

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING 2' CONTOURS
---	EXISTING 10' CONTOURS
---	PROPOSED CONTOUR
•	SPOT ELEVATION
---	LIMITS OF DISTURBANCE
---	EXISTING TIE LINE
---	PROPOSED TIE LINE
---	SOILS LINES AND TYPE
---	SUPER SILT FENCE
---	STABILIZED CONSTRUCTION ENTRANCE
---	NON-ROOFTOP DISCONNECTION (N-2)
---	EX. DRIVEWAY TO BE REMOVED
---	PROPOSED DRIVEWAY
---	SILT FENCE
---	EROSION CONTROL MATTING

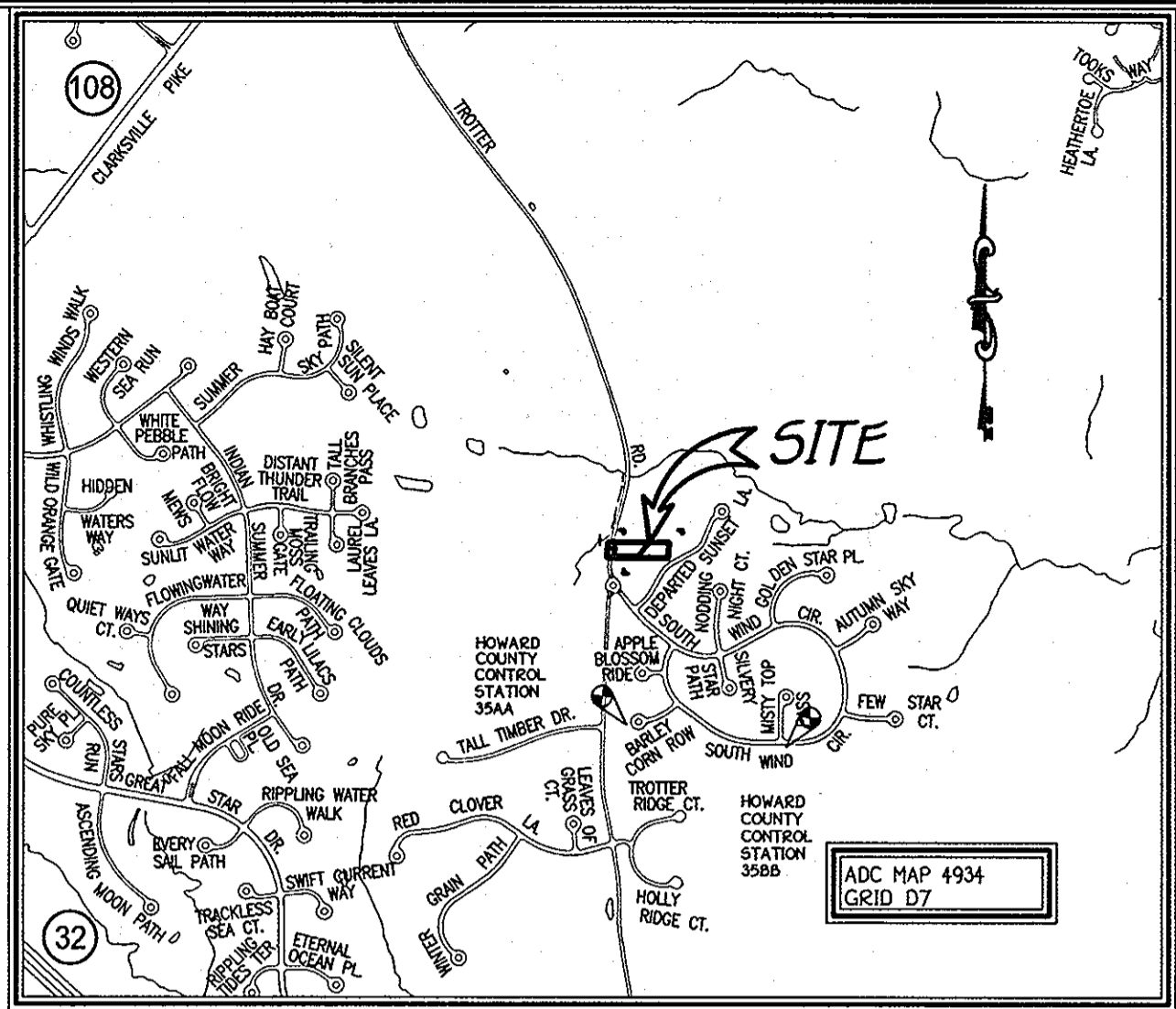
E50 Narrative:

- There are no existing Wetlands, Wetland Buffers, Streams, Stream Buffers Or 100 Year Floodplains Located On This Site.
- The existing drainage patterns will be maintained as closely as possible during and after the development of the site.
- Efforts have been made to reduce the impervious areas; however, when the final house types is selected, it may be possible to reduce the site imperviousness through better site design.
- The required Sediment and Erosion control measures consisting of super silt fence; a stabilized construction entrance and Erosion Control Matting have been designed in accordance with the latest Howard County Soil Conservation District and Maryland Department of the Environment regulations. Based on the type and location of the E50 practices, there was no need to incorporate these measures into the SWM strategy.
- The proposed Environmental Site Design measures have been implemented to the Maximum extent Possible and meet the targeted Pe for this site. As such, no major structural practices as described in Chapter 3 of the above cited Manual will be required.

SOILS LEGEND		
SOIL	NAME	CLASS
GbC	Gladstone loam, 0 to 15 percent slopes	B
GfB	Gladstone-Urban land complex, 0 to 8 percent slopes	B
GnB	Glenville-Baile silt loams, 0 to 8 percent slopes	B

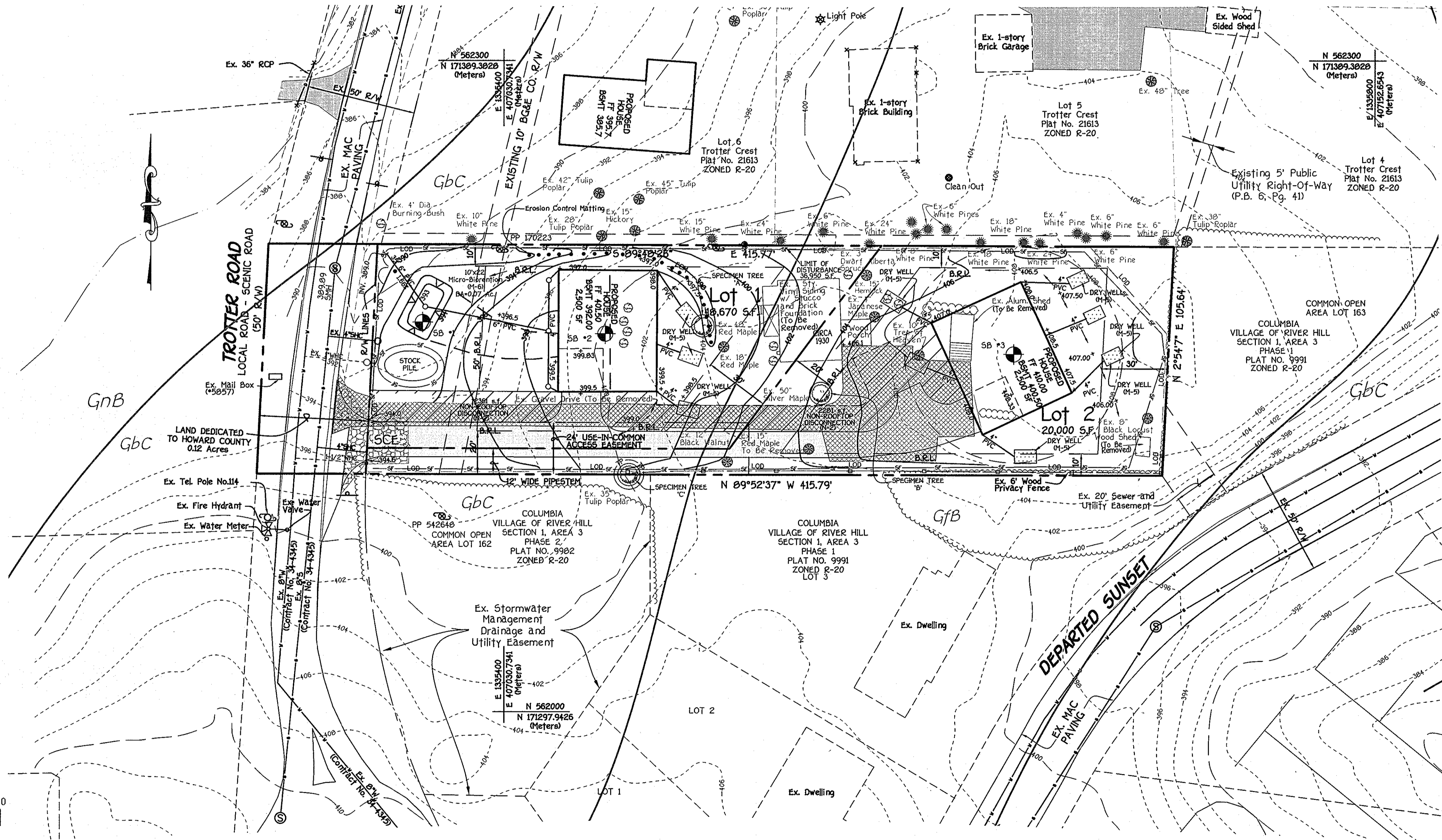
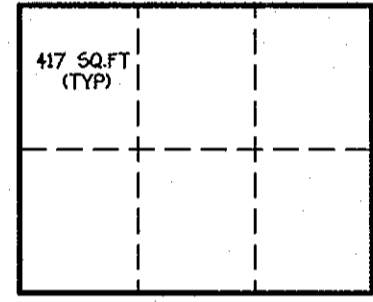
SPECIMEN TREE DATA

Key	SPECIES, SIZE	COMMENT
A	RED MAPLE, 48"	GOOD CONDITION, SOME BRANCH DAMAGE
B	SILVER MAPLE, 63.5"	POOR CONDITION, SUBSTANTIAL LEADER DAMAGE AND TRUNK ROT
C	TULIP POPLAR, 35"	GOOD CONDITION



SITE ANALYSIS DATA

- TOTAL AREA OF SUBJECT PROPERTY = 1.010 ACRES
- DEVELOPABLE AREA (EXCLUDING ROAD DEDICATION) = 0.99 ACRES
- WETLAND AREA: NONE
- FLOODPLAIN: NONE
- FOREST: NONE
- STEEP SLOPES: NONE
- EROSION SOILS: NONE
- LIMIT OF DISTURBANCE: 0.85 ACRES
- PROPOSED SITE USE: RESIDENTIAL
- GREEN OPEN AREA: 0.85 ACRES
- IMPERVIOUS AREA: 0.25 ACRES



GENERAL NOTES

- SUBJECT PROPERTY ZONED: R-20.
- PREVIOUS DEPARTMENT OF PLANNING AND ZONING FILE NUMBER: ZB-1091M
- FOREST STAND DELINEATION AND WETLAND DELINEATION WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. DATED NOVEMBER, 2011.
- THE SWM MEASURES ILLUSTRATED ON THIS PLAN ARE CONCEPTUAL AS SPECIFIC HOUSE CONFIGURATIONS HAVE NOT YET BEEN ESTABLISHED. SPECIFIC SWM MEASURES WILL BE PROVIDED WITH THE ASSOCIATED PLOT PLAN WHEN FINAL DESIGN DETAILS CAN BE PROVIDED.
- ELEVATIONS ARE BASED ON FIELD RUN TOPOGRAPHIC SURVEY PERFORMED MAY, 2011 BY FISHER, COLLINS & CARTER, INC.
- LIMIT OF DISTURBANCE: 0.85 AC.
- APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBDIVISION PLAN, SITE DEVELOPMENT PLAN, OR GRADING OR BUILDING PERMIT. 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, SITE PLAN, OR GRADING AND BUILDING PERMIT STAGES.

Stormwater Management Note

Stormwater Management requirements for this site will be met using Environmental Site Design to the Maximum Extent Possible in accordance with the Maryland Stormwater Design Manual, Volume 1 & II, effective May 2010. Proposed practices will be located on individual lots and the Use-in-Common driveway as follows:

- Lot 1 will meet stormwater requirements using Drywells (M-5), Micro-Bioretenion (M-6) And Non-Rooftop Disconnection (N-2)
 - Lot 2 will meet stormwater requirements using Drywells (M-5) and Non-Rooftop Disconnection (N-2)
- These practices shall be privately owned and maintained in accordance with individual Declarations of Covenants.

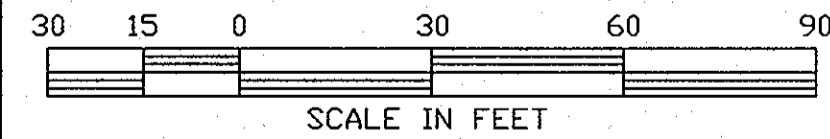
SWM SUMMARY CHART			
AREA ID	ESDV REQ. cu.ft.	ESDV Pvd. cu.ft.	REMARKS
LOT 1		475	DRY WELLS (M-5) & MICRO-BIORETENTION (M-6) &
LOT 2		510	DRY WELLS (M-5)
ALL DRIVEWAYS		317	NON-ROOFTOP DISCONNECTION (N-2)
TOTALS	1370	1310*	

CALCULATE THE PE PROVIDED AS FOLLOWS:

$$Pe \text{ Provided} = \frac{ESDV \times 12}{Rv \times A} = \frac{1310 \times 12}{0.266 \times 0.89} = 66,638.41 / 43,560 = 1.53 / 1.6 = 0.96x$$

Through the Application Of Approved Chapter 5 Practices, Runoff Characteristics Of Woods In Good Condition 12N Of 95 For This Environmental Concept Plan Have Been Met Through The Application Of Environmental Site Design (ESD) To The Maximum Extent Practicable (MEP). Once The Final House Types And Grading Have Been Determined At The Site Development Plan Stage Of This Project, The Design Can Be Refined To Meet 100% Of The Pe Requirement.

STORMWATER MANAGEMENT PRACTICES																
LOT No.	ADDRESS	GREEN ROOF A-1 (Y/N)	PERMEABLE PAVING A-2 (Y/N)	REINFORCED TURF A-3 (Y/N)	DISCONNECTION OF ROOFTOP RUNOFF N-1 (NUMBER)	DISCONNECTION OF NON-ROOFTOP RUNOFF N-2 (Y/N)	SHEET FLOW TO CONSERVATION AREAS N-3 (Y/N)	RAINFALL HARVESTING N-4 (NUMBER)	SUBMERGED GRAVEL WETLANDS N-5 (NUMBER)	LANDSCAPE INFILTRATION N-6 (NUMBER)	INFILTRATION BERM N-7 (NUMBER)	DRY WELLS N-8 (NUMBER)	MICRO-BIO-RETENTION N-9 (NUMBER)	RAIN GARDENS N-10 (NUMBER)	SWALES N-11 (NUMBER)	ENHANCED FILTER N-12 (NUMBER)
1	TROTTER ROAD											3	1			
2	TROTTER ROAD											6				
DRIVEWAYS																



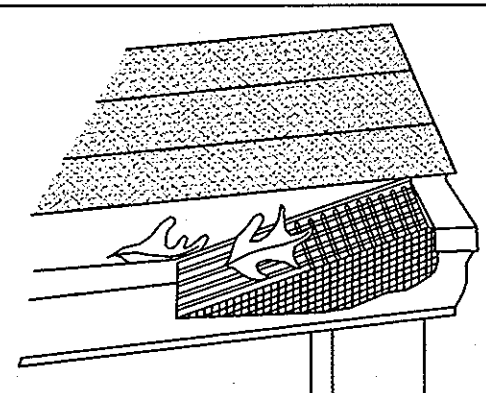
APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 Date: 5/29/12

OWNER AND DEVELOPER
 TROTTER 5857, LLC
 1819 PANARAMA COURT
 McLEAN, VIRGINIA 22101
 1-703-442-3278

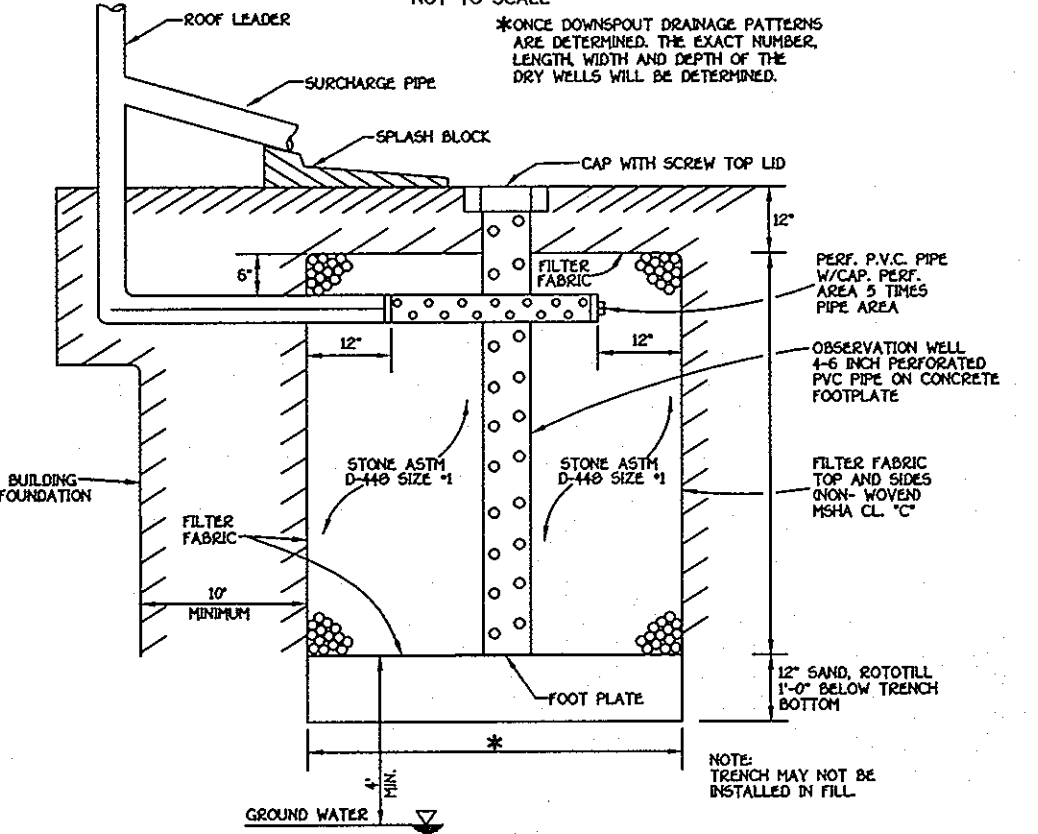
Eco-Science Professionals, Inc.
 CONSULTING ECOLOGISTS

MD DNR Qualified Professional
 USACE Wetland Designer
 Certification # WDCP00000004
 JOHN P. CANOLES

ENVIRONMENTAL CONCEPT PLAN
TROTTER 5857, LLC PROPERTY
 LOTS 1 & 2
 5857 TROTTER ROAD, CLARKSVILLE, MD 21029
 TAX MAP No. 0035 GRID No. 0002 PARCEL No. 0220
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 ZONED: R-20
 SCALE: 1" = 30' DATE: MAY 22, 2012
 SHEET 1 OF 2



GUTTER DRAIN FILTER DETAIL
NOT TO SCALE



DRY WELL DETAIL
NOT TO SCALE

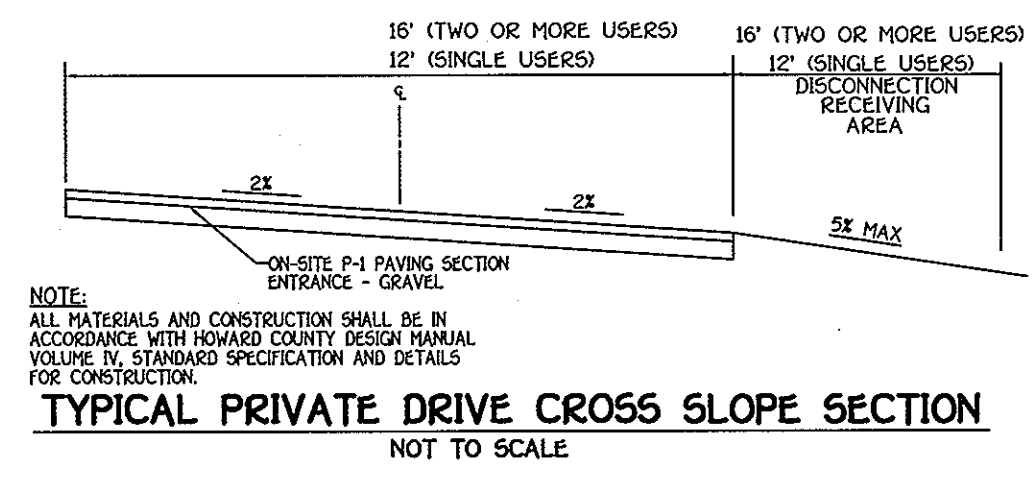
LOT	NO. OF DRY WELLS	AREA OF ROOF SQ. FT.	VOL. REQ. CU. FT.	VOLUME PROVIDED CU. FT.	SIZE PROVIDED (LxWxH)
1	3	417	76	86.5	9' x 8' x 4'
2	6	417	76	86.5	9' x 8' x 4'

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 500 SQ. FT. OR LESS.
- DRYWELLS SHALL BE PROVIDED AT LOCATIONS WHERE THE LENGTH OF DISCONNECTION IS LESS THAN 75' AT 5X. THE SIZE AND CONSTRUCTION OF THE DRYWELL SHALL BE IN ACCORDANCE WITH THE DETAIL SHOWN ON THIS SHEET.

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

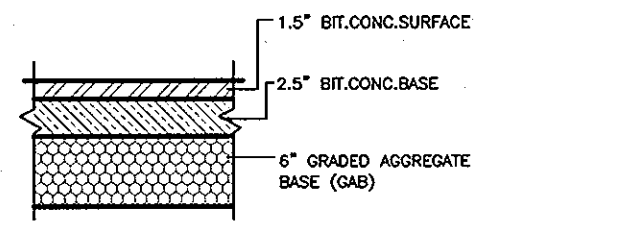
- THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT.
- THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO INSURE TRENCH DRAINAGE.
- THE OWNER SHALL MAINTAIN A LOG BOOK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



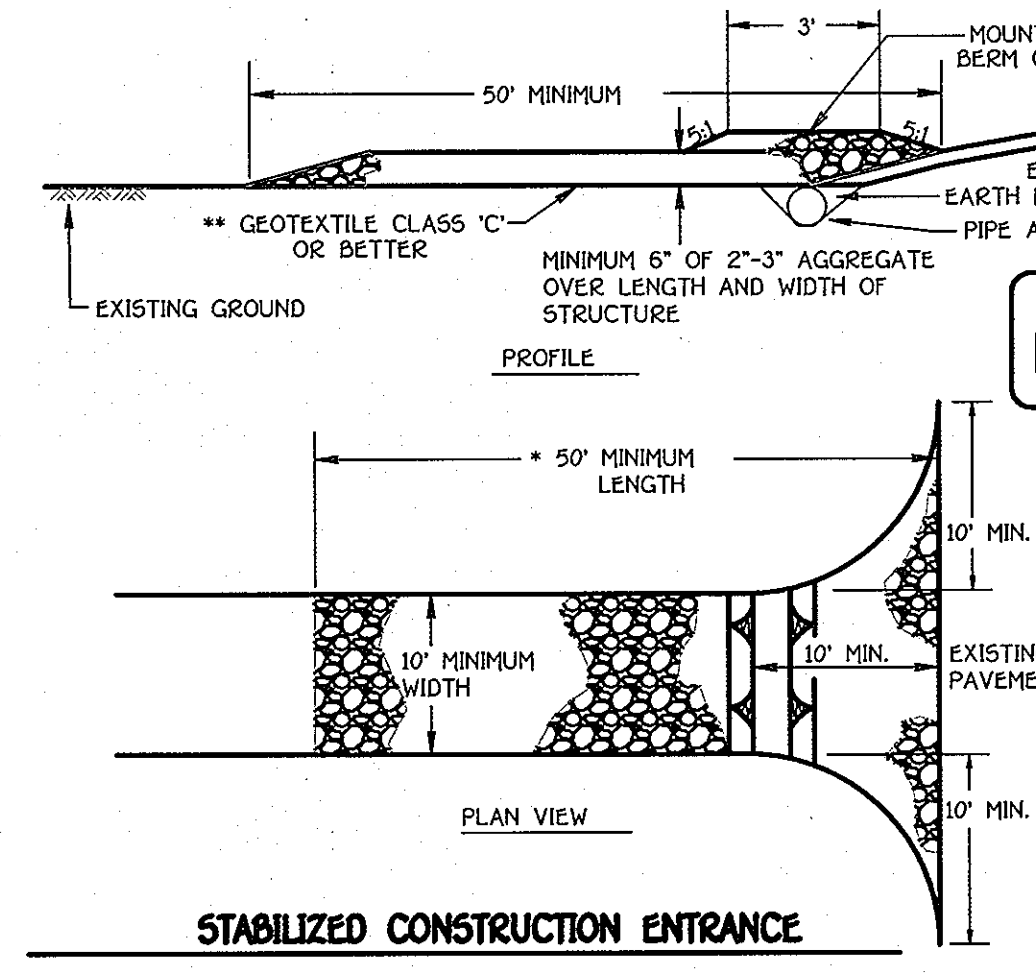
TYPICAL PRIVATE DRIVE CROSS SLOPE SECTION
NOT TO SCALE

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

- 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.



P-1 DRIVEWAY PAVING SECTION
(N.T.S.)



STABILIZED CONSTRUCTION ENTRANCE

TOTAL SITE AREA = DEVELOPMENT AREA = 0.887 ACRES
TARGET RCN = 55
TARGET PE = 16"

FOREST CONSERVATION WORKSHEET

NET TRACT AREA _____ Acres

A. TOTAL TRACT AREA _____

B. AREA WITHIN 100 YEAR FLOODPLAIN _____

C. AREA TO REMAIN IN AGRICULTURE PRODUCTION _____

D. NET TRACT AREA _____

LAND USE CATEGORY: (from table 3.2.1, page 40, Manual)

AREA MDR IDA HDR MPD CIA _____

INFORMATION FOR CALCULATIONS:

E. AFFORESTATION THRESHOLD _____ 15% x D = _____ 0.15

F. FOREST RETENTION THRESHOLD _____ 20% x D = _____ 0.20

G. EXISTING FOREST COVER: _____

H. AREA OF FOREST ABOVE REFORESTATION THRESHOLD _____

I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD _____

BREAK EVEN POINT:

J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION _____ 0

K. CLEARING PERMITTED WITHOUT MITIGATION _____ 0

PROPOSED FOREST CLEARING:

L. TOTAL AREA OF FOREST TO BE CLEARED OR RETAINED OUTSIDE FCE _____ 0

M. TOTAL AREA OF FOREST TO BE RETAINED IN FCE _____ 0

PLANTING REQUIREMENTS:

N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD _____ 0

P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD _____ 0

Q. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD _____ 0

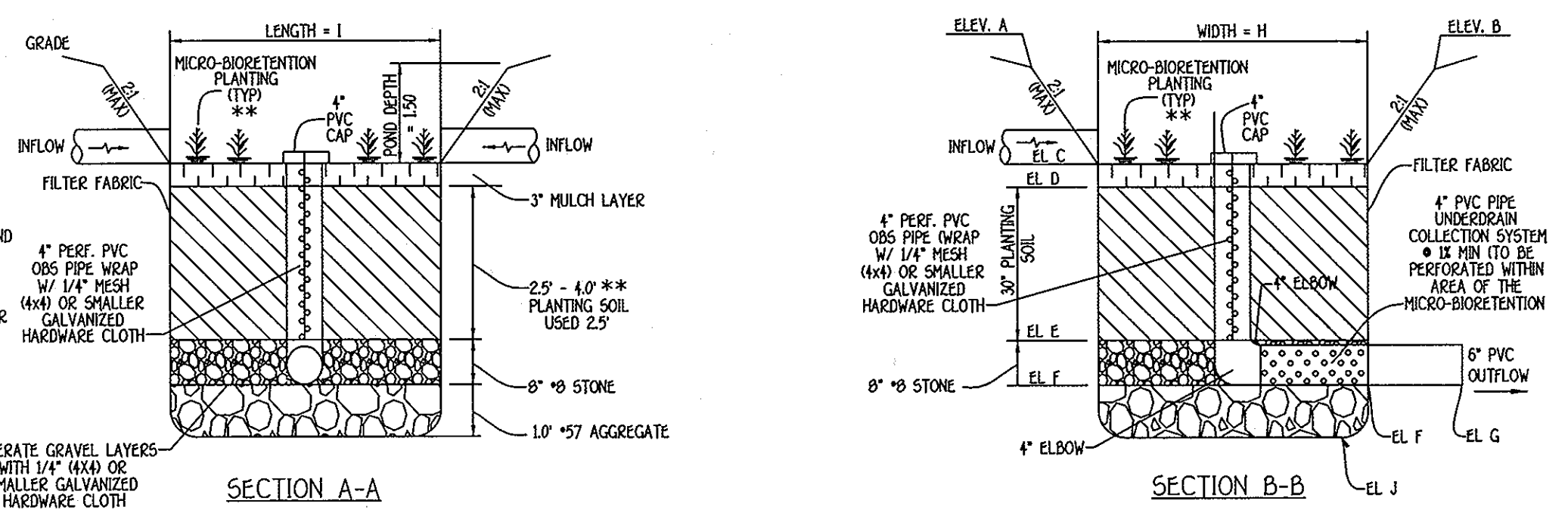
R. TOTAL REFORESTATION REQUIRED _____ 0.15

S. TOTAL AFFORESTATION REQUIRED _____ 0.15

T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED _____ 0.15

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

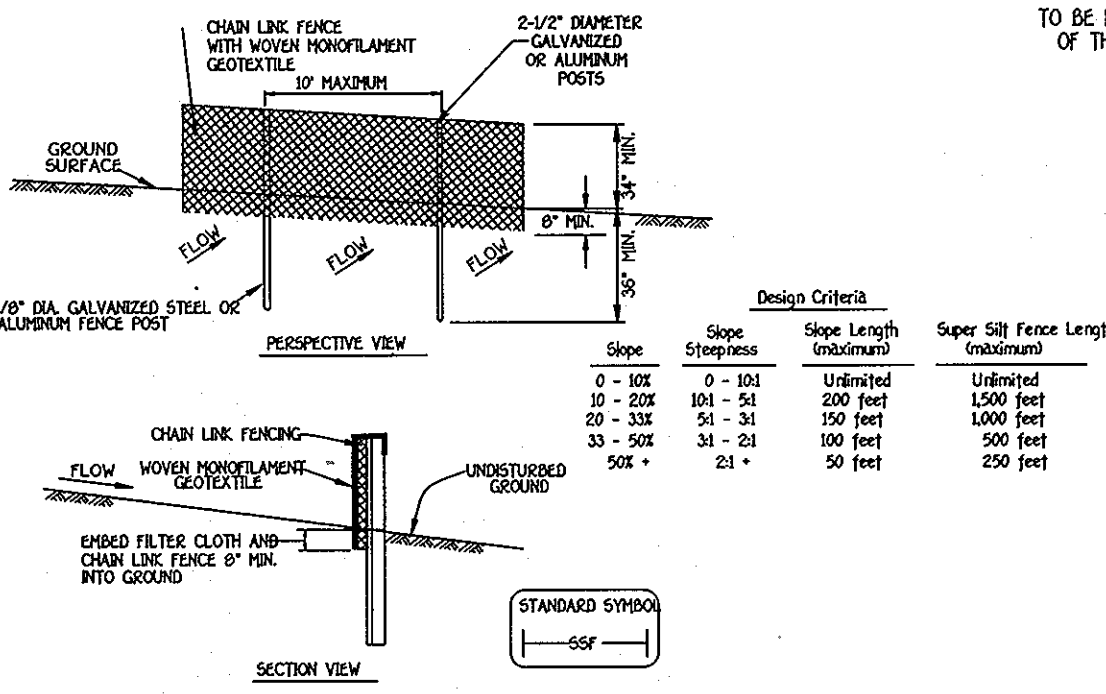
- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A4.1 AND 2.
- 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.
- 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.



SECTION A-A

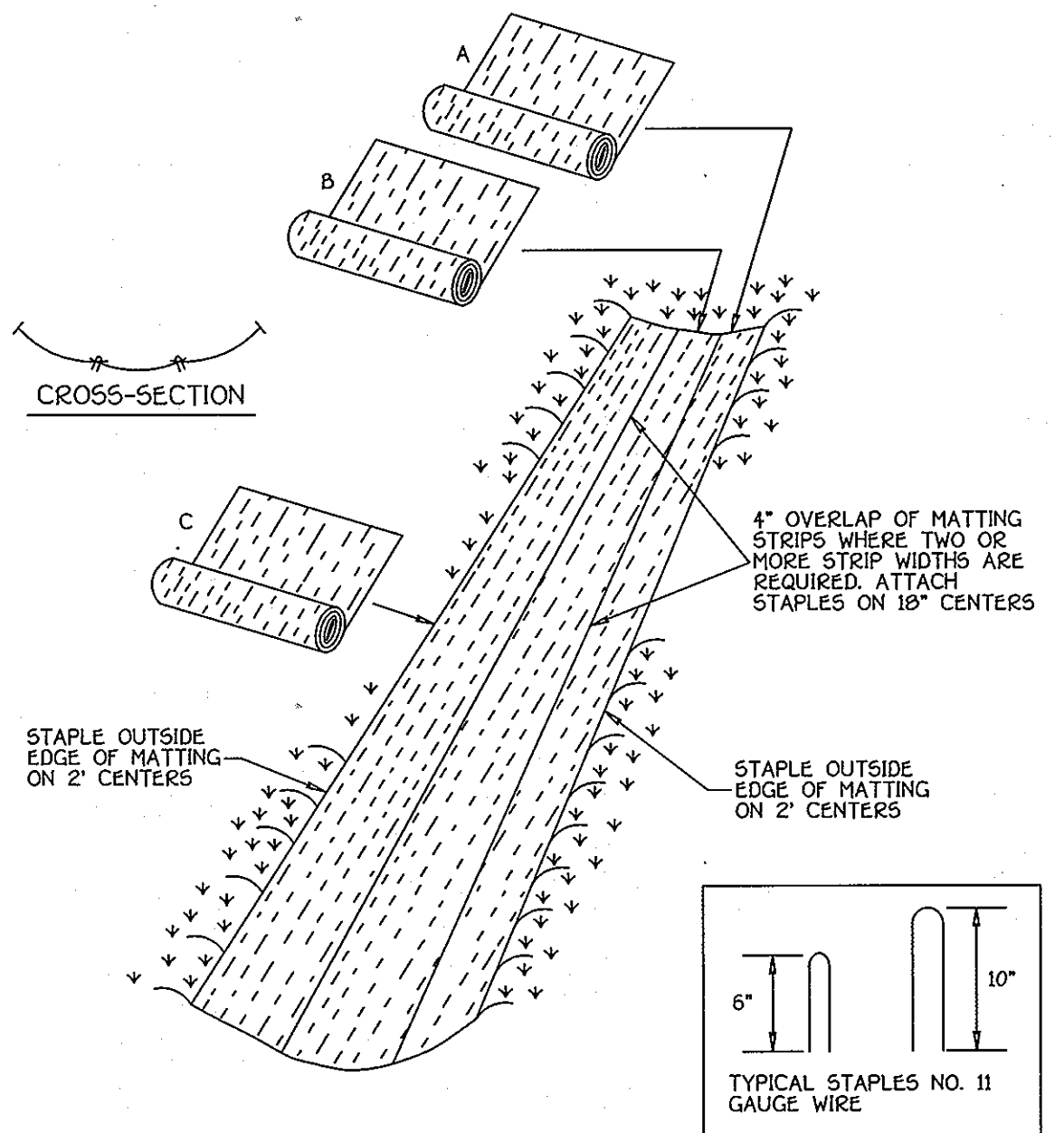
SECTION B-B

BIORETENTION FILTER	A	B	C	D	E	F	G	H	I	J
1	594.00	594.00	593.00	592.75	590.25	589.50	589.00	10'	22'	588.50



- CONSTRUCTION SPECIFICATIONS**
- INSTALL 2 3/8" DIAMETER GALVANIZED STEEL OR ALUMINUM POSTS SIX FEET IN LENGTH PLACED NO FURTHER THAN 10 FEET FROM EACH OTHER. A MINIMUM OF 36 INCHES INTO THE GROUND.
 - FASTEN MINIMUM 9 GAUGE CHAIN LINK FENCE (2 3/8" MAX. DIAMOND) 42 INCHES IN HEIGHT SECURELY TO THE POSTS WITH WIRE TIES OR STAPLES.
 - FASTEN WOVEN MONOFILAMENT GEOTEXTILE AS SPECIFIED IN SECTION H4 MATERIALS SECURELY TO THE CHAIN LINK WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. ENDED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
 - WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS.
 - REMOVE ACCUMULATED SEDIMENTS WHEN "MUDGULGES" DEVELOP IN THE SILT FENCE, OR WHEN SEDIMENTS REACH 25% OF THE FENCE HEIGHT TO PREVENT OVERFLOW.
 - EXTEND BOTH ENDS OF THE SUPER-SILT FENCE A MINIMUM OF 5 FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNED WITH THE FENCE TO PREVENT SEDIMENT BYPASS.
 - PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/COMMISSION AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS SET FORTH IN THE MATERIALS SPECIFICATION.
 - INSPECT AND PROVIDE NECESSARY MAINTENANCE PERIODICALLY AND AFTER EACH RAIN EVENT.

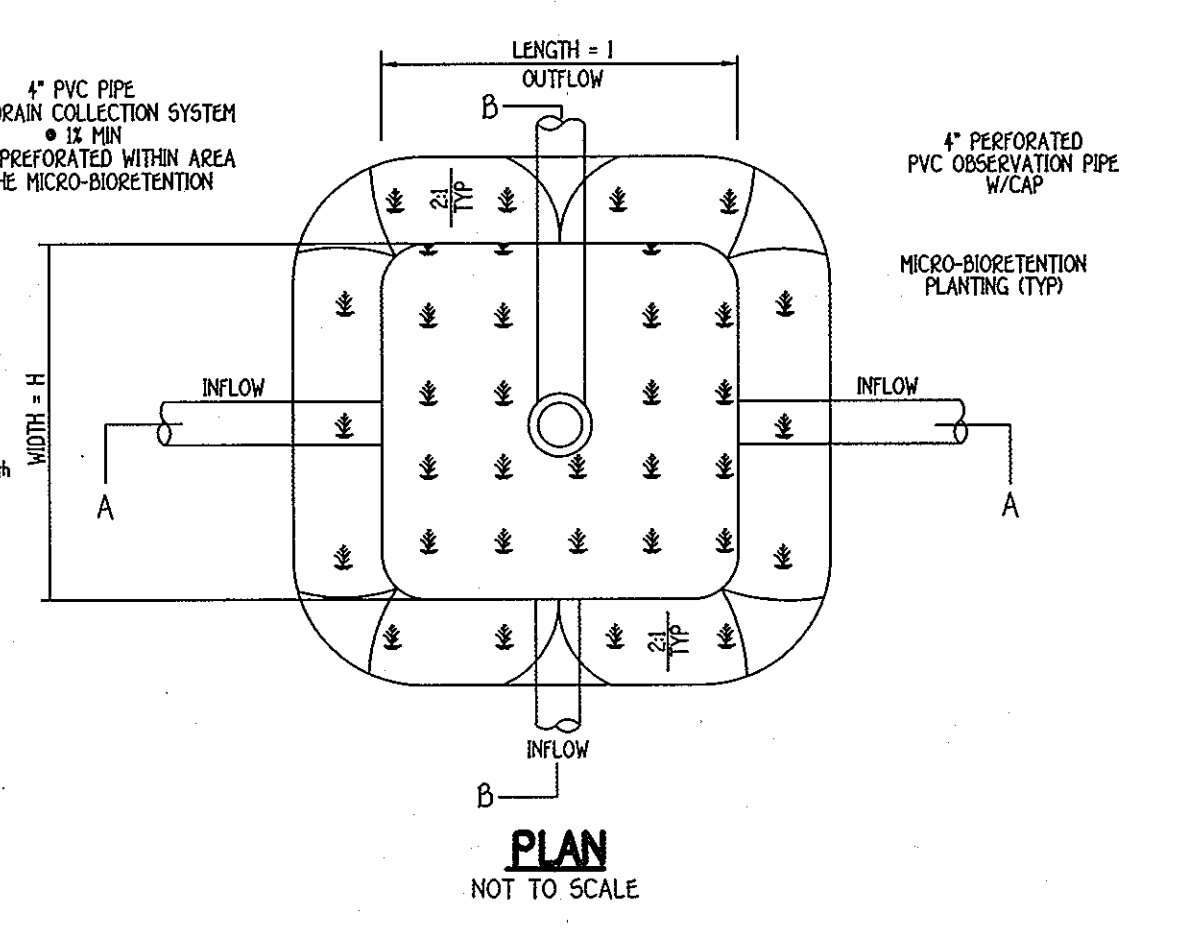
SUPER SILT FENCE
NOT TO SCALE



TREE PROTECTION DETAIL
NOT TO SCALE

- NOTES:**
- FOREST PROTECTION DEVICE ONLY.
 - RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
 - BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
 - ROOT DAMAGE SHOULD BE AVOIDED.
 - PROTECTIVE SIGNAGE MAY ALSO BE USED.
 - DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

MICRO-BIORETENTION DETAIL (M-6)
NOT TO SCALE

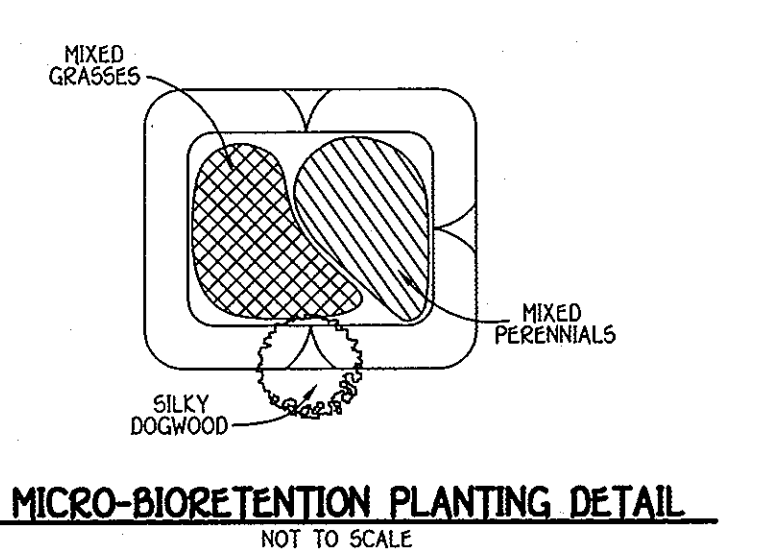
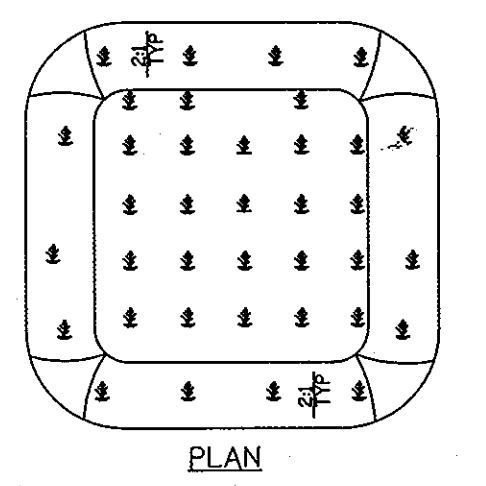


PLAN
NOT TO SCALE

QUANTITY	NAME	MAXIMUM SPACING (FT)
45	MIXED PERENNIALS	1 FT.
45	MIXED GRASSES	1 FT.
1	SILKY DOGWOOD	PLANT AWAY FROM INFLOW LOCATION

- MIXED PERENNIALS: OUTLEAF CORNFLOWER, TRANSLUCENT ASTER
- MIXED GRASSES: TUFTED FOXTAIL, SWITCH GRASS
- SILKY DOGWOOD

NOTE: PLANT MATERIAL MUST COVER AT LEAST 50% OF THE SURFACE AREA OF THE LANDSCAPING INFILTRATION



MICRO-BIORETENTION PLANTING DETAIL
NOT TO SCALE

- CONSTRUCTION SPECIFICATIONS**
- KEY-IN THE MATTING BY PLACING THE TOP ENDS OF THE MATTING IN A NARROW TRENCH 6" IN DEPTH. BACKFILL THE TRENCH AND TAMP FIRMLY TO CONFORM TO THE CHANNEL CROSS-SECTION. SECURE WITH A ROW OF STAPLES ABOUT 4" DOWN SLOPE FROM THE TRENCH. SPACING BETWEEN STAPLES IS 6".
 - STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES.
 - BEFORE STAPLING THE OUTER EDGES OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL.
 - STAPLES SHALL BE PLACED 2' APART WITH 4 ROWS FOR EACH STRIP. 2 OUTER ROWS, AND 2 ALTERNATING ROWS DOWN THE CENTER.
 - WHERE ONE ROLL OF MATTING ENDS AND ANOTHER BEGINS, THE END OF THE TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4". SHIPLAP FASHION. REINFORCE THE OVERLAP WITH A DOUBLE ROW OF STAPLES SPACED 6" APART IN A STAGGERED PATTERN ON EITHER SIDE.
 - THE DISCHARGE END OF THE MATTING LINER SHOULD BE SIMILARLY SECURED WITH 2 DOUBLE ROWS OF STAPLES.

NOTE: IF FLOW WILL ENTER FROM THE EDGE OF THE MATTING THEN THE AREA EFFECTED BY THE FLOW MUST BE KEPT IN.

EROSION CONTROL MATTING
NOT TO SCALE

ENVIRONMENTAL CONCEPT PLAN
TROTTER 5857, LLC PROPERTY
LOTS 1 & 2
5857 TROTTER ROAD, CLARKSVILLE, MD 21029

TAX MAP No. 35 GRID No. 2 PARCEL No. 220
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
ZONED: R-20
SCALE: NONE DATE: MAY 22, 2012
SHEET 2 OF 2

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Kate L. ... 5/29/12 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT

Shel ... 5/29/12 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION

LICENSE EXPIRES 9/3/14

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 3272 BALTIMORE NATIONAL PKWY
ELLSWORTH CITY, MARYLAND 21041
410.281.2255

OWNER AND DEVELOPER

TROTTER 5857, LLC
1819 PANARAMA COURT
MCLEAN, VIRGINIA 22101
PHONE: 703-442-3278

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DMC Qualified Professional
USDA/DC National Wetlands
Certification # WDCPS00000040

John P. Canoles
JOHN P. CANOLES