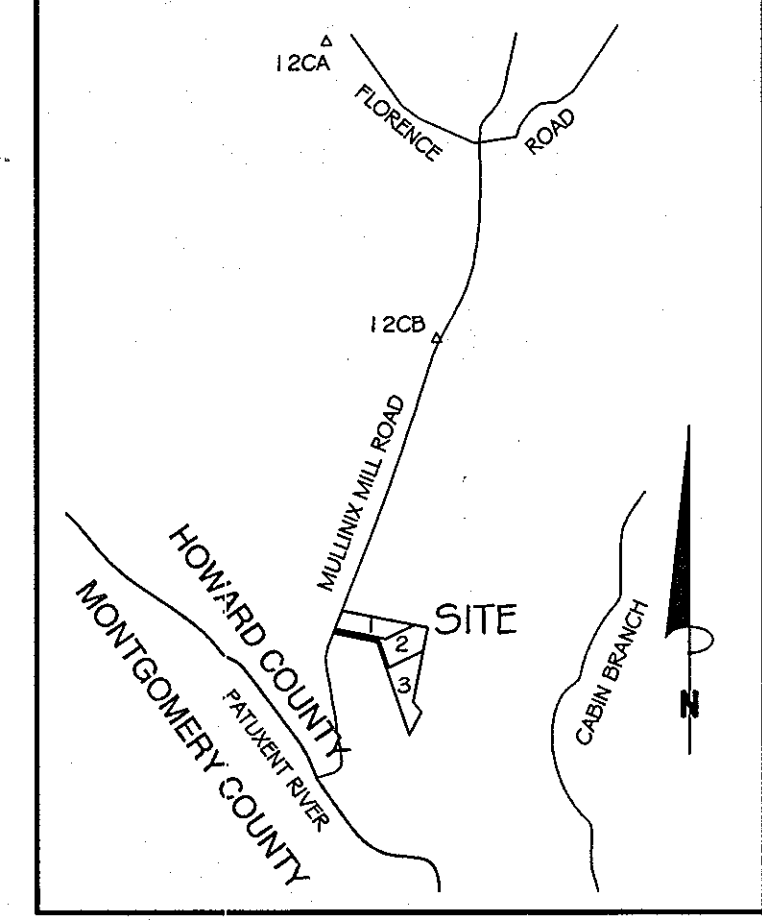


SCALE: 1"=30'



VICINITY MAP ADC MAP 4810, GRID G3  
TAX MAP 12, GRID 17 PARCEL 75  
SCALE: 1"=2,000'

**FOREST CONSERVATION WORKSHEET**

NET TRACT AREA  
A. TOTAL TRACT AREA: A= 10.50  
B. DEDUCTIONS: B= 0.00  
C. NET TRACT AREA: C= 10.50

LAND USE CATEGORY  
INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY.  
ARA MDR IDA HDR MPD CIA  
D. AFFORESTATION THRESHOLD (NET TRACT AREA x 20%): D= 2.10  
E. CONSERVATION THRESHOLD (NET TRACT AREA x 25%): E= 2.63

EXISTING FOREST COVER  
F. EXISTING FOREST COVER WITHIN THE NET TRACT AREA: F= 1.19  
G. AREA OF FOREST ABOVE CONSERVATION THRESHOLD: G= 0.00

BREAK EVEN POINT  
H. BREAK EVEN POINT: H= 1.19  
I. FOREST CLEARING PERMITTED WITHOUT MITIGATION: I= 0.00

PROPOSED FOREST CLEARING  
J. TOTAL AREA OF FOREST TO BE CLEARED: J= 0.00  
K. TOTAL AREA OF FOREST TO BE RETAINED: K= 1.19

PLANTING REQUIREMENTS  
L. REFORESTATION FOR CLEARING ABOVE THE CONSERVATION THRESHOLD: L= 0.00  
M. REFORESTATION FOR CLEARING BELOW THE CONSERVATION THRESHOLD: M= 0.00  
N. CREDIT FOR RETENTION ABOVE THE CONSERVATION THRESHOLD: N= 0.00  
O. TOTAL AFFORESTATION REQUIRED: O= 0.00  
P. TOTAL AFFORESTATION REQUIRED: P= 0.00  
R. TOTAL PLANTING REQUIRED: R= 0.00

**SHIPE Forest Conservation Worksheet 2.1**

Note: Use 0 for all negative numbers that result from calculations.

Net Tract Area  
A. Total Tract Area: A= 10.50  
B. Deductions (Critical Area, area restricted by local ordinance or program): B= 0.00  
C. Net Tract Area: C= 10.50

Land Use Category: AG  
D. Afforestation Threshold (Net Tract Area [C] x 20%): D= 2.10  
E. Conservation Threshold (Net Tract Area [C] x 25%): E= 2.63

Existing Forest Cover  
F. Existing Forest Cover within the Net Tract Area: F= 1.19  
G. Area of Forest Above Conservation Threshold: G= 0.00  
If the Existing Forest Cover (F) is greater than the Conservation Threshold (E), then G = F - E; Otherwise G = 0.

Break-even Point  
H. Break-even Point (Amount of forest that must be retained so that no mitigation is required)  
(1) If the Area of Forest Above the Conservation Threshold (G) is greater than 0, then H = (0.2 \* the Area of Forest Above Conservation Threshold (G)) + the Conservation Threshold (E);  
(2) If the Area of Forest Above the Conservation Threshold (G) is equal to 0, then H = Existing Forest Cover (F)

I. Forest Clearing Permitted Without Mitigation  
I = Existing Forest Cover (F) - Break-even Point (H)  
I = 0.00

Proposed Forest Clearing  
J. Total Area of Forest to be Cleared: J = 0.00  
K. Total Area of Forest to be Retained: K = 1.19

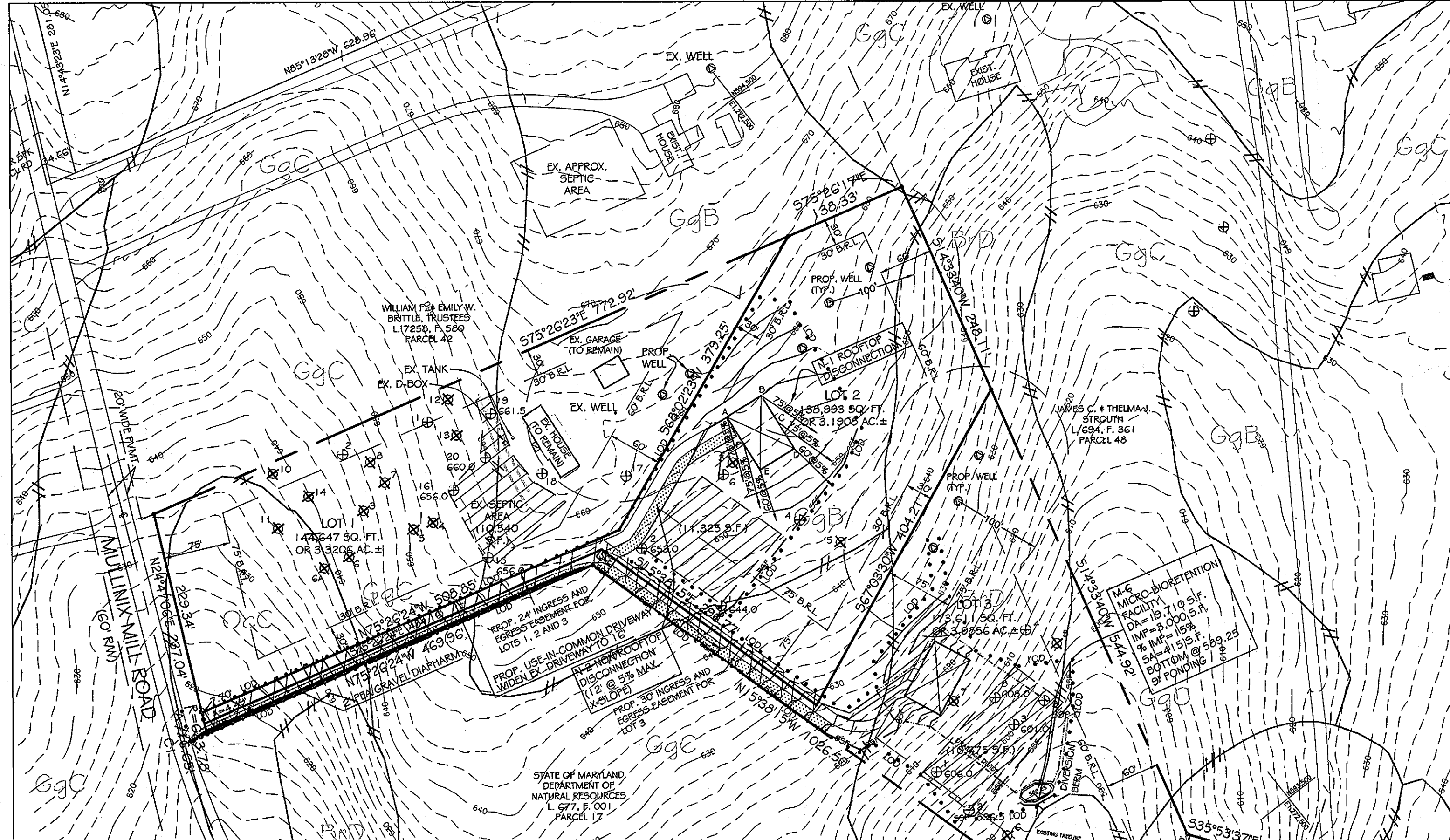
Planting Requirements  
L. Reforestation for Clearing Above the Conservation Threshold  
(1) If the Total Area of Forest to be Retained (K) is greater than the Conservation Threshold (E), then L = the Area of Forest to be Cleared (J) \* 0.25;  
(2) If the Forest to be Retained (K) is less than or equal to the Conservation Threshold (E), then L = Area of Forest Above Conservation Threshold (G) \* 0.25

M. Reforestation for Clearing Below the Conservation Threshold  
(1) If Existing Forest Cover (F) is greater than the Conservation Threshold (E) and the Forest to be Retained (K) is less than or equal to the Conservation Threshold (E), then M = 2.0 \* Conservation Threshold (E) - Forest to be Retained (K);  
(2) If Existing Forest Cover (F) is less than or equal to the Conservation Threshold (E), then M = 2.0 \* Forest to be Cleared (J)

N. Credit for Retention Above the Conservation Threshold  
If the Area of Forest to be Retained (K) is greater than the Conservation Threshold (E), then N = K - E  
N = 0.00

O. Total Afforestation Required  
If Existing Forest Cover (F) is less than the Afforestation Threshold (D), then O = Afforestation Threshold (D) - Existing Forest Cover (F)  
O = 0.91

R. Total Planting Required: R = O  
R = 0.91



SCALE: 1"=100'

**LEGEND**

PROPOSED SEPTIC SYSTEM: [Symbol]

SUPER SILT FENCE: SSF [Symbol] SSF [Symbol] SSF [Symbol]

LIMIT OF DISTURBANCE: LOD [Symbol]

(PASSED) PERCOLATION TEST SITE: [Symbol]

(FAILED) PERCOLATION TEST SITE: [Symbol]

EXISTING WELL: [Symbol]

PROPOSED HOUSE SITE: [Symbol]

PROPOSED WELL SITE: [Symbol]

15 - 25% SLOPES: [Symbol]

25% OR GREATER SLOPES: [Symbol]

EXISTING TREE LINE: [Symbol]

**DESIGN NARRATIVE PER CONCEPT PLAN CHECK LIST ITEM III.K**

- NATURAL AREAS ARE PRESERVED BY A FOREST PROTECTION AREA, STORMWATER MANAGEMENT PRACTICES AND SEDIMENT AND EROSION CONTROL MEASURES. THERE ARE NO FLOODPLAIN, WETLAND, STREAMS OR THEIR BUFFERS LOCATED ON LOTS 1 - 3.
- NATURAL FLOW PATTERNS ARE MAINTAINED THROUGH THE MINIMIZATION OF GRADING ON LOTS 2 & 3.
- IMPERVIOUS AREAS HAVE BEEN MINIMIZED BY THE LOCATION OF HOUSE SITES ON LOTS 2 & 3 ADJACENT TO BUILDING RESTRICTION LINES. STORMWATER MANAGEMENT TREATMENT WILL BE THROUGH THE USE OF NON-STRUCTURAL TECHNIQUES.
- THE DESIGN ACHIEVES INTEGRATION OF EROSION AND SEDIMENT CONTROLS INTO THE SWM STRATEGY BY LIMITING THE AMOUNT OF DISTURBED AREA, BY MAINTAINING NATURAL VEGETATION, MAINTAINING NATURAL DRAINAGE PATTERNS AND THE PLACEMENT OF RESIDENTIAL SINGLE FAMILY HOMES TO PROTECT NATURAL RESOURCES OF THE SITE. SEDIMENT CONTROL IS INTEGRATED INTO THE SWM STRATEGY USING NON-STRUCTURAL SWM PRACTICES OF ROOFTOP DISCONNECTION, NON-ROOFTOP DISCONNECTION AND MICRO-BIORETENTION.
- STORMWATER MANAGEMENT REQUIREMENTS WILL BE ADDRESSED USING NON-ROOFTOP DISCONNECTION, ROOFTOP DISCONNECTION AND MICRO-BIORETENTION. SWM IS IN ACCORDANCE WITH THE 2009 REVISIONS OF THE 2000 MD STORMWATER DESIGN MANUAL.
- THERE ARE NO WAIVER PETITIONS PROPOSED.
- THERE ARE NO ENVIRONMENTAL FEATURES WITHIN THE L.O.D.
- FOREST CONSERVATION MEASURES ARE TO BE PROVIDED BY AN ON-SITE EASEMENT OF 1.19 ACRES OF EXISTING ON-SITE FOREST, 0.34 AC NEW PLANTED ON-SITE FOREST, AND 0.57 AC NEW PLANTED OFF-SITE FOREST. A WAIVER HAS BEEN REQUESTED TO ALLOW A FOREST EASEMENT ON A LOT LESS THAN 10 AC.

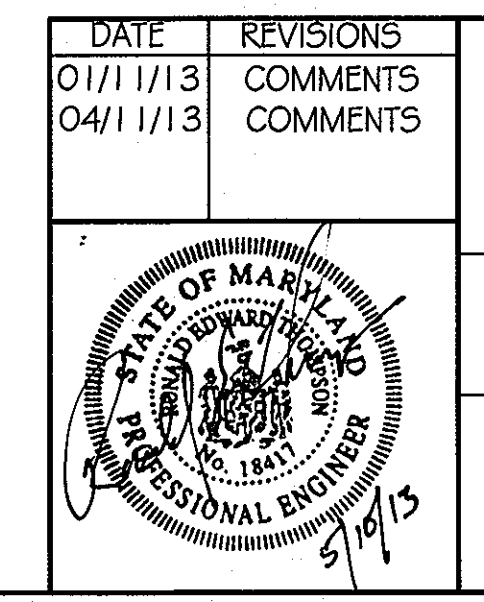
**SITE ANALYSIS DATA SHEET**

	ACRES
PROPOSED SITE USE	RESIDENTIAL 0.00
WETLANDS	0.00
WETLANDS BUFFER	0.00
FLOODPLAIN	0.00
FORESTS	1.19
STEEP SLOPES (15-24%)	2.27
STEEP SLOPES (25% OR GREATER)	0.35
TOTAL PROJECT AREA	7.18
LOD AREA	2.64
GREEN OPEN SPACE AREA	0.00
EX IMPERVIOUS AREA	0.29
PROP. IMPERVIOUS AREA	0.44
HIGHLY ERODIBLE SOILS IN PROJECT AREA	3.33

**SWM TREATMENT SUMMARY**

Practice	Area Treated	Methodology	Volume (ESDv)
N-1: Rooftop Disconnection (75' @ 5%)	A-C&F (Lot 2) 2000	ESDv=P <sub>e</sub> *R <sub>v</sub> *DA/12 where P <sub>e</sub> =1.0' & R <sub>v</sub> =0.95	222 cft
N-1: Rooftop Disconnection (60' @ 5%)	D-E (Lot 2) 1000	ESDv=P <sub>e</sub> *R <sub>v</sub> *DA/12 where P <sub>e</sub> =0.8' & R <sub>v</sub> =0.95	64 cft
N-2: Non-Rooftop Disconnection	8,630	ESDv=P <sub>e</sub> *R <sub>v</sub> *DA/12 where P <sub>e</sub> =1.0' & R <sub>v</sub> =0.95	585 cft
N-3: Sheetflow to Conservation Area	2,940	ESDv=P <sub>e</sub> *R <sub>v</sub> *DA/12 where P <sub>e</sub> =1.0' & R <sub>v</sub> =0.95	233 cft
M-6: Micro-Bioretenion	19,710	Storage above filter media	311 cft
Total ESDv Provided =			1,415 cft
ESDv Required =			1,391 cft

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. 18417, Expiration Date: 9-18-13.



ENVIRONMENTAL CONCEPT PLAN  
LOTS 1 THRU 3  
HARRY N. SHIPE PROPERTY

TAX MAP: 12 ELECTION DISTRICT: No. 4 SCALE: AS SHOWN  
GRID NO: 17 HOWARD COUNTY, MARYLAND DATE: NOV 2012  
PARCEL NO: 75 EX. ZONING: RCDEO SHEET 1 OF 1

**VANMAR ASSOCIATES, INC.**  
Engineers, Surveyors, Planners  
310 South Main Street P.O. Box 328 Mount Airy, Maryland 21771  
(301) 829-2890 (301) 851-5015 (410) 549-2751

APPROVED  
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*West Shiloh* 6/10/13  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*John Congedo* 6/13/13  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE