

VICINITY MAP
SCALE: 1" = 2,000'

BENCHMARKS

24CA	ELEV. = 548.251	N = 566,506.22	E = 126,634.27
24FA	ELEV. = 262.807	N = 583,751.44	E = 126,679.83

ADC MAP: 4815 GRID: J7

- LEGEND**
- 600 --- EXISTING CONTOUR
 - 600 --- PROPOSED CONTOUR
 - SBB --- STREAM BUFFER
 - STREAM BANK ---
 - STREAM ---
 - LIMIT OF DISTURBANCE ---
 - EXISTING TREELINE ---
 - PROPOSED/ULTIMATE TREELINE ---
 - FP --- 100 YEAR FLOODPLAIN
 - EXISTING BUILDING ---
 - PROPOSED BUILDING ---
 - GURB & GUTTER ---
 - PROP. SEWER LINE ---
 - EX. 8" S --- EX. SEWER MAIN
 - WATER LINE ---
 - EX. 8" M --- EX. WATER MAIN
 - PROP. STORM DRAIN ---
 - EX. STORM DRAIN ---
 - STEEP SLOPES 25%+ ---
 - SIDEWALK ---
 - GnA --- SOIL BOUNDARY
 - SOIL TYPE ---
 - BUILDING RESTRICTION LINE ---
 - PROPERTY LINE ---
 - EX. EDGE OF PAVEMENT ---
 - EXISTING EASEMENT ---
 - TYPE ---
 - ESD SWM DEVICE ---
 - TYPES OF DEVICES:
 - MER - MICRO-BIORETENTION (M-6)
 - BS - BIO-SHALE (M-6)
 - 8'x4'x5' DRY WELL (M-5)
 - POROUS PAVEMENT W/ 12" STONE (A-2)
 - SMALE
 - DISCONNECT LENGTH
 - ROOFTOP DISCONNECT (N-1)
 - BUFFER WIDTH
 - SHEET FLOW TO BUFFER (N-3)

ESD DESIGN NARRATIVE

THE STORMWATER MANAGEMENT FOR THIS SITE WILL BE PROVIDED BY A COMBINATION OF MICRO-SCALE PRACTICES AND LARGE STRUCTURAL POND. THIS SITE IS IN THE TIBER RIVER WATERSHED AND REQUIRES 100 YEAR MANAGEMENT. THE DEVELOPMENT AREA OF THE SITE IS 45% IMPERVIOUS WHICH WILL REQUIRE A PE OF 1.35. THE ROOFTOPS WILL BE INITIALLY TREATED BY ROOFTOP DISCONNECT AND IN THE REAR BY A DRY WELL WHERE THERE ARE B SOILS. FOR THE LOTS ON THE NORTH SIDE OF THE PUBLIC ROAD, THE BACK HALF OF THE HOUSE AND THE BACK YARDS WILL RECEIVE ADDITIONAL TREATMENT FROM BIO-SHALES. FOR THE LOTS TO THE SOUTH OF THE PUBLIC ROAD, THE BACK OF THE HOUSES WILL RECEIVE A MINIMUM OF 1A OF TREATMENT BY EITHER ROOFTOP DISCONNECT, DRYWELLS, SHEET FLOW TO BUFFER, OR MICRO-BIORETENTION FACILITIES. THE DRIVEWAYS AND THE SIDEWALK IN THE PUBLIC RIGHT-OF-WAY WILL BE POROUS PAVEMENT. THE ROAD PAVEMENT AND ROOFTOP RUNOFF FROM THE FRONT OF THE HOUSES WILL BE TREATED BY THE FOUR MICRO-BIORETENTION FACILITIES LOCATED THROUGHOUT THE SITE. ALMOST ALL OF THE DEVELOPMENT AREA IS FINED TO THE LARGE STRUCTURAL POND FOR 100 YEAR MANAGEMENT AFTER INITIALLY RECEIVING SOME ESD TREATMENT. ESD FOR THE SITE HAS BEEN PROVIDED TO THE MAXIMUM EXTENT PRACTICABLE. 135% OF ESD HAS BEEN PROVIDED FOR THE DEVELOPMENT AREA (LSD). THE REMAINING ESD VOLUME WILL BE PROVIDED IN THE SAND FILTER AS W/AV. IT IS NOT POSSIBLE TO GET THE FIRST 150' OF ROAD A OR FREDERICK ROAD INTO AN ESD DEVICE OR TO THE POND. THE STRUCTURAL POND, A SAND FILTER, WILL BE A MD-370 CLASS A FACILITY THAT PROVIDES THE REMAINING ESDV AND 100 YEAR MANAGEMENT FOR THE SITE AREA. THIS POND WILL OUTFALL TO THE FLOODPLAIN IN THE SOUTH EAST PART OF THE SITE. THE LARGE POND AND MICRO-BIORETENTION FACILITIES WILL BE JOINTLY MAINTAINED BY HOWARD COUNTY AND THE HOA. ALL OTHER STORMWATER PRACTICES WILL BE PRIVATELY OWNED AND MAINTAINED.

THE PROPOSED DEVELOPMENT HAS BEEN CLUSTERED AS MUCH AS POSSIBLE TO PROTECT NATURAL RESOURCES AND REDUCE THE AMOUNT OF IMPERVIOUS AREA REQUIRED FOR THE DEVELOPMENT. THE TOWNHOUSE UNITS HAVE LARGER THAN USUAL OFFSETS TO FOLLOW THE CURVE OF THE ROAD. THIS LARGER OFFSET WILL ALLOW FOR SHORTER DRIVEWAYS. THE PAVEMENT WIDTH FOR THE PROPOSED PUBLIC ROAD IS SET AT THE MINIMUM WIDTH ALLOWED BY COUNTY STANDARDS. ALTHOUGH TOWNHOUSE LOTS ARE HIGHLY IMPERVIOUS, THEIR SMALL SIZE AND CLUSTERING ALLOW FOR MAXIMIZING THE AMOUNT OF OPEN SPACE PROVIDED ON THE SITE. ONLY 4 ACRES OF THE 11 ACRE SITE WILL BE USED FOR PUBLIC RIGHT OF WAY OR LOTS. THE REMAINING 7 ACRES WILL BE OPEN SPACE. THIS LARGE AMOUNT OF OPEN SPACE ALLOWS MOST OF THE NATURAL RESOURCES ON SITE TO BE PROTECTED. THE 15' STREAM BUFFER AND FLOODPLAIN AREA WILL BE PLACED INTO A FOREST CONSERVATION AREA. ALL OF THE FOREST CONSERVATION REQUIREMENTS WILL BE PROVIDED ON SITE. THE STREAM BUFFER AND FLOODPLAIN WILL ONLY BE DISTURBED TO REALIGN THE STREAM WHERE IT IS FLOWING CLOSE TO FREDERICK ROAD. FOUR OUT OF THE FIVE SPECIEN TREES ON SITE WILL BE PRESERVED. THE LOCATION OF THE PROPOSED PUBLIC ROAD HAS BEEN SET SO THAT IT DOES NOT NEED TO CROSS THE STREAM ALONG FREDERICK ROAD. THE STREET GRADES AND HOUSE ELEVATIONS HAVE BEEN SET SO THAT THE SEWER OUTFALL CAN STAY WITHIN THE PUBLIC ROAD RIGHT OF WAY AND IT DOES NOT NEED TO CROSS THE STREAM. THE ENTIRE SITE FLOWS TO THE STREAM ADJACENT TO FREDERICK ROAD AND WILL CONTINUE TO DRAIN TO THIS STREAM AFTER DEVELOPMENT. THE SEDIMENT CONTROLS HAVE BEEN PRELIMINARILY DESIGNED SO THEY DO NOT INCREASE THE LIMIT OF DISTURBANCE.

PRELIMINARY STORMWATER MANAGEMENT PROVIDED BY DEVICE

MICRO-BIORETENTION:	7,063 CU-FT
BIO-SHALES:	882 CU-FT
DRY WELLS:	1,472 CU-FT
POROUS SIDEWALK:	1,171 CU-FT
POROUS DRIVEWAY:	2,735 CU-FT
SHEETFLOW TO BUFFER:	171 CU-FT
ROOFTOP DISCONNECT:	380 CU-FT
TOTAL:	14,420 CU-FT
	Pe Provided = 1.35*
SAND FILTER :	4,733 CU-FT

PRELIMINARY STORMWATER MANAGEMENT REQUIREMENT

DEVELOPMENT AREA:	6.44 AC.
% IMPERVIOUS:	45%
Pe:	1.35*
PRELIMINARY ESDV REQUIRED:	19,153 CU-FT (0.44 AC-ft)

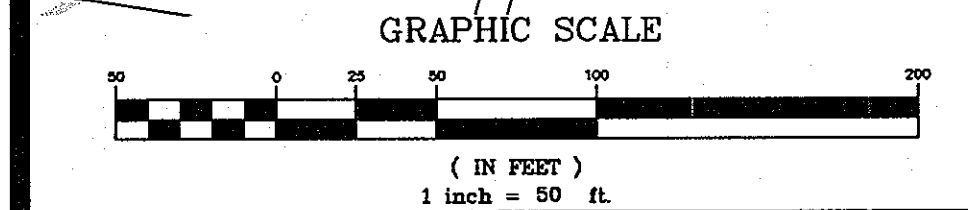
GENERAL NOTES

- SITE ANALYSIS DATA SHEET

AREA OF THE SITE	10,983 AC.
NETLANDS AND THEIR BUFFER	N/A
FLOODPLAINS AND THEIR BUFFER	1,581 AC.
FORESTS	5,524 AC.
STEEP SLOPES 15% AND GREATER	2,914 AC.
ERODIBLE SOILS PROJECT AREA	0.02 AC.
LIMIT OF DISTURBANCE AREA	6.74 AC.
PROPOSED SITE USES	RESIDENTIAL
GREEN OPEN AREA	2,281 AC.
PROPOSED IMPERVIOUS AREA	3,874 AC.
- APPLICABLE DPZ FILE REFERENCE: SDP-01-054(VOIDED), SDP-00-060(VOIDED)

SOILS

Map Unit Symbol	Map Unit Name	Type
LdB	Lagera-Hortallito-Urban land complex, 0 to 8 percent slopes	B
LdC	Lagera-Hortallito-Urban land complex, 8 to 15 percent slopes	B
HdB	Hutchings soil, 3 to 8 percent slopes, stony	D



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Vetzel 2/10/14
Chief, Division of Land Development

Chen 2/14/14
Chief, Development Engineering Division

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

NOTES

1. APPROVAL OF THIS ECP DOES NOT CONSTITUTE APPROVAL OF SUBSEQUENT OR ASSOCIATED SUBDIVISION PLANS OR PLATS AND/OR SITE DEVELOPMENT PLANS. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN STAGES. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED REVIEW COMMENTS (INCLUDING COMMENTS THAT MAY ALTER THE OVERALL SITE DESIGN) AS THIS PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.

2. THIS SITE IS SUBJECT TO SECTION 16.10.02 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION MANUAL. FOREST CONSERVATION OBLIGATIONS WILL BE FULFILLED UNDER A FUTURE DEVELOPMENT PLAN.

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

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. 12975
EXPIRATION DATE: MAY 26, 2014

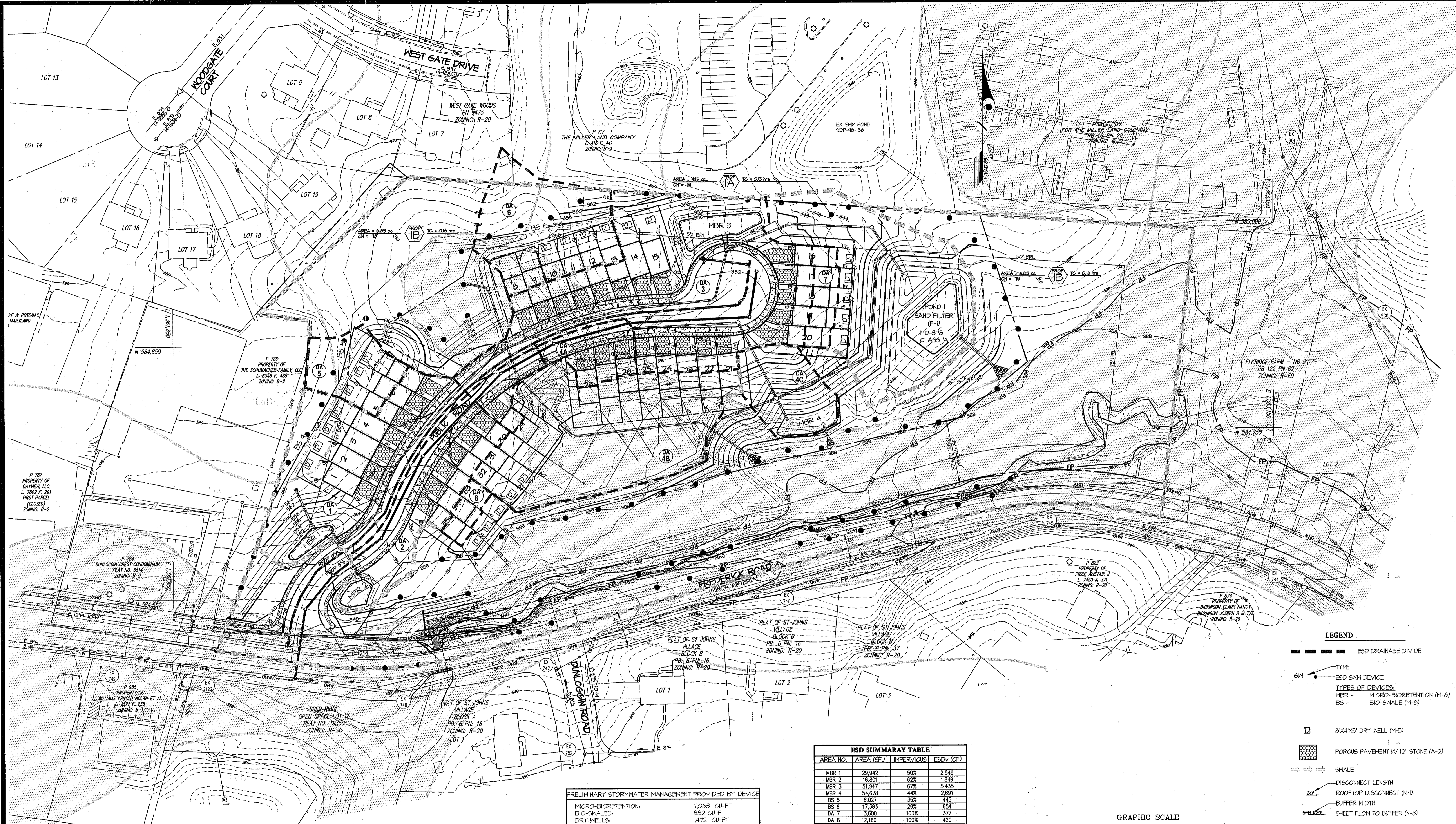
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ENVIRONMENTAL CONCEPT PLAN

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

ELECTION DISTRICT No. 2

SCALE	ZONING	G. L. W. FILE NO.
1"=50'	R-SC	12039
DATE	TAX MAP - GRID	SHEET
Feb., 2014	24 - 11	1 OF 3



LEGEND

- ESD DRAINAGE DIVIDE
- TYPE
- GW ESD SPM DEVICE
- TYPES OF DEVICES:
 - MBR - MICRO-BIORETENTION (M-6)
 - BS - BIO-SHALE (M-8)
- 8'x4'x5' DRY WELL (M-5)
- ▨ POROUS PAVEMENT 1/2" STONE (A-2)
- SNALE
- DISCONNECT LENGTH
- ROOFTOP DISCONNECT (M-1)
- BUFFER WIDTH
- SHEET FLOW TO BUFFER (M-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	67%	5,435
MBR 4	54,678	44%	2,691
BS 5	8,027	35%	445
BS 6	17,363	23%	654
DA 7	3,600	100%	371
DA 8	2,180	100%	420
TOTAL	184,518	53%	14,420

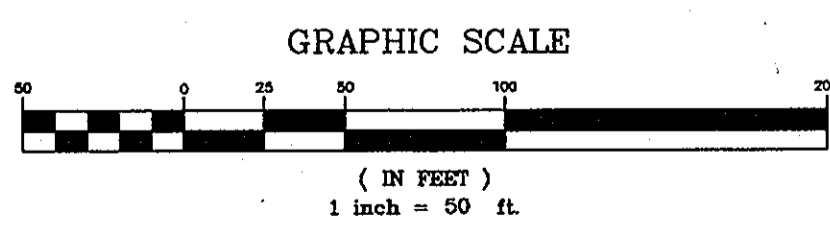
PRELIMINARY STORMWATER MANAGEMENT PROVIDED BY DEVICE

MICRO-BIORETENTION:	7,063 CU-FT
BIO-SHALES:	892 CU-FT
DRY WELLS:	1,472 CU-FT
POROUS SIDEWALK:	1,117 CU-FT
POROUS DRIVENWAY:	2,735 CU-FT
SHEETFLOW TO BUFFER:	171 CU-FT
ROOFTOP DISCONNECT:	980 CU-FT
TOTAL:	14,420 CU-FT

Pe Provided = 1.35"
SAND FILTER: 4,733 CU-FT

PRELIMINARY STORMWATER MANAGEMENT REQUIREMENT

DEVELOPMENT AREA:	6.44 Ac.
% IMPERVIOUS:	45%
Pe:	1.8"
PRELIMINARY ESDV REQUIRED:	14,533 CU-FT (0.44 Ac-ft)



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Kat Chahine 2/10/14
Chief, Division of Land Development Date

Chad Clark 2/14/14
Chief, Development Engineering Division Date

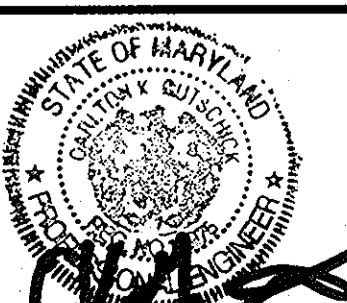
GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
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PREPARED FOR:
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2124 PRIEST BRIDGE 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

[Signature]

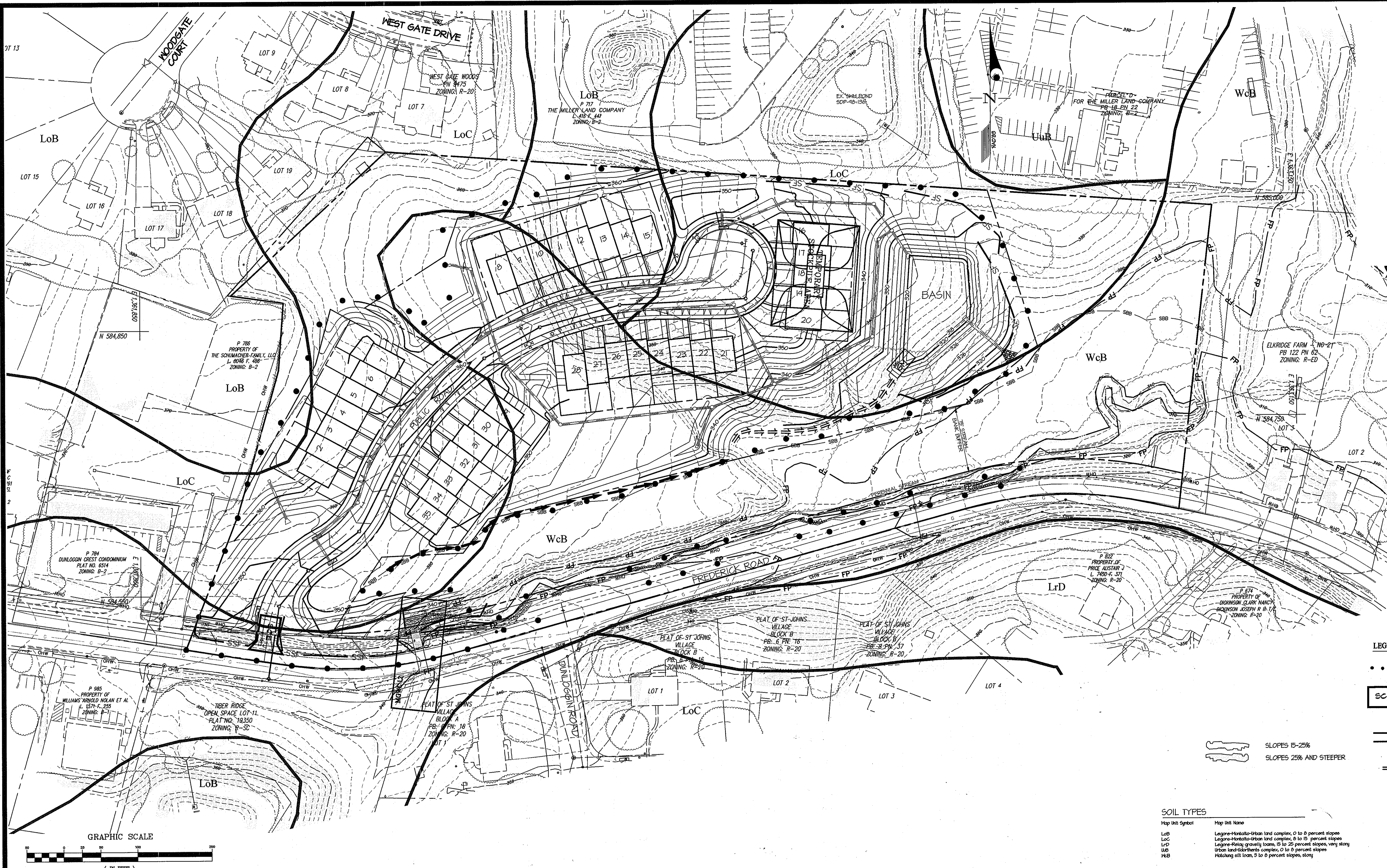


ENVIRONMENTAL CONCEPT PLAN DRAINAGE AREA MAP

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

SCALE	ZONING	G. L. W. FILE NO.
1"=50'	R-SC	12039
DATE	TAX MAP - GRID	SHEET
Feb., 2014	24 - 11	2 OF 3

DATE	REVISION	BY	APP'R.

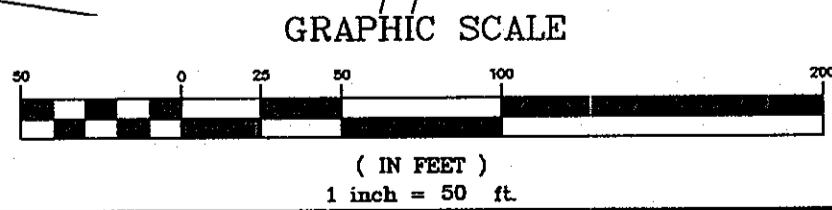


LEGEND

- LIMIT OF DISTURBANCE
- STABILIZED CONSTRUCTION ENTRANCE
- SSF PROPOSED SUPER SILT FENCE
- SF PROPOSED SILT FENCE
- EARTH DIKE
- TEMPORARY SWALE
- GM GABION MATTRESS
- PROPOSED TEMPORARY STOCKPILE AREA
- EXISTING TREELINE
- FP 100 YEAR FLOODPLAIN
- MGCW 12** PUMP AROUND PRACTICE PER MARYLAND'S GUIDELINES TO WATERWAY CONSTRUCTION DETAIL 12

SOIL TYPES

Map Unit Symbol	Map Unit Name
LoB	Legare-Hortallou-Upton land complex, 0 to 8 percent slopes
LoC	Legare-Hortallou-Upton land complex, 8 to 15 percent slopes
LrD	Legare-Raley gravelly loams, 15 to 25 percent slopes, very stony
UeB	Upton land-identifiable complex, 0 to 8 percent slopes
WcB	Washington silt loam, 3 to 8 percent slopes, stony



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Versteh 2/10/14
 Chief, Division of Land Development Date

Chad Edwards 2/14/14
 Chief, Development Engineering Division Date

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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. 12975, EXPIRATION DATE: MAY 28, 2014.

Chad Edwards 2/14/14
 CHAD EDWARDS
 PROFESSIONAL ENGINEER



SEDIMENT CONTROL CONCEPT PLAN

TIBER WOODS
 LOTS 1-35 & OPEN SPACE LOT 36 - 39
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