

### LEGEND

- EXISTING CONTOURS: 452, 450
- EXISTING TREELINE: [Symbol]
- PROPOSED TREELINE: [Symbol]
- EXISTING STREAM: [Symbol]
- EXISTING STREAM BUFFER: [Symbol]
- APPROXIMATE 100 YEAR FLOODPLAIN LIMITS: [Symbol]
- EXISTING STRUCTURE: [Symbol]
- PROPOSED STRUCTURE: [Symbol]
- SLOPES 25% OR GREATER: [Symbol]
- MODERATE SLOPES: [Symbol]
- SOIL DELINEATION: [Symbol]
- SOILS DELINEATION: *GnA*
- LIMIT OF DISTURBANCE: [Symbol]
- ESD DRAINAGE AREA: [Symbol]
- PROP. ROOFLEADER: [Symbol]
- PROP. STORM DRAIN: [Symbol]
- 100 YEAR FLOODPLAIN: [Symbol]
- SILT FENCE: [Symbol]
- SUPER SILT FENCE: [Symbol]
- CLEANWATER EARTH DIKE: [Symbol]
- PROP. PERVIOUS PAVEMENT: [Symbol]
- PROP. MICRO-BIORETENTION FACILITY: [Symbol]
- SPECIMEN TREE: [Symbol]
- HIGHLY ERODIBLE SOILS: [Symbol]
- EX. 20' DRAINAGE AND UTILITY EASEMENT: [Symbol]

**ESD Facility Details:**

**Drainage Area MBR-1 (M-6) (0.33 ac)** - This Micro-Bioretention is located on the downhill side of the parking lot adjacent to the proposed building. This facility is proposed to take the entire building runoff via roof leaders and a section of the drive isle between the parking areas. The section of drive isle will collect into a storm inlet. An under-drain with an outfall for filtered water is provided as well as an overflow embankment to allow higher storms to safely pass through the facility.

**Drainage Area MBR-2 (M-6) (0.09 ac)** - This Micro-Bioretention is located at the southwest corner of the parking lot. This facility will take the lower portion of the parking along the left entrance of the site. A flow-thru inlet is proposed to convey the runoff into the facility. An under-drain with an outfall for filtered water is also provided for this facility as well as an overflow embankment to allow higher storms to safely pass through the facility.

**Drainage Area PP-1 (A-2) (0.12 ac)** - This Permeable Pavement area is located near the left entrance of the site. It will take a small area of runoff towards the front of the parking area and will utilize an inlet for overflow across the surface into the proposed storm drain.

**Drainage Area PP-2 (A-2) (0.10 ac)** - This Permeable Pavement area is located on the lower portion of the far end parking area at the left entrance. It will take runoff from a portion of the drive isle and the parking stalls. A flow through inlet is proposed for overflow across the surface. The outfall will be directed towards the existing stream.

**Drainage Area PP-3 (A-2) (0.15 ac)** - This Permeable Pavement area is located on the downhill side of the center parking area. It will take runoff from the drive isle and parking area along the downhill side. A curb cut is provided for overflow across the surface and drain towards the flow through inlet at the low area of PP-2.

**Drainage Area PP-4 (A-2) (0.10 ac)** - This Permeable Pavement area is at the right entrance of the site. It will take runoff from the drive isle and parking stalls and utilize a flow through inlet for overflow across the surface. The outfall will be directed to the existing stream.

**Drainage Area PP-5 (A-2) (0.04 ac)** - This Permeable Pavement area is located at the right entrance of the site. It will take runoff from the proposed sidewalk and parking stalls on the high end of that area. No overflow inlet need in this area. Overflow will drain towards PP-4.

**Drainage Area PP-6 (A-2) (0.11 ac)** - This Permeable Pavement area is located adjacent to Area PP-3 on the high side opposite of the proposed building. It will take runoff from the proposed sidewalk and the area of the parking stalls on the high end of that area. No overflow inlet need in this area. This overflow will drain towards PP-3.

The subject property is located on west side of Pine Orchard Lane 1300' from the intersection of Maryland Route 40. The site is zoned R-A-15 and is part of a 2 lot subdivision called Romanik Property. The development is proposed on Lot 1 which consists of 3.0 acres. Lot 2 is currently vacant. There is an existing residence on the property that is to be razed. The site is partially wooded with a stream located towards the rear of the property with an associated floodplain.

The site proposes an apartment building of 10,800 square feet with parking to support the units. There will be one entrance from Pine Orchard Lane to access the site. The drainage area was analyzed as woods in good condition and a target RCN was determined. A target rainfall depth treatment (Pe=2.2") was determined based on the measured impervious areas and HSG types. This Pe was then used to design the Alternative Surface practices. The target Pe was converted to a target ESDv using the volumetric runoff coefficient. Environmental Site Design practices were designed to treat the proposed impervious cover and the 1" storm to provide water quality.

The proposed site features are limited to the areas outside of the stream bank buffers with minimal impacts to existing woods. The proposed BMP's will require underdrain outfalls within the streambank buffer which impose minimal impacts due to the size of the pipe. There are no impacts to any adjacent properties.

Permeable pavement is proposed for several of the parking stalls to provide stormwater management for the parking lot with two micro-bioretention facilities for the proposed building and a portion of the parking lot. The facilities will outfall towards the existing stream.

Sediment and erosion control shall comply with the latest edition of the MDE Standards and Specifications for Sediment Control.

It is concluded that all ESD to the MEP requirements as defined in the Stormwater Management Act of 2007 have been met for the proposed development. The Water Quality has been provided by the implementation of two (2) micro-bioretention facilities (M-6) and six (6) areas of permeable pavement (A-2) to treat all of the proposed impervious onsite limiting underdrains and outfalls to reduce the environmental impacts.

Waivers for the removal of the 5 specimen trees within the limit of disturbance and disturbance to the stream buffer for the purpose grading have been approved.

### SOILS LEGEND

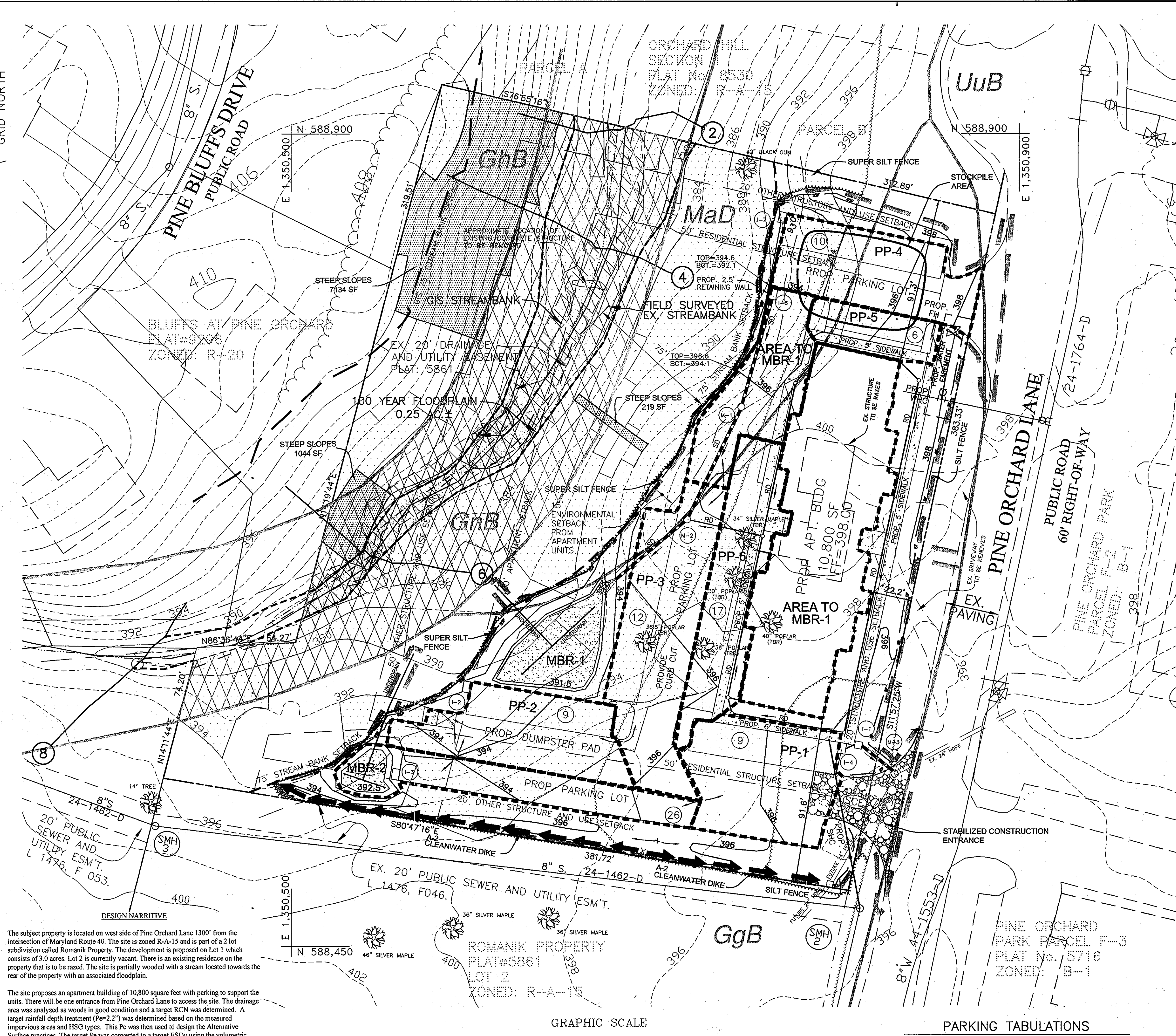
MAP SYMBOL	SOIL GROUP	SOIL TYPE
GgB	B	GLENELO LOAM, 3 TO 8 PERCENT SLOPES
GnB	B	GLENELO-URBAN LAND COMPLEX LOAM, 0 TO 8 PERCENT SLOPES
GnB*	C	GLENEVILLE-BAILE SILT LOAM, 0 TO 8 PERCENT SLOPES
MoD	B	MANOR LOAM, 15 TO 25 PERCENT SLOPES
UuB	D	URBAN LAND-UDORNTHERNS COMPLEX, 0 TO 8 PERCENT SLOPES

FROM NATURAL RESOURCES CONSERVATION SERVICES WEB SOIL SURVEY 2.0 HYDRIC SOILS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DATE: 11/26/12

DATE: 11/27/12



### GRAPHIC SCALE

( IN FEET )  
1 inch = 30 ft.

### PARKING TABULATIONS

PROPOSED BUILDING USE: APARTMENT  
NUMBER OF UNITS PROPOSED: 38  
NUMBER OF SPACES REQUIRED: 2,3/UNIT=88  
NUMBER OF SPACES PROVIDED: 89 (INCLUDING 4 HC SPACES AND 12 OVERFLOW/GUEST SPACES)

ESD	DA	%IMP.	SURFACE AREA	NOTES
MBR-1	0.33 AC.	98	1890 SF	ALL BUILDING, PARKING LOT RUNOFF
MBR-2	0.09 AC.	72	458 SF	PARKING LOT RUNOFF
PP-1	0.12 AC.	71	1458 SF	PARKING LOT RUNOFF
PP-2	0.10 AC.	68	1458 SF	PARKING LOT RUNOFF
PP-3	0.15 AC.	71	1944 SF	PARKING LOT RUNOFF
PP-4	0.10 AC.	64	1620 SF	PARKING LOT RUNOFF
PP-5	0.04 AC.	45	804 SF	PARKING LOT RUNOFF
PP-6	0.11 AC.	41	2530 SF	PARKING LOT RUNOFF

### SWM SUMMARY TABLE

D.A.	MDE Type	Total DA	Impervious Area	Qe	At			ESDv			Rev		
					Required	Provided	2% DA	Depth	Required	Provided	75% ESDv	Required	Provided
MBR-1	(M-6)	14,530	14,242	2.05	2131	1890	PASS	2.0	2483	1890	PASS	129	129
MBR-2	(M-6)	3,732	2,700	1.54	547	458	PASS	2.0	490	458	PASS	31	31
PP-1	(A-2)	5024	3566	1.52	N/A	N/A	N/A	N/A	907	3528	PASS	189	189
PP-2	(A-2)	4536	3078	1.45	N/A	N/A	N/A	N/A	822	3245	PASS	160	160
PP-3	(A-2)	6665	4121	1.33	N/A	N/A	N/A	N/A	1317	5063	PASS	252	252
PP-4	(A-2)	4464	2844	1.37	N/A	N/A	N/A	N/A	319	3271	PASS	145	145
PP-5	(A-2)	1761	957	1.19	N/A	N/A	N/A	N/A	158	1360	PASS	38	38
PP-6	(A-2)	4697	2167	1.02	N/A	N/A	N/A	N/A	873	3788	PASS	109	109
		45,409	33,675		2,678	2,348			7,358	22,603		1,021	1,053

### GENERAL NOTES

- SUBJECT PROPERTY ZONED R-A-15 PER THE 2-2-04 COMPREHENSIVE ZONING PLAN AND THE COMP LITE ZONING AMENDMENTS EFFECTIVE 7-28-06.
- THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE ZONING REGULATIONS EFFECTIVE APRIL 13, 2004.
- TOPOGRAPHY SHOWN HEREON IS BASED ON HOWARD COUNTY GIS AND ARE 2' INTERVALS.
- 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. #0066 AND #2485 WERE USED FOR THIS PROJECT.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE STREAMS, OR THEIR REQUIRED BUFFERS AND FLOODPLAIN UNLESS DEEMED NECESSARY BY THE DEPARTMENT OF PLANNING AND ZONING.
- THERE ARE NO STEEP SLOPES (25% OR GREATER) IN EXCESS 20,000 S.F. ON THIS SITE.
- A FOREST STAND DELINEATION AND WETLANDS CERTIFICATION WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC., AUGUST 2012.
- A PRELIMINARY FLOODPLAIN STUDY DATED JUNE, 2012 WAS PERFORMED BY BENCHMARK ENGINEERING, INC.
- TO THE BEST OF OUR KNOWLEDGE THERE ARE NO CEMETERIES LOCATED ON THIS SITE.
- A NOISE STUDY IS NOT REQUIRED FOR THIS DEVELOPMENT.
- THIS SITE IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
- THE FOREST CONSERVATION ACT IT IS ANTICIPATED THAT THE OBLIGATION FOR THIS PROJECT WILL BE MET BY THE ON-SITE RETENTION OF FOREST.
- PREVIOUS DPZ FILES: F-84-130, PLAT # 5861, WP-13-074
- AT THE TIME OF THE SUBDIVISION PLANS, A MORE DETAILED SEDIMENT CONTROL PLAN SHALL BE DEVELOPED, INCLUDING STUDY OF VARIOUS DISCHARGE AREAS, AND MORE COMPLETE DETERMINATION OF SEDIMENT TRAP NECESSITY.
- THIS PLAN IS SUBJECT TO WAIVER PETITION WP-13-074 APPROVED NOVEMBER 14, 2012 TO SECTION 16.116(a)(2)(i) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATION WHICH STATES, REMOVAL OF VEGETATIVE COVER AND TREES, PAVING AND NEW CONSTRUCTION SHALL NOT BE PERMITTED WITHIN 75' OF A PERENNIAL STREAMBANK AND SECTION 16.1202(a)(7) & (10) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WHICH REQUIRES THE RETENTION OF STATE CHAMPION TREES, TREES 75% OF THE DIAMETER OF THE STATE CHAMPION TREES, AND TREES 30" IN DIAMETER OR LARGER SUBJECT TO THE FOLLOWING:
  - APPROVAL OF THIS WAIVER IS FOR THE REMOVAL OF FIVE SPECIMEN TREES AS SHOWN ON THE WAIVER PETITION EXHIBIT. NO OTHER SPECIMEN TREES MAY BE REMOVED.
  - REMOVAL OF FIVE SPECIMEN TREES WILL REQUIRE MITIGATION AT A RATIO OF 3"-4" CALIPER TREE PER EACH SPECIMEN TREE REMOVED. THE MITIGATION PLANTING SHALL BE PROVIDED AS PART OF THE LANDSCAPE PLAN WITH THE SUBDIVISION AND/OR SITE DEVELOPMENT PLAN.
  - ONCE CONSTRUCTION IS COMPLETE THE TEMPORARY LIMIT OF DISTURBANCE WITHIN THE ENVIRONMENTAL FEATURES SHALL BE STABILIZED AS NECESSARY WITH SEED, SOIL, FOREST RESOURCES OR SUITABLE GROUND COVER.
  - PROVIDE ADEQUATE OUTLET PROTECTION FOR EACH BIORETENTION OUTLET TO PREVENT SOIL EROSION.
  - OBTAIN ALL NECESSARY AUTHORIZATION OF REGULATED ACTIVITY FROM THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.

### SITE ANALYSIS DATA/TABULATION

A) TOTAL PROJECT AREA.....	3.0± AC.
B) AREA OF WETLANDS AND BUFFER.....	N/A
C) AREA OF 100-YR. FLOODPLAIN.....	0.25± AC.
D) AREA OF EXISTING FOREST.....	2.0± AC.
E) AREA OF STEEP SLOPES 25% OR GREATER.....	0.19± AC.
F) NET AREA OF SITE.....	2.56± AC.
G) AREA OF MODERATE SLOPES 15% TO 25%.....	1.3± AC.
H) HIGHLY ERODIBLE SOILS (> 0.35).....	0.7± AC. (0.3± AC. OUTSIDE STEEP SLOPES AND FLOODPLAIN)
I) NUMBER OF UNITS ALLOWED.....	38 (2.56± AC.*15)
J) NUMBER OF RESIDENTIAL UNITS PROPOSED.....	38
K) AREA OF PLAN SUBMISSION.....	3.0± AC.
L) LIMIT OF DISTURBED AREA.....	1.6± AC.
M) OPEN SPACE REQUIRED.....	RECREATION OPEN SPACE 400 SF PER UNIT 38 UNITS*400=15,200 SF
N) OPEN SPACE PROVIDED.....	TBD
O) PRESENT ZONING DESIGNATION.....	R-A-15
P) PROPOSED USE: SINGLE FAMILY ATTACHED/APARTMENTS	
Q) IMPERVIOUS COVER.....	0.9± AC.

### BENCHMARK ENGINEERING, INC.

9450 BALTIMORE NATIONAL PIKE SUITE 418 ELLICOTT CITY, MARYLAND 21043  
(P) 410-465-6105 (F) 410-465-6844  
60 THOMAS JOHNSON DRIVE & FREDERICK, MARYLAND 21702  
(P) 301-371-3556 (F) 301-371-3556  
WWW.BCEN-ENGINEERING.COM

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. 26899-Expiration Date: 7.22.13.

STATE OF MARYLAND  
BENJAMIN F. GLENN  
Professional Engineer  
12/2/2012

### ROMANIK PROPERTY

LOT 1  
3200 PINE ORCHARD LANE  
TAX MAP: 24, GRID: 1, PARCEL: 647  
ZONED: R-A-15  
ELICOTT CITY DISTRICT NO. 2  
HOWARD COUNTY, MARYLAND

### ENVIRONMENTAL CONCEPT PLAN

OWNER: KATHLEEN A. AND CHRISTINA A. ROMANIK T/C ETAL  
13215 TRADITIONAL ROAD  
ELICOTT CITY, MD 21042

DEVELOPER: SECURITY DEVELOPMENT, LLC  
PO BOX 417  
ELICOTT CITY, MD 21041  
410-465-4244

DATE: AUGUST 2012  
NOVEMBER 2012

BEI PROJECT NO. 1796

SCALE: 1"=30'

SHEET 1 OF 1

ECP-13-012