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

ENVIRONMENTAL CONCEPT PLAN
VILLAGE OF HARPERS CHOICE
SECTION 5, AREA 9, PHASE 2
LOT 11

TAX MAP No. 29 GRID No. 15 PARCEL NO. 370

FIFTEENTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

LEGEND	
SYMBOL	DESCRIPTION
- - - - -	EXISTING CONTOUR 2' INTERVAL
———	PROPOSED CONTOUR 2' INTERVAL
—SF—SF—	SILT FENCE
—SSF—SSF—	SUPER SILT FENCE
LOD	LIMIT OF DISTURBANCE
——x——	EXISTING FENCE LINE
(scalloped line)	EX. LIMIT OF TREES AND FOREST
(tree symbols)	PROPOSED LANDSCAPING
(tree symbols)	EXISTING TREES
(hatch)	PROPOSED GRAVEL/RIPRAP/SCE
(shading)	15% TO 25% SLOPES
(shading)	25% OR GREATER SLOPES
MaC / OcB	SOIL LINES AND TYPES
——···——	EXISTING STREAM BANKS

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:
Village of Harpers Choice, Section 5, Area 9, Lot 11 is development on an unimproved single family detached lot that is zoned NT. It is located on Tax Map 29, Grid 15, Parcel No. 370 of the Howard County, Maryland Tax Map Database System. The property is part of a larger subdivision recorded in 1993. This plat consisted of thirteen (13) buildable lots. Existing public water and sewer house connections will be utilized that were built under contract #34-3307-D. The property is located in the Columbia area of Howard County in the watershed of an unnamed tributary of the Middle Patuxent River (02131106). This property is irregularly shaped but somewhat square and runoff on-site is mainly from east to west starting at the right of way of Manorstone Lane with runoff to an existing off-site stream. Site is exempt from Forest Conservation requirements, since the lot is part of a planned unit development, however, the entires site is forested. Also, according to a field inspection conducted by Eco-Science Professionals (ESP) dated February 5, 2014, no wetlands or streams are present on-site, but is subject to a 75 foot stream buffer per a recorded plat. The Web Soil Survey shows soils on the site consist of Manor loam (MgD) and Gladstone loam (GbC), Type "B" soils for the majority of the property, and a small portion of Glenville-Baile silt loams (GnB), Type "C" soils within the stream buffer near the edge of the property. The runoff from the roof of the proposed house is to be directed through roof leaders to a micro-bioretention which will outfall into an existing channel on the property. Runoff from the proposed driveway will flow overland and be treated by non-rooftop disconnection.

I. Natural Resource Protection:
Environmentally sensitive areas do exist on-site (stream buffer), therefore development has been proposed outside of the buffer area in an effort to protect this natural resource on-site.

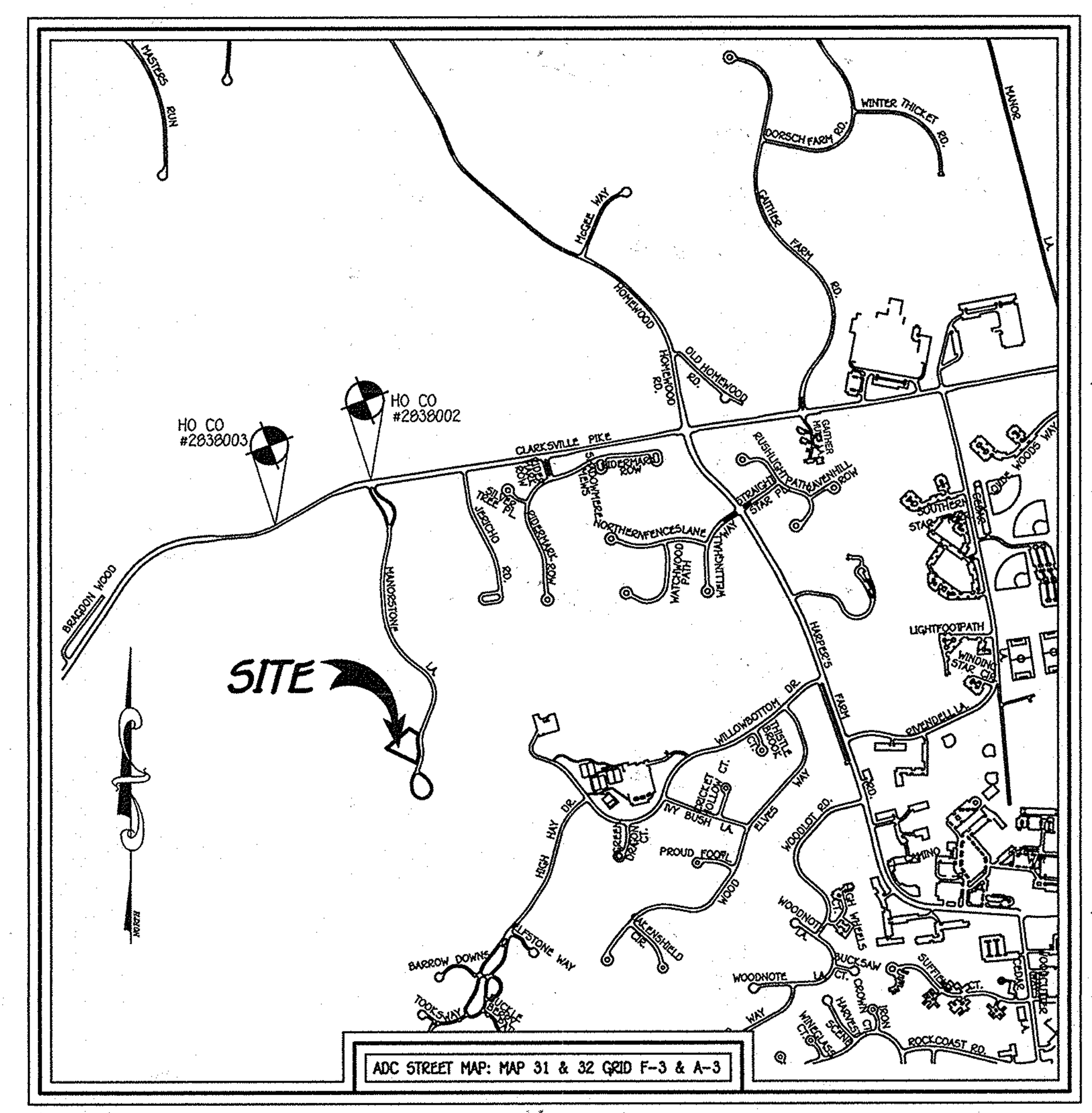
II. Maintenance of Natural Flow Patterns:
It is the intent of the proposed design to discharge runoff similar to the characteristics and direction of this site prior to any of the proposed improvements.

III. Reduction of impervious areas through better site design, alternative surfaces and Nonstructural Practices
The design of this project utilizes a single driveway. Non-Structural practices as permitted in Chapter 5, one (1) Micro-Bioretention Areas (M-6) and Non-Rooftop Disconnection (N-2) will be used to address ESD to the MEP requirements.

IV. Integration of Erosion and Sediment Controls into Stormwater Strategy:
Since this is a small drainage area (most of site sheet flows from this 1.14 acre site toward the off-site stream), 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 or prior to entering the existing off-site stream channel and eventually to the Middle Patuxent River. No drainage easements will be required. It is anticipated that all cut will be utilized on-site for construction at time of Grading Plan.

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 a Design Manual Waiver:
No Waivers related to stormwater management are being requested in this project..



VICINITY MAP
SCALE: 1" = 1200'

BENCHMARK INFORMATION

B.M.#1 - HOWARD COUNTY CONTROL STATION #2838002 - HORIZONTAL - NAD '27)
N 509424.956
E 825,625.556
ELEVATION = 434.527 - VERTICAL - (NAVD '27)

B.M.#2 - HOWARD COUNTY CONTROL STATION #2838003 - HORIZONTAL - (NAD '27)
N 508916.632
E 824,630.474
ELEVATION = 367.204 - VERTICAL - (NAVD '27)

GENERAL NOTES

1. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 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 THE RECORDED PLAT. TOPOGRAPHY SHOWN BASED IS BASED ON A FIELD SURVEY BY SHANABERGER AND LANE AND SUPPLEMENTED WITH A FIELD SURVEY CONDUCTED BY FISHER, COLLINS & CARTER, INC. DATED JANUARY, 2014 AND HOWARD COUNTY GIS TOPOGRAPHY AT 5' CONTOUR INTERVAL INTERPOLATED FOR 2' CONTOUR INTERVAL.
4. 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. 2838002 AND 2838003 WERE USED FOR THIS PROJECT.
5. PREVIOUS DPZ FILE NUMBERS: N/A.
6. 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.
7. LOT TO BE SERVED PUBLIC WATER AND PRIVATE SEWERAGE. EXISTING WATER AND SEWER HOUSE CONNECTIONS TO BE UTILIZED. CONSTRUCTED UNDER CONTRACT #34-3307-D.
8. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
9. THE SUBJECT PROPERTY IS ZONED NT PER COMPREHENSIVE ZONING PLAN EFFECTIVE DATE 10/06/2013.
10. STEEP SLOPES AND STREAM BUFFER EXIST ON-SITE, NO 20,000 SQ.FT. CONTIGUOUS STEEP SLOPES EXIST.
11. NO WETLANDS OR WETLAND BUFFERS, STREAMS, OR FLOODPLAIN EXIST ON-SITE.
12. SOILS DELINEATION SHOWN BASED ON NRCS ON-LINE WEBSOIL SURVEY.
13. NO CLEARING, GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF STREAM BUFFERS AND/OR FOREST CONSERVATION EASEMENT AREAS.
14. LANDSCAPING WILL BE PROVIDED AT THE FINAL PLAN STAGE OF THIS PROJECT.
15. LOT IS EXEMPT FROM FOREST CONSERVATION REQUIREMENTS SINCE IT IS A PART OF THE PLANNED UNIT DEVELOPMENT OF THE VILLAGE OF HARPERS CHOICE, SECTION 5, AREA 9. AN FDP IS ON FILE.
16. A SOIL BORING IS REQUIRED FOR THIS PROJECT, ONLY VERIFICATION OF DEPTH TO GROUNDWATER OR ROCK. NO ROCK OR WATER WAS OBSERVED DURING EXCAVATION.
17. 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.

SITE ANALYSIS DATA CHART

A. TOTAL AREA OF THIS SUBMISSION = 1.140 AC.±.
B. LIMIT OF DISTURBED AREA = 0.65 Ac.± (28,530 SQ.FT.±)
C. PRESENT ZONING DESIGNATION = NT
(PER 10/06/2013 COMPREHENSIVE ZONING PLAN)
D. PROPOSED USE: RESIDENTIAL
E. BUILDING COVERAGE OF SITE: N/A.
F. PREVIOUS HOWARD COUNTY FILES: F-94-11, CONT# 34-3307-D, WP-94-20, SP-92-21, WP-92-218, F-93-141, FDP-3054-A-1317 THRU 1319.
G. TOTAL AREA OF FLOODPLAIN LOCATED ON SITE 0.00 AC±
H. TOTAL AREA OF SLOPES IN EXCESS OF 15% = 0.69 AC± (25% SLOPES OR GREATER = 0.30 AC±)
I. TOTAL AREA OF ERODIBLE SOILS = 0.003 AC±
J. TOTAL AREA OF STREAMS AND STREAM BUFFERS = AC± (LOCATED WITHIN OPEN SPACE LOT 10)
K. TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0.00 AC.±
L. TOTAL AREA OF FOREST = 1.14 AC± (0.51 ACRES OF TREES TO BE RETAINED)
NOTE: THIS PLAN IS EXEMPT FROM FOREST CONSERVATION REQUIREMENTS SINCE IT IS PART OF A PLANNED UNIT DEVELOPMENT.
M. TOTAL GREEN OPEN AREA = 0.44 AC±
N. TOTAL IMPERVIOUS AREA = 0.19 AC±

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

NO.	REVISION	DATE

#X

X

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. 38386, EXPIRATION DATE: 01/12/2016.

Stephanie Tuite 4/3/14
Signature of Professional Engineer DATE

STATE OF MARYLAND STEPHANIE J. TUITE No. 38386 PROFESSIONAL ENGINEER

DEVELOPER / CONTRACT PURCHASER
HAGAN & HAMILTON
20 E. TIMONIUM ROAD, SUITE 209
TIMONIUM, MARYLAND 21093
410-561-1004
ATTN: PATRICK HAGAN

OWNERS
RONALD M. STOUGHTON
CHARLOTTE STOUGHTON
9497 SYLVAN DELL
COLUMBIA, MD 21045
410-381-9267

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — Date 4/09/14

Chief, Development Engineering Division — J.P. — Date 4.9.14

PROJECT				SECTION/AREA	PARCEL NO.
VILLAGE OF HARPERS CHOICE				5/9	370
PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
11367-11368	15	NT	29	FIFTEENTH	605502
WATER CONTRACT #34-3307-D			SEWER CONTRACT #34-3307-D		

ENVIRONMENTAL CONCEPT PLAN

LOT 11
VILLAGE OF HARPERS CHOICE
SECTION 5, AREA 9, PHASE 2
ZONED NT
TAX MAP No. 29 GRID No. 15 PARCEL No. 370
FIFTEENTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: FEBRUARY, 2014
SHEET 1 OF 2

ECP-14-056

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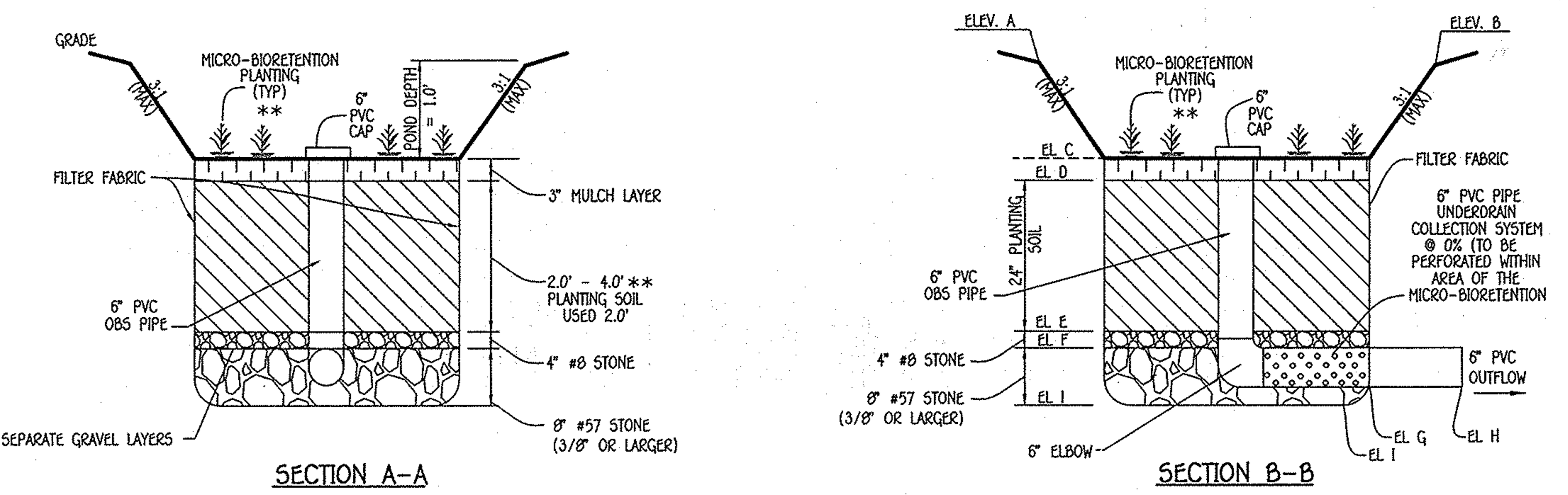
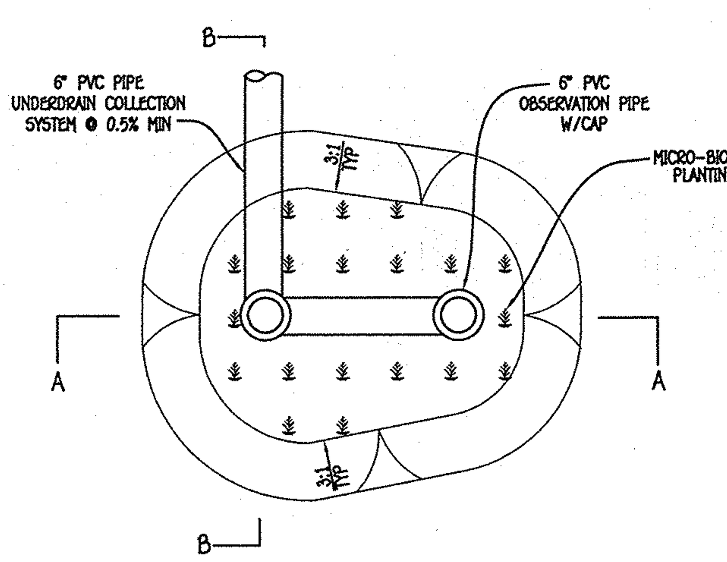


MICRO-BIORETENTION DETAIL (M-6)

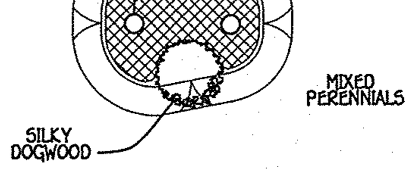
NOT TO SCALE



PLAN

NOT TO SCALE

MICRO-BIORETENTION									
BIORETENTION FILTER	A	B	C	D	E	F	G	H	I
1	340.00	340.00	339.00	338.75	336.75	336.42	335.92	334.00	335.75



MICRO-BIORETENTION PLANTING DETAIL

NOT TO SCALE

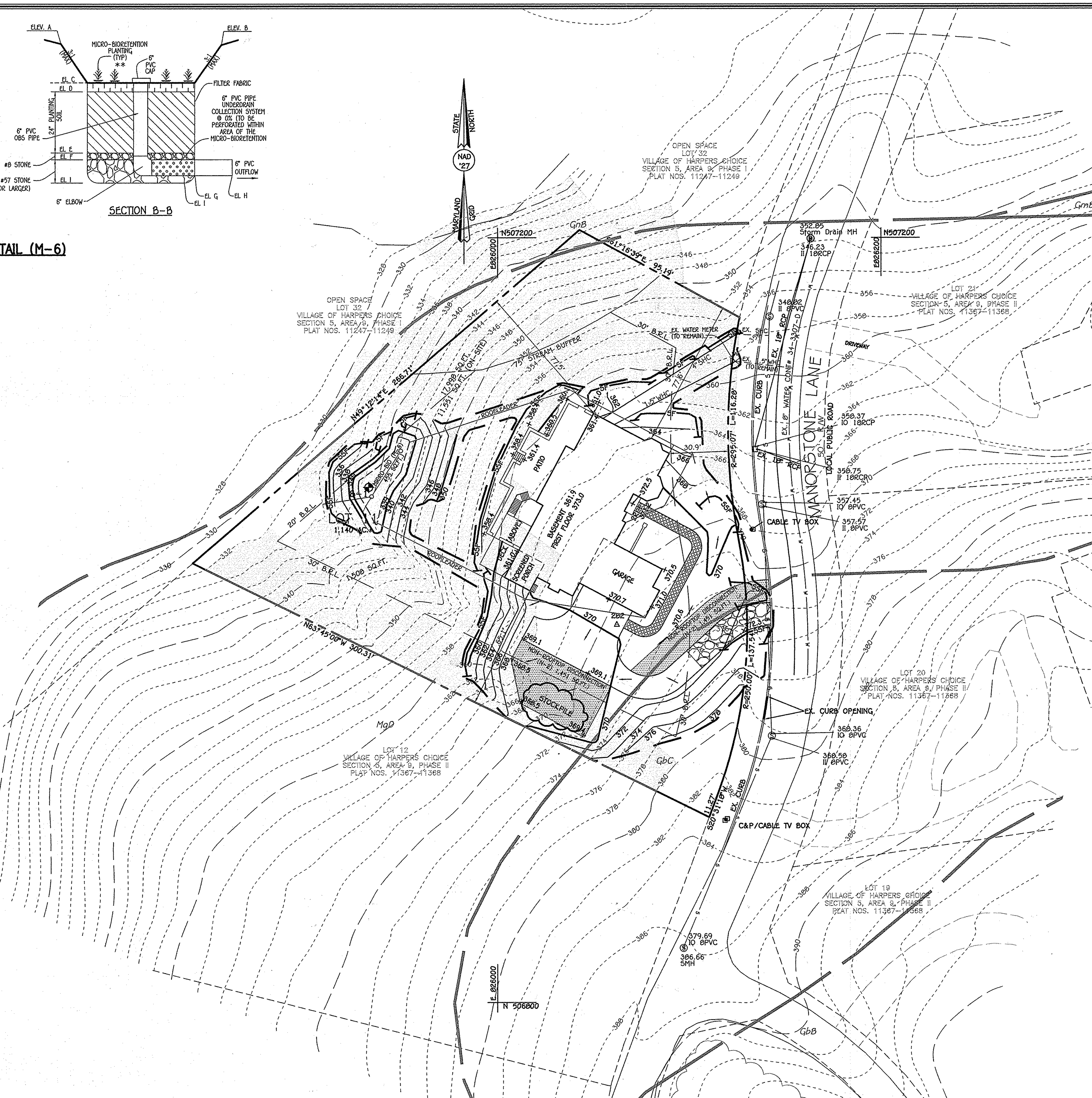
*MIXED PERENNIALS
NEW YORK OR CINNAMON FERNS (2-3' SP.)
VIRGINIA BLUEBELLS (1.5' SP.)
CARDINAL FLOWER LOBELIA (1.5' SP.)

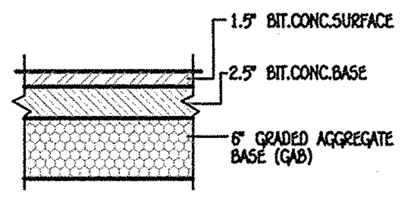
ARROWWOOD VIBURNUM

*SEE PLANT MATERIAL CHARTS FOR QUANTITIES AND SPACING

NOTE:
PLANT MATERIAL MUST COVER AT LEAST 50% OF THE SURFACE AREA OF THE MICRO-BIORETENTION

MICRO-BIORETENTION PLANT MATERIAL		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
58	MIXED PERENNIALS	1.5 TO 3.0 FT.
1	ARROWWOOD VIBURNUM	PLANT AWAY FROM INFLOW LOCATION





P-1 DRIVEWAY PAVING SECTION

NOT TO SCALE

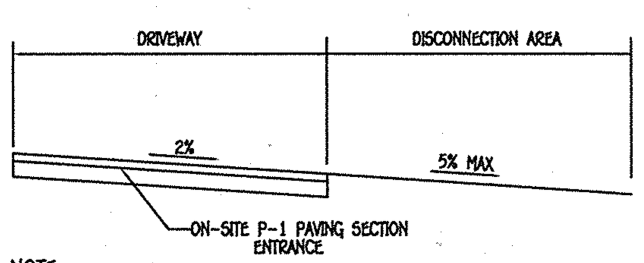
OPERATION & MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)

A. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER 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.

D. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.



NOTE:
1. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION.
2. SWALES ARE FOR CONVEYANCE OF RUNOFF AND NOT UTILIZED FOR TREATMENT CREDIT.

DRIVEWAY - CROSS SLOPE SECTION

NOT TO SCALE

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

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

SOILS LEGEND			
SOIL	NAME	CLASS	K FACTOR
GbB	Gladstone loam, 3 to 8 percent slopes	B	.20
GbC	Gladstone loam, 8 to 15 percent slopes	B	.20
GmB	Glenville silt loam, 3 to 8 percent slopes	C	.37
GnB	Glenville-Baile silt loams, 0 to 8 percent slopes	C	.37
MaD	Manor loam, 15 to 25 percent slopes	B	.24
MgD	Manor-Bannertown sandy loams, 15 to 25 percent slopes, rocky	B	.24

NOTES:
* Hydric soils and/or contains hydric inclusions
** May contain hydric inclusions
† Generally only within 100-year floodplain areas

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NO.	REVISION	DATE

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Stephanie Tuite (signature) 4/3/14
Signature Of Professional Engineer — DATE

STATE OF MARYLAND · STEPHANIE J. TUITE · No. 38386 · PROFESSIONAL ENGINEER

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SHEET 2 OF 2

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