

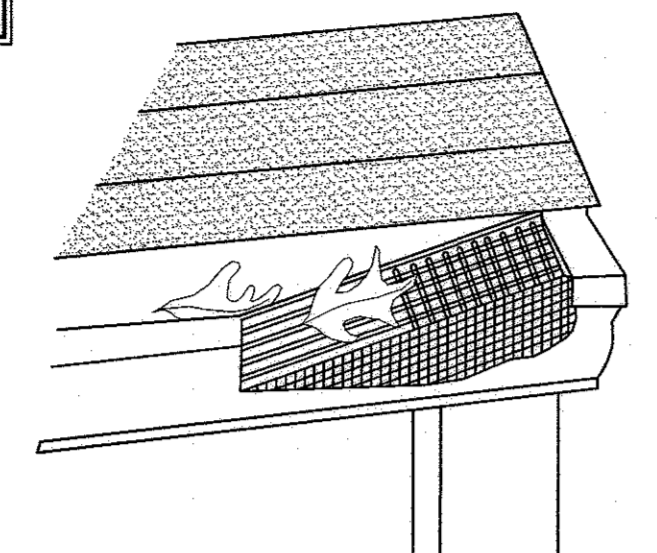
SHEET INDEX	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ENVIRONMENTAL CONCEPT PLAN

SOILS LEGEND			
SOIL	NAME	CLASS	K FACTOR
GfB	Gladesone - Urban land complex, 0 to 8 percent slopes	A	0.20

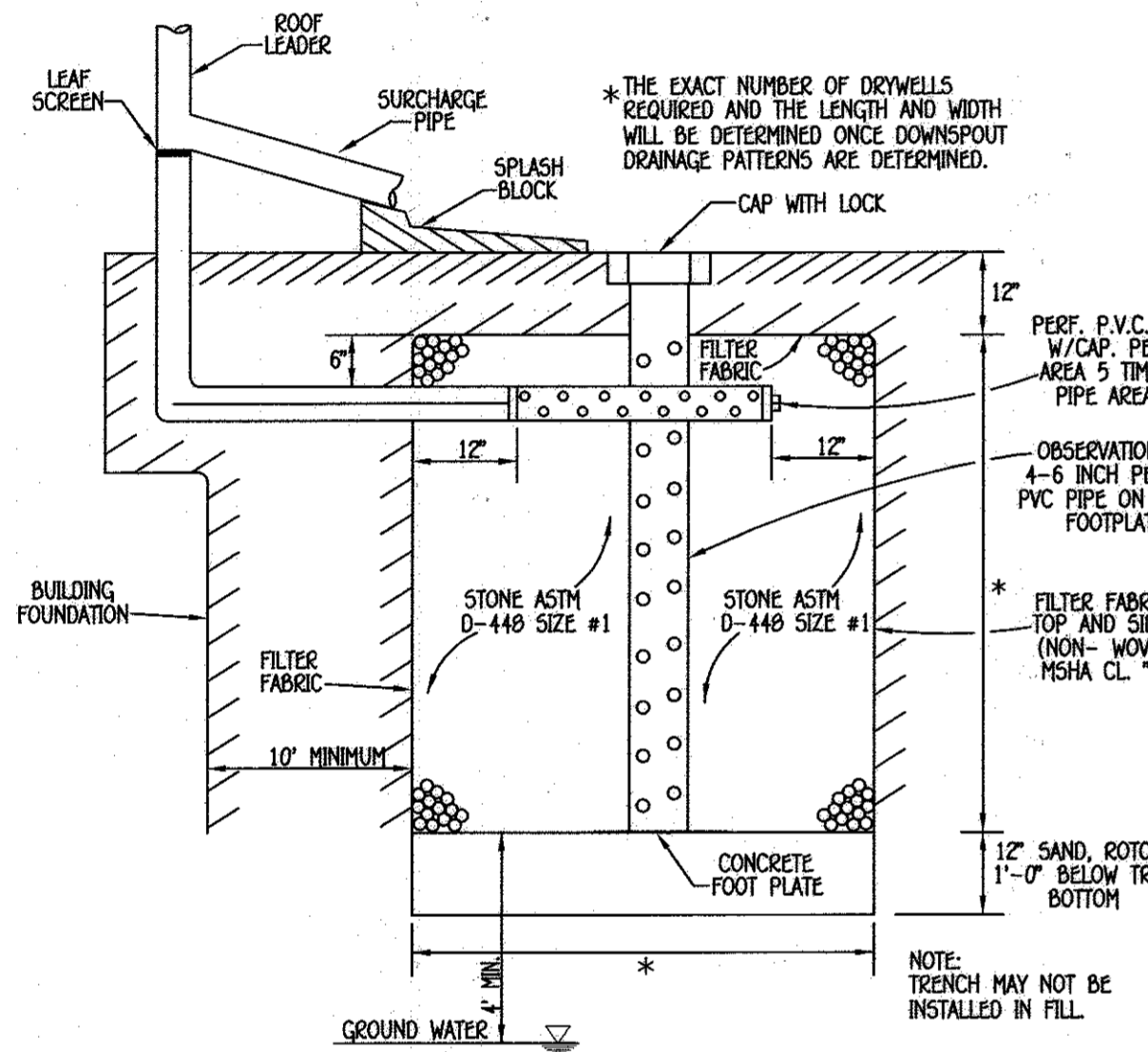
Soil Map Number: 23 (Clarksville, SE)

STORMWATER MANAGEMENT SUMMARY			
AREA ID.	ESD REQUIRED CU.FT.	ESD PROVIDED CU.FT.	REMARKS
SITE	341	378	DRY WELLS (M-5) & RAIN GARDEN (M-7)
TOTAL	341	378	

GROSS AREA = 1.003 ACRES  
 LOD = 0.34 ACRES  
 RCN = 38  
 TARGET Pe = 1.2"



GUTTER DRAIN FILTER DETAIL  
 NOT TO SCALE



DRY WELL DETAIL (M-5)  
 NOT TO SCALE

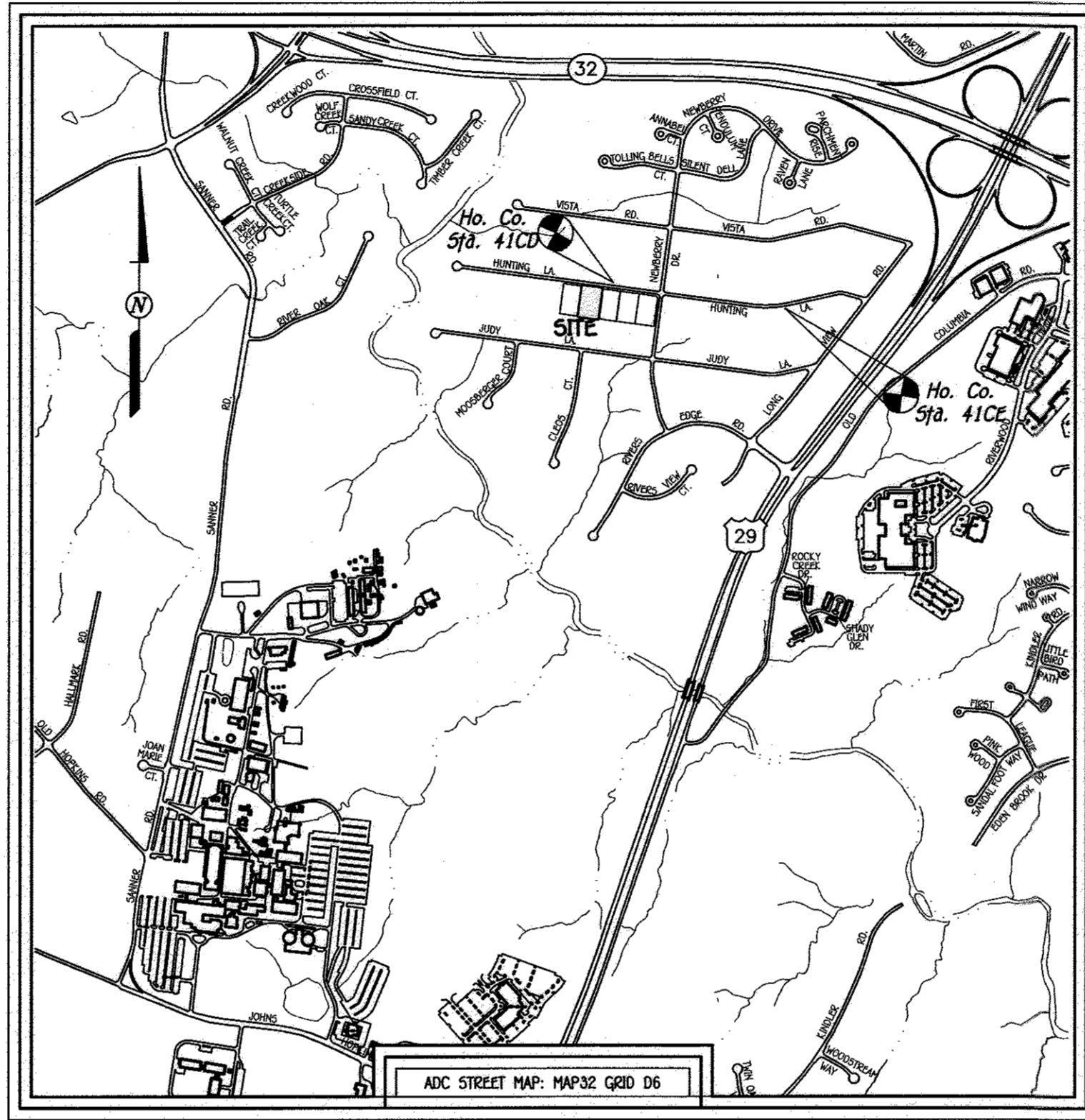
STORMWATER MANAGEMENT NOTES

- 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.
- MAXIMUM CONTRIBUTING ROOF TOP AREA TO EACH DOWNSPOUT SHALL BE 1,000 SQ. FT. OR LESS.
- DRYWELLS SHALL BE PROVIDED AT LOCATIONS WHERE THE LENGTH OF DISCONNECTION IS LESS THAN 75' AT 5%. THE SIZE AND CONSTRUCTION OF THE DRYWELL SHALL BE IN ACCORDANCE WITH THE DETAIL SHOWN ON THIS SHEET.
- FINAL GRADING IS SHOWN ON THIS SITE DEVELOPMENT PLAN.
- THE RAIN GARDEN (M-7) ON LOT 124 MUST BE INSTALLED WITH AN IMPERMEABLE LINER. (SEE DETAIL)
- PART OF THE DRIVEWAY IS OVERCOMPENSATED IN DRY WELLS DO TO THE EXISTING WELL RADIUS ON THE ADJACENT LOT.

DRY WELL CHART						
DRYWELL NO.	AREA OF ROOF PER DOWN SPOUT	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF TREATMENT	L	W
EAST	1,000 SQ. FT.	95 C.F.	126 C.F.	100%*	9'	7' x 5'
S.W.	600 SQ. FT.	57 C.F.	126 C.F.	100%*	9'	7' x 5'
N.W.	800 SQ. FT.	76 C.F.	126 C.F.	100%*	8'	6' x 5'

\* AREA OF TREATMENT EXCEEDS THAT REQUIRED.

# ENVIRONMENTAL CONCEPT PLAN HOLIDAY HILLS LOTS 123 AND 124 TAX MAP No. 41 GRID No. 05 PARCEL NO. 273 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND



VICINITY MAP  
 SCALE: 1" = 1200'

LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
---492---	EXISTING 2' CONTOURS	---	PROPOSED CONTOUR
---490---	EXISTING 10' CONTOURS	+362.5	SPOT ELEVATION
Gp	SOILS LINES AND TYPE	---	LOD
Gc	EXISTING TREELINE	---	LIMITS OF DISTURBANCE
---S---	INDIVIDUAL TREES & SHRUBS	---	DRAINAGE AREA DIVIDE
---	EXISTING FENCE LINE	---	SILT FENCE
---	EXISTING & PROPOSED PAVING	---	EROSION CONTROL MATTING
		---	STABILIZES CONSTRUCTION ENTRANCE

GENERAL NOTES

- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-313-1800 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY (MS&S UTILITY) AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- BOUNDARY SHOWN HEREON IS BASED ON FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED BY FISHER, COLLINS & CARTER, INC. DATED APRIL 2015. TOPOGRAPHY SHOWN HEREON IS BASED ON A TOPOGRAPHIC SURVEY PERFORMED BY FISHER, COLLINS & CARTER, INC. IN APRIL 2015 AND SUPPLEMENTED WITH HOWARD COUNTY GIS TOPOGRAPHY AT 5' CONTOUR INTERVAL INTERPOLATED FOR 2' CONTOUR INTERVAL.
- 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. 41C0 AND 41CE WERE USED FOR THIS PROJECT.
- PREVIOUS DPZ FILE NUMBERS: N/A.
- 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.
- THIS PROPERTY IS LOCATED INSIDE THE METROPOLITAN DISTRICT. LOTS TO BE SERVED PUBLIC WATER AND PRIVATE SEWER, CONTRACT #34-4350 & 34-3957.
- ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
- THE SUBJECT PROPERTY IS ZONED R-20 (PER DATE 10/06/2013 COMPREHENSIVE ZONING PLAN).
- THERE ARE NO WETLANDS, WETLAND BUFFERS, STREAMS, STREAM BUFFERS, STEEP SLOPES, FLOODPLAIN, AND FORESTED AREAS ON SITE.
- NO FOREST STANDS EXIST ON-SITE. SEE ENVIRONMENTAL FINDINGS LETTER PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. DATED JUNE, 2016.
- LANDSCAPING WILL BE PROVIDED AT THE FINAL PLAN STAGE OF THIS PROJECT.
- FOREST CONSERVATION REQUIREMENTS FOR THIS PROPOSED RESUBDIVISION WILL BE PROVIDED AT THE FINAL PLAN STAGE OF THIS PROJECT TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION ACT. IT IS ANTICIPATED THAT A FEE-IN-LIEU OF AFFORESTATION WILL BE REQUESTED.
- A SOIL BORING WILL BE REQUIRED FOR THIS PROJECT SINCE DRYWELLS ARE BEING UTILIZED.
- APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT SUBDIVISION, FOREST CONSERVATION, OR SITE DEVELOPMENT PLANS. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED COMMENTS THAT MAY ALTER THE SITE DESIGN, HOUSE LOCATION, DRIVEWAY LOCATION, GRADING, TREE CLEARING, AND/OR OTHER REQUIREMENTS AS THE DEVELOPMENT PLAN PROGRESSES THROUGH THE PLAN REVIEW PROCESS IN ACCORDANCE WITH THE SUBDIVISION AND ZONING REGULATIONS AND THE FOREST CONSERVATION REQUIREMENTS.
- APPROVAL OF THIS ECP BY THE HOWARD SOIL CONSERVATION DISTRICT DOES NOT PROVIDE APPROVAL OF THE SHOWN SEDIMENT CONTROLS.
- A STRUCTURE EXISTS ON THE PROPERTY, KNOWN AS 10813 HUNTING LANE, WHICH IS TO REMAIN.
- SOILS SHOWN HEREON ARE BASED ON THE NRCS WEBSOIL SURVEY AND HOWARD COUNTY SOIL MAP #23.
- THERE ARE NO HISTORICAL STRUCTURES LOCATED ON SITE.
- EXISTING GARAGE AND POND SHOWN ON LOT 124 TO BE REMOVED (TRR).

DESIGN NARRATIVE

- Introduction:**  
 This report will demonstrate how the criteria set forth in the Maryland Stormwater Design Manual, Volumes I and II (effective October 2009, 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.
- General Site Conditions:**  
 10813 Hunting Lane is zoned R-20 and is located on Tax Map 41, Parcel No.273 of the Howard County, Maryland Tax Map Database System. The property was previously recorded as Lot 52 under platbook B, folio 79, dated April 2, 1962. The site has an existing house on an open lot (not forested) with some individual trees. Since this subdivision was created prior to Forest Conservation regulations, it is anticipated that a fee-in-lieu will be requested for the new lot. The proposed house will be served by public water and sewer as will the existing house which is current on private well and public sewer. The runoff from the lot is mostly from northeast to the south and west to the rear corner of the new lot. Drywells will be utilized to treat majority runoff and a Rain Garden to treat the driveway runoff. Per the 2004 Web Soil Survey, soils on-site consist of "GfB", Gladesone - Urban land complex, type A soil.
- Natural Resource Protection:**  
 Environmentally sensitive features such as wetlands, streams, their buffers, steep slopes, floodplain and forested areas do not exist on-site.
  - Maintenance of Natural Flow Patterns:**  
 Nature flow patterns will be maintained. Existing and proposed runoff flows mostly toward the west portion of the site with a portion of proposed lot 124 flowing to south most portion of the property.
  - Reduction of Impervious Areas through better site design, alternative surfaces and Nonstructural Practices**  
 A Use-in-Kind driveway is proposed to provide access to both the existing and proposed house. The design will reduce the amount of impervious area needed to serve the new development.
  - Integration of Erosion and Sediment Controls into Stormwater Strategy:**  
 Silt Fence will be utilized to provide erosion and sediment control.
  - Implementation of ESD Planning Techniques and practices to the Maximum Extent Practicable (MEP)**  
 The full required ESD volume is being provided.
  - Request for a Design Manual Waiver:**  
 No waivers related to stormwater management are required.

BENCHMARK INFORMATION	
B.M.#1 - HOWARD COUNTY CONTROL STATION #41C0 - HORIZONTAL - (NAD '83) (LOCATED ON THE NORTH SIDE OF HUNTING LANE WEST OF NEWBERRY DRIVE) N 550.548.6850 E 1,344.380.3950 ELEVATION = 347.74 - VERTICAL - (NAVD '86)	
B.M.#2 - HOWARD COUNTY CONTROL STATION #41CE - HORIZONTAL - (NAD '83) (LOCATED ON THE SOUTH SIDE OF HUNTING LANE) N 550.340.9790 E 1,345.892.2830 ELEVATION = 371.34 - VERTICAL - (NAVD '86)	

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

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

SITE ANALYSIS DATA CHART

- TOTAL AREA OF THIS SUBMISSION = 0.53 AC.±
- LIMIT OF DISTURBED AREA = 14,800 SQ.FT. OR 0.34 AC.±
- PRESENT ZONING DESIGNATION = R-20  
(PER 10/06/2013 COMPREHENSIVE ZONING PLAN)
- PROPOSED USE: RESIDENTIAL
- PREVIOUS HOWARD COUNTY FILES: N/A
- TOTAL AREA OF FLOODPLAIN LOCATED ON-SITE = 0.00 AC.±
- TOTAL AREA OF MODERATE STEEP SLOPES: 15%-24.9% = 0.00 AC.±
- TOTAL AREA OF STEEP SLOPES: 25% OR GREATER = 0.00 AC.±
- TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0.00 AC.±
- TOTAL AREA OF STREAM (INCLUDING BUFFER) = 0.00 AC.±
- TOTAL AREA OF EXISTING FOREST = 0.00 AC.±
- TOTAL AREA OF FOREST TO BE RETAINED = 0.00 AC.±
- TOTAL AREA OF LOTS / BUILDABLE PARCELS = 0.53 AC.±
- TOTAL GREEN OPEN AREA = 0.43 AC.±
- TOTAL IMPERVIOUS AREA = 0.10 AC.±
- TOTAL AREA OF ESCAPEABLE SOILS = 0.00 AC.±
- TOTAL AREA OF ROAD DEDICATION = 0.00 AC.±

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 60-85% compost 35-40% or sandy loam 30% compost and 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)	n/a	
Mulch	shredded hardwood	n/a	aged 6 months, minimum
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 3"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	ASHTO M-43	No. 57 or No. Aggregate (3/8" to 3/4")	
Underdrain piping	1" Type P5 2B or ASHTO M-27B	4" to 6" rigid schedule 40 PVC or 50235	slotted or perforated pipe; 3/8" per. @ 8" on center, 4 holes per row; minimum of 3" of gravel over slopes; 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 requires 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 350.2.9, vertical loading 14-10 or 11-20; allowable horizontal loading (based on soil pressure); and analysis of potential cracking.
Sand	ASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Dolomite and Gypstone (ASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

NO.	REVISION	DATE

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 461-2999

**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21581, EXPIRATION DATE: 07/15/2017.

*Signature of Professional Land Surveyor*      9/07/2016      DATE

STATE OF MARYLAND  
 PROFESSIONAL LAND SURVEYOR

**OWNER/DEVELOPER**

DANIEL AND MARY DUGAN  
 10813 HUNTING LANE  
 COLUMBIA, MARYLAND 21044-4207  
 202-359-4259

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING	DATE	
<i>Ketzelbach</i> Chief, Division of Land Development	9-28-16	
<i>Chilchuk</i> Chief, Development Engineering Division	9-28-16	
PROJECT HOLIDAY HILLS, LOTS 123 & 124	SECTION -	PARCEL NO. 273
PLAT PB 8 / F 79	BLOCK NO. 05	ZONE R-20
TAX/ZONE 41	ELEC. DIST. FIFTH	CENSUS TR. 605102

TITLE SHEET

HOLIDAY HILLS,  
 LOTS 123 AND 124,  
 10813 HUNTING LANE  
 ZONED R-20  
 TAX MAP No. 41 GRID No. 05 PARCEL No. 273  
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: SEPTEMBER, 2016  
 SHEET 1 OF 2

ECP-16-049

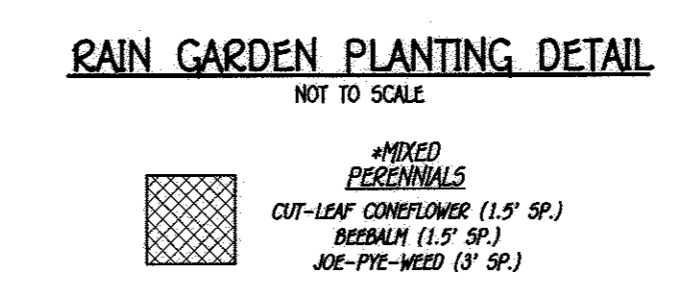


LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
---	EXISTING 2' CONTOURS	---	PROPOSED CONTOUR
---	EXISTING 10' CONTOURS	+	SPOT ELEVATION
GfB, GfC	SOILS LINES AND TYPE	---	LIMITS OF DISTURBANCE
---	EXISTING TREELINE	---	DRAINAGE AREA DIVIDE
○	INDIVIDUAL TREES & SHRUBS	---	SILT FENCE
---	EXISTING FENCE LINE	---	EROSION CONTROL MATTING
---	EXISTING & PROPOSED PAVING	---	STABILIZES CONSTRUCTION ENTRANCE
		---	TO BE REMOVED

STORMWATER MANAGEMENT PRACTICES				
LOT NO.	DISCONNECTION OF ROOFTOP RUNOFF (N-1) Y/N, NUMBER	DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2) Y/N	DRY WELLS (M-5) Y/N, NUMBER	RAIN GARDEN (M-7) Y/N, NUMBER
123				
124	NO	NO	YES, THREE (3)	YES, (1)

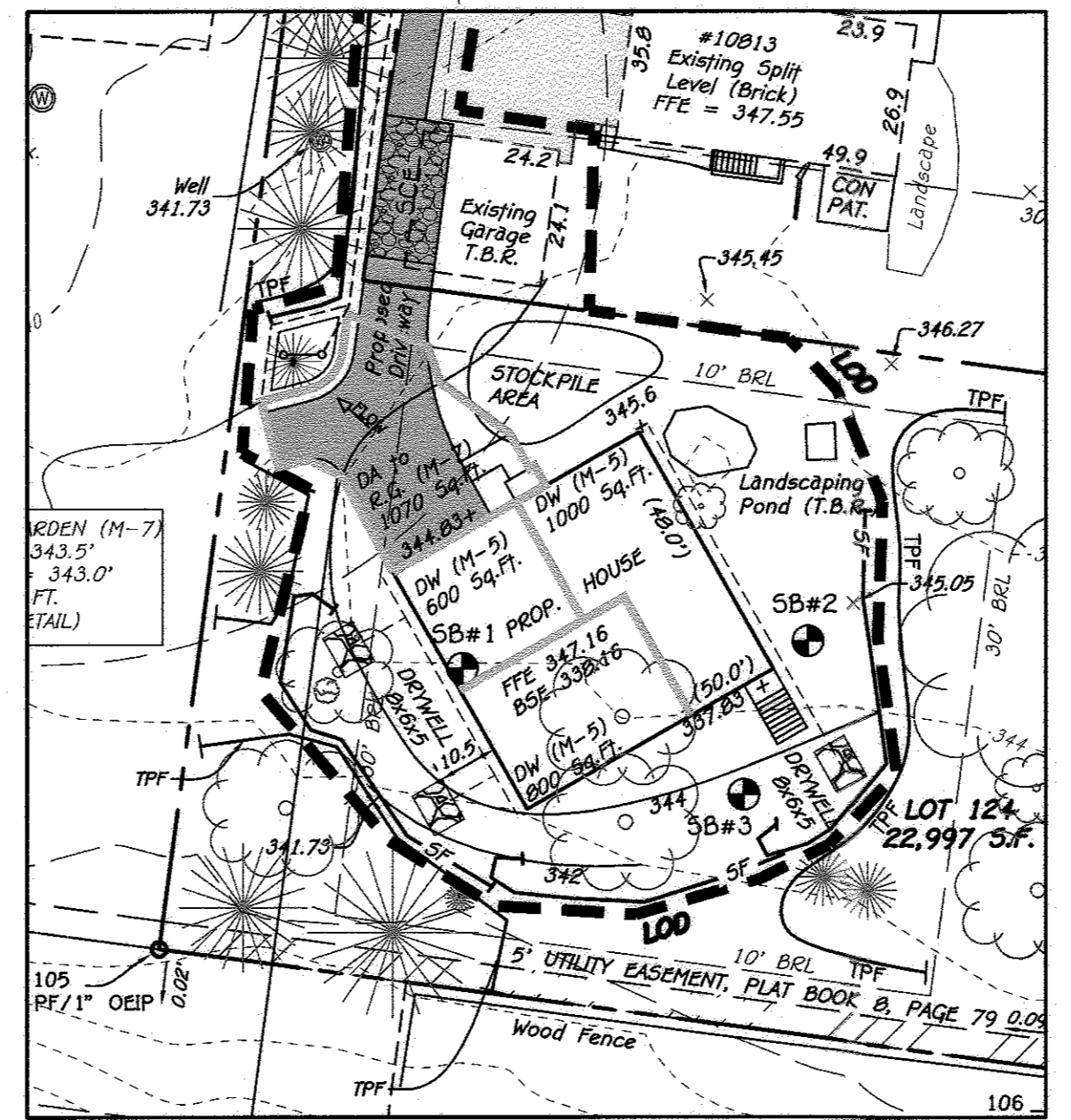
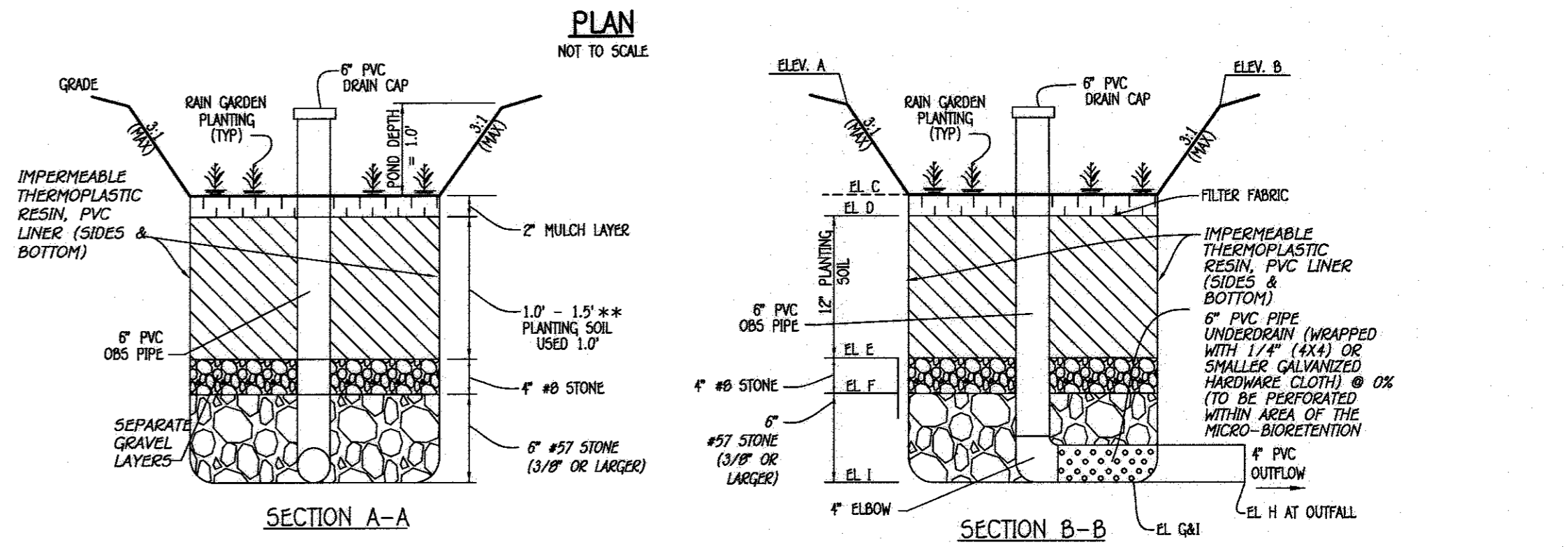
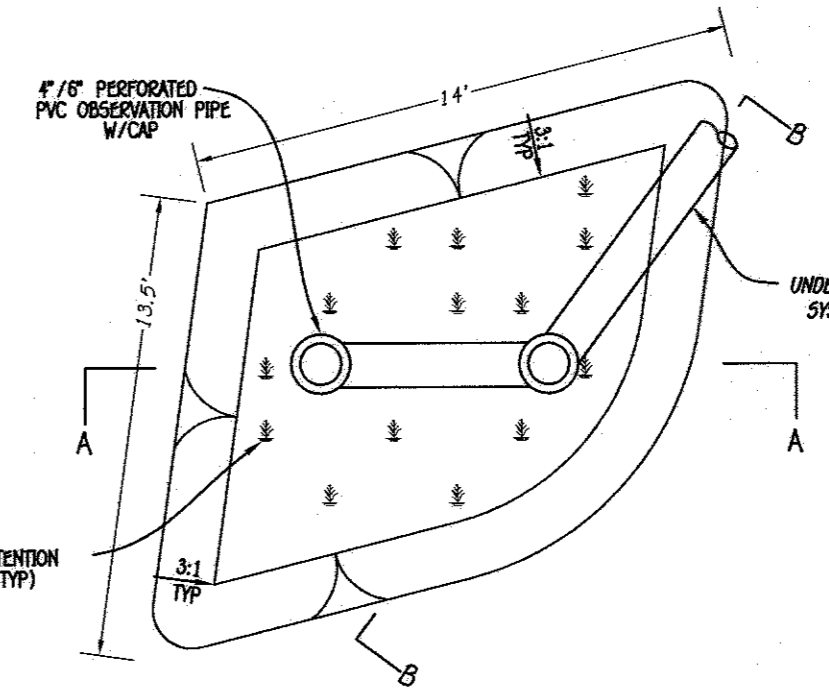
SOILS LEGEND			
SOIL	NAME	CLASS	K FACTOR
GfB	Gladstone - Urban land complex, 0 to 8 percent slopes	A	0.28

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



MICRO-BIORETENTION									
BIORETENTION FILTER	A	B	C	D	E	F	G	H	I
1 (SIDE)	343.76	343.5	343.0	343.83	342.83	342.50	342.0	339.5	342.0

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



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(410) 461-2899

NO.	REVISION	DATE	X

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*[Signature]* 9/07/2016  
Signature of Professional Land Surveyor DATE

**OWNER/DEVELOPER**  
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COLUMBIA, MARYLAND 21044-4207  
202-359-4259

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 9-8-16  
Chief, Division of Land Development Date

*[Signature]* 9-28-16  
Chief, Development Engineering Division Date

PROJECT: HOLIDAY HILLS, LOTS 123 & 124  
SECTION: -  
PARCEL NO.: 273

PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
PB 8 / F 79	05	R-20	41	FIFTH	605102

**ENVIRONMENTAL CONCEPT PLAN**

**HOLIDAY HILLS,**  
LOTS 123 AND 124,  
10813 HUNTING LANE  
ZONED R-20  
TAX MAP No. 41 GRID No. 05 PARCEL No. 273  
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: SEPTEMBER, 2016  
SHEET 2 OF 2

**ECP-16-049**