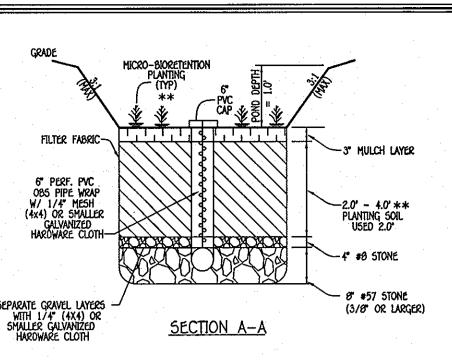


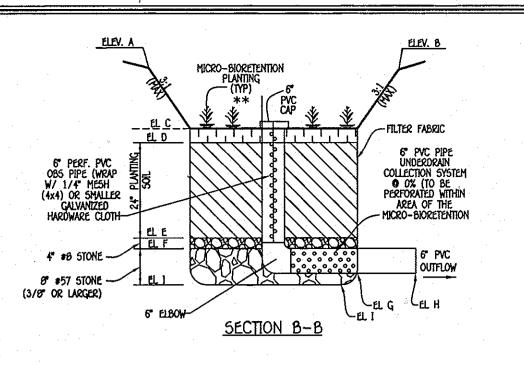
P-1 DRIVEWAY PAVING SECTION

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

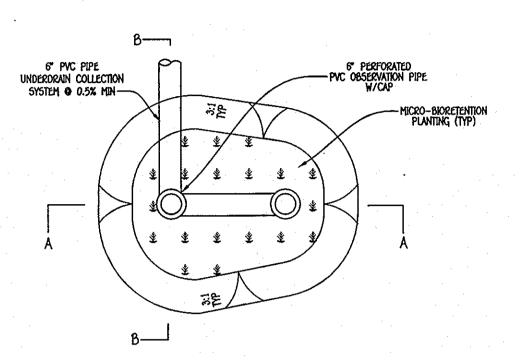
- A THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING, PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING, ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.
- 8. 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.
- C. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER

IS APPLIED. D. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

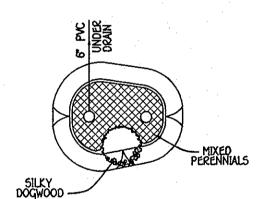




## MICRO-BIORETENTION DETAIL (M-6)

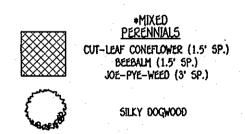


MICRO-BIORETENTION									
BIORETENTION FILTER	Α	В	С	D	É	F	G	Н	I
1 (05 LOT 12)				370.90					
2 (05 LOT 11)				372.90					
3 (05 LOT 9)				390.75					
4 (05 LOT 9)	397.50	397.50	396.50	396.25	394.25	393.92	393.42	393.04	393.25



MICRO-BIORETENTION PLANTING DETAIL

NOT TO SCALE



MICRO-	BIORETENT	ION PLANT MATERIAL			
QUANTITY	NAME	MAXIMUM SPACING (FT.)			
12 MIXED PERENNIALS		1.5 TO 3.0 FT.			
1	SILKY DOGWOOD	PLANT AWAY FROM INFLOW LOCATION			

FISHER, COLLINS & CARTER, INC. l square office park — 10272 Baltimore national pike Ellicott city, maryland 21042 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. 30306, EXPIRATION DATE: 01/12/2014. DATE

PROFESSIONAL CERTIFICATION



DEVELOPER / CONTRACT PURCHASER RIVER HILL OVERLOOK, LLC 5034 DORSEY HALL DRIVE

ELLICOTT CITY, MARYLAND 21042 410-740-0522 ATTN: DOUG DIERINGER & RICHARD DEMMITT

**OWNERS** JACQUELINE RANA REVOCABLE TRUST 6301 TROTTER ROAD CLARKSVILLE, MARYLAND 21029 410-533-5380 ATTN: CHRISTOPHER B EMERY, TRUSTEE & YASMIN NATASHA GAJEWSKI, TRUSTEE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING 10.27.12 PARCEL NO. SECTION RIVER HILL OVERLOOK, LOTS 1 THRU 8 AND OPEN SPACE LOT 9 BLOCK NO. ZONE TAX/ZONE ELEC. DIST. CENSUS TR. X / 6055.01 R-EO Χ SEWER CODE WATER CODE N/A

STORMWATER MANAGEMENT DETAILS & NOTES

RIVER HILL OVERLOOK, LOTS 1 THRU 8 AND OPEN SPACE LOT 9

ZONED R-ED TAX MAP No. 35 GRID No. 8 PARCEL No. 66 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: OCTOBER, 2013 SHEET 4 OF 4

ECP-14-010