

SOILS		
MAP UNIT SYMBOL	MAP UNIT NAME	HYDROLOGIC GROUP
UID	URBAN LAND - UDORTHERTS COMPLEX 0 TO 15 PERCENT SLOPES	C

NR MAPPING NOTE:

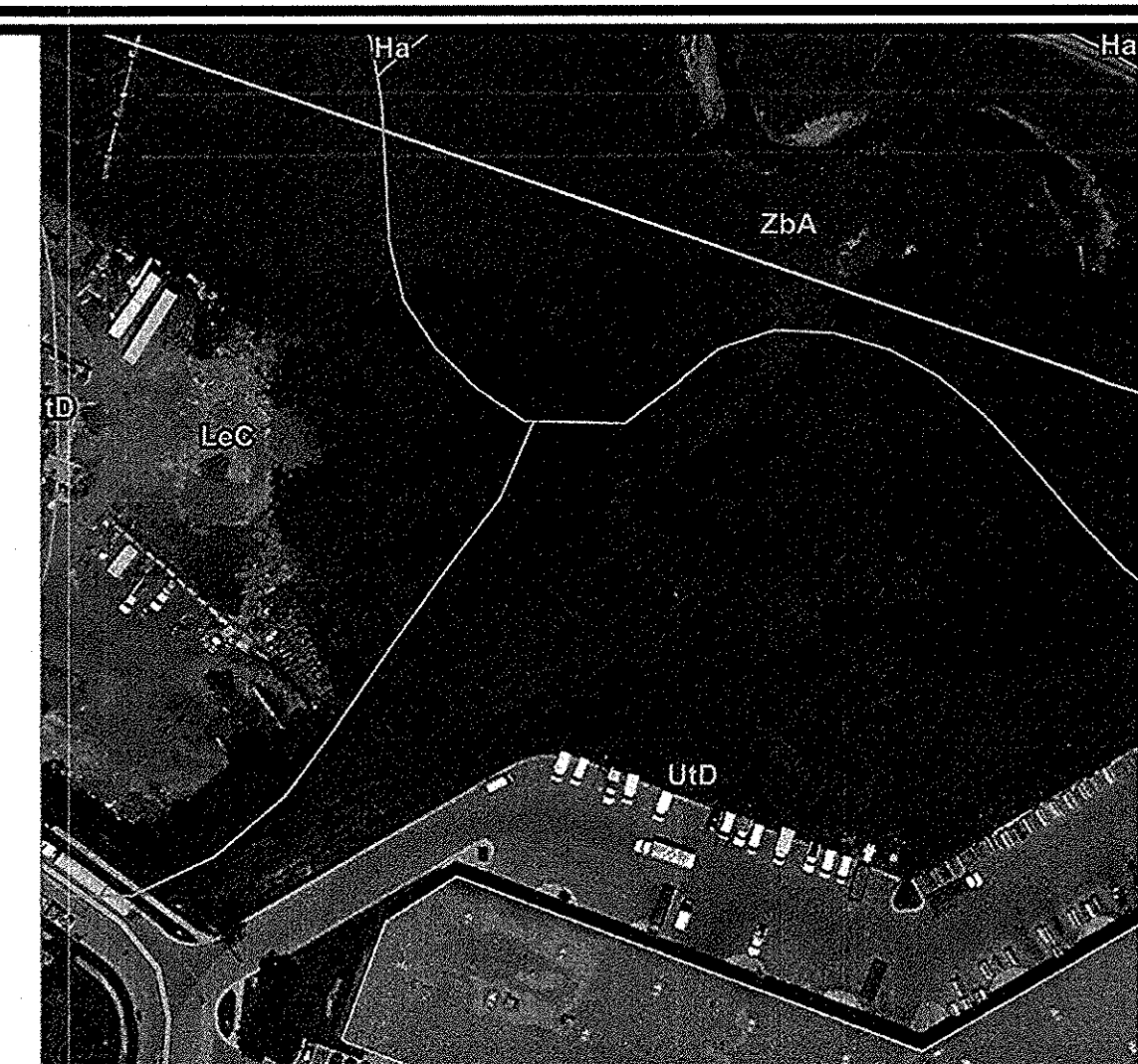
THERE ARE NO WETLANDS, MAJOR WATERWAYS, FLOODLAINS, BUFFERS, CRITICAL AREAS, STEEP SLOPES, HIGHLY ERODIBLE SOILS, SPRINGS, ETC. WITHIN THE SITE AREA.

NOTE

APPROVAL OF THIS ECP SHALL NOT BE CONSTRUED AS APPROVAL TO ANY REQUIRED SITE DEVELOPMENT PLAN, FINAL PLAT OR OTHER FUTURE DEVELOPMENT PLAN SUBMISSIONS.

NOTE

PARKING SPACES = 78
 REQUIRED PARKING SPACES = 87
 ADDITIONAL 9 PARKING SPACES BY STREET PARKING DURING PEAK DEMAND.



SOIL MAP
SCALE: 1" = 300'

STORMWATER MANAGEMENT CALCULATIONS:

1. Pre-Development Condition:

HSG	RCN	Area (acre)	RCNArea
A	38	0.42	27.72
B	66	1.40	98.00
C	70	1.40	98.00
D	77		
Total		1.82	125.72

*RCN for "Woods in Good Condition" (Table 2.2, TR-55)

2. Post-Development Condition:

HSG	Area	% Impervious	PE*	PE X Area
A	0.42	75	2.2'	1.00
B	1.40	95	2.2'	2.80
C	1.40			
D				
Total	1.82			3.8

*PE from Table 5.3 of MDE Manual.

Weighted PE = Total PE x Area / Total Area
 Weighted PE = 2.0'
 Total Site Area (A) = 1.82 acres = 79,279 sq. ft.
 Total Disturbance Area = 1.82 acres = 79,279 sq. ft.
 Total Impervious Area = 6,500 sq. ft.
 Percent Imperviousness (I) = 6500/79279 = 81%

3. Stormwater Treatment Design Calculations:

Proposed Drainage Areas:

Lot Size	79,279 sq. ft.
Land Use	Commercial
Hydrologic soil group (HSG)	B and C
DA-1:	10,900
DA-2:	14,800
DA-2a:	9,500
DA-2b:	5,300
DA-3:	27,620

Calculate Environmental Site Design Volume (ESDv) for Stormwater Treatment:

$ESDv = (PE)(Rv)(A)$; where:
 $Rv = 0.05 + (0.009)(I)$ where; $I = 81\%$
 $Rv = 0.78$
 $A = \text{Disturbance Area} = 1.82 \text{ acre} = 79,279 \text{ sq. ft.}$
 $ESDv = 10,306 \text{ cu. ft.}$

Use Microbioretention (MBR-1) for DA-1
 Using Equation 5.2 (MDE Manual, p.5.98);
 $PE = 15' \frac{A}{DA}$
 with DA-1 = 10,900 sq. ft. and A(1) = 2150 sq. ft.
 $PE = 15' \frac{2150}{10900}$; $PE = 2.96'$
 10900

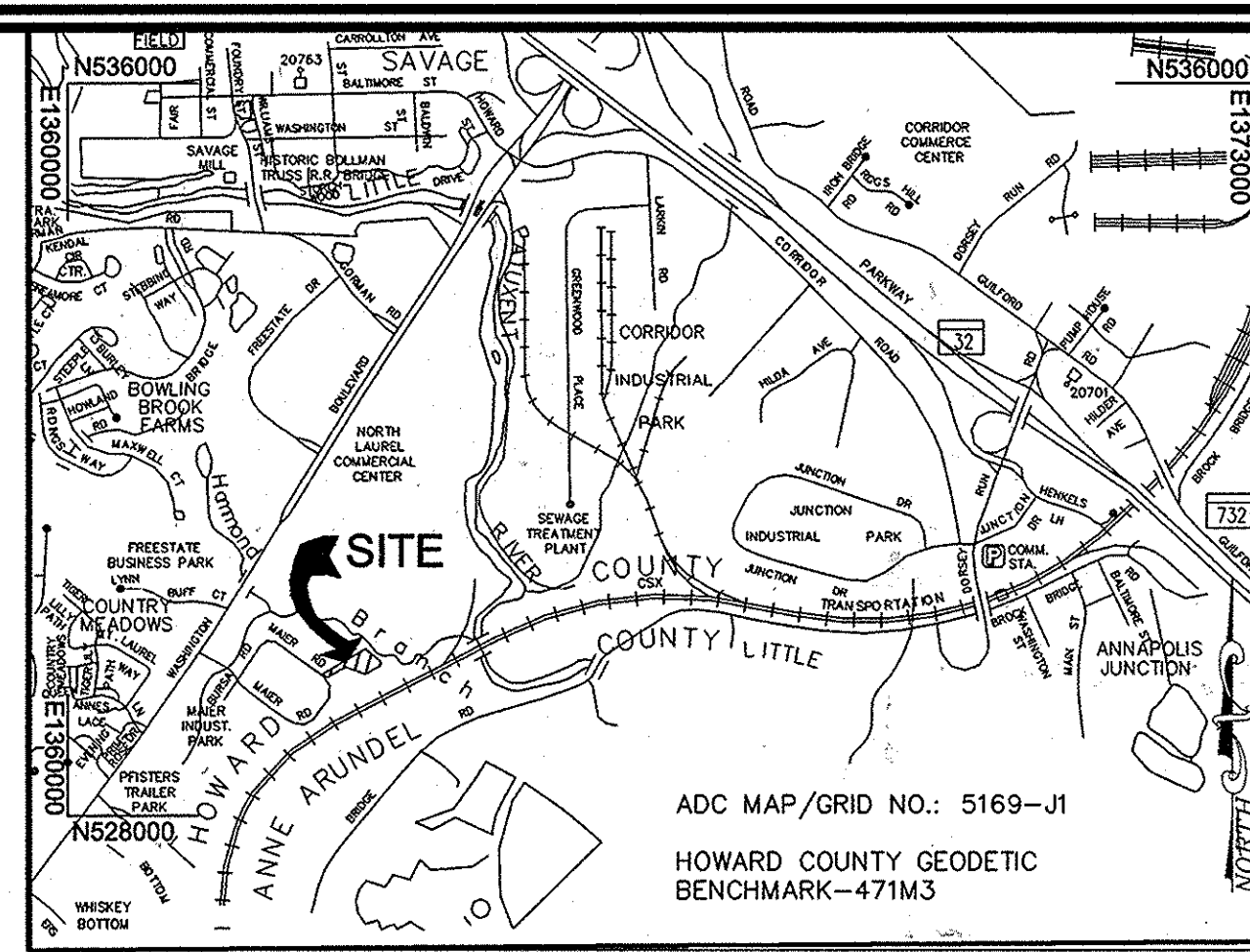
The treatment volume for MBR-1 will be:
 The 75% treatment volume for MBR-1 will be:
 $V1 (75\%) = 2150 \times 1.5 \times 0.4 \text{ voids} = 1290 \text{ cu. ft.}$
 $V1 (25\%) = 2150 \times 1.5 \times 0.4 \text{ voids} = 1290 \text{ cu. ft.}$
 $V1 = 2150 + 1290 = 3440 \text{ cu. ft.}$

Use Microbioretention (MBR-2) for DA-2
 Using Equation 5.2 (MDE Manual, p.5.98);
 $PE = 15' \frac{A}{DA}$
 with DA-2 = 14,800 sq. ft. and A(2) = 2500 sq. ft. (as shown on the Plan for MBR-2)
 $PE = 15' \frac{2500}{14800}$; $PE = 2.53'$
 14800

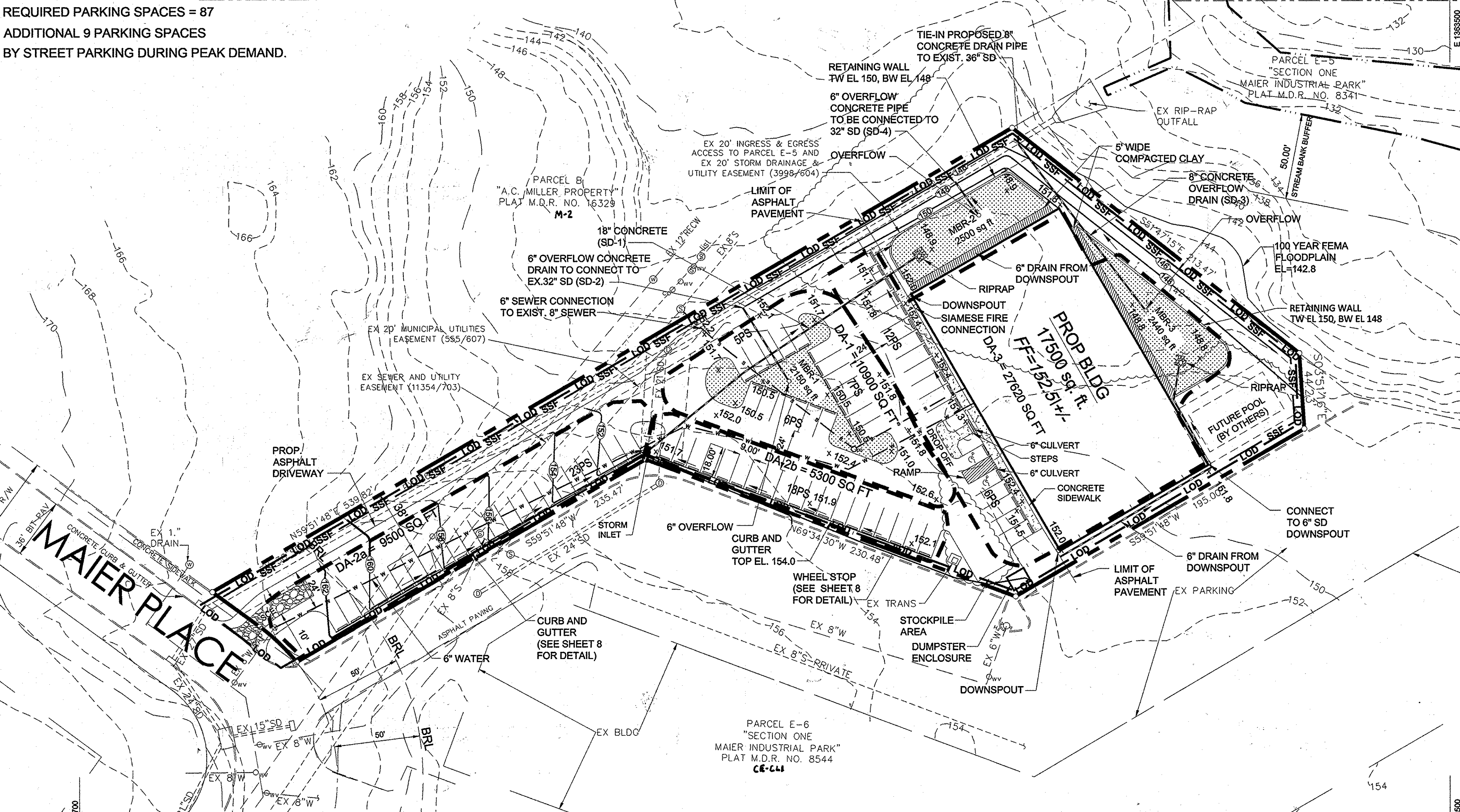
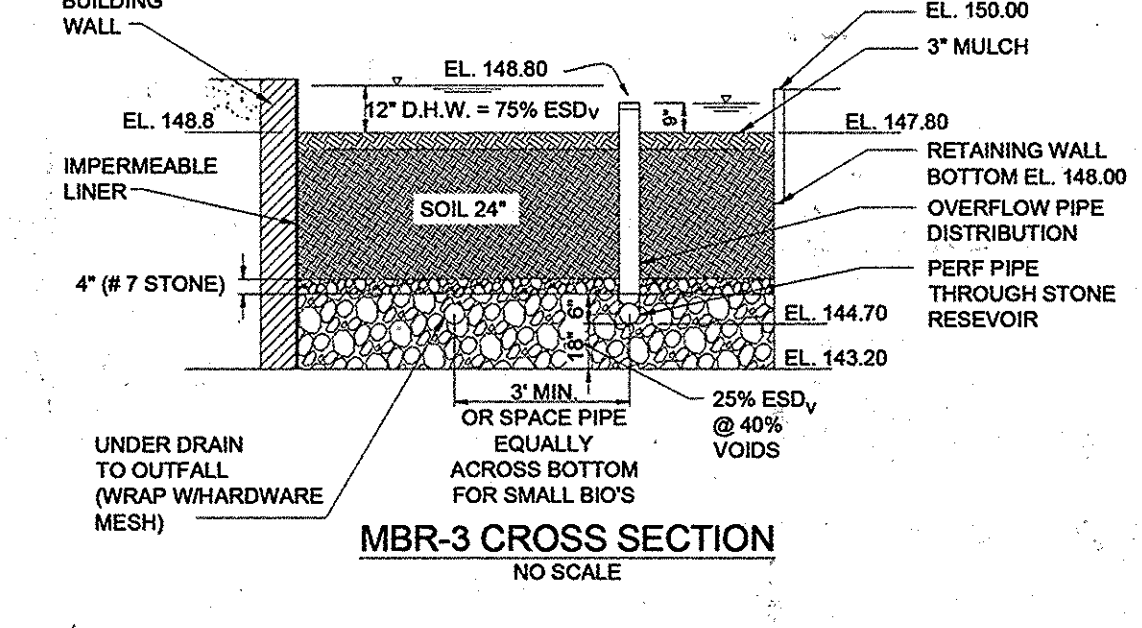
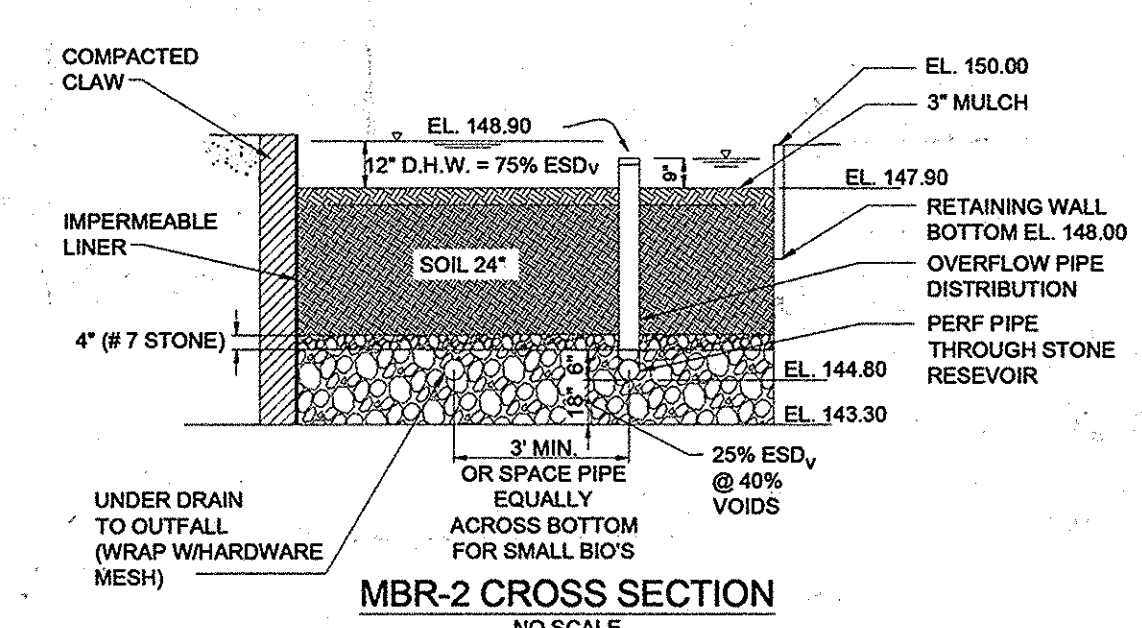
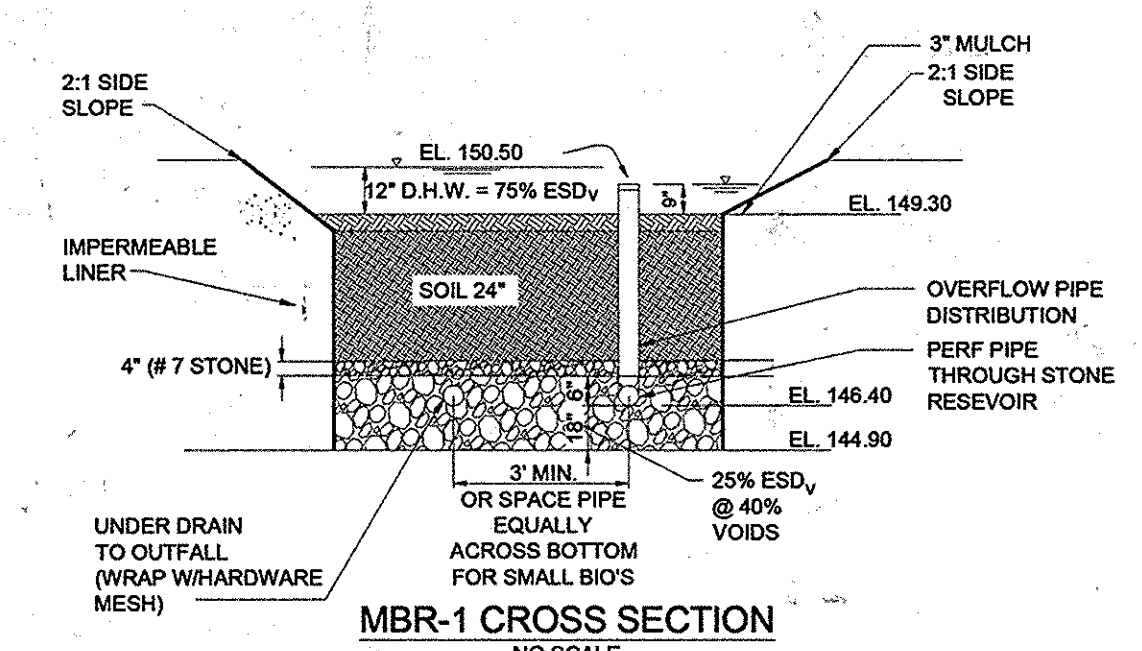
The treatment volume for MBR-2 at 1-ft depth will be:
 $V2 (75\%) = 2500 \times 1 = 2500 \text{ cu. ft.}$
 The remaining 25% treatment volume is
 $V2 (25\%) = 2500 \times 1.5 \times 0.4 \text{ voids} = 1500 \text{ cu. ft.}$
 $V2 = 2500 + 1500 = 4000 \text{ cu. ft.}$

Use Microbioretention (MBR-3) for DA-3
 Using Equation 5.2 (MDE Manual, p.5.98);
 $PE = 15' \frac{A}{DA}$
 with DA-3 = 27,620 sq. ft. and A(3) = 2,440 sq. ft. (as shown on the Plan for MBR-3)
 $PE = 15' \frac{2440}{27620}$
 $PE = 1.32'$

The 75% treatment volume for MBR-3 will be:
 $V3 (75\%) = 2440 \times 1 = 2440 \text{ cu. ft.}$
 $V3 (25\%) = 2440 \times 1.5 \times 0.4 \text{ voids} = 1464 \text{ cu. ft.}$
 $V3 = 2440 + 1464 = 3904 \text{ cu. ft.}$
 Total ESDv = 3440 + 4000 + 3904 = 11344 cu. ft.
 ESDv goal is 10,306 cubic feet that is less than the total treated volume of 11,344 cubic feet. Therefore, ESDv goal is met.



VICINITY MAP
SCALE: 1" = 2000'



LEGEND

EX 8"W	EXISTING WATER LINE	PROPOSED WALK	BLR	BUILDING RESTRICTION LINE
EX 8"S	EXISTING SEWER LINE	PROPOSED GRADING	MBR	MICROBIORETENTION
EX 30"SD	EXISTING STORM DRAIN	SUPER SILT FENCE	-----	DRAINAGE AREA LIMIT
(M)	EXISTING WATER MANHOLE	LOD	---	DRAINAGE AREA
(X)	EXISTING FIRE HYDRANT	---	PS	PARKING SPACES
(S)	EXISTING SANITARY MANHOLE	PROPOSED STORM DRAIN		
co	EXISTING CLEAN OUT	PROPOSED STORM INLET		
wv	EXISTING WATER VALVE	PROPERTY LINE		
(D)	EXISTING STORM DRAIN MANHOLE	RIGHT-OF-WAY LINE		
(I)	EXISTING STORM DRAIN INLET	20" PUBLIC WATER AND UTILITY EASEMENT		
-----	EXISTING CURB AND GUTTER	PROPOSED MICROBIORETENTION AREA (MBR-1)		

APPROVED: HOWARD COUNTY DEPARTMENT DEPARTMENT OF PLANNING AND ZONING

[Signature] 5-18-16
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 5-5-16
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

 DIRECTOR DATE

HOWARD COUNTY
 PROJECT NAME:
 SDP - 15- 059

OWNER/DEVELOPER
 DBW, LLC
 9525 BERGER RD
 COLUMBIA, MD 21046
 PHONE: 410-381-7565

9000 MAIER PLACE
 TAX MAP: 47 PARCEL 873
 LOT E 4
 SECTION ONE
 MAIER INDUSTRIAL PARK
 PLAT C.M.P. NO. 8341
 1.823 AC±
 ZONING: CE-CL1
 ELECTION DISTRICT: 6

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN
ENVIRONMENTAL CONCEPT PLAN

GYM/SCHOOL
 9000 MAIER PLACE
 LAUREL, MD 20723
 ZONED: CE-CL1

PARCEL 873
 HOWARD COUNTY, MD

ENVIRODESIGN, INC
 Civil-Environmental Engineering Services
 5228 Pine Bark Ct, Columbia, MD 21045
 Phone: 301-509-3803
 www.civil-environmental.com

TAX MAP 47 BLOCK 21
 6TH ELECTION DISTRICT

DESIGN BY: NB
 DRAWN BY: HP
 CHECKED BY: NB
 DATE: 3/25/16
 SCALE: AS SHOWN

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. 17356 EXPIRATION DATE: 5/31/2017

PROJ # ECP-15-045

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