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2	ENVIRONMENTAL CONCEPT PLAN

# ENVIRONMENTAL CONCEPT PLAN PROPERTY OF JAMES AND AUDREY KING LOTS 5 THRU 7

(A Resubdivision Of Lot 4 Property of James and Audrey King  
Plat Nos. 7373)

STORMWATER MANAGEMENT SUMMARY			
AREA ID.	ESDV REQUIRED CU.FT.	ESDV PROVIDED CU.FT.	REMARKS
SITE	+1,680	1,340	DRY WELLS (M-5) & NON-ROOFTOP DISCONNECTIONS (N-2)
TOTAL	+1,680	1,340	

\*NOTE: 4,480 SQ.FT. OF THE 14,682 SQ.FT. OF IMPERVIOUS AREA IS EXISTING ON LOT 5.  
ESDV = 1680 - 262 - 126 - 104 = 1196 SF AFTER DISCONNECTION CREDITS.  
1196 - 354 CREDIT FOR EX. IMPERVIOUS = 842 CF REQUIRED ES DV  
842 CF PROVIDED IN DRYWELLS

ALTHOUGH THE TOTAL ES DV HAS NOT BEEN PROVIDED, ALL NEW IMPERVIOUS AREAS HAVE BEEN TREATED. 1.0" OF TREATMENT IS PROVIDED FOR THE PROPOSED DRIVEWAYS. THE DRY WELLS PROPOSED TO TREAT ROOFTOP RUNOFF HAVE BEEN OVERSIZED TO PROVIDE ADDITIONAL STORAGE TO COMPENSATE FOR THE 0.2" Pe NOT TREATED WITH NON-ROOFTOP DISCONNECTION.

GROSS AREA = 1.68 ACRES  
LOD = 0.82 ACRES  
RCN = 55  
TARGET Pe = 1.2"

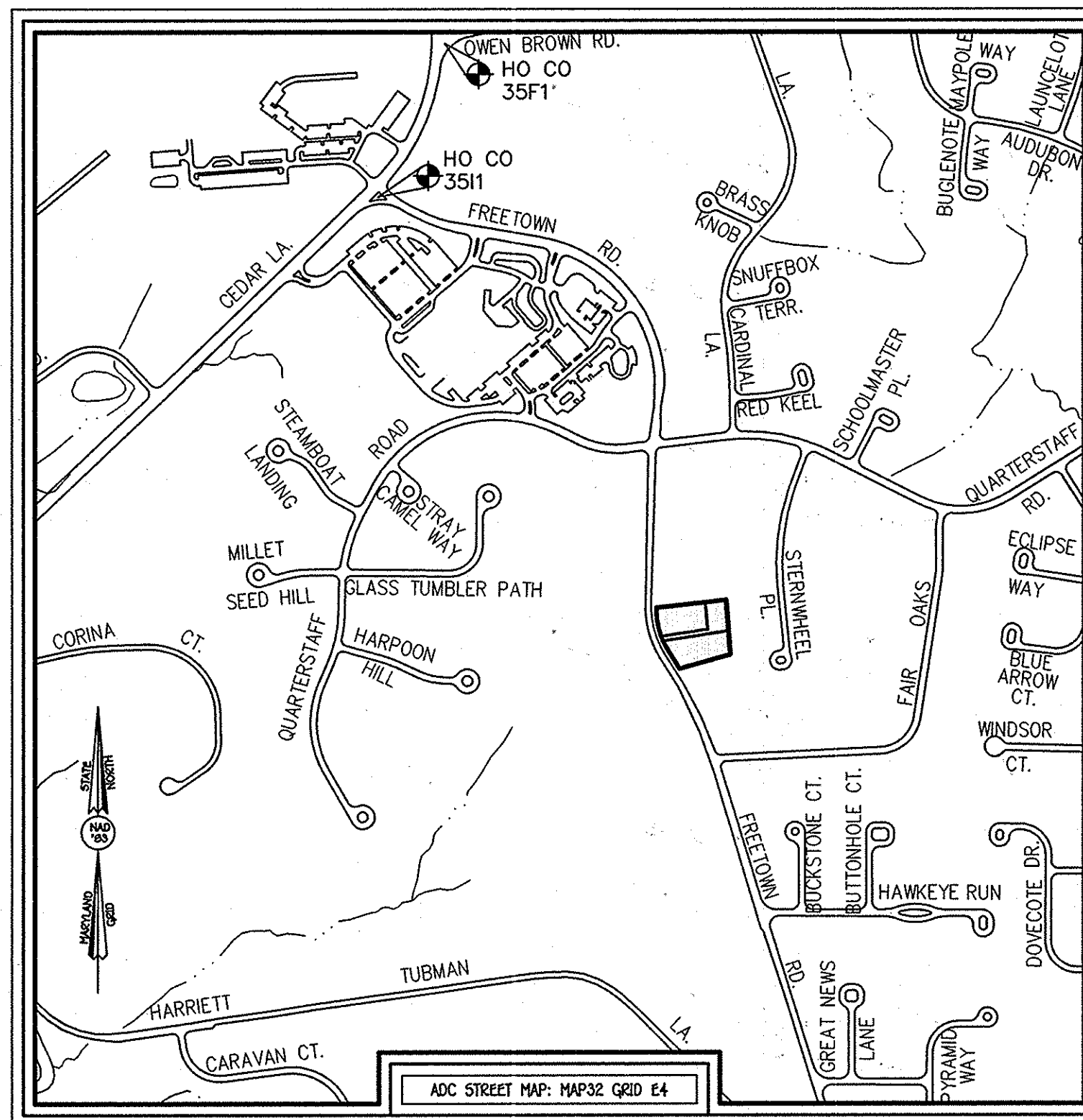
### DESIGN NARRATIVE

**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:**  
Property of James & Audrey King is three lot single family lot subdivision including one existing house to remain and an existing house and barn to be removed. Property is zoned R-12 and located on Tax Map 35, Grid 24, Parcel No. 139 of the Howard County, Maryland Tax Map Database System. The property is an existing lot or record located at 6567 & 6551 Freetown Road. Subdivision will utilize a proposed public water and sewer extension. The property is located in the Columbia area of Howard County in the watershed of an unnamed tributary of the Little Patuxent River (02131105). This property is relatively square in shape and runoff on-site is mainly from west to east. The existing houses sit just east of the high point / Freetown Road along the western property line. No forest exists on-site. Also, according to a field inspection conducted by Eco-Science Professionals (ESP) dated October 3, 2013, no wetlands or streams are present on-site. The Web Soil Survey shows soils on the site consist of Gladstone loam and Gladstone-Urban Land Complex (Gbb, Gbc, Gfb), Type "B" soils exist for the property. The runoff from the roofs of the proposed houses is to be directed through roof leaders to four (4) dry wells to be located on Lots 6 & 7 in the front and rear of the proposed houses. Runoff from the proposed driveways will flow overland and be treated with non-rooftop disconnection credit.

- I. **Natural Resource Protection:**  
Environmentally sensitive areas do not exist on-site, therefore no special effort is required to protect 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 common driveway and individual driveways for the two new lots. Non-Structural practices as permitted in Chapter 5, four (4) Dry Wells (M-5) 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 (site sheet flows from Freetown Road west to east), silt fence, super silt fence, and erosion control matting will be utilized for erosion and sediment control. There is no direct discharge of runoff directly to a stream. All site runoff will discharge to 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 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.

TAX MAP No. 35 GRID No. 24 PARCEL No. 139  
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND



**VICINITY MAP**  
SCALE: 1" = 600'

BENCHMARK INFORMATION	
B.M.#1 - HOWARD COUNTY CONTROL STATION #3511 - HORIZONTAL - (NAD '83) (ISLAND AT CORNER OF OWEN BROWN ROAD AND CEDAR LANE) N 557,787.380 E 1,345,217.266 ELEVATION = 400.459 - VERTICAL - (NAVD '86)	
B.M.#2 - HOWARD COUNTY CONTROL STATION #3511 - HORIZONTAL - (NAD '83) (ISLAND AT CORNER OF CEDAR LANE AND FREETOWN ROAD) N 557,110.396 E 1,344,293.621 ELEVATION = 400.055 - VERTICAL - (NAVD '86)	

LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	EXISTING 2' CONTOURS		PROPOSED CONTOUR
	EXISTING 10' CONTOURS		SPOT ELEVATION
	SOILS LINES AND TYPE		LIMITS OF DISTURBANCE
	EXISTING TREELINE		PROPOSED TREELINE
	SPECIMEN TREE		SILT FENCE
	TREE PROTECTION		EROSION CONTROL MATTING
	EXISTING & PROPOSED PAVING		SUPER SILT FENCE
	DRAINAGE AREA DIVIDE		STABILIZES CONSTRUCTION ENTRANCE

### 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 FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED BY FISHER, COLLINS & CARTER, INC. DATED NOVEMBER 2013. TOPOGRAPHY SHOWN HEREON IS BASED ON A TOPOGRAPHIC SURVEY PERFORMED BY FISHER, COLLINS & CARTER, INC. IN NOVEMBER 2013 AND SUPPLEMENTED WITH 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. 3511 AND 3511 WERE USED FOR THIS PROJECT.
5. PREVIOUS DEP FILE NUMBERS: F-82-01, F-05-20, F-07-220, #24-1362-D.
6. STORM WATER MANAGEMENT IS IN ACCORDANCE WITH THE H.D.E. STORM WATER DESIGN MANUAL, VOLUMES I & II, REVISED 2009. NON-STRUCTURAL PRACTICES IN ACCORDANCE WITH CHAPTER 5 ARE BEING UTILIZED.
7. THIS PROPERTY IS LOCATED INSIDE THE METROPOLITAN DISTRICT. LOTS TO BE SERVED PUBLIC WATER AND PUBLIC SEWERAGE.
8. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
9. THE SUBJECT PROPERTY IS ZONED R-12 (PER DATE 10/06/2013 COMPREHENSIVE ZONING PLAN).
10. NO CEOMETRIES OR HISTORIC STRUCTURES EXIST ON-SITE.
11. NO STEEP SLOPES, 100 YEAR FLOODPLAIN, STREAM(S), STREAM BUFFERS, WETLAND(S), WETLAND BUFFER(S), AND FOREST STANDS EXIST ON-SITE.
12. NO CLEARING, GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF STREAM BUFFERS AND FOREST CONSERVATION EASEMENT AREAS.
13. LANDSCAPING WILL BE PROVIDED AT THE FINAL PLAN STAGE OF THIS PROJECT. TREES SHOWN ARE EXISTING.
14. FOREST CONSERVATION OBLIGATIONS WILL BE MET BY DECLARATION OF INTENT FOR INTRA-FAMILY TRANSFER AND FEE-IN-LIEU OF AFFORESTATION AT THE FINAL PLAN STAGE OF THIS PROJECT.
15. SOIL BORINGS ARE REQUIRED FOR THIS PROJECT.
16. 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 = 1.68 AC.
- B. LIMIT OF DISTURBED AREA = 0.82 AC.
- C. PRESENT ZONING DESIGNATION = R-12  
(PER 10/06/2013 COMPREHENSIVE ZONING PLAN)
- D. PROPOSED USE: RESIDENTIAL
- E. PREVIOUS HOWARD COUNTY FILES: F-82-01, F-05-20, F-07-220, #24-1362-D.
- F. TOTAL AREA OF FLOODPLAIN LOCATED ON SITE = 0 AC.
- G. TOTAL AREA OF SLOPES IN EXCESS OF 15% = 0 AC.
- H. TOTAL AREA OF WETLANDS (INCLUDING BUFFERS) = 0 AC.
- I. TOTAL AREA OF STREAM (INCLUDING BUFFER) = 0 AC.
- J. TOTAL AREA OF EXISTING FOREST = 0 AC.
- K. TOTAL AREA OF FOREST TO BE RETAINED = 0 AC.
- L. TOTAL GREEN OPEN AREA = 1.34 AC.
- M. TOTAL IMPERVIOUS AREA = 0.34 AC.
- N. TOTAL AREA OF ERODIBLE SOILS = 0 AC.

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
ELICOTT CITY, MARYLAND 21042  
(410) 451 - 2995

### 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: 01/12/2014.

*Signature*  
Signature of Professional Engineer  
DATE: 10/3/14



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Signature*  
Chief, Division of Land Development  
Date: 10/27/14

*Signature*  
Chief, Development Engineering Division  
Date: 10-10-14

### OWNER/DEVELOPER

MRS. AUDREY KING  
6567 FREETOWN ROAD  
COLUMBIA MD, 21044-4001  
410-707-3366 ATTN: KATHERINE KING

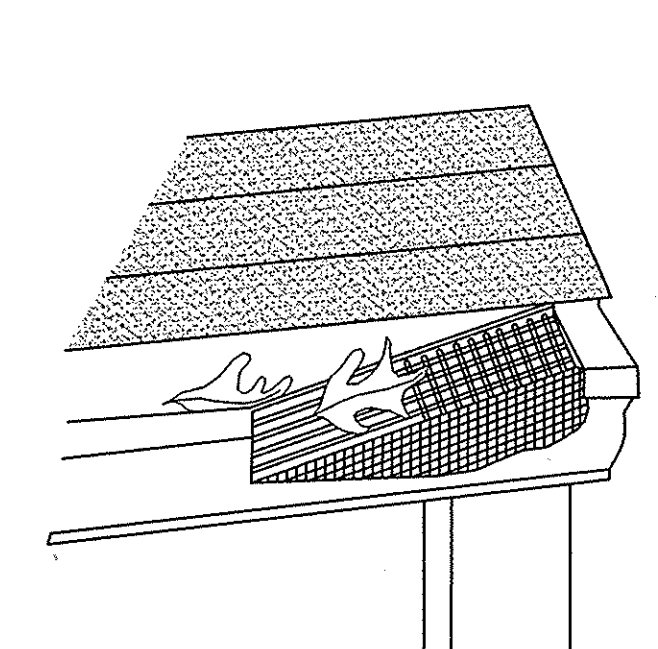
PROJECT	SECTION	PARCEL NO.			
PROPERTY OF JAMES AND AUDREY KING	-	139			
PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
7373	24	R-12	35	FIFTH	605602

### TITLE SHEET

**PROPERTY OF JAMES AND AUDREY KING**  
LOTS 5 THRU 7  
(A Resubdivision Of Lot 4 Property of James & Audrey King  
Plat No. 7373)  
ZONED R-12  
TAX MAP No. 35 GRID No. 24 PARCEL No. 139  
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: AUGUST, 2014  
SHEET 1 OF 2

ECP-14-060

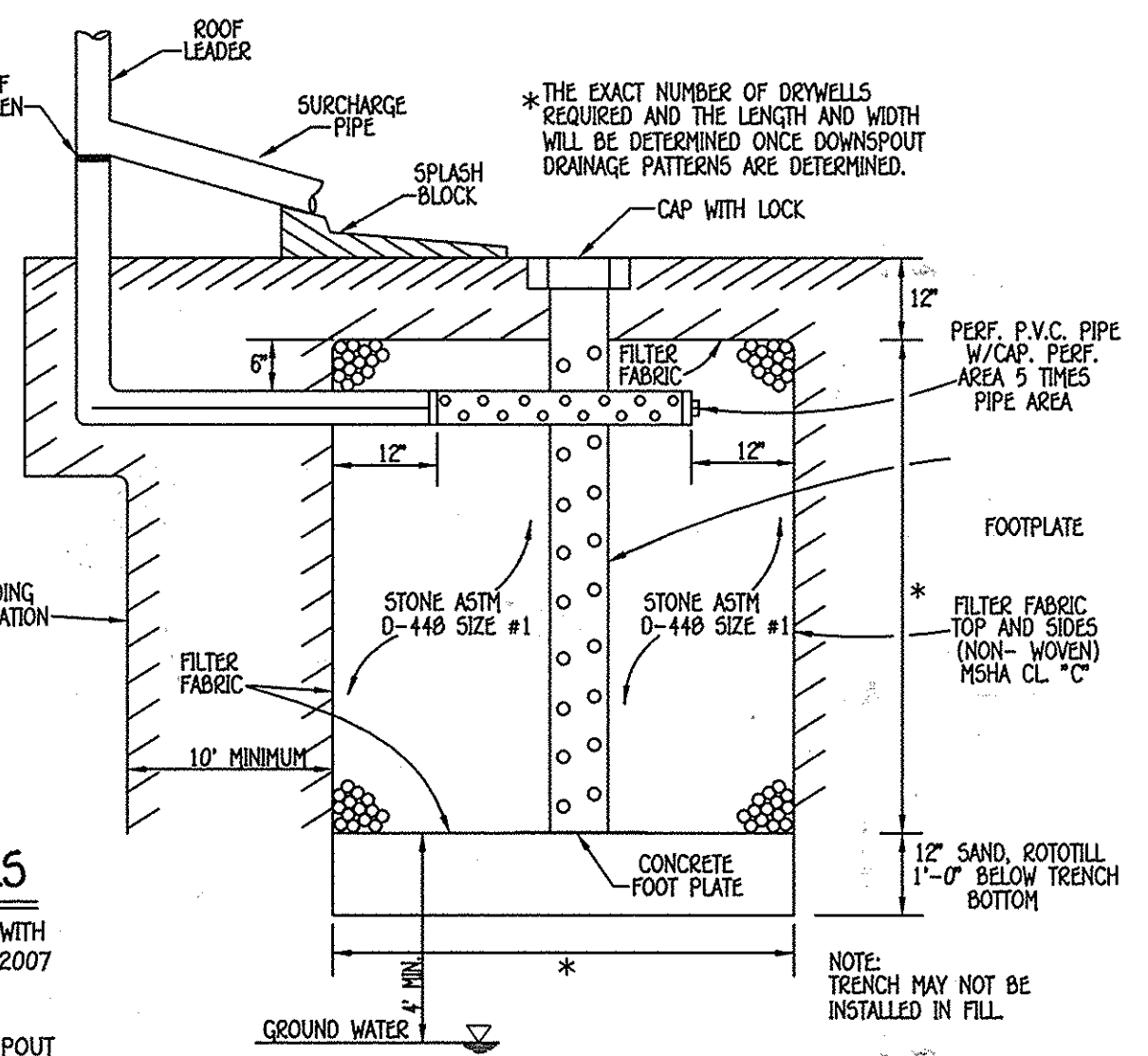




GUTTER DRAIN FILTER DETAIL  
NOT TO SCALE

STORMWATER MANAGEMENT NOTES

1. STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE 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 THIS SITE DEVELOPMENT PLAN.

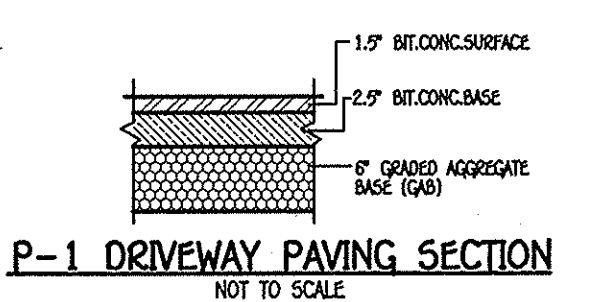


DRY WELL DETAIL (M-5)  
NOT TO SCALE

DRY WELL CHART						
DRYWELL NO.	AREA OF ROOF PER DOWN SPOUT	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF TREATMENT	L	D W
LOT 6 (1)	1,000 SQ. FT.	95 C.F.	176 C.F.	100%+	11.5x	8' x 5'
LOT 6 (2)	1,000 SQ. FT.	95 C.F.	176 C.F.	100%+	8'	x 11.5x 5'
LOT 7 (1)	1,000 SQ. FT.	95 C.F.	240 C.F.	100%+	12'	x 10' x 5'
LOT 7 (2)	1,000 SQ. FT.	95 C.F.	240 C.F.	100%+	12'	x 10' x 5'

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

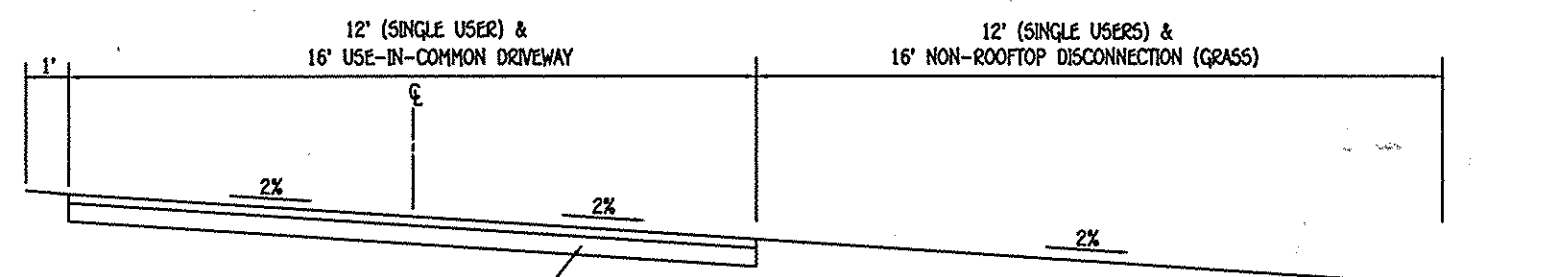
- A. THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT.
- B. THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO ENSURE TRENCH DRAINAGE.
- C. THE OWNER SHALL MAINTAIN A 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 REQUIRED.



P-1 DRIVEWAY PAVING 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 UNDEVELOPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF PERVIOUS AREAS. IN COMMERCIAL AREAS FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.



12' INDIVIDUAL & 16' USE-IN-COMMON DRIVEWAY CROSS SLOPE SECTION  
NOT TO SCALE

SOILS LEGEND			
SOIL	NAME	CLASS	K FACTOR
GbB	Gladstone loam, 3 to 8 percent slopes	B	0.20
GbC	Gladstone loam, 8 to 15 percent slopes	B	0.20
GbB	Gladstone-Urban land complex, 0 to 8 percent slopes	B	0.20
GnB	Glenville-Baile silt loams, 0 to 8 percent slopes	C	0.37
UuB	Urban land-Udorhtents complex, 0 to 8 percent slopes	D	-

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOURS
-x-x-	EXISTING FENCE
---	BOUNDARY/RIGHT OF WAY LINE
-BRL-	BUILDING RESTRICTION LINE
-S-	EXISTING SEWER
-OHE-	EXISTING OVERHEAD ELECTRIC
-W-	EXISTING WATER
---	EXISTING TREELINE
ST#6	EXISTING SPECIMEN TREE
-LOD-	PROPOSED L.O.D.
○	PROPOSED DRY WELLS
---	EXISTING PAVING TO REMAIN & PROPOSED PAVING
-SF-	SILT FENCE
-SSF-	SUPER SILT FENCE
-N-2-	NON-ROOFTOP DISCONNECTION (N-2)

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**FISHER, COLLINS & CARTER, INC.**  
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ELLSWORTH CITY, MARYLAND 21042  
(410) 461-2895

NO.	REVISION	DATE

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APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Kat Slawson*  
Chief, Division of Land Development 10/07/14  
*John J. ...*  
Chief, Development Engineering Division J.P. 10.10.14

OWNER/DEVELOPER  
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