

SWM Concept Summary Table	
General Property Information:	
SM#: STORMWATER-284767	
Type of Concept: SWM Concept	
MNCP&PC Process/No: N/A	
Property Address: 20941 Lake Ridge Drive, Boyds, Maryland 20841 (Black Hill Regional Park)	
Property Legal Description: GARNKIRK ETC	
Property Size (ac./sq.ft.): 19.170 ac. / 835,045 sq. ft.	
Total Concept Area (ac./sq.ft.): 1.332 ac. / 58,036 sq. ft.	
Zoning: RE-2	
Watershed and Stream Class: Little Seneca Creek; Class I-P	
Special Protection Area: N/A	
100 YR Floodplain: N/A	
Ex. % Impervious/Redevelopment or New Development: 7.43% - New Development	
SWM Summary:	
Target P _t /Proposed P _c : 1.0 in. / 1.04 in.	
Target ESDv/Provided ESDv: 1,590 cu. ft. / 1,656 cu. Ft.	
ESD Measures: 1- Micro-bioretentation Facility	
Structural Storage Required/Provided: N/A	
Structural Measures: N/A	
Waiver Request/QL/QN/Both: No	
Provided ESDv + Structural Storage Provided + Requested to be Waived = 1,656 cu. ft.	
Other Information: N/A	



CLARK | AZAR & ASSOCIATES
20440 Century Blvd, Suite 220
Germantown, MD, 20874
T(301) 528-2010
www.clarkazar.com
A Woman Owned Small Business

LSG LANDSCAPE ARCHITECTURE	DESIGN		
Designer's Name DAVE NORDEN			
Address 1775 GREENSBORO STATION PLACE, SUITE 110 City/State/Zip TYSONS, VIRGINIA, 22102 Telephone Number 703-821-2045	Landscape Architect	Date	Checked By:
	Architect CLARK AZAR & ASSOCIATES	Date 4/12/19	Checked By: DC
	Engineer ME	Date 4/12/19	Checked By: JA
	Drawn by	Date	Checked By:

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.

DocuSigned by:
Jason Azar
341C0499C2C4D0

License No. 31168
Expiration Date 01/12/2021



The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunnet Avenue
Silver Spring, Maryland 20901
(301) 495-2535

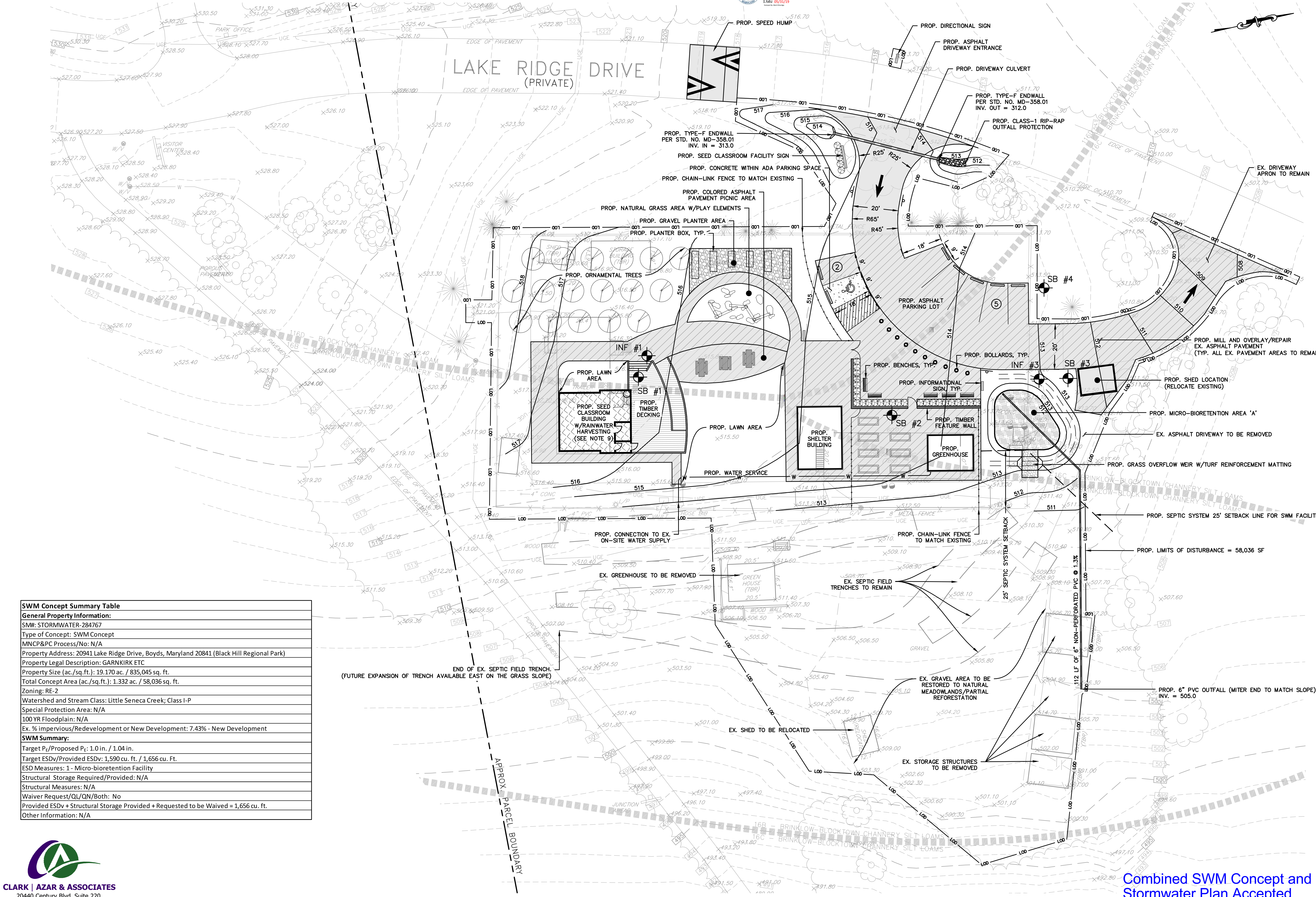
REVIEW AND APPROVAL		ISSUED FOR PROCUREMENT ON	
		REVISIONS	
Project Manager	Date	Rev. No.	Date
Construction Manager	Date	1	03/27/19
Park Manager	Date	2	05/01/19

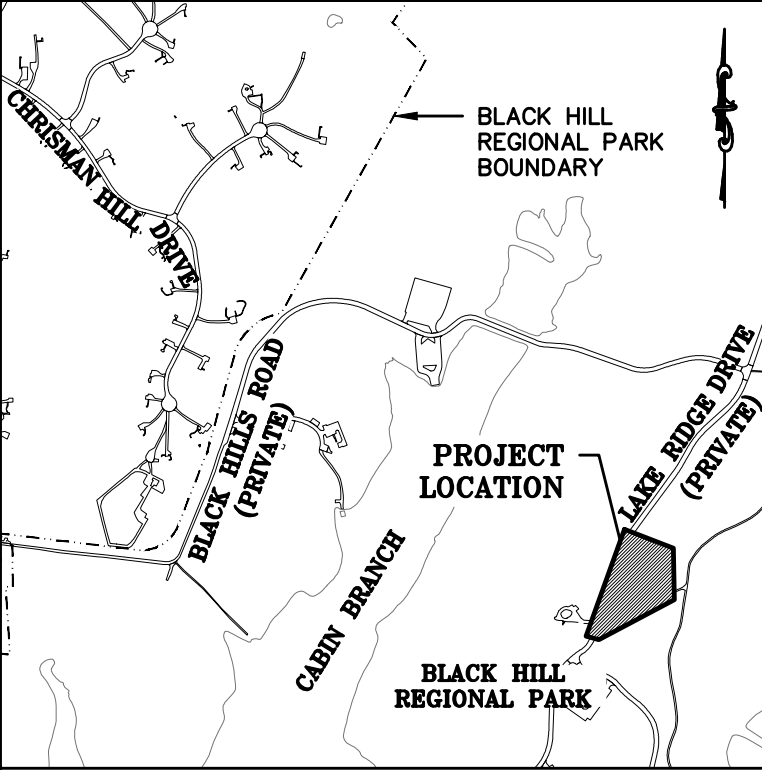
BLACK HILL REGIONAL PARK
SEED CLASSROOM FACILITY PLAN
20941 LAKE RIDGE DRIVE, BOYDS, MARYLAND 20841
Combined SWM Concept / Site Development SWM Plan

LEGAL DESCRIPTION: GARNKIRK ETC
PLAN NUMBER: 42019149E
TAX MAP: EU123
WSSC GRID: 228NW14

SCALE: AS SHOWN

DWG. #
C-1
SHT. # 1 OF 2





VICINITY MAP
SCALE: 1" = 1000'

GENERAL NOTES

OWNER: MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION
8787 GEORGIA AVENUE
SILVER SPRING, MARYLAND 20910

CONTACT: WEN HUANG, PROJECT MANAGER
(301) 495-2466
WEN.HUANG@MONTGOMERYPARKS.ORG

- WSSC MAP GRID: 228NW14, 229NW14
- TAX MAP: EV-21
- ZONING: RE-2
- ELECTION DISTRICT: 2
- TOPOGRAPHY SURVEY PERFORMED BY POTOMAC VALLEY SURVEYS, LLC APRIL 12, 2016 AND SUPPLEMENTED BY MONTGOMERY COUNTY GIS DATA.
- THE LOCATION OF UNDERGROUND UTILITIES ARE SHOWN APPROXIMATE IN NATURE AND PER AVAILABLE PLANS. ABOVE GROUND UTILITIES & IMPROVEMENTS FIELD LOCATED BY POTOMAC VALLEY SURVEYS, LLC. INVERT ELEVATIONS HAVE BEEN OBTAINED WHERE ACCESS IS AVAILABLE. ALL CONTRACTORS MUST CALL "MISS UTILITY" PRIOR TO ANY EXCAVATIONS.
- NRCS WEB SOIL SURVEY IDENTIFIES SOILS AT THIS SITE AS OCCOQUAN LOAM (HSG-B), BLOCKTOWN CHANNERY SILT LOAM (HSG-D), AND BRINKLOW-BLOCKTOWN CHANNERY SILT LOAMS (HSG-C).
- THERE IS NO MAPPED FLOODPLAIN ASSOCIATED WITH THIS SITE PER FEMA FLOOD INSURANCE RATE MAP NUMBER 24031C0160D, DATED SEPTEMBER 29, 2006.
- PROPOSED SEED CLASSROOM BUILDING TO UTILIZE RAINWATER HARVESTING VIA INTERNAL CISTERN TO COLLECT ROOFTOP RUNOFF. BUILDING FOOTPRINT HAS BEEN EXCLUDED FROM MICRO-BIORETENTION AREA 'A' DRAINAGE AREA AND NO STORMWATER MANAGEMENT HAS BEEN CREDITED.
- THERE IS AN EXISTING SEPTIC FIELD ON-SITE TO REMAIN. THE PROPOSED MICRO-BIORETENTION FACILITY IS LOCATED OUTSIDE OF THE MINIMUM 25' SETBACK FROM THE EXISTING SEPTIC FIELD AND ANY FUTURE TRENCHES. THERE ARE NO EXISTING/PROPOSED WELLS ON SITE.

LEGEND

- LOO PROPOSED LIMITS OF DISTURBANCE
- PROPOSED GRAVEL (ASSUMED IMPERVIOUS)
- PROPOSED ASPHALT PAVEMENT
- EXISTING ASPHALT PAVEMENT (MILL & OVERLAY/REPAIR)
- PROPOSED CONCRETE PAVEMENT
- PROPOSED MICRO-BIORETENTION AREA
- PROPOSED RAINWATER HARVEST AREA (NO SWM CREDITED)
- SB-1 SOIL BORING/INFILTRATION TEST LOCATION

Combined SWM Concept and Site Development
Stormwater Plan Accepted
Mary M. Fertig
5/29/2019



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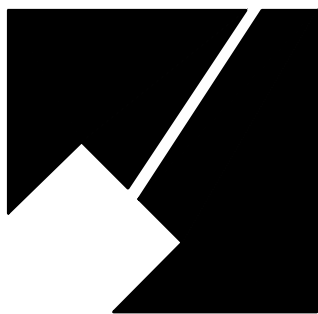
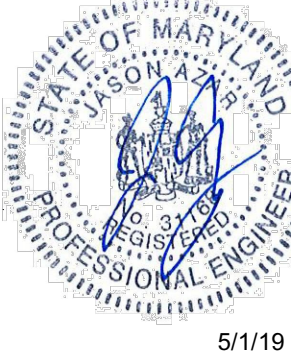
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Designer's Name DAVE NORDEN		
Address 1775 GREENSBORO STATION PLACE, SUITE 110 TYSONS, VIRGINIA, 22102 Telephone Number 703-821-2045		

DESIGN		
Landscape Architect	Date	Checked By:
Architect CLARK AZAR & ASSOCIATES	Date 4/12/19	Checked By: DC
Engineer ME	Date 4/12/19	Checked By: JA
Drawn by	Date	Checked By:

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.

DocuSigned by:
Jason Azar
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License No. 31168
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Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL	
Project Manager	Date
Construction Manager	Date
Park Manager	Date

ISSUED FOR PROCUREMENT ON _____		
REVISIONS		
Rev. No.	Date	Description
1	03/27/19	Simplified NRI & FC Exemption
2	05/01/19	Stormwater Management Concept

**BLACK HILL REGIONAL PARK
SEED CLASSROOM FACILITY PLAN**
20941 LAKE RIDGE DRIVE, BOYDS, MARYLAND 20841
Combined SWM Concept / Site Development SWM Plan

SCALE: AS SHOWN

LEGAL DESCRIPTION: GARNKIRK ETC
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TAX MAP: EU123
WSSC GRID: 228NW14

DWG. #
C-2
SHT. # 2 OF 2

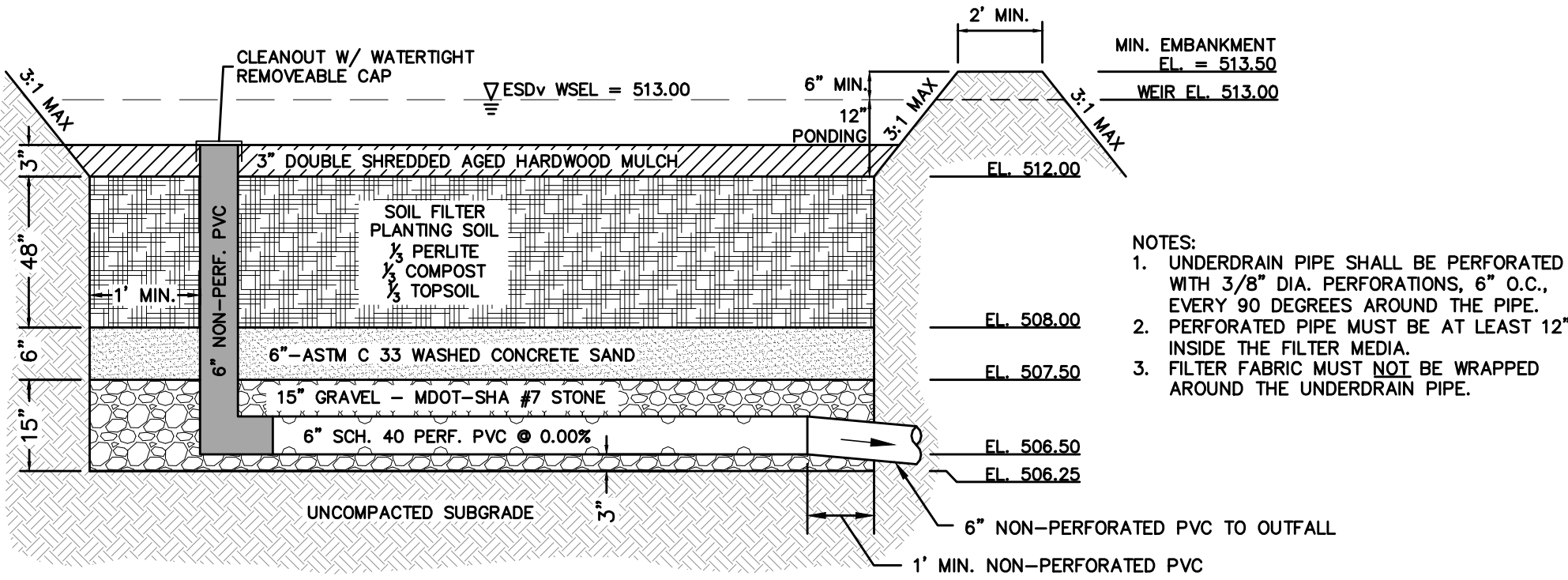


LOD AREA:
TOTAL AREA = 58,036 SF (1.332 AC)
PERVIOUS AREA = 40,063 SF (0.919 AC)
IMPERVIOUS AREA = 17,973 SF (0.413 AC)
PERCENT IMPERVIOUS = 31.0%

DRAINAGE AREA (DA-1):
TOTAL AREA = 17,218 SF (0.395 AC)
PERVIOUS AREA = 9,681 SF (0.222 AC)
IMPERVIOUS AREA = 7,537 SF (0.173 AC)
PERCENT IMPERVIOUS = 43.8%

DRAINAGE AREA (DA-2):
TOTAL AREA = 817,827 SF (18.775 AC)
PERVIOUS AREA = 783,016 SF (17.988 AC)
IMPERVIOUS AREA = 34,271 SF (0.787 AC)
PERCENT IMPERVIOUS = 4.2%

SWM SUMMARY TABLE							
Measure Number	Type of Measure	Drainage Area to Measure	Impervious Area to Measure	% Impervious	Rv for ESD Calculations	Min ESDv	Credited Volume
ESD							
'A'	MBR	17,218 SF	7,537 sf	43.80%	0.444	637 cf	1,656 cf
Total		17,218 sf	7,537 sf				1,656 cf
Structural							
Total		0	0				0
Does not drain to a SWM measure							
QN Waiver acres and % impervious							N/A
QL Waiver acres and % impervious							N/A
Project							
Total		0	0	0	0		0
ESDv Required 1,590							
ESDv Provided 1,656							
Structural Required 0							
Structural Provided 0							



1 TYPICAL MICRO-BIORETENTION SECTION
NOT TO SCALE

