



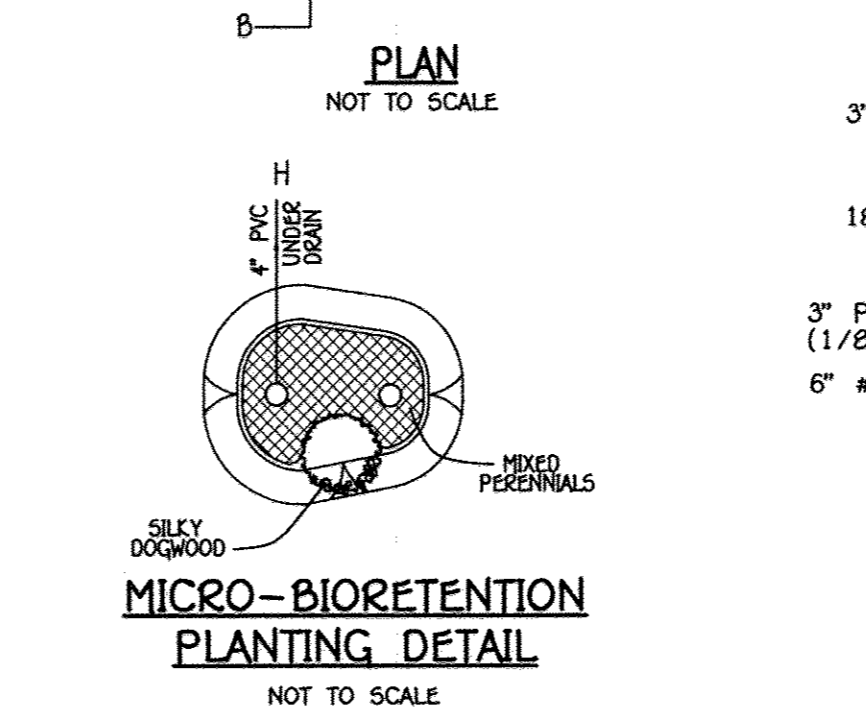
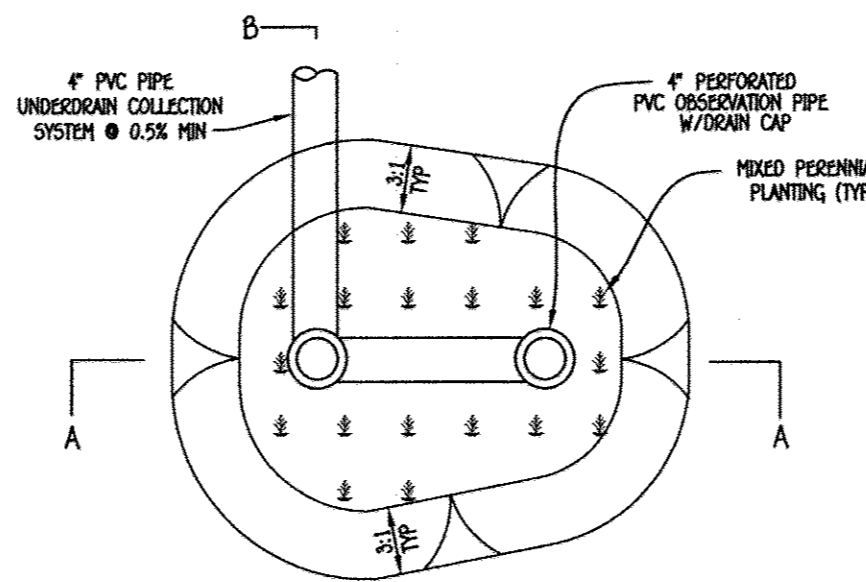
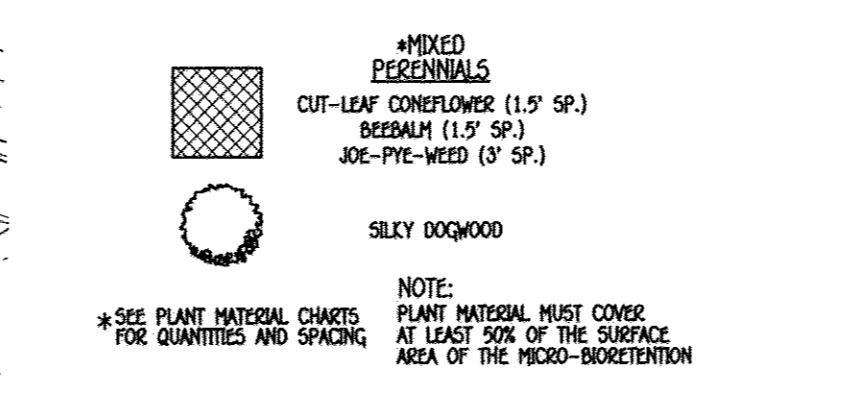
SITE ANALYSIS DATA CHART

- A. TOTAL AREA OF THIS SUBMISSION = 43,655 SQ.FT. OR 1.00 AC.
- B. LIMIT OF DISTURBED AREA = 16,620 SQ.FT. OR 0.38 AC.
- C. PRESENT ZONING DESIGNATION = R-20 (PER 10/06/2013 COMPREHENSIVE ZONING PLAN)
- D. PROPOSED USE: RESIDENTIAL
- E. PREVIOUS HOWARD COUNTY FILES: N/A
- F. TOTAL AREA OF FLOODPLAIN LOCATED ON-SITE = 0.00 AC
- G. TOTAL AREA OF SLOPES IN EXCESS OF 15% = 0.00 AC
- H. TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0.00 AC
- I. TOTAL AREA OF STREAM (INCLUDING BUFFER) = 0.00 AC
- J. TOTAL AREA OF EXISTING FOREST = 0.00 AC
- K. TOTAL GREEN OPEN AREA = 0.00 AC
- L. TOTAL IMPERVIOUS AREA = 0.09 AC
- M. TOTAL AREA OF ERODIBLE SOILS = 0.95 AC. (GmA & Ha soils)
- N. TOTAL AREA OF ROAD DEDICATION = 0.00 AC.

STORMWATER MANAGEMENT SUMMARY			
AREA ID	ESDv REQUIRED CU.FT.	ESDv PROVIDED CU.FT.	REMARKS
SITE	477	651	MICRO-BIORETENTION (M-6)
TOTAL	477	651	

GROSS AREA = 1.00 ACRE (SITE)
 LOD = 0.38 ACRES
 RCN = 73.5
 TARGET Pe = 1.0"

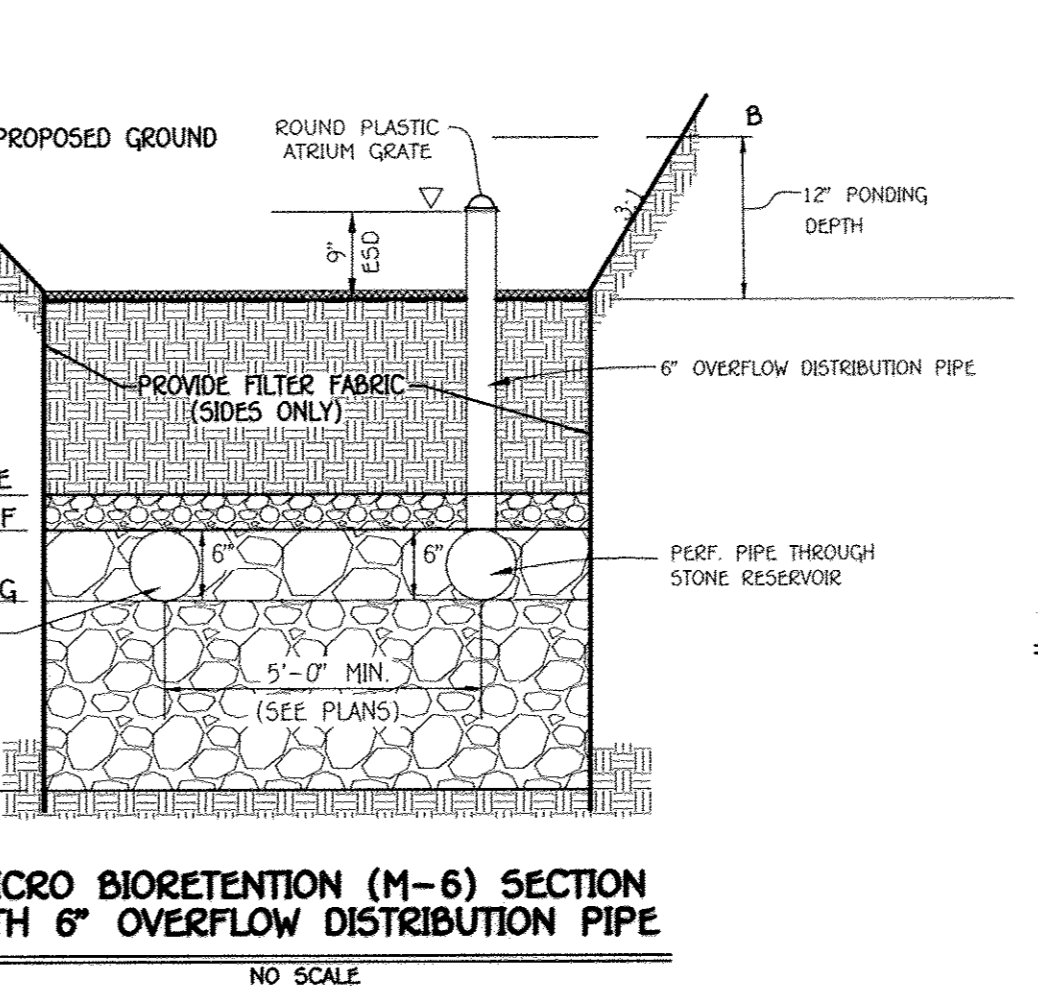
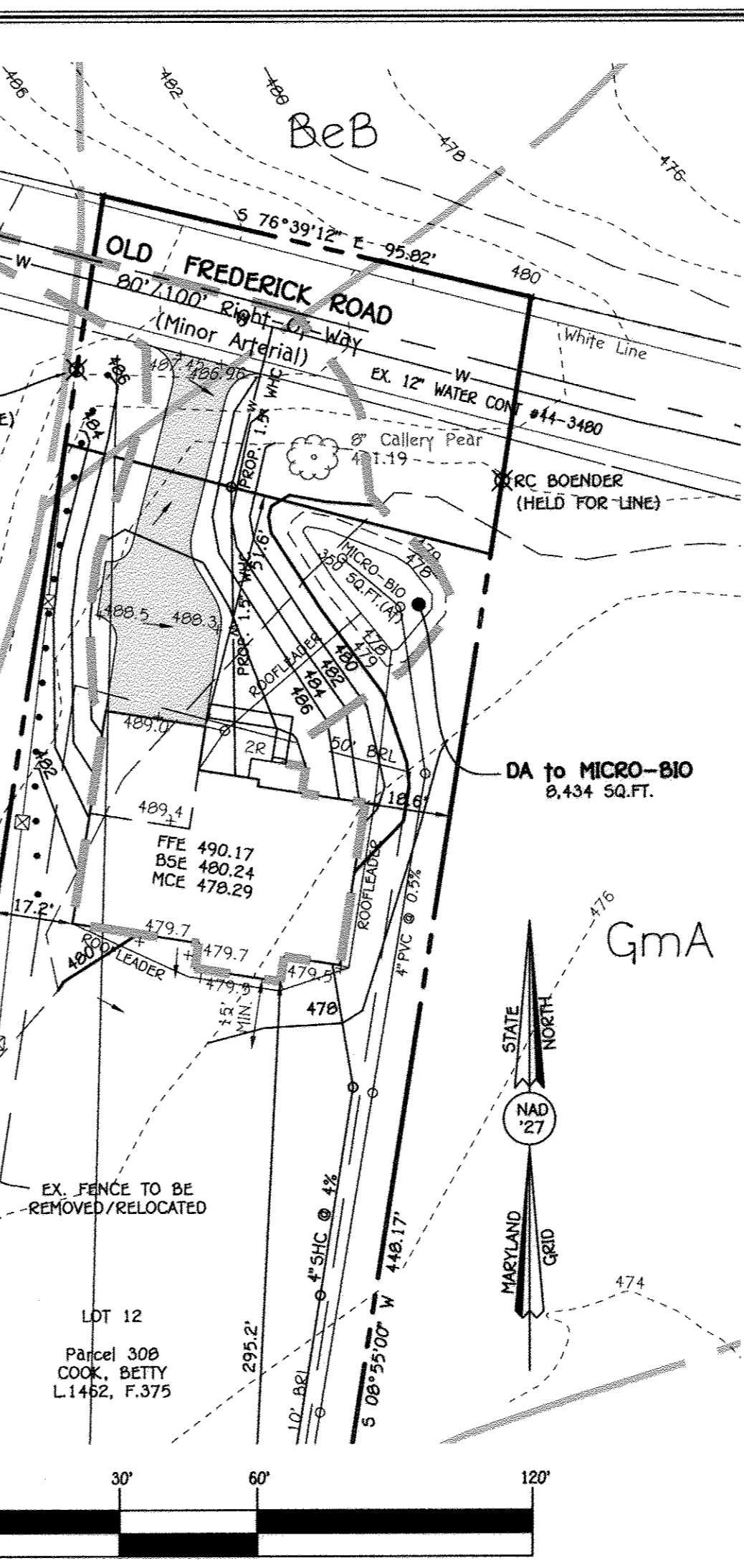
MICRO-BIORETENTION									
BIORETENTION FILTER	A	B	C	D	E	F	G	H	I
1 (LOT 12)	479.00	479.00	478.00	477.25	475.25	475.00	474.67	474.49	473.83



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

LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
---492---	EXISTING 2' CONTOURS	---	PROPOSED CONTOUR
---	EXISTING 10' CONTOURS	+	SPOT ELEVATION
GmA	SOILS LINES AND TYPE	---	LOD
---	EXISTING TREELINE	---	PROPOSED TREELINE
---	EXISTING FENCE LINE	---	SILT FENCE
---	PROPOSED PAVING	--- </td <td>PERMANENT SOIL STABILIZATION MATTING</td>	PERMANENT SOIL STABILIZATION MATTING
--- </td <td>DRAINAGE AREA DIVIDE</td> <td>---<!--</td--> <td>SUPER SILT FENCE</td> </td>	DRAINAGE AREA DIVIDE	--- </td <td>SUPER SILT FENCE</td>	SUPER SILT FENCE
--- </td <td></td> <td>---<!--</td--> <td>STABILIZED CONSTRUCTION ENTRANCE</td> </td>		--- </td <td>STABILIZED CONSTRUCTION ENTRANCE</td>	STABILIZED CONSTRUCTION ENTRANCE

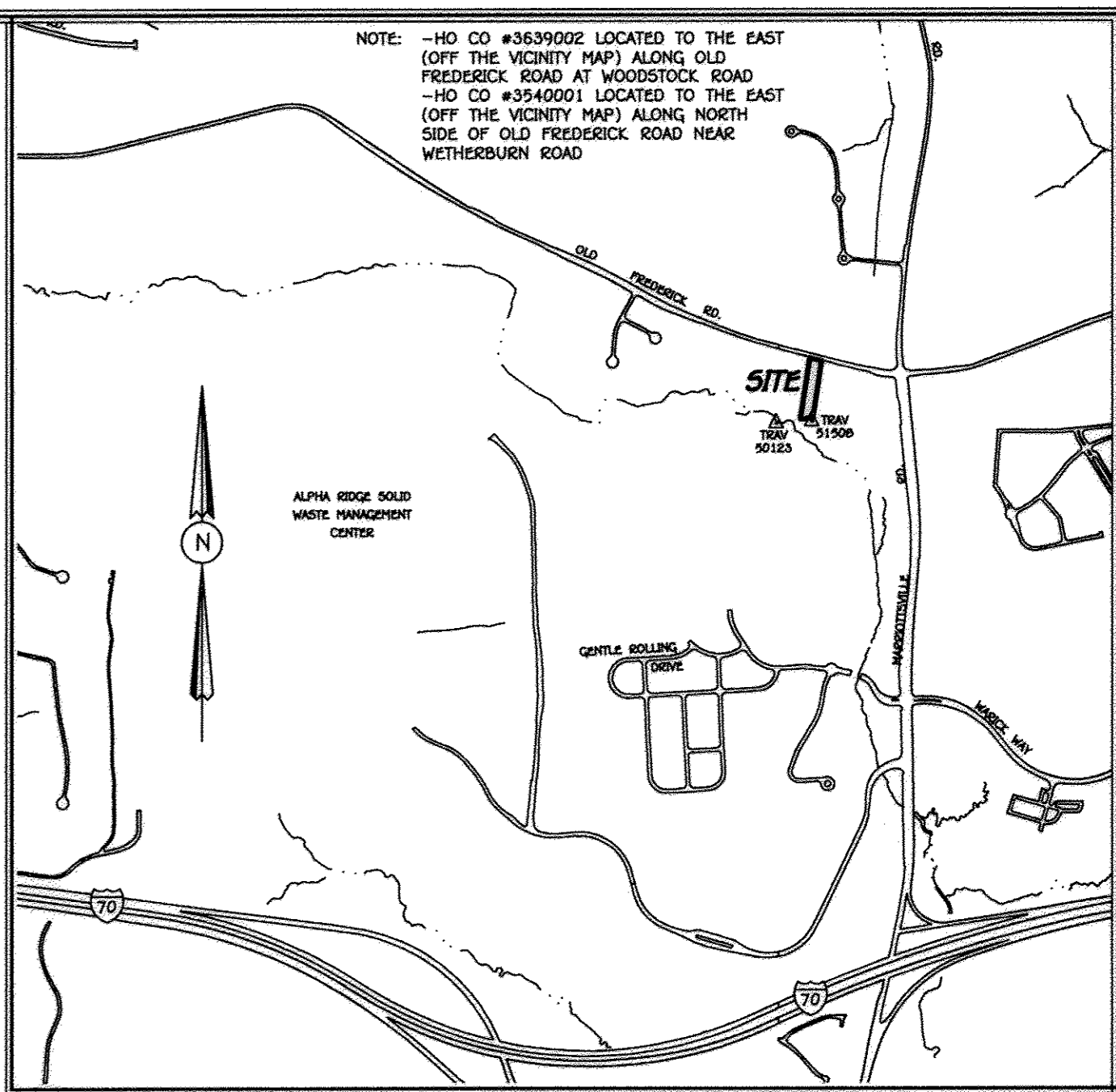
PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 96386, EXPIRATION DATE: 01/12/2018.
 Signature of Professional Engineer: *Alpham Jaha* DATE: 7/24/17



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

- A. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYERS 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.
- B. 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. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

STORMWATER MANAGEMENT PRACTICES		
PARCEL NO.	ADDRESS	MICRO-BIORETENTION (M-6) Y/N, NUMBER
308	11235 OLD FREDERICK ROAD	YES, ONE (1)



SOILS LEGEND			
SOIL	NAME	CLASS	K FACTOR
BeB	Benevol Silt Loam, 3 to 8 percent slope	B	.28
GmA	Glenville Silt Loam, 0 to 3 percent slope	C	.37
Ha	Hatboro-Codorus Silt Loams, 0 to 3 percent slope (Hydric Soil)	D	.37

Soil Map Number: 05 (Sykesville, NE)

GENERAL NOTES

- 1. 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.
- 2. THE CONTRACTOR SHALL NOTIFY (MISS UTILITY) AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- 3. BOUNDARY SHOWN HEREON IS BASED ON FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED BY FISHER, COLLINS & CARTER, INC., DATED MAY, 2017.
- 4. TOPOGRAPHY SHOWN HEREON IS BASED ON HOWARD COUNTY GIS TOPOGRAPHY AT 2' CONTOUR INTERVAL INTERPOLATED AND FIELD RUN BY FISHER, COLLINS & CARTER, INC. DATED MAY, 2017.
- 5. THE SURVEY SHOWN HEREON IS IN NAD 27 DATUM. COORDINATES BASED ON COMPANY TRAVERSE, FCC#50123 & FCC#51508, FROM THE ADJACENT AND NEARBY WAREHOUSES DEVELOPMENT, BASED ON HOWARD COUNTY MONUMENT #3639002 & #3450001. HO CO MONUMENT #3639002 N 540,311.256 E 832,918.467 ELEV. 445.577 HO CO MONUMENT #3450001 N 537,800.891 E 836,174.192 ELEV. 509.924
- 6. DEED REFERENCE L&ER 1462, FOLIO 375
- 7. PREVIOUS OPZ FILE NUMBERS: N/A.
- 8. 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.
- 9. THE SUBJECT PROPERTY IS PROPOSED TO BE LOCATED INSIDE THE METROPOLITAN DISTRICT. PERMIT HAS BEEN FILED. LOT IS TO BE SERVED BY PUBLIC WATER CONTRACT #44-3480 AND BY PUBLIC SEWER CONTRACT #20-4398-D.
- 10. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
- 11. THE SUBJECT PROPERTY IS ZONED R-20 (PER DATE 10/06/2013 COMPREHENSIVE ZONING PLAN).
- 12. NO 100 YEAR FLOODPLAIN, WETLANDS, STREAM(S) AND/OR THEIR BUFFERS, NOR STEEP SLOPES EXIST ON-SITE.
- 13. NO WETLANDS EXIST ON-SITE. SEE ENVIRONMENTAL FINDINGS LETTER PREPARED BY FISHER, COLLINS & CARTER, INC. DATED MAY, 2017.
- 14. PARCEL WILL MEET FOREST CONSERVATION REQUIREMENTS BY DECLARATION OF INTENT FOR CLEARING LESS THAN 20,000 SF OF FOREST.
- 15. SOIL BORINGS WILL BE REQUIRED FOR THE PROPOSED STORMWATER MANAGEMENT DEVICES.
- 16. APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBMISSION 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 SUBMISSION 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.
- 17. NO STRUCTURES EXIST ON THIS PROPERTY.
- 18. PROPERTY LOCATED ON HOWARD COUNTY SOIL SURVEY MAP #5.

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:
 11235 Old Frederick Road is zoned R-20 and is located on Tax Map 10, Parcel No.308 of the Howard County, Maryland Tax Map Database System. The property is a deeded parcel of land. The property is vacant land. The parcel has a number of individual trees but is not forested. A notice of intent to clear less than 20,000 sq.ft. of forest will be filed to satisfy forest conservation requirements. The proposed house will be served by public water and sewer. The runoff from the lots is mostly from north to south toward the rear property line. A Micro-Bioretentation (M-6) will be utilized to treat rooftop and driveway runoff. Per the 2004 Web Soil Survey, soils on-site consist of "BeB", Benevol silt loam, Type B Soil, "GmA", Glenville silt loam, Type C soil, "Ha", Hatboro-Codorus silt loams, Type D soil.

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

Maintenance of Natural Flow Patterns:
 Nature flow patterns will be maintained. Proposed runoff flows from north to south toward the rear of the property.

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. The design will make use of a micro-bioretentation to treat runoff from the new house and driveway.

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.

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 are required.

ENVIRONMENTAL CONCEPT PLAN
11235 OLD FREDERICK ROAD
 ZONING: R-20
 GRID NO. 22
 PARCEL NO. 308
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JULY, 2017
 SHEET 1 OF 1

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SOURCE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461-2099

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development: *Sue Maudman* Date: 8/8/17
 Chief, Development Engineering Division: *Alpham Jaha* Date: 8/14/17

OWNER
 BETTY LOU COOK, WANDA COOK & MAURICE COOK
 5705 BARTHOLOW RD
 SYKESVILLE, MARYLAND 21784
 (443) 865-4243

CONTRACT PURCHASER
 AMANDEEP SINGH & MANPREET KOUR
 4358 COLUMBIA ROAD
 ELLICOTT CITY, MARYLAND 21042
 (443) 803-5570

