

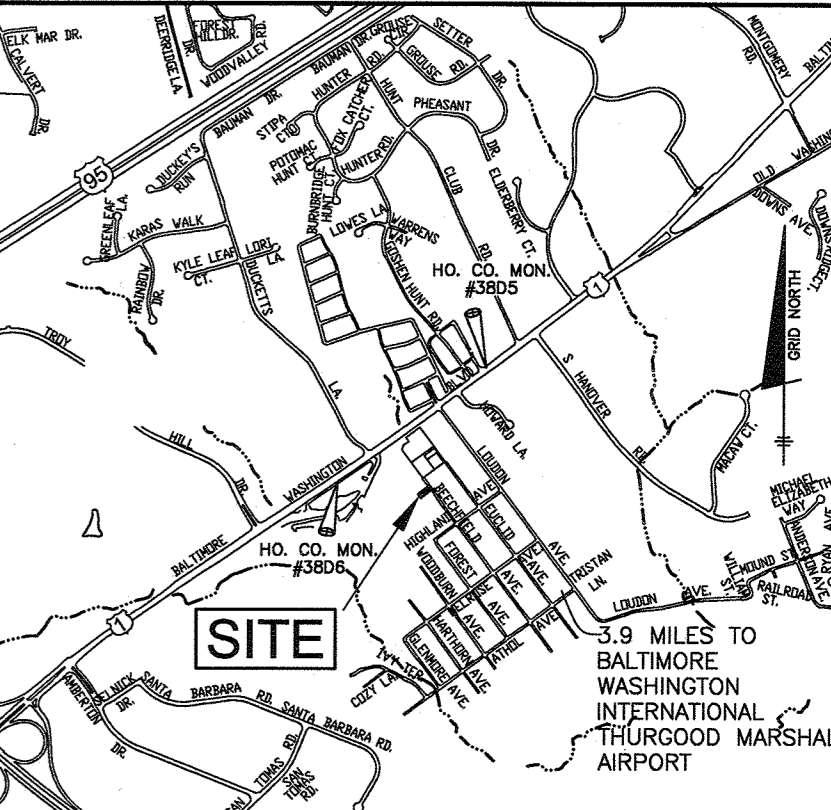
BENCH MARKS

HO. CO. #3805 (NAD '83) ELEV. 193.71
 STAMPED DISC ON CONCRETE MONUMENT BEING 38' SOUTHEAST OF A FIRE HYDRANT, 5.6' NORTH OF THE EXISTING CONCRETE CURB ALONG NORTH SIDE OF WASHINGTON BLVD (RT.1)

N 558,378.581 E 1,386,524.195

HO. CO. #3806 (NAD '83) ELEV. 175.23
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N 557,155.459 E 1,384,992.262



LEGEND

LIMIT OF SUBMISSION: - - - - -

ADJACENT PROPERTIES: - - - - -

LOT BOUNDARIES: - - - - -

EXISTING CONTOURS: - - - - -

PROPOSED CONTOURS: - - - - -

EXISTING STRUCTURES: [Symbol]

PROPOSED STRUCTURE: [Symbol]

PROPOSED RETAINING WALL: [Symbol]

PAVEMENT OVERLAY: [Symbol]

SHEET INDEX

NO.	DESCRIPTION
1	ENVIRONMENTAL CONCEPT PLAN
2	STORMWATER MANAGEMENT PLAN SEDIMENT & EROSION CONTROL PLAN

SITE ANALYSIS DATA CHART

GROSS AREA	0.14 AC.
FLOODPLAIN	0.00 AC.
SLOPES	0.00 AC.
WETLANDS	0.00 AC.
STREAMS	0.00 AC.
FORSTED AREA	0.00 AC.
ERODIBLE SOILS	0.00 AC.
LIMIT OF DISTURBANCE	0.14 AC.
IMPERVIOUS AREA	0.07 AC.
GREEN SPACE	0.07 AC.

- NOTES:**
- EXISTING ZONING: R-12
 - DEED REFERENCE: 14919/00078
 - SITE ANALYSIS DATA:
 - A. TOTAL AREA OF SITE: 0.14 AC.
 - B. EXISTING IMPERVIOUS AREA: 0.00 AC.
 - C. EXISTING GREEN AREA: 0.14 AC.
 - D. EXISTING FORESTED AREA: 0.0 AC.
 - E. EXISTING SITE USE: OPEN
 - F. AREA OF PLAN SUBMISSION: 0.14 AC.
 - G. LIMIT OF DISTURBANCE: 0.14 AC.
 - H. IMPERVIOUS AREA: 0.07 AC.
 - I. REVEGETATED AREA: 0.07 AC.
 - PROPOSED USE: 1 NEW SINGLE FAMILY SEMI-DETACHED DUPLEX
 - PREVIOUS SUBMITTAL: PLAT BOOK 60, FOLIO 115
 - THIS LOT WILL UTILIZE A CUSTOM SEDIMENT AND EROSION PLAN SINCE THE LIMIT OF DISTURBANCE IS FOR MORE THAN ONE LOT.
 - STORMWATER MANAGEMENT FOR THIS PROPOSAL IS PROVIDED WITH THE APPROVAL OF THE SITE DEVELOPMENT PLAN THERE IS NO EXISTING DWELLING ON SITE.
 - TO THE BEST OF OUR KNOWLEDGE AND BELIEF THERE ARE NO CEMETERIES ON SITE.
 - THE SITE AREA IS LESS THAN 20,000 SF. THEREFORE, THE SITE SHALL BE EXEMPT FROM THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION PER SECTION 16.1202(b)(1)(i) OF THE SUBDIVISION REGULATIONS FOR DEVELOPMENT ON LAND WHICH IS LESS THAN 40,000 SF IN SIZE.
 - APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN AND/OR RED-LINE REVISION PLAN. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS SHALL OCCUR AT THE SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN STAGES AND/OR RED-LINE REVISION PROCESS. 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.

SWM DESIGN NARRATIVE:

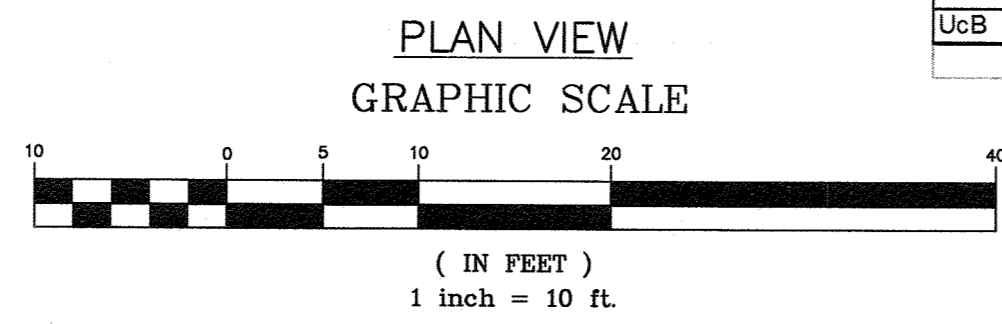
NATURAL RESOURCES SHALL BE PRESERVED TO THE EXTENT FEASIBLE. THERE ARE NO ENVIRONMENTALLY SENSITIVE (SLOPES, ERODIBLE SOILS, FOREST) AREAS ON-SITE. THERE ARE NO WETLAND, STREAMS OR THEIR BUFFER, FLOODPLAIN, STEEP SLOPES, OR FOREST ON SITE. THEREFORE NONE ARE BEING DISTURBED. THE IMPERVIOUS AREA OF THE SITE IS MINIMIZED BY UTILIZING A SHARED DRIVEWAY. MINIMIZING WIDTH OF THE INDIVIDUAL DRIVEWAY AND KEEPING THE DRIVEWAY LENGTH MINIMAL ALL ARE CONDITIONS THAT REDUCE THE IMPERVIOUS AREAS. ERODIBLE SOILS WITH A K_w OF 0.35 OR GREATER ARE BEING DISTURBED BUT ADEQUATE SEDIMENT AND EROSION CONTROL SHALL BE PROVIDED.

EXISTING FLOW PATTERNS SHALL BE MAINTAINED. UNDER ULTIMATE CONDITIONS MOST DRAINAGE FLOW SHALL EXIT TO BEECHFIELD AVENUE FOR THE FRONT OF THE LOTS AND TOWARD THE ALLEY FOR THE REAR OF THE PROPERTY.

IMPERVIOUS AREA IS BEING HELD TO A MINIMUM BY LOCATING THE PROPOSED HOUSES CLOSE TO THE ROADWAY AND BY UTILIZING THE MINIMUM WIDTH FOR DRIVEWAYS.

SEDIMENT AND EROSION CONTROL SHALL BE PROVIDED. A SCHEMATIC CONCEPT IS SHOWN WITHIN THIS PLAN SET. IT IS ANTICIPATED THAT IT WILL CONSIST MAINLY OF DIVERSION FENCE, SILT FENCE AND SUPER SILT FENCE ALONG THE PERIMETER. EROSION CONTROL MATTING SHALL BE USED FOR SWALES. THERE ARE NO IMPACTS TO SWM DESIGN BASED ON SEDIMENT AND EROSION CONTROL.

THE PROPOSED (M-6) MICRO-BIORETENTION AND RAIN BARREL (M-1) FACILITIES SHALL ADEQUATELY TREAT THE PROPOSED ROOFTOP IMPERVIOUS AREAS. THE PRACTICE SHALL DISCHARGE AT A LOCATION THAT IS NOT DETRIMENTAL TO THE ADJACENT PROPERTIES. NO PRACTICAL TREATMENT IS POSSIBLE FOR THE SHORT DRIVEWAYS DUE TO THE DRAINAGE DIVIDE THAT PARALLELS BEECHFIELD AVENUE. THE DRIVEWAY DISCHARGES TO THE GUTTER OF BEECHFIELD AVENUE AND THEN TO THE EXISTING STORM DRAIN SYSTEM. FULL TREATMENT OF THE ESD_v IS BEING PROVIDED FOR THE ROOFTOP AND THE YARD RUNOFF ACQUIRED BY MBR-1, RB-1, AND RB-2; THEREFORE, THIS PROJECT CAN BE CONSIDERED TO BE TREATED TO THE MAXIMUM PRACTICAL EXTENT.



SOILS CHART

SYMBOL	HYDRIC	HYDROLOGIC GROUP	NAME	K VALUE
UcB	NO	D	URBAN LAND-CHILLUM-BELTSVILLE COMPLEX, 0 TO 5 PERCENT SLOPES	0.37

USDA - NRCS WEBSITE - SOIL SURVEY MAP No. 25 - NO HYDRIC SOILS

MODERATE INCOME HOUSING UNITS (MIHU) ALLOCATION EXEMPTIONS TRACKING

Total Number of Lots/Units Proposed	2
Number of MIHU Required	0
Number of MIHU Provided Onsite (exempt from APFO allocations)	0
Number of APFO Allocations Required (remaining lots/units)	0
MIHU Fee-in-Lieu (indicate lot/unit numbers)	NA

*Development consists of two lots previously recorded per plat 60/115

ESD STORMWATER MANAGEMENT SUMMARY TABLE

Practice	#	DA to practice	Imp Area to practice	Q _e = 0.98 inches		ESD _v = 490 cf	R _v = 0.54		Rev	Ownership
				Required	Provided		2% DA?	Required		
MBR-1	(M-6)	#1	2,711	2,240		323	326	PASS	83	Private
RB-1	(M-1)	#1	1,120	1,120		160	7	N/A		Private
RB-2	(M-1)	#2	1,120	1,120		160	7	N/A		Private
Total Treated			2,711	2,240	0	0		1.2	16	83
Site Total			5,993	3,293						

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] DATE: 9/21/18

CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] DATE: 9/21/18

CHIEF, DEVELOPMENT ENGINEERING DIVISION

NO.	DATE	REVISION

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 45577, Expiration Date: 06-08-2020.

[Signature] 9/5/18

BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.
 8480 BALTIMORE NATIONAL PIKE & SUITE 315 • ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-8108 (F) 410-465-8844
 WWW.BE-CMLENGINEERING.COM

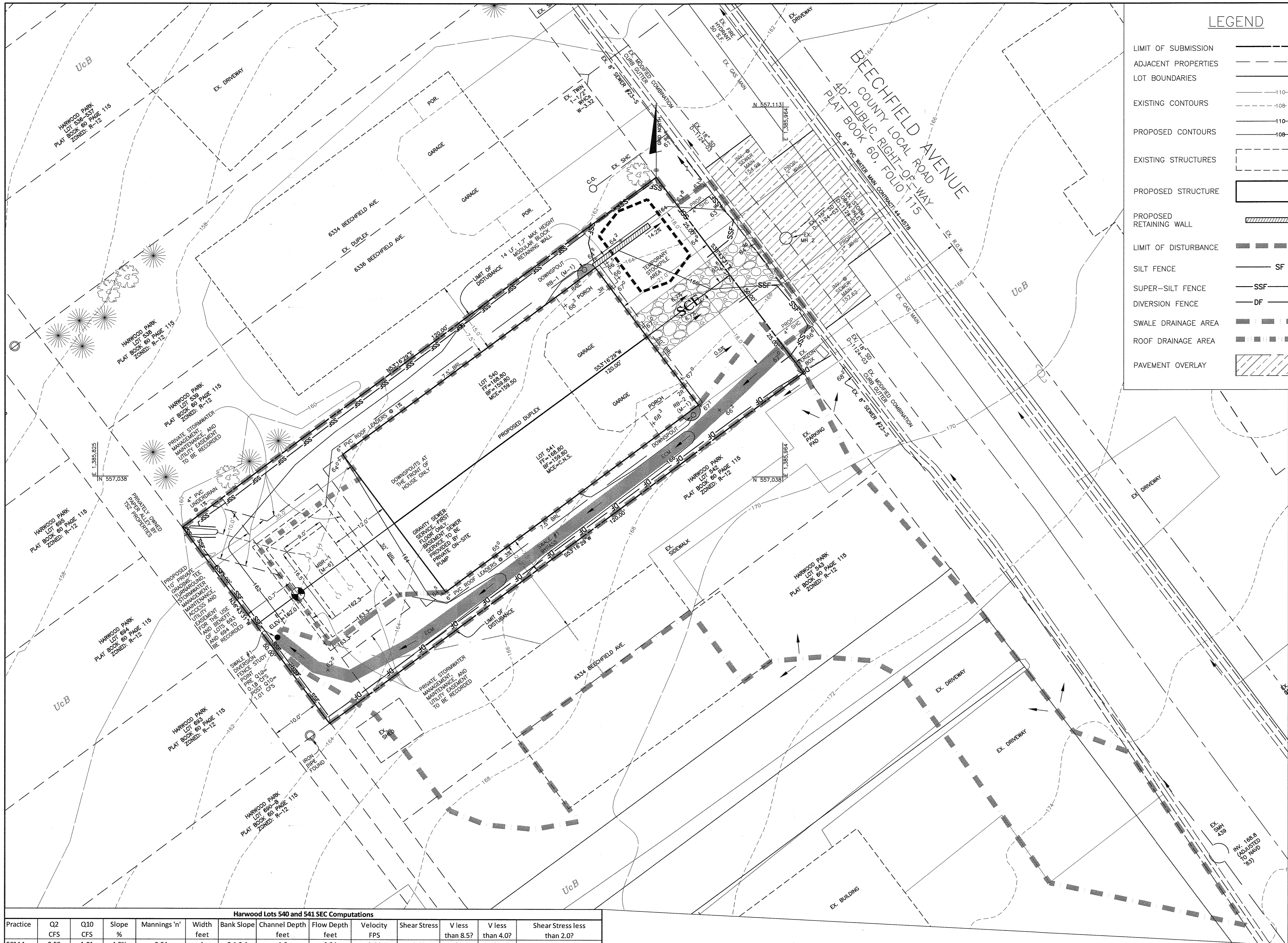
OWNER/DEVELOPER:
 TSZ PROPERTIES
 10382 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 410-465-4103
 C/O STEPHANIE PORTA

HARWOOD PARK
 LOTS 540-541
 PLAT BOOK 60 FOLIO 115
 SINGLE FAMILY SEMI-DETACHED DUPLEX UNITS

TAX MAP: 38 ZONED: R-12 PARCEL: 873
 BEECHFIELD AVENUE
 ELECTION DISTRICT NO. 1, HOWARD COUNTY, MARYLAND

ENVIRONMENTAL CONCEPT PLAN

DATE: JUNE, 2018 BEI PROJECT NO. 2565
 SCALE: 1" = 10' SHEET 1 OF 2

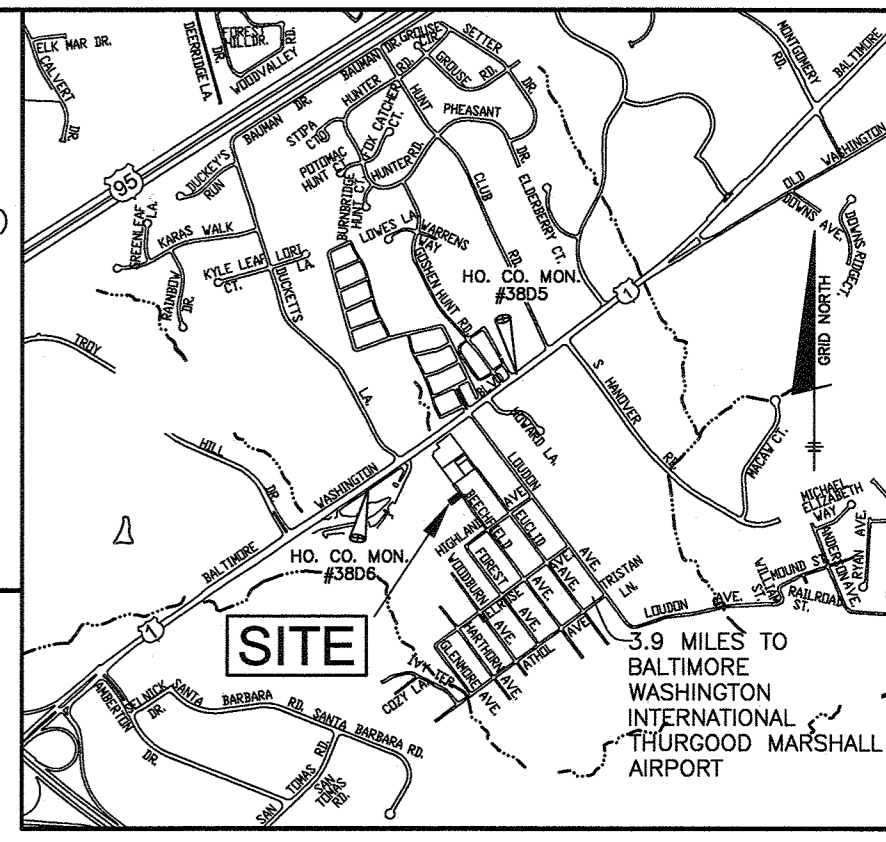


LEGEND

- LIMIT OF SUBMISSION
- ADJACENT PROPERTIES
- LOT BOUNDARIES
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING STRUCTURES
- PROPOSED STRUCTURE
- PROPOSED RETAINING WALL
- LIMIT OF DISTURBANCE
- SILT FENCE
- SUPER-SILT FENCE
- DIVERSION FENCE
- SWALE DRAINAGE AREA
- ROOF DRAINAGE AREA
- PAVEMENT OVERLAY

BENCH MARKS

HO. CO. #3805 (NAD '83)	ELEV. 193.71
STAMPED DISC ON CONCRETE MONUMENT BEING 33.8' SOUTHEAST OF A FIRE HYDRANT, 5.6' NORTH OF THE EXISTING CONCRETE CURB ALONG NORTH SIDE OF WASHINGTON BLVD (RT. 1)	
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BORING LOG

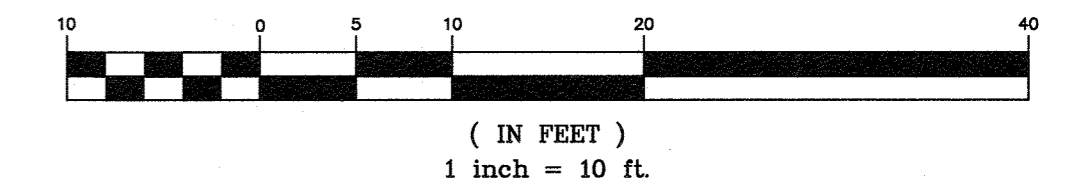
Client: **TSZ Properties** Project No: **118-051**
 Project: **Harwood Park: 6336 Beechfield Avenue, Elkridge** Location: **See Boring Location Plan**
 Boring No.: **B-1** (1 of 1) Depth: **6.5** Elev: **162.0** Date: **4/16/2018** Order: **D. Cochran**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	Moisture Content	REMARKS
162.0	0.0	Topsoil with root matter and organics		Groundwater was not encountered during drilling or at completion.
141.5	0.5	Red CLAY with little fine sand, moist. (USCS: CL, USDA: Clay)	22.7	
154.1	3.5	Light brown SILT with some clay, little fine to coarse sand and little fine gravel, moist. (USCS: ML, USDA: Clay Loam)	19.5	
155.5	4.5		17.2	
	6.5	End of boring - Auger Refusal		

FIELD INFILTRATION RESULTS

BORING NO.	DEPTH OF PIPE BELOW	AVERAGE INFILTRATION RATE (IN/HR)	TEXTURE CLASS
B-1	5	0.2	CLAY LOAM

PLAN VIEW



Harwood Lots 540 and 541 SEC Computations

Practice	Q2 CFS	Q10 CFS	Slope %	Mannings 'n'	Width feet	Bank Slope	Channel Depth feet	Flow Depth feet	Velocity FPS	Shear Stress	V less than 8.57	V less than 4.0?	Shear Stress less than 2.0?
FCM 1	0.59	1.01	4.0%	0.04	1	2:1:2:1	1.0	0.24	2.84	0.60	okay	okay	okay
DF 1	0.59	NA	3.4%	0.04	0	5:1:0.01:1	0.0	0.32	2.3	0.68	okay	okay	okay

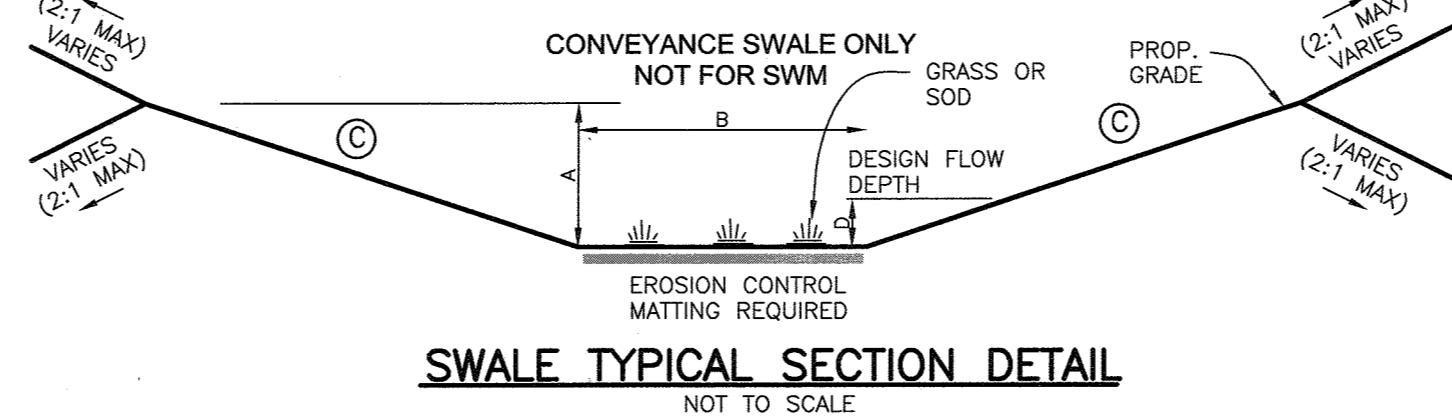
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SITE PRACTICES CHART

LOT	ADDRESS	MBR (M-6)	RAIN BARREL (M-1)
540	6338-A BEECHFIELD AVE.	1*	1
541	6338-B BEECHFIELD AVE.	1*	1

* MBR-1 on Lots 540 and 541 is shared



SWALE #1

AREA	0.163 AC
I2	4.5 IN/HR
I10	6.6 IN/HR
Q2	0.59 CFS
Q10	1.01 CFS

SWALE #1

A	1.0'
B	1.0'
C	2:1
D	0.24'
SLOPE	4.0%
BOTTOM DIMS	
LENGTH	125'
WIDTH	1.0'

NOTE: ELEVATIONS LISTED IN CHART ARE ELEVATIONS AT BOTTOM OF THE SWALES. THESE SWALES DO NOT PROVIDE STORMWATER MANAGEMENT.

STORM Q (RUNOFF) VELOCITY
 2 YR: 0.59 CFS, 2.41 FPS, a=0.60 LB/5F
 10 YR: 1.01 CFS, 2.84 FPS, a=0.60 LB/5F

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 9/20/18

BENCHMARK ENGINEERS & LAND SURVEYORS, INC.
 8480 BALTIMORE NATIONAL PIKE & SUITE 315 A ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-9199 (F) 410-465-6644
 WWW.BEI-CIVILENGINEERING.COM

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer in the State of Maryland. License #5372, Expiration Date: 06-08-2020.

9/5/18

OWNER/DEVELOPER: **HARWOOD PARK**
 LOTS 540-541
 PLAT BOOK 60 FOLIO 115
 SINGLE FAMILY SEMI-DETACHED DUPLEX UNITS

TAX MAP: 38 GRID: 13 PARCEL: 873
 ZONED: R-12
 BEECHFIELD AVENUE
 ELECTION DISTRICT NO. 1, HOWARD COUNTY, MARYLAND

SEDIMENT AND EROSION CONTROL PLAN
 STORMWATER MANAGEMENT PLAN

DATE: JUNE, 2018 BEI PROJECT NO. 2565
 SCALE: 1" = 10' SHEET 2 OF 2