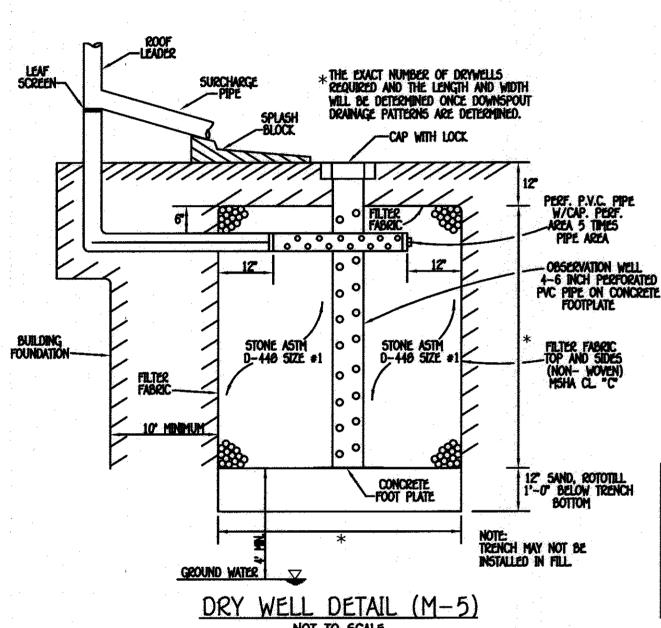
		SHEET INDEX
	SHEET NO.	DESCRIPTION
	1	TITLE SHEET
Ш	2	ENVIRONMENTAL CONCEPT PLAN

50IL	NAME	CLA55	K FACTOR
Co	Codorus and Hatboro silt loams, 0 to 3 percent slopes	С	0.32
GhB	Gleneig-Urban land complex, 0 to 8 percent slopes	В	0.37
GhC	Gleneig-Urban land complex, 8 to 15 percent slopes	8	0.37
GmC	Glenville silt loam, 8 to 15 percent slopes	C	0.43
GuB	Gjenville-Urban land-Udorthents complex, 0 to 8 percent slopes	С	0.43
MaD	Manor loam, 15 to 25 percent slopes	В	0.32

	STORMWA	AGEMENT SUMMARY	
AREA ID. ESDV REQUIRED CU.FT.		ESDV PROVIDED CU.FT.	remark5
SITE	550	554	DRY WELLS (M-5) & MICRO-BIORETENTION (M-6)
TOTAL	550	554	

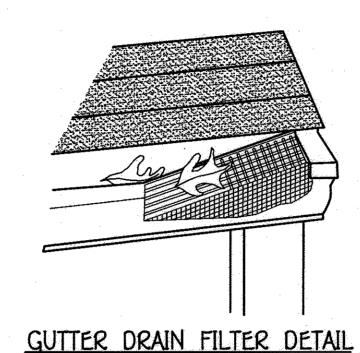
GROSS SITE AREA = 0.55 ACRES LOD = 0.30 ACRES RCN = 55 TARGET Pe = 1.2"



ENVIRONMENTAL CONCEPT PLAN STANDAFER PROPERTY LOT 2

9832 OWEN BROWN ROAD

TAX MAP No. 36 GRID No. 8 PARCEL NO. 175 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND



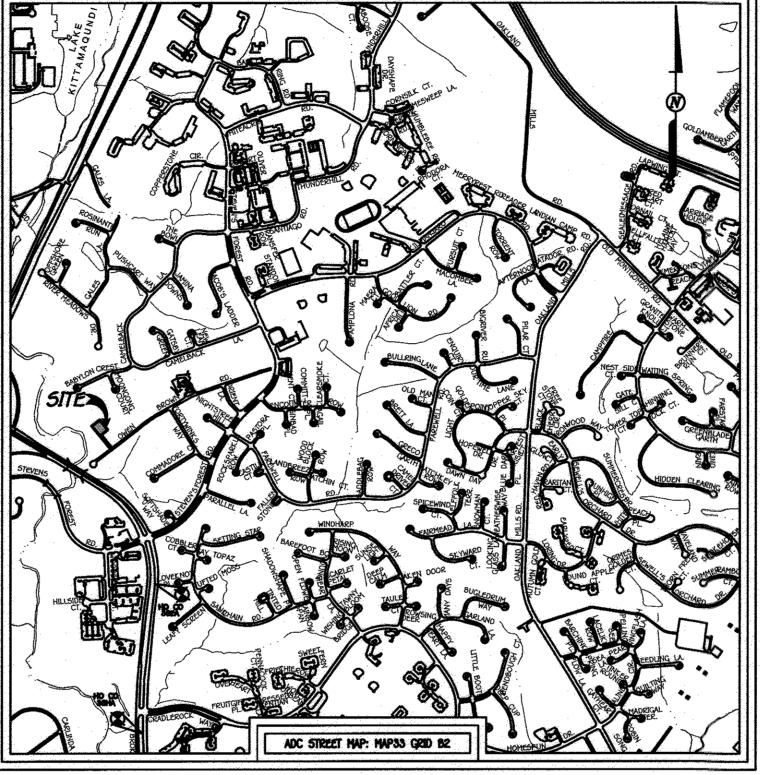
STORMWATER MANAGEMENT NOTES

- 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 SQ. 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 THE DETAIL SHOWN ON THIS SHEET.
- 4. FINAL GRADING IS SHOWN ON THE SITE DEVELOPMENT PLAN.

DRY WELL CHART										
DRYWELL No.	AREA OF PER DOWN	ROOF SPOUT	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF TREATMENT	L	W	D		
SIDE (FRONT)	923 50). FT.	66 C.F.	200 C.F.	100%*	10° x	10'	x 5'		
SIDE (REAR)	423 50). FT.	41 C.F.	50 C.F.	100%*	5' x	5'	x 5'		
REAR	757 50). FT.	72 C.F.	200 C.F.	100%*	10' x	10'	x 5'		

* AREA OF TREATMENT EXCEEDS THAT REQUIRED.

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)		
1ulch	shredded hardwood		aged 6 months, minimum
Pea gravel diaphragm	ped gravel: ASTM-D-448	No. 8 or No. 9 (1/8" to 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and nfiltration berms)	AASHTO M-43	No. 57 or No. Aggregate (3/8" to 3/4")	
Inderdrain piping	F 750, Type P5 20 or AASHTO M-270	4" to 6" rigid schedule 40 PVC or 5DR35	Slotted or perforated pipe; 3/8" pert. 6 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with 1/4 inch galvanized hardware cloth
Poured in place concrete (if equired)	MSHA Mix No. 3; f = 3500 psi at 20 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n.ā	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 5tate 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 350.8/89; vertical loading [H-10 or H-201; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
and	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.



VICINITY MAP

BENCHMARK INFORMATION

B.M.#1 - HOWARD COUNTY CONTROL STATION #36EA - HORIZONTAL - NAD '63)
(LOCATED AT BROKEN LAND PARKWAY, 0.1 MILES SOUTH OF STEVENS FOREST ROAD)
N 556,986.803

E 1,354,535.200 ELEVATION = 354.061 - VERTICAL - (NAVD '00)

ELEVATION = 292.221 - VERTICAL - (NAVD '88)

B.M.#2 - HOWARD COUNTY CONTROL STATION #36HA - HORIZONTAL - (NAD '83) (LOCATED AT BROKEN LAND PARKWAY & CRADDLEROCK WAYEN] N 555,116.606

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 DRAINS.
- 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

LEGEND						
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION			
~492	EXISTING 2' CONTOURS	-162	PROPOSED CONTOUR			
490	EXISTING 10' CONTOURS	+362.5	SPOT ELEVATION			
GfB GfC	SOILS LINES AND TYPE	LOD	LIMITS OF DISTURBANCE			
~~~	existing treeline	~~~~	PROPOSED TREELINE			
Ü	EXISTING FENCE LINE	—5F——	SILT FENCE			
	EXISTING PAVING	P55MC	PERMANENT SOIL STABILIZATION MATTING			
	PROPOSED PAVING	55F	SUPER SILT FENCE			
nyan usukwa mwaka siniawa	DRAINAGE AREA DIVIDE		STABILIZES CONSTRUCTION ENTRANCE			

#### GENERAL NOTES

- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION 110—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 48 HOURS PRIOR TO ANY EXC

- 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. 36EA AND 36HA WERE USED FOR THIS PROJECT.

  PREVIOUS DPZ FILE NUMBERS: PLAT NO. 20444, F-08-046.

  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. LOT IS TO BE SERVED BY PUBLIC WATER CONTRACT #710-D-W AND BY PUBLIC SEWER CONTRACT #319-WAS.

  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 10/08/2013 COMPREHENSIVE ZONING PLAN).

  ONO 100 YEAR FLOODPLAIN, WETLANDS, STREAM(S) AND/OR THEIR BUFFERS, NOR STEEP SLOPES EXIST ON-SITE.

  1. NO WETLANDS EXIST ON-SITE. SEE ENARONMENTAL FINDINGS LETTER PREPARED BY ECO-SCIENCE, INC. DATED JUNE 2016.

  2. LOT IS EXEMPT FROM POREST CONSERVATION REQUIREMENTS SINCE IT IS A SINGLE LOT WITH A TOTAL AREA LESS THAN 40,000 SF.

  3. SOIL BORINGS WILL BE REQUIRED FOR THE PROPOSED STORMATER MANAGEMENT DEVICES.

  4. APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBDINISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN AND/OR RED-LINE REVISION PLAN, REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDINISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SUBDINISION PLAN/PLAT AND/OR SITE DEVELOPMENT REQULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SUBDINISION PLAN/PLAT AND/OR SITE DEVELOPMENT REQULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SUBDINISION PLAN/PLAT AND/OR SITE DEVELOPMENT REQULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SUBDINISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN STAGES AND/OR RED—LINE REVISION PROCESS.

  5. NO STRUCTURES EXIST ON TH

#### DESIGN NARRATIVE

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

Standafer Property, Lot 2 involves development of a single family lot that is currently unimproved and has a number of individual trees on-site. Property is zoned R-20 and located on Tax Map 36, Grid 8, Parcel No. 175, Lot 2 of the Howard County, Maryland Tax Map Database System. The property is an existing lot of record located at 9832 Owen Brown Road. Lot will utilize connections to existing water and sewer mains in Owen Brown Road. The property is located in the Columbia area of Howard County in the watershed of the Little Patuxent River (02131105). This property is relatively rectangular in shape on a pipestem and runoff on-site is mainly from East to West. The existing off-site house to the northeast acts as a high point for runoff. Only minimal off-site area has runoff that crosses this property. The proposed individual driveway will connect to the existing driveway for 9836 Owen Brown Road which per plat #20444 is to act as a common driveway. Being that the lot is less than 40,000 sq.ft., it is not subject to the forest conservation regulations. Also, according to a field inspection conducted by Eco-Science Professionals (ESP) dated June, 2016, no wetlands or streams are present on-site. The Web Soil Survey shows soils on the site consist of Glenelo-Lirban Complex. (Ch8) & Manor Loam (MaD). Type "8" soils exist on the property. The runoff from the roof of the Glenelg-Urban Complex (GhB) & Manor Loam (MaD), Type "B" soils exist on the property. The runoff from the roof of the proposed house is to be treated through roof leaders to three (3) dry wells (M-5). Runoff from a portion of the proposed driveway will flow overland and be treated by a micro-bioretention facility (M-6).

- vironmentally sensitive areas do not exist on-site, therefore no special effort is required to protect natural resource on-site.
- 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 improvements.
- III. <u>Reduction of impervious areas through better site design. Alternative surfaces and Nonstructural Practices</u>

  The design will make use of the design of this project utilizes an individual driveway that will access the existing common driveway. Non-Structural practices as permitted in Chapter 5, three (3) Dry Wells (M-5) and one (1) Micro-Bioretention (M-6) will be used
- to address ESD to the MEP requirements. W. Integration of Erosion and Sediment Controls into Stormwater Strategy:
- Since this is a small drainage area (site sheet flows from the eastern property line to western property line, silt fence, super silt fence, and erosion control matting will be utilized for erosion & sediment control. There is no direct discharge of runoff directly to a stream. All site runoff will discharge to the the existing ground then eventually to the Little Patuxent River. No drainage easements will be required. It is anticipated that all cut will be utilized on—site for construction at time of Site Development Plans.
- V. Implementation of £50 Planning Techniques and practices to the Maximum Extent Practicable (MEP)
  The full required £50 volume is being provided.
- VI. <u>Request for a Design Manual Waiver:</u>
  No waivers related to stormwater management are being requested in the project.

#### SITE ANALYSIS DATA CHART

TOTAL AREA OF THIS SUBMISSION = 23,900 5Q.FT. OR 0.55 AC.+. LIMIT OF DISTURBED AREA = 16,380 5Q.FT. OR 0.30 Ac.+

PRESENT ZONING DESIGNATION = R-20 (PER 10/06/2013 COMPREHENSIVE ZONING PLAN)

PROPOSED USE: RESIDENTIAL PREVIOUS HOWARD COUNTY FILES: PLAT#20444, F-08-048. TOTAL AREA OF FLOODPLAIN LOCATED ON-SITE = 0.00 AC

TOTAL AREA OF SLOPES IN EXCESS OF 15% = 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 = N/A

(EXEMPT FROM FOREST CONSERVATION REQUIREMENTS SINCE LOT IS LESS THAN 40,000 SQ.FT.) TOTAL GREEN OPEN AREA = 0.46 AC+

TOTAL IMPERVIOUS AREA = 0.09 AC:
TOTAL APPA OF PRODIBLE SOILS = 0.20 AC.

· · · · · · · · · · · · · · · · · · ·	APPROVED: DEPARTMENT	T OF DIANKING AND 2	ONING	
EQUENI SCHEDI	TE 13 REQUIRED.	P.	TOTAL AREA OF ROAD D	

NO.	2EV510N	DATE	· X
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			#X

PROFESSIONAL CERTIFICATION 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: 01/12/2010.

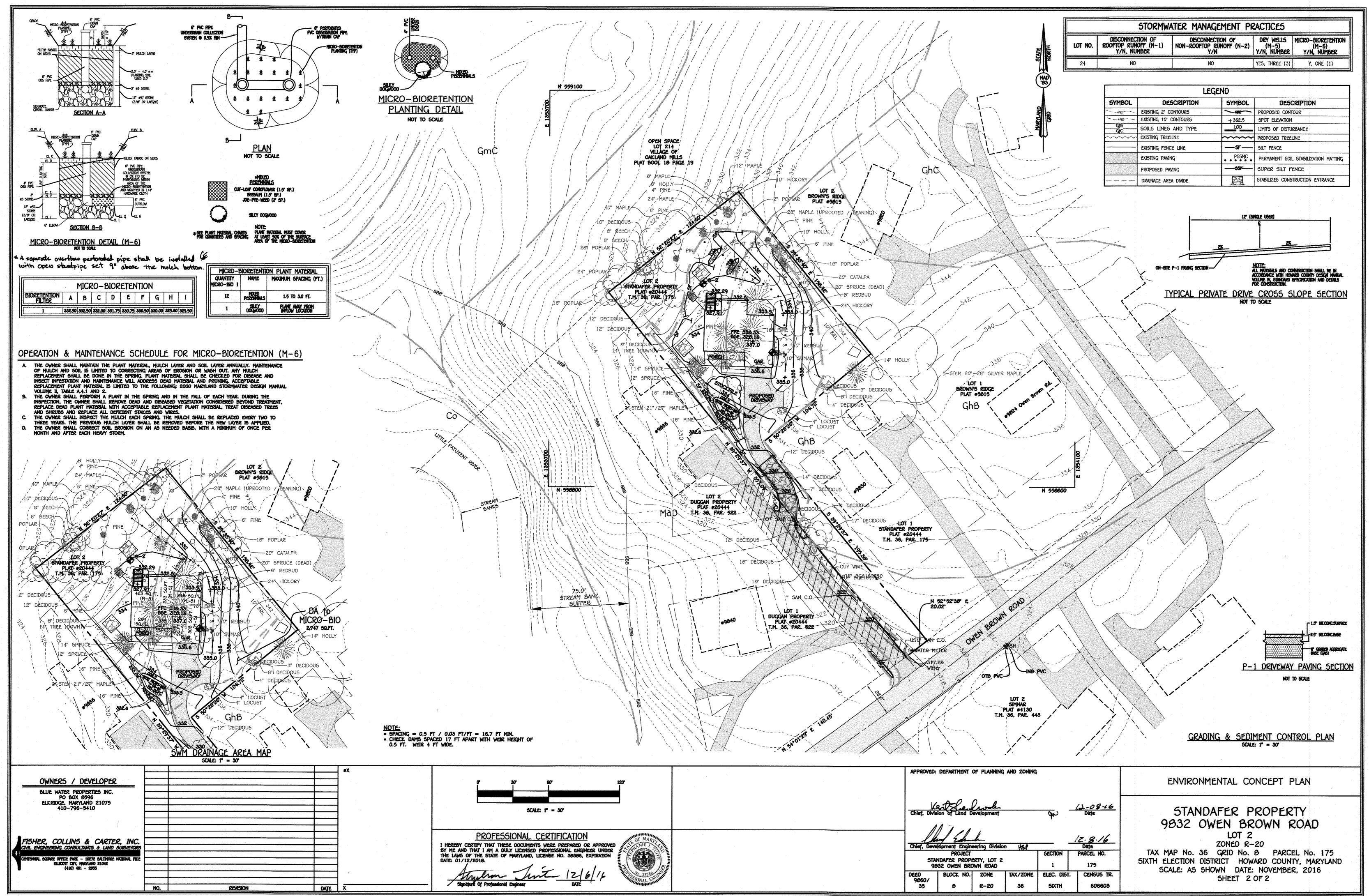
Chief. Division of Land Development que Date							
Chief, Deve	forment Engine	eering Division	12.8		Date		
	PROJECT			SECTION	PARCEL NO.	1	
	ndafer propi 132 owen bro			1	175		
DEED	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.		
9860/ 35	9	R-20	36	SEXTH	606603		

TITLE SHEET

### STANDAFER PROPERTY 9832 OWEN BROWN ROAD

LOT 2 ZONED R-20

TAX MAP No. 36 GRID No. 8 PARCEL No. 175 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: NOVEMBER, 2016 SHEET 1 OF 2



ECP-17-007