

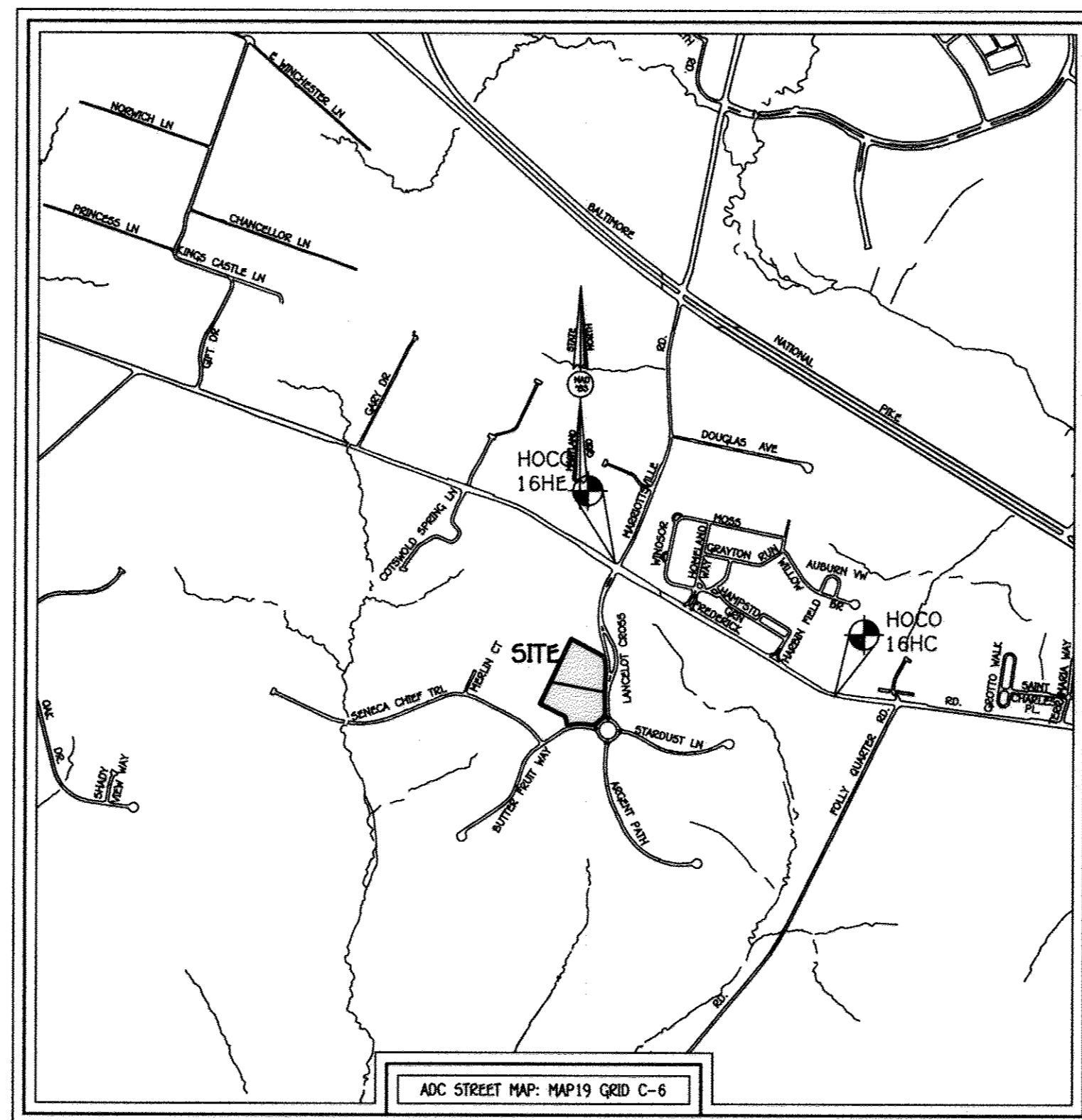
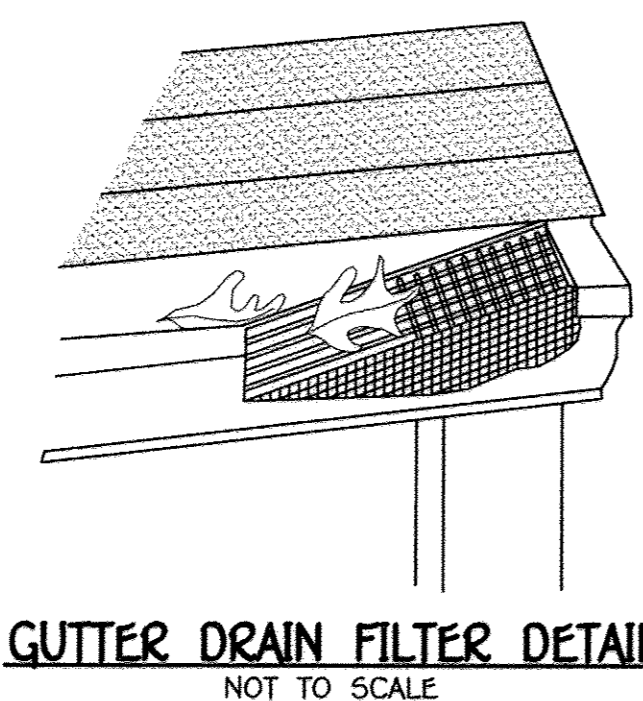
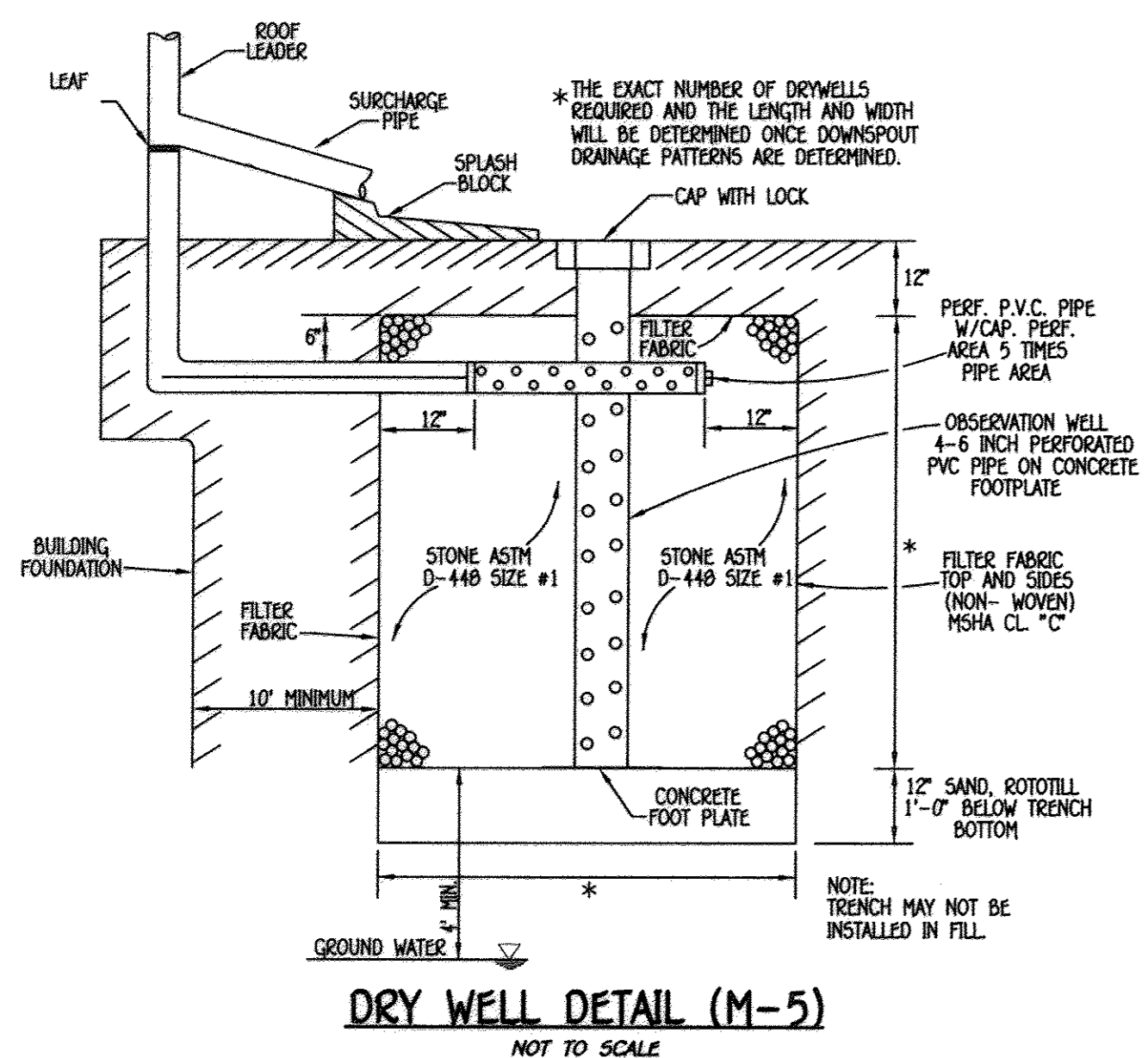
SHEET INDEX	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ENVIRONMENTAL CONCEPT PLAN

ENVIRONMENTAL CONCEPT PLAN CHARLES FEAGA PROPERTY, LOTS 1 & 2

TAX MAP No. 23 GRID No. 4 PARCEL No. 62
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SOILS LEGEND			
SOIL	NAME	CLASS	Kw FACTOR
GgB	Glenelig loam, 3 to 8 percent slopes	B	0.2B
GmB	Glenville silt loam, 3 to 8 percent slopes	C	0.43
MdB	Manor loam, 3 to 8 percent slopes	B	0.2B
MAC	Manor loam, 8 to 15 percent slopes	B	0.2B

LEGEND	
---	EXISTING 2' CONTOURS
---	EXISTING 10' CONTOURS
---	EXISTING TREE LINE
---	SOIL LINES AND TYPES
⊙	DENOTES PROPOSED WELL
○	DENOTES FAILED PERC
⊙#21	DENOTES PASSED PERC
▨	DENOTES PROPOSED SEPTIC EASEMENT
▩	DENOTES EXISTING SEPTIC EASEMENTS
▧	DENOTES 15% TO 25% SLOPES
▦	DENOTES 1500 SQ.FT. ALTERNATE WELL SITE
△	DENOTES EXISTING PERCS FROM 5/6/92
□	DENOTES AN EXISTING PUBLIC DRAINAGE & UTILITY EASEMENT



BENCHMARK INFORMATION	
B.M.# 16HC - HOWARD COUNTY CONTROL STATION #16HC - HORIZONTAL - NAD '83	N 589,790.500 E 1,341,529.866 ELEVATION = 448.644 - VERTICAL - (NAVD '88)
B.M.# 16HE - HOWARD COUNTY CONTROL STATION #16HE - HORIZONTAL - (NAD '83)	N 590,948.693 E 1,339,596.619 ELEVATION = 537.975 - VERTICAL - (NAVD '88)

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 TO BE SHOWN ON A GRADING PLAN.

DRY WELL CHART						
DRYWELL NO.	AREA OF ROOF PER DOWN SPOUT	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF TREATMENT	L	W
LOT 2 (FRONT RT)	500 SQ. FT.	48 C.F.	128 C.F.	100%*	8'	8' x 5'
LOT 2 (FRONT LT)	1,000 SQ. FT.	95 C.F.	162 C.F.	100%*	9'	9' x 5'
LOT 2 (REAR RT)	500 SQ. FT.	48 C.F.	128 C.F.	100%*	8'	8' x 5'
LOT 2 (REAR LT)	1,000 SQ. FT.	95 C.F.	162 C.F.	100%*	9'	9' x 5'

* AREA OF TREATMENT EXCEEDS THAT REQUIRED.

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

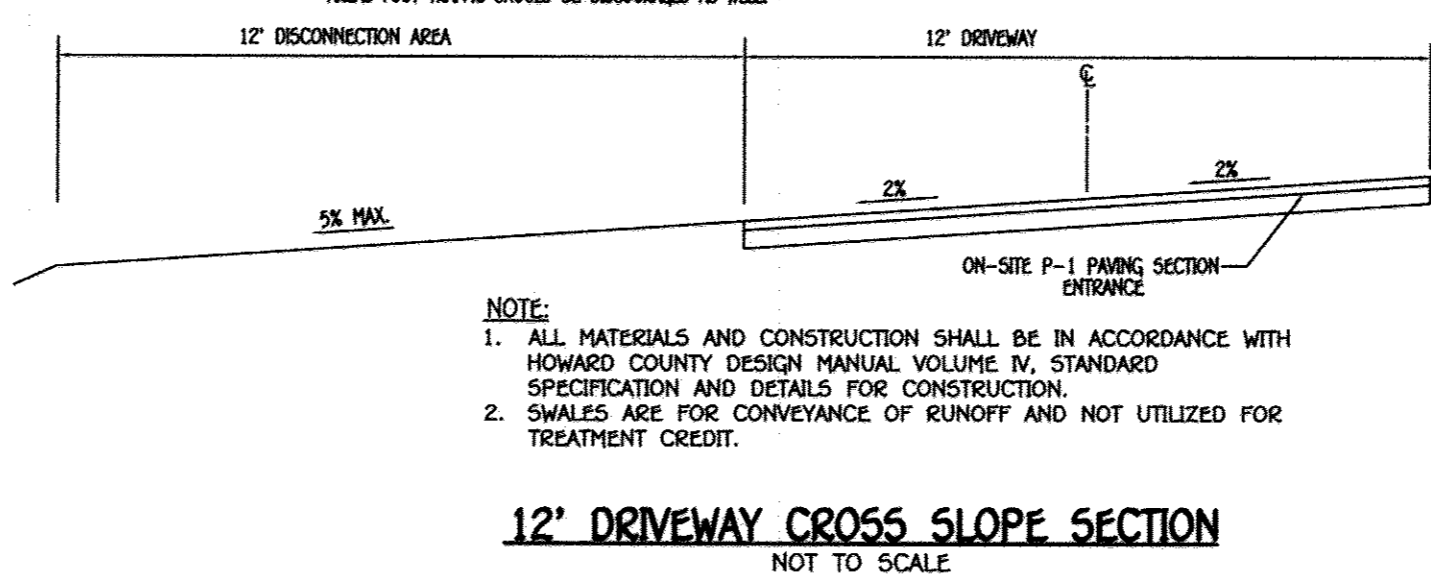
Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Filling soil (2" to 4" deep)	USDA soil types loamy sand or sandy loam; clay content <5% or sandy loam 30% coarse sand 30% compost 40%		
Organic Content	Min. 10% by dry weight (ASTM D 2924)		
Mulch	shredded hardwood		aged 6 months, minimum
Pea gravel diaphragm	pea gravel: ASTM-D-448	No. 8 or No. 9 (1/8" to 3/8")	
Curbside drain	ornamental stone, washed cobble	stone: 2" to 5"	
Geotextile	n/a	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	F 75B, Type PS 2B or ASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Sloped or perforated pipe: 3/8" per ft. @ 6" on center, 4 holes per row, minimum of 9" 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 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 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 308.8/09; vertical loading D1-10 or H-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 Diabase and Graystone (ASHTO) #10 are not acceptable. No calcium carbonate or dolomitic sand substitutions are acceptable. No "rock duff" can be used for sand.

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 ENSURE 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.

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

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



GENERAL NOTES:

- THIS AREA DESIGNATES A PRIVATE SEWERAGE EASEMENT OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWERAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THESE EASEMENTS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWERAGE EASEMENT. RECORDATION OF A MODIFIED SEWERAGE EASEMENT SHALL NOT BE NECESSARY.
- ADJUSTMENTS TO SEPTIC EASEMENT AREA IS NOT PERMITTED WITHOUT ADDITIONAL TESTING.
- THE LOT SHOWN HEREON COMPLIES WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT.
- EXISTING WELLS AND/OR SEWERAGE EASEMENTS WITHIN 100 FEET OF THE PROPERTY HAVE BEEN SHOWN FROM THE BEST AVAILABLE INFORMATION.
- TOPOGRAPHY SHOWN IN THE AREA OF THE LOT BEING DISTURBED IS BASED ON A TOPOGRAPHIC SURVEY BY FISHER, COLLINS & CARTER, INC. IN MARCH, 2017 AND SUPPLEMENTED WITH HOWARD COUNTY GIS TOPOGRAPHY AT 2' CONTOUR INTERVAL.
- BOUNDARY OF LOT BASED ON A FIELD RUN SURVEY BY FISHER, COLLINS & CARTER, INC. DATED MARCH, 2017.
- ANY CHANGES TO A PRIVATE SEWERAGE EASEMENT SHALL REQUIRE A REVISED PERC CERTIFICATION PLAN.
- DEED REFERENCE: LIBER 4902 FOLIO 245.
- LIMIT OF DISTURBANCE: 41,412 SQ.FT. OR 0.97 ACRES.
- SUBJECT PROPERTY ZONED: RC-DEO
- TOTAL AREA OF PROPERTY: 6.75 AC.
- WETLANDS, STREAMS, THEIR BUFFERS, FLOODPLAIN, AND STEEP SLOPES DO NOT EXIST ON THIS LOT.
- SOILS SHOWN HEREON ARE BASED ON NRCS WEB SOIL SURVEY AND HOWARD COUNTY SOILS MAP 12.
- THIS SUBDIVISION IS EXEMPT FROM FOREST CONSERVATION SINCE IT IS A SINGLE LOT BEING CREATED WITH NO FURTHER SUBDIVISION POTENTIAL.
- APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN AND/OR RED-LINE REVISION PLAN. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION 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 THIS PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.
- NO CEMETERIES EXIST ON-SITE. THERE IS AN EXISTING HISTORIC STRUCTURE ON-SITE (50+ YEARS OLD) WHICH WAS BUILT AROUND 1952. PER THE HISTORIC PRESERVATION DEPARTMENT, NO HPC HEETING IS REQUIRED.

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

3050 Lancelot Cross is zoned RC-DEO and is located on Tax Map 23, Parcel No.62 of the Howard County, Maryland Tax Map Database System. The property is a deeded parcel of land. The lot has an existing house to remain. The lot has a number of individual trees and is not forested. Since the subdivision is a single lot subdivision with no further subdivision potential, it is exempt from forest conservation requirements. The proposed house will be served by private well and private septic systems. The runoff from the lots is mostly from west to east toward Lancelot Cross. Drywells (M-5) and Non-Rooftop Disconnection (N-2) will be utilized to treat majority rooftop and driveway runoff. Per the 2004 Web Soil Survey, soils on-site consist of "GgB", Glenelig loam and "MdB", Manor loam. Type B soils and "GmB", Glenville silt loam, Type C soils.

I. Natural Resource Protection

Environmentally sensitive features such as wetlands, streams, their buffers, steep slopes, forest, and floodplain do not exist on-site.

II. Maintenance of Natural Flow Patterns

Nature flow patterns will be maintained. Proposed runoff flows northward toward Lancelot Cross.

III. Reduction of Impervious Areas through better site design, alternative surfaces and Nonstructural Practices
A single driveway is proposed to provide access to the proposed house with a shared apron with the existing house. The design will make use of Non-Rooftop Disconnection (N-2) to treat majority of runoff from the new driveway.

IV. Integration of Erosion and Sediment Controls into Stormwater Strategy

Silt Fence, Super Silt Fence, and Permanent Soil Stabilization Matting will be utilized to provide the majority of erosion and sediment control.

V. Implementation of ESD Planning Techniques and practices to the Maximum Extent Practicable (MEP)

The full required ESD volume is being provided.

VI. Request for Design Manual Waiver

No Waivers are required.

SITE ANALYSIS DATA CHART

- TOTAL AREA OF THIS SUBMISSION = 6.75 AC.±
- LIMIT OF DISTURBED AREA = 42,412 SQ.FT. OR 0.97 AC.± (50M BASED ON LOD)
- PRESENT ZONING DESIGNATION = RC-DEO (PER 10/05/2013 COMPREHENSIVE ZONING PLAN)
- PROPOSED USE: RESIDENTIAL
- PREVIOUS HOWARD COUNTY FILES: N/A
- TOTAL AREA OF FLOODPLAIN LOCATED ON-SITE = 0 AC
- TOTAL AREA OF SLOPES IN EXCESS OF 15% = 0 AC
- TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0 AC
- TOTAL AREA OF STREAM (INCLUDING BUFFER) = 0 AC
- TOTAL AREA OF EXISTING FOREST = 0 AC
- TOTAL AREA OF FOREST TO BE RETAINED = 0 AC (SUBDIVISION IS EXEMPT FROM FOREST CONSERVATION REGULATIONS, SINCE IT IS A SINGLE LOT WITH NO FURTHER SUBDIVISION POTENTIAL)
- TOTAL AREA OF LOTS / BUILDABLE PARCELS = 6.75 AC± (3.45 AC LOT 2)
- TOTAL GREEN OPEN AREA = 0.75 AC± (WITHIN LOD)
- TOTAL IMPERVIOUS AREA = 0.18 AC± (WITHIN LOD, EXCLUDES EXISTING IMPERVIOUS)
- TOTAL AREA OF ERODIBLE SOILS = 0.0 AC
- TOTAL AREA OF ROAD DEDICATION = 0 AC

ENVIRONMENTAL CONCEPT PLAN CHARLES FEAGA PROPERTY, LOTS 1 & 2

3050 LANCELOT CROSS, ELLICOTT CITY, MD

ZONED: RC-DEO

TAX MAP #23 GRID 0004 PARCEL: 62

THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: 1"=40' DATE: JULY, 2017

SHEET 1 OF 2 ECP-17-059

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

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. 36386, EXPIRATION DATE: 01/12/2018.

Signature of Professional Engineer DATE 7/28/17

Signature of Chief, Development Engineering Division DATE 8/17/17

Signature of Chief, Development Engineering Division DATE 8/14/17

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CONTINENTAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PARK
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2955



OWNER

CHARLES FEAGA
BARBARA FEAGA
3050 LANCELOT CROSS
ELLICOTT CITY, 21042
410-489-7500

DEVELOPER

HERITAGE LAND DEVELOPMENT
19950 NORTH AVE.
P.O. BOX 482
LISBON, MD 21765
410-489-7900

SOILS LEGEND

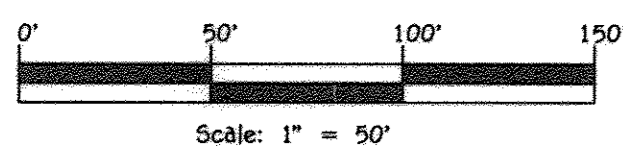
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GmB	Glenville silt loam, 3 to 8 percent slopes	C	0.43
MaB	Manor loam, 3 to 8 percent slopes	B	0.28
MaC	Manor loam, 8 to 15 percent slopes	B	0.28

STORMWATER MANAGEMENT PRACTICES

LOT NO.	DRY WELLS (M-3) Y/N, NUMBER	MICRO-BIoretention (M-5) Y/N, NUMBER	NON-ROOFTOP DISCONNECTION (N-2) Y/N
1	-	-	-
2	YES, FOUR (4)	NO	YES

Specimen Tree Chart

Key (X#)	Species	Size (in dbh)	CRZ (feet radius)	Comments
1	Silver maple	37.5	56.25	poor condition, trimmed and trunk rot noted
2	Silver maple	44	66	poor condition, significant dieback
3	Silver maple	50.5	75.75	poor condition, major trunk failure
4	Norway maple	35	52.5	poor condition, trunk rot hazard to existing house
5	Silver maple	34	51	fair condition, some trunk rot noted
6	Black locust	35	52.5	poor condition, major trunk failure
7	Silver maple	61	91.5	fair condition, minor trunk rot noted
8	Silver maple	39	58.5	fair condition, minor trunk rot noted
9	Silver maple	43	64.5	fair condition, minor trunk rot noted
10	Silver maple	41.5	62.25	fair condition, minor trunk rot noted
11	Silver maple	44	66	fair condition, minor trunk rot noted
12	Black walnut	38	57	fair condition, limb dieback
13	Silver maple	39.5	59.25	fair condition, minor trunk rot noted
14	Silver maple	34	51	fair condition, minor trunk rot noted, multi-stem



OWNER

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DEVELOPER

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APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SERVICE OFFICE PARK - 18272 BALTIMORE NATIONAL FEE
ELLICOTT CITY, MARYLAND 21042
(410) 461-2895

John J. LKS
Chief, Division of Land Development
8/7/17
Date

John J. LKS
8-14-17
Date

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. 38306, EXPIRATION DATE 01/12/2016.

William J. Turt 7/28/17
Signature of Professional Engineer DATE



**ENVIRONMENTAL CONCEPT PLAN
CHARLES FEAGA PROPERTY,
LOTS 1 & 2**

3050 LANCELOT CROSS, ELLICOTT CITY, MD

ZONED: RC-DEO

TAX MAP #23 GRID 0004 PARCEL: 62

THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: 1"=50' DATE: JULY, 2017

SHEET 2 OF 2 ECP-17-059