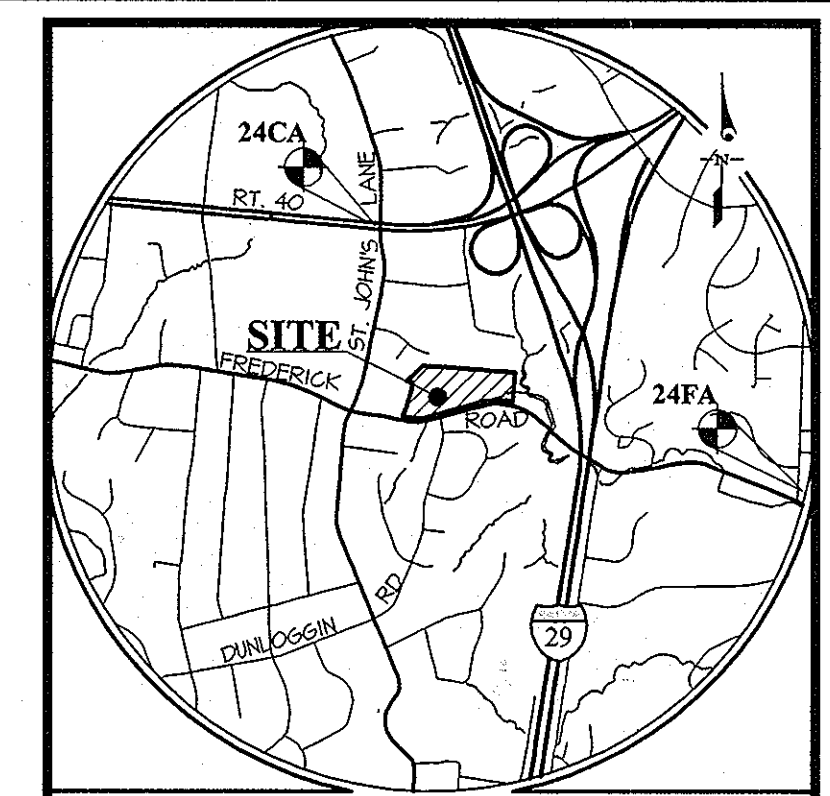


# PRELIMINARY EQUIVALENT SKETCH PLAN

## TIBER WOODS

Lots 1 - 35 & Open Space Lots 36 - 39



VICINITY MAP  
SCALE: 1" = 2,000'

**BENCHMARKS**

24CA	ELEV. 549.251	N = 586,506.22	E = 1361,634.27
24FA	ELEV. = 262.807	N = 583,751.44	E = 1366,041.83

ADC MAP: 20 GRID: F8

**SHEET INDEX**

- COVER SHEET
- PRELIMINARY EQUIVALENT SKETCH PLAN
- PRELIMINARY GRADING PLAN
- PRELIMINARY LANDSCAPE PLAN
- PRELIMINARY STORM DRAIN DRAINAGE AREA MAP
- PRELIMINARY ESD DRAINAGE AREA MAP
- PRELIMINARY EXISTING CONDITION DRAINAGE AREA MAP
- PRELIMINARY PROPOSED DRAINAGE AREA MAP
- FOREST CONSERVATION PLAN
- FOREST CONSERVATION PLAN NOTES & DETAILS
- PRELIMINARY SEDIMENT CONTROL PLAN
- PRELIMINARY STREAM RESTORATION PLAN

**LEGEND**

- 400 --- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING TREELINE
- EX 8.5% --- EXISTING SANITARY SEWER
- EX 8.5% --- PROPOSED SANITARY SEWER
- EX 8.5% --- EXISTING WATERLINE
- EX 8.5% --- PROPOSED WATERLINE
- PROPOSED FIRE HYDRANT
- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- M 202 --- STRUCTURE NUMBER
- LIMIT OF SITE
- CONCRETE SIDEWALK
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING EDGE OF PAVEMENT
- EXISTING EDGE AND GUTTER
- 100 YEAR FLOODPLAIN
- LIMIT OF WETLAND
- WETLAND AREA
- SBB --- EXISTING STREAM BANK BUFFER
- WB --- WETLAND BUFFER
- FOREST CONSERVATION EASEMENT
- RECREATIONAL OPEN SPACE
- STREAM BANK CENTERLINE OF STREAM
- STEEP SLOPES - 25% AND GREATER
- 15' NO-MOODY VEGETATION ZONE
- PROPOSED STREET LIGHT
- PROPOSED EASEMENTS
- 25' BRL --- PROPOSED BUILDING RESTRICTION LINE
- PROPOSED PAVING
- PROPOSED BUILDING RESTRICTION LINE
- PROPOSED BUILDING RESTRICTION LINE
- MINIMUM DRIVEWAY LENGTH (TO BACK OF PUBLIC SIDEWALK OR RIGHT OF WAY, WHICHEVER IS LESS)

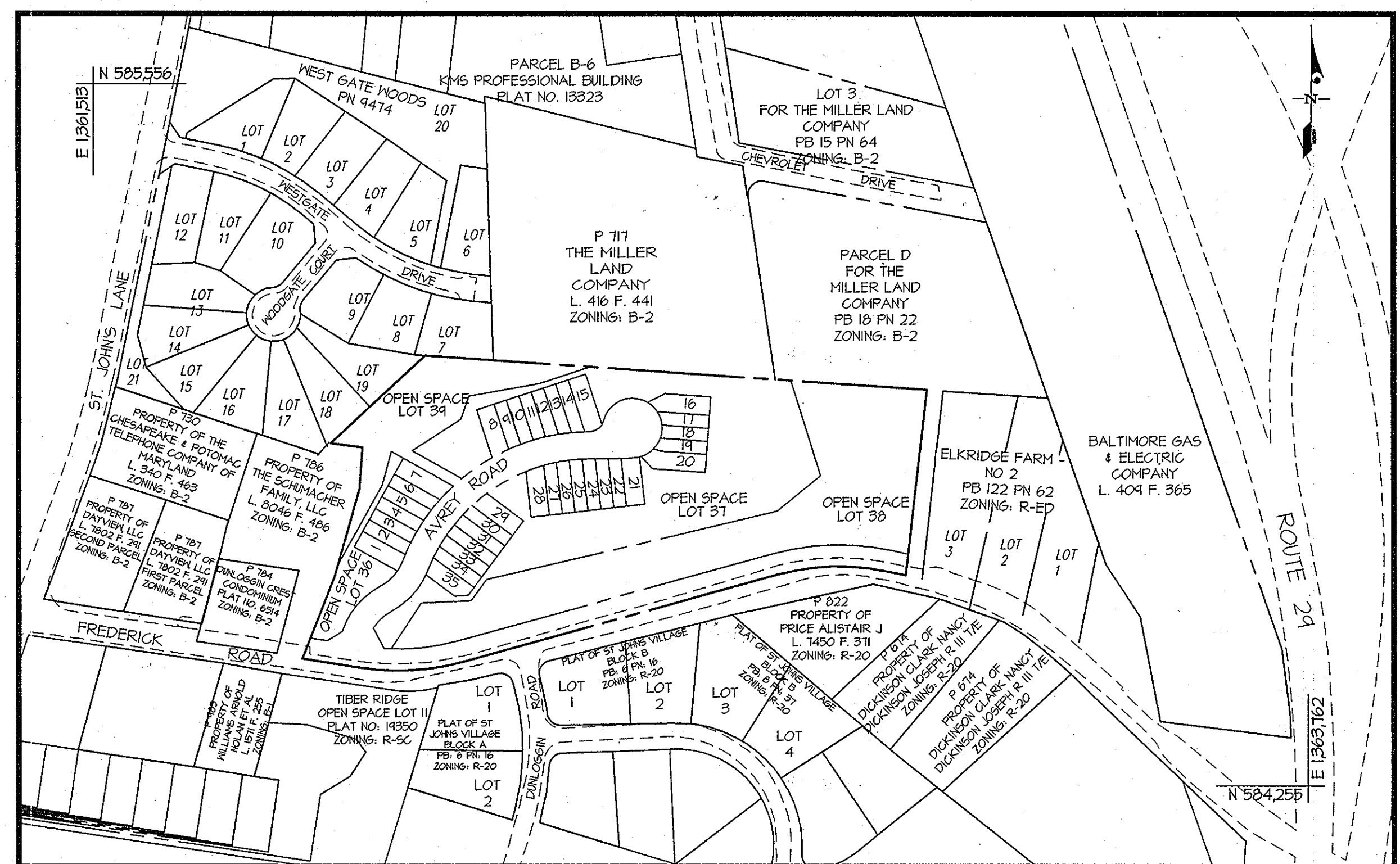
**SINGLE FAMILY ATTACHED PARKING ANALYSIS**

NUMBER OF SINGLE-FAMILY ATTACHED LOTS = 35  
 REQUIRED PARKING (@ 2 SPACES PER UNIT) = 70 SPACES  
 REQUIRED OVERFLOW PARKING (@ 0.3 SPACES PER UNIT) = 11 SPACES  
 TOTAL REQUIRED SPACES = 81 SPACES

PARKING PROVIDED:  
 4 SPACES/UNIT (2 GARAGE & 2 DRIVEWAY) = 140 SPACES  
 OVERFLOW PARKING (ON STREET) = 12 SPACES  
 TOTAL PROVIDED = 152 SPACES

**SETBACK REQUIREMENTS**

SETBACK TYPE	SETBACK SINGLE-FAMILY ATTACHED
FROM VICINAL PROPERTIES - FOR ALL STRUCTURES AND USES IN A SFA DEVELOPMENT PROJECTS	
1. FROM RC, RR, R-ED, R-20, OR R-12 DISTRICT OR A SFD AREA OF A PDCG, NT OR HD DISTRICT	75'
(a) DWELLINGS	50'
(b) DWELLINGS	50'
FRONT / SIDE ARTERIAL OR COLLECTOR PUBLIC STREET R/W	30'
FRONT/SIDE ON OTHER PUBLIC STREET R/W	20'
FACE TO FACE	30'
FACE TO SIDE / REAR TO SIDE	30'
SIDE TO SIDE	15'
REAR TO REAR	60'
REAR TO FACE	100'

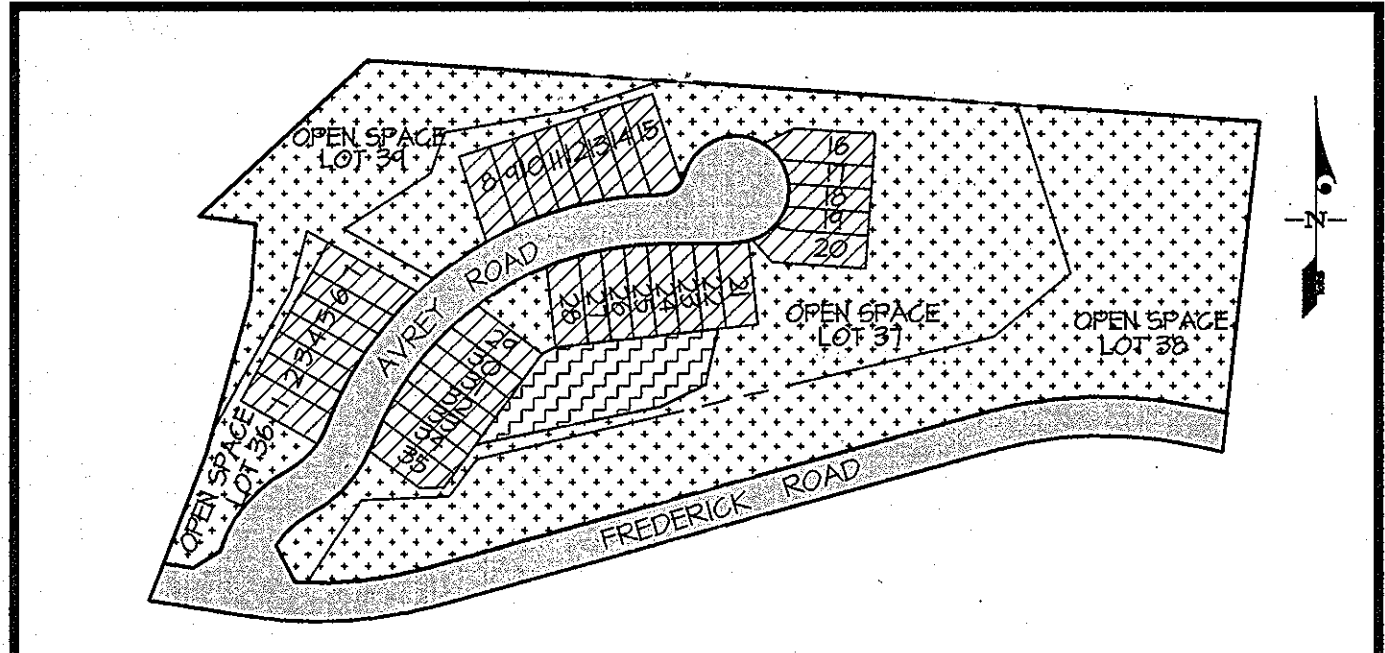


**LOCATION PLAN**

SCALE: 1"=200'

**BENCHMARKS**

24CA	ELEV. 549.251	N = 586,506.22	E = 1361,634.27
24FA	ELEV. = 262.807	N = 583,751.44	E = 1366,041.83



LEGEND	LAND USE DESCRIPTION	ACREAGE	(% OF TOTAL)
---	SINGLE FAMILY ATTACHED	2.01 AC.	10.3 %
---	RECREATIONAL OPEN SPACE	0.36 AC.	3.3 %
---	ROAD RIGHT-OF-WAY	2.03 AC.	10.5 %
---	GENERAL OPEN SPACE	6.58 AC.	59.9 %
	<b>TOTAL</b>	<b>10.98 AC.</b>	<b>100 %</b>

**OVERALL LAND USE**

SCALE: 1"=200'

- GENERAL NOTES**
- ZONING: THE SUBJECT PROPERTIES ARE ZONED R-SC PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN.
  - PREVIOUS DEPARTMENT OF PLANNING AND ZONING FILE NUMBERS: SDF-01-054(VOIDED), SDF-08-060 (VOIDED), F-08-022(VOIDED), F-08-101 (VOIDED), ECP-13-060, MP-14-056
  - SITE ANALYSIS:
    - TOTAL AREA OF SITE: 10.98 ACRES±
    - TOTAL AREA OF 100 YR. FLOODPLAIN: 1.54 ACRES±
    - AREA OF STEEP SLOPES (OUTSIDE OF FLOODPLAIN): 0.55 ACRES±
    - NET AREA: 0.84 ACRES±
    - AREA OF PROPOSED ROADWAY (PUBLIC): 2.03 ACRES±
    - NO. OF SINGLE FAMILY ATTACHED LOTS: 35
    - AREA OF SINGLE FAMILY ATTACHED LOTS: 2.01 ACRES±
    - TOTAL NUMBER OF LOTS: 35
    - NO. OF OPEN SPACE LOTS: 2
    - AREA OF OPEN SPACE: 6.54 ACRES±
  - TOTAL APPROXIMATE LIMIT OF PROP. SITE DISTURBANCE: 6.71 ACRES± (61% OF GROSS)
  - OPEN SPACE REQUIREMENTS:
    - OPEN SPACE REQUIRED: 25% OF GROSS AREA
    - OPEN SPACE PROVIDED: 2.75 ACRES±
    - RECREATIONAL OPEN SPACE PROVIDED: 0.36 ACRES±
    - RECREATIONAL OPEN SPACE REQUIRED: 400 SF PER SFA LOT
    - RECREATIONAL OPEN SPACE REQUIRED: 0.32 ACRES±
  - THIS PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN PROCESSED.
  - THE CENTERLINE INVENTORY MAP DOES NOT SHOW ANY CENTERLINES WITHIN THE PROJECT LIMITS.
  - THE SCENIC ROADS MAP DOES NOT INDICATE ANY SCENIC ROADS IN THE VICINITY.
  - THE HISTORIC SITES MAP DOES NOT SHOW ANY HISTORICAL SITES WITHIN THE PROJECT LIMITS.
  - THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY BENCHMARKS 24CA AND 24FA WERE USED FOR THIS PROJECT.
  - BOUNDARY INFORMATION IS FROM BOUNDARY SURVEYS BY GUTSCHICK, LITTLE AND WEBER, P.A., DATED MARCH, 2013
  - SOILS DATA WAS TAKEN FROM THE SOIL SURVEY OF HOWARD COUNTY, MARYLAND ISSUED MARCH, 2008.
  - EXISTING TOPOGRAPHY IS TAKEN FROM AERIAL TOPOGRAPHY PREPARED BY MCKENZIE-SINTEG DRUMS DECEMBER, 2012.
  - THE WETLANDS DELINEATION STUDY FOR THIS PROJECT WAS PREPARED BY KLEBASCO ENVIRONMENTAL, LLC., DATED DECEMBER 2, 2012 AND APPROVED ON JULY 17, 2013.
  - THE 100-YEAR FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY AB CONSULTANTS, INC DATED DECEMBER 2006, AND WAS APPROVED ON NOVEMBER 2007.
  - A NOISE STUDY WAS PREPARED BY STAINCO ENGINEERS DATED APRIL 24, 2013 AND WAS APPROVED ON DECEMBER 16, 2013.
  - A TRAFFIC STUDY WAS PREPARED BY TRAFFIC GROUP IN A REPORT DATED APRIL 1, 2013 AND WAS APPROVED ON JULY 11, 2013.
  - THE GEO-TECHNICAL REPORT WAS PROVIDED BY HILLIS CARRIES DATED MAY 10, 2013. THIS STUDY WILL BE APPROVED AS PART OF THE FINAL PLAN STAGE.
  - EXISTING UTILITIES WERE TAKEN FROM AVAILABLE HOWARD COUNTY RECORDS.
  - THE PROJECT IS WITHIN THE METROPOLITAN DISTRICT.
  - WATER AND SEWER ARE PUBLIC PER CONTRACT NO. 14-4801-D.
  - EXISTING CONTRACT NUMBERS:
    - WATER: 10-M
    - SEWER: 31-5
  - THE FOLLOWING STREAM BUFFERS HAVE BEEN PROVIDED:
    - PERENNIAL STREAM: 75' BUFFER
    - THE STREAM BUFFERS ARE MEASURED FROM THE STREAM BANKS AND NOT THE CENTERLINE.
  - FINAL LOCATION OF STREET TREES WILL BE DETERMINED AT FINAL PLAN STAGE. CONFLICTS BETWEEN THE STREET TREES AND OTHER DESIGN ELEMENTS WILL BE RESOLVED AT THAT TIME.
  - NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, OR PLACEMENT OF NEW STRUCTURES IS PERMITTED WITHIN LIMITS OF WETLANDS, STREAMS OR THEIR REQUIRED BUFFERS, AND 100 YEAR FLOODPLAIN AREAS, UNLESS PERMITTED UNDER AN APPROVED WAIVER PETITION OR DETERMINED TO BE ESSENTIAL OR NECESSARY BY DPZ.
  - OPEN SPACE LOT 37 WILL CONTAIN ACTIVE RECREATIONAL AREAS IN ACCORDANCE WITH SECTION 16.12(A)(4) OF THE SUBDIVISION REGULATIONS (5TH EDITION). THE TYPE OF FACILITIES PROVIDED ON THESE LOTS WILL BE DETERMINED AT THE FINAL PLAN STAGE.
  - THE FOREST CONSERVATION REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL WILL BE SATISFIED WITH AN OBLIGATION FOR 3.20 ACRES. THIS OBLIGATION WILL BE MET WITH A TOTAL MINIMUM OF 1.97 ACRES OF REFORESTATION AND 1.23 ACRES OF CREDITED RETENTION TO BE PROVIDED ON-SITE.
  - MINIMUM BUILDING SETBACK RESTRICTIONS FROM PUBLIC ROADS AND PROPERTY LINES WILL BE PROVIDED IN ACCORDANCE WITH THE ZONING REGULATIONS ADOPTED OCTOBER, 2013.
  - ALL BUFFERING AND OTHER LANDSCAPING REQUIREMENTS/FEATURES WILL BE PROVIDED AT THE SITE DEVELOPMENT PLAN STAGE AND/OR THE FINAL PLAN STAGE AND WILL BE PROVIDED IN ACCORDANCE WITH THE SUBDIVISION REGULATIONS (AMENDED 5TH EDITION).
  - A FREE-SUBDIVISION COMMUNITY MEETING WAS HELD FOR THIS PROJECT ON 11/05/2012 IN COMPLIANCE WITH SECTION 16.122 OF THE REGULATIONS.
  - THIS SITE IS IN THE TIBER RIVER WATERSHED AND 100 YEAR MANAGEMENT IS REQUIRED.
  - STORMWATER MANAGEMENT FOR THIS SITE WILL BE PROVIDED IN ACCORDANCE WITH CHAPTER 5 OF THE MDE STORMWATER DESIGN MANUAL. BASED ON TABLE E.3, THIS SITE HAS A TARGET PE OF 12". IN ORDER TO FULFILL THE STORMWATER MANAGEMENT REQUIREMENTS A COMBINATION OF ROOFTOP DISCONNECT (N-1), SHEET FLOW TO BUFFER (N-3), DRY WELLS (M-5), POROUS PAVEMENT (A-2), BIO-SHALES (M-8), AND MICRO-BIORETENTION (M-6) WILL BE USED. A SURFACE SAND FILTER (F-3) WILL BE USED TO PROVIDE ANY REMAINING ESD VOLUME NOT PROVIDED BY THE CHAPTER 5 DEVICES AND TO PROVIDE 100 YEAR MANAGEMENT FOR THE SITE.
  - DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
    - A) WIDTH - 12' SERVING MORE THAN ONE RESIDENCE
    - B) SURFACE - 6" OF COMPACTED CRUISER RUNBASE WITH TAR AND CHIP COATING (1 1/2" MIN)
    - C) GEOMETRY - MAX. 15% GRADE, MAX 10% GRADE CHANGE AND MIN. 45' TURNING RADIUS
    - D) STRUCTURE (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (825 LOADING)
    - E) DRAINAGE ELEMENTS - SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE
    - F) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE
  - PER ZONING SECTION 16.01.E, 10% OF THE TOTAL NUMBER OF UNITS MUST BE DEDICATED AS MHU'S. THE MHU LOTS WILL BE DETERMINED AT THE FINAL PLAN.
  - MP-14-056, A WAIVER REQUEST FROM SUBDIVISION SECTION 16.1205(G)(1), PROHIBITING REMOVAL OF A SPECIMEN TREE WAS APPROVED ON DECEMBER 16, 2013 UNDER THE FOLLOWING CONDITIONS:
    - WAIVER APPROVAL APPLIES ONLY TO REMOVAL OF SPECIMEN TREE No. 1 AS INDICATED BY THE WAIVER EXHIBIT
    - THE PETITIONER SHALL PROVIDE A 1:1 REPLACEMENT PLANTINGS ONSITE TO MITIGATE REMOVAL OF SPECIMEN TREE No. 1. THE REPLACEMENT PLANTINGS SHALL BE MADE PART OF THE LANDSCAPE PLAN AND SHALL CONSIST OF A SPECIES SIMILAR TO THE TREE REMOVED AND EQUAL OR GREATER, THEN THE SIZES AND SPECIFICATIONS FOUND FOR SUCH PLANTINGS IN THE HOWARD COUNTY LANDSCAPE MANUAL. THE PETITIONER SHALL INDICATE AND IDENTIFY THE REPLACEMENT PLANTINGS ON THE LANDSCAPE PLAN.

**SITE ANALYSIS CHART**

HO. CO. FILE NO.	GROSS ACREAGE	100 YR. FLOODPLAIN	STEEP SLOPE AREAS	NET ACREAGE	SFA ACREAGE (% OF GROSS AC.)	REQUIRED (% OF GROSS AC.)	PROVIDED (% OF GROSS AC.)	PUBLIC R/W (% OF GROSS AC.)	LIMIT OF DISTURBANCE AREAS (% OF GROSS AC.)
SP-13-013	10.98	1.54	0.55	8.84	2.01 (18.3%)	2.75	6.54	2.03 (18.5%)	6.7 (61%)

**UNIT DENSITY TABULATION**

HO. CO. FILE NO.	ZONING	SITE ACREAGE				REQUIRED (MAXIMUM No. OF UNITS)			PROVIDED No. OF UNITS		
		GROSS	100 YR. FP	STEEP SLOPES	NET	MAX. UNIT DENSITY ALLOWED	MAX. UNITS ALLOWED	SFD PROVIDED	SFA PROVIDED	TOTAL	
SP-13-013	R-SC	10.98	1.54	0.55	8.84	4 UNITS / NET ACRE	35	---	35	35	

**RECREATIONAL OPEN SPACE CHART**

Type	CRITERIA	REQUIRED	PROVIDED	WHERE PROVIDED
RECREATIONAL OPEN SPACE	400 SF PER SFA LOT X 35 LOTS	14,200 SF (0.32 AC.)	---	---
TOTAL	---	14,200 SF (0.32 AC.)	14,930 SF (0.34 AC.)	05 LOTS 37

**TENTATIVELY APPROVED**  
 DEPT. OF PLANNING AND ZONING OF  
 HOWARD COUNTY  
 PLANNING DIRECTOR DATE

OWNER P. 117  
 THE MILLER LAND CO  
 PO BOX 307  
 ELLICOTT CITY, MD 21104  
 PAUL MILLER  
 410-916-4998

OWNER P. 117  
 PROFESSIONAL SERVICES ASSOCIATES  
 870 RIVER ROAD  
 SYKESVILLE, MD 21784  
 J. VICTOR STRIN  
 410-442-5552

**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3009 NATIONAL DRIVE - SUITE 250 - BURTONTOWNE OFFICE PARK  
 BURTONTOWNE, MARYLAND 20866  
 TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DES. dds	DRN. dds	CHK.	DATE	REVISION	BY	APPR.

PREPARED FOR:  
 ROBERTS REAL ESTATE DEVELOPMENT, LLLP  
 2124 PRIEST BRIDGE DRIVE  
 SUITE ONE  
 CROFTON, MD 21114  
 BRIAN ROBERTS  
 240-461-9172

**PROFESSIONAL CERTIFICATION**  
 I HEREBY CERTIFY THAT THESE PLANS 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. 12974  
 EXPIRATION DATE: May 26, 2014

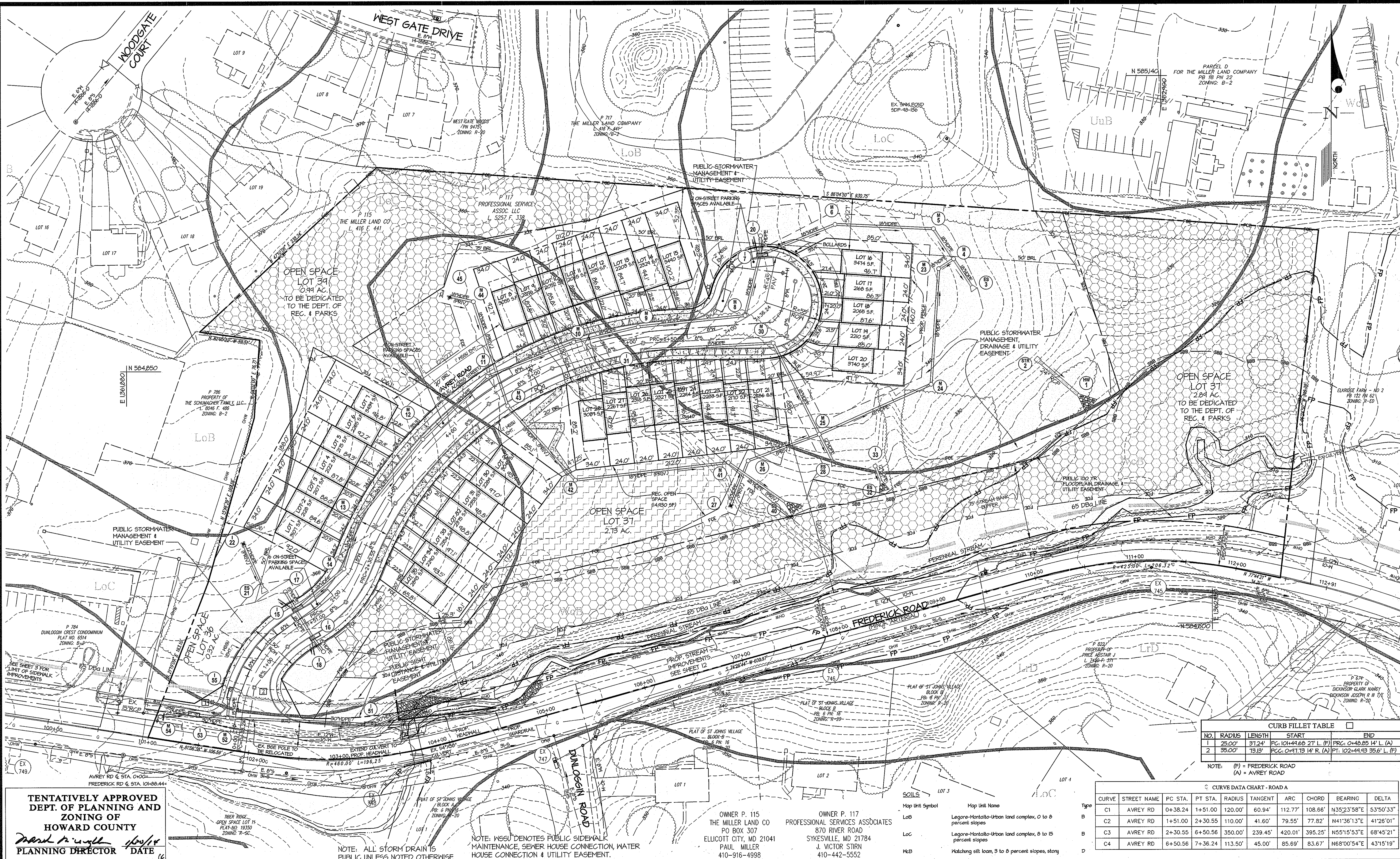
1-21-14

**COVER SHEET**

**TIBER WOODS**  
 LOTS 1-35 & OPEN SPACE LOTS 36-39  
 L. 416 F. 441 & L. 5237 F. 338  
 PARCEL 115 & 117

SCALE AS SHOWN  
 ZONING R-SC  
 G. L. W. FILE NO. 12039  
 DATE JAN, 2014  
 TAX MAP - GRID 24 - 11  
 SHEET 1 OF 12

ELECTION DISTRICT No. 2  
 HOWARD COUNTY, MARYLAND



**TENTATIVELY APPROVED  
DEPT. OF PLANNING AND  
ZONING OF  
HOWARD COUNTY**

*David A. Webb* 1/20/14  
**PLANNING DIRECTOR** DATE

NOTE: ALL STORM DRAIN IS PUBLIC UNLESS NOTED OTHERWISE

NOTE: WSSU DENOTES PUBLIC SIDEWALK MAINTENANCE, SEWER HOUSE CONNECTION, WATER HOUSE CONNECTION & UTILITY EASEMENT.

OWNER P. 115  
THE MILLER LAND CO  
PO BOX 307  
ELLCOTT CITY, MD 21041  
PAUL MILLER  
410-916-4998

OWNER P. 117  
PROFESSIONAL SERVICES ASSOCIATES  
870 RIVER ROAD  
SYKESVILLE, MD 21784  
J. VICTOR STIRN  
410-442-5552

**CURB FILLET TABLE**

NO.	RADIUS	LENGTH	START	END
1	25.00'	37.24'	PC: 101+44.60 27' L. (F)	PT: 0+46.25 14' L. (A)
2	35.00'	73.13'	PC: 0+47.13 14' R. (A)	PT: 102+44.43 35.6' L. (F)

NOTE: (F) = FREDERICK ROAD  
(A) = AVREY ROAD

**CURVE DATA CHART - ROAD A**

CURVE	STREET NAME	PC STA.	PT STA.	RADIUS	TANGENT	ARC	CHORD	BEARING	DELTA
C1	AVREY RD	0+38.24	1+51.00	120.00'	60.94'	112.77'	108.66'	N35°23'58"E	53°50'33"
C2	AVREY RD	1+51.00	2+30.55	110.00'	41.60'	79.55'	77.82'	N41°36'13"E	41°28'01"
C3	AVREY RD	2+30.55	6+50.56	350.00'	239.45'	420.01'	395.25'	N55°15'53"E	68°45'21"
C4	AVREY RD	6+50.56	7+36.24	113.50'	45.00'	85.69'	83.67'	N68°00'54"E	43°15'19"

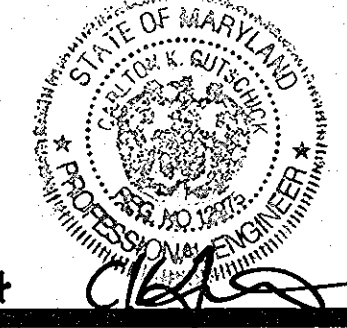
**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
3609 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
BURTONSVILLE, MARYLAND 20886  
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4188

DATE	REVISION	BY	APP'R.

PREPARED FOR:  
ROBERTS REAL ESTATE DEVELOPMENT, LLLP  
2124 PRIEST BRIDGE DRIVE  
SUITE ONE  
CROFTON, MD 21114  
BRIAN ROBERTS  
240-461-9172

PROFESSIONAL CERTIFICATION  
HEREBY CERTIFY THAT THESE PLANS 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. 12975  
EXPIRATION DATE: MAY 25, 2014

1-21-14



**PRELIMINARY PLAN**

**TIBER WOODS**  
LOTS 1-35 & OPEN SPACE LOTS 36-39  
L. 416 F. 441 & L. 5257 F. 338  
PARCEL 115 & 117

SCALE: 1"=40'  
ZONING: R-SC  
G. L. W. FILE NO.: 12039

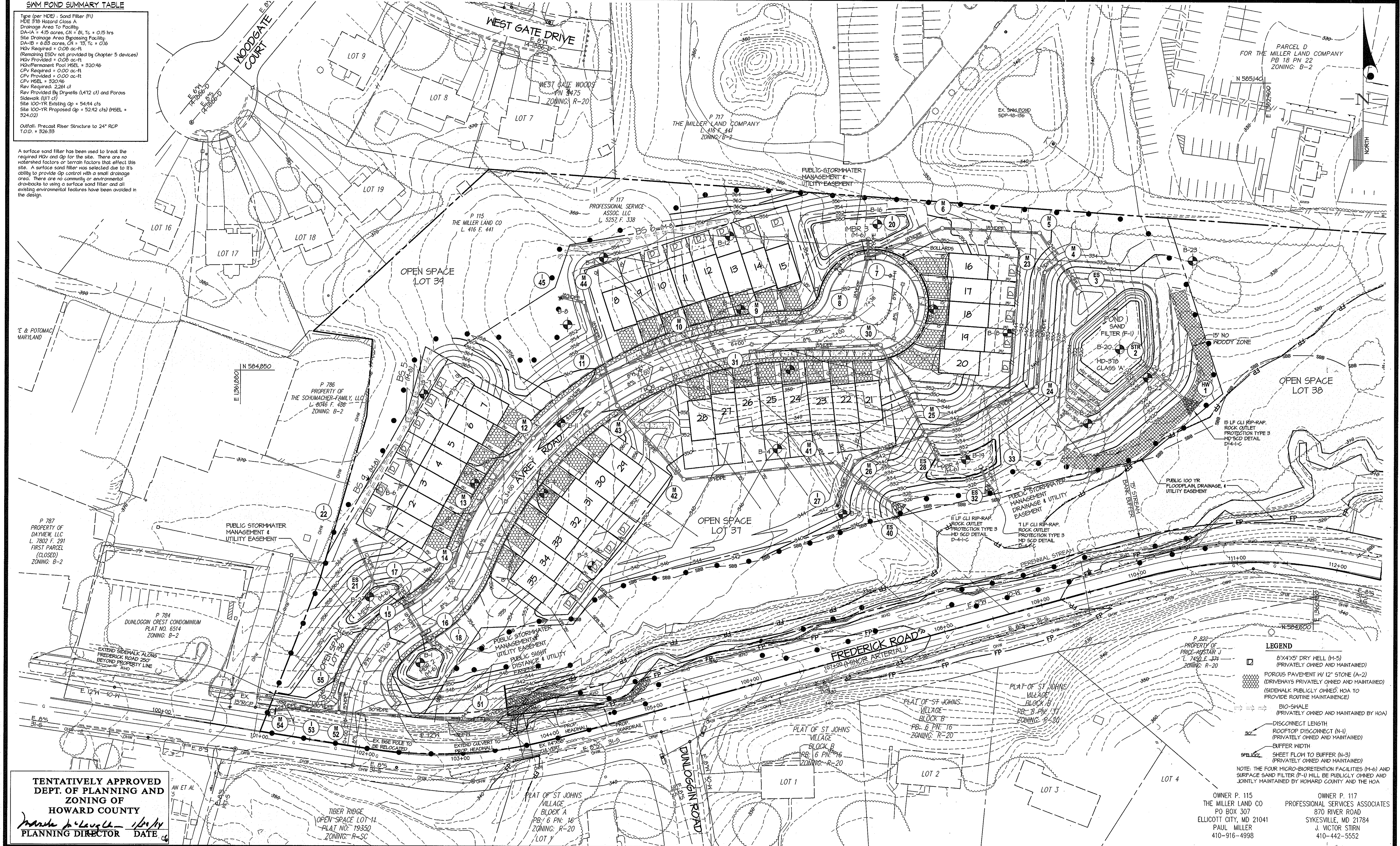
DATE: JAN., 2014  
TAX MAP - GRID: 24 - 11  
SHEET: 2 OF 12

ELECTION DISTRICT No. 2  
HOWARD COUNTY, MARYLAND

**SWM FOND SUMMARY TABLE**

Type (per MDE) - Sand Filter (F)  
 MDE 519 Hazard Class A  
 Drainage Area To Facility:  
 DA-1A = 4.15 acres, CN = 0.1, Tc = 0.15 hrs  
 Site Drainage Area Excessing Facility:  
 DA-1B = 6.63 acres, CN = 0.15, Tc = 0.16  
 NOV Required = 0.08 ac-ft  
 (Remaining ESDv not provided by Chapter 5 devices)  
 NOV Provided = 0.08 ac-ft  
 NOV/Permanent Pool (NSL) = 320.46  
 CPV Required = 0.00 ac-ft  
 CPV Provided = 0.00 ac-ft  
 CPV (NSL) = 320.16  
 Rev Required: 2.261 cf  
 Rev Provided By Drywells (472 cf) and Porous Sidewalk (117 cf)  
 Site 100-YR Existing Op = 54.44 cfs  
 Site 100-YR Proposed Op = 52.92 cfs (NSL = 324.02)  
 Outfall: Precast River Structure to 24" RCP  
 T.O.D. = 326.33

A surface sand filter has been used to treat the required NOV and Cp for the site. There are no watershed factors or terrain factors that effect this site. A surface sand filter was selected due to its ability to provide Cp control with a small drainage area. There are no community or environmental drawbacks to using a surface sand filter and all existing environmental features have been avoided in the design.



**TENTATIVELY APPROVED**  
 DEPT. OF PLANNING AND  
 ZONING OF  
 HOWARD COUNTY  
*Martha P. Leavelle* 1/21/14  
 PLANNING DIRECTOR DATE

**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3009 NATIONAL DRIVE - SUITE 250 - BIRTONSVILLE OFFICE PARK  
 BIRTONSVILLE, MARYLAND 20866  
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DATE	REVISION	BY	APPR.

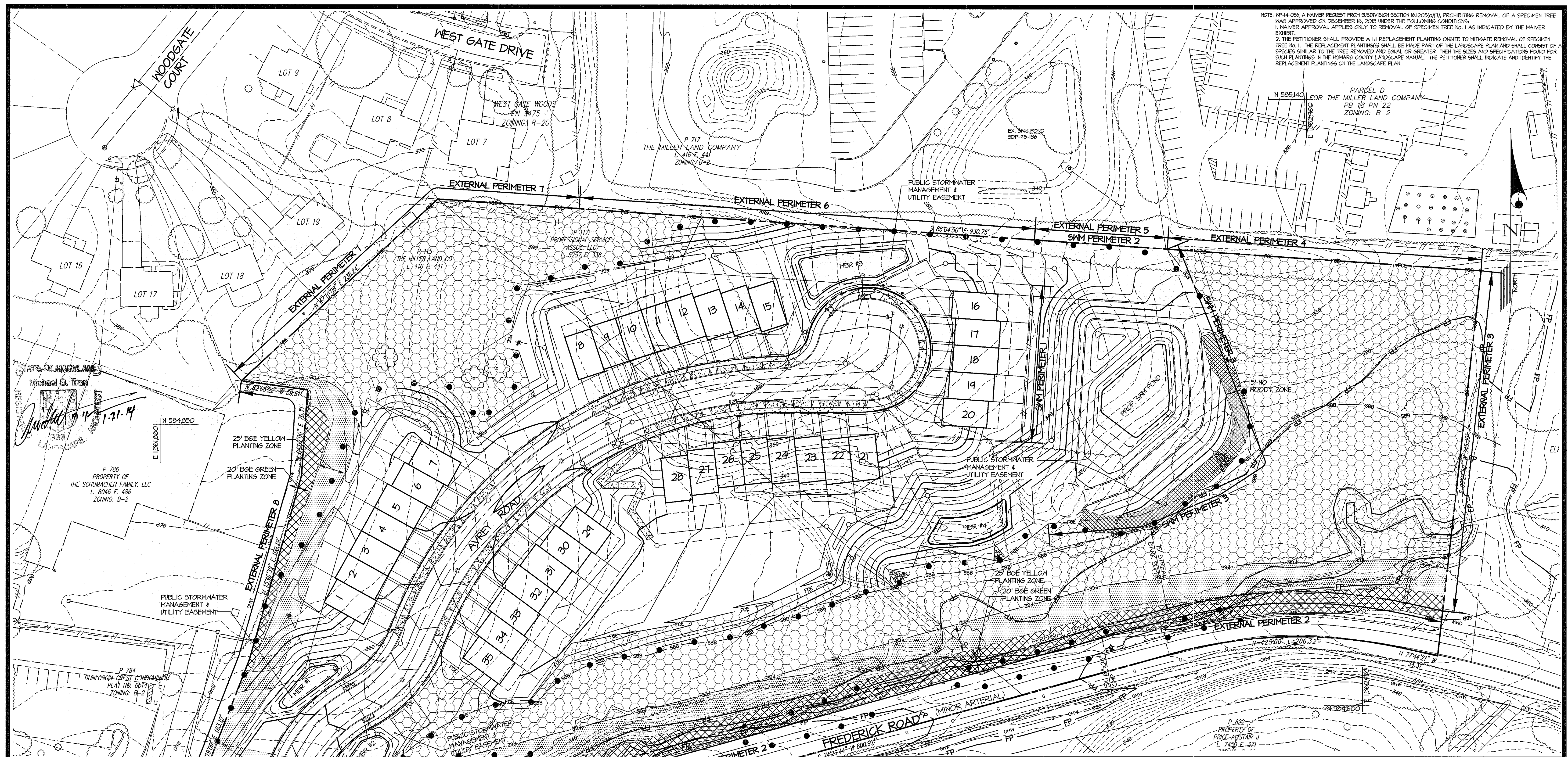
PREPARED FOR:  
 ROBERTS REAL ESTATE DEVELOPMENT, LLP  
 2124 PRIEST BRIDGE DRIVE  
 SUITE ONE  
 CROFTON, MD 21114  
 BRIAN ROBERTS  
 240-461-9172

PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE PLANS  
 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. 12875  
 EXPIRATION DATE: May 26, 2014  
 1-21-14

**PRELIMINARY GRADING PLAN**  
**TIBER WOODS**  
**LOTS 1-35 & OPEN SPACE LOTS 36-39**  
 L. 416 F. 441 & L. 5257 F. 338  
 PARCEL 115 & 117  
 PREPARED BY:  
 OWNER P. 115 THE MILLER LAND CO PO BOX 307 ELLICOTT CITY, MD 21041 PAUL MILLER 410-916-4998  
 OWNER P. 117 PROFESSIONAL SERVICES ASSOCIATES 870 RIVER ROAD SYKESVILLE, MD 21784 J. VICTOR STIRN 410-442-5552

SCALE	ZONING	G. L. W. FILE NO.
1"=40'	R-SC	12039
DATE	TAX MAP - GRID	SHEET
JAN., 2014	24 - 11	3 OF 12

NOTE: HP-14-056, A HAVER REQUEST FROM SUBDIVISION SECTION 16.1205(G)(1), PROHIBITING REMOVAL OF A SPECIMEN TREE WAS APPROVED ON DECEMBER 16, 2018 UNDER THE FOLLOWING CONDITIONS:  
 1. HAVER APPROVAL APPLIES ONLY TO REMOVAL OF SPECIMEN TREE NO. 1 AS INDICATED BY THE HAVER EXHIBIT.  
 2. THE PETITIONER SHALL PROVIDE A 1:1 REPLACEMENT PLANTING ON-SITE TO MITIGATE REMOVAL OF SPECIMEN TREE NO. 1. THE REPLACEMENT PLANTING(S) SHALL BE MADE PART OF THE LANDSCAPE PLAN AND SHALL CONSIST OF SPECIES SIMILAR TO THE TREE REMOVED AND EQUAL OR GREATER, THEN THE SIZE(S) AND SPECIFICATIONS FOUND FOR SUCH PLANTING(S) IN THE HOWARD COUNTY LANDSCAPE MANUAL. THE PETITIONER SHALL INDICATE AND IDENTIFY THE REPLACEMENT PLANTING(S) IN THE LANDSCAPE PLAN.



Michael E. Tress  
 1.21.14

P 786  
 PROPERTY OF THE SCHUMACHER FAMILY, LLC  
 L 8046 F. 486  
 ZONING: B-2

P 784  
 DUNLOUGH CREST CONDOMINIUM  
 PLAT NO. 6574  
 ZONING: B-2

OWNER P. 115  
 THE MILLER LAND CO  
 PO BOX 307  
 ELLICOTT CITY, MD 21041  
 PAUL MILLER  
 410-916-4998

OWNER P. 117  
 PROFESSIONAL SERVICES ASSOCIATES  
 870 RIVER ROAD  
 SYKESVILLE, MD 21784  
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**TENTATIVELY APPROVED**  
**DEPT. OF PLANNING AND ZONING OF**  
**HOWARD COUNTY**  
 Planning Director  
 DATE 1/20/14

THE BUFFERS SHOWN IN THE SCHEDULES ARE IN ACCORDANCE WITH THE LANDSCAPE MANUAL, CHAPTER IV, TABLE I:

EDGE TYPE	LANDSCAPE CHARACTER	SHADE TREES/LI	EVERGREENS/F	SHRUBS/LI
A	LIGHT BUFFER	1:60	0	0
B	MODERATE BUFFER	1:50	1:40	0
C	HEAVY BUFFER	1:40	1:20	0

NOTE: STREET TREES SHALL BE PROVIDED AT FINAL PLAN STAGE.

**RESIDENTIAL LOT INTERNAL LANDSCAPING - SCHEDULE C**

BUILDING TYPE	SHADE TREES	SHRUBS	NOTES
SINGLE FAMILY ATTACHED	1 SHADE TREE PER SFA LOT (LOTS 1-35)	NONE REQUIRED	DEFERRED TO SDP

**STORMWATER MANAGEMENT AREA - SCHEDULE D**

PERIMETER	LAND USE	ADJACENT LAND USE	TYPE OF BUFFER	LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) DESCRIBE BELOW IF NEEDED.	CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) DESCRIBE BELOW IF NEEDED.	NUMBER OF PLANTS REQUIRED	HOW REQUIRED BUFFER IS BEING PROVIDED
SM PERIMETER 1	SM FACILITY	RESIDENTIAL	'B' Buffer	140'	NO	NO	3	DEFERRED TO FINAL PLAN STAGE
SM PERIMETER 2	SM FACILITY	COMMERCIAL	'B' Buffer	118'	NO	NO	2	DEFERRED TO FINAL PLAN STAGE
SM PERIMETER 3	SM FACILITY	RES/COMMERCIAL	'C' Buffer	341'	NO	NO	10*	*PROVIDED BY EXTERNAL PERIMETER 2 & 3

**PERIMETER PLANTING - SCHEDULE A**

PERIMETER	LAND USE	ADJACENT LAND USE	TYPE OF BUFFER	LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) DESCRIBE BELOW IF NEEDED.	CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) DESCRIBE BELOW IF NEEDED.	NUMBER OF PLANTS REQUIRED	HOW REQUIRED BUFFER IS BEING PROVIDED
EXTERNAL PERIMETER 1	SFA SIDE/REAR	ROADWAY	'C' Buffer	56'	NO	NO	1	DEFERRED TO FINAL PLAN STAGE
EXTERNAL PERIMETER 2	SFA SIDE/REAR	ROADWAY	'C' Buffer	1024'	YES, 640' (EX FOREST)	NO	26	
EXTERNAL PERIMETER 3	SFA	RESIDENTIAL (SFD)	'C' Buffer	305'	NO	NO	8	
EXTERNAL PERIMETER 4	SFA	OTHER	'A' Buffer	280'	NO	NO	7	
EXTERNAL PERIMETER 5 **	SFA	OTHER	'A' Buffer	110'	NO	NO	0	
EXTERNAL PERIMETER 6	SFA	OTHER	'A' Buffer	406'	NO	NO	7	
EXTERNAL PERIMETER 7	SFA	RESIDENTIAL (SFD)	'C' Buffer	364'	YES, 364' (EX FOREST)	NO	9	
EXTERNAL PERIMETER 8	SFA	OTHER	'A' Buffer	427'	NO	NO	4	

**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
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 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20886  
 TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-589-2524 FAX: 301-421-4186

DATE	REVISION	BY	APP'R.

PREPARED FOR:  
 ROBERTS REAL ESTATE DEVELOPMENT, LLLP  
 2124 PRIEST BRIDGE DRIVE  
 SUITE ONE  
 CROFTON, MD 21114  
 BRIAN ROBERTS  
 240-461-9172

**PRELIMINARY LANDSCAPE PLAN**

**TIBER WOODS**  
 LOTS 1-35 & OPEN SPACE LOTS 36-39  
 L. 416 F. 441 & L. 5257 F. 333  
 PARCEL 115 & 117

SCALE	ZONING	G. L. W. FILE NO.
1"=40'	R-SC	12039
DATE	TAX MAP - GRID	SHEET
JAN, 2014	24 - 11	4 OF 12



**TENTATIVELY APPROVED**  
 DEPT. OF PLANNING AND  
 ZONING OF  
 HOWARD COUNTY  
*Mark A. Long*  
 PLANNING DIRECTOR DATE 1/20/14

OWNER P. 115  
 THE MILLER LAND CO  
 PO BOX 307  
 ELLICOTT CITY, MD 21041  
 PAUL MILLER  
 410-916-4998

OWNER P. 117  
 PROFESSIONAL SERVICES ASSOCIATES  
 870 RIVER ROAD  
 SYKESVILLE, MD 21784  
 J. VICTOR STIRN  
 410-442-5552

**'C' FACTOR COMPUTATIONS**

STRUCTURE	AREA (AC.)	'C'	IMPERVIOUS
I-7	0.91	0.67	70%
I-15	0.31	0.67	70%
I-16	0.30	0.67	70%
I-17	0.20	0.67	70%
I-18	0.09	0.67	70%
I-20	0.31	0.67	70%
I-22	0.19	0.67	70%
I-27	0.82	0.67	70%
I-31	0.22	0.67	70%
I-33	0.22	0.67	70%
I-45	3.64	0.34	20%
I-51	0.37	0.77	85%
I-53	2.10	0.77	85%
I-55	0.10	0.67	70%

**LEGEND**

--- STORM DRAIN DRAINAGE DIVIDE

□ 'B' TYPE SOILS

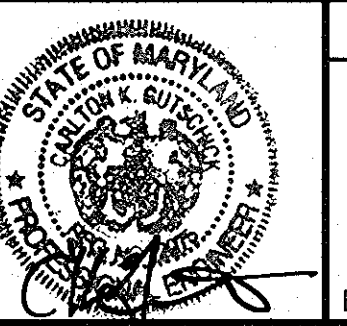
▨ 'D' TYPE SOILS

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
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DATE	REVISION	BY	APP'R.

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 2124 PRIEST BRIDGE DRIVE  
 SUITE ONE  
 CROFTON, MD 21114  
 BRIAN ROBERTS  
 240-461-9172

PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE PLANS  
 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. 12978  
 EXPIRATION DATE: MAY 26, 2014

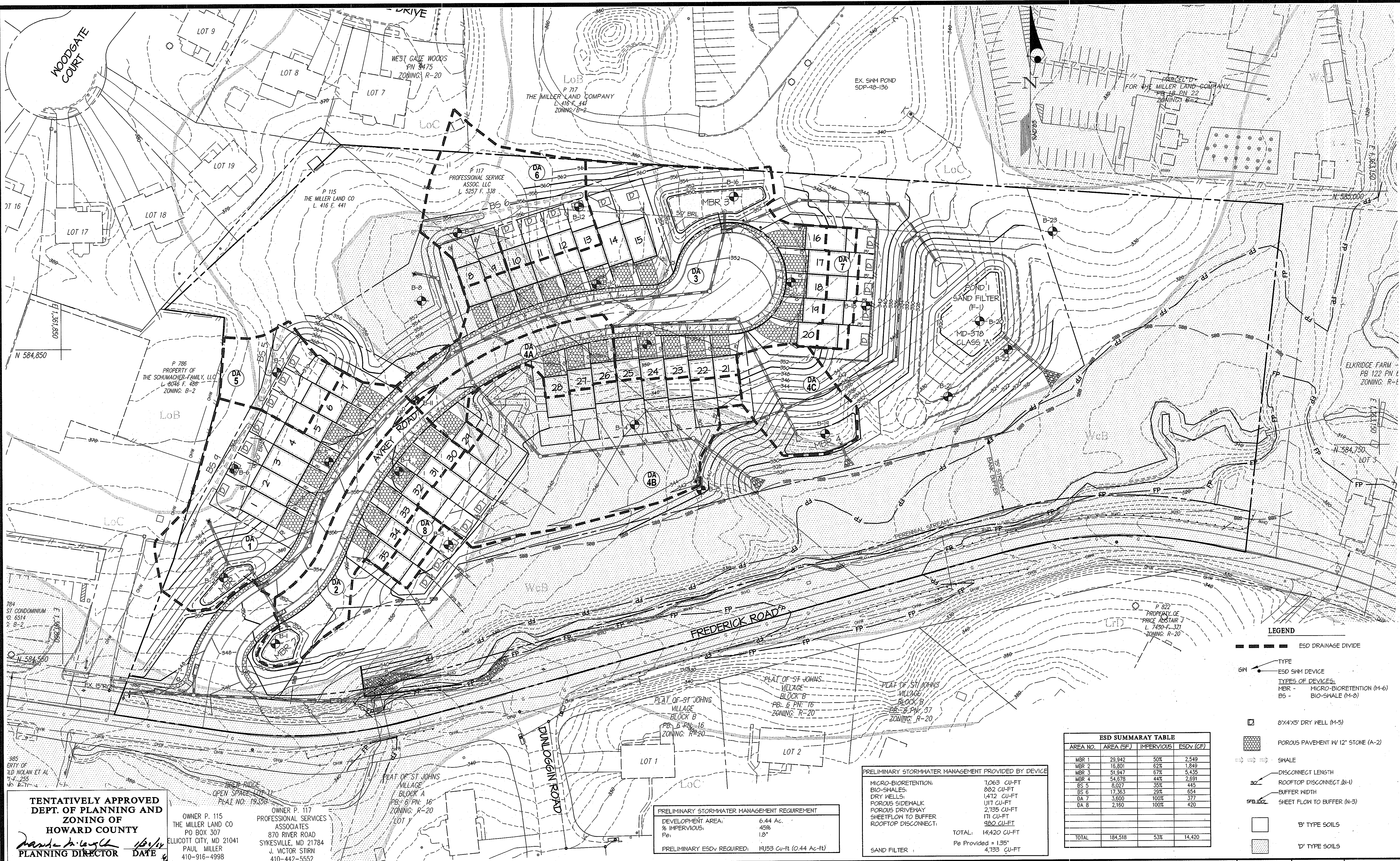


**STORM DRAIN DRAINAGE AREA MAP**

**TIBER WOODS**  
 LOTS 1-35 & OPEN SPACE LOTS 36-39  
 L. 416 F. 441 & L. 5257 F. 333  
 PARCEL 115 & 117

ELECTION DISTRICT No. 2

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-SC	12039
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JAN., 2014	24 - 11	5 OF 12



**LEGEND**

- ESD DRAINAGE DIVIDE
- GM TYPE
- ESD SWM DEVICE
- TYPES OF DEVICES:
  - MBR - MICRO-BIORETENTION (M-6)
  - BS - BIO-SHALE (M-8)
- 8'x4'x5' DRY WELL (M-5)
- ▨ POROUS PAVEMENT W/ 12" STONE (A-2)
- SWALE
- DISCONNECT LENGTH
- ROOFTOP DISCONNECT (N-1)
- BUFFER WIDTH
- SHEET FLOW TO BUFFER (N-3)
- B' TYPE SOILS
- ▨ D' TYPE SOILS

**ESD SUMMARY TABLE**

AREA NO.	AREA (SF)	IMPERVIOUS	ESDv (CF)
MBR 1	29,942	50%	2,549
MBR 2	16,801	62%	1,849
MBR 3	51,947	63%	5,435
MBR 4	54,578	44%	2,691
BS 5	8,027	35%	445
BS 6	17,363	29%	654
DA 7	3,600	100%	377
DA 8	2,160	100%	420
<b>TOTAL</b>	<b>184,518</b>	<b>53%</b>	<b>14,420</b>

**PRELIMINARY STORMWATER MANAGEMENT PROVIDED BY DEVICE**

MICRO-BIORETENTION: 7,063 CU-FT  
 BIO-SHALES: 882 CU-FT  
 DRY WELLS: 1,412 CU-FT  
 POROUS SIDEWALK: 1,117 CU-FT  
 POROUS DRIVEWAY: 2,155 CU-FT  
 SHEETFLOW TO BUFFER: 171 CU-FT  
 ROOFTOP DISCONNECT: 980 CU-FT

**TOTAL: 14,420 CU-FT**  
 Pe Provided = 135"  
 SAND FILTER: 4,733 CU-FT

**PRELIMINARY STORMWATER MANAGEMENT REQUIREMENT**

DEVELOPMENT AREA: 6.44 Ac.  
 % IMPERVIOUS: 45%  
 Pe: 1.8"  
**PRELIMINARY ESDv REQUIRED: 19,153 CU-FT (0.44 AC-Ft)**

**TENTATIVELY APPROVED**  
**DEPT. OF PLANNING AND ZONING OF HOWARD COUNTY**  
*Paul Miller*  
**PLANNING DIRECTOR**      **DATE** 10/14

OWNER P. 115 THE MILLER LAND CO PO BOX 307 ELLICOTT CITY, MD 21041 PAUL MILLER 410-916-4998

OWNER P. 117 PROFESSIONAL SERVICES ASSOCIATES 870 RIVER ROAD SYKESVILLE, MD 21784 J. VICTOR STIRN 410-442-5552

**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
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DATE	REVISION	BY	APPR.

PREPARED FOR:  
 ROBERTS REAL ESTATE DEVELOPMENT, LLP  
 2124 PRIEST BRIDGE DRIVE SUITE ONE CROFTON, MD 21114 BRIAN ROBERTS 240-461-9172

PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE PLANS 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. 12875 EXPIRATION DATE: MAY 26, 2014  
 1-21-14

**ESD DRAINAGE AREA MAP**

**TIBER WOODS**  
 LOTS 1-35 & OPEN SPACE LOTS 36-39  
 L. 416 F. 441 & L. 5257 F. 338  
 PARCELS 115 & 117

ELECTION DISTRICT No. 2

SCALE	ZONING	G. L. W. FILE No.
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HOWARD COUNTY, MARYLAND



**LEGEND**

- DRAINAGE DIVIDE
- B' TYPE SOILS
- D' TYPE SOILS
- TC PATH
- DRAINAGE AREA LABEL

**EXISTING DRAINAGE AREA SUMMARY**

	Q1 (cfs)	Q10 (cfs)	Q100 (cfs)
STUDY POINT 1	6.83	30.95	54.94

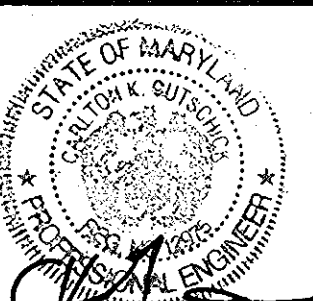
TENTATIVELY APPROVED  
DEPT. OF PLANNING AND  
ZONING OF  
HOWARD COUNTY  
*Mark A. Long* 1/20/14  
PLANNING DIRECTOR DATE

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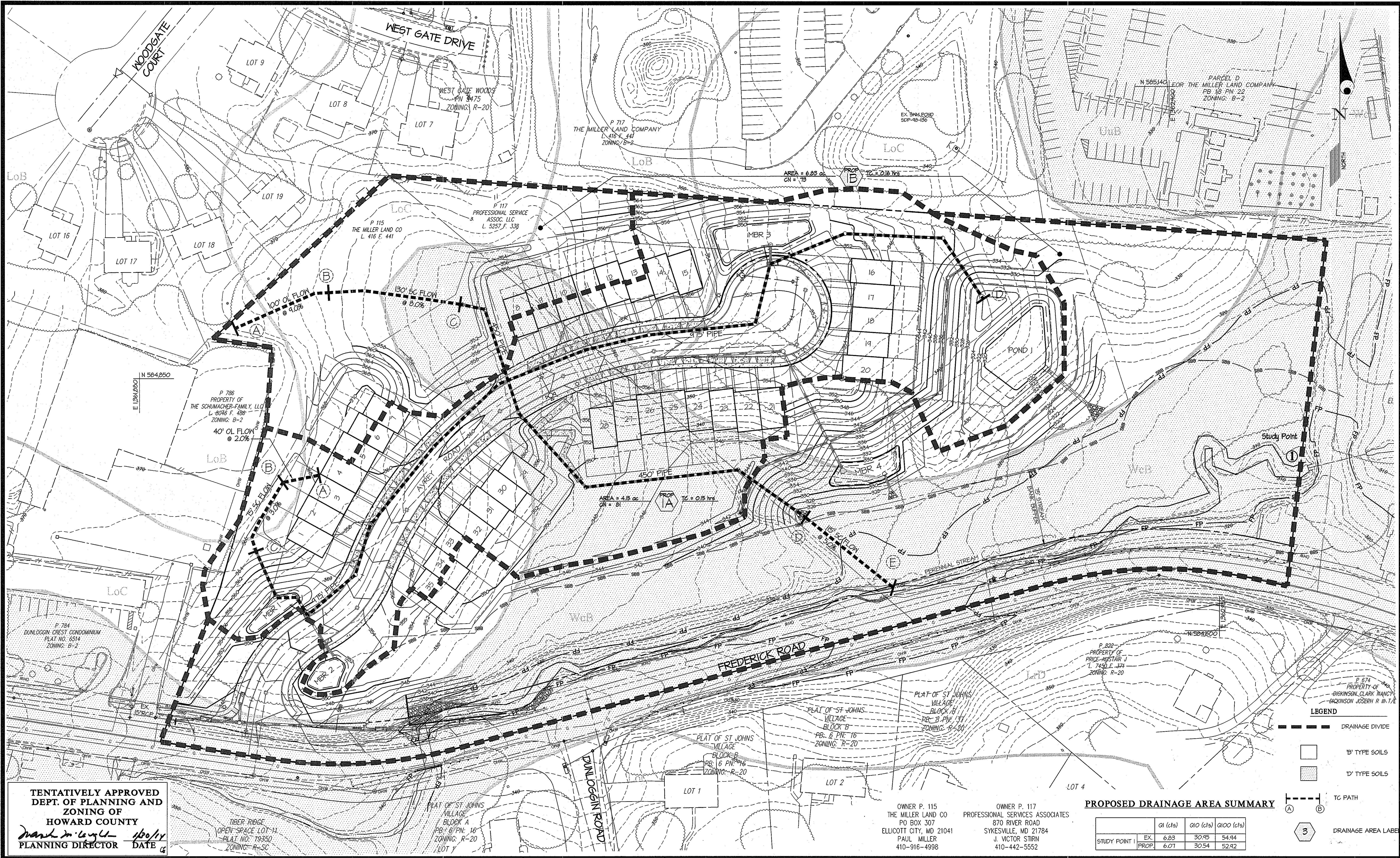
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LICENSE NO. 12975  
EXPIRATION DATE: May 26, 2014



ELECTION DISTRICT No. 2

**EXISTING DRAINAGE AREA MAP**  
**TIBER WOODS**  
**LOTS 1-35 & OPEN SPACE LOTS 36-39**  
L. 416 F. 441 & L. 5257 F. 338  
PARCEL 115 & 117  
HOWARD COUNTY, MARYLAND

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JAN, 2014	24 - 11	7 OF 12



TENTATIVELY APPROVED  
DEPT. OF PLANNING AND  
ZONING OF  
HOWARD COUNTY  
*Mark M. Leavelle* 1/30/14  
PLANNING DIRECTOR DATE

**PROPOSED DRAINAGE AREA SUMMARY**

STUDY POINT I	Q (cfs)		
	EX	Q10	Q100
PROP.	6.07	30.54	52.92

**LEGEND**

- DRAINAGE DIVIDE
- B' TYPE SOILS
- D' TYPE SOILS
- TC PATH
- DRAINAGE AREA LABEL

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PROFESSIONAL ENGINEER UNDER THE  
LAWS OF THE STATE OF MARYLAND,  
LICENSE NO. 12974  
EXPIRATION DATE: MAY 26, 2014



**PROPOSED STORMWATER MANAGEMENT DRAINAGE AREA MAP**

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LOTS 1-35 & OPEN SPACE LOTS 36-39  
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PARCEL 115 & 117

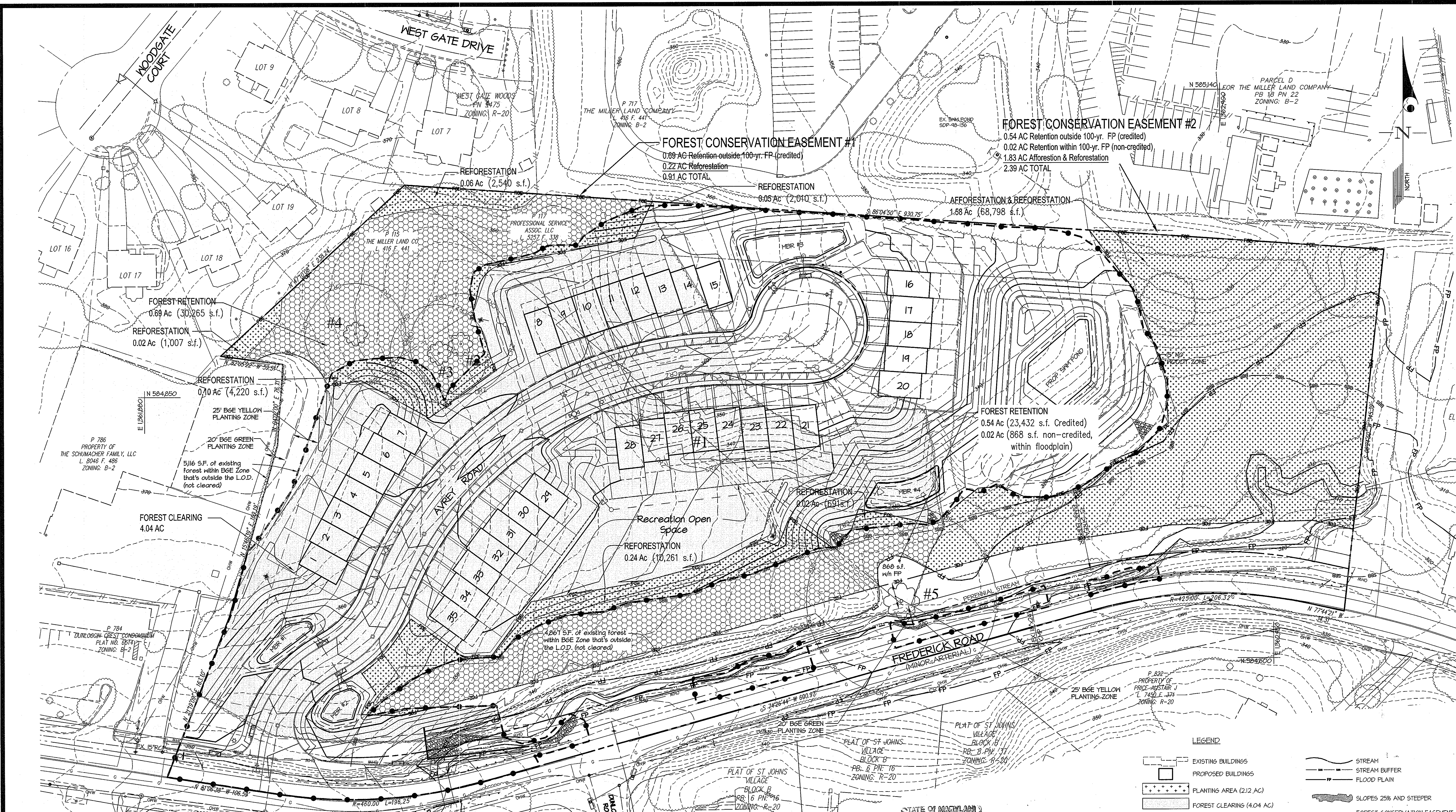
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**FOREST CONSERVATION EASEMENT #2**  
 0.54 AC Retention outside 100-yr. FP (credited)  
 0.02 AC Retention within 100-yr. FP (non-credited)  
 1.83 AC Afforestation & Reforestation  
 2.39 AC TOTAL

**FOREST CONSERVATION EASEMENT #1**  
 0.69 AC Retention outside 100-yr. FP (credited)  
 0.22 AC Reforestation  
 0.91 AC TOTAL

**FOREST RETENTION**  
 0.54 AC (23,432 s.f. Credited)  
 0.02 AC (868 s.f. non-credited, within floodplain)

**FOREST RETENTION**  
 0.69 AC (30,265 s.f.)  
**REFORESTATION**  
 0.02 AC (1,007 s.f.)

**REFORESTATION**  
 0.10 AC (4,220 s.f.)  
 25' BGE YELLOW PLANTING ZONE  
 20' BGE GREEN PLANTING ZONE

**FOREST CLEARING**  
 4.04 AC

**Recreation Open Space**  
**REFORESTATION**  
 0.24 AC (10,261 s.f.)

4,261 S.F. of existing forest within BGE Zone that's outside the L.O.D. (not cleared)

**LEGEND**

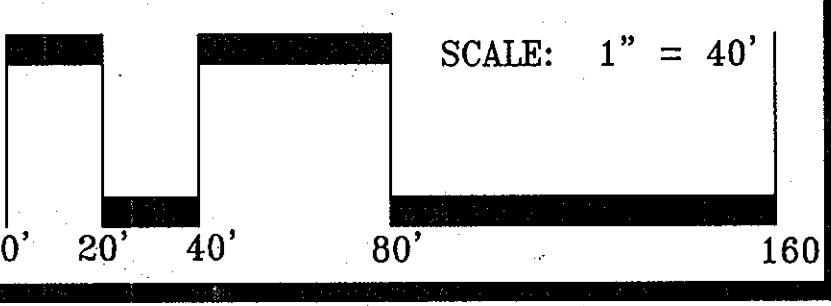
[Symbol]	EXISTING BUILDINGS	[Symbol]	STREAM
[Symbol]	PROPOSED BUILDINGS	[Symbol]	STREAM BUFFER
[Symbol]	PLANTING AREA (212 AC)	[Symbol]	FLOOD PLAIN
[Symbol]	FOREST CLEARING (4.04 AC)	[Symbol]	SLOPES 25% AND STEEPER
[Symbol]	FOREST RETENTION (1.23 AC)	[Symbol]	FOREST CONSERVATION EASEMENT
[Symbol]	EXISTING CONTOURS	[Symbol]	LIMITS OF DISTURBANCE
[Symbol]	PROPOSED CONTOURS	[Symbol]	FIELD SURVEYED TREE
[Symbol]	PROPOSED TREE LINES	[Symbol]	CRITICAL ROOT ZONE
[Symbol]	EXISTING TREE LINES		

**TENTATIVELY APPROVED**  
 DEPT. OF PLANNING AND ZONING OF  
 HOWARD COUNTY  
 Planning Director DATE 1/20/14

STATE OF MARYLAND  
 Michael C. Tran  
 REGISTERED LANDSCAPE ARCHITECT  
 6/21/14

**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
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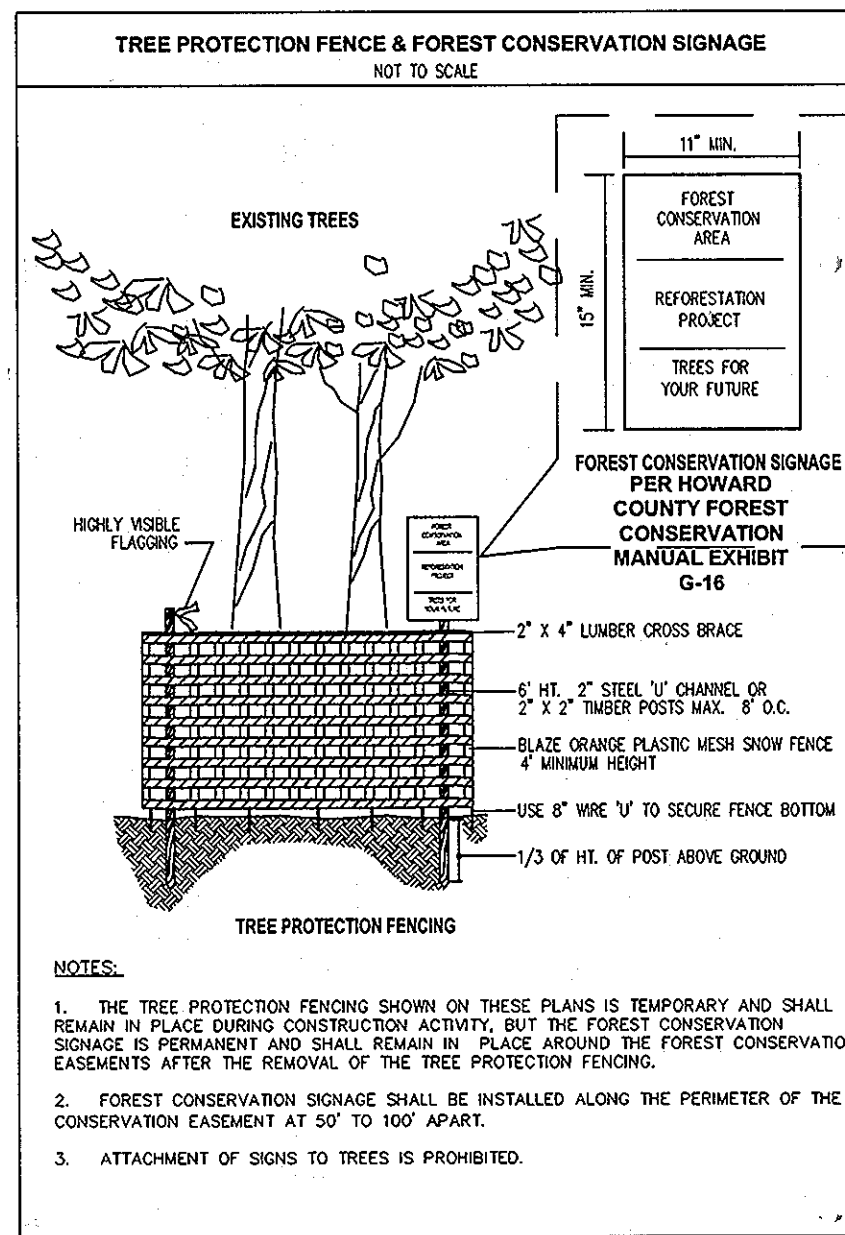


**PRELIMINARY FOREST CONSERVATION PLAN**  
**TIBER WOODS**  
 LOTS 1-35 & OPEN SPACE LOTS 36-39  
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**FOREST CONSERVATION WORKSHEET**

Project Name: <b>Tiber Woods</b>		DPZ File No.: <b>SP-13-013</b>
<b>1 Site Data</b>		
A. Gross Site Area		10.9800
B. Area within 100-yr floodplain, if any		1.5900
C. Area of existing easement for major utility transmission lines, if any		0.0000
D. Area of external public road (frontage) dedication, if any		0.0000
E. Net Tract Area		9.3900
F. Land Use Category (for R-SC zone)	Residential-Suburban	
<b>2 Input Data</b>		
A. Net Tract Area		9.3900
B. Reforestation Threshold (percent of net tract = 20 %)		1.8780
C. Afforestation Threshold (percent of net tract = 15 %)		1.4085
D. Existing Forest on Net Tract Area		5.4980
E. Forest Clearing on Net Tract Area		4.0365
F. Forest Retention on Net Tract Area		1.4615
<b>3 Reforestation Calculations</b>		
A. Net tract forest clearing above reforestation threshold		3.6200
B. Net tract forest clearing below reforestation threshold		0.4165
C. Planting up to afforestation threshold		0.0000
D. Reforestation planting required for clearing above threshold		0.9050
E. Reforestation planting required for clearing below threshold		0.8330
F. Total reforestation planting required (3C+3D+3E)		1.7380
<b>4 Forest Conservation Required</b>		
A. Forest Retention Area (2F)		1.4615
B. Forest Planting Area (3F)		1.7380
C. Total minimum FCE required for retention and reforestation		3.1994



TASKS		MONTHS											
		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
TRANSPLANT OF 2" DBH OR GREATER													
PLANTING SEEDLINGS, MAPS													
MINIMUM MONITORING:													
FERTILIZER + (IF NEEDED)													
WATER ++													
PRUNING													

KEY:

- \* ACTIVITIES DURING THESE MONTHS ARE DEPENDENT UPON GROUND CONDITIONS
- █ GREATLY RECOMMENDED
- ▨ RECOMMENDED WITH ADDITIONAL CARE
- ▩ RECOMMENDED
- + DEPENDENT UPON SITE CONDITIONS
- ++ DEPENDENT UPON SITE CONDITIONS; WEEKLY WATERING IS GREATLY RECOMMENDED FROM MAY THROUGH OCTOBER UNLESS WEEKLY RAINFALL EQUALS 1"

NOTE: THE PLANTING AND CARE OF TREES IS MOST SUCCESSFUL WHEN COORDINATED WITH THE LOCAL CLIMATIC CONDITIONS. THIS CALENDAR SUMMARIZES SOME OF THE RECOMMENDED THE PRACTICES FOR BASIC REFORESTATION AND STRESS REDUCTION ACTIVITIES.

SOURCE: ADAPTED FROM THE MARYLAND STATE FOREST CONSERVATION MANUAL.

**GENERAL NOTES**

- THIS REFORESTATION PLAN IS PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS OF SUBTITLE 12 "FOREST CONSERVATION" OF THE HOWARD COUNTY CODE.
- IMPLEMENTATION OF THIS PLAN MUST BE PERFORMED BY A CONTRACTOR THAT IS KNOWLEDGEABLE AND EXPERIENCED IN AFFORESTATION/REFORESTATION TECHNIQUES AND PRACTICES.
- THE OWNER IS RESPONSIBLE FOR A 2-YEAR (MIN.) POST-CONSTRUCTION MAINTENANCE PERIOD WHICH INVOLVES ACTIVITIES NECESSARY TO ENSURE SURVIVAL AND GROWTH OF THE CONSERVATION AREA. TWO INSPECTIONS PER YEAR BY A QUALIFIED PROFESSIONAL AT BEGINNING AND END OF THE GROWING SEASON, ARE RECOMMENDED IN ORDER TO TAKE REMEDIAL STEPS AS NECESSARY. IF, AFTER ONE YEAR, THE POSSIBILITY EXISTS THAT THE ORIGINAL PLANTING (IF APPLICABLE) WILL NOT MEET SURVIVAL RATE STANDARDS, THE APPLICANT MAY CHOOSE TO ESTABLISH REINFORCEMENT PLANTINGS.
- AT THE END OF THE POST-CONSTRUCTION MANAGEMENT AND PROTECTION PERIOD, CERTIFICATION BY A QUALIFIED CONSULTANT WILL BE REQUIRED BEFORE TO THE OWNER CAN BE RELEASED FROM HIS/HER FOREST CONSERVATION OBLIGATION TO THE ADMINISTRATOR OF THE HOWARD COUNTY FOREST CONSERVATION PROGRAM.
- THE DEVELOPER/BUILDER SHALL (IN WRITING) NOTIFY ALL HOME OWNERS IN THIS DEVELOPMENT OF THE EXISTENCE OF FOREST CONSERVATION AREAS AND THAT DISTURBANCE TO THE FOREST CONSERVATION AREAS OR THE REMOVAL OF FOREST CONSERVATION SIGNAGE IS PROHIBITED.
- REFORESTATION/AFFORESTATION TREE PLANTINGS SHOULD BE INSTALLED IN A CURVILINEAR PATTERN TO FACILITATE MAINTENANCE BUT AVOID A GRID APPEARANCE. EACH SPECIES OF TREE SHALL BE DISTRIBUTED EVENLY WITHIN EACH FOREST CONSERVATION EASEMENT AREA.
- THIS SITE IS LOCATED IN THE PATAPSCO WATERSHED DNR #02-13-04-06.

**CONSTRUCTION PERIOD PROTECTION PROGRAM**

- THE LIMIT OF FOREST RETENTION SHALL BE STAKED AND FLAGGED.
- A PRE-CONSTRUCTION MEETING AT THE SITE SHOULD BE HELD TO CONFIRM THE LIMITS OF CLEARING SPECIFIED. THE MEETING SHOULD INCLUDE THE OWNER OR THE OWNER'S REPRESENTATIVE, THE ON-SITE FOREMAN IN CHARGE OF LAND DISTURBANCE, THE ENVIRONMENTAL CONSULTANT AND THE APPROPRIATE HOWARD COUNTY INSPECTORS.
- FOREST PROTECTION DEVICES AND SIGNS (SEE DETAILS) SHALL BE INSTALLED PRIOR TO ANY CLEARING OR GRADING. THE PROTECTION DEVICES AND SIGNS SHALL BE MAINTAINED DURING THE ENTIRE CONSTRUCTION PERIOD. NONE OF THE DEVICES SHALL BE ANCHORED OR ATTACHED IN ANY WAY TO THE TREES TO BE SAVED.
- EQUIPMENT, VEHICLES AND BUILDING MATERIALS SHALL NOT BE WITHIN THE PROTECTED AREA. ACTIVITIES STRICTLY TO IMPLEMENT ANY REFORESTATION PLANTING AND MAINTENANCE (I.E. WATERING, FERTILIZING THINNING, PRUNING, REMOVAL OF DEAD AND DISEASED TREES WHERE NECESSARY, ETC.) OF THE CONSERVATION AREA ARE PERMITTED. CLEARING FOR THE PURPOSE OF SODDING OR PLANTING GRASS IS NOT PERMITTED WITHIN THE FOREST CONSERVATION AREAS ONCE THEY'RE ESTABLISHED.
- AT THE END OF THE CONSTRUCTION PERIOD, THE DESIGNATED QUALIFIED PROFESSIONAL SHALL CONVEY TO THE ADMINISTRATOR OF THE HOWARD COUNTY FOREST CONSERVATION PROGRAM CERTIFICATION THAT ALL FOREST RETENTION AREAS HAVE BEEN PRESERVED, ALL REFORESTATION AND/OR AFFORESTATION PLANTINGS (IF APPLICABLE) HAVE BEEN INSTALLED AS REQUIRED BY THE FOREST CONSERVATION PLAN, AND THAT ALL PROTECTION MEASURES REQUIRED FOR THE POST-CONSTRUCTION PERIOD HAVE BEEN INSTALLED. UPON REVIEW OF THE FINAL CERTIFICATION DOCUMENT FOR COMPLETENESS AND ACCURACY, THE PROGRAM COORDINATOR WILL NOTIFY THE OWNER OF RELEASE FROM THE CONSTRUCTION PERIOD OBLIGATIONS. THE 2-YEAR (MIN.) POST-CONSTRUCTION MANAGEMENT AND PROTECTION PERIOD THEN COMMENCES.

**FOREST CONSERVATION EASEMENT AREA TABULATION**

Forest Conservation Easement No.	Acreage of Credited Forest Retention outside the 100-yr floodplain	Non-credited Forest Retention Acreage (inside the 100-yr floodplain)	Acreage of Reforestation Planting	Acreage of (FCE) Forest Conservation Easement
1	0.69	0.00	0.22	0.91
2	0.54	0.02	1.83	2.39
<b>TOTAL PROVIDED ON-SITE</b>	<b>1.23 *</b>	<b>0.02</b>	<b>2.05</b>	<b>3.30</b>
<b>TOTAL REQUIRED ON-SITE</b>	<b>1.46</b>	<b>----</b>	<b>1.74</b>	<b>3.20</b>
<b>Difference</b>	<b>-0.23</b>		<b>0.31</b>	<b>0.10</b>

\* NOT ALL RETENTION AREAS OUTSIDE THE 100-YR FLOODPLAIN ARE WITHIN A FOREST CONSERVATION EASEMENT. THERE ARE TWO RETENTION AREAS (4867 S.F. AND 5116 S.F.) THAT ARE ENCUMBERED BY A BGE "TREE ZONE". THESE TWO AREAS ARE SUBJECT TO BGE TRIMMING OPERATIONS TO PROTECT THEIR POWER LINES; THEREFORE, THESE TWO AREAS ARE NOT INCLUDED WITHIN THE FOREST CONSERVATION EASEMENTS. ADDITIONAL CREDITED FOREST CONSERVATION PLANTING OF AT LEAST 9,983 S.F. (APPROX. 0.23 AC.) IS PROVIDED TO MITIGATE THIS SITUATION. THE REQUIRED MINIMUM FOREST CONSERVATION PLANTING IS 1.74 AC + 0.23 AC = 1.97 ACRES

**SIGNIFICANT / SPECIMEN TREE LIST**

TAG NO.	COMMON NAME	SCIENTIFIC NAME	DBH (IN.)	REMARKS / CONDITION	DISPOSITION
1	Black Walnut	Juglans nigra	32	Good	To Be Removed
2	Silver Maple	Acer saccharinum	32	Good	To Remain
3	Silver Maple	Acer saccharinum	31	Poor - vine cover, poor form	To Remain
4	Silver Maple	Acer saccharinum	32	Good	To Remain
5	Silver Maple	Acer saccharinum	60	Very Poor - crown dieback, broken limbs, multi-trunk heavy vine cover	To Remain

**FOREST CONSERVATION PROGRAM SEQUENCE**

- OBTAIN ALL NECESSARY PERMITS.
- STAKEOUT LIMITS OF DISTURBANCE.
- FIELD MEETING TO REVIEW AND VERIFY LIMIT OF DISTURBANCE FOR THE SITE GRADING AND CONSTRUCTION.
- INSTALL FOREST CONSERVATION SIGNS AND FOREST PROTECTION DEVICES (FENCES) ALONG THE PORTION OF THE LIMIT OF DISTURBANCE (THAT INVOLVES CLEARING AND/OR RETENTION OF TREES).
- COMMENCE SITE CONSTRUCTION.
- PREPARE SITE SOIL BY MULCHING AND REMOVAL OF TRASH AND WEEDS INCLUDING AN APPLICATION OF HERBICIDES TO CONTROL NOXIOUS WEEDS AND INVASIVE SPECIES.
- INSTALL FOREST CONSERVATION SIGNS AND FOREST CONSERVATION EASEMENT. MOVE CONSERVATION SIGNS INSTALLED IN #4 (ABOVE) TO THE EDGE OF THE CONSERVATION EASEMENT.
- INSPECTION AND CERTIFICATION FOR THE RELEASE OF THE CONSTRUCTION PERIOD OBLIGATIONS; START OF POST-CONSTRUCTION MANAGEMENT PERIOD.
- POST-CONSTRUCTION MANAGEMENT FOR A PERIOD OF 2 YEARS (MIN).
- FINAL INSPECTION AND CERTIFICATION FOR THE RELEASE OF THE OWNER'S FOREST CONSERVATION SURETY.

THE REQUIRED FOREST CONSERVATION SURETY IS:  
 (1.97 AC X 43,560 SF/AC) X 0.50/SF = \$42,407.00 (rounded)

STATE OF MARYLAND  
 Michael D. Tran

*Michael D. Tran*  
 933 LANDSCAPE ARCHITECT  
 1-21-14

**TENTATIVELY APPROVED**  
 DEPT. OF PLANNING AND ZONING OF  
 HOWARD COUNTY

*Janet DeLough* 1/20/14  
 PLANNING DIRECTOR DATE

**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20886  
 TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4188

L:\CAD\DRAWINGS\PLANS BY GLW\Preliminary\12039-P102.dwg DES. JRS DRN. JRS CHK. MBT

DATE	REVISION	BY	APPR.

PREPARED FOR:  
 ROBERTS REAL ESTATE DEVELOPMENT, LLLP  
 2124 PRIEST BRIDGE DRIVE  
 SUITE ONE  
 CROFTON, MD 21114  
 BRIAN ROBERTS  
 240-461-9172

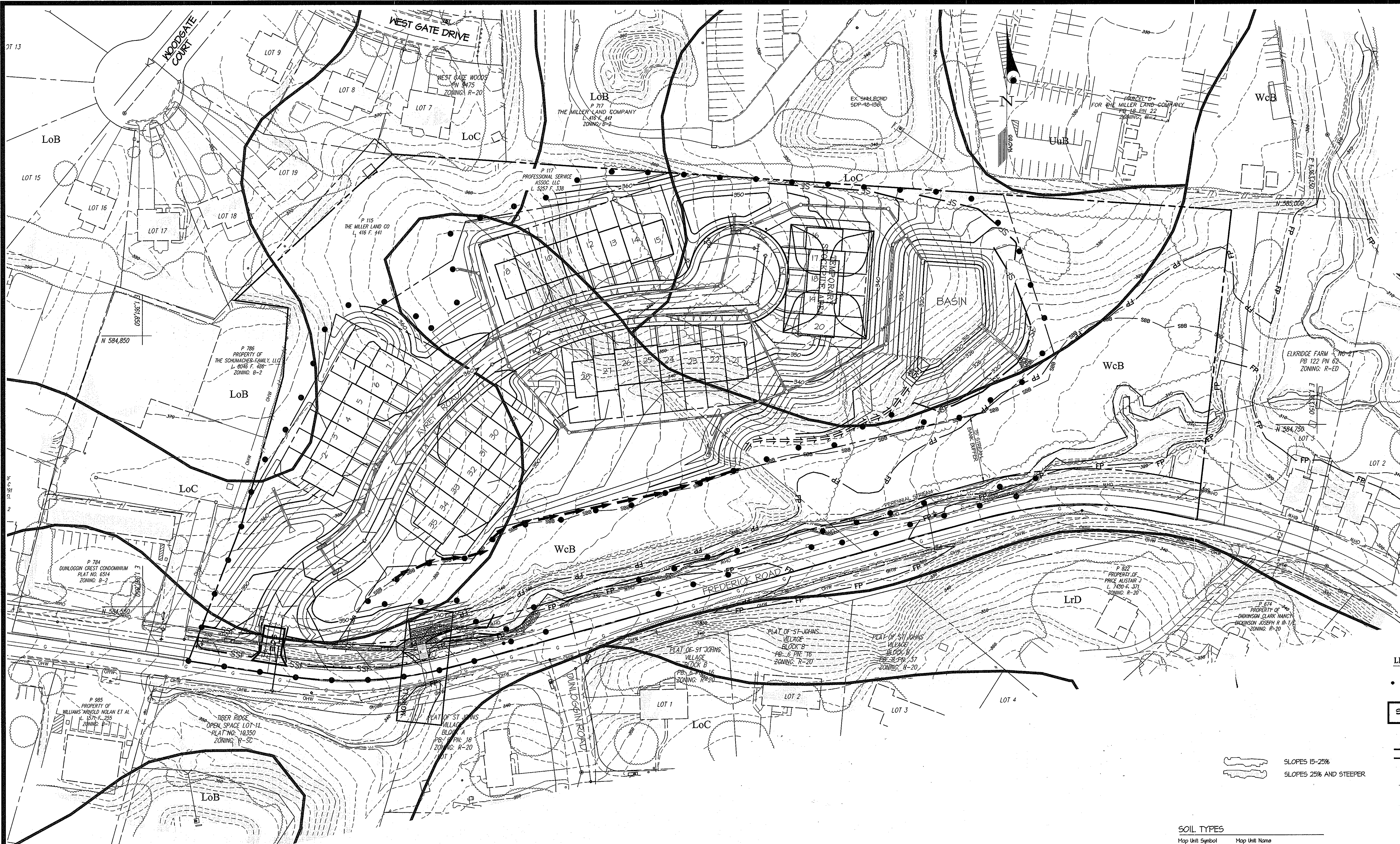
**PRELIMINARY FOREST CONSERVATION PLAN**

**TIBER WOODS**  
 LOTS 1-35 & OPEN SPACE LOTS 36-39  
 L. 416 F. 441 & L. 5257 P. 338  
 PARCEL 115 & 117

SCALE	ZONING	G. L. W. FILE No.
NTS	R-SC	12039
DATE	TAX MAP - GRID	SHEET
JAN., 2014	24 - 11	10 OF 12

ELECTION DISTRICT No. 2

HOWARD COUNTY, MARYLAND



- LEGEND**
- ..... LIMIT OF DISTURBANCE
  - STABILIZED CONSTRUCTION ENTRANCE
  - PROPOSED SUPER SILT FENCE
  - PROPOSED SILT FENCE
  - EARTH DIKE
  - TEMPORARY SWALE
  - GABION MATTRESS
  - PROPOSED TEMPORARY STOCKPILE AREA
  - EXISTING TREELINE
  - 100 YEAR FLOODPLAIN
  - PUMP AROUND PRACTICE PER MARYLAND'S GUIDELINES TO WATERWAY CONSTRUCTION DETAIL 1.2

**SOIL TYPES**

Map Unit Symbol	Map Unit Name
LoB	Lagore-Montalto-Urban land complex, 0 to 8 percent slopes
LoC	Lagore-Montalto-Urban land complex, 8 to 15 percent slopes
LrD	Lagore-Relay gravelly loams, 15 to 25 percent slopes, very stony
WcB	Urban land-urban complex, 0 to 8 percent slopes
WcB	Matching silt loam, 5 to 8 percent slopes, stony

**TENTATIVELY APPROVED**  
**DEPT. OF PLANNING AND ZONING OF**  
**HOWARD COUNTY**  
*Mark A. Wyle*  
**PLANNING DIRECTOR**      **DATE**

OWNER P. 115  
 THE MILLER LAND CO  
 PO BOX 307  
 ELLICOTT CITY, MD 21041  
 PAUL MILLER  
 410-916-4998

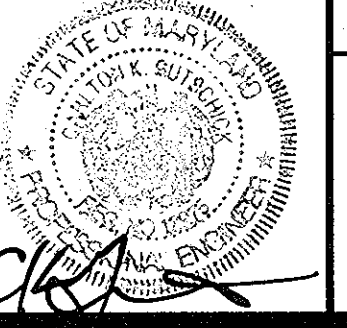
OWNER P. 117  
 PROFESSIONAL SERVICES ASSOCIATES  
 870 RIVER ROAD  
 SYKESVILLE, MD 21784  
 J. VICTOR STIRN  
 410-442-5552

**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3609 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APP'R.

PREPARED FOR:  
 ROBERTS REAL ESTATE DEVELOPMENT, LLLP  
 2124 PRIEST BRIDGE DRIVE  
 SUITE ONE  
 CROFTON, MD 21114  
 BRIAN ROBERTS  
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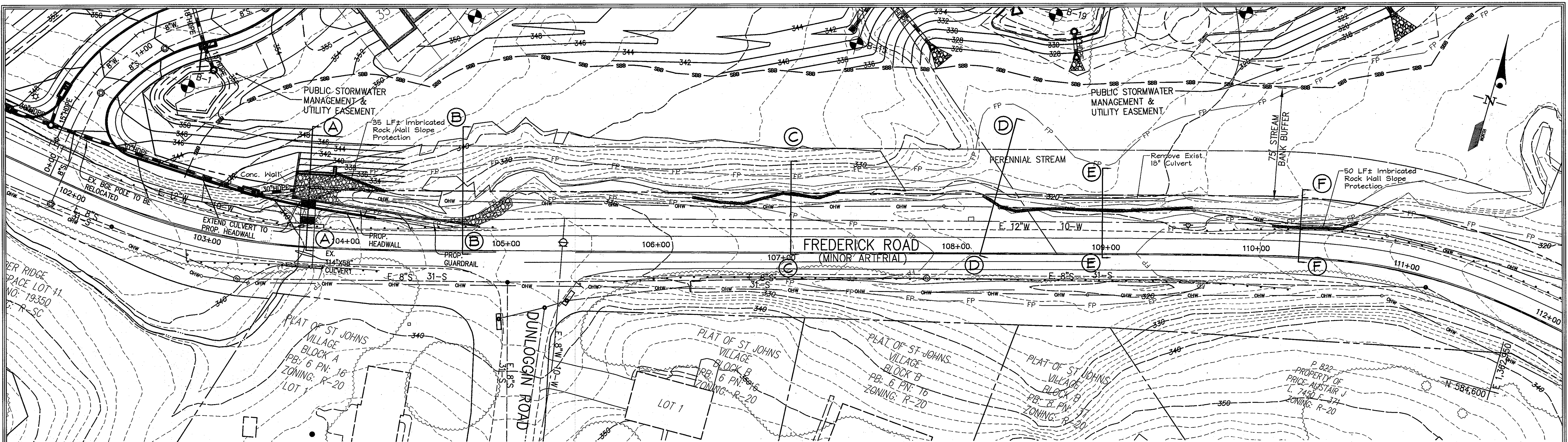
PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 2275  
 EXPIRATION DATE: MAY 26, 2014  
 1-21-14



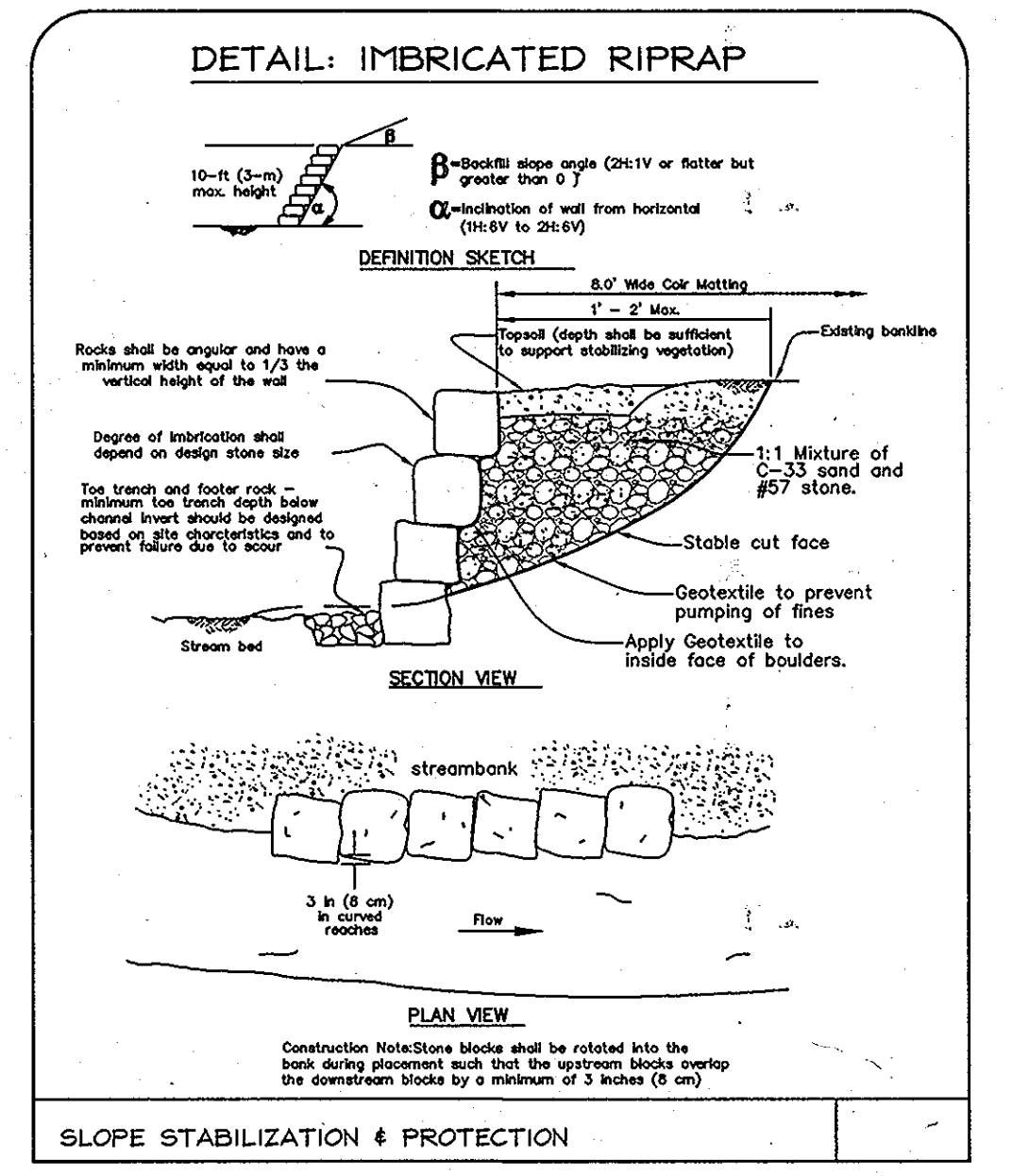
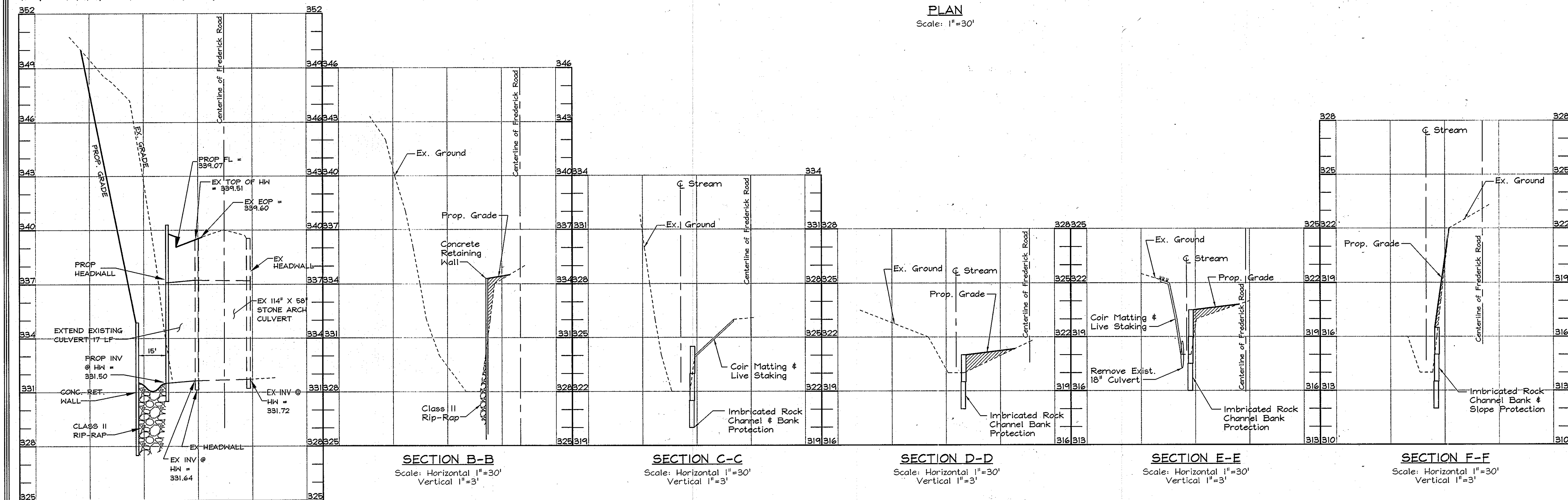
**PRELIMINARY SEDIMENT CONTROL PLAN**

**TIBER WOODS**  
**LOTS 1-35 & OPEN SPACE LOTS 36-39**  
 L. 416 F. 441 & L. 5257 F. 338  
 PARCEL 115 & 117  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-SC	12039
DATE	TAX MAP - GRID	SHEET
JAN., 2014	24 - 11	11 OF 12



PLAN  
Scale: 1"=30'



SECTION A-A  
Scale: Horizontal 1"=30'  
Vertical 1"=3'

PLANNING DIRECTOR

SECTION B-B  
Scale: Horizontal 1"=30'  
Vertical 1"=3'

SECTION C-C  
Scale: Horizontal 1"=30'  
Vertical 1"=3'

SECTION D-D  
Scale: Horizontal 1"=30'  
Vertical 1"=3'

SECTION E-E  
Scale: Horizontal 1"=30'  
Vertical 1"=3'

SECTION F-F  
Scale: Horizontal 1"=30'  
Vertical 1"=3'

**PRELIMINARY STREAM STABILIZATION PLAN NARRATIVE**

This plan was prepared to depict the preliminary stream channel protection measures required to stabilize portions of the existing stream channel which flows eastward along the southern property line. Stream channel protection is needed at the 17 ft. extension of a 14" x 58" pipe arch culvert where a plunge pool with retaining walls transitioning to imbricated rock rip rap will be added to provide channel protection. Imbricated rock toe and bank protection is provided along meander bends where excessive bank and slope erosion has occurred. An existing 18" culvert pipe, found to be partially exposed within the stream, will be removed and the channel stabilized with coir matting and live stakes.

**STREAM STABILIZATION  
PRELIMINARY PLAN  
TIBER WOODS**

TAX MAP 24 GRID 11  
2nd ELECTION DISTRICT

PARCEL 115 & 117  
HOWARD COUNTY, MARYLAND

DESIGN BY: SLH  
DRAWN BY: CRH2  
CHECKED BY: SLH  
SCALE: AS SHOWN  
DATE: JAN. 21, 2014  
P.L.O. No.: 2634  
SHEET No. 12 OF 12

**EXPLORATION RESEARCH, INC.**  
ENVIRONMENTAL CONSULTANTS  
LANDSCAPE ARCHITECTS  
8319 HOWARD LANE  
GREENBELT, MARYLAND 21075  
TEL: (410) 567-3216 FAX: (410) 798-1962  
ONLINE: [www.explore-research.com](http://www.explore-research.com)  
Base Information By:  
FSH Associates, LLC