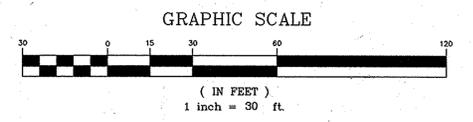


PAVED/RUBBERIZED PATHWAY IS TO MEANDER THROUGH THE FOREST CONSERVATION EASEMENT TO AVOID ANY TREE REMOVAL AND TO LIMIT DISTURBANCE TO ANY ENVIRONMENTAL FEATURES. THE PATHWAY IS TO BE CONSTRUCTED AND MAINTAINED BY ORCHARD PARK, SECTION 3 PER THIS PLAN.

Recreation Open Space Tabulation				
Unit	Credit per Unit	Amenity Credits	Quantity (SF)	
Asphalt Pathway	3 sf/1 sf of Pathway	1600 sf	4800	
Stone Dust/Mulched Pathway	3 sf/1 sf Pathway	2120 sf	6360	
Picnic Area		2	1000	
Seating/S' Bench		16	3200	
Gazebo/Pavilion		2	4000	
Recreation Area		1	4821	
Tot Lot/Play Equip.		1	2000	
Total			26181	

THIS PROJECT IS TO BE ANNEXED INTO THE ORCHARD PARK COMMUNITY UPON COMPLETION AND IS AUTHORIZED BY DPZ PLANNING DIRECTOR TO UTILIZE THE EXISTING RECREATIONAL FACILITIES, SUCH AS THE CLUBHOUSE, POOL ETC., AS PART OF THE RECREATIONAL OPEN SPACE OBLIGATIONS.



2 6-1-15 REMOVE SHED & DRYWELL ON PARCEL 'B'
1 9-22-2014 REVISE T-1 #1-3 TO A-5 INLETS AND SHOW UG ELECTRIC.

BENCHMARK ENGINEERING, INC.
ENGINEERS & LAND SURVEYORS & PLANNERS
8480 BALTIMORE NATIONAL PIKE SUITE 415 ELLICOTT CITY, MD 21043
(P) 410-465-6105 (F) 410-465-6844
WWW.BEI-CIVILENGINEERS.COM

STATE OF MARYLAND PROFESSIONAL ENGINEER
DONALD MASON, P.E. No. 21443

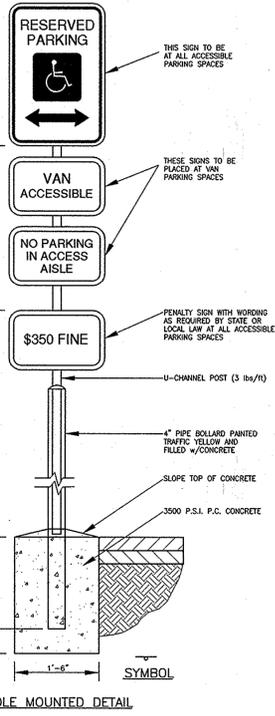
ORCHARD PARK SECTION 3
3200 PINE ORCHARD LANE
ROMANIK PROPERTY, LOT 1 AND ORCHARD HILL, PARCEL B
TAX MAP: 24 & 17, GRID: 1 & 19, PARCEL: 647 & P/O 130
ELECTION DISTRICT NO. 2
HOWARD COUNTY, MARYLAND

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

OWNER: LAKESHORE I, LLC
C/O SECURITY DEVELOPMENT 8480 BALTIMORE NATIONAL PIKE SUITE 415 ELLICOTT CITY, MD 21043

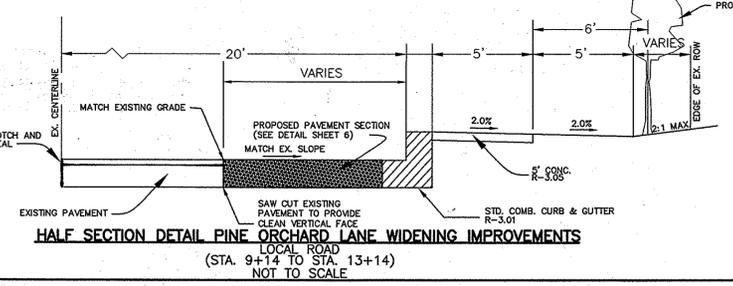
SITE DEVELOPMENT PLAN
DATE: MAY 2014
SCALE: 1"=30'

SITE PLAN
BEI PROJECT NO. 1796
SHEET 2 OF 10



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Clark, 6/7/14, CHIEF, DEVELOPMENT ENGINEERING DIVISION
Walt Schaefer, 6-19-14, CHIEF, DIVISION OF LAND DEVELOPMENT
Dorothy M. Lough, 6/19/14, DIRECTOR



AS-BUILT CERTIFICATION
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.
Donald Mason, P.E. No. 21443 Date 6-25-15

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. 21443 Expiration Date: 12-31-16



SWALE #1

Given Input Data:

Shape	Trapezoidal
Solving for	Depth of Flow
Flowrate	0.5000 cfs
Slope	0.0300 ft/ft
Manning's n	0.0330
Height	10000.0000 ft
Bottom width	2.0000 ft
Left slope	4.0000 ft/ft (V/H)
Right slope	4.0000 ft/ft (V/H)

(V/H)

Computed Results:

Depth	0.1314 ft
Velocity	1.8722 fps
Full Flowrate	0.5000 cfs
Flow area	0.2671 ft ²
Flow perimeter	2.2708 ft
Hydraulic radius	0.1176 ft
Top width	2.0857 ft
Area	0.2671 ft ²
Perimeter	2.2708 ft
Percent full	100.0000 %

SWALE #2

Given Input Data:

Shape	Trapezoidal
Solving for	Depth of Flow
Flowrate	0.2000 cfs
Slope	0.0260 ft/ft
Manning's n	0.0330
Height	10000.0000 ft
Bottom width	2.0000 ft
Left slope	6.0000 ft/ft (V/H)
Right slope	6.0000 ft/ft (V/H)

(V/H)

Computed Results:

Depth	0.0783 ft
Velocity	1.2686 fps
Full Flowrate	0.2000 cfs
Flow area	0.1577 ft ²
Flow perimeter	2.1588 ft
Hydraulic radius	0.0730 ft
Top width	2.0261 ft
Area	0.1577 ft ²
Perimeter	2.1588 ft
Percent full	100.0000 %

SWALE #3

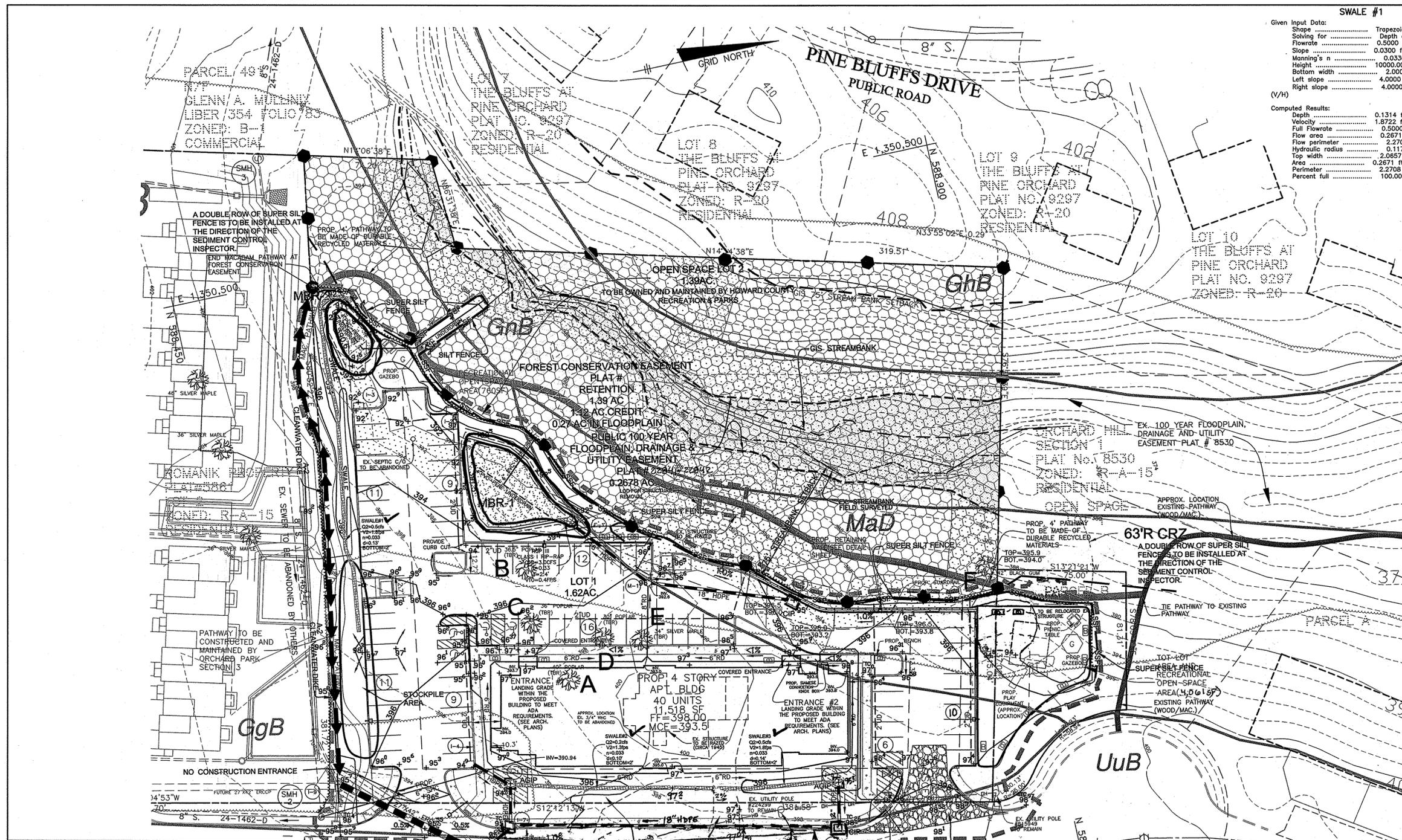
Given Input Data:

Shape	Trapezoidal
Solving for	Depth of Flow
Flowrate	0.5000 cfs
Slope	0.0250 ft/ft
Manning's n	0.0330
Height	10000.0000 ft
Bottom width	2.0000 ft
Left slope	2.5000 ft/ft (V/H)
Right slope	2.5000 ft/ft (V/H)

(V/H)

Computed Results:

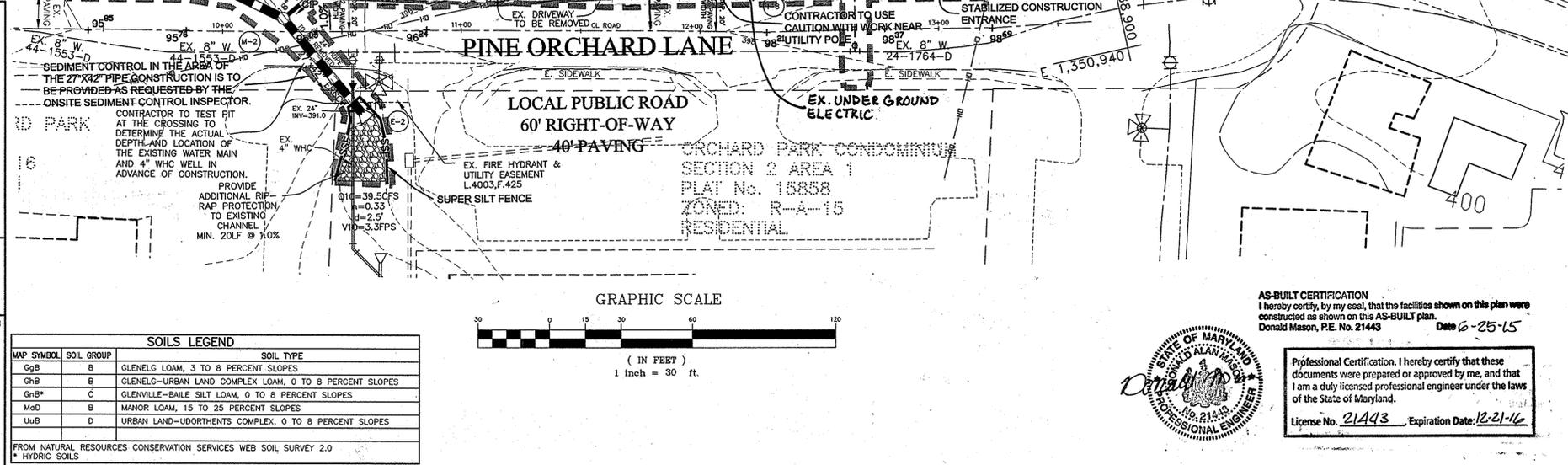
Depth	0.1379 ft
Velocity	1.7644 fps
Full Flowrate	1.18534 cfs
Flow area	0.2834 ft ²
Flow perimeter	2.2970 ft
Hydraulic radius	0.1234 ft
Top width	2.1103 ft
Area	2.4000 ft ²
Perimeter	4.1541 ft
Percent full	13.7885 %



ENGINEER'S CERTIFICATE
 I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION 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.
 Christopher A. Malagari
 ENGINEER - CHRISTOPHER A. MALAGARI
 DATE: 5/5/14

DEVELOPER'S CERTIFICATE
 I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL AND THAT ALL 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.
 Simon Umatah
 DEVELOPER LAKESHORE I, LLC BY MDC ASSOCIATES, LLC, DATE: 5/21/14

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division: 6/17/14
 Chief, Division of Land Development: 6-19-14
 Director: 6/19/14



SOILS LEGEND

MAP SYMBOL	SOIL GROUP	SOIL TYPE
GgB	B	GLENELG LOAM, 3 TO 8 PERCENT SLOPES
GhB	B	GLENELG-URBAN LAND COMPLEX LOAM, 0 TO 8 PERCENT SLOPES
GhB*	C	GLENVILLE-BAILE SILT LOAM, 0 TO 8 PERCENT SLOPES
MdD	B	MANOR LOAM, 15 TO 25 PERCENT SLOPES
UuB	D	URBAN LAND-UOORTHENTS COMPLEX, 0 TO 8 PERCENT SLOPES

FROM NATURAL RESOURCES CONSERVATION SERVICES WEB SOIL SURVEY 2.0
 * HYDRIC SOILS

2 6-1-15 REMOVE SHED & DRYWELL ON PARCEL B
 1 9-22-2014 REVISE I-7 FOR TOA-BUILDINGS AND SHOW UG ELECTRIC

NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC.
 ENGINEERS & LAND SURVEYORS & PLANNERS
 8480 BALTIMORE NATIONAL PIKE & SUITE 315 & ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-6844
 WWW.BE-ENR.COM

ORCHARD PARK SECTION 3
 5200 PINE ORCHARD LANE
 ROMANIK PROPERTY, LOT 1 AND ORCHARD HILL, PARCEL B
 TAX MAP: 24 & 17, GRID: 1 & 19, PARCEL: 647 & P/O 130
 ELECTION DISTRICT NO. 2
 HOWARD COUNTY, MARYLAND

SITE DEVELOPMENT PLAN
 GRADING, SEDIMENT & EROSION CONTROL PLAN

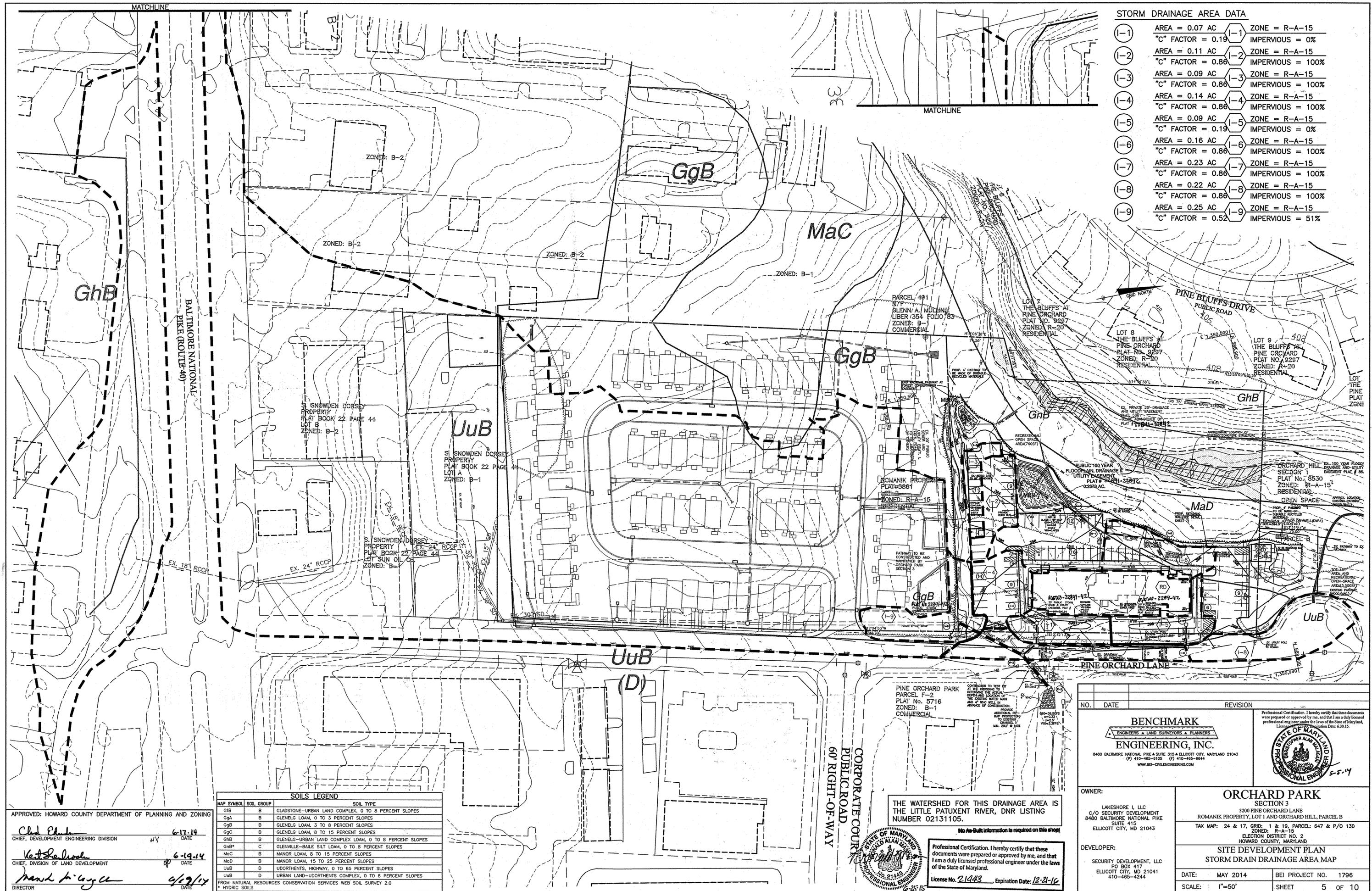
OWNER: LAKESHORE I, LLC
 C/O SECURITY DEVELOPMENT
 8480 BALTIMORE NATIONAL PIKE
 SUITE 415
 ELLICOTT CITY, MD 21043

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

DATE: MAY 2014
 SCALE: 1"=30'

BEI PROJECT NO. 1796
 SHEET 3 OF 10

AS-BUILT
 SDP-13-055



STORM DRAINAGE AREA DATA

(1-1)	AREA = 0.07 AC	(1-1)	ZONE = R-A-15
(1-2)	"C" FACTOR = 0.19	(1-2)	IMPERVIOUS = 0%
(1-3)	AREA = 0.11 AC	(1-3)	ZONE = R-A-15
(1-4)	"C" FACTOR = 0.86	(1-4)	IMPERVIOUS = 100%
(1-5)	AREA = 0.09 AC	(1-5)	ZONE = R-A-15
(1-6)	"C" FACTOR = 0.86	(1-6)	IMPERVIOUS = 100%
(1-7)	AREA = 0.14 AC	(1-7)	ZONE = R-A-15
(1-8)	"C" FACTOR = 0.86	(1-8)	IMPERVIOUS = 100%
(1-9)	AREA = 0.09 AC	(1-9)	ZONE = R-A-15
	"C" FACTOR = 0.19	(1-9)	IMPERVIOUS = 0%
	AREA = 0.16 AC	(1-6)	ZONE = R-A-15
	"C" FACTOR = 0.86	(1-6)	IMPERVIOUS = 100%
	AREA = 0.23 AC	(1-7)	ZONE = R-A-15
	"C" FACTOR = 0.86	(1-7)	IMPERVIOUS = 100%
	AREA = 0.22 AC	(1-8)	ZONE = R-A-15
	"C" FACTOR = 0.86	(1-8)	IMPERVIOUS = 100%
	AREA = 0.25 AC	(1-9)	ZONE = R-A-15
	"C" FACTOR = 0.52	(1-9)	IMPERVIOUS = 51%

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Blum 6-17-14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION NY DATE

Keith S. Linder 6-19-14
 CHIEF, DIVISION OF LAND DEVELOPMENT p DATE

Mark A. Goyke 4/27/14
 DIRECTOR DATE

SOILS LEGEND

MAP SYMBOL	SOIL GROUP	SOIL TYPE
GgB	B	GLADSTONE-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES
GgA	B	GLENELO LOAM, 0 TO 3 PERCENT SLOPES
GgB	B	GLENELO LOAM, 3 TO 8 PERCENT SLOPES
GgC	B	GLENELO LOAM, 8 TO 15 PERCENT SLOPES
GhB	B	GLENELO-URBAN LAND COMPLEX LOAM, 0 TO 8 PERCENT SLOPES
GhC	C	GLENELO-URBAN LAND COMPLEX LOAM, 0 TO 8 PERCENT SLOPES
MaC	B	MANOR LOAM, 0 TO 15 PERCENT SLOPES
MaD	B	MANOR LOAM, 15 TO 25 PERCENT SLOPES
UuB	D	UDORNTENTS, HIGHWAY, 0 TO 65 PERCENT SLOPES
UuB	D	URBAN LAND-UDORNTENTS COMPLEX, 0 TO 8 PERCENT SLOPES

FROM NATURAL RESOURCES CONSERVATION SERVICES WEB SOIL SURVEY 2.0
 * HYDRIC SOILS

THE WATERSHED FOR THIS DRAINAGE AREA IS THE LITTLE PATUXENT RIVER, DNR LISTING NUMBER 02131105.

No As-Built information is required on this sheet



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. 21423 Expiration Date: 12-21-16

<p>NO. DATE REVISION</p>	
<p>BENCHMARK ENGINEERING, INC. ENGINEERS & LAND SURVEYORS & PLANNERS 8480 BALTIMORE NATIONAL PIKE SUITE 415 ELLICOTT CITY, MD 21043 (P) 410-465-8105 (F) 410-465-8844 WWW.BEI-ENGINEERING.COM</p>	
<p>OWNER: LAKESHORE I, LLC C/O SECURITY DEVELOPMENT 8480 BALTIMORE NATIONAL PIKE SUITE 415 ELLICOTT CITY, MD 21043</p>	<p>DEVELOPER: SECURITY DEVELOPMENT, LLC PO BOX 417 ELLICOTT CITY, MD 21041 410-465-4244</p>
<p>ORCHARD PARK SECTION 3 5200 PINE ORCHARD LANE ROMANIK PROPERTY, LOT 1 AND ORCHARD HILL, PARCEL B TAX MAP: 24 & 17, GRID: 1 & 19, PARCEL: 647 & P/O 130 ZONED: R-A-15 ELECTION DISTRICT NO. 2 HOWARD COUNTY, MARYLAND</p>	
<p>SITE DEVELOPMENT PLAN STORM DRAIN DRAINAGE AREA MAP</p>	
<p>DATE: MAY 2014</p>	<p>BEI PROJECT NO. 1796</p>
<p>SCALE: 1"=50'</p>	<p>SHEET 5 OF 10</p>

SOILS LEGEND		
MAP SYMBOL	SOIL GROUP	SOIL TYPE
GcB	B	GLENELG LOAM, 3 TO 8 PERCENT SLOPES
GcB	B	GLENELG-URBAN LAND COMPLEX LOAM, 0 TO 8 PERCENT SLOPES
GcB*	C	GLENVILLE-BAILE SILT LOAM, 0 TO 8 PERCENT SLOPES
McD	B	MANOR LOAM, 15 TO 25 PERCENT SLOPES
UcB	D	URBAN LAND-UDORTHERS COMPLEX, 0 TO 8 PERCENT SLOPES

FROM NATURAL RESOURCES CONSERVATION SERVICES WEB SOIL SURVEY 2.0
* HYDRIC SOILS

LEGEND

EXISTING CONTOURS: 190, 199, 209, 219, 229, 239, 249, 259, 269, 279, 289, 299, 309, 319, 329, 339, 349, 359, 369, 379, 389, 399, 409, 419, 429, 439, 449, 459, 469, 479, 489, 499, 509, 519, 529, 539, 549, 559, 569, 579, 589, 599, 609, 619, 629, 639, 649, 659, 669, 679, 689, 699, 709, 719, 729, 739, 749, 759, 769, 779, 789, 799, 809, 819, 829, 839, 849, 859, 869, 879, 889, 899, 909, 919, 929, 939, 949, 959, 969, 979, 989, 999

PROPOSED CONTOURS: 190, 199, 209, 219, 229, 239, 249, 259, 269, 279, 289, 299, 309, 319, 329, 339, 349, 359, 369, 379, 389, 399, 409, 419, 429, 439, 449, 459, 469, 479, 489, 499, 509, 519, 529, 539, 549, 559, 569, 579, 589, 599, 609, 619, 629, 639, 649, 659, 669, 679, 689, 699, 709, 719, 729, 739, 749, 759, 769, 779, 789, 799, 809, 819, 829, 839, 849, 859, 869, 879, 889, 899, 909, 919, 929, 939, 949, 959, 969, 979, 989, 999

EXISTING TREELINE: ---

PROPOSED TREELINE: ---

EXISTING STREAM: ---

EXISTING STREAMBANK BUFFER: ---

100 YEAR FLOODPLAIN LIMITS: ---

100 YEAR FLOODPLAIN DRAINAGE & UTILITY EASEMENT: ---

FOREST CONSERVATION EASEMENT: ---

FOREST CONSERVATION SIGN: ---

EXISTING STRUCTURE: ---

PROPOSED BUILDING: ---

SLOPES 25% OR GREATER: ---

MODERATE SLOPES: ---

EX. 20' DRAINAGE AND UTILITY EASEMENT: ---

PUBLIC DRAINAGE & UTILITY EASEMENT, PLAT #: ---

PUBLIC WATER & UTILITY EASEMENT: ---

PROP. MICRO-BIORETENTION FACILITY: ---

PROP. PERMEABLE PAVEMENT: ---

PROP. GAZEBO/PAVILION: ---

PROP. 5' PARK BENCH GUARDRAIL: ---

TOP WALL: ---

ALLAN BLOCK TYPE UNIT: ---

EXPOSED WALL HEIGHT (2.9' MAX.): ---

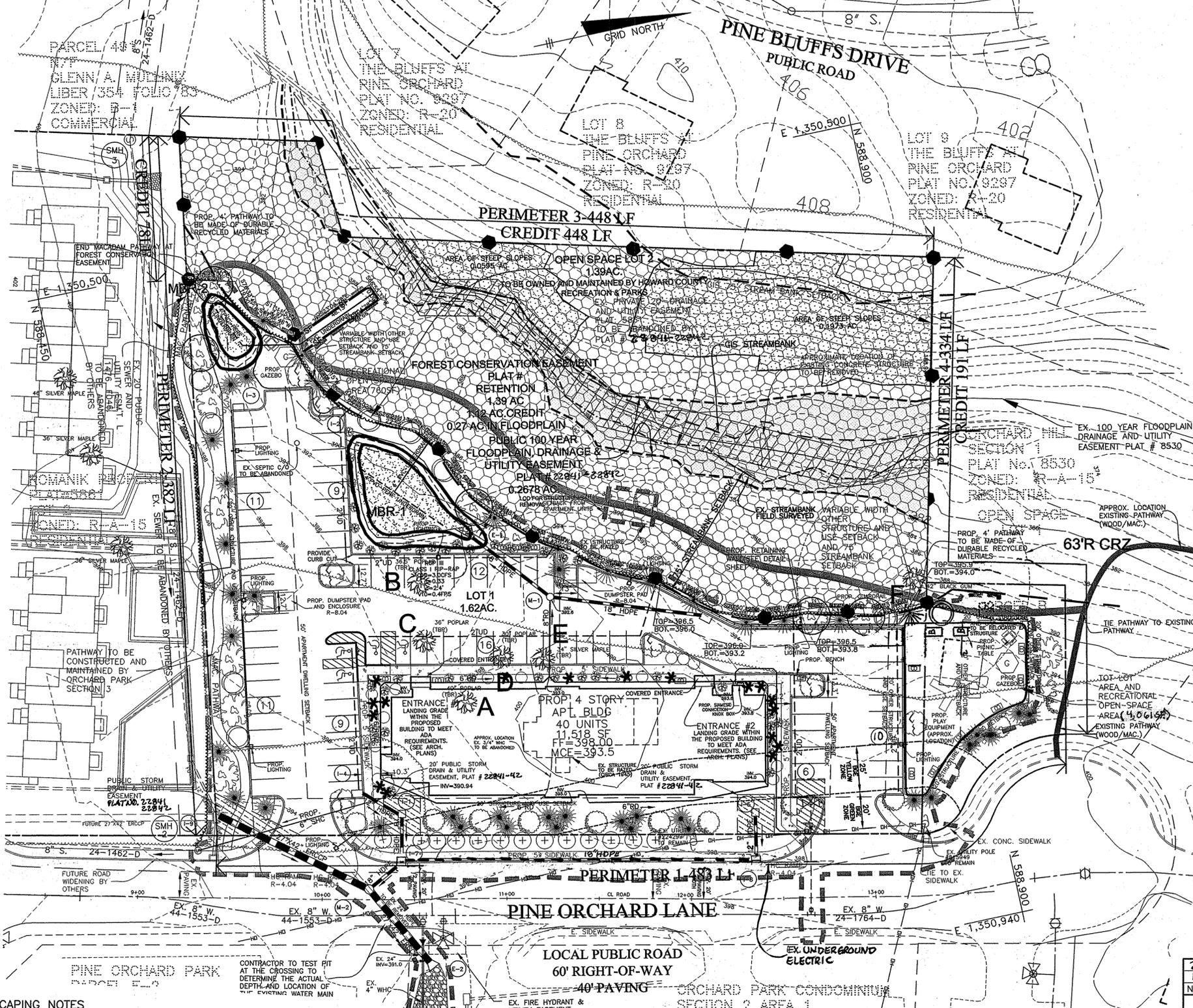
FINISHED GRADE: ---

RETAINED SOIL: ---

WELL-GRADED GRANULAR WALL ROCK 0.25" TO 1.5" LESS THAN 10% FINES: ---

4" TOE DRAIN PIPE VENTED TO DAYLIGHT: ---

TYPICAL BLOCK RETAINING WALL DETAIL NTS



LANDSCAPING NOTES

- 1) THE PROPOSED LANDSCAPING SHALL BE PROVIDED BY THE PLANTINGS AS SHOWN ON THESE PLANS.
- 2) THE DEVELOPER SHALL BE RESPONSIBLE FOR ALL INTERNAL PLANTINGS. THE PRESERVATION OF THE EXISTING PERIMETER VEGETATION AND FOR THE PERIMETER PLANTINGS AS SHOWN ON THESE PLANS, BONDING FOR THE PROPOSED PLANTINGS IS THE OBLIGATION OF THE DEVELOPER AS PART OF THE DEVELOPER'S AGREEMENT.
- 3) TREES MUST BE A MINIMUM OF FOUR(4) FEET FROM THE CURB OR SIDEWALK AND MUST BE A MINIMUM OF FIVE(5) FEET FROM ANY STORM DRAIN.
- 4) A MINIMUM DISTANCE OF TWENTY(20) FEET MUST BE MAINTAINED BETWEEN ANY TREES LOCATED ALONG THE CURB LINE AND FROM STREET LIGHTS.
- 5) TREES MUST BE PLANTED A MINIMUM OF FIVE(5) FEET FROM AN OPEN SPACE ACCESS STRIP AND TEN(10) FEET FROM A DRIVEWAY AND A MINIMUM OF FIVE(5) FEET FROM DRAIN INLET STRUCTURES.
- 6) THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SEC.-18.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
- 7) SIX (6) SPECIMEN TREES WERE FOUND ON-SITE AS PER FOREST STAND DELINEATION PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. DATED AUGUST 2012. AS APPROVED UNDER WP-12-074 FIVE(5) OF THE SPECIMEN TREES ARE TO BE REMOVED WITH A REQUIRED MITIGATION AT A RATIO OF ONE 3"-4" CALIBER TREE FOR EACH SPECIMEN TREE REMOVED. SPECIMEN TREE F WILL BE RETAINED AS PART OF THIS PROJECT. ROOT PRUNING ALONG THE PROPOSED LIMITS OF DISTURBANCE WILL BE PROVIDED TO REDUCE AND INSURE ITS SURVIVAL.
- 8) THE REQUIRED PERIMETER PLANTINGS AND PARKING LOT PLANTINGS ARE PROVIDED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 18.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT FOR SDP-13-056 IN THE AMOUNT OF \$20,410.00 (\$3,600.00 FOR 32 SHADE TREES, \$6,600.00 FOR 44 EVERGREEN TREES, \$1,800.00 FOR 12 ORNAMENTAL TREES AND \$2,250.00 FOR 75 SHRUBS) THE ADDITIONAL \$160.00 FEE IS FOR THE DISTURBANCE WITHIN THE FOREST CONSERVATION EASEMENT. SEE NOTE B SHEET 8.
- 9) AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING.
- 10) THE OWNERS, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIAL AND BERM, FENCES AND WALLS. ALL PLANT MATERIAL SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHERE NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS.
- 11) IN ACCORDANCE WITH THE PRE-SUBMISSION COMMUNITY MEETING HELD ON FEBRUARY 18, 2013 THE DEVELOPER HAS AGREED TO PLANT ADDITIONAL LANDSCAPING (EVERGREENS) ALONG THE PARKING LOTS ADJACENT TO THE RESIDENTIAL PROPERTIES. DPZ WILL ENFORCE THIS AGREEMENT AS PART OF THE INTERNAL LANDSCAPE REQUIREMENTS AND SURETY FOR THE PROVIDED TREES WILL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT.

AS-BUILT CERTIFICATION

I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.
Donald Mason, P.E. No. 21443 Date 6-25-15

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. 21443, Expiration Date: 12-21-16

J. CHRIS OZGA
DNR QUALIFIED PROFESSIONAL

GRAPHIC SCALE
1" = 30'
(IN FEET)
0 10 20 30 40 50 60 70 80 90 100

SCHEDULE A PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAY	ADJACENT TO PERIMETER PROPERTIES	YES	NO	NO	NO	YES	TOTAL
PERIMETER NO. 7 LANDSCAPE TYPE	(1) B	(2) B	(3) C	(4) A				
LINEAR FEET OF PERIMETER (FRONTAGE/ROADWAY)	483	382	448	334	25	50		
CREDIT FOR EXISTING VEGETATION: NO OR YES (+/MINUS FEET) (DESCRIBE BELOW IF NEEDED)	NO	YES 78	YES 151	NO				
LINEAR FEET OF REQUIRED PERIMETER LANDSCAPING	483	304		143	50			
CREDIT FOR WALL, FENCE OR BERM: NO OR YES (+/MINUS FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO				
NUMBER OF PLANTS REQUIRED:								
SHADE TREES	10	6		2	2(1EACH)	20		
EVERGREEN TREES	12	2		2	2(1EACH)	22		
OTHER TREES (2:1 SUBSTITUTE) SHRUBS								
NUMBER OF PLANTS PROVIDED:								
SHADE TREES	0	6		2	2	10		
EVERGREEN TREES	22	8		2	2	32		
OTHER TREES (2:1 SUBSTITUTE) SHRUBS (10:1 SUBSTITUTE) (DESCRIBE PLANT SUBSTITUTION CHECKS BELOW IF NEEDED)	110					110		

* 10 EVERGREEN TREES SUBSTITUTED FOR 200 SMALL ORNAMENTAL TREES SUBSTITUTED FOR 10 SHADE TREES.

SCHEDULE B - PARKING LOT INTERNAL LANDSCAPING

NUMBER OF PARKING SPACES:	83
NUMBER OF TREES/L.S.-ISLES REQUIRED: 1/10	8
NUMBER OF TREES PROVIDED:	8
SHADE TREES	8
OTHER TREES (2:1 SUBSTITUTE) SHRUBS (10:1 SUBSTITUTE)	

SCHEDULE C - RESIDENTIAL DEVELOPMENT INTERNAL LANDSCAPING

SYMBOL	QUANTITY	NAME	REMARKS
(1)	1/3 UNITS 40 UNITS 13 (10 SHADE TREES AND 30 SHRUBS ARE PROVIDED)	QUERCUS RUBRA NORTHERN RED OAK	2 1/2"-3" CAL

STREET TREE LANDSCAPE PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS
(+)	390LF/30	ACER TARABICUM TATARIAN MAPLE BEE GREEN ZONE LESS THAN 25' MAX. HT.	2 1/2" CAL

STREET TREES FOR ORCHARD HILL, PARCEL B WERE SATISFIED UNDER 7-88-291

LANDSCAPE PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS
(1)	9	ACER RUBRUM/OCTOBER GLORY OCTOBER RED MAPLE SHADE TREE	2 1/2"-3" CAL
(2)	15	LIRIODENDRON TULIPIFERA "TULIP POPLAR" SHADE TREE	3"-4" CAL
(3)	12	ACER GINALEA "ANNUAL MAPLE" SMALL DECIDUOUS TREE	1 1/2"-2" CAL BEE GREEN ZONE LESS THAN 25' MAX. HT.
(4)	32	LLEX "NELLIE R. STEVENS" NELLIE R. STEVENS HOLLY	5'-6' HT BEE GREEN ZONE LESS THAN 25' MAX. HT.
(5)	8	PRUNUS SARGENTI "SARGENT CHERRY" LARGE DECIDUOUS TREE	2 1/2" - 3" HT
(6)	10	LLEX CRENATA "HELLER" "HELLER JAPANESE HOLLY"	18" - 24" HT
(7)	10	BUXUS MICROPHYLLA KOREANA "WINTERGREEN BOXWOOD"	2 1/2" - 3" HT
(8)	10	EVONYMUS KAMTSCHOVICUS "SEBODIANA" "SEBOLD EVONYMUS"	2 1/2" - 3" HT
(9)	12	PINUS STROBUS "WHITE PINE"	6" - 8" HT
(10)	22	LLEX CRENATA "HELLER" "HELLER JAPANESE HOLLY"	18" - 24" HT

* 5 ADDITIONAL SHADE TREES FOR THE 5 SPECIMEN TREES REMOVED UNDER WP-13-074. SEE NOTE #7 THIS SHEET.
** 1 ADDITIONAL SHADE TREE FOR THE LOD WITHIN THE FOREST CONSERVATION EASEMENT. SEE NOTE #8 SHEET 8.
*** ENHANCED LANDSCAPING TO MITIGATE THE 15' WIDE LANDSCAPE AREA BETWEEN THE BUILDING AND PARKING AREA.

ADDITIONAL LANDSCAPING ABOVE REQUIREMENTS (SEE NOTE #11 THIS SHEET)

2 6-1-15 REMOVE SHED & DRYWELL FROM PARCEL B
1 9-22-2014 REVISE I7I-B TO A-B INLETS AND SHOW UG ELECTRIC

DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 18.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION OF A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Susan Johnson 5/21/14
DEVELOPER LANDSCAPE, LLC, BY: MARGARET A. LEE, P.E., SINCERE
OWNER: Susan Johnson, member

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad E. Clark 6-17-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION NY DATE

Paul Salzman 6-19-14
CHIEF, DIVISION OF LAND DEVELOPMENT NY DATE

Paul A. Uryga 6/19/14
DIRECTOR NY DATE

BENCHMARK ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE SUITE 315 ELLICOTT CITY, MARYLAND 21043
(7) 410-465-4105 (F) 410-465-6644
WWW.BEI-CVLENGINEERING.COM

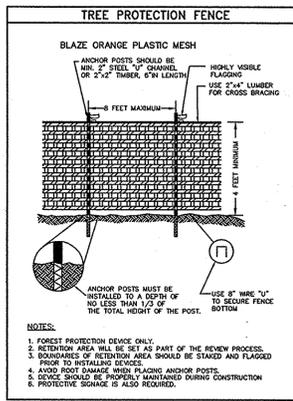
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
Date: 6.30.15

ORCHARD PARK SECTION 3
3200 PINE ORCHARD LANE
ROMANIK PROPERTY, LOT 1 AND ORCHARD HILL, PARCEL B
TAX MAP: 24 & 17, GRID: 1 & 19, PARCEL: 647 & P/O 130
ZONED: R-A-15
ELECTION DISTRICT NO. 2
HOWARD COUNTY, MARYLAND

OWNER: LAKESHORE 1, LLC
C/O SECURITY DEVELOPMENT
8460 BALTIMORE NATIONAL PIKE SUITE 415
ELLICOTT CITY, MD 21043

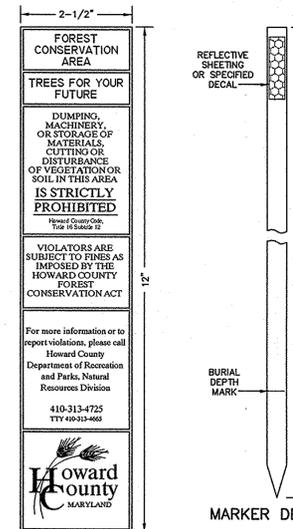
DEVELOPER: SECURITY DEVELOPMENT, LLC
PO BOX 417
ELLICOTT CITY, MD 21041
410-465-4244

SITE DEVELOPMENT PLAN
LANDSCAPE AND FOREST CONSERVATION PLAN
DATE: MAY 2014 BEI PROJECT NO. 1796
SCALE: 1"=30' SHEET 7 OF 10

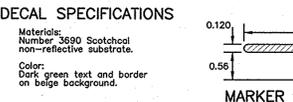


FOREST CONSERVATION NOTES:

1. ANY FOREST CONSERVATION EASEMENT (FCE) AREA SHOWN HEREON IS SUBJECT TO PROTECTIVE COVENANTS WHICH MAY BE FOUND IN THE LAND RECORDS OF HOWARD COUNTY WHICH RESTRICT THE DISTURBANCE AND USE OF THESE AREAS.
2. THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE. FOREST CONSERVATION ACT NO. CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENTS; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
3. LIMITS OF DISTURBANCE SHALL BE RESTRICTED TO AREAS OUTSIDE THE LIMIT OF TEMPORARY FENCING OR THE FCE BOUNDARY, WHICHEVER IS GREATER.
4. THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENT, EXCEPT AS PERMITTED BY HOWARD COUNTY DPZ.
5. NO STOCKPILES, PARKING AREAS, EQUIPMENT CLEANING AREAS, ETC. SHALL OCCUR WITHIN AREAS DESIGNATED AS FOREST CONSERVATION EASEMENTS.
6. TEMPORARY FENCING SHALL BE USED TO PROTECT FOREST RESOURCES DURING CONSTRUCTION. THE FENCING SHALL BE PLACED ALONG ALL FCE BOUNDARIES WHICH OCCUR WITHIN 15 FEET OF THE PROPOSED LIMITS OF DISTURBANCE.
7. PERMANENT SIGNAGE SHALL BE PLACED 50'-100' APART ALONG THE BOUNDARIES OF ALL AREAS INCLUDED IN FOREST CONSERVATION EASEMENTS.
8. THE TOTAL FOREST CONSERVATION OBLIGATION AMOUNT HAVE BEEN MET BY THE ON-SITE RETENTION OF 1.12 AC. WITHIN A FOREST CONSERVATION EASEMENT. A \$160.00 FEE IS REQUIRED FOR THE DISTURBANCE WITHIN THE FOREST CONSERVATION EASEMENT TO REMOVE THE EXISTING STRUCTURE. THE LIMIT OF DISTURBANCE IS 400SF (400*80.40/SF). THIS FEE WILL BE ADDED TO THE LANDSCAPE SURETY. PLANTING OF 2" CALIBER TREES IS REQUIRED FOR THE DISTURBANCE AT 100 PER ACRE OF LOD. SEE LANDSCAPE PLANT LIST SHEET 7.



FOREST CONSERVATION WORKSHEET		
ORCHARD PARK SECTION 3		
Computations by: JCO	BEI JOB No. 1796	Date: 10/9/2013
NET TRACT AREA:		
A. Total tract area		3.19 ac.
B. Other deductions: (floodplain)		0.27 ac.
C. Net Tract Area		2.92 ac.
LAND USE CATEGORY:		
Select category (AR, MDR, ID, HDR, MPD, CI)		HDR
D. Afforestation Threshold	15% x "F" =	0.44 ac.
E. Conservation threshold	20% x "F" =	0.58 ac.
EXISTING FOREST COVER:		
F. Existing forest cover		2.00 ac.
G. Area of forest above afforestation threshold		1.66 ac.
H. Area of forest above conservation threshold		1.42 ac.
BREAK EVEN POINT:		
I. Forest retention above threshold with no mitigation		0.87 ac.
J. Clearing permitted without mitigation		1.21 ac.
PROPOSED FOREST CLEARING:		
K. Total area of forest to be cleared		0.88 ac.
L. Total area of forest to be retained		1.12 ac.
PLANTING REQUIREMENTS:		
M. Reforestation for clearing above conservation threshold		0.22 ac.
N. Reforestation for clearing below conservation threshold		0.00 ac.
O. Credit for retention above conservation threshold		0.54 ac.
P. Total reforestation required		0.00 ac.
Q. Total afforestation required		0.00 ac.
R. Credit for landscaping - may not exceed 20% of "S."		0.00 ac.
S. Total reforestation and afforestation required		0.00 ac.



FCE CARSONITE MARKER

FOREST CONSERVATION EASEMENT CHART		
EASEMENT #	AREA	TYPE
1	1.39 AC. (1.12 AC. CREDIT)	RETENTION

DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION OF A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Susan Umstoes 5/2/14
DEVELOPER LAKESHORE I, LLC, BY: MICHAEL ASSOCIATES, LLC, LICENSED MEMBER
Owner: *Susan Umstoes* member

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Eberhart 6-17-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE

Walt Shalinski 6-23-14
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE

David A. Cogle 6/23/14
DIRECTOR
DATE

FOREST PROTECTION PROCEDURES - Preconstruction Phase

- 1) The edge of the woods to be protected will be marked (staked or flagged) in the field per the limits of forest conservation easement shown in the approved site development plan prior to the start of construction activity. All areas within protective easement are to be considered "off limits" to any construction activities. The optional protective fencing shall be installed at the outside edge of forested areas and should be combined with sediment control devices when possible. The limit of the critical root zone and therefore the location of the protective devices is to be determined as follows:
Edge of Forested Area - 1 foot of protective radius/inch of DBH or an eight foot protective radius, whichever is greater.

Critical Root Zone for the forest on this site is an average of 12 feet from the trunk of the tree. Critical root zones for Specimen Tree 'F' 63'.

- 2) Construction activities expressly prohibited within the preservation areas are:
Placing or stockpiling backfill or top soil in protected areas
Felling trees into protected areas
Driving construction equipment into or through protected areas
Burning in or in close proximity to protected areas
Stacking or storing supplies of any kind
Concrete wash-off areas
Conducting trenching operations
Grading beyond the limits of disturbance
Parking vehicles or construction equipment
Removal of root mat or topsoil
Siting and construction of:
Utility lines
Access roads
Impervious surfaces
Stormwater management devices
Staging areas

- 3) Protective fencing (see Figure "Protective Fencing") shall be the responsibility of the general contractor. The general contractor shall affix signs to the fencing at 25' minimum intervals indicating that these areas are "Forest Retention Area" (see Figure "Signage"). The general contractor shall take great care to assure the restricted areas are not violated and that root systems are protected from smothering, flooding, excessive wetting from dewatering operations, off-site runoff, spillage, and drainage or solutions containing materials hazardous to tree roots.

- 4) The general contractor shall be responsible for any tree damaged or destroyed within the preservation areas whether caused by the contractor, his agents, employees, subcontractors, or licensees.

- 5) Foot traffic shall be kept to a minimum in the protective areas.

- 6) All trees which are not to be preserved within fifty feet of any tree preservation areas are to be removed in a manner that will not damage those trees that are designated for preservation. It is highly recommended that tree stumps within this fifty foot area be ground out with a stump grinding machine to minimize damage.

- 7) The general contractor shall designate a "wash out" area onsite for concrete trucks which will not drain toward a protected area.

- 8) A pre-construction meeting shall be held with local authorities before any disturbance has taken place on site.

FOREST PROTECTION PROCEDURES - Construction Phase

Forest and tree conditions should be monitored during construction and corrective measures taken when appropriate.

- The following shall be monitored:
- a) Soil compaction
 - b) Root injury - prune and monitor; consider crown reduction
 - c) Limb injury - prune and monitor
 - d) Flooded conditions - drain and monitor; correct problem
 - e) Drought conditions - water and monitor; correct problem
 - f) Other stress signs - determine reason, correct, and monitor

FOREST PROTECTION PROCEDURES - Post Construction Phase

The following measures shall be taken:

- 1) Corrective measures if damages were incurred due to negligence:
 - a) Stress reduction
 - b) Removal of dead or dying trees. This may be done only if trees pose an immediate safety hazard.
- 2) Removal of temporary structures:
 - a) No burial of discarded materials will occur onsite within the conservation area.
 - b) No open burning within 100 feet of a wooded area.
 - c) All temporary forest protection structures will be removed after construction.
 - d) Remove temporary roads by removing stone or broadcasting mulch; pre-construction elevation should be maintained.
 - e) Aerate compacted soil.
 - f) Replant disturbed sites with trees, shrubs and/or herbaceous plants.
 - g) Retain signs for retention areas or specimen trees.
 - h) A County official shall inspect the entire site.
- 3) Future protection measures:
 - a) Howard County and the developer shall arrange for the dedication of an appropriate forest conservation easement at a later date.

FOREST PROTECTION PROCEDURES - Preconstruction Phase

Stress Reduction and Protection of Specimen Trees Isolated from Forest Retention Areas and General Forest Retention Areas (as they may apply)

Isolated specimen trees that are to be preserved will be examined to determine if stress reduction techniques are needed. Protective measures and their evaluation criteria are provided on this plan only if they are employed herein.

Root Pruning
Evaluation Criteria
Will the critical root zone be affected by construction activities such as grade changes, digging for foundations and roads or utility installation?

- Design Considerations**
- a) Prune prior to construction as shown on the plan (see Figure "Root Pruning Detail.")
 - b) Prune root with a clean cut using proper pruning equipment such as a vibratory knife.
 - c) Exact location of pruning trench should be identified, and immediately backfilled to cover exposed roots after pruning with soil removed other topsoil, peat moss, or other suitable material or with other high organic soil.
 - d) For trees over 15" in diameter, root pruning may be done up to one year in advance of construction.
 - e) Tree(s) will be monitored for signs of stress.

Crown Reduction or Pruning
Evaluation Criteria
Has the root system been significantly reduced (>30%) or are there dead, damaged, or diseased limbs?

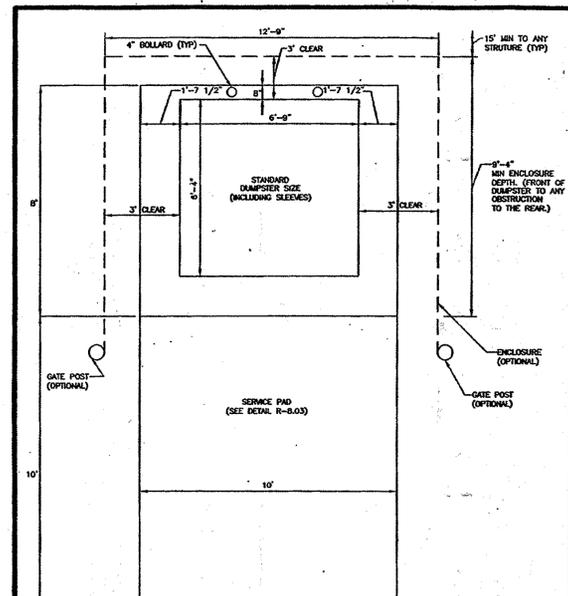
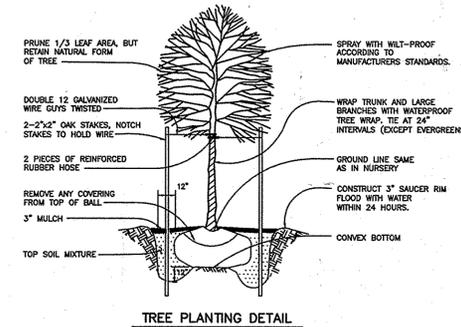
- Design Considerations**
- a) Reduce only at specified times of the year:
Flowering trees - only after flowering and before bud set
Non-flowering trees - in late winter, early spring or mid summer
 - b) No more than 1/3 of the crown should be removed at one time using acceptable pruning methods (see Figure "Crown Reduction Detail")
 - c) Monitor for signs of stress

Watering
Evaluation Criteria
Will construction activities alter the hydrology of the site? Has or will root pruning occur?

- Design Considerations**
- a) Water only as necessary
 - b) Monitor for signs of stress (see Figure "Tree Planting and Maintenance Calendar")

Fertilizing
Evaluation Criteria
Is or will be tree(s) be under stressful conditions? Has or will root pruning occur?

- Design Considerations**
- a) Use low nitrogen and slow release fertilizers.
 - b) Apply in late fall or early spring (see Figure "Tree Planting and Maintenance Calendar")
 - c) For small trees (<3" in diameter), use punch hole method or pressurized injection method (see Figure "Application of Fertilizers by Injection.")
 - d) For larger trees (>3" diameter), use punch hole method or pressurized injection method (see Figure "Application of Fertilizers by Injection.")
 - e) Do not apply fertilizer any closer than 3' from tree trunk for pressurized injection method.
 - f) Monitor for signs of stress.



- NOTES:**
1. ENCLOSURE GATES ARE NOT RECOMMENDED.
 2. IF ENCLOSURE GATES ARE INSTALLED, MINIMUM OPENING OF 12'-9" MUST BE MAINTAINED WHEN GATES ARE SECURED OPEN.
 3. A MINIMUM OF 15' CLEAR SPACE SHALL BE PROVIDED FROM THE ENCLOSURE TO ANY STRUCTURE.

Howard County, Maryland Department of Public Works	SOLID WASTE Single Container Enclosure	Detail R-8.04
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No As-Built information is required on this sheet

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. 21443, Expiration Date: 12-31-16

NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC.
ENGINEERS & LAND SURVEYORS & PLANNERS
8480 BALTIMORE NATIONAL PIKE & SUITE 315 & ELLICOTT CITY, MARYLAND 21043
(P) 410-485-8105 (F) 410-485-8844
WWW.BE-ENR.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. 22390, Expiration Date: 6-30-15.

ORCHARD PARK SECTION 3
3200 PINE ORCHARD LANE
ROMANIK PROPERTY, LOT 1 AND ORCHARD HILL, PARCEL B
ZONED: R-4-15
TAX MAP: 24 & 17, GRID: 1 & 19, PARCEL: 647 & P/O 130
ELECTION DISTRICT NO. 2
HOWARD COUNTY, MARYLAND

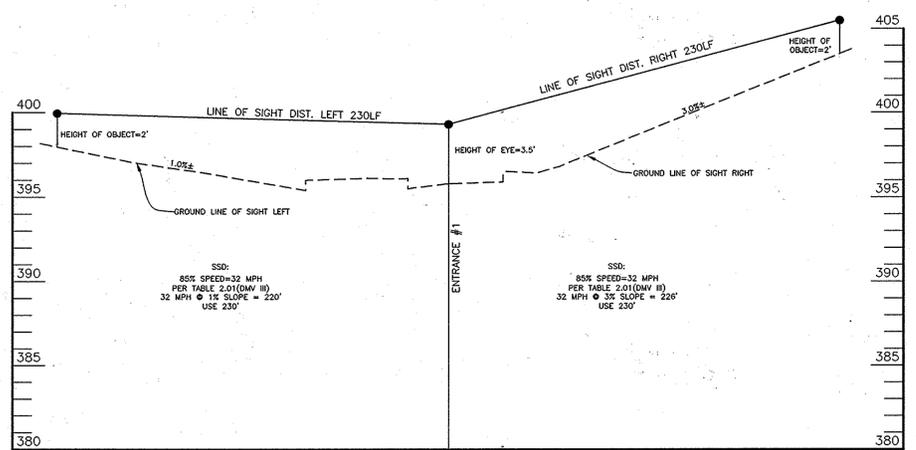
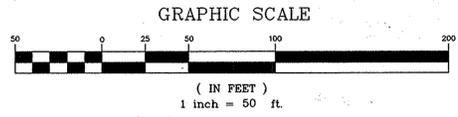
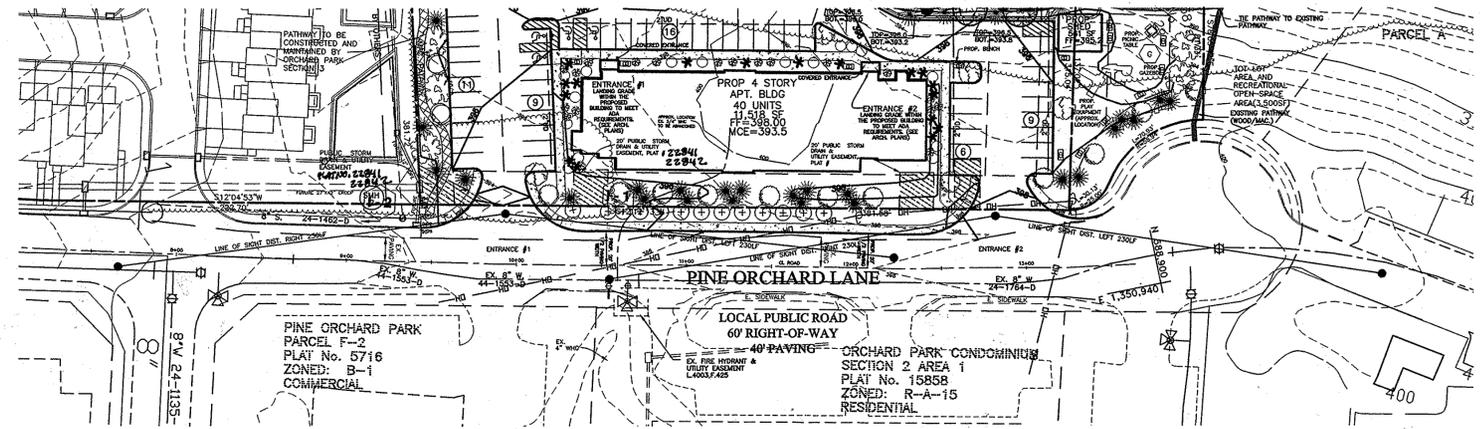
OWNER:
LAKESHORE I, LLC
C/O SECURITY DEVELOPMENT
8480 BALTIMORE NATIONAL PIKE
SUITE 415
ELLICOTT CITY, MD 21043

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

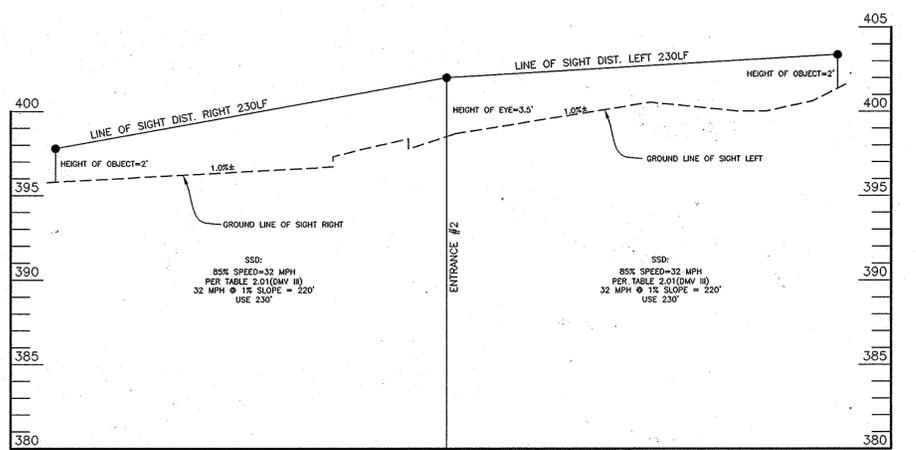
SITE DEVELOPMENT PLAN
FOREST CONSERVATION NOTES AND DETAILS

DATE: MAY 2014
SCALE: AS SHOWN

BEI PROJECT NO. 1796
SHEET 8 OF 10



SIGHT DISTANCE-ENTRANCE #1
SCALE: VERTICAL 1"=5'
HORIZONTAL 1"=50'



SIGHT DISTANCE-ENTRANCE #2
SCALE: VERTICAL 1"=5'
HORIZONTAL 1"=50'

NOTE:
EXISTING TOPOGRAPHY IS TAKEN FROM A FIELD RUN SURVEY WITH 2 FOOT CONTOUR INTERVALS PREPARED BY BENCHMARK ENGINEERING, INC. DATED DECEMBER 2012.

PER HOWARD COUNTY DESIGN MANUAL VOL.III;
STOPPING SIGHT DISTANCE IS MEASURED USING A HEIGHT OF EYE OF 3.5 FEET AND HEIGHT OF OBJECT OF 2.0 FEET. THE DISTANCE IS MEASURED FROM A POINT 10 FEET BACK FROM THE EDGE OF PAVING.

BASED ON 85TH PERCENTILE SPEED ON PINE ORCHARD LANE (MARS GROUP, DECEMBER 2012): 32MPH

CONCLUSION: SIGHT DISTANCE ADEQUATE BOTH ENTRANCES.

No As-Built information is required on this sheet



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. 21443, Expiration Date: 12-21-16

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Edmister 6-17-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Vicki Shalton 6-19-14
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Harold P. Levitt 6/19/14
DIRECTOR DATE

NO.	DATE	REVISION
 ENGINEERS & LAND SURVEYORS & PLANNERS 8480 BALTIMORE NATIONAL PIKE & SUITE 315 & ELLICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6644 WWW.BEI-ENR.COM		
OWNER: LAKESHORE I, LLC C/O SECURITY DEVELOPMENT 8480 BALTIMORE NATIONAL PIKE SUITE 415 ELLICOTT CITY, MD 21043		ORCHARD PARK SECTION 3 3200 PINE ORCHARD LANE ROMANIK PROPERTY, LOT 1 AND ORCHARD HILL, PARCEL B TAX MAP: 24 & 17, GRID: 1 & 13, PARCEL: 647 & P/O 130 ZONED: R-A-15 ELECTION DISTRICT NO. 2 HOWARD COUNTY, MARYLAND
DEVELOPER: SECURITY DEVELOPMENT, LLC PO BOX 417 ELLICOTT CITY, MD 21041 410-465-4244		SITE DEVELOPMENT PLAN SIGHT DISTANCE EXHIBIT DATE: MAY 2014 BEI PROJECT NO. 1796 SCALE: AS SHOWN SHEET 9 OF 10

