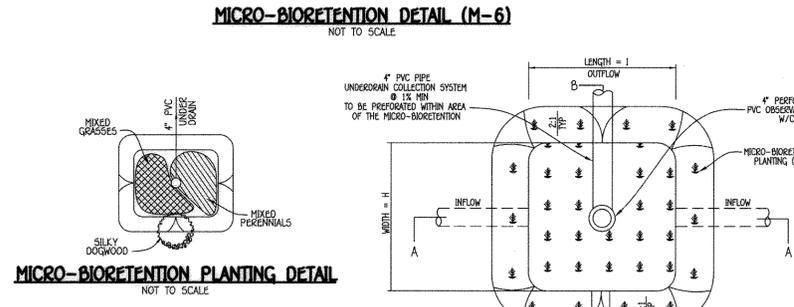


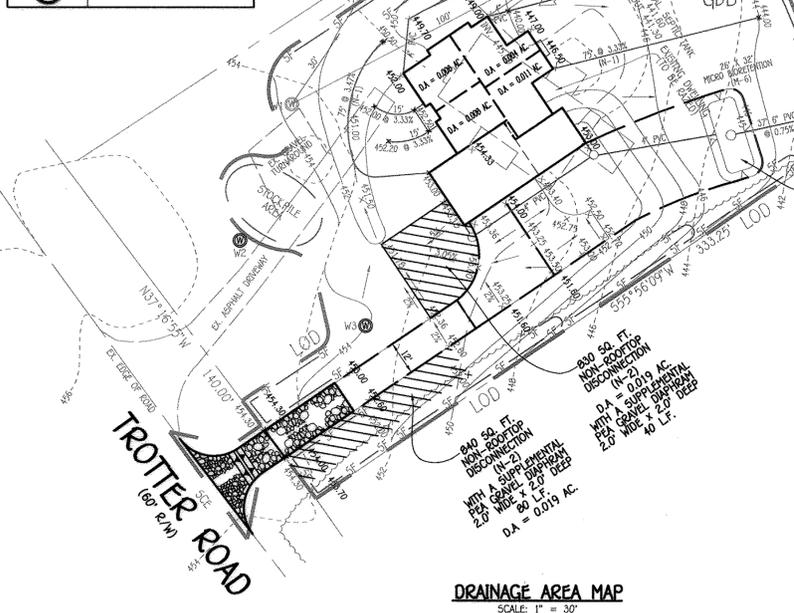
**MICRO-BIORETENTION DETAIL (M-6)**  
NOT TO SCALE



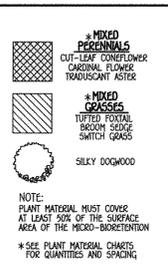
**MICRO-BIORETENTION PLANTING DETAIL**  
NOT TO SCALE

**LEGEND**

SYMBOL	DESCRIPTION
---	EXISTING 2' CONTOURS
---	EXISTING 10' CONTOURS
---	PROPOSED CONTOURS
•	SPOT ELEVATION
SF-SF	SILT FENCE
---	EXISTING TREE LINE
---	PROPOSED TREE LINE
---	SHEET FLOW (5% MAX.)
---	DISCONNECTED IMPERVIOUS AREA
---	DISCONNECTED RECEIVING AREA
---	SOIL LINES AND TYPES
○	DENOTES PROPOSED WELL
○	DENOTES FAILED PERC
○	DENOTES PASSED PERC
---	LIMIT OF DISTURBANCE
○	EXISTING TREES



**DRAINAGE AREA MAP**  
SCALE: 1" = 30'



NOTE: PLANT MATERIAL MUST COVER AT LEAST 50% OF THE SURFACE AREA OF THE MICRO-BIORETENTION AREA OF THE MICRO-BIORETENTION. \* SEE PLANT MATERIAL CHARTS FOR QUANTITIES AND SPACING.

**STORMWATER MANAGEMENT PRACTICES**

LOT NO.	ADDRESS	GREEN ROOF (Y/N)	PERMEABLE PAVING (Y/N)	REINFORCED TURF (Y/N)	DISCONNECTION OF ROOFTOP RUNOFF (N-1 (Y/N))	DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2 (Y/N))	SHEET FLOW TO CONSERVATION AREAS (N-3 (Y/N))	RAINWATER HARVESTING (M-1 (NUMBER))	SUBMERGED GRAVEL WETLANDS (M-2 (NUMBER))	LANDSCAPE INFILTRATION (M-3 (NUMBER))	INFILTRATION BERM (M-4 (NUMBER))	DRY WELLS (M-5 (NUMBER))	BIO-MICRO RETENTION (M-6 (NUMBER))	RAIN GARDENS (M-7 (NUMBER))	SWALES (M-8 (NUMBER))	ENHANCED FILTER (M-9 (NUMBER))
4	5517 TROTTER ROAD				1	1							1			

**MICRO-BIORETENTION**

BIORETENTION FILTER	A	B	C	D	E	F	G	H	I	J
1	446.00	446.00	445.00	444.95	442.25	441.58	441.00	440.10	440.26	440.58

**SOILS LEGEND**

SOIL	NAME	CLASS
Gbb	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	B

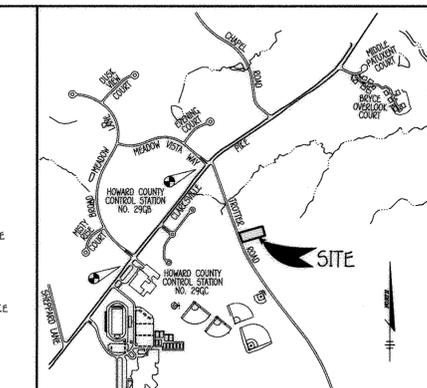
**SITE ANALYSIS DATA CHART**

**BENCH MARKS**

A. TOTAL PROJECT AREA: 1.0712 ACRES OR 46,661 SQUARE FEET.  
 B. AREA OF SUBMISSION: 1.0712 ACRES OR 46,661 SQUARE FEET.  
 C. LIMITS OF DISTURBANCE: 0.63 ACRES OR 27,443 SQUARE FEET.  
 D. PRESENT ZONING DESIGNATION: R-20.  
 E. PROPOSED USES FOR SITE: RESIDENTIAL.  
 F. APPLICABLE DFP FILE REFERENCES: BOOK NO.: RHM 6, PAGE 49, ECP 12-017

T.P. 29GB ELEV. 455.965  
 N. 566,826.1708 E. 1,333,255.8943  
 LOC. NEAR THE INTERSECTION OF MAADOW VISTA RD. & CLARKSVILLE PIKE

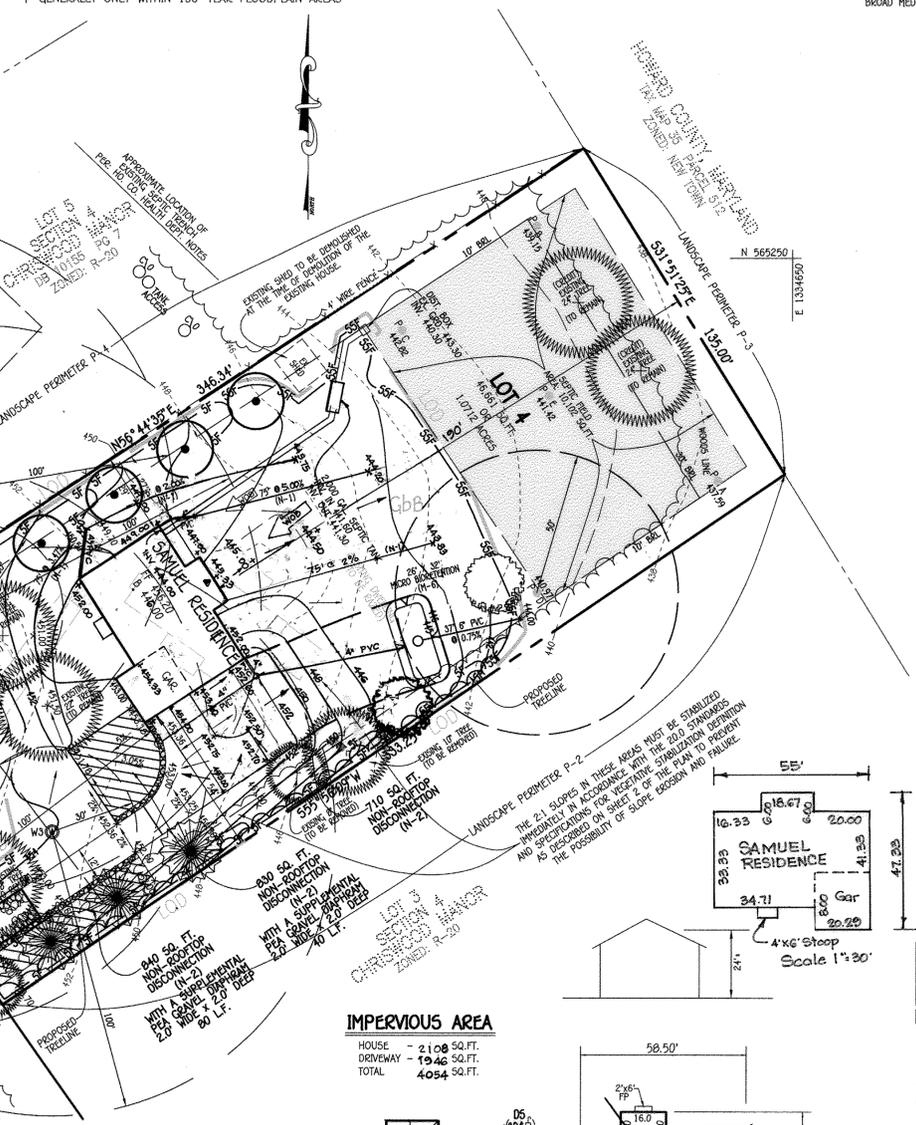
T.P. 29GC ELEV. 490.718  
 N. 565,530.8136 E. 1,332,248.7022  
 LOC. NEAR THE INTERSECTION OF BROAD MEADOW LANE & CLARKSVILLE PIKE



**VICINITY MAP**  
SCALE: 1" = 1200'  
ADC MAP COORDINATES: 4934, C-5

**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 3, TABLE A.4.1 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.

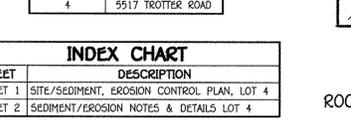


**ADDRESS CHART**

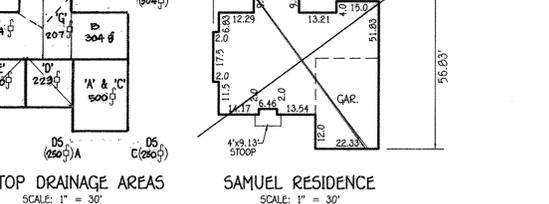
LOT NUMBER	STREET ADDRESS
4	5517 TROTTER ROAD

**INDEX CHART**

SHEET	DESCRIPTION
SHEET 1	SITE/SEDIMENT, EROSION CONTROL PLAN, LOT 4
SHEET 2	SEDIMENT/EROSION NOTES & DETAILS LOT 4



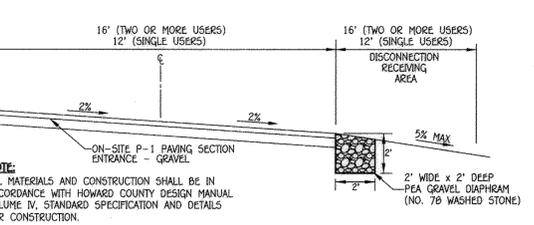
**ROOFTOP DRAINAGE AREAS**  
SCALE: 1" = 30'



**SAMUEL RESIDENCE**  
SCALE: 1" = 30'

**GENERAL NOTES**

- SUBJECT PROPERTY ZONED R-20 PER THE 2/2/04 COMPREHENSIVE ZONING PLAN AND THE LITE ZONING REGULATION AMENDMENTS EFFECTIVE ON 7/28/06.
- TOTAL NUMBER OF LOTS SUBMITTED: 1 SFD
- COORDINATES BASED ON NAD '83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 29GP AND NO. 29GC
- PREVIOUS FILE NUMBERS FOR REFERENCE: ECP 12-017, PLAT BOOK NO. RHM 6, PAGE 49.
- TOPOGRAPHIC AND BOUNDARY SURVEY COMPILED BY RAZTEK ASSOCIATES, INC., IN MAY, 2011.
- HORIZONTAL AND VERTICAL CONTROL DATUM IS BASED ON NAD 83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS. HOWARD COUNTY MONUMENT 29GP N. 566,826.1708 E. 1,333,255.8943 ELEV. 455.965 HOWARD COUNTY MONUMENT 29GC N. 565,530.8136 E. 1,332,248.7022 ELEV. 490.718
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING (MINIMUM) REQUIREMENTS:
  - WIDTH: 12' (16' SERVING MORE THAN ONE RESIDENCE)
  - SURFACE: 6" OF COMPACTED CRUSHER RUN BASE W/AT&R AND CHIP COATING (1-1/2" MIN.) (12% SLOPING)
  - GEOMETRY: MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND 45 FOOT TURNING RADIUS.
  - STRUCTURES (BRIDGES/CULVERTS) CAPABLE OF SUPPORTING 25 GROSS TONS (12% SLOPING)
  - DRAINAGE ELEMENTS CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE.
  - STRUCTURE CLEARANCES - MINIMUM 12 FEET
  - MAINTENANCE SUFFICIENT TO INSURE ALL WEATHER USE.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
- FOR DRIVEWAY ENTRANCE DETAILS REFER TO HO. CO. DESIGN MANUAL VOL. II DETAILS R.6.06.
- SITE ANALYSIS DATA:
  - TOTAL PROJECT AREA: 1.0712 AC. ± OR 46,661 SQUARE FEET ±.
  - TOTAL AREA OF IMPERVIOUS SURFACE PROPOSED: 0.110 AC. OR 4,792 SQUARE FEET.
- THIS PROJECT IS EXEMPT FROM FOREST CONSERVATION PER SECTION 16.1202 (b)(2)(i) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS BECAUSE THE TOTAL CUTTING, CLEARING OR GRADING OF FOREST RESOURCES IS LESS THAN 20,000 SQ. FT. AS SUCH, THE DEVELOPER WILL BE REQUIRED TO SUBMIT A "DECLARATION OF INTENT FOR A SINGLE RESIDENTIAL LOT EXEMPTION CLEARING LESS THAN 20,000 SQ. FT. OF FOREST" PRIOR TO THE APPROVAL OF THIS SDP.
- 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 VOLUMES I & II, EFFECTIVE MAY, 2010. PROPOSED PRACTICES WILL BE LOCATED ON LOT 4, AS FOLLOWS:
  - STORMWATER MANAGEMENT WILL BE MET BY USING ROOFTOP DISCONNECTIONS (N-1) AND MICRO-BIORETENTION (M-6) FOR THE PROPOSED HOUSE AND NON-ROOFTOP DISCONNECTION (N-2) FOR THE PROPOSED DRIVEWAY. THESE PRACTICES WILL PROVIDE THE REQUIRED ESD VOLUMES AND SHALL BE PRIVATELY OWNED AND MAINTAINED IN ACCORDANCE WITH AN INDIVIDUAL DECLARATION OF COVENANTS.
  - IN ACCORDANCE WITH SECTION 12B OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS, PORCHES OR DECKS OPEN OR ENCLOSED, MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACKS.
  - THERE ARE NO STREAMS, WETLANDS, OR THEIR BUFFERS, 100 YEAR FLOODPLAIN, STEEP SLOPES OR FOREST CONSERVATION EASEMENTS EXIST ON-SITE.
  - THERE ARE NO CEMETERIES ON-SITE.
  - TOTAL LANDSCAPE SURETY FOR 9 SHADE TREES @ \$300.00 EACH = \$2700.00 WILL BE PROVIDED WITH THE SITE DEVELOPMENT PLAN DEVELOPER'S AGREEMENT.



**TYPICAL PRIVATE DRIVE CROSS SLOPE SECTION**  
(FOR DISCONNECTION OF NON-ROOFTOP RUNOFF CREDIT, STA. 0+00 @ E.P. TO 1+07.03)  
NOT TO SCALE

A MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE OWNER SHALL ENSURE THE AREAS RECEIVING RUNOFF ARE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREAS, FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
10070 BALTIMORE NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21042  
(410) 461-3995

**ENGINEER'S CERTIFICATE**  
"I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."  
Signature of Engineer: Terrell A. Prater, 8/30/12  
DATE

**BUILDER/DEVELOPER'S CERTIFICATE**  
"I/we certify that all development and construction will be done according to this plan, for sediment and erosion control and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."  
Signature of Developer: Thomas Samuel, 9/18/12  
DATE

1 Rev hsc type 1 qrd  
NO. REVISION DATE

APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS,  
HOWARD COUNTY HEALTH DEPARTMENT.  
Walter M. Mansel, 11/2/2012  
COUNTY HEALTH OFFICER 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. 44271, EXPIRATION DATE: 9/9/14  
Terrell A. Prater, 8/30/12  
DATE

This development plan is approved for soil erosion and sediment control by  
Howard SCD  
John R. Prater, 9/27/12  
Howard SCD

**OWNER/DEVELOPER**  
THOMAS SAMUEL  
5517 TROTTER ROAD  
CLARKSVILLE, MARYLAND 21029  
301-552-0005

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
Karl S. Jurek, 11/29/12  
Chief, Division of Land Development  
Date  
Mansel A. Mansel, 10/2/12  
Chief, Development Engineering Division  
Date  
Director - Department of Planning and Zoning  
11/2/12  
Date

PROJECT: CRISWOOD MANOR SECTION: 4 LOT NO.: 4

PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
RHM 6 PG. 49	0020	R-20	0029	FIFTH	6068.02

WATER CODE: N/A SEWER CODE: N/A

**SITE DEVELOPMENT & SEDIMENT/EROSION CONTROL PLAN**  
5517 TROTTER ROAD  
CRISWOOD MANOR  
SECTION 4  
LOT 4

TAX MAP NO.: 0029 PARCEL NO.: 0088 GRID NO.: 0020  
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 30' DATE: AUGUST, 2012

SHEET 1 OF 2

