

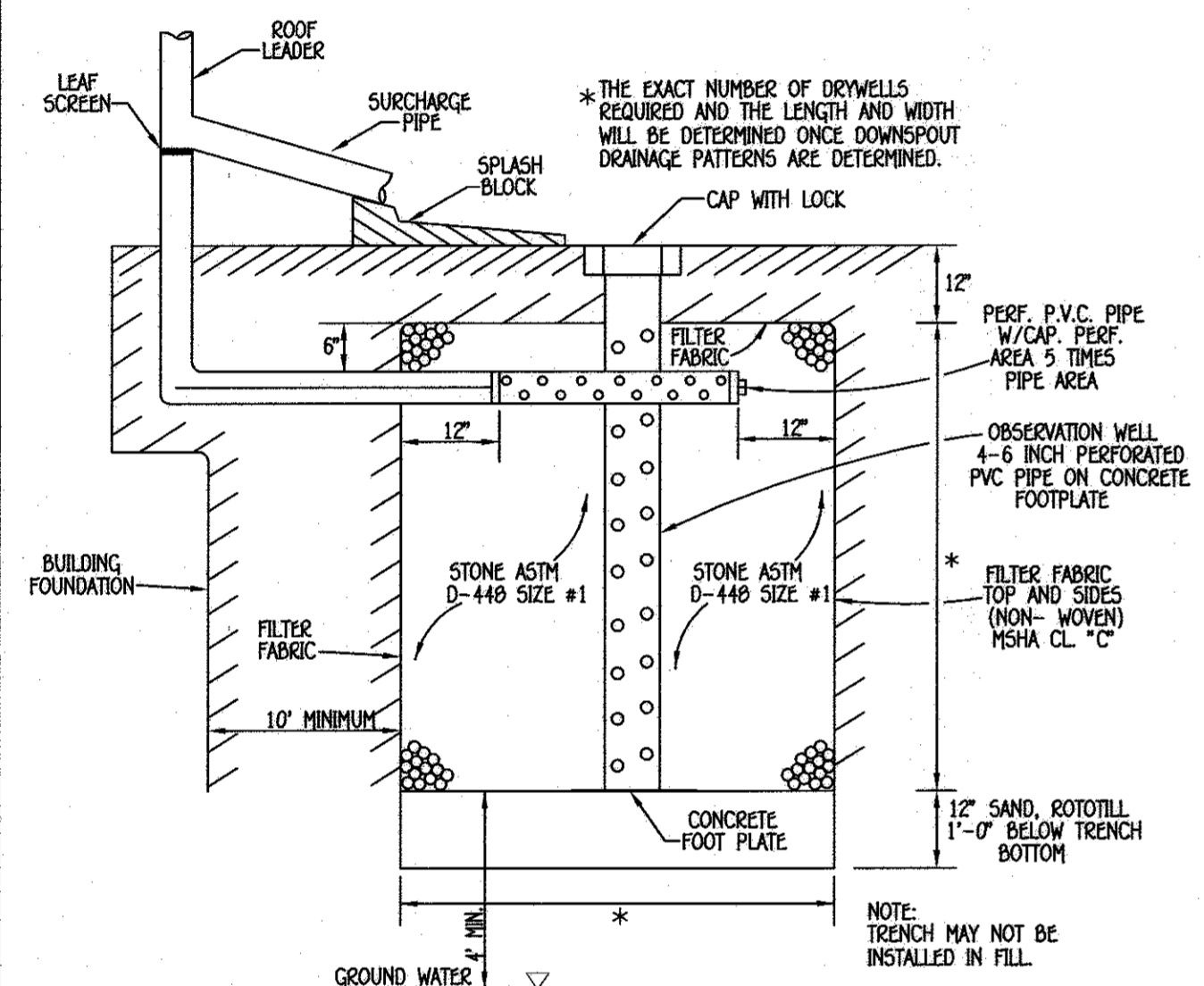
SHEET INDEX	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ENVIRONMENTAL CONCEPT PLAN

SOILS LEGEND			
SOIL	NAME	CLASS	K FACTOR
GfB	Gladstone - Urban land complex, 0 to 8 percent slopes	A	0.20
GfC	Gladstone - Urban land complex, 8 to 15 percent slopes	A	0.20
QuB	Glenville - Urban land udorthents complex, 0 to 8 per. slopes	C	0.37

Soil Map: Z3 (Clarksville, SE)

STORMWATER MANAGEMENT SUMMARY			
AREA ID.	ESD REQUIRED CU.FT.	ESD PROVIDED CU.FT.	REMARKS
SITE	618	760	DRY WELLS (M-5) & MICRO-BIORETENTION (M-6)
TOTAL	618	760	

GROSS AREA = 0.532 AC. (LOT 126) 1.003 AC. (TOTAL)
 LOD = 0.46 ACRES
 RCN = 38.6
 TARGET Pe = 1.4"



GUTTER DRAIN FILTER DETAIL
NOT TO SCALE

STORMWATER MANAGEMENT NOTES

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

DRY WELL CHART					
DRYWELL NO.	AREA OF ROOF PER DOWN SPOUT	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF TREATMENT	L W D
NORTH	960 SQ. FT.	107 C.F.	112 C.F.	100%*	8' x 7' x 5'

* AREA OF TREATMENT EXCEEDS THAT REQUIRED.

DRY WELL DETAIL (M-5)
NOT TO SCALE

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

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil (2' to 4' deep)	loamy sand 60-65% compost 35-40% or sandy loam 30% coarse sand 30% compost 40%		USDA soil types loamy sand or sandy loam; clay content <5%
Organic Content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum
Pea gravel diaphragm	pea gravel: ASTM D-440	No. 8 or No. 9 (1/8" to 3/8")	
Curbside drain	ornamental stone: washed cobbles	stone: 2" to 3"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	No. 57 or No. Aggregate (3/8" to 3/4")	
Underdrain piping	1" 750, Type P5 20 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" pert. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipe; not necessary underneath pipes. Perforated pipe shall be wrapped with 1/4 inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA, Msc No. 3, f = 3500 psi at 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-80	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 308.2R99; vertical loading D1-10 or H-20; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AASHTO-M-6 or ASTM-C-33	0.075" to 0.04"	Sand substitutions such as Database and Graystone (AASHTO) #10 are not acceptable. No calcium chlorinated diatomite sand substitutions are acceptable. No "rock dust" can be used for sand.

ENVIRONMENTAL CONCEPT PLAN

HOLIDAY HILLS

LOTS 125 AND 126

TAX MAP No. 41 GRID No. 06 PARCEL No. 174
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

LEGEND	
SYMBOL	DESCRIPTION
---452---	EXISTING 2' CONTOURS
---490---	EXISTING 10' CONTOURS
GfB	SOILS LINES AND TYPE
GfC	SOILS LINES AND TYPE
---	EXISTING TREELINE
⊙ ⊗ ⊕	INDIVIDUAL TREES & SHRUBS
---	EXISTING FENCE LINE
---	EXISTING & PROPOSED PAVING
---	PROPOSED CONTOUR
---	SPOT ELEVATION
---	LIMITS OF DISTURBANCE
---	DRAINAGE AREA DIVIDE
---	SILT FENCE
---	EROSION CONTROL MATING
---	STABILIZES CONSTRUCTION ENTRANCE

GENERAL NOTES

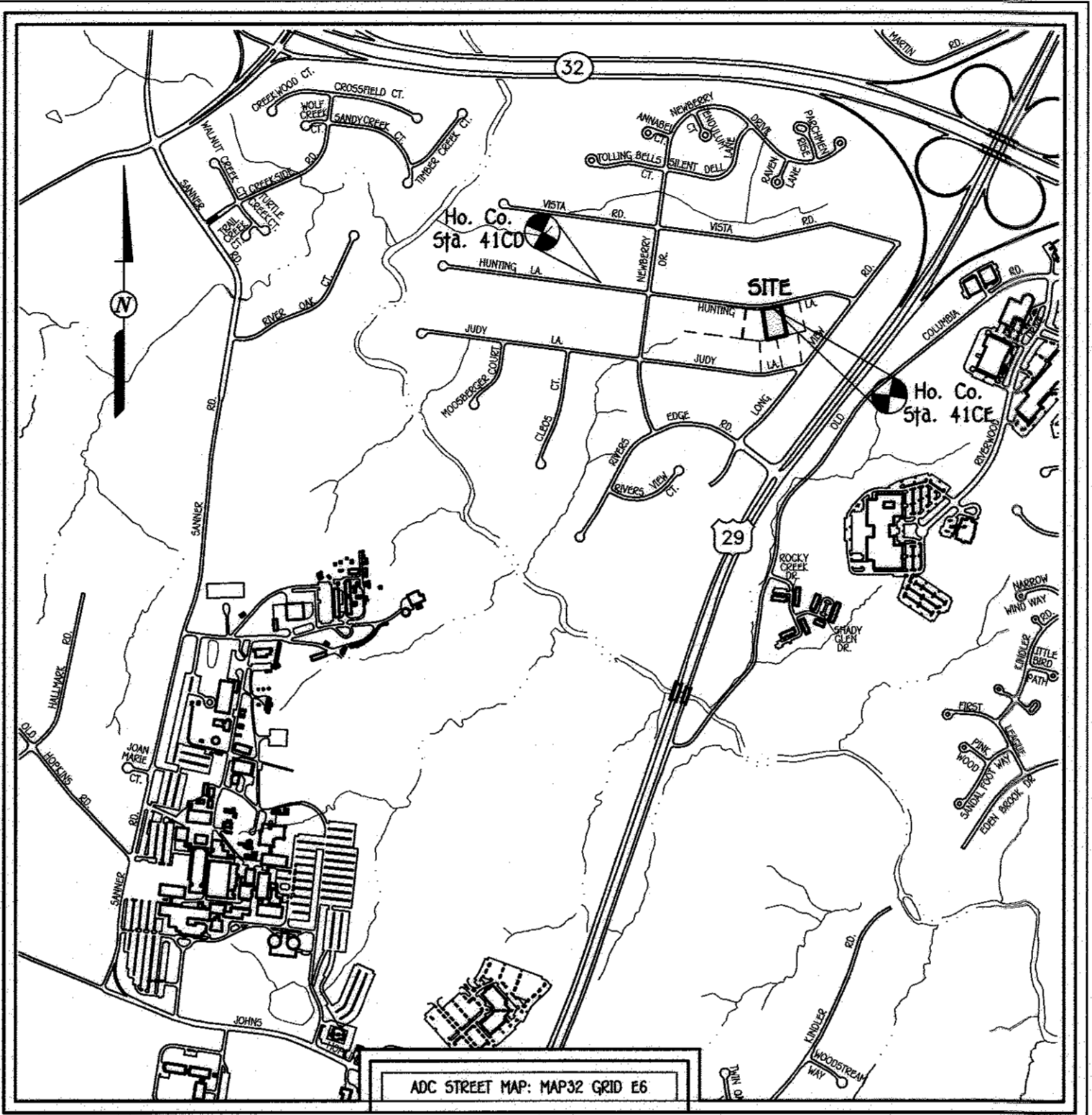
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-313-1800 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY (MISS UTILITY) AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- BOUNDARY SHOWN HEREON IS BASED ON FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED BY FISHER, COLLINS & CARTER, INC. DATED MAY, 2016. TOPOGRAPHY SHOWN HEREON IS BASED ON A TOPOGRAPHIC SURVEY PERFORMED BY FISHER, COLLINS & CARTER, INC. IN MAY, 2016 AND SUPPLEMENTED WITH HOWARD COUNTY QS 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. 41CD AND 41CE WERE USED FOR THIS PROJECT.
- PREVIOUS DRP 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 & 34-3995.
- 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 10/05/2013 COMPREHENSIVE ZONING PLAN).
- NO 100 YEAR FLOODPLAIN, WETLANDS, STREAMS) AND/OR THEIR BUFFERS, NOR STEEP SLOPES EXIST ON-SITE.
- NO FOREST STANDS EXIST ON-SITE. SEE ENVIRONMENTAL FINDINGS LETTER PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. DATED MAY 13, 2016.
- LANDSCAPING WILL BE PROVIDED AT THE FINAL PLAN STAGE OF THIS PROJECT.
- FOREST CONSERVATION REQUIREMENTS FOR THIS PROPOSED REDIVISION 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 APPROPRIATION 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 10617 HUNTING LANE, WHICH IS TO REMAIN.
- SOILS SHOWN HEREON ARE BASED ON THE NCS WERSOIL SURVEY AND HOWARD COUNTY SOIL MAP #23.
- NO HISTORICAL FEATURES OR CEMETRIES ARE ON SITE.

DESIGN NARRATIVE

- Introduction:**
 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.
- General Site Conditions:**
 10617 Hunting Lane is zoned R-20 and is located on Tax Map 41, Parcel No.174 of the Howard County, Maryland Tax Map Database System. The property was previously recorded as Lot 19 under platbook 5, folio 78, dated November 12, 1956. 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 currently be served public water and public sewer. The runoff from the lot is mostly from northeast to southwest and southeast to the rear corners of the new lot. Micro-bioretenention will be utilized to treat majority rooftop and driveway runoff, a drywell will treat the remaining portion of the roof. Per the 2004 Web Soil Survey, soils on-site consist of "GfB" and GfC, Gladstone - Urban land complex, type A soil and a small (2% of the site) amount of "QuB", Glenville - Urban land udorthents complex, type C soil.
- Natural Resource Protection:**
 Environmentally sensitive features such as wetlands, streams, their buffers, steep slopes, floodplain and forested areas do not exist on-site. Three (3) specimen trees existing along the western property line and are to remain.
 - Maintenance of Natural Flow Patterns:**
 Nature flow patterns will be maintained. Existing and proposed runoff flows mostly toward the southwest and southeast portion of the site.
 - Reduction of impervious areas through better site design, alternative surfaces and Nonstructural Practices**
 A Use-In-Common 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.

SITE ANALYSIS DATA CHART

- TOTAL AREA OF THIS SUBMISSION = 0.532 AC.*
- LIMIT OF DISTURBED AREA = 20,100 SQ.FT. OR 0.46 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 GREEN OPEN AREA = 0.402 AC.*
- TOTAL IMPERVIOUS AREA = 0.13 AC.*
- TOTAL AREA OF ERODIBLE SOILS = 0.02 AC.*
- TOTAL AREA OF ROAD DEDICATION = 0.00 AC.*

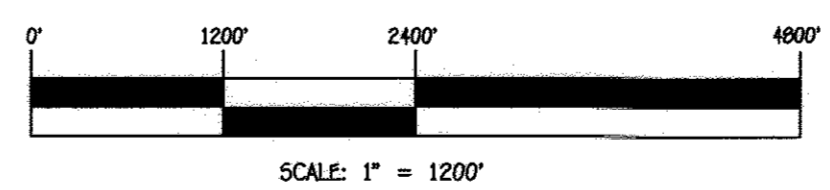


VICINITY MAP
SCALE: 1" = 1200'

BENCHMARK INFORMATION	
B.M.#1 - HOWARD COUNTY CONTROL STATION #41CD - HORIZONTAL - (NAD '83) (LOCATED ON THE NORTH SIDE OF HUNTING LANE WEST OF NEWBERRY DRIVE) N 550,548.6650 E 1,344,389.3950 ELEVATION = 347.74 - VERTICAL - (NAVD '88)	
B.M.#2 - HOWARD COUNTY CONTROL STATION #41CE - HORIZONTAL - (NAD '83) (LOCATED ON THE SOUTH SIDE OF HUNTING LANE) N 550,340.9790 E 1,345,092.2830 ELEVATION = 371.34 - VERTICAL - (NAVD '88)	

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

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



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Kentle D. ...
 Chief, Division of Land Development 10-12-16
 Date

JP
 Chief, Development Engineering Division JP 10-14-16
 Date

TITLE SHEET

HOLIDAY HILLS,
 LOTS 125 AND 126,
 10617 HUNTING LANE
 ZONED R-20

TAX MAP No. 41 GRID No. 06 PARCEL No. 174
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: OCTOBER 03, 2016
 SHEET 1 OF 2

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31391, EXPIRATION DATE: 07/15/2017.

John H. ... 10/07/16
 Signature of Professional Land Surveyor DATE



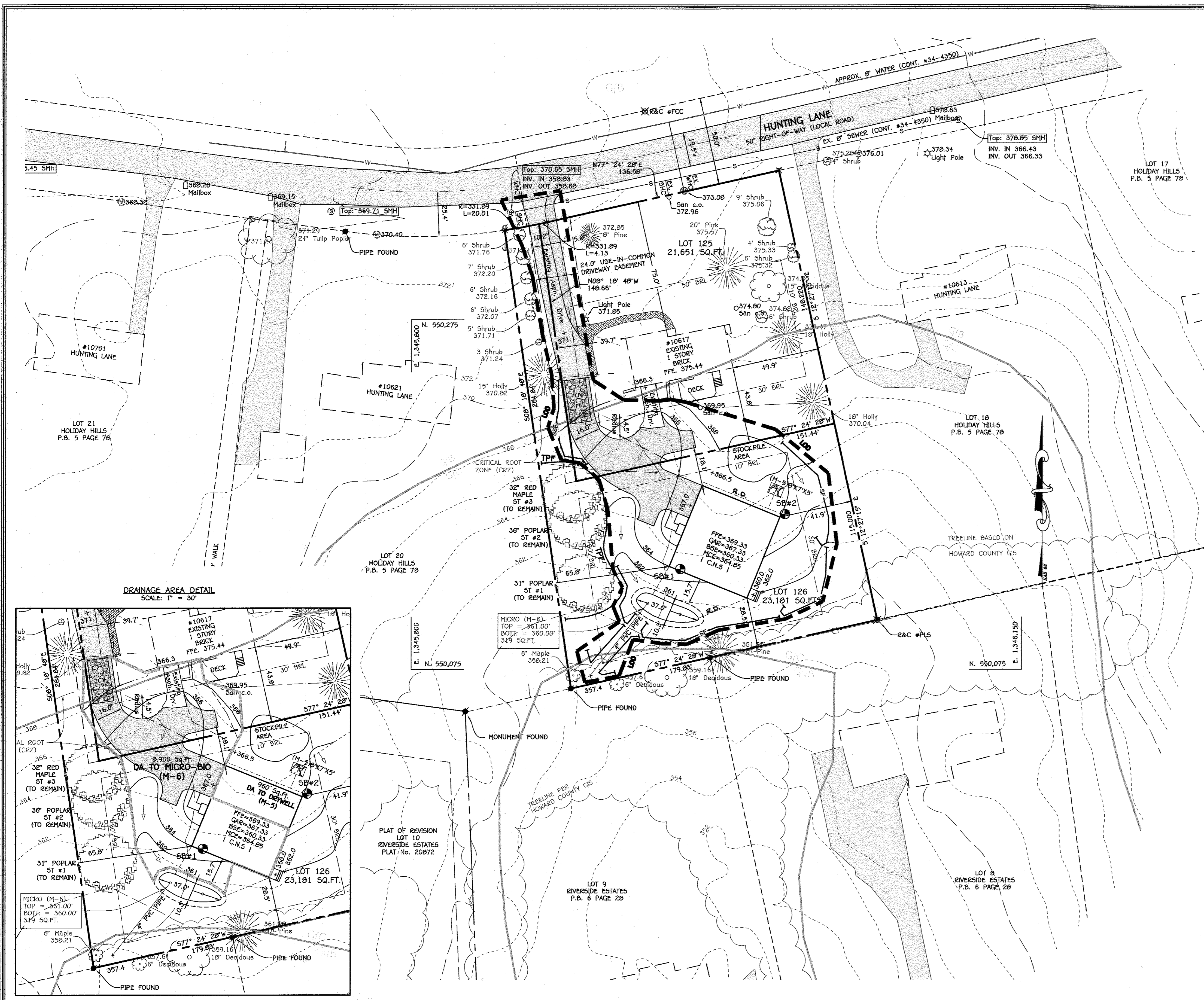
OWNER/DEVELOPER

MARK & PATRICIA WHEELER
 10617 HUNTING LANE
 COLUMBIA, MARYLAND 21044-4207
 410-531-8207

PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
PB 5 / F 78	06	R-20	41	FIFTH	605102

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALDORNE NATIONAL PIKE
 ELKLOFT CITY, MARYLAND 21042
 (410) 461-2995

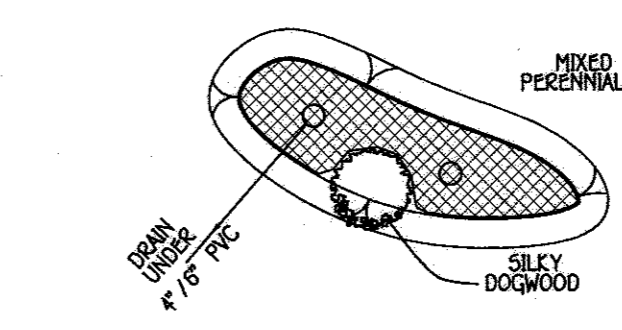
NO.	REVISION	DATE	X



LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	EXISTING 2' CONTOURS		PROPOSED CONTOUR
	EXISTING 10' CONTOURS		SPOT ELEVATION
	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

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	MICRO-BIORETENTION (M-6) Y/N, NUMBER
125	-	-	-	-
126	NO	NO	YES (1)	YES (1)

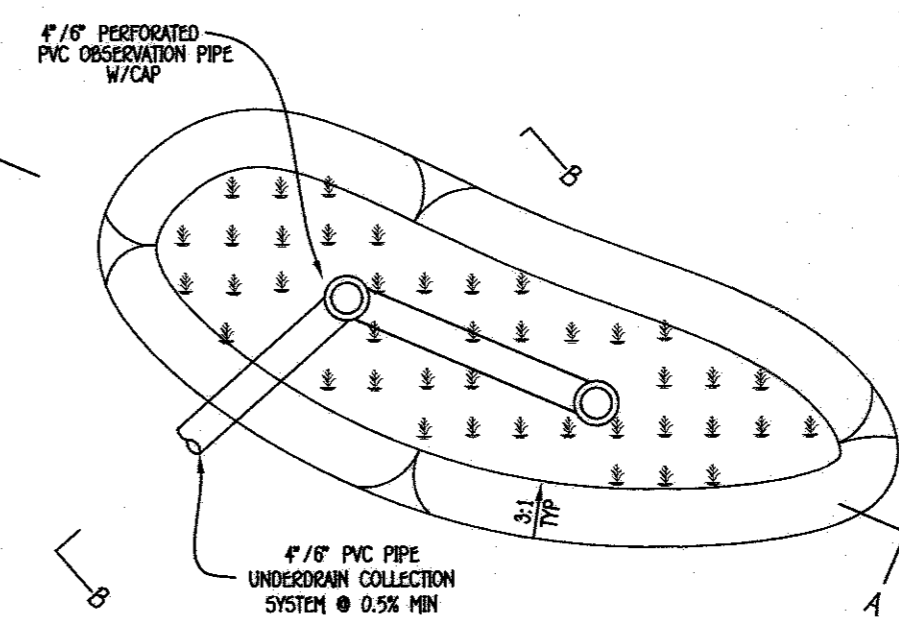
SPECIMEN TREE TABLE				
KEY	SPECIES	SIZE (DBH)	CRZ (FT RADIUS)	COMMENTS
1	TULIP POPLAR	31"	46.5'	TO REMAIN
2	TULIP POPLAR	36"	54.0'	TO REMAIN
3	RED MAPLE	32"	48.0'	TO REMAIN



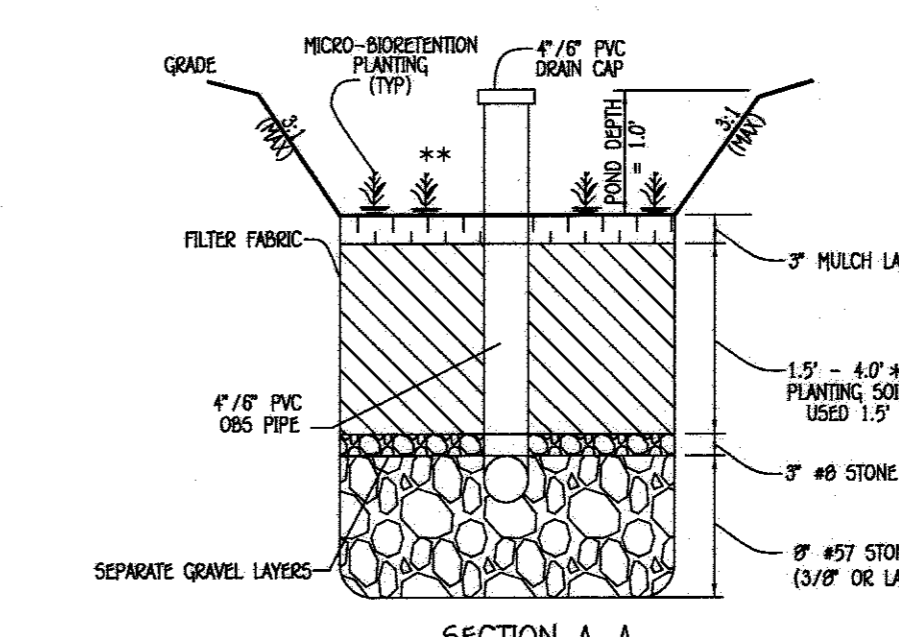
MICRO-BIORETENTION / BIORETENTION									
BIORETENTION FILTER	A	B	C	D	E	F	G	H	I
LOT 126	361.0	361.0	360.0	359.75	358.25	358.0	357.67	357.5	375.33

MICRO-BIORETENTION PLANT MATERIAL		
MICRO-BIO QUANTITY	NAME	MAXIMUM SPACING (FT.)
40	MIXED PERENNIALS	1.5 TO 3.0 FT.
1	SILY DOGWOOD	PLANT AWAY FROM INFLOW LOCATION

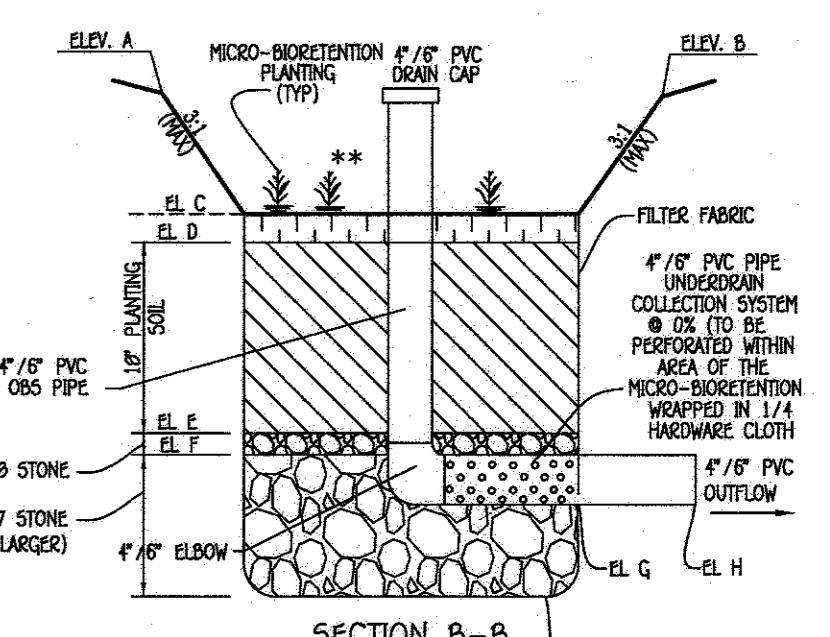
MICRO-BIORETENTION PLANTING DETAIL
NOT TO SCALE



PLAN
NOT TO SCALE

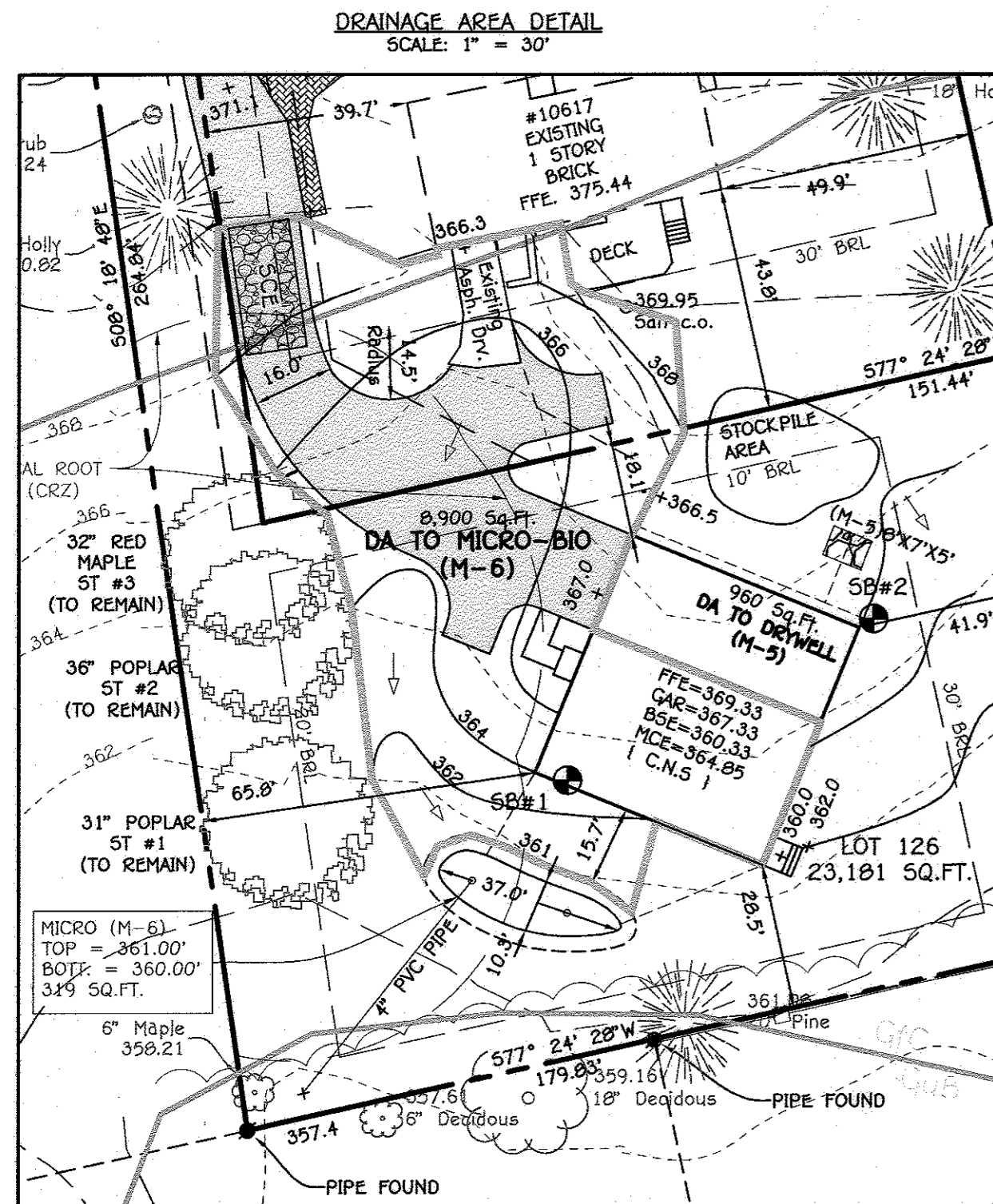


SECTION A-A



SECTION B-B

MICRO-BIORETENTION DETAIL (M-6)
NOT TO SCALE



DRAINAGE AREA DETAIL
SCALE: 1" = 30'

NO.	REVISION	DATE	X

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31351, EXPIRATION DATE: 07/15/2017.

Signature 10/07/16
DATE

OWNER/DEVELOPER
MARK & PATRICIA WHEELER
10617 HUNTING LANE
COLUMBIA, MARYLAND 21044-4207
410-531-8207

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Signature 10-12-16
Chief, Division of Land Development Date

Signature 10-24-16
Chief, Development Engineering Division Date

PROJECT: HOLIDAY HILLS, LOTS 125 & 126 SECTION: PARCEL NO. 174

PLAT PB 5 / F 78	BLOCK NO. 06	ZONE R-20	TAX/ZONE 41	ELEC. DIST. FIFTH	CENSUS TR. 605102
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ENVIRONMENTAL CONCEPT PLAN

HOLIDAY HILLS,
LOTS 125 AND 126,
10617 HUNTING LANE
ZONED R-20

TAX MAP No. 41 GRID No. 06 PARCEL No. 174
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: OCTOBER 03, 2016
SHEET 2 OF 2

ECP-17-010

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