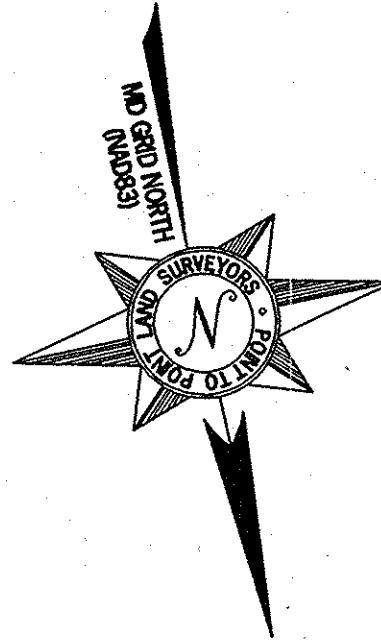


PROPOSED CONDITIONS

STUDY POINT A:
 D.A. 322,712 S.F.(7.41 AC.)
 CN = 48
 Tc = 0.405 H.C.
 1 - 2: 75' Sheet Flow @ 4%
 2 - 3 : 771' Shallow Conc.Flow @ 19.2%



STORMWATER MANAGEMENT REQUIREMENTS			
AREA	PROPOSED PRACTICE (Length X Width X Height)	SURFACE AREA PROVIDED (S.F.)	VOLUME PROVIDED-ESDv (C.F.)
FRONT ROOF-1000 S.F.	DRY-WELL (10.25'x10'x5')	102.5 S.F.	205 C.F.
BACK ROOF-1000 S.F.	DRY-WELL (10.25'x10'x5')	102.5 S.F.	205 C.F.
GARAGE ROOF-600 S.F.	DRY-WELL (8'x7'x5')	61.6 S.F.	123.2 C.F.
DRIVEWAY RUN-OFF-596 S.F.	NON ROOF TOP DISCONNECTION Contributing Impervious Area Flow Length=27' Disconnection Flow Length=147'	---	47.18 C.F.
TOTAL VOLUME PROVIDED			580.38 C.F.
TOTAL VOLUME NEEDED			347.34 C.F.

SITE ANALYSIS DATA SHEET	
SITE AREA	5.63 ACRES
WETLAND AREA	0.00 ACRES
FLOODPLAIN AREA	0.00 ACRES
FOREST AREA	4.73 ACRES
STEEP SLOPES IN EXCESS OF 20%	1.97 ACRES
ERODIBLE SOILS AREA	0.00 ACRES
LIMIT OF DISTURBANCE (L.O.D.)	0.55 ACRES
FOREST AREA WITH IN L.O.D	0.21 ACRES
AREA OF STEEP SLOPE DISTURBANCE	0.00 ACRES
GREEN OPEN AREA	0.83 ACRES
PROPOSED IMPERVIOUS AREA	0.076 ACRES

DESIGN NARRATIVE

Natural Resource Protection and Enhancement;
 This site is entirely wooded, with relatively steep slopes in 40% of the site. The approach in achieving the goals of this project is to disturb a minimum amount of the existing wooded areas. As shown on this plan, approximately 90% of the site will remain undisturbed, therefore maintaining the existing characteristic of the site. The placement of the house and proposed appurtenances, such as the driveways, have been proposed in places that are least intrusive to the character of the site. The house itself has been placed in the flatter part of the site, which would result in the least amount of grading, and therefore fewer disturbances. The driveway is shown to cut through an area that is fairly clear, and mostly populated with brush and smaller trees, and would not require too much clearing.

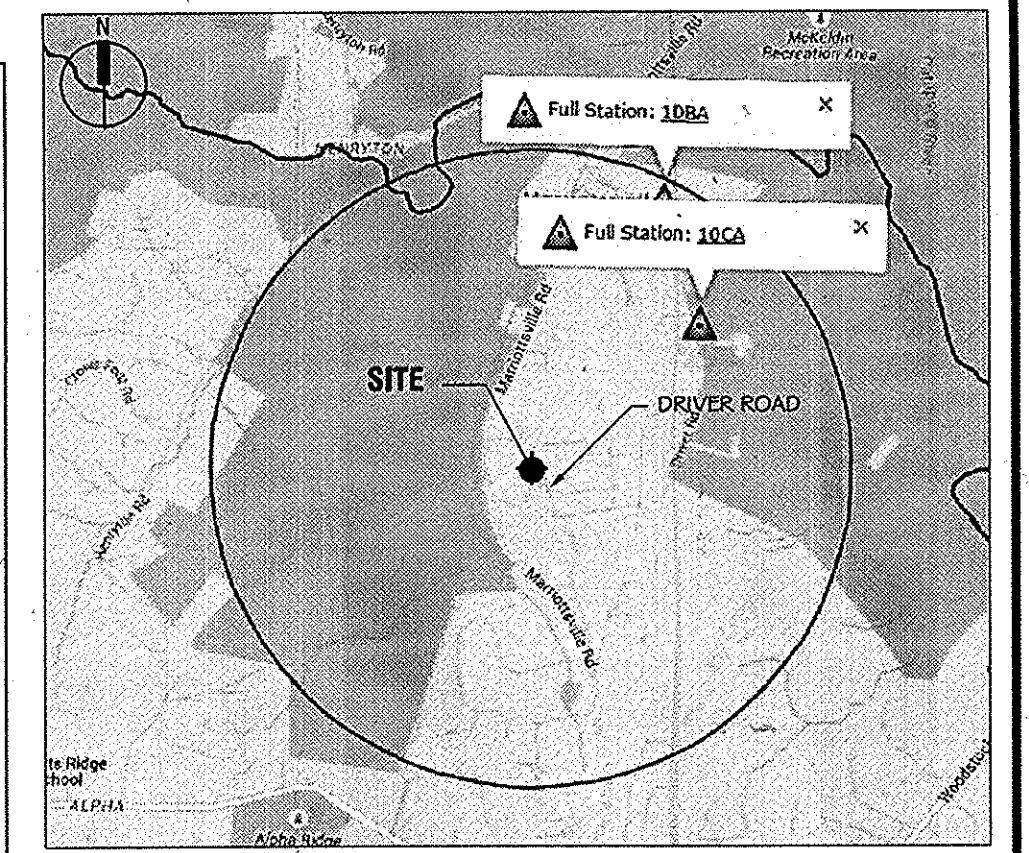
Maintenance of Natural Flow Patterns;
 The project has been designed to maintain the natural drainage patterns of the site. The proposed house will be situated very close to the ridge of the site, and the associated grading shows that there will be few changes in flow patterns. Furthermore, the placement of the proposed stormwater management practices have been placed to maintain these natural flow patterns. Runoff from impervious areas are naturally directed to the proposed practices.

Reduction of Impervious Areas Through Better Site Design, Alternative Surfaces, Non-Structural Practices;

Since the site is mostly wooded any new development will create new impervious areas. However, we have used a site design that will allow a vast majority of the site to be maintained in its natural state. This has been achieved by strategically placing the house, so that there is minimal disturbance. Furthermore, we have explored the opportunity to meet ESD requirements by using stormwater management credits. However, due to site restrictions, such as steep slopes, it is difficult to satisfy the requirements through credits. Therefore, stormwater management practices have been proposed to meet stormwater management requirements for most impervious surfaces.

Integration of Erosion and Sediment Controls into SWM Strategy;

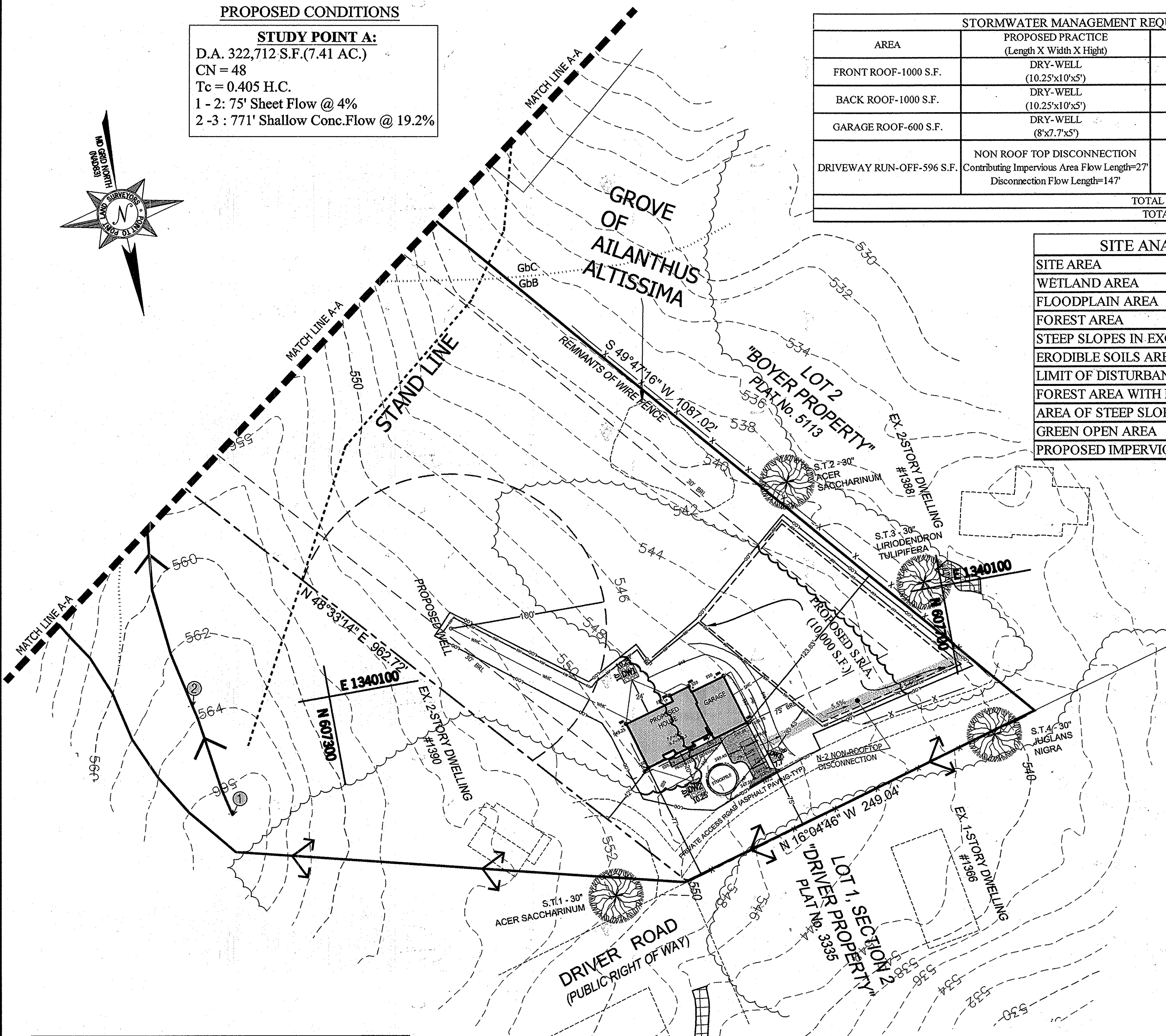
The stormwater management strategy of the site is to use micro practices, and to naturally direct impervious runoff to these practices. The existing topography of the site and the approach to site design requires minimal erosion and sediment control measures, and therefore fewer disturbances. The use of silt fence will adequately handle runoff from disturbed areas. Implementation of ESD Planning Techniques and Practices To The MEP The site has been designed to limit the amount of disturbance to the site. The proposed design has an impervious area of 0.076 acres, approximately 1.35%. The actual disturbance is approximately 15%. The proposed driveway is strategically place to limit the disturbance to the site. It should be noted that the placement of the driveway was actually staked in the field and then implemented in the proposed plan. All of the existing slope greater than 25% will remain in its existing state without disturbance. Impervious areas from garage roof is directed to proposed Drywell# 3 and impervious areas from the front rooftop is directed to proposed Drywell# 2, both, located in the front. Impervious areas from the back portion of the rooftop are directed to Drywell# 1. Also the driveway drainage has been attenuated by Non-roof top disconnection. These facilities are sized in accordance with Chapter 5 of the Maryland Stormwater Management Manual. In order to preserve the nature of the site, and to limit the amount of disturbance to the site especially in areas of steep slopes, no practice is proposed in those areas. The Total volume provided in proposed systems is 580.38 C.F. which is greater than the required target volume of 347.44 C.F. Therefore, the required ESDv to MEP has been satisfied.



VICINITY MAP ADC MAP: 4694 - GRID: F7 SCALE: 1"=2000'

EXISTING FEATURE	SYMBOL
SUBJECT SITE BOUNDARY	---
ADJOINING PROPERTY BOUNDARY	---
EXISTING ROAD CENTERLINE	---
BUILDING RESTRICTION LINE	25' BRL
EXISTING STRUCTURES	EX
EXISTING CONTOURS (MINOR)	101
EXISTING CONTOURS (INDEX)	100
EXISTING SEWER LINE	S
EXISTING WATER LINE	W
EXISTING OVERHEAD WIRES	ETC
EXISTING FENCE	GbC
SOIL TYPE BOUNDARY	GbB
EXISTING TREE LINE	---
EXISTING TREE AREA/TREE LINE TO BE REMOVED DUE TO CONSTRUCTION.	---
FOREST STAND BOUNDARY	S.T. 1
SPECIMEN TREE	---
AREAS OF SLOPE >20%	---
INTERMITTENT STREAM	---
STREAM BUFFER BOUNDARY	SB
PROPOSED STRUCTURE	SYMBOL
LIMITS OF DISTURBANCE	-LOD
PROP. BUILDING	---
PROP. PAVEMENT	---
PROP. CONTOUR	100
PROP. SPOT ELEVATION	+526
PROP. GRAVEL DRYWELL	---
PROP. DOWNSPOUT LOCATION	DS1
PROP. ROOF LEADER	---
STABILIZED CONSTRUCTION ENTRANCE	SCES
PROP. SILT FENCE	SF
PROP. WATER HOUSE CONNECTION	WHC
PROP. SEWER HOUSE CONNECTION	SHC
SOIL BORING LOCATION	HA-1

D.A. MAP LEGEND	
DRAINAGE DIVIDE	---
TIME OF CONCENTRATION FLOWPATH	---
NON-ROOF TOP DISCONNECTION CREDIT AREA	5.5%



[OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OF ROOFTOP RUNOFF (N-1), DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)]

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.

[OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER INFILTRATION TRENCHES (I-1), 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.

GENERAL NOTES

- SUBJECT PROPERTY ZONED R-C (DEO) PER 06/25/2015 COMPREHENSIVE ZONING PLAN.
- COORDINATES REFERENCED TO THE VERTICAL DATUM OF THE NATIONAL GEODETIC SURVEY (NAVD88) AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NOS:

NO.10CA NORTH	610473.234 FEET	ELEV. 483.536
EAST	1342530.924 FEET	
NO.10BA NORTH	612486.567 FEET	ELEV. 435.258
EAST	1341887.106 FEET	
- THE TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED ON A FIELD-RUN SURVEY, BASED ON A GLOBAL POSITIONING SYSTEM (G.P.S.) SURVEY CONDUCTED IN JULY, 2009 BY CLOVERLEA LAND SURVEYS, INC.
- EXISTING USE: VACANT
- PROPOSED USE: RESIDENTIAL (SINGLE FAMILY)
- STORMWATER MANAGEMENT IS IN ACCORDANCE WITH CHAPTER 5 OF THE MARYLAND STORMWATER MANAGEMENT MANUAL, VOLUME I & II REVISED 2009. WE ARE PROVIDING THREE DRY-WELLS (M-5) AND ONE NON-ROOFTOP DISCONNECTION TO ATTENUATE THE ESD REQUIRED FOR THE SITE.
- THIS PROPERTY IS SERVED BY SEPTIC AND WELL.
- FOREST CONSERVATION WILL NOT BE REQUIRED, SINCE THE AMOUNT OF FOREST REMOVED ON THIS PROPERTY WILL BE 8986 SQUARE FEET WHICH IS BELOW THE 20,000 SQUARE FEET THRESHOLD.
- THIS PROJECT IS NOT SUBJECT TO THE REQUIREMENTS OF THE HOWARD COUNTY SUBDIVISION REQUIREMENTS, SINCE THIS PROPERTY WAS CREATED 1949, AND HAS NOT BEEN ALTERED SINCE.
- A FOREST STAND DELINEATION PLAN AND DATED APRIL 21, 2015 AND PREPARED BY ANDREA MURTHA OF Wetland Studies and Solutions, Inc. AND HAVE BEEN PROVIDED AS PART OF THE SUBMISSION.
- NO ENVIRONMENTAL FEATURE EXIST WITHIN THE L.O.D.

MAPPED SOILS TABLE					
Symbol	Map Unit Name	Kw-Factor	Hydric	Hydric Soil Group	Drainage Class
GbB	Gladstone loam, 3 to 8 percent slopes	0.20	0	A	Well drained
GbC	Gladstone loam, 8 to 15 percent slopes	0.20	0	A	Well drained
MaD	Manor loam, 15 to 25 percent slopes	0.24	0	B	Well drained
MgF	Manor-Bannertown sandy loams, 25 to 65 percent slopes, rocky	0.24	0	B	Well drained

SITE PLAN
 SHOWN WITH ALL PROPOSED SWM & SBC FEATURES

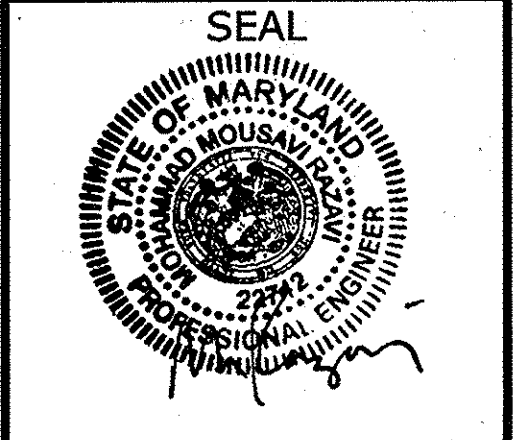


APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 Chief, Division of Land Development

APPLICANT
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 ARLINGTON, VA 22209
 C/O :PHONE (410)-977-1244

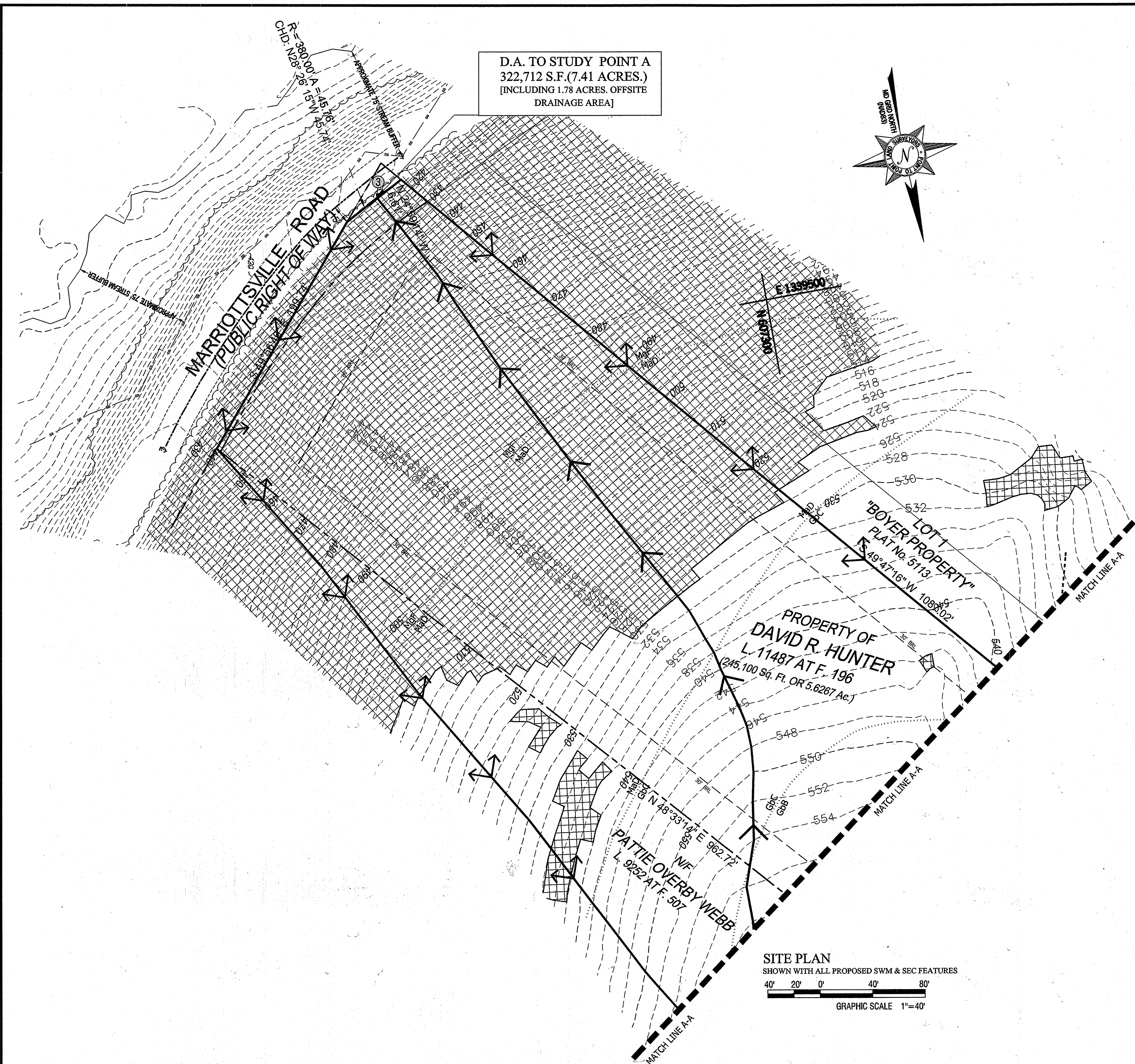
ENVIRONMENTAL CONCEPT PLAN
 DAVID R. HUNTER
 LIBER 11487 AT FOLIO 196
 DRIVER ROAD, HOWARD CO., MD
 ZONE: R-C(DEO) 3-th DISTRICT
 TAX MAP: 10 GRID:10, PARCEL:128

RAZTEC ASSOCIATES, INC.
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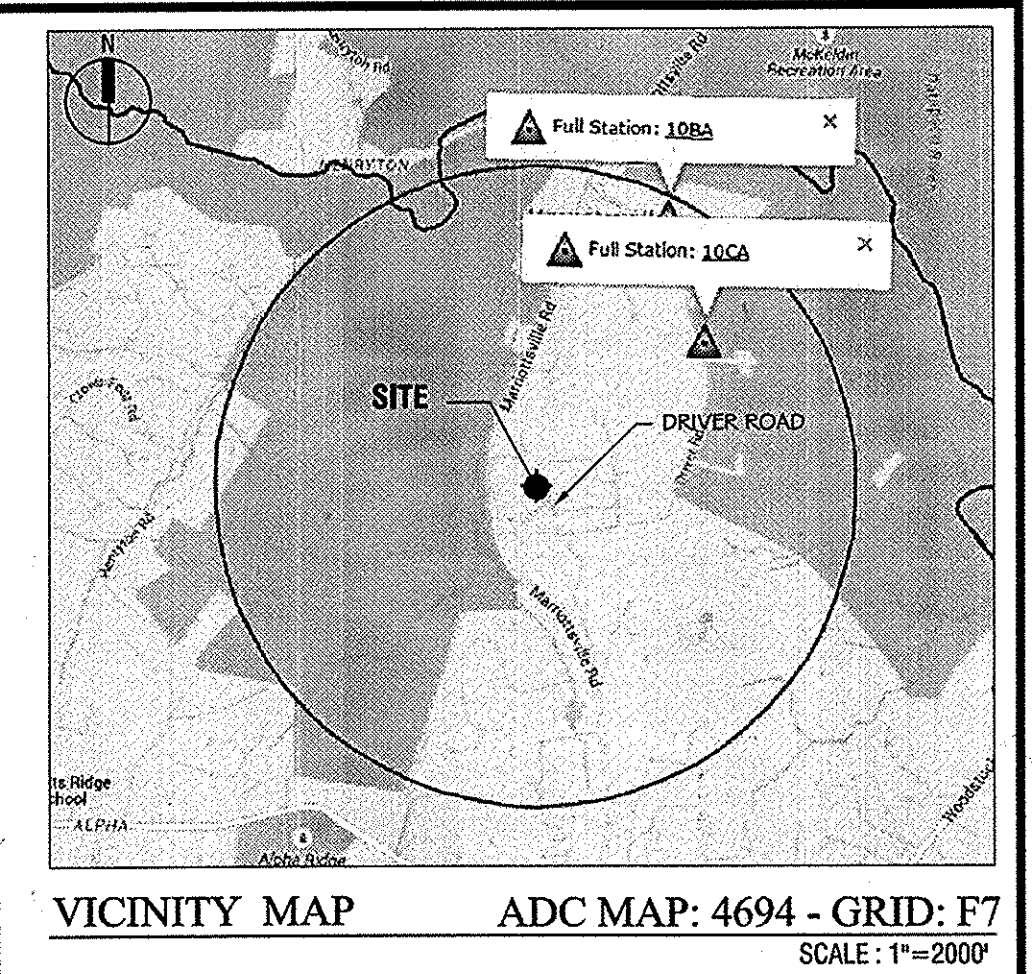


SCALE
 1" = 40'
CHECKED BY: MR
DRAWN BY: MP

DATE
 MAY 2015
SHEET NUMBER
 1 of 2



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EXISTING OVERHEAD WIRES	ETC
EXISTING FENCE	GBC
SOIL TYPE BOUNDARY	G6B
EXISTING TREE LINE	---
EXISTING TREE AREA/TREE LINE TO BE REMOVED DUE TO CONSTRUCTION	---
FOREST STAND BOUNDARY	S.T. 1
SPECIMEN TREE	---
AREAS OF SLOPE ≥ 20%	---
INTERMITTENT STREAM	SB
STREAM BUFFER BOUNDARY	SB
PROPOSED STRUCTURE	---
LIMITS OF DISTURBANCE	LOD
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PROP. CONTOUR	100
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PROP. DOWNSPOUT LOCATION	DS1
PROP. ROOF LEADER	R-L
STABILIZED CONSTRUCTION ENTRANCE	SC
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PROP. WATER HOUSE CONNECTION	WHC
PROP. SEWER HOUSE CONNECTION	SHC
SOIL BORING LOCATION	HA-1



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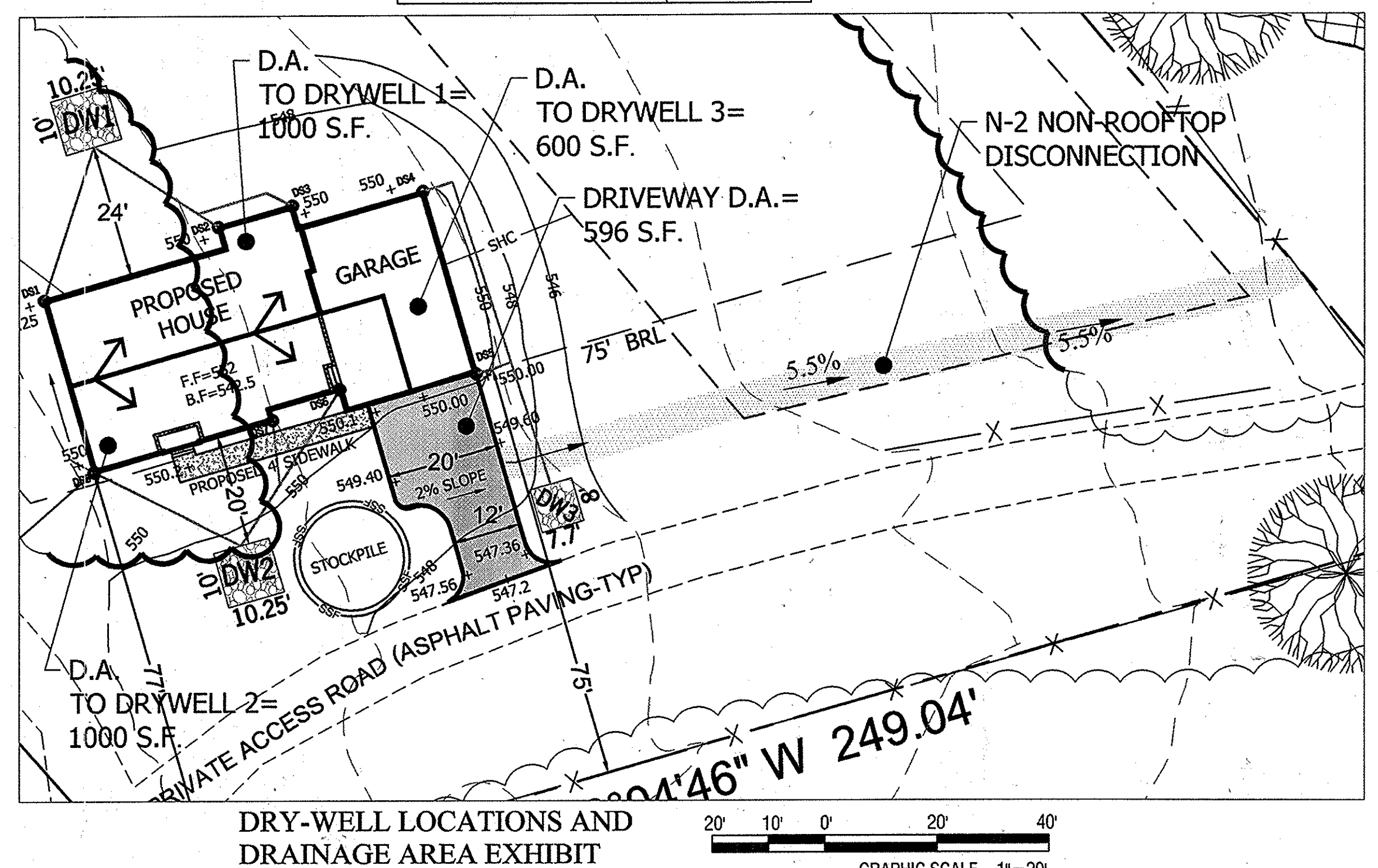
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D.A. MAP LEGEND

DRAINAGE DIVIDE →

TIME OF CONCENTRATION FLOWPATH ←

NON-ROOFTOP DISCONNECTION CREDIT AREA →



PROFESSIONALS' REVIEW STATEMENT:
I 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 NUMBER: 22742 EXPIRES: JUNE 15, 2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chad Edinger
Chief, Development Engineering Division
DATE: 2-16-16

Kristen Anderson
Chief, Division of Land Development
DATE: 1-6-16

APPLICANT

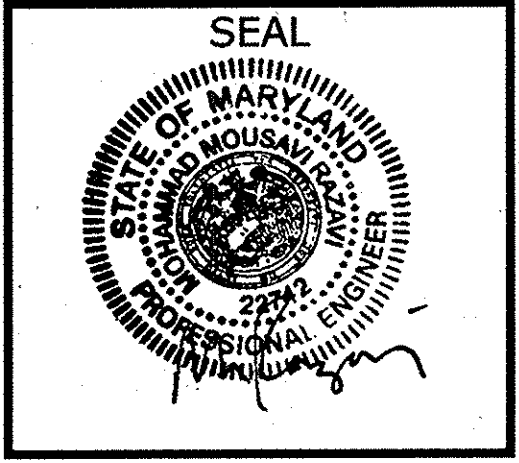
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ENVIRONMENTAL CONCEPT PLAN

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DATE
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