

SHEET INDEX	
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3	ENVIRONMENTAL CONCEPT PLAN

LOT NUMBER	ADDRESS	DISCONNECTION OF ROOFTOP RUN-OFF N-1 (NUMBER)	DISCONNECTION OF NON-ROOFTOP RUN-OFF N-2 (Y/N)	MICRO-BIO-RETENTION M-6 (NUMBER)
1	FREDERICK ROAD	N	1	2
2	FREDERICK ROAD	6	1	N
3	13765 FREDERICK ROAD	N	1	N
4	FREDERICK ROAD	N	1	1
5	FREDERICK ROAD	N	1	1

* EXISTING HOUSE TO REMAIN

SITE ANALYSIS DATA CHART

- A. TOTAL AREA OF SUBJECT PROPERTY: 16.97 ACRES
- B. DEVELOPABLE AREA: 15.55 ACRES
- C. WETLANDS AND BUFFERS: 1.42 ACRES
- D. FLOODPLAINS AND BUFFERS: NONE
- E. FOREST: 7.0 ACRES
- F. STEEP SLOPES: NONE
- G. LIMIT OF DISTURBANCE: 5.56 ACRES
- H. PROPOSED SITE USE: RESIDENTIAL
- I. GREEN OPEN AREA: 16.12 ACRES
- J. IMPERVIOUS AREA: 0.85 ACRES

DESIGN NARRATIVE

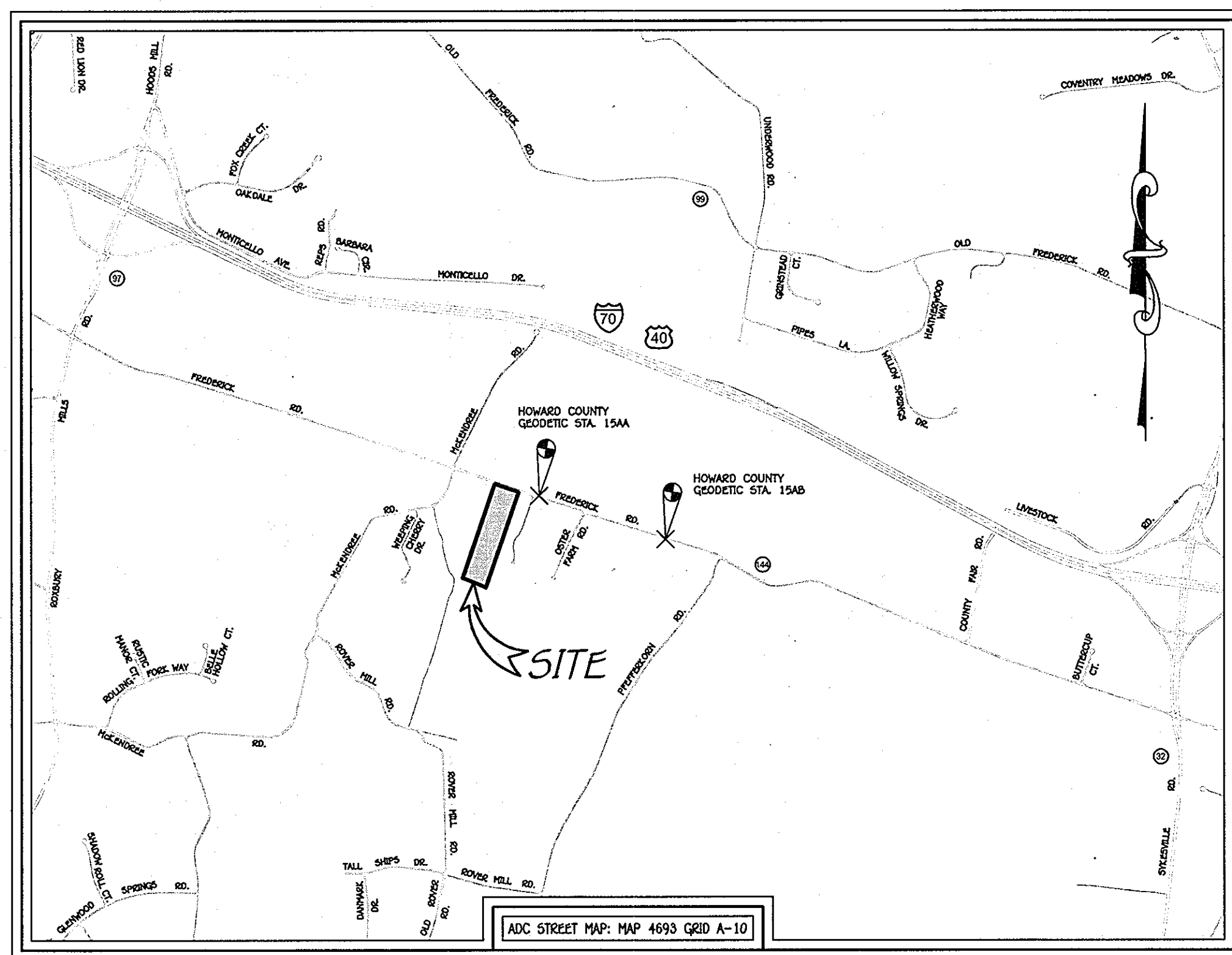
Introduction:
This report will demonstrate how the criteria set forth in the Maryland Stormwater Design Manual, Volumes I and II (effective October 2000, revised May 2009) will be satisfied on this project. The goal of creating hydrology similar to that of "Woods in Good Condition" will be accomplished 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:
The Renfro Property is zoned RC-DEO and is located on Tax Map 15, Grid 1, Parcel No. 178 of the Howard County, Maryland Tax Map Database System. The property consists of 16.97 acres of which 15.55 acres is considered developable while the remaining 1.42 acres contain environmental features, i.e. wetlands and buffers. The property is located in the West Friendship area of Howard County and according to a field inspection conducted by Eco-Science Professionals (ESP) in November of 2011, there is a single family residence, associated outbuildings and a swimming pool that will remain on the site. Vegetation on the site consists of lawn, scattered trees and the tree cover is sufficient to be considered a forest resource consisting of young successional to mature oak poplar community. To paraphrase a part of their report, "there is a wetland system located along Frederick Road that developed in an old field that may have at one time been drained or piped. The existing driveway crosses the wetland using a small culvert system and does not appear to support stream channel development on-site, but does drain to a stream channel on adjacent offsite properties before draining under Frederick Road." The Howard County Soil Survey shows soils on the site area consist of Type "B" Chester silt loams (ChA, ChB2, ChC2), Gleney loams (GlC2) and Manor loam (MlB2, MlD2) along with a small area of Type "C" Glenville silt loam (GlB2). It is to be noted that the Type "C" soil is located within the wetlands area of the site and will not have an impact on the design of the stormwater management facilities.

- I. **Natural Resource Protection:**
To ensure the protection of natural resources located on this site, all buffers will be honored by locating any improvements away from environmentally sensitive areas.
- 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 places the proposed buildings as close to the proposed drive as subjects allow, attempting to reduce any need for additional driveway surfaces.
- IV. **Integration of Erosion and Sediment Controls into Stormwater Strategy:**
If appropriate Micro-Bio Retention facilities proposed under this plan will be used as sediment traps.
- 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 Design Manual Waiver:**
A waiver to Table 2.10 located within Section 2.6 of the Howard County Design Manual Volume III, is being submitted with this Environmental Concept Plan. This waiver request a reduction to the required driveway width of 16' to a width of 12' for a distance of approximately 33' along the existing driveway.

ENVIRONMENTAL CONCEPT PLAN RENFRO PROPERTY LOTS 1 THRU 5

TAX MAP No. 15 GRID No. 1 PARCEL NO. 178
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND



VICINITY MAP

SCALE: 1" = 2000'

HOWARD COUNTY CONTROL STATION

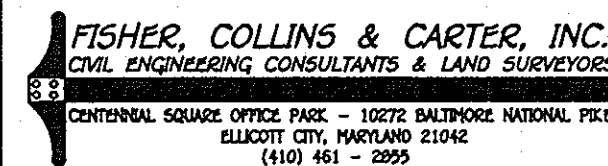
- 15AA - RT-144 0.3 MI EAST OF MCKENDREE RD.
N 999605.3402
E 1.314773.3674
ELEVATION = 547.83 - VERTICAL - (NAVD '80)
- 15AB - RT-144 0.2MI WEST OF PFEFFERCORN RD
N 998050.9735
E 1.316925.1147
ELEVATION = 535.75 - VERTICAL - (NAVD '80)

GENERAL NOTES

1. THE SUBJECT PROPERTY IS ZONED RC-DEO PER 2-04-04 COMPREHENSIVE ZONING PLAN AND THE COMP-LITE ZONING AMENDMENTS DATED 7/28/06.
 2. PREVIOUS HOWARD COUNTY FILE NUMBERS: 40812-114
 3. TOPOGRAPHY SHOWN IS FROM HOWARD COUNTY GIS TOPOGRAPHY SHOWN AT 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. 15AA AND 15AB WERE USED FOR THIS PROJECT.
 5. STORMWATER MANAGEMENT IS IN ACCORDANCE WITH THE MDE STORMWATER DESIGN MANUAL, VOLUMES I & II, REVISED 2009. THE PROPOSED PRACTICES WILL BE LOCATED ON THE INDIVIDUAL LOTS AS FOLLOWS:
 - LOT 1: MICRO-BIORETENTION (M-6), FOR THE PROPOSED HOUSE AND NON-ROOFTOP DISCONNECTION (N-2) FOR THE PROPOSED DRIVEWAY.
 - LOT 2: ROOFTOP DISCONNECTION (N-1) FOR THE PROPOSED HOUSE AND DRIVEWAY.
 - LOT 3: NON-ROOFTOP DISCONNECTION (N-2) FOR THE PROPOSED DRIVEWAY.
 - LOT 4: THE EXISTING HOUSE WILL REMAIN FOR WHICH SWM IS NOT REQUIRED.
 - LOT 5: MICRO-BIORETENTION (M-6) FOR THE PROPOSED HOUSE AND NON-ROOFTOP DISCONNECTION (N-2) FOR THE PROPOSED DRIVEWAY.
- THESE PRACTICES SHALL BE PRIVATELY OWNED AND MAINTAINED IN ACCORDANCE WITH INDIVIDUAL DECLARATIONS OF COVENANTS.
6. ANY REQUIRED LANDSCAPING WILL BE PROVIDED WITH THE PLOT PLAN FOR THIS PROJECT.
 7. FOREST CONSERVATION OBLIGATIONS WILL BE ADDRESSED AT THE RECORDED PLAT STAGE OF THIS PROJECT.
 8. SOIL BORINGS WILL BE PROVIDED AT THE RECORDED PLAT STAGE OF THIS PROJECT.
 9. 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 RECORDED PLAT STAGE. THEREFORE, THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED COMMENTS (INCLUDING THOSE THAT MAY ALTER OVERALL SITE DESIGN) AS THIS PROJECT PROGRESSES.
 10. 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.
 11. THE SWM MEASURES ILLUSTRATED ON THIS PLAN ARE CONCEPTUAL AS SPECIFIC HOUSE CONFIGURATIONS HAVE NOT BEEN ESTABLISHED. SPECIFIC SWM MEASURES WILL BE PROVIDED WITH THE ASSOCIATED PLOT PLAN WHEN FINAL DESIGN DETAILS CAN BE PROVIDED.
 12. PRIVATE WATER AND SEWER SHALL BE UTILIZED WITHIN THIS DEVELOPMENT.
 13. SOILS INFORMATION TAKEN FROM THE SOIL SURVEY, HOWARD COUNTY, MARYLAND, JULY, 1960 ISSUE.
 14. THIS AREA DESIGNATES A PRIVATE EASEMENT OF 10,000 SQ.FT. AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL IMPROVEMENT OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWAGE IS AVAILABLE. THESE EASEMENTS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE AUTHORITY TO GRANT VARIANCES FOR ADJUSTMENTS TO THE PRIVATE SEWERAGE EASEMENT. RECORDATION OF A MODIFIED EASEMENT SHALL NOT BE NECESSARY.
 15. BOUNDARY OUTLINE BASED ON FIELD RUN SURVEY PERFORMED BY FISHER, COLLINS & CARTER, INC. IN NOVEMBER OF 2011.



SCALE: 1" = 50'



PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/13.

Frank John Robinson II 10/22/12
Signature of Professional Land Surveyor DATE

OWNER / DEVELOPER

HAROLD E. RENFRO JR.
MARILYN S. RENFRO
13765 FREDERICK ROAD
WEST FRIENDSHIP, MD 21794-9703
301-854-6782

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Kate Scherlock
Chief, Division of Land Development
Michael Brennan
Chief, Development Engineering Division

10/22/12
Date

10/23/12
Date

TITLE SHEET

**RENFRO PROPERTY
LOTS 1 THRU 5**

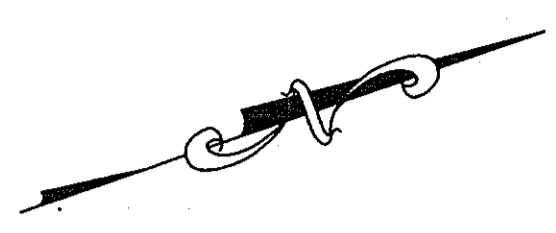
13765 FREDERICK ROAD
WEST FRIENDSHIP, MD 21794-9703

TAX MAP NO.: 15 GRID NO.: 1 PARCEL NO.: 178
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER 12, 2012
SHEET 1 OF 3

ECP-12-051

NO.	REVISION	DATE

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LEGEND	
SYMBOL	DESCRIPTION
--- 10'	EXISTING 2' CONTOURS
--- 10'	EXISTING 10' CONTOURS
--- 10'	PROPOSED 2' CONTOURS
--- 10'	PROPOSED 10' CONTOURS
+382.5	SPOT ELEVATION
L.O.D.	LIMITS OF DISTURBANCE
---	EXISTING TREELINE
---	PROPOSED TREELINE
---	PROPOSED PAVING
---	EXISTING PAVING TO BE REMOVED
---	SOILS LINES AND TYPE
---	SUPER SILT FENCE
---	A-1 EARTH DICE
---	NON-ROOFTOP DISCONNECTION (N-2)
---	DRAINAGE AREA FOR TIEDO SUBSTITUTION FACILITIES
---	DRAINAGE DIVIDE
---	EROSION AND CONTROL MATING
---	WETLAND
---	FOREST RETENTION AREA

(H) SPECIMEN TREES

Specimen Tree Chart

Key	Species, Size	Condition*
A	Quercus rubra, 33.5"	
B	Acer saccharinum, 34.5"	
C	Acer saccharinum, 37"	
D	Acer saccharinum, 57"	multi-stem
E	Platanus occidentalis, 31"	twin-stem
F	Platanus occidentalis, 30"	
G	Quercus velutina, 37.5"	
H	Quercus velutina, 31"	
I	Quercus rubra, 41"	
J	Quercus alba, 34.5"	

*good unless otherwise noted

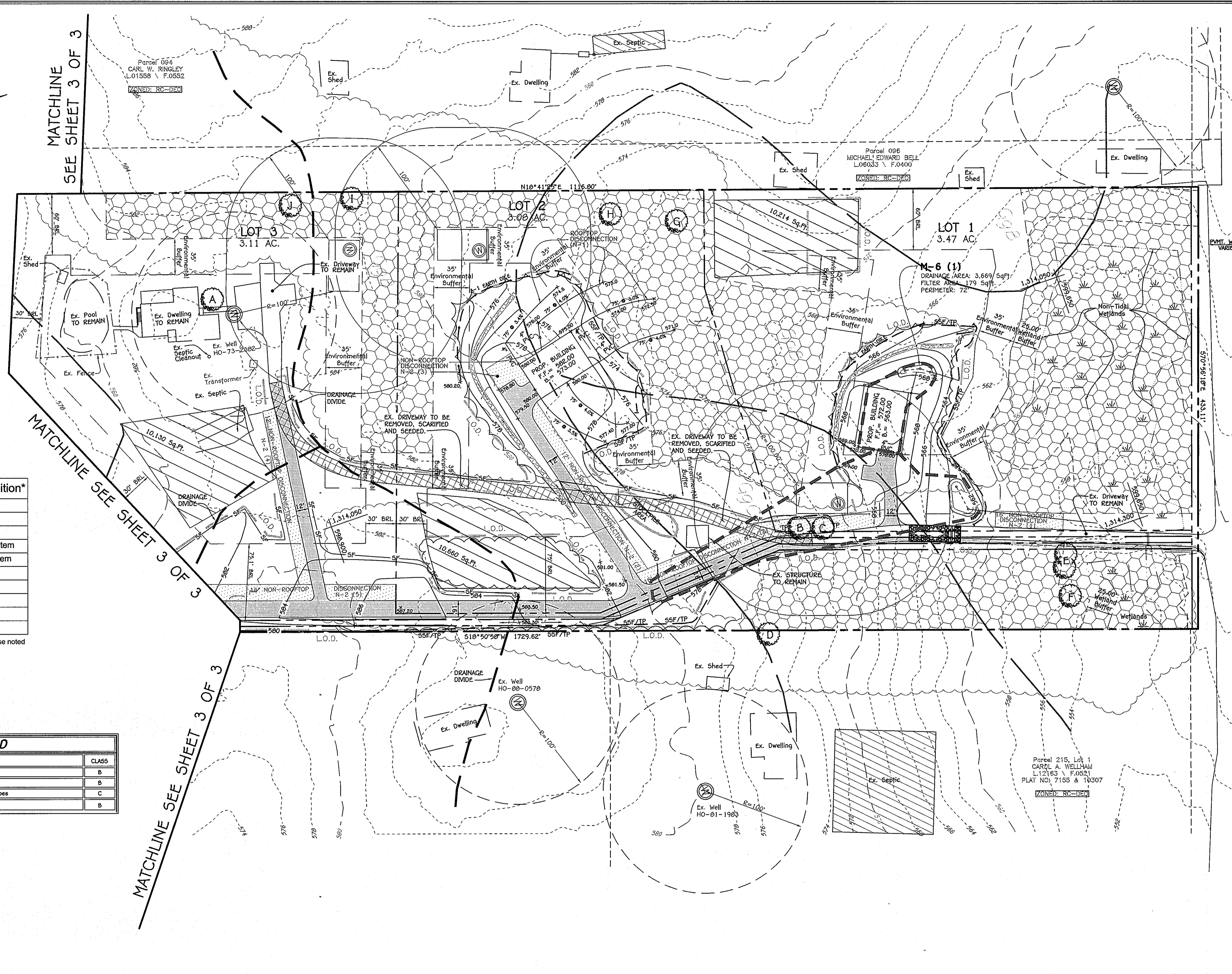
Critical root zone shall be 1.5":1" dbh

SOILS LEGEND

SOIL	NAME	CLASS
G ₂ B	Glenn loam, 3 to 8 percent slopes	B
G ₂ C	Glenn loam, 8 to 15 percent slopes	B
G ₂ B	Glenn-Balle silt loam, 0 to 8 percent slopes	C
MAC	Minor loam, 0 to 15 percent slopes	D

NOTES:

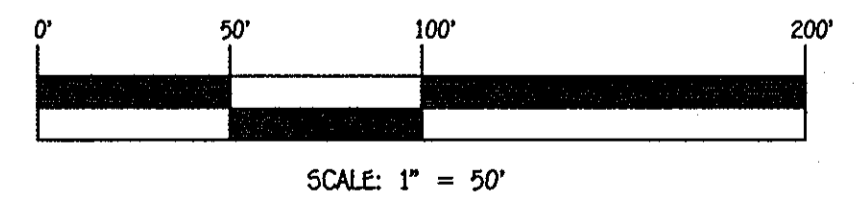
- * Hydric soils and/or contains hydric inclusions
- ** May contain hydric inclusions
- † Generally only within 100-year floodplain areas



Parcel 092
GARCIA JULIAN JIMENEZ
L08661 F.00306
ZONING: RC-1250

FREDERICK ROAD
THIRTY-THREE FEET EACH SIDE OF THE ORIGINAL CENTERLINE OF SURFACING
SIXTY-SIX FOOT WIDE
CONVERTED TO STATE USES M.A.L.C. 90, PLAT 22, 1910

Parcel 215, Lot 1
CAROL A. WELLMAN
L12163 F.0521
PLAT NO. 7155 & 10307
ZONING: RC-1250



FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10775 BALTIMORE NATIONAL PARK
ELICOTT CITY, MARYLAND 21042
(410) 461-1289

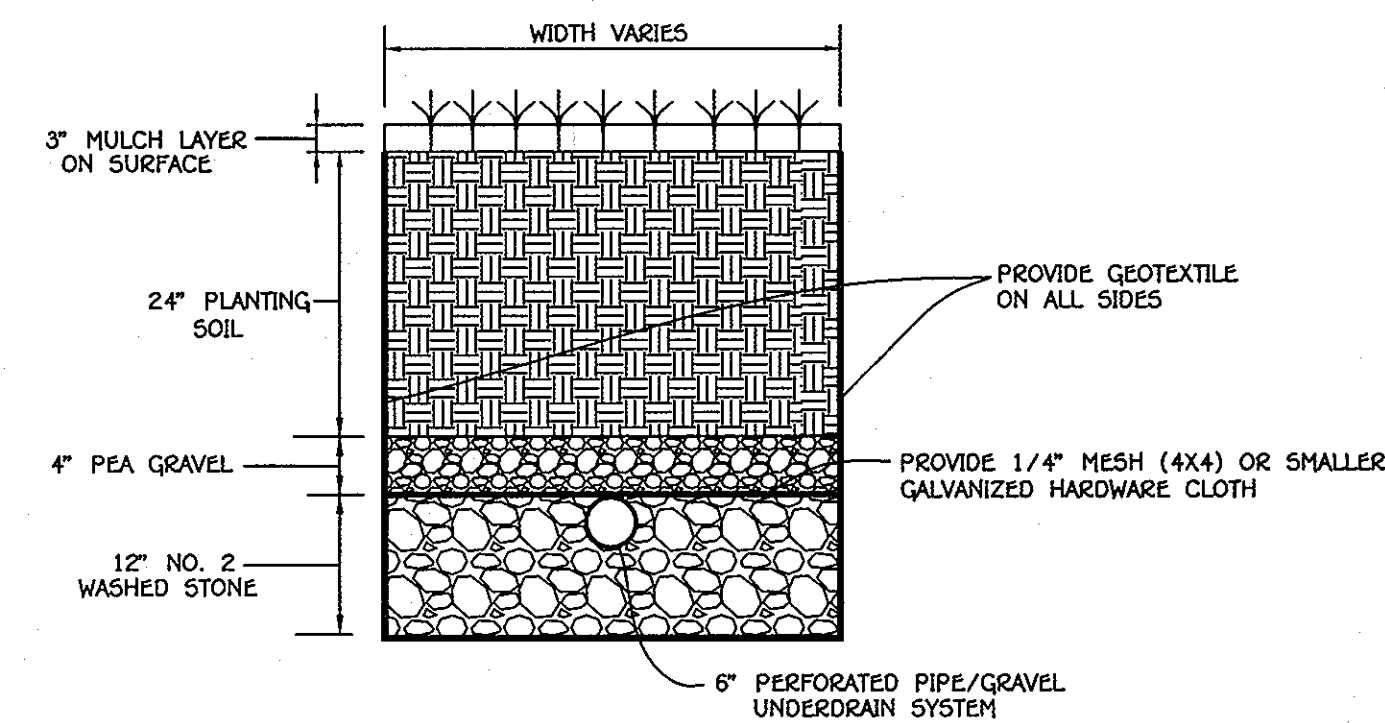
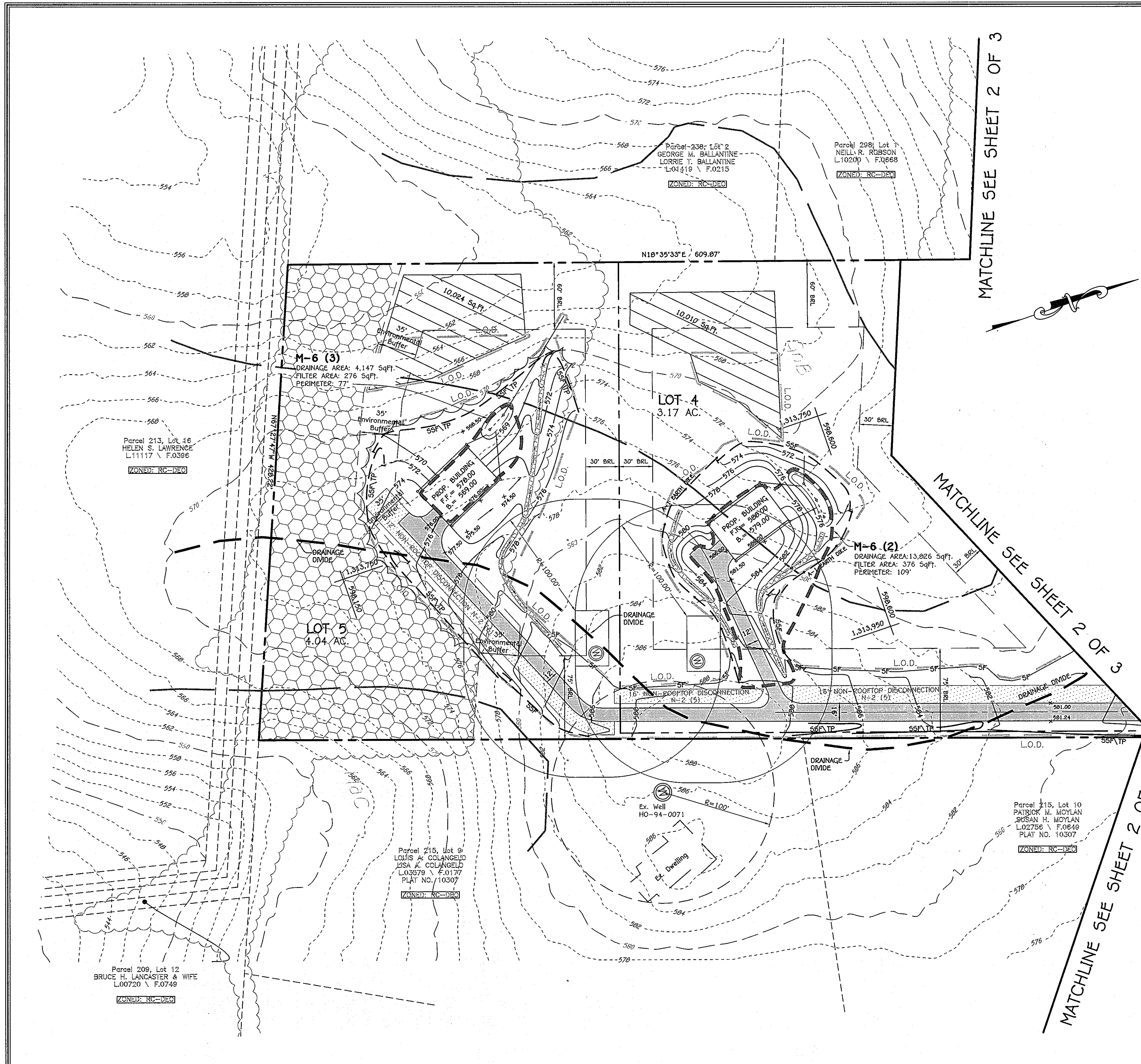


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Frank John Thompson 10/27/12
Signature of Professional Land Surveyor DATE

OWNER / DEVELOPER
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MARILYN S. RENFRO
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301-854-6782

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Kathleen 10/22/12
Chief, Division of Land Development DATE
Michael 10/23/12
Chief, Development Engineering Division DATE

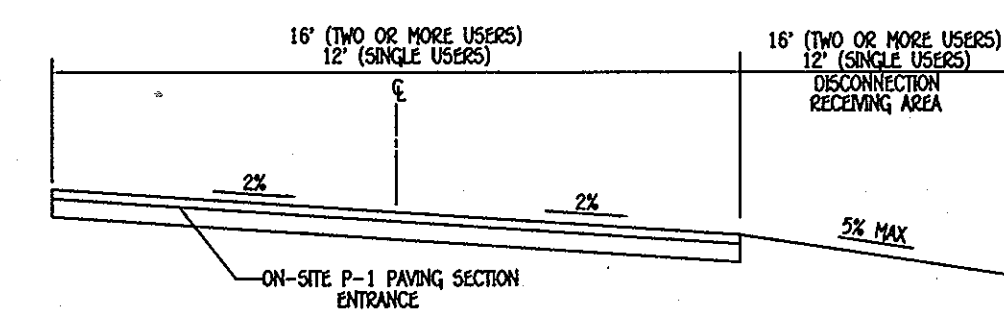
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RENFRO PROPERTY
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TAX MAP NO.: 15 GRID NO.: 1 PARCEL NO.: 178
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER 12, 2012
SHEET 2 OF 3



TYPICAL SECTION - BIO-RETENTION FACILITY (M-6)

- MICRO-BIORETENTION (M-6) OPERATION & MAINTENANCE SCHEDULE**
- ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. 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.
 - SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDER BEYOND TREATMENT. TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
 - MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
 - SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING 2' CONTOURS
- - -	EXISTING 10' CONTOURS
- - -	PROPOSED 2' CONTOURS
- - -	PROPOSED 10' CONTOURS
+	SPOT ELEVATION
LOD	LIMITS OF DISTURBANCE
---	EXISTING TREELINE
---	PROPOSED TREELINE
---	PROPOSED PAVING
---	EXISTING PAVING TO BE REMOVED
---	SOILS LINES AND TYPE
---	SOIL
---	SUPER SILT FENCE
---	A-1 EARTH DIKE
---	NON-ROOFTOP DISCONNECTION (N-2)
---	DRAINAGE AREA FOR MICRO-BIORETENTION FACILITIES
---	DRAINAGE DIVIDE
---	WETLAND
---	FOREST RETENTION AREA

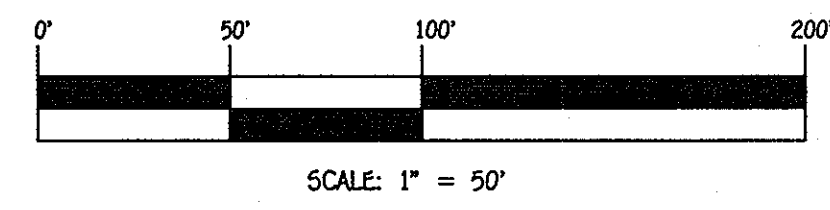


TYPICAL PRIVATE DRIVE CROSS SLOPE SECTION

- 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 CONSTRUCTION OR DEVELOPMENT OF IMPERVIOUS AREA IN CONJUNCTION. AREAS FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

SOILS LEGEND		
SOIL	NAME	CLASS
GgB	Glenelg loam, 3 to 6 percent slopes	B
GgC	Glenelg loam, 6 to 15 percent slopes	B
GnB	Glenville-Balle silt loams, 0 to 6 percent slopes	C
MnC	Manor loam, 6 to 15 percent slopes	B

- 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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John J. ... 10/17/12
 Signature of Professional Land Surveyors DATE

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 301-854-6782

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Robert ... 10/22/12
 Chief, Division Land Development Date

John ... 10/22/12
 Chief, Development Engineering Division Date

ENVIRONMENTAL CONCEPT PLAN

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