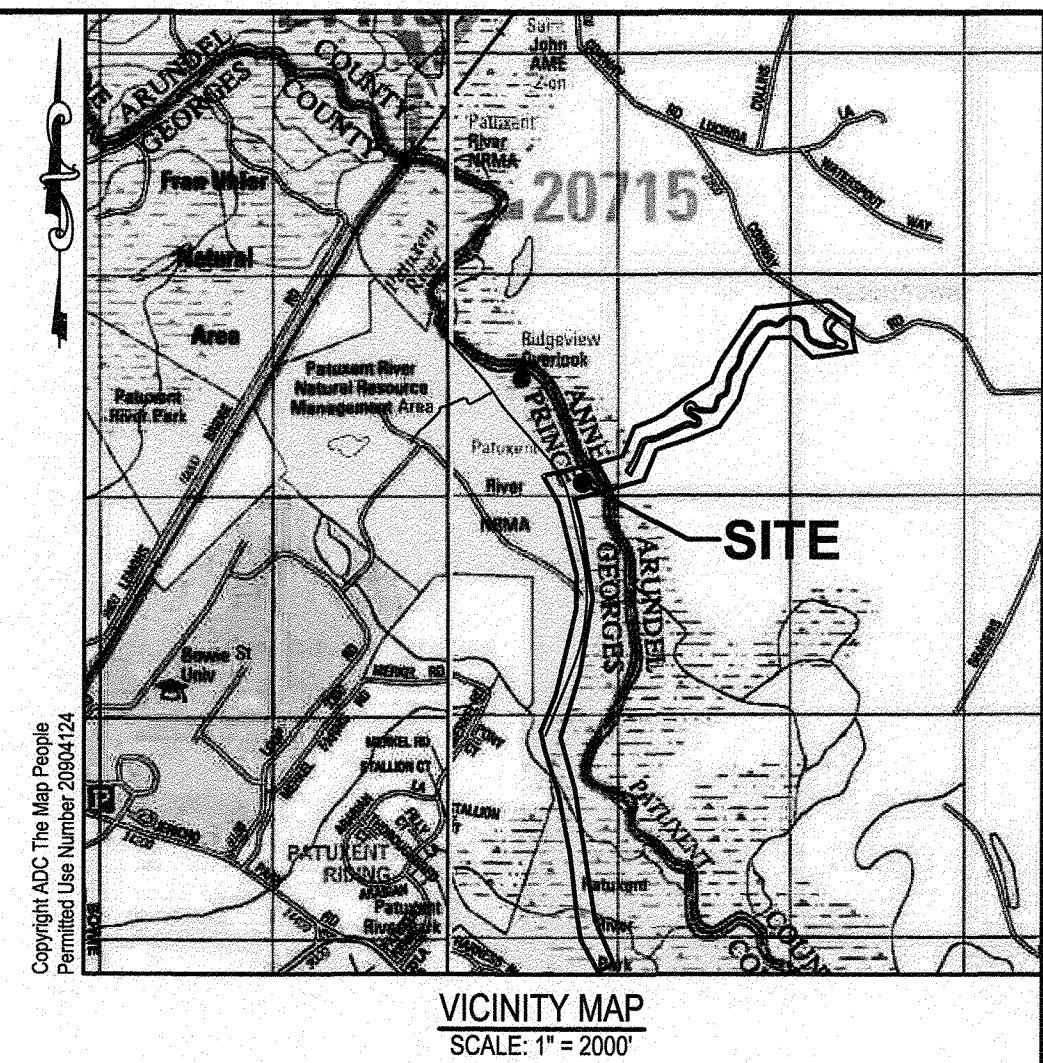


ANNE ARUNDEL COUNTY & PRINCE GEORGE'S COUNTY, MARYLAND WB&A TRAIL - BRIDGE AT PATUXENT RIVER

PROJECT NO. P393600, CONTRACT NO. P393608
SHA NO. AA089B51, FAP NO. TAP-3(736)E ISSUED FOR BID
JUNE, 2021



OWNER / DEVELOPER

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS
2662 RIVA ROAD
ANNAPOLIS, MARYLAND 21401
ATTN: ROBERT HERNANDEZ
PHONE: (410) 222 - 4126

AND

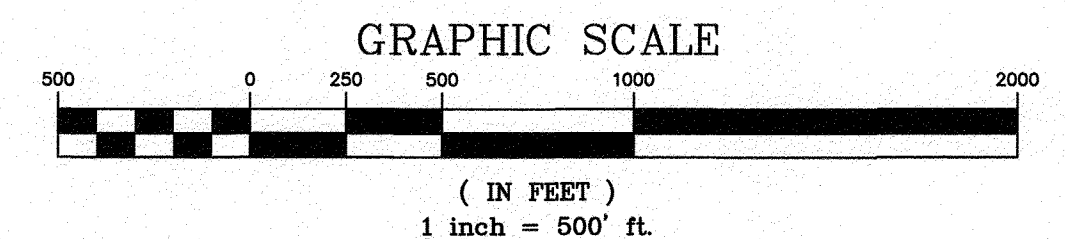
MARYLAND-NATIONAL CAPITAL PARK
AND PLANNING COMMISSION (M-NCPPC)
PRINCE GEORGE'S COUNTY
DEPARTMENT OF PARKS AND RECREATION
6600 KENILWORTH AVENUE
RIVERDALE, MD 20737
ATTN: ROBERT PATTEN
PHONE: 301-699-2522



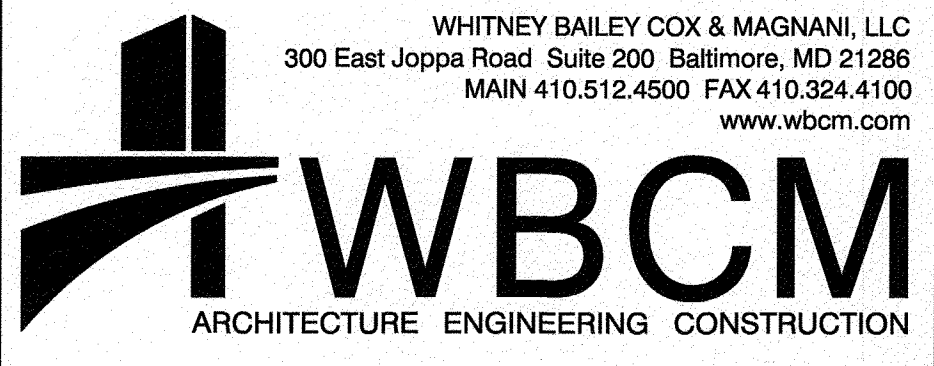
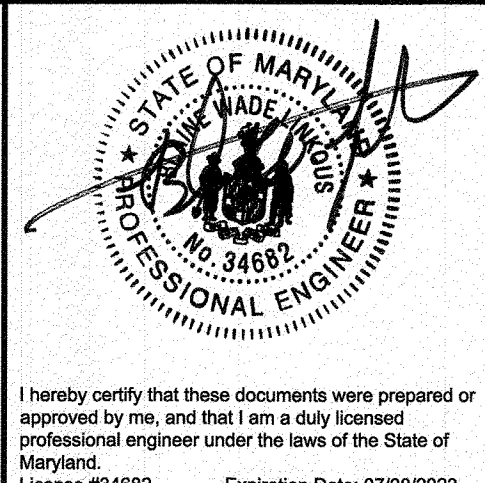
INDEX OF DRAWINGS:

NO. OF SHEETS	SHEET TITLE
1	OVERALL PROJECT COVER SHEET
2-17	ANNE ARUNDEL COUNTY - SITE, GRADING, EROSION & SEDIMENT CONTROL, AND STORMWATER MANAGEMENT
18-33	PRINCE GEORGE'S COUNTY - SITE, GRADING, EROSION & SEDIMENT CONTROL, AND STORMWATER MANAGEMENT
34-44	BRIDGE / STRUCTURAL
45	TRAFFIC CONTROL PLAN

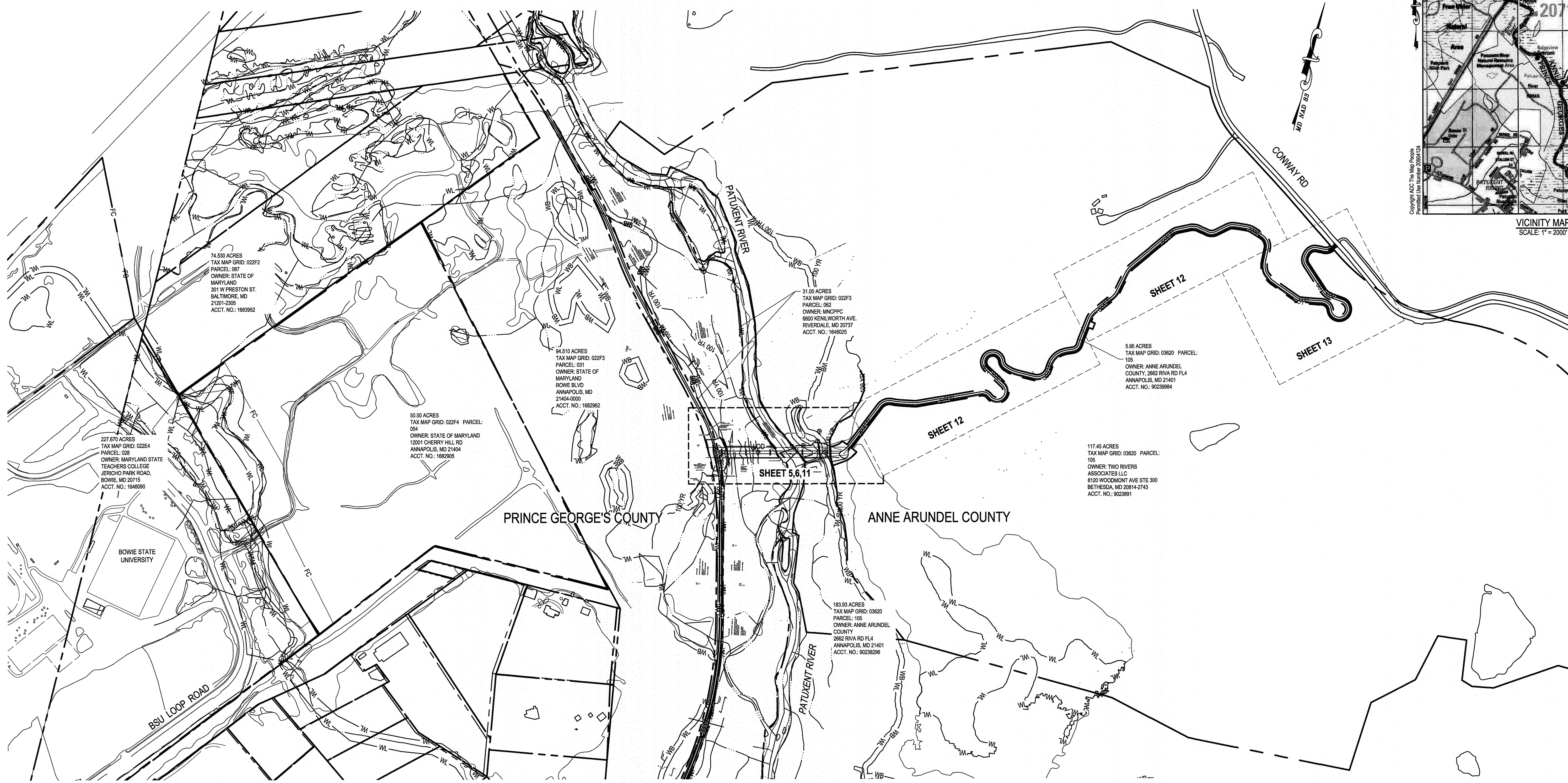
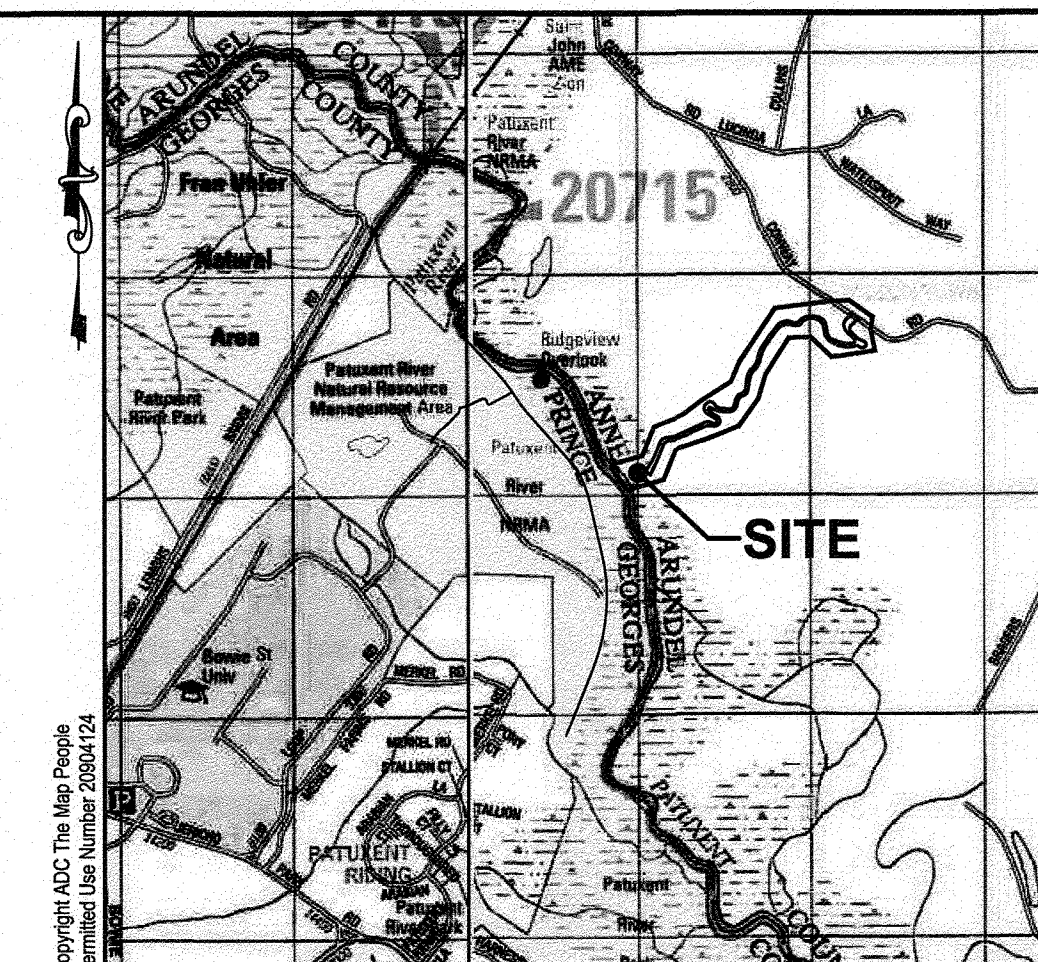
ALL WORK ON THIS PROJECT SHALL CONFORM TO LATEST APPROVED MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION (MDOT SHA) "STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS" REVISIONS THEREOF OR ADDITIONS THERETO, AS INDICATED IN THE PROJECT DESCRIPTION OF THE INVITATION FOR BIDS BOOK; THE SPECIAL PROVISIONS INCLUDED IN THE INVITATION FOR BIDS BOOK; THE ADMINISTRATION'S "BOOK OF STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES" AND THE LATEST ADOPTED MUTCD.



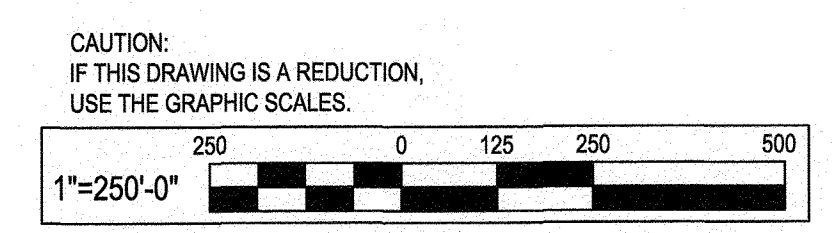
SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

 <p>WHITNEY BAILEY COX & MAGNANI, LLC 300 East Joppa Road Suite 200 Baltimore, MD 21286 MAIN 410.512.4500 FAX 410.324.4100 www.wbcm.com</p>	 <p>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 #34682 Expiration Date: 07/08/2023</p>	<p style="text-align: center;">REVISIONS</p> <table border="1"> <thead> <tr> <th>NO.</th> <th>DESCRIPTION</th> <th>BY</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>				NO.	DESCRIPTION	BY	DATE													<p style="text-align: center;">ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS</p> <p style="text-align: right; font-size: 24pt;">98220</p> <p style="text-align: right;">WB&A TRAIL - BRIDGE AT PATUXENT</p>			
		NO.	DESCRIPTION	BY	DATE																				
<p>APPROVED: <i>[Signature]</i> DATE: 8/9/21 CHIEF ENGINEER</p> <p>APPROVED: <i>[Signature]</i> DATE: 8/15/21 PROJECT MANAGER</p> <p>APPROVED: <i>[Signature]</i> DATE: 8/11/21 ASSISTANT CHIEF ENGINEER</p>		<p>APPROVED: <i>[Signature]</i> DATE: 8/15/21 CHIEF, RIGHT-OF-WAY</p>		<p>SCALE: AS SHOWN</p> <p>DRAWN BY: M.M./H.H.</p> <p>CHECKED BY: B.L.</p> <p>SHEET NO. 1 OF 45</p> <p>PROJECT NO.: 2014017900</p> <p>CONTRACT NO.: 2014017900</p>																					

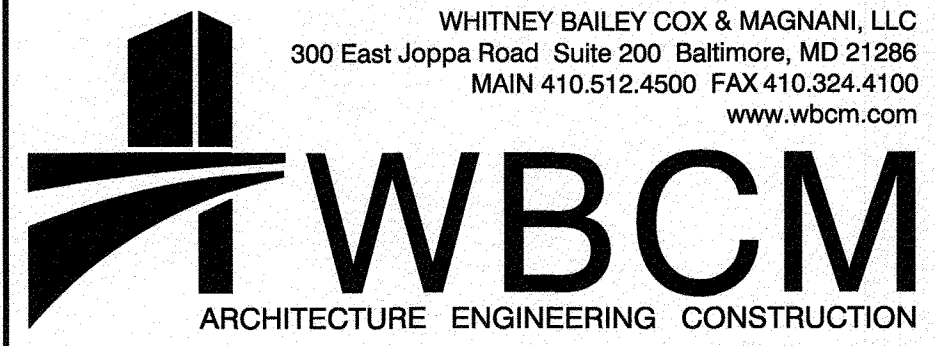
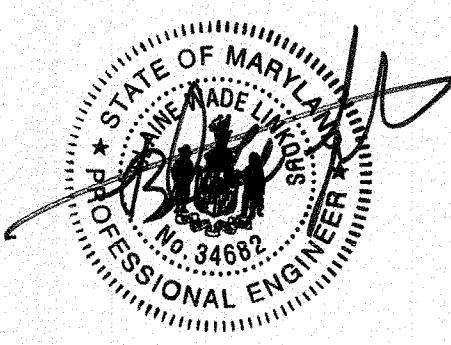
DPM# 37876



OVERALL PLAN
SCALE: 1" = 250'



SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

 <p>WHITNEY BAILEY COX & MAGNANI, LLC 300 East Joppa Road, Suite 200, Baltimore, MD 21286 MAIN 410.512.4500 FAX 410.324.4100 www.wbcm.com</p>	 <p>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 #34682 Expiration Date: 07/08/2023</p>	<p style="text-align: center;">REVISIONS</p> <table border="1"> <thead> <tr> <th>NO.</th> <th>DESCRIPTION</th> <th>BY</th> <th>DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>				NO.	DESCRIPTION	BY	DATE													<p style="text-align: center;">ANNE ARUNDEL COUNTY</p> <p style="text-align: center;">DEPARTMENT OF PUBLIC WORKS</p> <p style="text-align: right; font-size: 24pt; font-weight: bold;">98222</p>			
		NO.	DESCRIPTION	BY	DATE																				
<p>APPROVED: <i>[Signature]</i> 8/9/21 CHIEF ENGINEER</p>		<p>APPROVED: <i>[Signature]</i> 8/5/21 PROJECT MANAGER</p>		<p>SCALE: 1" = 250'</p> <p>DRAWN BY: M.M./H.H.</p> <p>CHECKED BY: B.L.</p>																					
<p>APPROVED: <i>[Signature]</i> 8/11/21 ASSISTANT CHIEF ENGINEER</p>		<p>APPROVED: <i>[Signature]</i> 8/6/21 CHIEF, RIGHT-OF-WAY</p>		<p>SHEET NO. 3 OF 45</p> <p>PROJECT NO.: 2014017900</p> <p>CONTRACT NO.: 2014017900</p>																					
				<p style="font-size: 24pt; font-weight: bold;">OVERALL PLAN</p>																					

Schnabel TEST BORING LOG		Project: WB&A Trail Bridge over Patuxent River		Boring Number: B-2							
Contractor: Connelly and Associates, Inc. Frederick, Maryland		Contract Number: 17C14032.00		Sheet: 1 of 2							
Contractor Foreman: DJ Skaps		Schnabel Representative: Kevin Bell		Equipment: CME-65 (Track)							
Method: 3-1/4" I.D. Hollow Stem Auger		Hammer Type: Auto Hammer (140 lb)		Dates Started: 7/18/17 Finished: 7/18/17							
X: 1385253 N Y: 495045 E By: Land Survey		Coordinate System: MD State Plane		Ground Surface Elevation: 63.4 (ft) Total Depth: 59.3 ft							
Groundwater Observations		Date		Time		Depth		Casing		Caved	
Encountered	7/19	10:02 AM	13.9'	13.5'	---	---	---	---	---	---	
Completion	7/19	12:17 PM	12.8'	68.5'	---	---	---	---	---	---	
Casing Pulled	7/19	12:42 PM	13.7'	---	---	---	---	---	---	---	

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	SAMPLING DEPTH DATA	TESTS	REMARKS
0.3	Topsoil	FILL	62.7	A	S-1 SPT (14" x 14") REC=4, 22%	LL = 28 PI = 3 MC = 5.7%	Fill
5.0	POORLY GRADED SAND WITH SILT, fine to coarse grained sand, moist, light orange brown and light gray, estimated 5-10% fines, estimated <5% mica	SP-SM	60.0	5	S-2 SPT (14" x 14") REC=12, 67%	LL = NP PI = NP MC = 3.0%	Terrace Deposits
8.5	SILTY SAND, fine to coarse grained sand, moist, light orange brown, est. 15-20% fines, estimated <5% mica	SM	54.5	15	S-4 SPT (14" x 14") REC=19, 100%	MC = 10.6%	B.O.F. ABUTMENT B EL. 53.5
18.5	POORLY GRADED SAND WITH SILT, fine to medium grained sand, wet, light orange brown and light gray, estimated 5-10% fines, estimated <5% mica	SP-SM	44.5	20	S-6 SPT (14" x 14") REC=11, 100%	MC = 28.8%	Driller added water mixed with G150 to augers
25.0	Change: Contains coarse sand size, weakly to moderately cemented iron nodules	SP-SM	44.5	25	S-7 SPT (14" x 14") REC=11, 100%	MC = 28.8%	Driller added water mixed with G150 to augers
30.0	Change: Contains a 2 inch layer of fine gravel size, strongly cemented iron nodules	SP-SM	44.5	30	S-8 SPT (14" x 14") REC=11, 100%	MC = 28.8%	Driller added water mixed with G150 to augers
35.0	Change: Contains coarse sand size, weakly to moderately cemented iron nodules	SP-SM	44.5	35	S-9 SPT (14" x 14") REC=11, 100%	MC = 28.8%	Driller added water mixed with G150 to augers
59.3	Bottom of Boring at 59.3 ft. Boring terminated at selected depth.						Running sand encountered.

Schnabel TEST BORING LOG		Project: WB&A Trail Bridge over Patuxent River		Boring Number: B-2							
Contractor: Connelly and Associates, Inc. Frederick, Maryland		Contract Number: 17C14032.00		Sheet: 2 of 2							
Contractor Foreman: J. Leathman		Schnabel Representative: J. Spencer		Equipment: Tripod Drilling Equipment							
Method: 3-1/4" I.D. Hollow Stem Auger		Hammer Type: Safety Hammer (140 lb)		Dates Started: 7/5/18 Finished: 7/5/18							
X: 1385099 N Y: 495050 E By: Land Survey		Coordinate System: MD State Plane		Ground Surface Elevation: 52.0 (ft) Total Depth: 15.0 ft							
Groundwater Observations		Date		Time		Depth		Casing		Caved	
Encountered	7/5	---	4.0'	---	---	---	---	---	---	---	

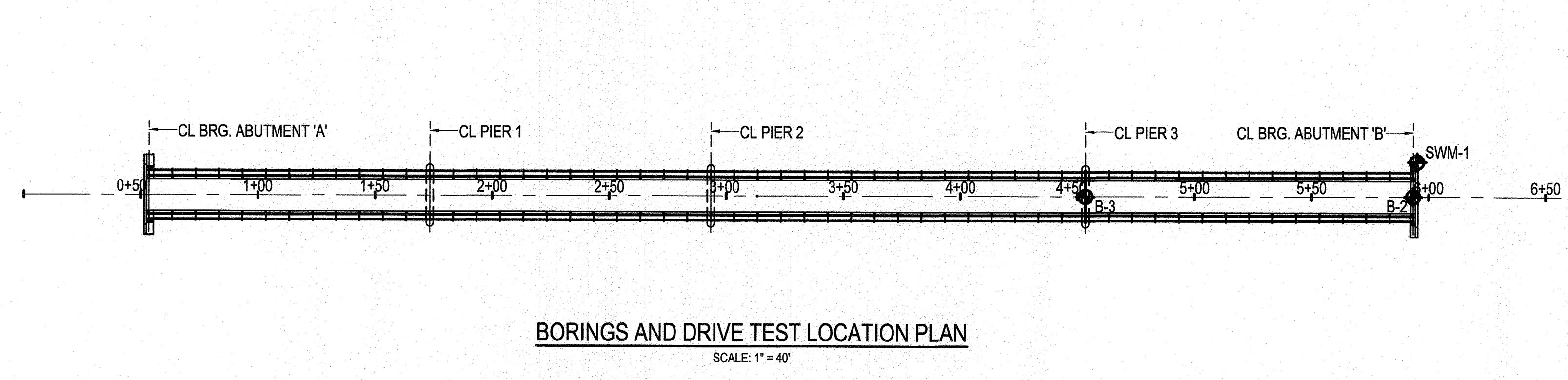
DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	SAMPLING DEPTH DATA	TESTS	REMARKS
0.2	Root Mat 2-inches	FILL	51.8	A	S-1 SPT (14" x 14") REC=7, 33%	LL = 28 PI = 3 MC = 5.7%	Fill
2.5	SILT, moist, brown, estimated 5-10% sand, estimated <5% mica, contains roots	ML	49.3	5	S-2 SPT (14" x 14") REC=7, 33%	LL = 28 PI = 3 MC = 5.7%	B.O.F. PIER 3 EL. 49.0
5.0	SILT WITH SAND, wet, brown, contains wood, organics	ML	46.8	5	S-3 SPT (14" x 14") REC=4, 54%	LL = 28 PI = 3 MC = 5.7%	Terrace Deposits
8.5	SILTY SAND WITH GRAVEL, moist, orange brown, estimated <5% mica	SM	43.3	10	S-4 SPT (14" x 14") REC=17, 67%	LL = 28 PI = 3 MC = 5.7%	Terrace Deposits
13.5	POORLY GRADED SAND WITH SILT, moist, tan brown, estimated <5% mica	SP-SM	38.5	15	S-6 SPT (14" x 14") REC=19, 100%	LL = 28 PI = 3 MC = 5.7%	Running sand encountered.
15.0	Bottom of Boring at 15.0 ft. Could not go any deeper because of running sands. Offset 21 feet east of staked location for access.						Running sand encountered.

Schnabel TEST BORING LOG		Project: WB&A Trail Bridge over Patuxent River		Boring Number: B-3							
Contractor: Connelly and Associates, Inc. Frederick, Maryland		Contract Number: 17C14032.01		Sheet: 1 of 1							
Contractor Foreman: J. Leathman		Schnabel Representative: J. Spencer		Equipment: Tripod Drilling Equipment							
Method: 3-1/4" I.D. Hollow Stem Auger		Hammer Type: Safety Hammer (140 lb)		Dates Started: 7/5/18 Finished: 7/5/18							
X: 1385099 N Y: 495050 E By: Land Survey		Coordinate System: MD State Plane		Ground Surface Elevation: 52.0 (ft) Total Depth: 15.0 ft							
Groundwater Observations		Date		Time		Depth		Casing		Caved	
Encountered	7/5	---	4.0'	---	---	---	---	---	---	---	

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	SAMPLING DEPTH DATA	TESTS	REMARKS
0.2	Root Mat 2-inches	FILL	51.8	A	S-1 SPT (14" x 14") REC=7, 33%	LL = 28 PI = 3 MC = 5.7%	Fill
2.5	SILT, moist, brown, estimated 5-10% sand, estimated <5% mica, contains roots	ML	49.3	5	S-2 SPT (14" x 14") REC=7, 33%	LL = 28 PI = 3 MC = 5.7%	B.O.F. PIER 3 EL. 49.0
5.0	SILT WITH SAND, wet, brown, contains wood, organics	ML	46.8	5	S-3 SPT (14" x 14") REC=4, 54%	LL = 28 PI = 3 MC = 5.7%	Terrace Deposits
8.5	SILTY SAND WITH GRAVEL, moist, orange brown, estimated <5% mica	SM	43.3	10	S-4 SPT (14" x 14") REC=17, 67%	LL = 28 PI = 3 MC = 5.7%	Terrace Deposits
13.5	POORLY GRADED SAND WITH SILT, moist, tan brown, estimated <5% mica	SP-SM	38.5	15	S-6 SPT (14" x 14") REC=19, 100%	LL = 28 PI = 3 MC = 5.7%	Running sand encountered.
15.0	Bottom of Boring at 15.0 ft. Could not go any deeper because of running sands. Offset 21 feet east of staked location for access.						Running sand encountered.

Schnabel TEST BORING LOG		Project: WB&A Trail Bridge over Patuxent River		Boring Number: SWM-1							
Contractor: Connelly and Associates, Inc. Frederick, Maryland		Contract Number: 17C14032.01		Sheet: 1 of 1							
Contractor Foreman: J. Leathman		Schnabel Representative: M. Krasch		Equipment: Dierich D-50 (Track)							
Method: 3-1/4" I.D. Hollow Stem Auger		Hammer Type: Auto Hammer (140 lb)		Dates Started: 7/5/18 Finished: 7/6/18							
X: 1385212 N Y: 495082 E By: Land Survey		Coordinate System: MD State Plane		Ground Surface Elevation: 61.0 (ft) Total Depth: 15.0 ft							
Groundwater Observations		Date		Time		Depth		Casing		Caved	
Encountered	7/6	10:16 AM	8.5'	---	---	---	---	---	---	---	
Completion	7/6	10:20 AM	9.0'	---	---	---	---	---	---	---	
Casing Pulled	7/6	10:36 AM	10.0'	---	---	---	---	---	---	---	

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	SAMPLING DEPTH DATA	TESTS	REMARKS
0.4	Topsoil 4-inches	FILL	60.6	A	S-1 SPT (14" x 14") REC=9, 39%	LL = 28 PI = 3 MC = 5.7%	Fill
2.5	LEAN CLAY WITH SAND, moist, tan brown reddish brown	CL	58.1	5	S-2 SPT (14" x 14") REC=16, 100%	PP = 3.60 tbf	Terrace Deposits
5.0	POORLY GRADED SAND WITH SILT, moist, tan white with mottles of orange brown	SP-SM	56.0	5	S-3 SPT (14" x 14") REC=19, 100%	LL = 28 PI = 3 MC = 5.7%	Terrace Deposits
8.5	POORLY GRADED SAND WITH SILT, wet, tan with mottles of orange	SP-SM	52.5	10	S-4 SPT (14" x 14") REC=19, 100%	LL = 28 PI = 3 MC = 5.7%	Terrace Deposits
13.5	POORLY GRADED SAND WITH SILT, wet, with speckles of light orange	SP-SM	47.5	15	S-6 SPT (14" x 14") REC=19, 100%	LL = 28 PI = 3 MC = 5.7%	Terrace Deposits
15.0	Bottom of Boring at 15.0 ft. Offset 3 feet southwest of staked location. Infiltration hole 1 offset 6 feet northwest of boring. Encountered red, lean clay. Infiltration hole 2 offset 7 feet east of boring. Accepted for testing.						Terrace Deposits



BORINGS AND DRIVE TEST LOCATION PLAN
SCALE: 1" = 40'

- NOTES:
- BORING LOCATIONS ARE SHOWN ON SEE SHEET 5 OF 44.
 - B.O.F. = BOTTOM OF FOOTER.
 - P.T. = ESTIMATED PILE TOP ELEVATION.

WHITNEY BAILEY COX & MAGNANI, LLC
300 East Joppa Road Suite 200 Baltimore, MD 21286
MAIN 410.512.4500 FAX 410.324.4100
www.wbcm.com

REVISIONS			
NO.	DESCRIPTION	BY	DATE

SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

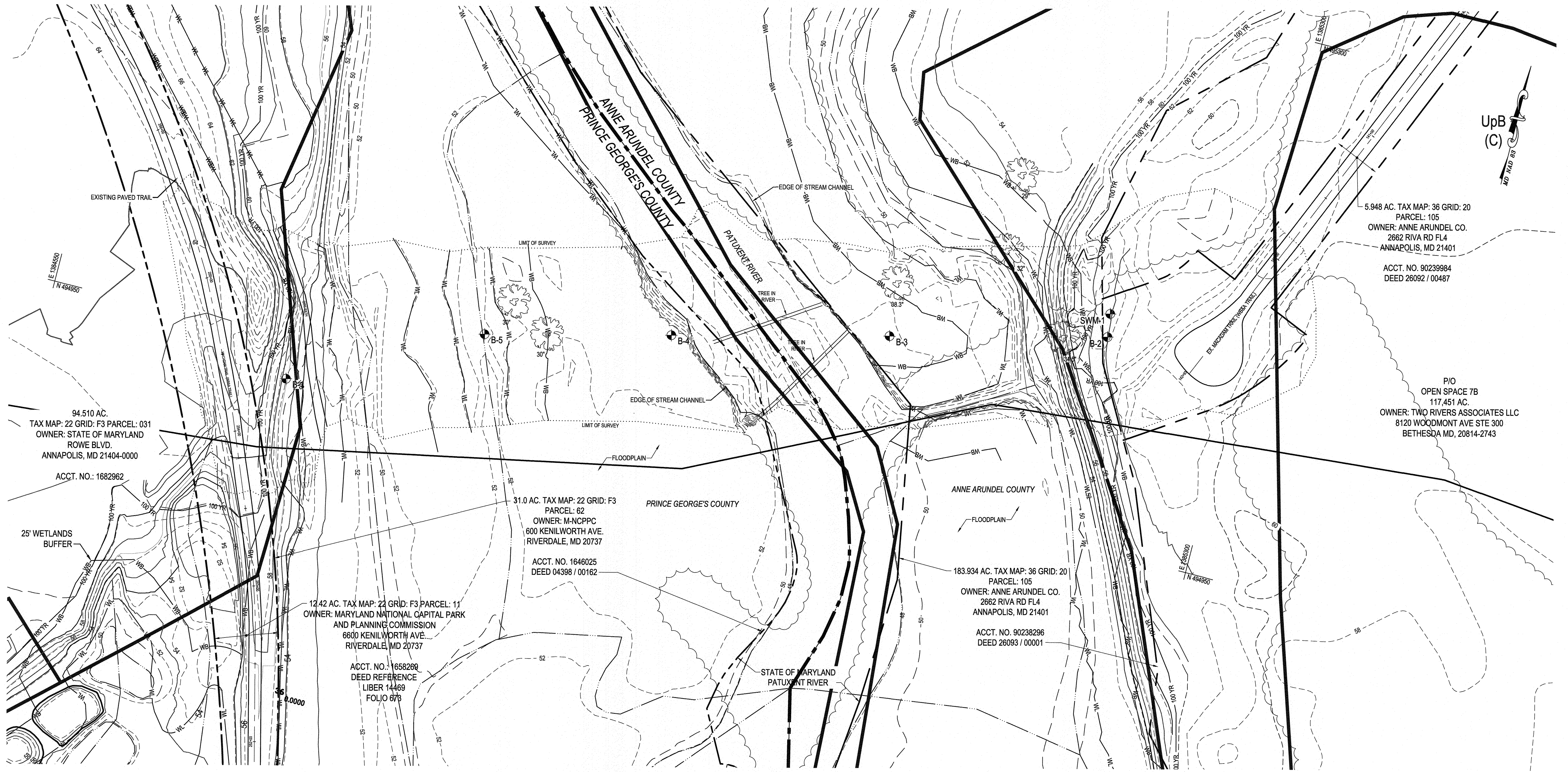
98223

WB&A TRAIL - BRIDGE AT PATUXENT

BORING LOGS

APPROVED <i>[Signature]</i> CHIEF ENGINEER	DATE 8/9/21	APPROVED <i>[Signature]</i> PROJECT MANAGER	DATE 8/5/21
APPROVED <i>[Signature]</i> ASSISTANT CHIEF ENGINEER	DATE 8/11/21	APPROVED <i>[Signature]</i> CHIEF, RIGHT-OF-WAY	DATE 8/6/21

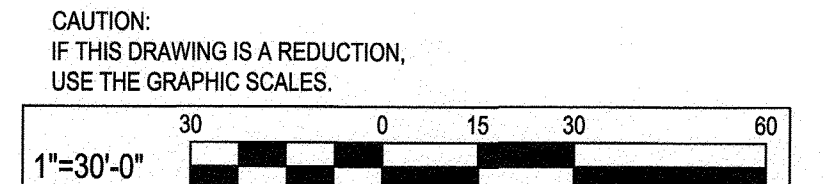
SCALE: AS SHOWN
DRAWN BY: M.M.H.H.
CHECKED BY: B.L.
SHEET NO. 4 OF 45
PROJECT NO.: 2014017900
CONTRACT NO.: 2014017900



PLAN
SCALE: 1" = 30'

HYDROLOGIC SOIL GROUP - ANNE ARUNDEL COUNTY, MARYLAND

MAP UNIT SYMBOL	MAP UNIT NAME	SLOPE	HYDRIC	HSG RATING	k RATING
CorB	Christiana-Sassafras complex	2 to 5 %	No	D	0.49
CH1A	Codorus and Halboro soils, freq. flooded	0 to 2 %	Partially	C	
UpB	Udorthents, reclaimed gravel pits	0 to 5 %	No	C	0.15



SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

WHITNEY BAILEY COX & MAGNANI, LLC
300 East Joppa Road Suite 200 Baltimore, MD 21286
MAIN 410.512.4500 FAX 410.324.4100
www.wbcm.com

WBCM
ARCHITECTURE ENGINEERING CONSTRUCTION

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 #34682 Expiration Date: 07/08/2023

REVISIONS			
NO.	DESCRIPTION	BY	DATE

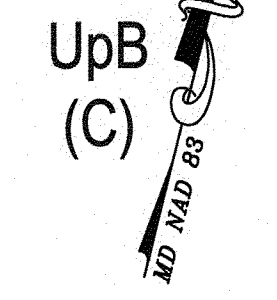
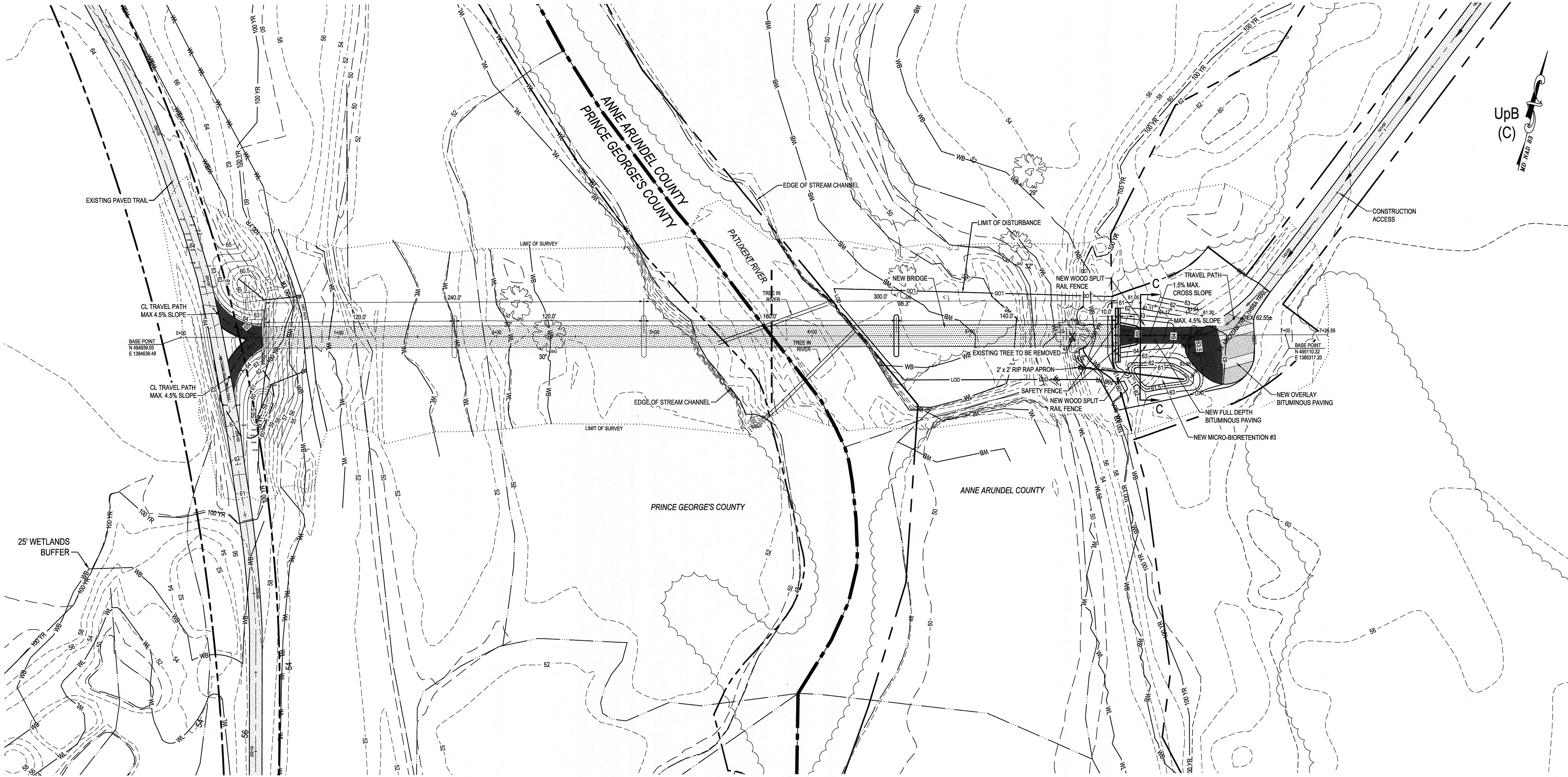
ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

98224

WB&A TRAIL - BRIDGE AT PATUXENT

EXISTING CONDITIONS PLAN

APPROVED	DATE	APPROVED	DATE	SCALE: 1" = 30'
<i>[Signature]</i>	8/9/21	<i>[Signature]</i>	8/5/21	DRAWN BY: M.M./H.H.
CHIEF ENGINEER		PROJECT MANAGER		CHECKED BY: B.L.
APPROVED	DATE	APPROVED	DATE	SHEET NO. 5 OF 45
<i>[Signature]</i>	8/11/21	<i>[Signature]</i>	8/5/21	PROJECT NO.: 2014017900
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT-OF-WAY		CONTRACT NO.: 2014017900



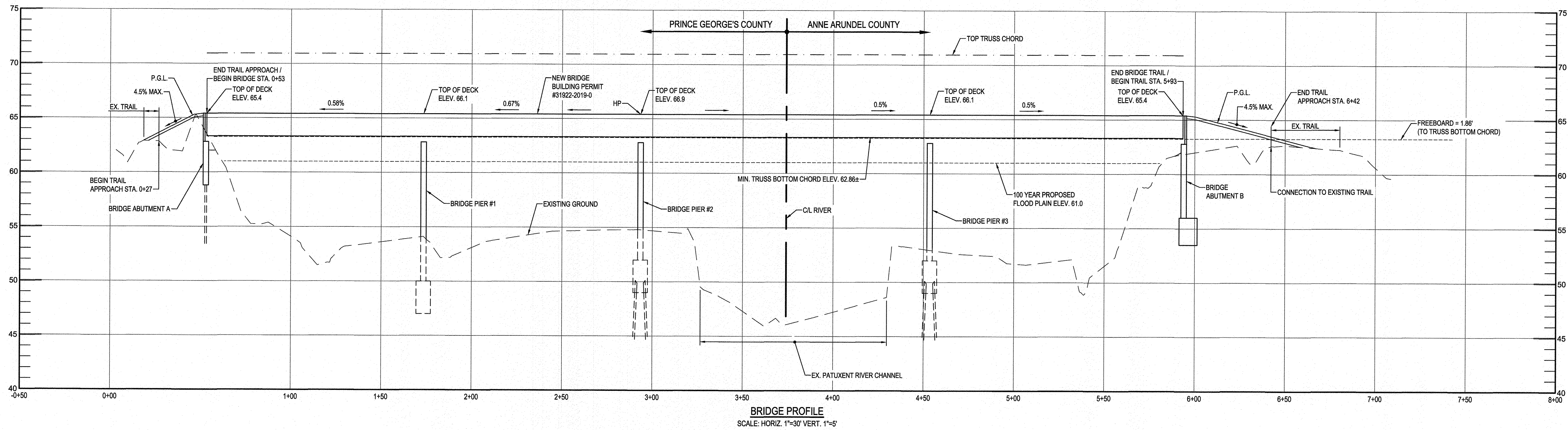
PLAN
SCALE: 1" = 30'

NOTE:
FOR BRIDGE PROFILE AND CROSS SECTIONS SEE THE
PROFILE AND CROSS SECTIONS PLAN.

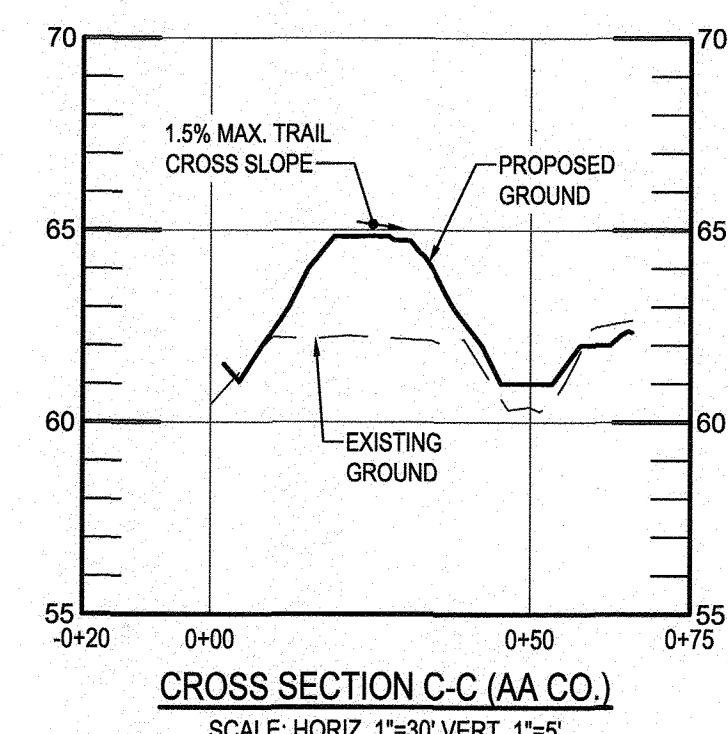
CAUTION:
IF THIS DRAWING IS A REDUCTION,
USE THE GRAPHIC SCALES.

SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

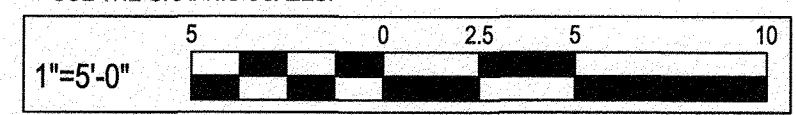
<p>WBCM ARCHITECTURE ENGINEERING CONSTRUCTION</p> <p><small>WHITNEY BAILEY COX & MAGNANI, LLC 300 East Joppa Road Suite 200 Baltimore, MD 21286 MAIN 410.512.4500 FAX 410.324.4100 www.wbcm.com</small></p>	<p><small>I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License #34682 Expiration Date: 07/08/2023</small></p>	REVISIONS				ANNE ARUNDEL COUNTY				
						DEPARTMENT OF PUBLIC WORKS				
						98225				
						WB&A TRAIL - BRIDGE AT PATUXENT				
		NO.	DESCRIPTION	BY	DATE	APPROVED	DATE	APPROVED	DATE	SCALE: 1" = 30'
							8/9/21		8/5/21	DRAWN BY: M.M./H.H.
							8/11/21		8/6/21	CHECKED BY: B.L.
										SHEET NO. 6 OF 45
										PROJECT NO.: 2014017900
										CONTRACT NO.: 2014017900
										SITE PLAN



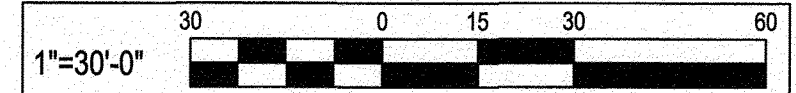
NOTE:
 ABUTMENT A, PIER #1 AND PIER #2 TO BE CONSTRUCTED UNDER PRINCE GEORGES COUNTY PERMITS.



CAUTION:
 IF THIS DRAWING IS A REDUCTION,
 USE THE GRAPHIC SCALES.

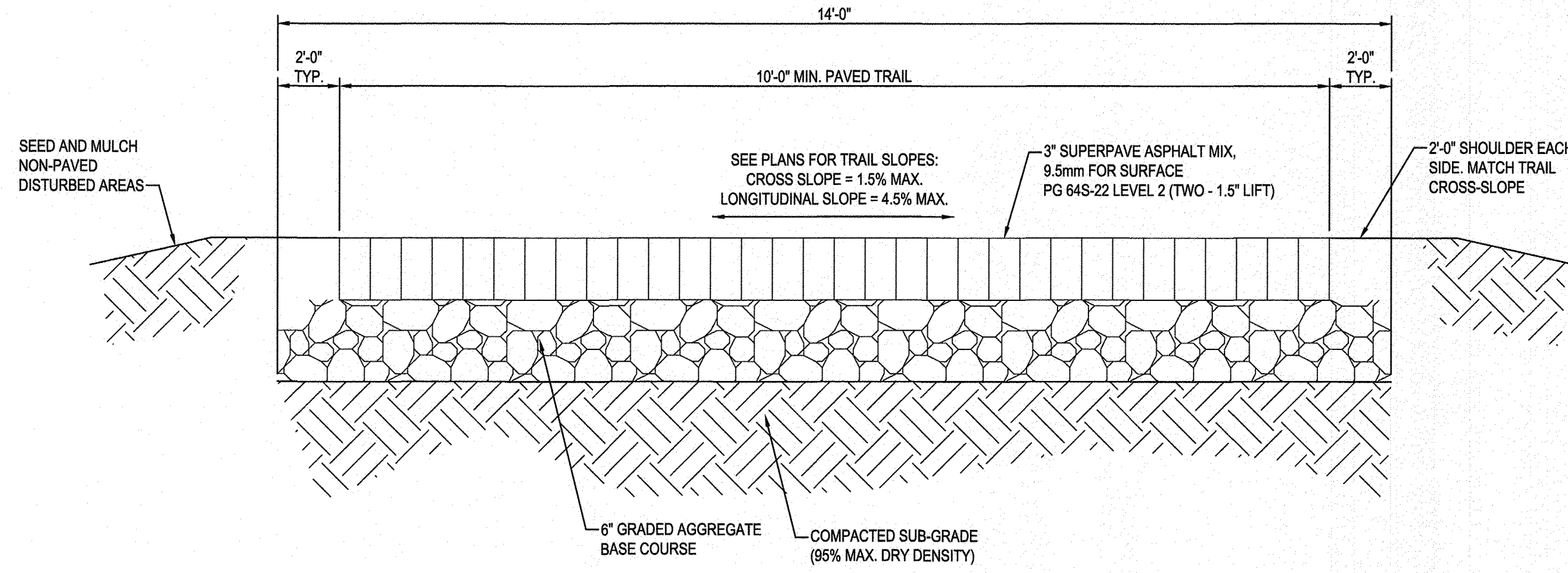


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 USE THE GRAPHIC SCALES.



SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

 WBCM ARCHITECTURE ENGINEERING CONSTRUCTION <small>WHITNEY BAILEY COX & MAGNANI, LLC 300 East Joppa Road Suite 200 Baltimore, MD 21286 MAIN 410.512.4500 FAX 410.324.4100 www.wbcm.com</small>	 <small>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 #34682 Expiration Date: 07/08/2023</small>	REVISIONS <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:5%;">NO.</th> <th style="width:60%;">DESCRIPTION</th> <th style="width:15%;">BY</th> <th style="width:20%;">DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	NO.	DESCRIPTION	BY	DATE													ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS <div style="float: right; font-size: 24pt; font-weight: bold;">98226</div>
		NO.	DESCRIPTION	BY	DATE														
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;"> APPROVED: CHIEF ENGINEER DATE: 8/9/21 </td> <td style="width:50%;"> APPROVED: PROJECT MANAGER DATE: 8/15/21 </td> </tr> <tr> <td> APPROVED: ASSISTANT CHIEF ENGINEER DATE: 8/11/21 </td> <td> APPROVED: CHIEF, RIGHT-OF-WAY DATE: 8/16/21 </td> </tr> </table>	APPROVED: CHIEF ENGINEER DATE: 8/9/21	APPROVED: PROJECT MANAGER DATE: 8/15/21	APPROVED: ASSISTANT CHIEF ENGINEER DATE: 8/11/21	APPROVED: CHIEF, RIGHT-OF-WAY DATE: 8/16/21	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>SCALE: AS SHOWN</td> <td rowspan="3" style="text-align: center; vertical-align: middle;"> WB&A TRAIL - BRIDGE AT PATUXENT TRAIL/BRIDGE PROFILE AND CROSS SECTIONS </td> </tr> <tr> <td>DRAWN BY: M.M./J.H.</td> </tr> <tr> <td>CHECKED BY: B.L.</td> </tr> </table>	SCALE: AS SHOWN	WB&A TRAIL - BRIDGE AT PATUXENT TRAIL/BRIDGE PROFILE AND CROSS SECTIONS	DRAWN BY: M.M./J.H.	CHECKED BY: B.L.										
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SCALE: AS SHOWN	WB&A TRAIL - BRIDGE AT PATUXENT TRAIL/BRIDGE PROFILE AND CROSS SECTIONS																		
DRAWN BY: M.M./J.H.																			
CHECKED BY: B.L.																			
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>SHEET NO. 7 OF 45</td> <td>PROJECT NO.: 2014017900</td> <td>CONTRACT NO.: 2014017900</td> </tr> </table>		SHEET NO. 7 OF 45	PROJECT NO.: 2014017900	CONTRACT NO.: 2014017900															
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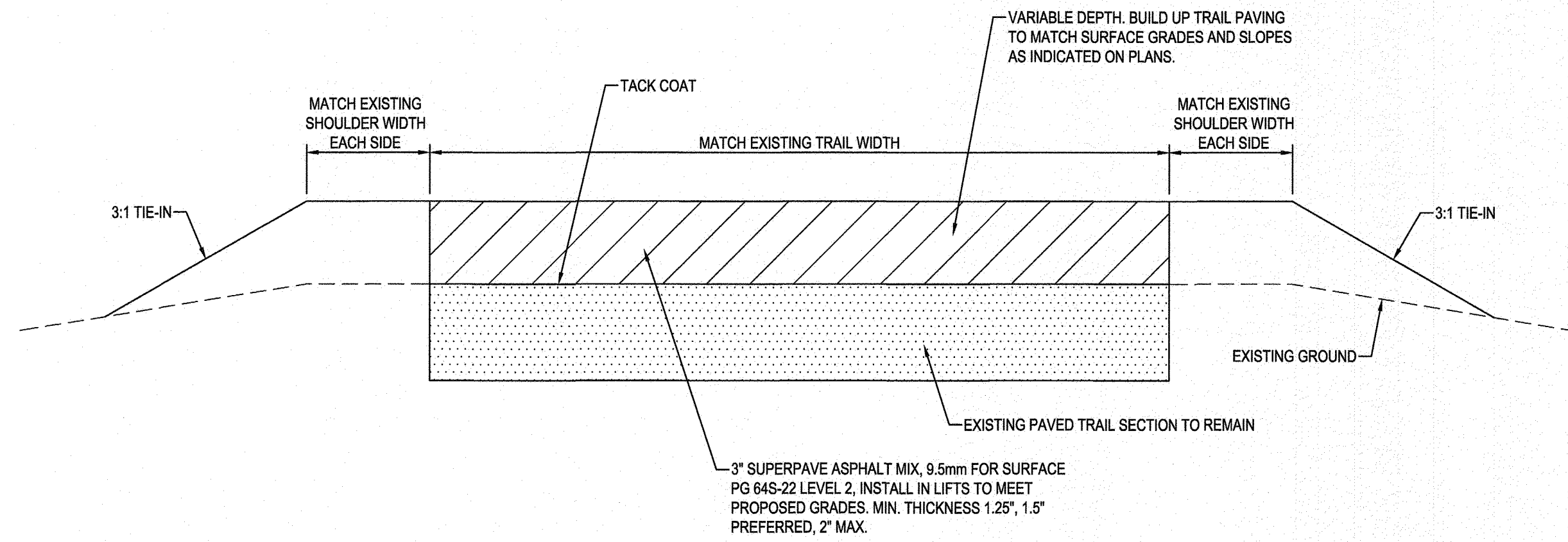


SECTION

STA. 5+95 TO STA 6+42
STA. 142+71 TO 142+93

1 BITUMINOUS TRAIL PAVING

NOT TO SCALE

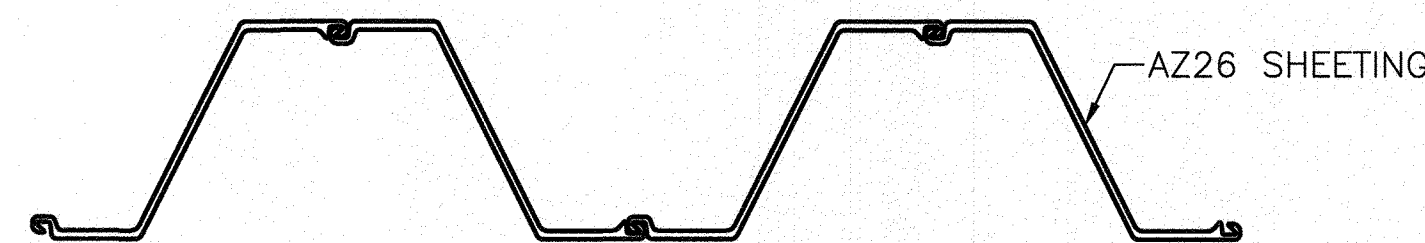


SECTION

STA. 142+50 TO STA 142+71

2 BITUMINOUS TRAIL PAVING - OVERLAY AT EXISTING TRAIL

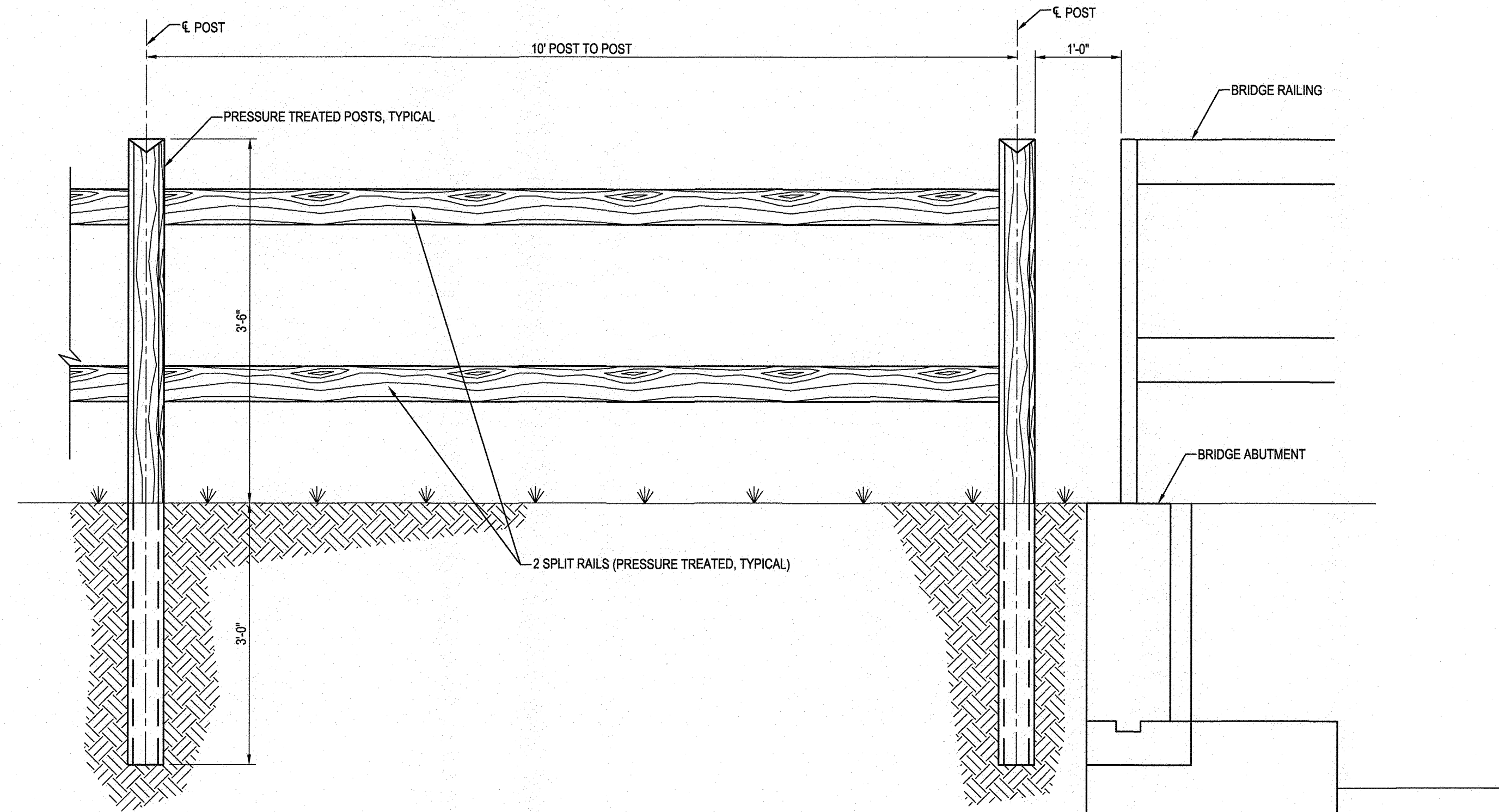
NOT TO SCALE



PLAN VIEW

5 TYPICAL DETAIL OF SHEETING CONNECTION

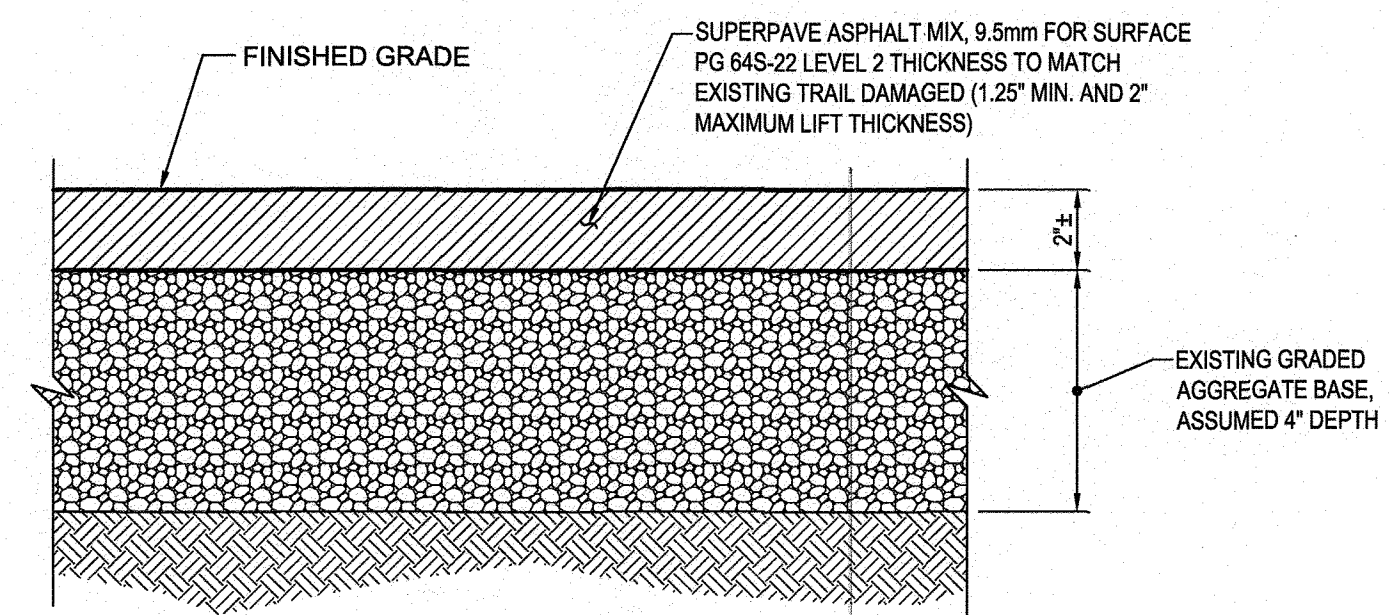
SCALE: 3/4" = 1'-0"



SECTION

3 SPLIT RAIL FENCE

NOT TO SCALE



SECTION

STA. 100+00 TO STA 142+50

4 PATCHING FOR DAMAGED EXISTING BITUMINOUS TRAIL

NOT TO SCALE

CAUTION:
IF THIS DRAWING IS A REDUCTION,
USE THE GRAPHIC SCALES.



SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

WHITNEY BAILEY COX & MAGNANI, LLC
300 East Joppa Road, Suite 200 Baltimore, MD 21286
MAIN 410.512.4500 FAX 410.324.4100
www.wbcm.com

WBCM
ARCHITECTURE ENGINEERING CONSTRUCTION

STATE OF MARYLAND
PROFESSIONAL ENGINEER
No. 34882
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 #34882 Expiration Date: 07/08/2023

REVISIONS			
NO.	DESCRIPTION	BY	DATE

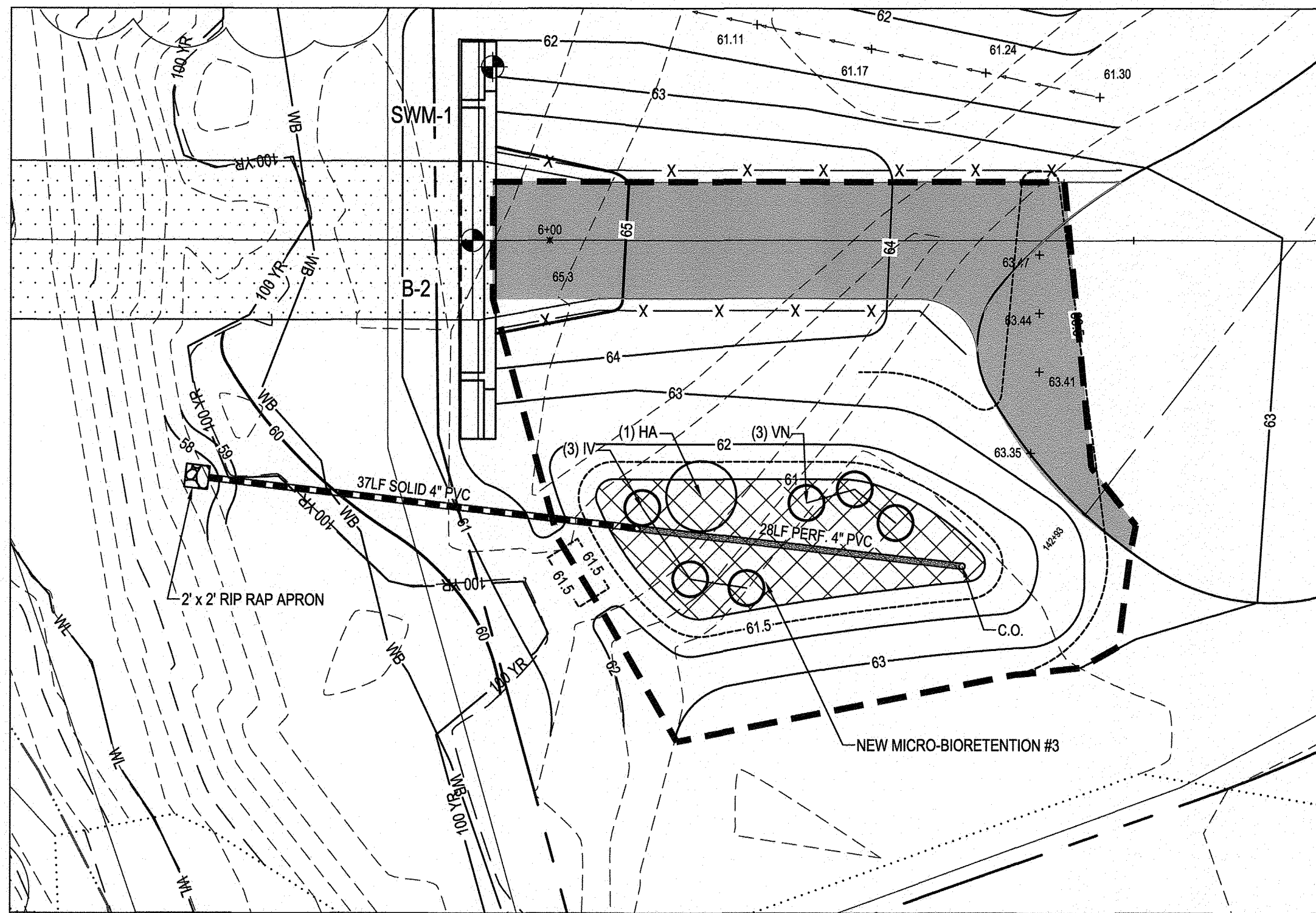
ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

98227
WB&A TRAIL - BRIDGE AT PATUXENT

APPROVED <i>[Signature]</i> CHIEF ENGINEER	DATE 8/9/21	APPROVED <i>[Signature]</i> PROJECT MANAGER	DATE 8/5/21	SCALE: AS SHOWN
APPROVED <i>[Signature]</i> ASSISTANT CHIEF ENGINEER	DATE 8/11/21	APPROVED <i>[Signature]</i> CHIEF, RIGHT-OF-WAY	DATE 8/6/21	CHECKED BY: B.L.
SHEET NO. 8 OF 45				PROJECT NO.: 2014017900
CONTRACT NO.: 2014017900				SITE DETAILS

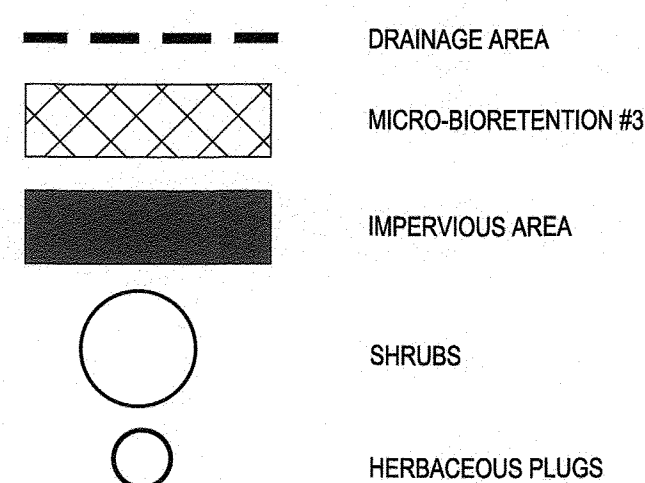
STORMWATER MANAGEMENT DATA TABLE

STORM_ID	STRU_NAME	MDE BMP CLASS	MDE BMP TYPE	CONSTRUCTION PURPOSE	ON or OFF SITE	LAND USE	DEVICE DRAINAGE AREA (acres)	IMPERVIOUS AREA DRAINING TO DEVICE (acres)	IMPERVIOUS ACRES RESTORED (See Note 3)	MD NORTH COORD (NAD83 - FT)	MD EAST COORD (NAD83 - FT)	WQV (ac-ft) (See Note 5)
3	Micro Bioretention	E	ESDMB	NEWD	ON	18	0.048	0.017	0	495065	1385244	167



PLAN (ANNE ARUNDEL CO.)
SCALE: 1" = 10'

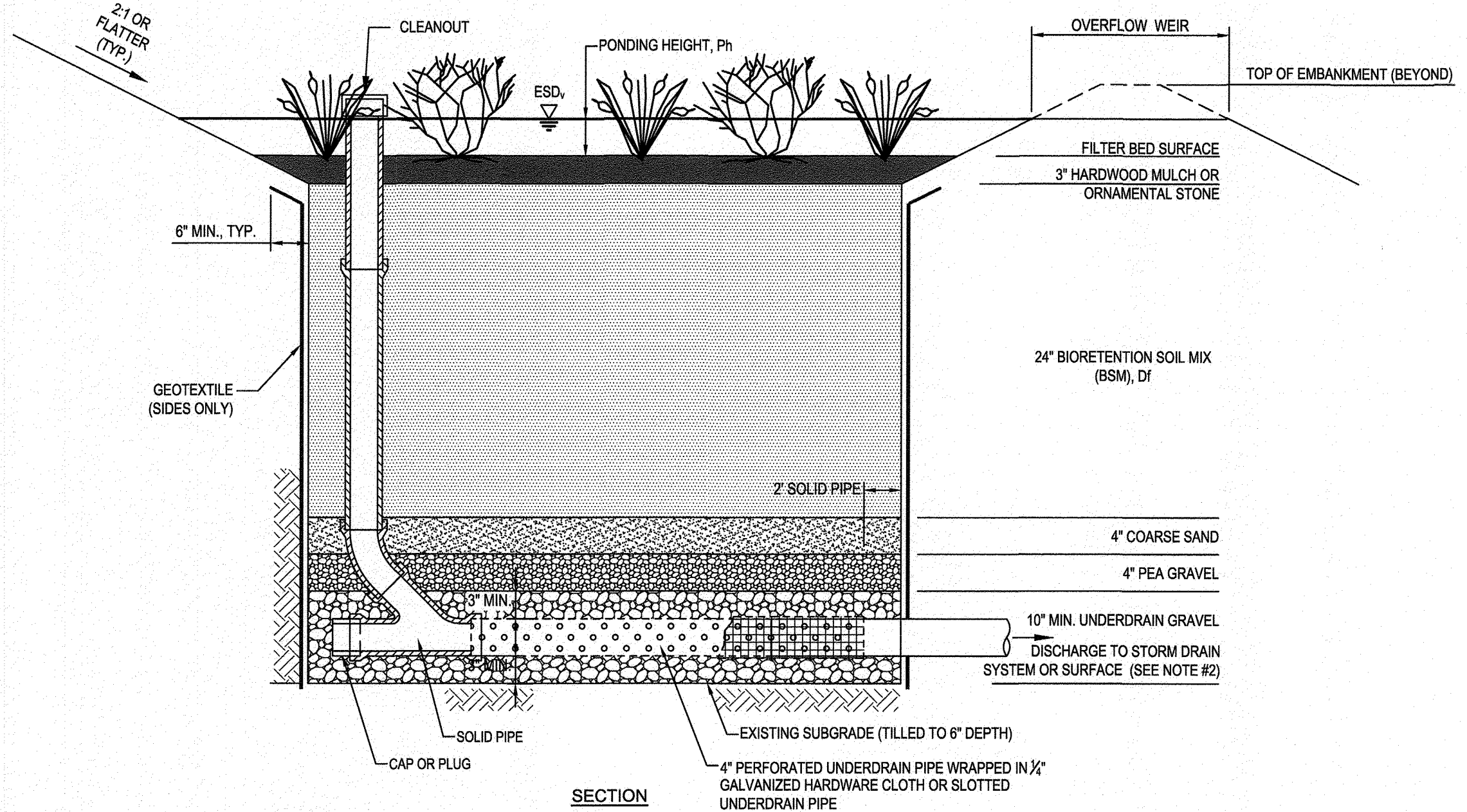
SWM LEGEND



NOTE: MICRO-BIORETENTION FACILITIES TO ADDITIONALLY BE SEEDED WITH A MIX OF SWITCH GRASS, SOFT RUSH, BUTTON BUSH, FOX SEDGE, AND TORREY'S RUSH AT A RATE OF 15 LBS PER ACRE.

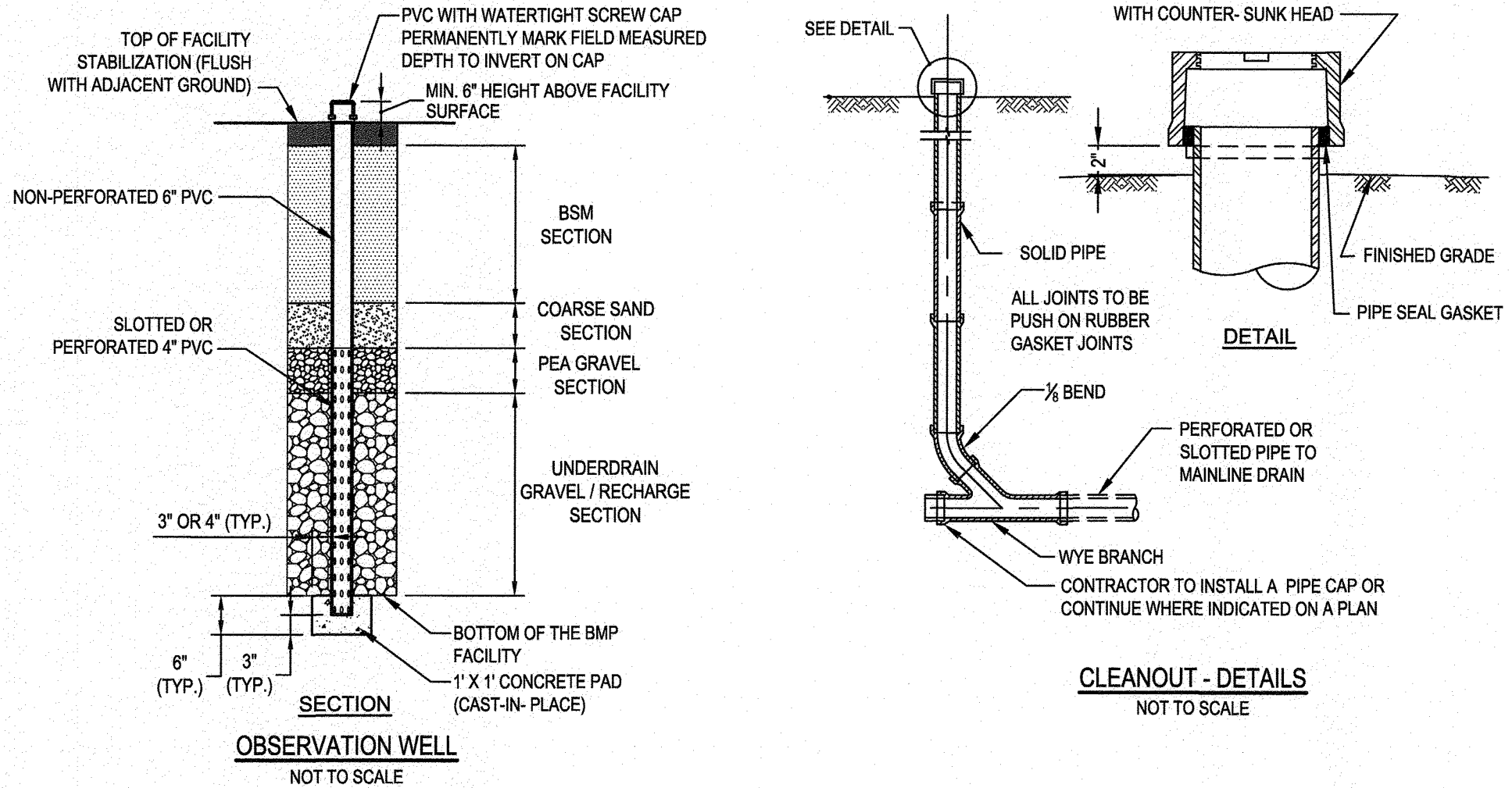
Shrubs						
Key	Qty.	Botanical Name	Common Name	Size (Min.)	Root	Spacing
HA	1	Hamamelis virginiana	Witch Hazel	18"-24"	Cont.	As shown
1 Total						
Herbaceous Plants						
Key	Qty.	Botanical Name	Common Name	Size (Min.)	Root	Spacing
IV	3	Iris versicolor	Iris, Blue Water	Plug	Cont.	36" on center
VN	3	Vernonia noveboracensis	New York Ironweed	Plug	Cont.	36" on center
6 Total						

GENERAL NOTE:
THE BIRETENTION SOIL MIX (BSM) CANNOT BE INSTALLED UNTIL AFTER THE UPSTREAM DRAINAGE AREAS ARE STABILIZED.

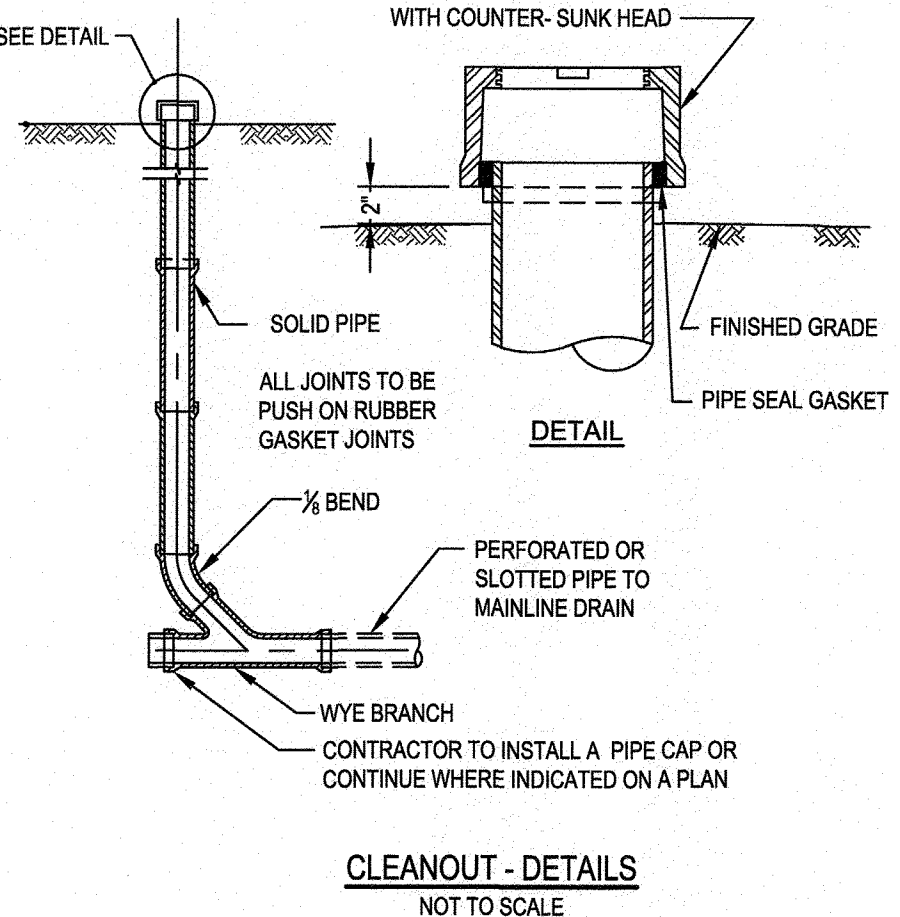


NOTES:
1. DO NOT INSTALL GEOTEXTILE ALONG THE TOP, BOTTOM, OR ANY HORIZONTAL LAYER.
2. DISCHARGE MUST BE TO A STABLE, NON-EROSIVE OUTFALL.

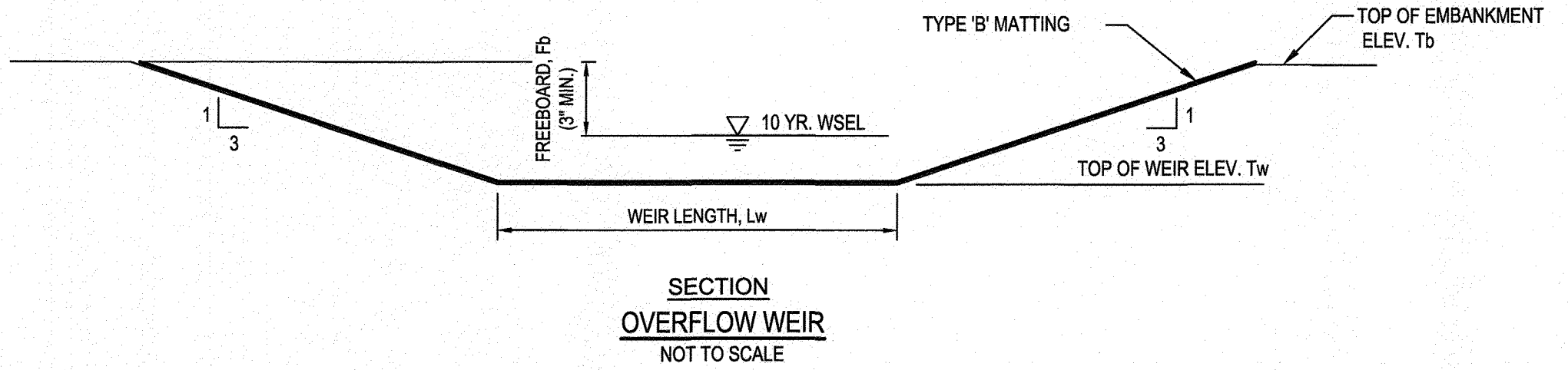
SECTION FOR MICRO-BIORETENTION WITH WEIR SPILLWAY
NOT TO SCALE



OBSERVATION WELL
NOT TO SCALE



CLEANOUT - DETAILS
NOT TO SCALE



SECTION OVERFLOW WEIR
NOT TO SCALE

SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

- SPECIFICATIONS:**
- SEE CHART BELOW.
 - THE CONTRACTOR SHALL SUBMIT SOIL TEST RESULTS (1 PER 30 CY BSM) TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. PERFORM SOIL TESTS REQUIRED FOR BOTH IMPORTED SOIL AND REUSED / AMENDED TOP SOIL. SOIL TEST AND RESULTS SHALL INCLUDE AT A MINIMUM: PHOSPHORUS, ORGANIC MATTER, SOLUBLE SALTS, NUTRIENTS, AND TEXTURAL ANALYSIS.
 - MINIMIZE COMPACTION OF SUBGRADE SOILS IN BIRETENTION AREAS. CONTRACTOR SHALL TILL THE SUBGRADE SOILS TO A DEPTH OF 6" BELOW THE BOTTOM OF EACH FACILITY. WHEN BACKFILLING THE BIRETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIRETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIRETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH SHARP TRACKS.
 - PLANT MATERIAL SHALL BE REPRESENTATIVE OF SPECIES AND CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1-2004.

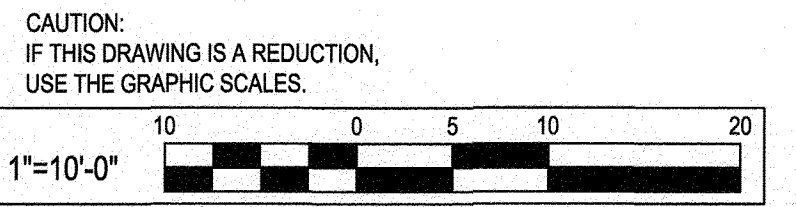
MATERIAL	SPECIFICATION	SIZE	NOTES
PLANTINGS	SEE PLAN SHEET	N/A	PLANTINGS ARE SITE SPECIFIC
BSM	SHA BIRETENTION SOIL MIX (BSM) SECTION 920.01.05 ORGANIC CONTENT MIN. 5% BY DRY WEIGHT (ASTM D 2974)	N/A	MARYLAND STATE HIGHWAY ADMINISTRATION STANDARDS SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS DATED MAY 2017 INCLUDING AND ADDENDA THERETO. COPY TO BE KEPT ON-SITE
MULCH	SHREDDED HARDWOOD	AGED 6 MONTHS, MINIMUM, NO FINE OR WOOD CHIPS	
PEA GRAVEL	ASTM-C-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
ORNAMENTAL STONE	WASHED COBBLES	STONE: 2" TO 3"	
GEOTEXTILE		N/A	NONWOVEN GEOTEXTILE TABLE H.1 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
UNDERDRAIN GRAVEL	AASHTO M-43	NO. 57, 8, OR 67 (3/8" TO 3/4")	
IMPERMEABLE LINER (IF REQUIRED)	ASTM-D-4853 (THICKNESS) ASTM-D-4302 (TENSILE STRENGTH) 1.100LB. ELONGATION 200% ASTM-D-624 (TEAR RESISTANCE - 150LB.IN.) ASTM-D-471 (WATER ABSORPTION: +8 TO -2% MASS)	30 MIL THICKNESS	LAYER TO BE ULTRA-VIOLET RESISTANT. A GEOTEXTILE FABRIC SHOULD BE USED TO PROTECT THE LINER FROM PUNCTURE.
UNDERDRAIN PIPING	F 759, TYPE PS 26 AASHTO M-278	4" TO 6"	SLOTTED OR PERFORATED PIPE. SLOTTED PIPE SHALL HAVE A MINIMUM OPEN AREA OF 1.5 SQ. IN. / LINEAR FOOT WITH A MAXIMUM SLOT LENGTH OF 2" AND MAXIMUM SLOT WIDTH OF 1/8 INCH. PERFORATED PIPE SHALL BE WRAPPED WITH 14 INCH GALVANIZED HARDWARE CLOTH.
CAST-IN-PLACE CONCRETE (IF REQUIRED)	MSHA MIX NO. 3, F _c =3500 PSI @ 28 DAYS, NORMAL WEIGHT, AIR-ENTRAINED, REINFORCING TO MEET ASTM-A15-50	N/A	ON-SITE TESTING OF CAST-IN-PLACE CONCRETE REQUIRED: 30 DAY STRENGTH AND SLUMP TEST. ALL CONCRETE DESIGN (CAST-IN-PLACE OR PRE-CAST) NOT USING PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS REQUIRED DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND - DESIGN TO INCLUDE MEETING ACI CODE 309.889; VERTICAL LONGING 18" OR 20" ALLOWABLE HORIZONTAL LONGING BASED ON SOIL PRESSURES); AND ANALYSIS OF POTENTIAL CRACKING
COARSE SAND	AASHTO M-8 OR ASTM-C-33	0.075 TO 0.425"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRANSTONE (AASHTO #10) ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "HOOK DUST" CAN BE USED FOR SAND
STABILIZATION MATTING	SHA SECTION 920.05		TYPE A, B, C OR D AS NOTED ON PLAN / SECTION / DETAILS MARYLAND STATE HIGHWAY ADMINISTRATION STANDARDS SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS DATED MAY 2017 INCLUDING AND ADDENDA THERETO. COPY TO BE KEPT ON-SITE

MAINTENANCE SCHEDULE:
AFTER CONSTRUCTION COMPLETION AND ACCEPTANCE OF THE WORK, INSPECTION AND MAINTENANCE SHALL BE THE RESPONSIBILITY OF ANNE ARUNDEL COUNTY OR PRINCE GEORGE'S COUNTY AS INDICATED. THE FACILITIES MUST DRAIN DOWN WITHIN 24 HOURS OF A RAINFALL EVENT.

INSPECTION ITEM	FREQUENCY OF INSPECTION	INSPECTION REQUIREMENTS	REMEDIAL ACTION
BIORETENTION BASIN	SEASONALLY AND AFTER A MAJOR STORM		
VEGETATION	SEASONALLY AND AFTER A MAJOR STORM	FACILITY MUST DEWATER WITHIN 24 HOURS OF RAINFALL. NOTICEABLE DOORS, STAINED WATER ON THE FILTER SURFACE OR AT THE OUTLET, OR THE PRESENCE OF ALGAE OR AQUATIC VEGETATION ARE INDICATORS OF ANEROBIC CONDITIONS, AND INADEQUATE DEWATERING OF THE FACILITY.	THE TOP THREE INCHES OF SOIL SHOULD BE REMOVED AND REPLACED WITH SOIL MATERIAL AS PER PLAN SPECIFICATIONS. FOLLOW UP INSPECTIONS MUST CONFIRM ADEQUATE DEWATERING. IF THE FACILITY DOES NOT FUNCTION AS INTENDED AFTER THE ABOVE ACTION, THE ENTIRE FILTER AND UNDERDRAIN SYSTEM MAY NEED MAINTENANCE. MDE APPROVAL MAY BE NECESSARY.
MULCH LAYER	SEASONALLY AND AFTER A MAJOR STORM	CHECK MULCH FOR ADEQUATE COVER, SEDIMENT ACCUMULATION, OR DISCOLORATION.	REPLACE AND REMOVE OLD MULCH AND EXCESS SEDIMENTS. PROVIDE ADEQUATE MULCH COVER ACCORDING TO APPROVED DESIGN.
VEGETATIVE SURFACES	MONTHLY		
PLANT COMPOSITION AND HEALTH	MONTHLY	COMPARE PLANT COMPOSITION WITH APPROVED PLANS. CHECK FOR INVASIVE SPECIES OR WEEDS. CHECK FOR DEAD OR DYING VEGETATION.	REMOVE AND REPLACE PLANTS IN ACCORDANCE WITH PLAN SPECIFICATIONS.
VEGETATIVE COVER AND EROSION	MONTHLY	CHECK FOR EVIDENCE OF EROSION, RUNOFF CHANNELIZING, OR BARE SPOTS.	RE-SEED OR RE-PLANT IN ACCORDANCE WITH APPROVED LANDSCAPING PLANS. RE-GRADING MAY BE REQUIRED WHEN CONCENTRATED FLOW CAUSES RILLS OR GULLYING THROUGH THE FACILITY.
DEBRIS AND TRASH CLEANOUT	MONTHLY	CHECK THAT THE FACILITY IS CLEAN OF TRASH AND DEBRIS. INLETS, OUTLETS, AND CONTRIBUTING AREAS AROUND THE FACILITY MUST BE CHECKED.	TRASH AND DEBRIS MUST BE DISPOSED OF IN AN ACCEPTABLE MANNER ACCORDING TO CURRENT REGULATIONS.
STRUCTURAL COMPONENTS	ANNUALLY	CHECK FOR EVIDENCE OF STRUCTURAL DETERIORATION, SPALLING, OR CRACKING. INLET AND OUTLET STRUCTURES MUST BE IN GOOD CONDITION.	REPAIR TO GOOD CONDITION ACCORDING TO SPECIFICATIONS ON THE APPROVED PLANS.
OUTLETS	SEASONALLY AND AFTER A MAJOR STORM	CHECK FOR EVIDENCE OF EROSION, RILLS, OR GULLYING. RIPRAP OUTLET MUST BE MAINTAINED IN GOOD FUNCTIONAL CONDITION.	STABILIZE ALL ERODED AREAS AND GRADE TO PROVIDE STABLE CONVEYANCE. REPAIR ACCORDING TO APPROVED PLAN.
PRETREATMENT	SEASONALLY AND AFTER A MAJOR STORM		
SEDIMENT ACCUMULATION	SEASONALLY AND AFTER A MAJOR STORM	CHECK FOR SEDIMENT ACCUMULATION.	WHEN SEDIMENT ACCUMULATIONS TO A DEPTH OF ONE HALF THE DESIGN PONDING DEPTH OR COVERS MORE THAN 10% OF THE FACILITY, SEDIMENT MUST BE REMOVED AND THE FACILITY RESTORED ACCORDING TO THE APPROVED DESIGN.
GRASS CHANNEL CONVEYANCE SYSTEMS	ANNUALLY	CHECK FOR EROSION, FLOW BLOCKAGES, AND STABLE CONVEYANCE.	STABILIZE AND GRADE ACCORDING TO APPROVED PLAN.
OVERALL FUNCTION OF THE FACILITY	ANNUALLY	CHECK THAT FLOW SPLITTERS ARE FUNCTIONING AS DESIGNED AND THAT BYPASS IS OPERATING AS DESIGNED.	CONSTRUCTION MUST BE IN ACCORDANCE WITH APPROVED PLANS.

INSPECTION:
REGULAR INSPECTIONS SHALL BE MADE DURING THE FOLLOWING STAGES OF CONSTRUCTION: CONTRACTOR SHALL NOTIFY THE ENGINEER-IN-CHARGE RESPONSIBLE FOR AS-BUILTS 48 HOURS PRIOR TO REQUIRED INSPECTION.

- DURING EXCAVATION TO SUBGRADE.
- DURING PLACEMENT AND BACKFILL OF UNDERDRAIN PIPE AND GRAVEL.
- DURING PLACEMENT OF GEOTEXTILE.
- DURING PLACEMENT OF BACKFILL AND PLANTING SOIL.
- DURING PLACEMENT OF MULCH.
- DURING PLACEMENT OF PLANTS.
- UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.



SWM Summary Study Point #2 (Anne Arundel County)										
ESD Practice type	ESD Practice	Number	Area of Filter Af (ft2)	Drainage Area (ft2)	Impervious Area (ft2)	%	Rv	Design Pe	Recharge Volume Provided (ft3)	ESDv treated (ft3)
M6	MICRO-BIORETENTION	3	291	2,087	744	36%	0.37	2.6	29	167
N2	NON ROOFTOP DISCONNECT	5	70	70	70	100%	0.95	1.0	0	6
Sub-total Provided Treatment by ESD measures				2,157	814		0.39	2.5	29	173
Required Treatment by ESD measures					807				7	106

WHITNEY BAILEY COX & MAGNANI, LLC
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MAIN 410.512.4500 FAX 410.324.4100
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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 #34682 Expiration Date: 07/08/2023

REVISIONS			
NO.	DESCRIPTION	BY	DATE

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

98228

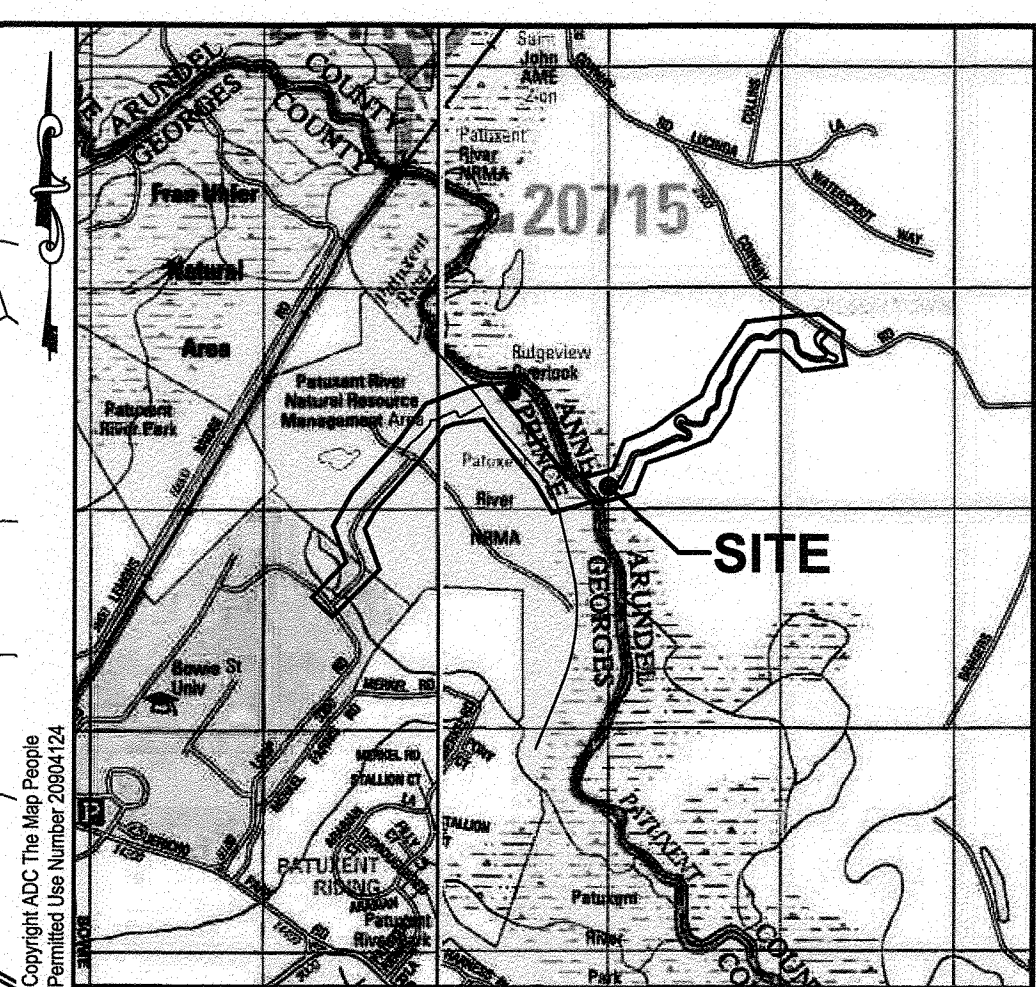
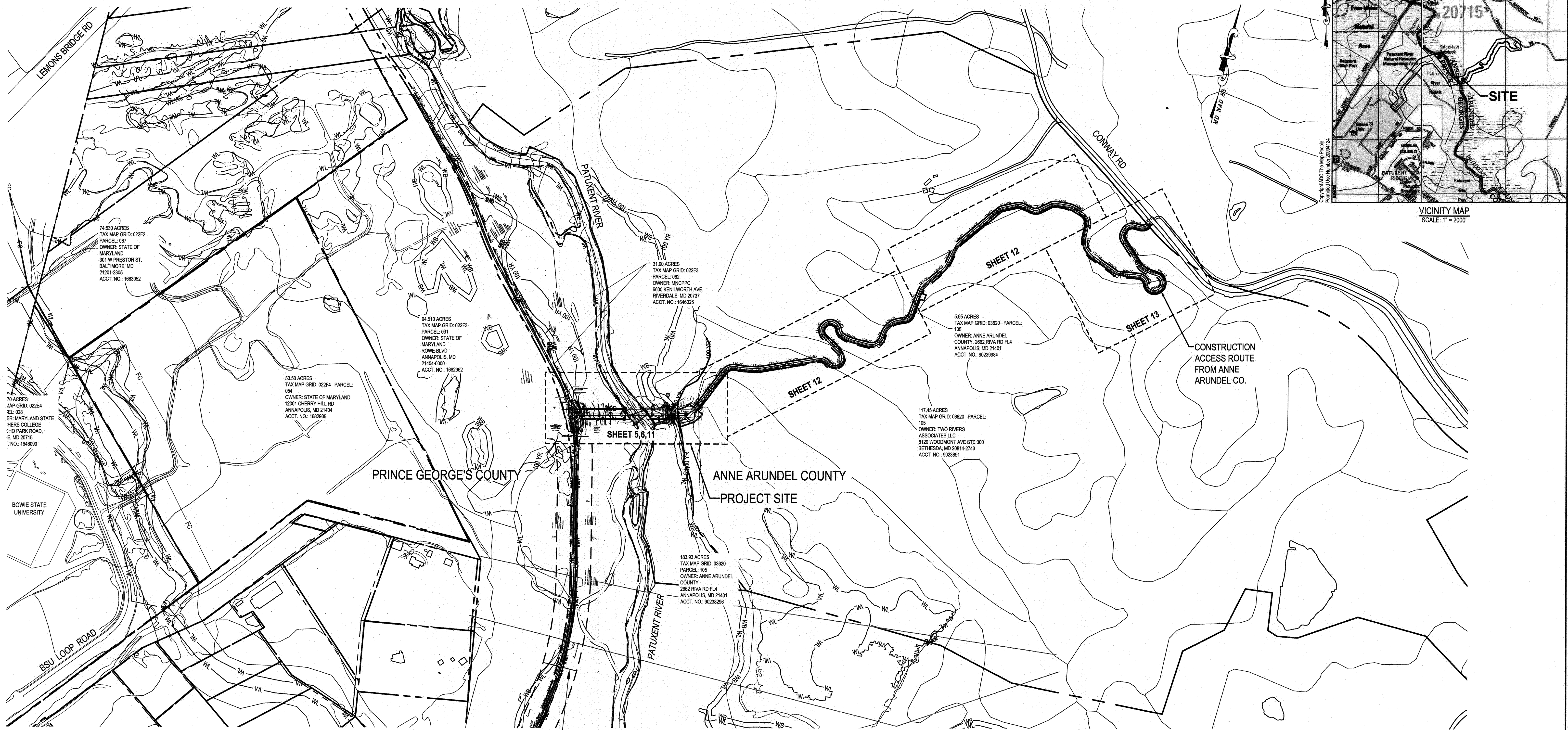
SCALE: 1" = 10'

WB&A TRAIL - BRIDGE AT PATUXENT

STORMWATER MANAGEMENT PLAN

APPROVED	DATE	APPROVED	DATE
<i>[Signature]</i>	8/9/21	<i>[Signature]</i>	8/5/21
CHIEF ENGINEER		PROJECT MANAGER	
APPROVED	DATE	APPROVED	DATE
<i>[Signature]</i>	8/16/21	<i>[Signature]</i>	8/16/21
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT-OF-WAY	

CHECKED BY: B.L.
SHEET NO. 9 OF 45
PROJECT NO.: 2014017900
CONTRACT NO.: 2014017900

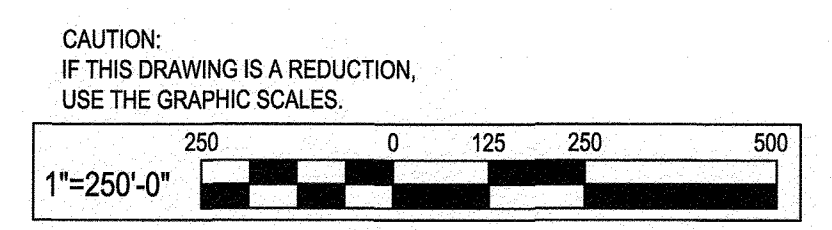


VICINITY MAP
SCALE: 1" = 2000'

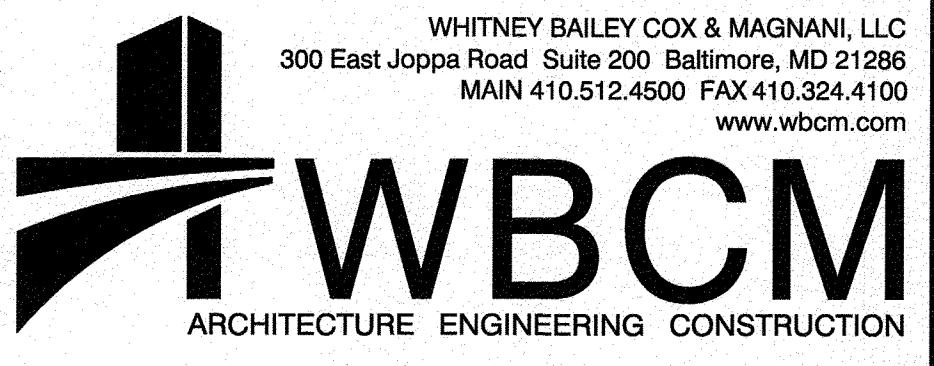
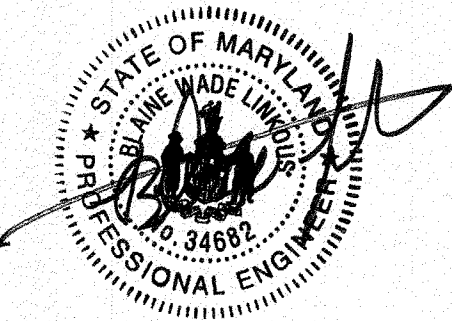
OVERALL PLAN
SCALE: 1" = 250'

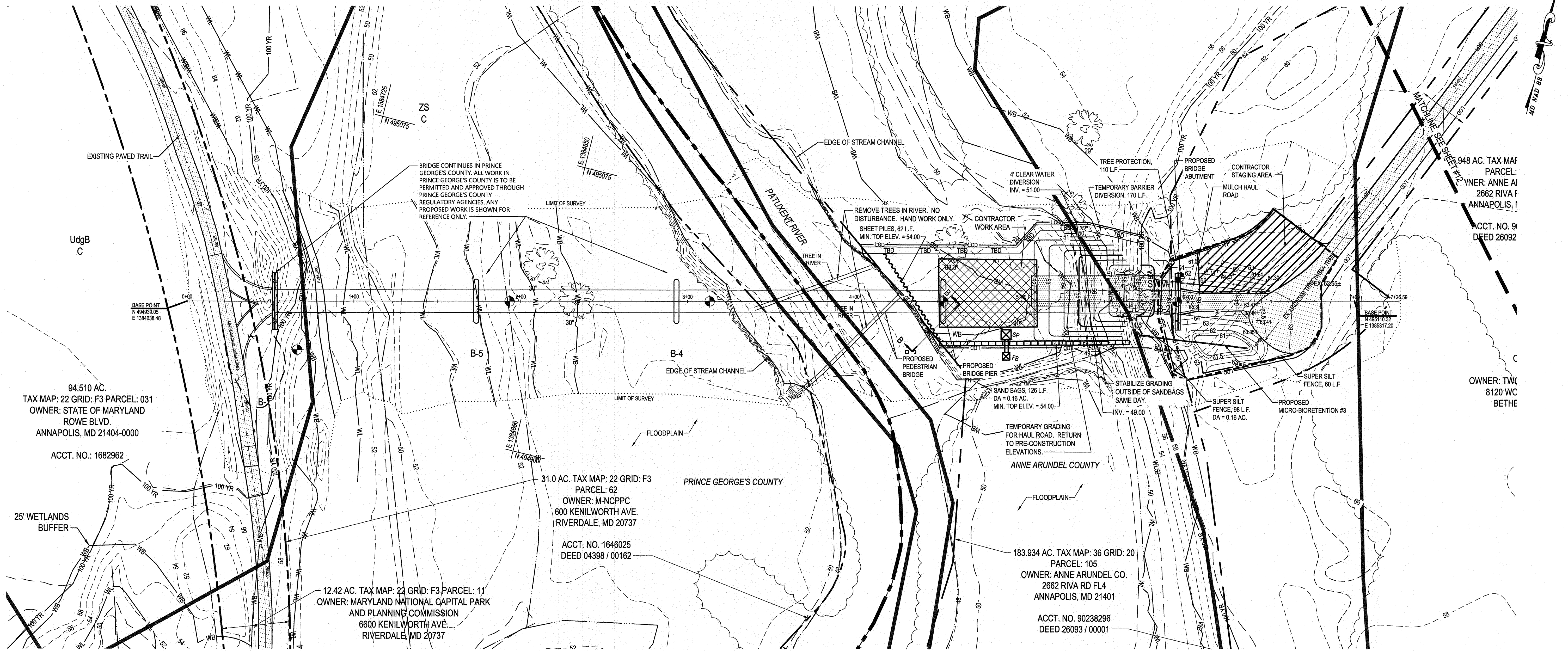
CONSTRUCTION ACCESS ROUTE FROM PRINCE GEORGE'S COUNTY. SEE PRINCE GEORGE'S COUNTY PLANS/PERMIT.

EXISTING PAVED TRAIL TO BE USED FOR CONSTRUCTION ACCESS. CONTRACTOR SHALL PROVIDE PROTECTION OF TRAIL AND IN-KIND REPLACEMENT TO ALL PORTIONS OF TRAIL DAMAGED BY CONSTRUCTION ACTIVITIES. SEE "TEMPORARY CONSTRUCTION ACCESS ALONG EXISTING PAVED TRAIL GENERAL NOTES" INCLUDED ON SHEET #13 FOR REQUIREMENTS.

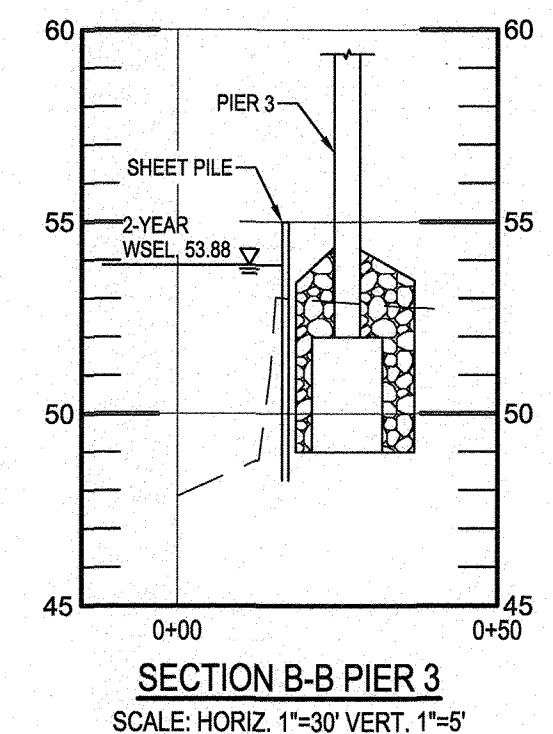
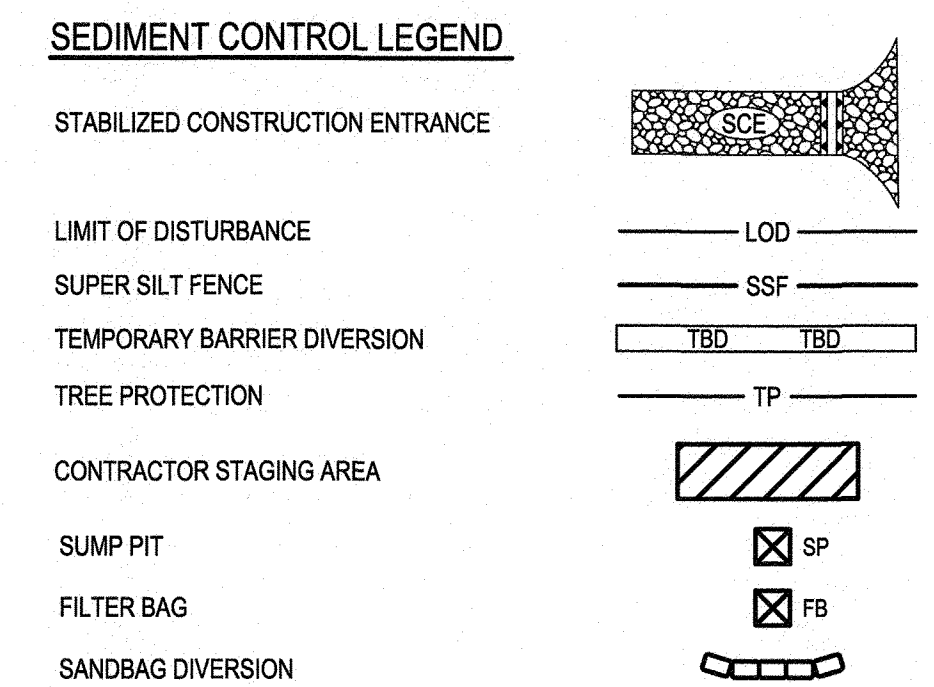


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		NO.	DESCRIPTION	BY	DATE																				
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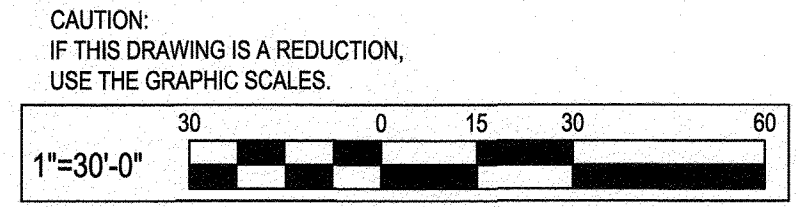


PROJECT AREA
SCALE: 1" = 30'



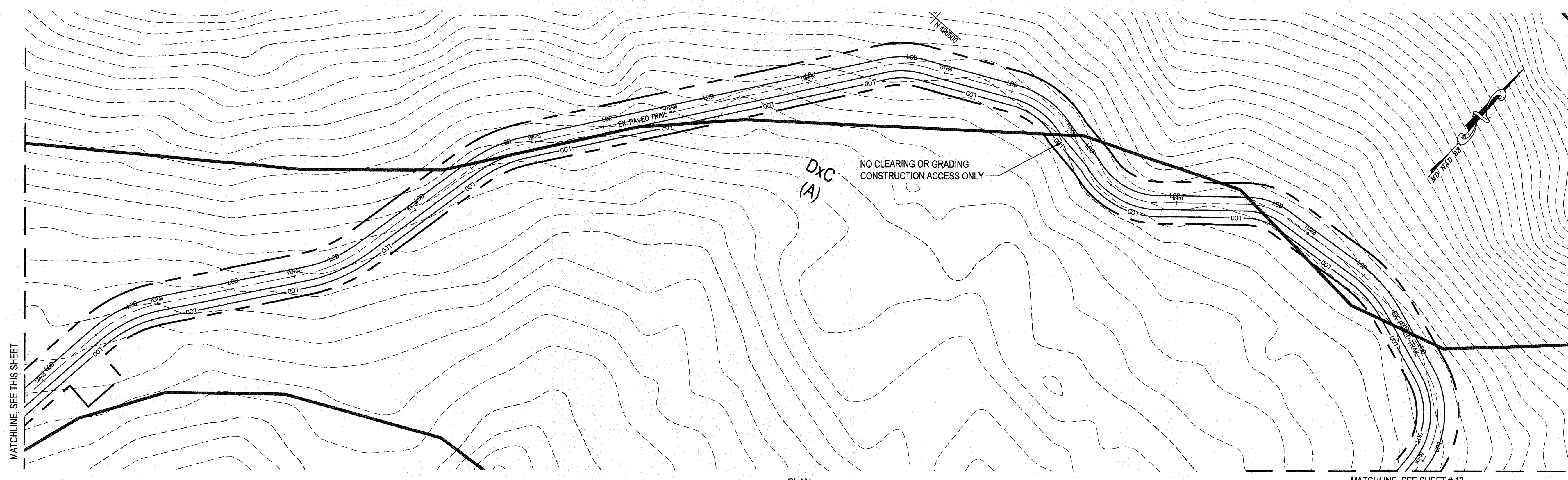
NOTE: SHEET PILING TO BE CUT OFF AT 6" BELOW FINISHED GRADE AT COMPLETION.

EXISTING PAVED TRAIL TO BE USED FOR CONSTRUCTION ACCESS. CONTRACTOR SHALL PROVIDE PROTECTION OF TRAIL AND IN-KIND REPLACEMENT TO ALL PORTIONS OF TRAIL DAMAGED BY CONSTRUCTION ACTIVITIES. SEE "TEMPORARY CONSTRUCTION ACCESS ALONG EXISTING PAVED TRAIL GENERAL NOTES" INCLUDED ON SHEET #13 FOR REQUIREMENTS.

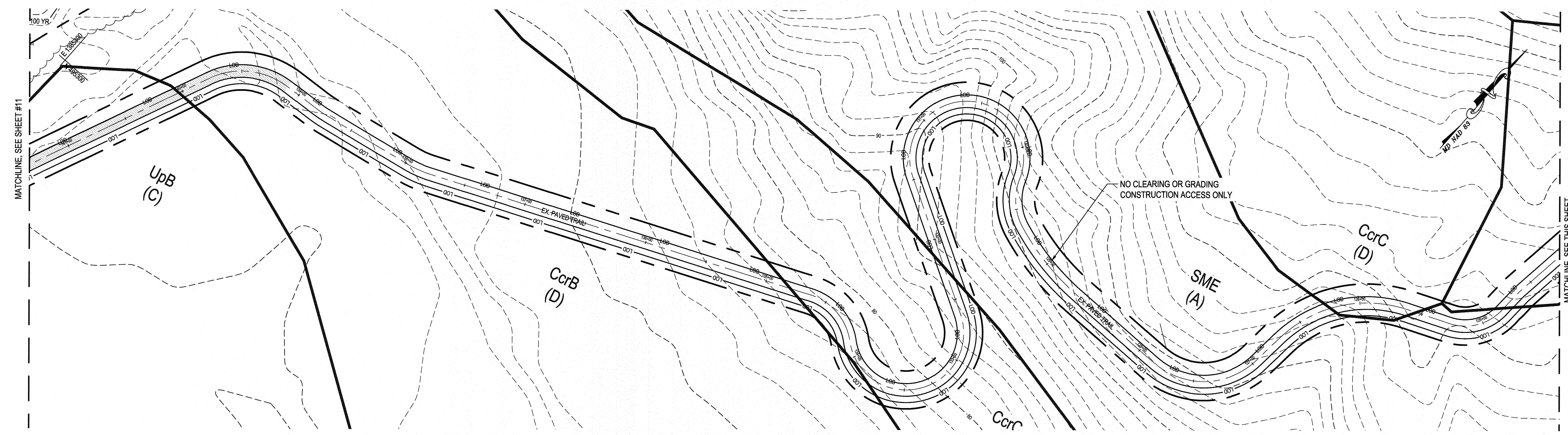


SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

<p>WHITNEY BAILEY COX & MAGNANI, LLC 300 East Joppa Road, Suite 200, Baltimore, MD 21286 MAIN 410.512.4500 FAX 410.324.4100 www.wbcm.com</p>	<p>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 #34882 Expiration Date: 07/08/2023</p>	<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>NO.</th> <th>DESCRIPTION</th> <th>BY</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>				NO.	DESCRIPTION	BY	DATE					<p>ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS</p>			
		NO.	DESCRIPTION	BY	DATE												
<p>APPROVED: <i>[Signature]</i> 8/9/21 CHIEF ENGINEER</p>		<p>APPROVED: <i>[Signature]</i> 8/5/21 PROJECT MANAGER</p>		<p>SCALE: 1" = 30'</p>		<p>98230</p>											
<p>APPROVED: <i>[Signature]</i> 8/16/21 ASSISTANT CHIEF ENGINEER</p>		<p>APPROVED: <i>[Signature]</i> 8/16/21 CHIEF, RIGHT-OF-WAY</p>		<p>CHECKED BY: B.L.</p>		<p>WB&A TRAIL - BRIDGE AT PATUXENT</p>											
<p>SHEET NO. 11 OF 45</p>				<p>PROJECT NO.: 2014017900</p>		<p>EROSION AND SEDIMENT CONTROL PLAN</p>											
<p>CONTRACT NO.: 2014017900</p>				<p>CONTRACT NO.: 2014017900</p>		<p> </p>											



PLAN
SCALE: 1" = 40'



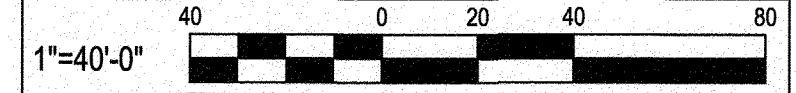
PLAN
SCALE: 1" = 40'

SEDIMENT CONTROL LEGEND

- STABILIZED CONSTRUCTION ENTRANCE
- LIMIT OF DISTURBANCE
- SUPER SILT FENCE
- TEMPORARY BARRIER DIVERSION
- TREE PROTECTION
- CONTRACTOR STAGING AREA
- SUMP PIT
- FILTER BAG
- SANDBAG DIVERSION

EXISTING PAVED TRAIL TO BE USED FOR CONSTRUCTION ACCESS. CONTRACTOR SHALL PROVIDE PROTECTION OF TRAIL AND IN-KIND REPLACEMENT TO ALL PORTIONS OF TRAIL DAMAGED BY CONSTRUCTION ACTIVITIES. SEE TEMPORARY CONSTRUCTION ACCESS ALONG EXISTING PAVED TRAIL GENERAL NOTES INCLUDED ON SHEET #13 FOR REQUIREMENTS.

CAUTION:
IF THIS DRAWING IS A REDUCTION,
USE THE GRAPHIC SCALES.



SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

WHITNEY BAILEY COX & MAGNANI, LLC
300 East Joppa Road Suite 200 Baltimore, MD 21286
MAIN 410.512.4500 FAX 410.324.4100
www.wbcm.com

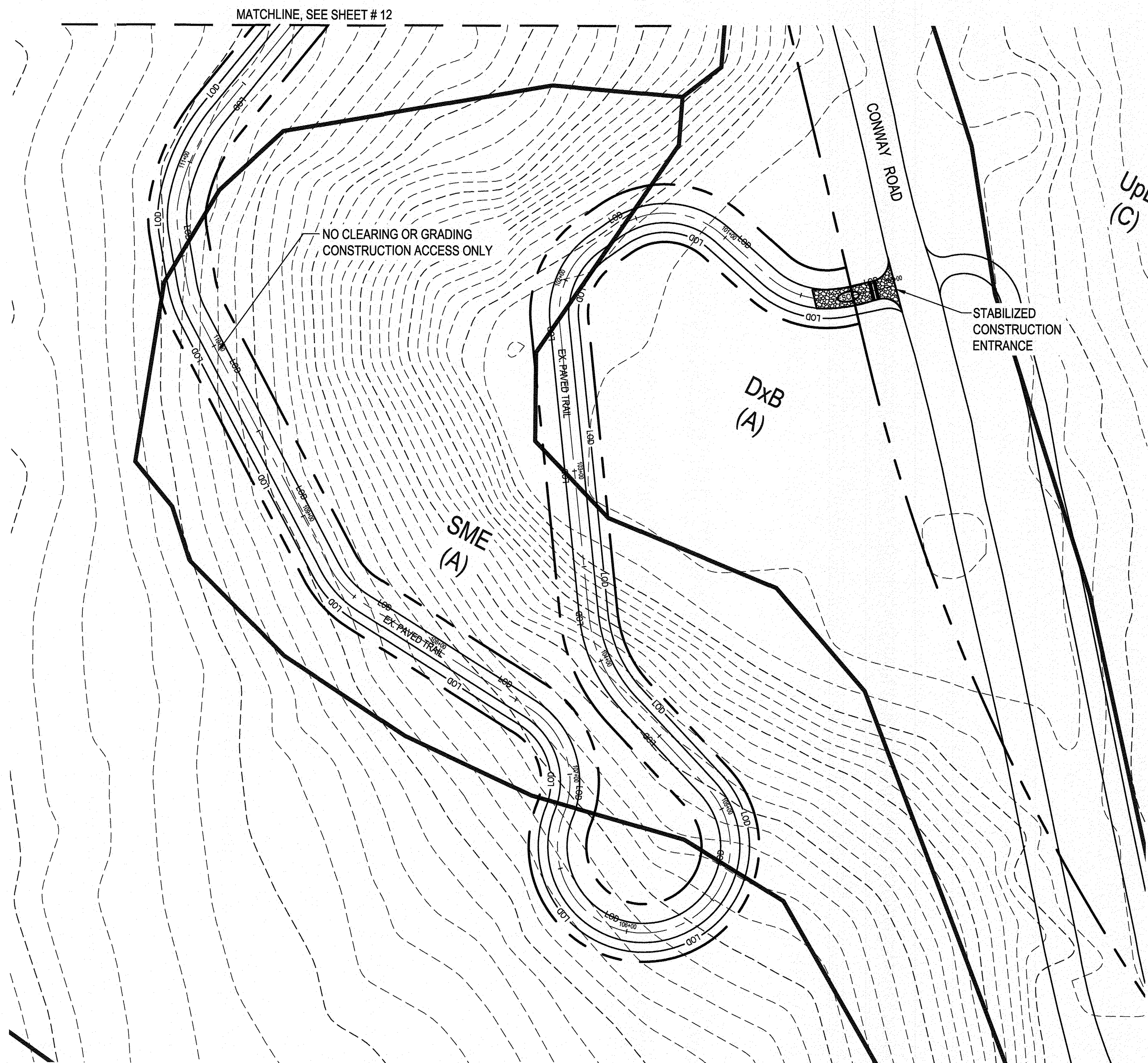
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License #34682 Expiration Date: 07/08/2023

REVISIONS			
NO.	DESCRIPTION	BY	DATE

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

98231

APPROVED CHIEF ENGINEER	DATE 8/9/21	APPROVED PROJECT MANAGER	DATE 8/5/21	SCALE: 1" = 40'	WB&A TRAIL - BRIDGE AT PATUXENT
APPROVED ASSISTANT CHIEF ENGINEER	DATE 8/11/21	APPROVED CHIEF, RIGHT-OF-WAY	DATE 8/6/21	DRAWN BY: M.M./H.H. CHECKED BY: B.L.	
SHEET NO. 12 OF 45				PROJECT NO.: 2014017900	EROSION AND SEDIMENT CONTROL PLAN
CONTRACT NO.: 2014017900					



PLAN
SCALE: 1" = 40'

BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS

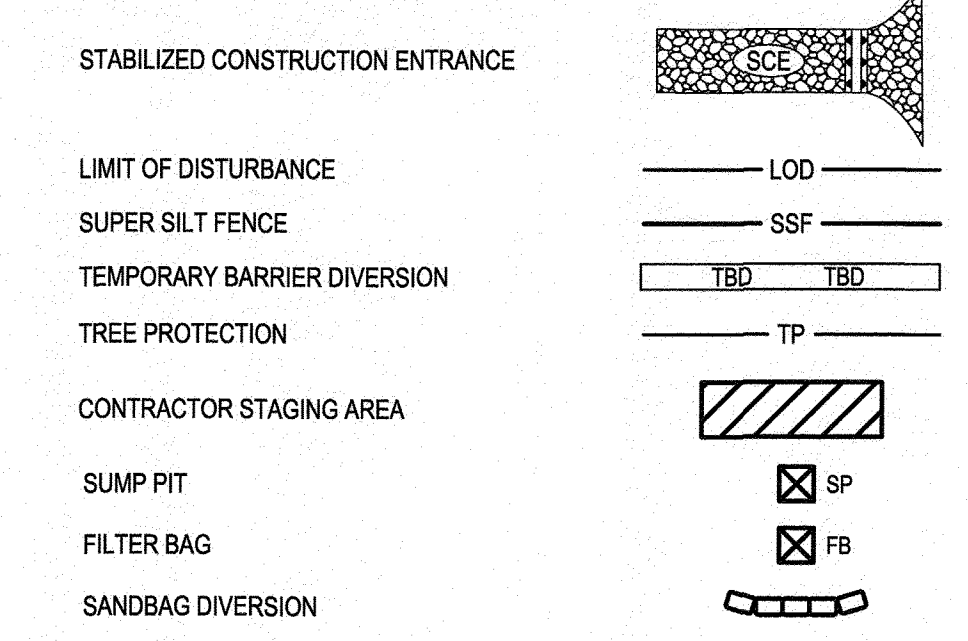
1. NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
2. PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
3. DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIALS FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
4. PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
5. REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
6. RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
7. ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (LOLIUM MULTIFLORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM SP.), OATS (UNIOLA SP.) AND/OR RYE (SECALE CEREALE). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.

8. AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
9. TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM:
 - A. USE I WATERS (WITHOUT YELLOW PERCH); IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE DURING ANY YEAR.
 - B. USE I WATERS (WITH YELLOW PERCH); IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD FEBRUARY 15 THROUGH JUNE 15, INCLUSIVE DURING ANY YEAR.
 - C. USE III WATERS; IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD OCTOBER 1 THROUGH APRIL 30, INCLUSIVE, DURING ANY YEAR.
 - D. USE IV WATERS; IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH MAY 31, INCLUSIVE, DURING ANY YEAR.
10. STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
11. CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

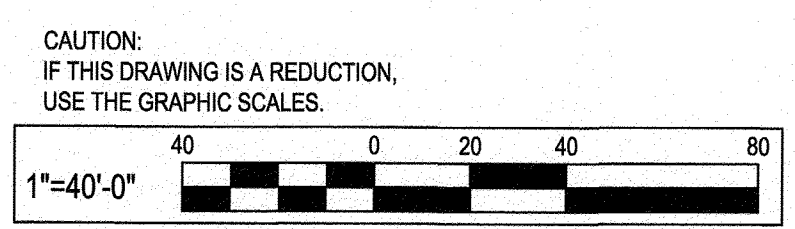
TEMPORARY CONSTRUCTION ACCESS ALONG EXISTING PAVED TRAILS GENERAL NOTES

1. THE CONTRACTOR SHALL PROVIDE MEANS AND METHODS FOR PROTECTION OF EXISTING PAVED ASPHALT TRAILS INDICATED FOR USE FOR CONSTRUCTION ACCESS ROUTES.
2. PERFORMANCE REQUIREMENTS:
 - a. DELEGATED DESIGN: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DESIGN AND/OR ENGINEERING THAT MAY BE NECESSARY FOR SELECTED PROTECTION MEASURES.
 - b. AS-BUILT SECTIONS OF THE EXISTING TRAILS ARE NOT AVAILABLE. THEY ARE ASSUMED TO BE STANDARD COUNTY TRAIL PAVING SECTION FOR PRIMARILY PEDESTRIAN LOADS.
 - c. THE CONTRACTOR IS RESPONSIBLE FOR THE INSPECTION AND VERIFICATION OF EXISTING CONDITIONS PRIOR TO THE START OF CONSTRUCTION.
 - d. PROTECTION MEASURES SHALL BE FULLY CONTAINED WITH THE PROJECT LIMITS OF DISTURBANCE AS INDICATED ON THE DRAWINGS.
 - e. ALL IMPACTS AND/OR DAMAGE TO THE EXISTING TRAIL SHALL BE RESTORED IN-KIND TO THE PRE-CONSTRUCTION CONDITION.
3. ACTION SUBMITTALS:
 - f. THE CONTRACTOR SHALL CONDUCT A PRECONSTRUCTION INSPECTION OF THE TRAIL TO DOCUMENT EXISTING CONDITIONS. THE OWNER SHALL BE NOTIFIED PRIOR TO THE INSPECTION. THE INSPECTION SUBMITTAL SHALL INCLUDE AT A MINIMUM; REPRESENTATIVE PHOTOGRAPHS AND DETAILED LIST OF ANY NOTED EXISTING DEFECTS OR DAMAGE.
 - g. THE CONTRACTOR SHALL CONDUCT A POST-CONSTRUCTION INSPECTION OF THE TRAIL. THIS SHALL BE CONDUCTED AS PART OF PROJECT SUBSTANTIAL COMPLETION. THE POST-CONSTRUCTION INSPECTION REPORT SHALL DOCUMENT THAT THE TRAIL CONDITION RELATIVE TO THE PRE-CONSTRUCTION CONDITION.
 - h. CONSTRUCTION ACCESS PLAN: CONTRACTOR SHALL PROVIDE A CONSTRUCTION ACCESS PLAN WITH THE SUBMISSION OF THE PRECONSTRUCTION INSPECTION SUMMARIZES THEIR APPROACH FOR PROTECTION AND/OR IN-KIND REPLACEMENT.
 - i. PRODUCT DATA: PROVIDE CUT SHEETS ON ALL PROPOSED PROTECTION MEASURES.

SEDIMENT CONTROL LEGEND



SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS



WHITNEY BAILEY COX & MAGNANI, LLC
300 East Joppa Road Suite 200 Baltimore, MD 21286
MAIN 410.512.4500 FAX 410.324.4100
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WBCM
ARCHITECTURE ENGINEERING CONSTRUCTION

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 #34882 Expiration Date: 07/08/2023

REVISIONS			
NO.	DESCRIPTION	BY	DATE

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

98232

WB&A TRAIL - BRIDGE AT PATUXENT

EROSION AND SEDIMENT CONTROL PLAN

APPROVED	DATE	APPROVED	DATE	SCALE: 1" = 40'
<i>David P. Bauman</i>	8/9/21	<i>David M. Jones</i>	8/5/21	DRAWN BY: M.M./J.H.
CHIEF ENGINEER		PROJECT MANAGER		CHECKED BY: B.L.
APPROVED	DATE	APPROVED	DATE	SHEET NO. 13 OF 45
<i>David P. Bauman</i>	8/11/21	<i>M.S.L.</i>	8/6/21	PROJECT NO.: 2014017900
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT-OF-WAY		CONTRACT NO.: 2014017900

SEDIMENT & EROSION NOTES

- ALL EROSION SEDIMENT CONTROL MEASURES SHALL COMPLY WITH THE LATEST VERSION OF MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- ALL STORM DRAIN AND SANITARY SEWER LINES NOT IN PAVED AREAS AND NOT SUBJECT TO ACTIVE GRADING IS TO BE MULCHED AND SEEDED WITHIN 3 DAYS AFTER THE INITIAL BACKFILL.
- ELECTRIC POWER, TELEPHONE AND GAS LINES NOT IN ACTIVE GRADING AREAS ARE TO BE COMPACTED, SEEDED AND MULCHED WITHIN 3 DAYS AFTER THE INITIAL BACKFILL.
- DURING CONSTRUCTION, ALL SEDIMENT CONTROL STRUCTURES WILL BE INSPECTED AFTER EACH RAIN FALL AND REPAIR IF NECESSARY. SEDIMENT TO BE REMOVED TO A SUITABLE DISPOSAL AREA AND STABILIZED WITH PERMANENT VEGETATIVE COVER.
- CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL SEDIMENT EROSION CONTROL MEASURES UNTIL DISTURBED AREAS ARE STABILIZED PERMANENTLY.
- MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE THAT STABILIZED AREAS CONTINUOUSLY MEET THE APPROPRIATE REQUIREMENTS OF THE LATEST VERSION OF MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

- THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
- SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

STANDARD UTILITY NOTES

- CONTRACTOR TO ONLY OPEN UP LENGTH OF TRENCH THAT CAN BE CONSTRUCTED AND BACKFILLED IN ONE WORKING DAY IN PAVED AREAS.
- CONTRACTOR TO PLACE EXCAVATED MATERIALS IN A DUMP TRUCK AND HAUL TO AN APPROVED LOCATION.
- CONTRACTOR TO BACKFILL TRENCH WITH APPROVED MATERIALS AND STABILIZE DISTURBED AREA THE SAME WORKING DAY.
- IF DEWATERING OF THE TRENCH IS REQUIRED, CONTRACTOR TO PUMP WATER TO A FILTER BAG TO DEWATER.
- CONTRACTOR TO SWEEP STREETS OF ANY DEBRIS OR SEDIMENTS CAUSED BY CONSTRUCTION OPERATIONS AND DISPOSE OF AT AN APPROVED LOCATION.
- CONTRACTOR TO STABILIZE ALL DISTURBED AREAS WITH SEED AND MULCH OR APPROPRIATE GRAVEL/ASPHALT REPAIR.

UTILITY NOTIFICATION

THE SOIL CONSERVATION DISTRICT MAKES NO REPRESENTATION AS TO THE EXISTENCE OR NONEXISTENCE OF ANY UTILITIES AT THE CONSTRUCTION SITE SHOWN ON THESE CONSTRUCTION DRAWINGS THOSE UTILITIES WHICH HAVE BEEN IDENTIFIED. IT IS THE RESPONSIBILITY OF THE LANDOWNERS OR OPERATORS AND CONTRACTORS TO ASSURE THEMSELVES THAT NO HAZARD EXISTS OR DAMAGE WILL OCCUR TO UTILITIES. THE LAW REQUIRES PRIOR TO EXCAVATION THAT MISS UTILITY BE CONTACTED AT: PHONE NO. 1-800-257-7777.

FOR UTILITY WORK ONLY OR OFF-SITE UTILITY WORK

- DISTURBANCE OUTSIDE OF LOD CANNOT EXCEED 5000 SQUARE FEET.
- PLACE ALL EXCAVATED MATERIAL ON HIGH SIDE OF TRENCH.
- ONLY DO AS MUCH WORK AS CAN BE DONE IN ONE DAY SO BACKFILLING, FINAL GRADING, SEEDING AND MULCHING CAN OCCUR.
- ANY SEDIMENT CONTROL MEASURES DISTURBED BY CONSTRUCTION WILL BE REPAIRED THE SAME DAY.

SOIL EROSION, SEDIMENT CONTROL & SEEDING NOTES

- ALL SOIL EROSION/SEDIMENT CONTROL MEASURES SHALL COMPLY WITH THE '2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL' AND THE PROVISIONS OF THE APPROVED PLAN.
- ALL GRADING AND STABILIZATION SHALL COMPLY WITH THE '2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL', 'SECTION B - GRADING AND STABILIZATION' AND THE PROVISIONS OF THE APPROVED PLAN.
- ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES (BMPs) ARE TO BE CONSTRUCTED AND/OR INSTALLED PRIOR TO OR AT THE INITIATION OF GRADING IN ACCORDANCE WITH '2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL', AND THE APPROVED PLAN.
- A GRADING UNIT IS THE MAXIMUM CONTIGUOUS AREA ALLOWED TO BE GRADED AT A GIVEN TIME AND IS LIMITED TO 20 ACRES. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY AND/OR THE WASHINGTON COUNTY SOIL CONSERVATION DISTRICT (APPROVAL AUTHORITY). UNLESS OTHERWISE SPECIFIED OR APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CUMULATIVE MAY BE DISTURBED AT A GIVEN TIME.
- FOR INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, TEMPORARY OR PERMANENT STABILIZATION MUST BE COMPLETED WITHIN:
 - THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
 - SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.
- STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 7 DAY STABILIZATION REQUIREMENTS, AS WELL AS, STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION (AS APPLICABLE).
- ALL CONSTRUCTED CHANNELS AND SWALES SHALL HAVE SPECIFIED TREATMENT INSTALLED TO THE DESIGN FLOW DEPTH COMPLETED DOWNSTREAM TO UPSTREAM AS CONSTRUCTION PROGRESSES. AN INSTALLATION DETAIL SHALL BE SHOWN ON THE PLANS.
- ALL STORM DRAIN AND SANITARY SEWER LINES NOT IN PAVED AREAS ARE TO BE MULCHED AND SEEDED WITHIN 3 DAYS OF INITIAL BACKFILL UNLESS OTHERWISE SPECIFIED ON PLANS.
- ELECTRIC POWER, TELEPHONE, AND GAS LINES ARE TO BE COMPACTED, SEEDED, AND MULCHED WITHIN 3 DAYS AFTER INITIAL BACKFILL UNLESS OTHERWISE SPECIFIED ON PLANS.
- NO SLOPE SHALL BE GREATER THAN 2:1.
- AS REQUIRED BY SECTION B, OF THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, "ADEQUATE VEGETATIVE STABILIZATION", IS DEFINED AS 95 PERCENT GROUND COVER. THE ANNE ARUNDEL COUNTY SOIL CONSERVATION DISTRICT REQUIRES THE PROJECT ADHERE TO THIS FOR SCHEDULING OF THE FINAL SITE CLOSEOUT REVIEW, AND/OR RELEASE OF THE SITE FOR SOIL EROSION AND SEDIMENT CONTROL.
- PLACE 4" MIN. OF TOPSOIL IN ALL GREEN AREAS BEFORE PERMANENT SEEDING IS PERFORMED. THIS INCLUDES HOA PROPERTY.
- MINIMUM 2% SLOPES MUST BE PROVIDED FOR ADEQUATE DRAINAGE OF GRASSY AREAS.

STOCKPILE NOTES

- NO STOCKPILING ALLOWED ON ASPHALT.
- ALL STOCKPILES LEFT AT THE END OF THE DAY NEED TO BE STABILIZED UNTIL THE NEXT REDISTURBANCE.

GENERAL LANDSCAPING NOTES

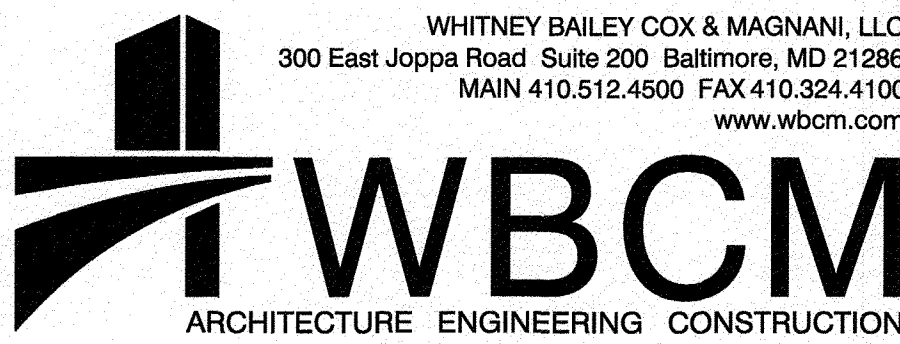
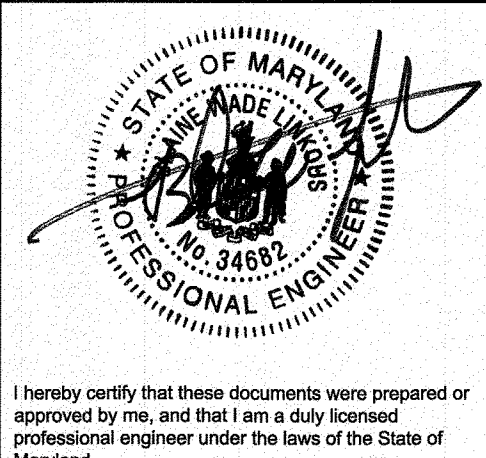
- ONLY TREES ON THE CITY APPROVED PLANTING LIST IN THE CITY STANDARD DETAILS, LATEST EDITION, ARE PERMITTED TO BE PLANTED IN THE ANNE ARUNDEL COUNTY'S RIGHT-OF-WAY.
- ALL STREET TREE PLANTINGS SHALL BE A MINIMUM OF 1-1/2" CALIPER AND DISPLAY A SINGLE STRAIGHT TRUNK TO 7' OF WHICH 5' SHALL BE FREE OF BRANCHING (ANZI Z60.1).
- THERE SHALL BE NO EXCESS SOIL OR MULCH ON TOP OF ROOT BALL SO AS TO EXPOSE BASAL ROOT FLARE. ALL STREET TREE PLANTINGS SHALL BE FREE OF DAMAGE, DISEASE AND DEFECTS.
- PER THE CITY OF FREDERICK CHARTER AND CODE OF LAWS SEC. 22-102 "PLANTINGS ON UTILITIES OR IN EASEMENTS. (A) IT SHALL BE UNLAWFUL TO PLACE OR PLANT A TREE OR TREES ON TOP OF OR WITHIN TEN (10) FEET OF ANY UNDERGROUND UTILITY LINE OR EQUIPMENT OF THE CITY. (B) IT SHALL BE UNLAWFUL TO PLACE OR PLANT TREES, BUSHES, SHRUBS OR OTHER PLANTINGS OR GROUND COVER OF ANY NATURE WHATSOEVER WITHIN THE UTILITY EASEMENT AREA OF THE CITY UNLESS PRIOR WRITTEN APPROVAL OF THE CITY IS SECURED." ALSO THERE SHALL BE A MINIMUM OF FIFTEEN (15) FEET OF SEPARATION BETWEEN PLANTED TREES AND CITY STREETLIGHTS, TO OBTAIN PRIOR WRITTEN APPROVAL OF EXCEPTION TO ANY OF THE ABOVE IN DESIGN OR IN CONSTRUCTION, CONTACT THE CITY ENGINEER. FOR UTILITIES OWNED BY COMPANIES OTHER THAN THE CITY ON PUBLIC OR PRIVATE PROPERTY WITH PRIVATELY MAINTAINED LANDSCAPING, THERE SHALL BE A MIN. OF TEN (10) FEET OF SEPARATION BETWEEN THE CENTER OF DESIGNED OR PLANTED TREES AND AN SUCH UTILITY LINES AND STRUCTURES (UNDER OR ABOVE GROUND) UNLESS PRIOR WRITTEN CONSENT IS OBTAINED FROM THE UTILITY COMPANY OWNER. WHERE UTILITIES ARE PRIVATELY-OWNED, A REASONABLE AND PRUDENT EFFORT TO MAINTAIN A MIN. TEN (10) FOOT SEPARATION BETWEEN DESIGNED OR PLANTED TREES AND UTILITIES SHALL BE REQUIRED.
- CONTRACTOR SHALL CALL THE CITY OF FREDERICK ARBORIST AT 301-600-1233 PRIOR TO PLACEMENT AND PLANTING OF CITY TREES FOR FIELD ADJUSTMENTS TO LOCATIONS. PRIOR TO ANY EXCAVATION WITHIN 10' OF CITY STREET TREES OR DESIGNATED STATE TREES, CONTRACTOR TO OBTAIN PERMIT FROM THE OFFICE OF THE CITY ARBORIST.

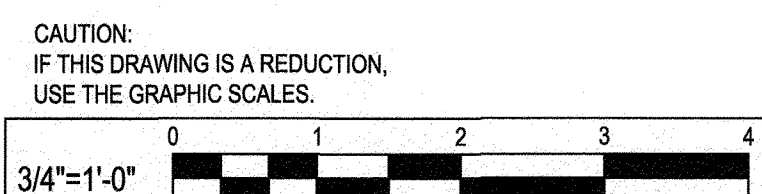
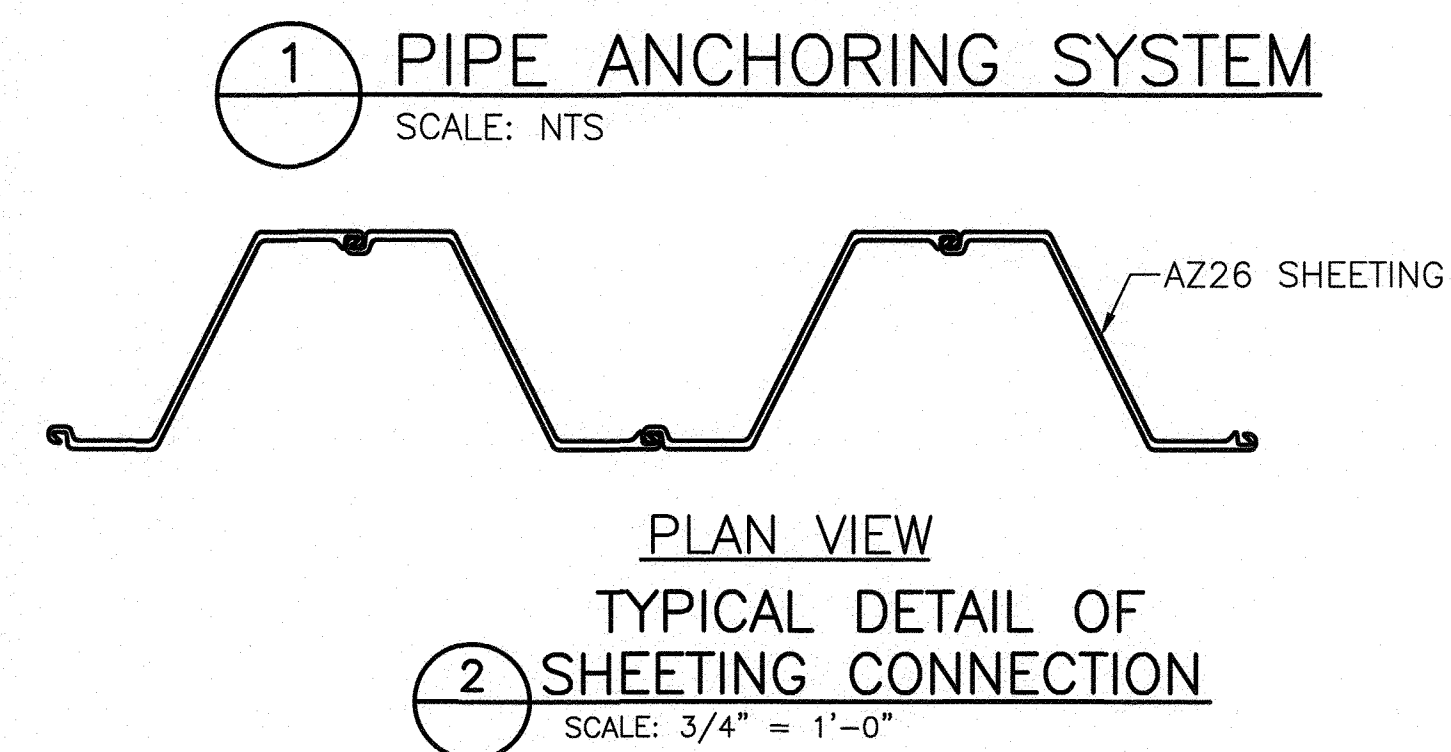
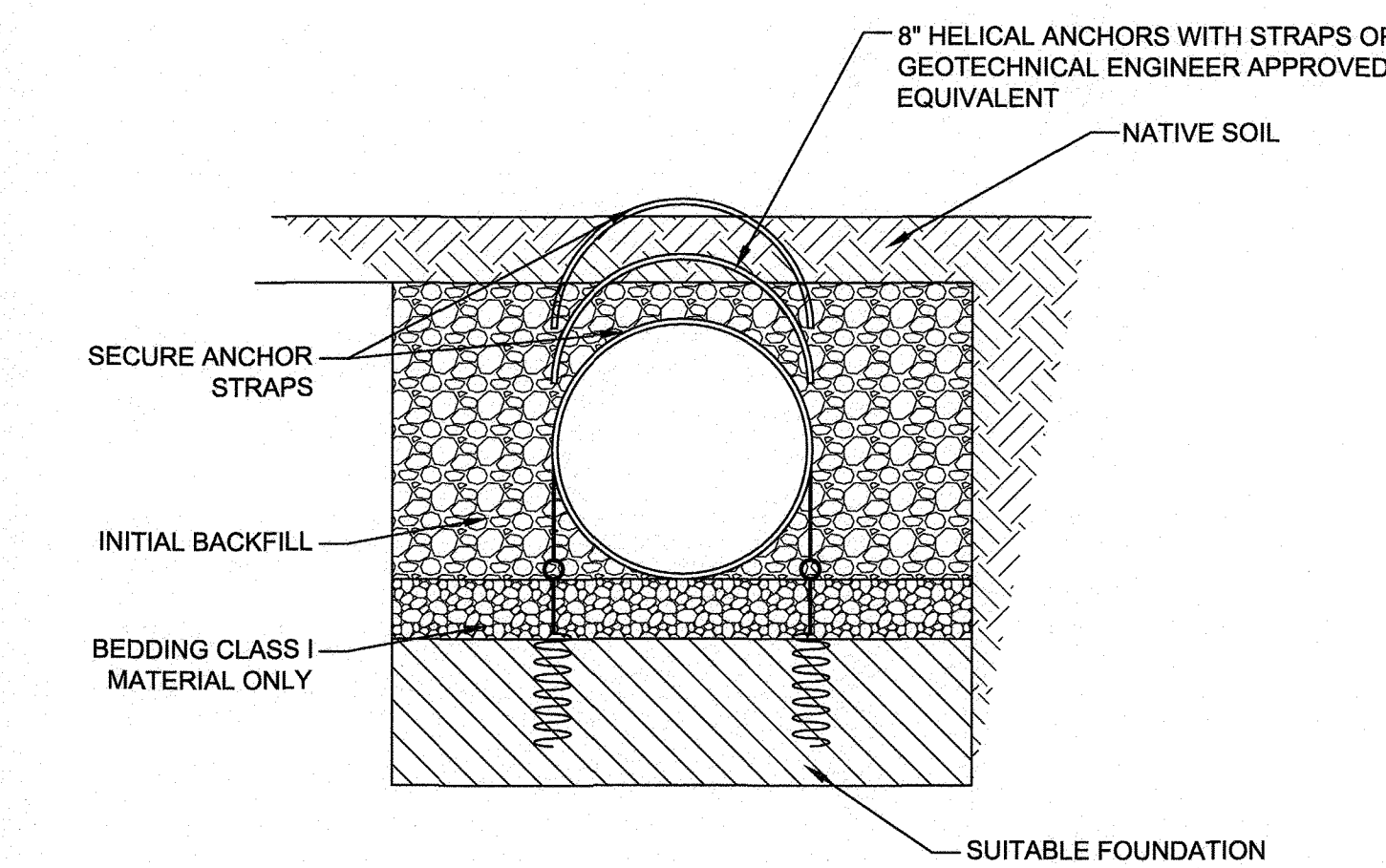
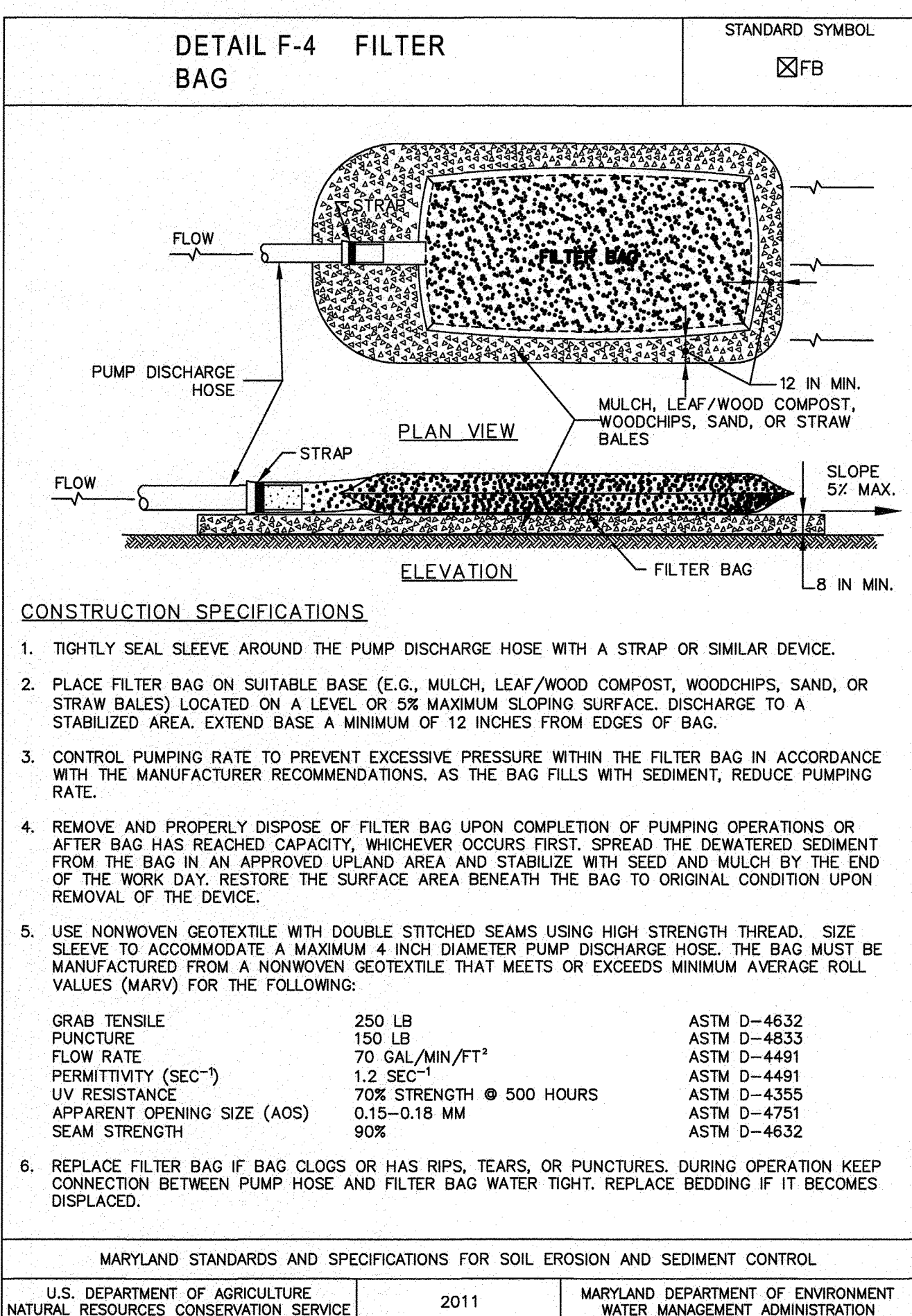
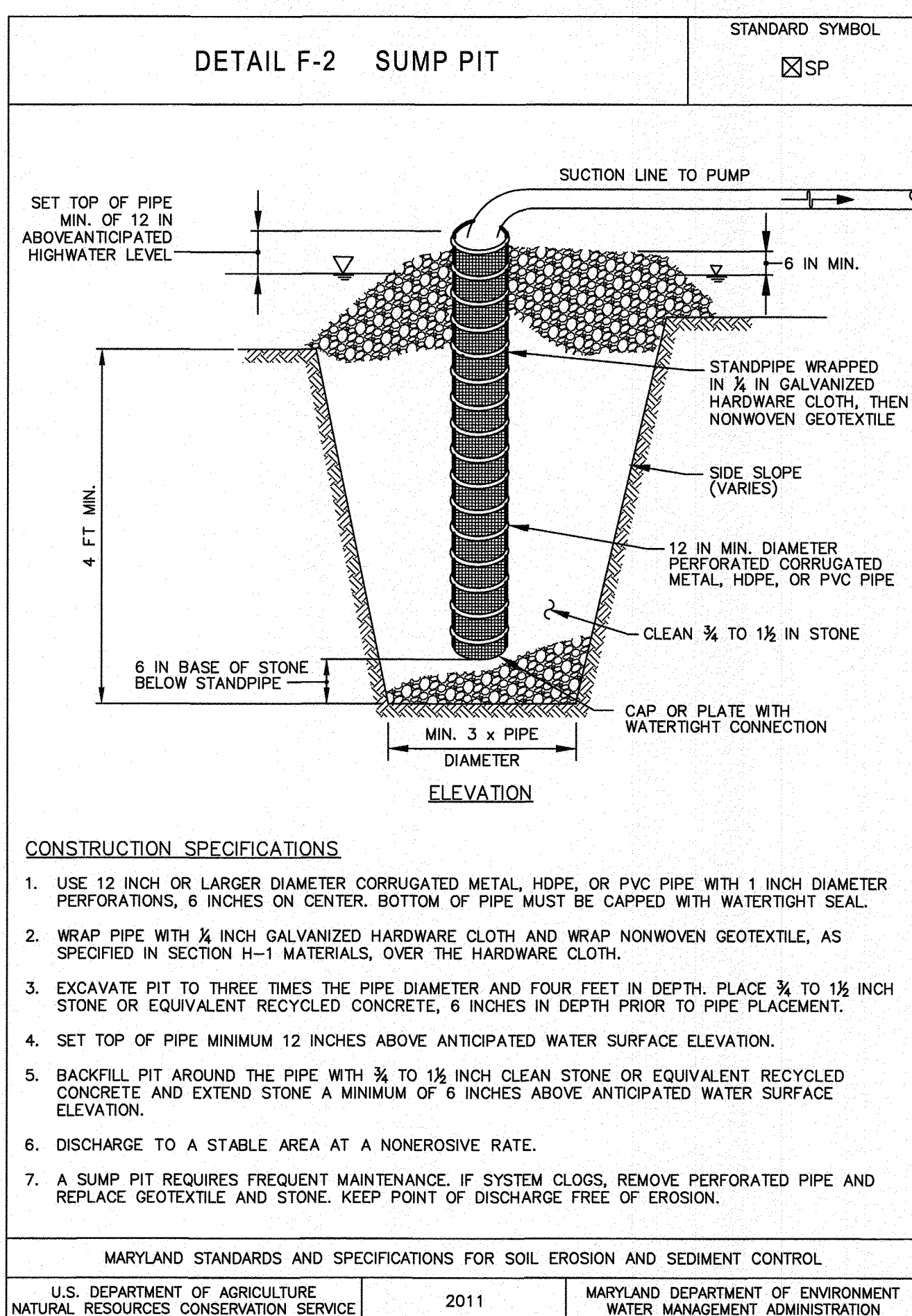
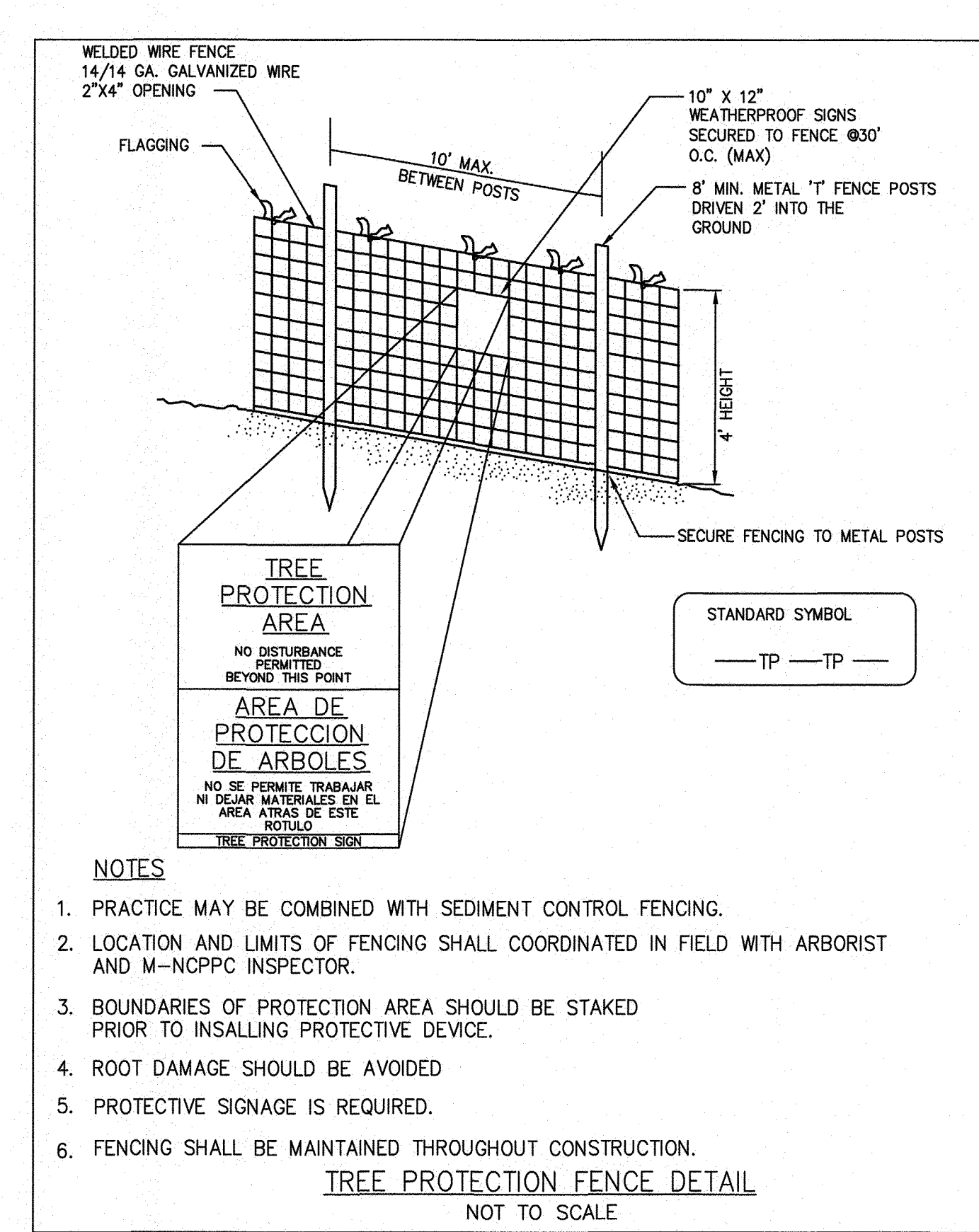
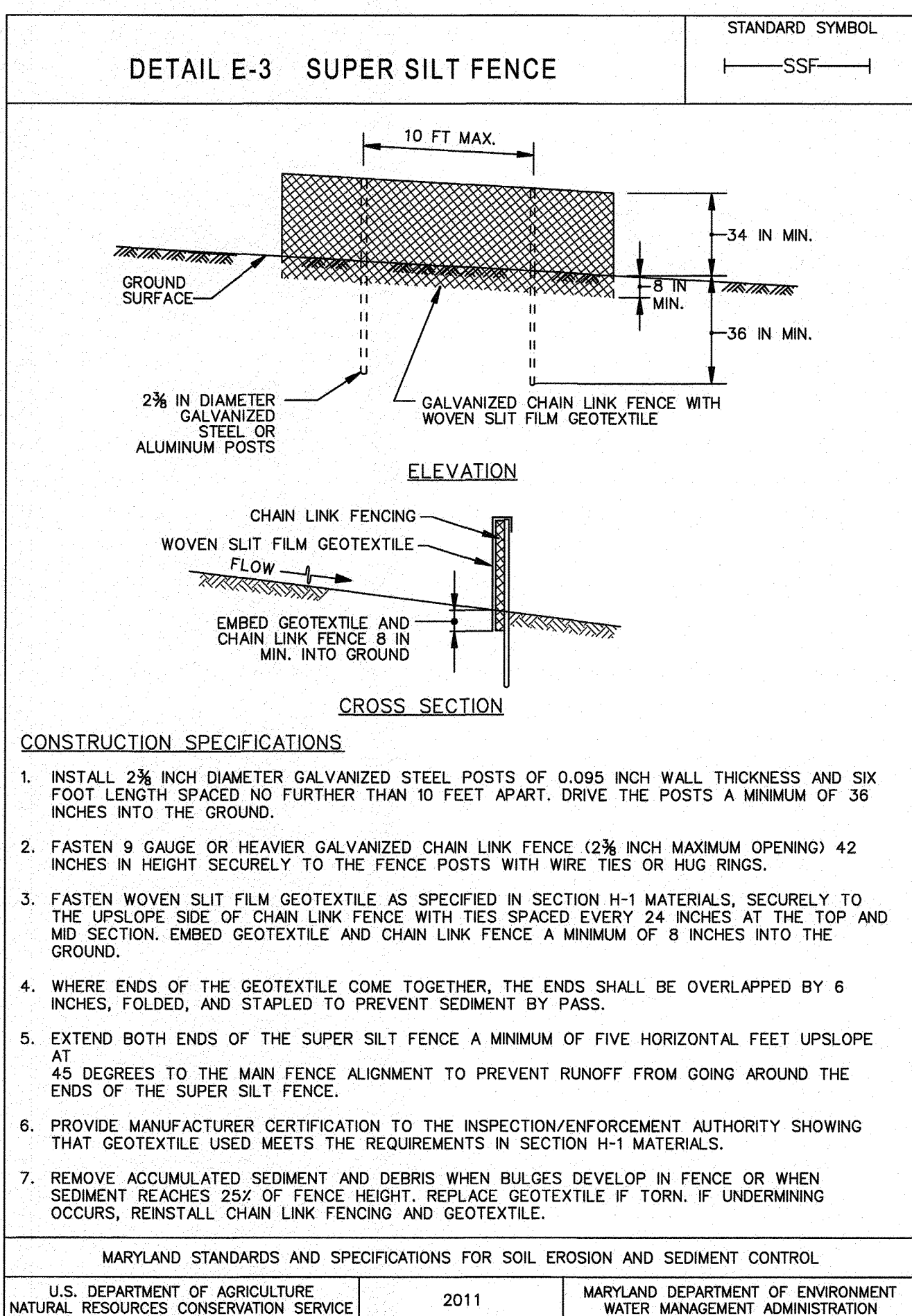
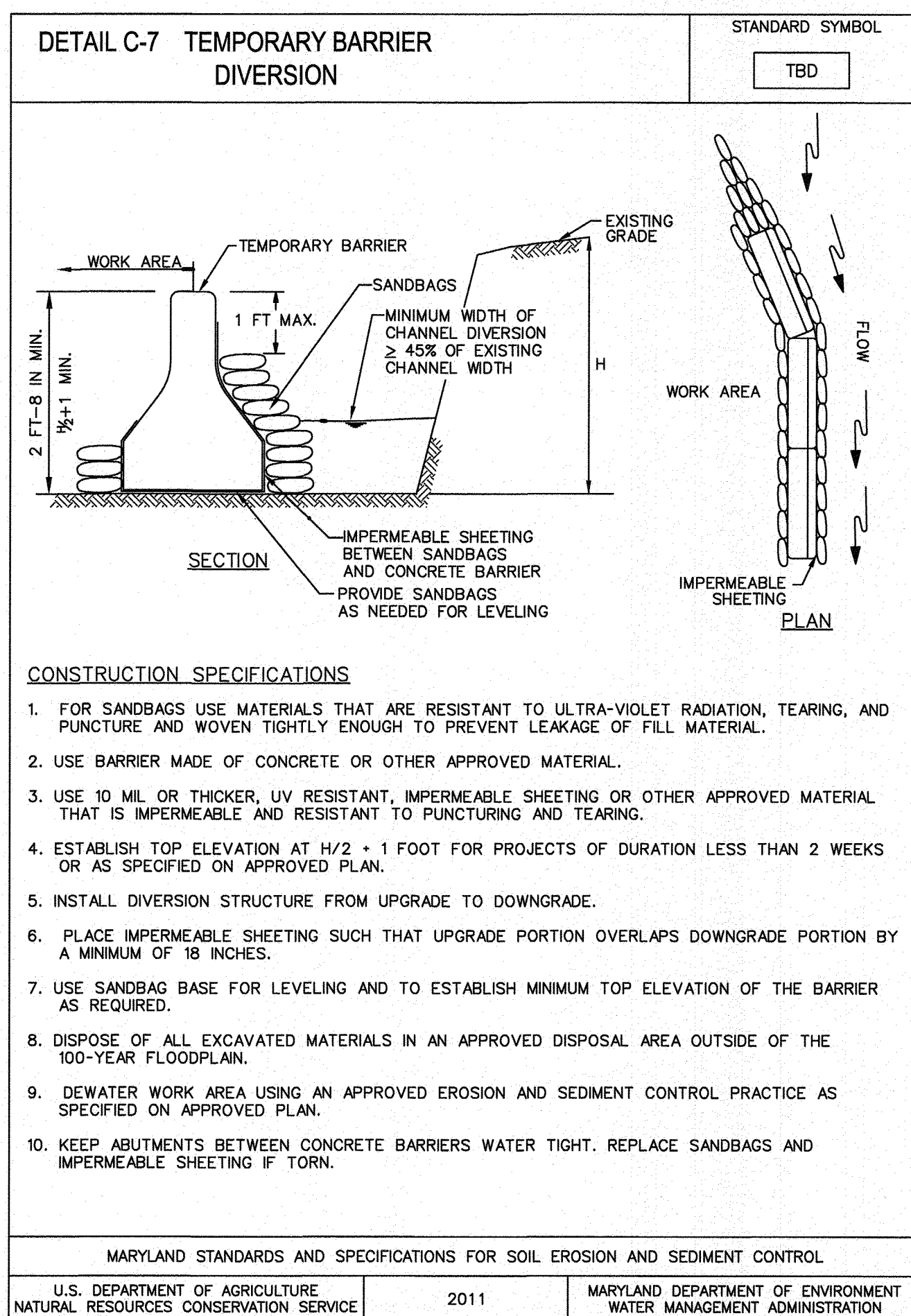
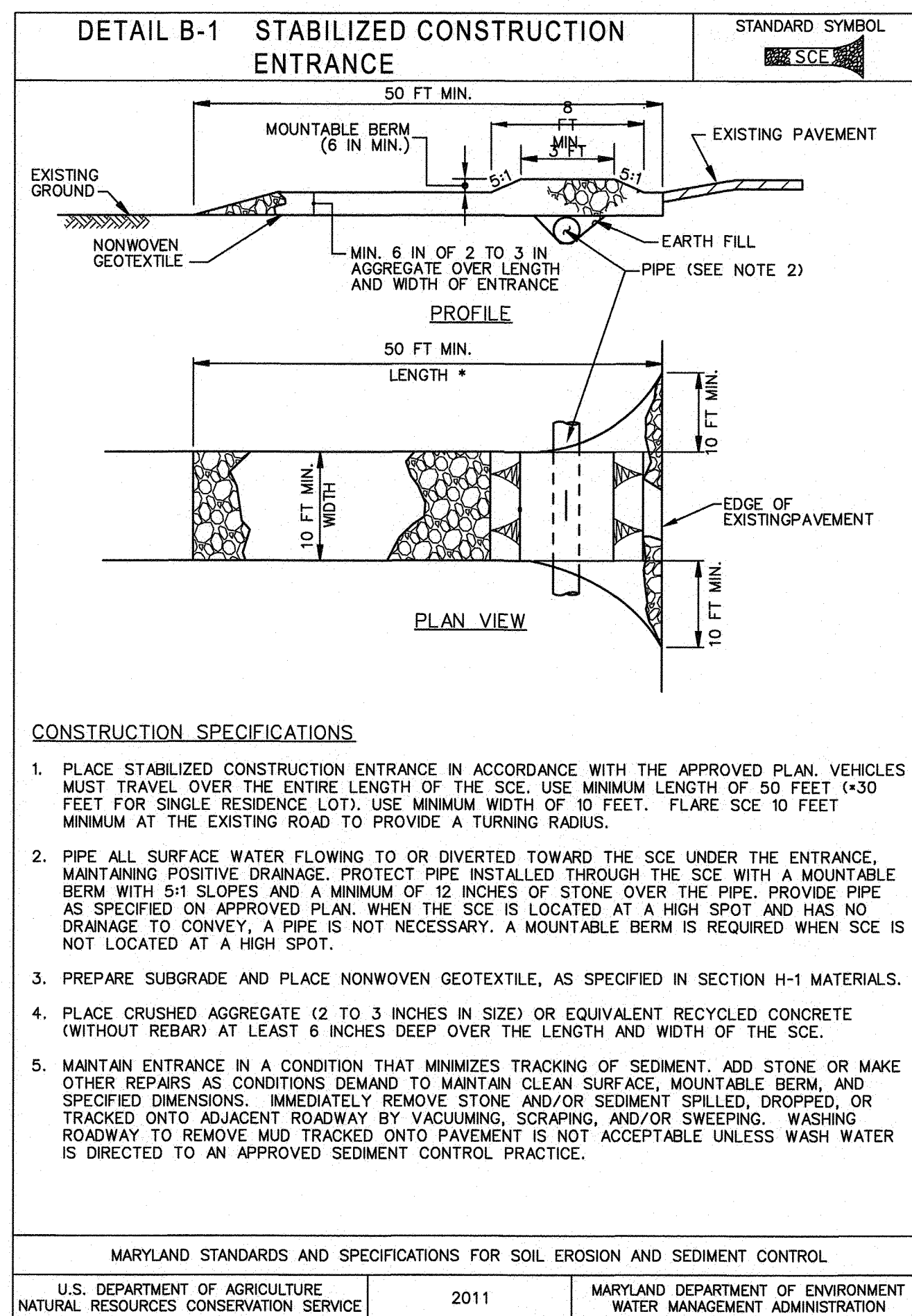
2018 VEGETATIVE ESTABLISHMENT

FOLLOWING INITIAL SOIL DISTURBANCES OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE CALENDAR DAYS FOR THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND SEVEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

- PERMANENT SEEDING:
 - SOIL TESTS: LIME AND FERTILIZER WILL BE APPLIED PER SOIL TESTS RESULTS FOR SITES GREATER THAN 5 ACRES. SOIL TESTS WILL BE DONE AT COMPLETION OF INITIAL ROUGH GRADING OR AS RECOMMENDED BY THE SEDIMENT CONTROL INSPECTOR. RATES AND ANALYSES WILL BE PROVIDED TO THE GRADING INSPECTOR AS WELL AS THE CONTRACTOR. OCCURRENCE OF ACID SULFATE SOILS (GRAYISH BLACK COLOR) WILL REQUIRE COVERING WITH A MINIMUM OF 12 INCHES OF CLEAN SOIL WITH 6 INCHES MINIMUM CAPPING OF TOP SOIL. NO STOCKPILES OF MATERIAL IS ALLOWED. IF NEEDED, SOIL TESTS SHOULD BE DONE BEFORE AND AFTER A 6-WEEK INCUBATION PERIOD TO ALLOW OXIDATION OF SULFATES.
- THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
 - SOIL PH SHALL BE BETWEEN 6.0 AND 7.0.
 - SOLUBLE SALTS SHALL BE LESS THAN 500 PARTS PER MILLION (PPM).
 - THE SOIL SHALL CONTAIN LESS THAN 40% CLAY BUT ENOUGH FINE GRAINED MATERIAL (> 30% SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IS IF LOVEGRASS OR SERICEA LESPEDEZA IS TO BE PLANTED, THEN A SANDY SOIL (< 30% SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 - SOIL SHALL CONTAIN 1.5% MINIMUM ORGANIC MATTER BY WEIGHT.
 - SOIL MUST CONTAIN SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
 - IF THESE CONDITIONS CANNOT BE MET BY SOILS ON SITE, ADDING TOPSOIL IS REQUIRED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS FROM THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL OR AMENDMENTS MADE AS RECOMMENDED BY A CERTIFIED AGRONOMIST.
- SEEDING PREPARATION: AREA TO BE SEEDED SHALL BE LOOSE AND FRIABLE TO A DEPTH OF AT LEAST 3-5 INCHES. THE TOP LAYER SHALL BE LOOSENEED BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING OCCURS. FOR SITES LESS THAN 5 ACRES, APPLY 100 POUNDS DOLOMITIC LIMESTONE AND 21 POUNDS OF 10-10-10 FERTILIZER PER 1,000 SQUARE FEET. HARROW OR DISK LIME AND FERTILIZER INTO THE SOIL TO A DEPTH OF AT LEAST 3-5 INCHES ON SLOPES FLATTER THAN 3:1.
- SEEDING: APPLY 5-6 POUNDS PER 1,000 SQUARE FEET OF TALL FESCUE BETWEEN FEBRUARY 1 AND APRIL 30 OR BETWEEN AUGUST 15 AND OCTOBER 31. APPLY SEED UNIFORMLY ON A MOIST FIRM SEEDBED WITH A CYCLONE SEEDER, CULTIPACKER SEEDER OR HYDROSEEDER (SLURRY INCLUDES SEEDS AND FERTILIZER, RECOMMENDED ON STEEP SLOPES ONLY). MAXIMUM SEED DEPTH SHOULD BE 1/4 INCH IN CLAYEY SOILS AND 1/2 INCH IN SANDY SOILS WHEN USING OTHER THAN THE HYDROSEEDER METHOD. IRRIGATE WHERE NECESSARY TO SUPPORT ADEQUATE GROWTH UNTIL VEGETATION IS FIRMLY ESTABLISHED. IF OTHER SEED MIXES ARE TO BE USED, SELECT FROM TABLE B3 AND B5 OF THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- MULCHING: MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING. DURING THE TIME PERIODS WHEN SEEDING IS NOT PERMITTED, MULCH SHALL BE APPLIED IMMEDIATELY AFTER GRADING. MULCH SHALL BE UNROTTED, UNCHOPPED, SMALL GRAIN STRAW APPLIED AT A RATE OF 2 TONS PER ACRE OR 90 POUNDS PER 1,000 SQUARE FEET (2 BALES). APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. IF A MULCH-ANCHORING TOOL IS USED, APPLY 2.5 TONS PER ACRE. MULCH MATERIALS SHALL BE RELATIVELY FREE OF ALL KINDS OF WEEDS AND SHALL BE COMPLETELY FREE OF PROHIBITED NOXIOUS WEEDS. SPREAD MULCH UNIFORMLY, MECHANICALLY OR BY HAND, TO A DEPTH OF 1-2 INCHES.
- SECURING STRAW MULCH: STRAW MULCH SHALL BE SECURED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE MOVEMENT BY WIND OR WATER. THE FOLLOWING METHODS ARE PERMITTED:
 - USE A MULCH-ANCHORING TOOL WHICH IS DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE TO A MINIMUM DEPTH OF 2 INCHES. THIS IS THE MOST EFFECTIVE METHOD FOR SECURING MULCH, HOWEVER, IT IS LIMITED TO RELATIVELY FLAT AREAS WHERE EQUIPMENT CAN OPERATE SAFELY.
 - WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUND PER ACRE. IF MIXED WITH WATER, USE 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 - LIQUID BINDERS MAY BE USED. APPLY AT HIGHER RATES AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF SLOPES. THE REMAINDER OF THE AREA SHOULD APPEAR UNIFORM AFTER BINDER APPLICATION. BINDERS LISTED IN THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL OR APPROVED EQUAL SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURERS.
 - LIGHTWEIGHT PLASTIC NETTING MAY BE USED TO SECURE MULCH. THE NETTING WILL BE STAPLED TO THE GROUND ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- TEMPORARY SEEDING:
 - LIME: 100 POUNDS OF DOLOMITIC LIMESTONE PER 1,000 SQUARE FEET.
 - FERTILIZER: 15 POUNDS OF 10-10-10 PER 1,000 SQUARE FEET.
 - SEED: PERENNIAL RYE - 0.92 POUNDS PER 1,000 SQUARE FEET (FEBRUARY 1 THROUGH APRIL 30 OR AUGUST 15 THROUGH OCTOBER 31).
 - MILLET - 0.92 POUNDS PER 1,000 SQUARE FEET (MAY 1 THROUGH AUGUST 15).
 - MULCH: SAME AS 1 D AND E ABOVE.
- NO FILLS MAY BE PLACED ON FROZEN GROUND. ALL FILL IS TO BE PLACED IN APPROXIMATELY HORIZONTAL LAYERS, EACH LAYER HAVING A LOOSE THICKNESS OF NOT MORE THAN 8 INCHES. ALL COMPACTION REQUIREMENTS ARE IN ACCORDANCE TO ANNE ARUNDEL COUNTY STANDARD SPECIFICATIONS FOR CONSTRUCTION AS WELL AS THE AA COUNTY DESIGN MANUAL AND STANDARD DETAILS. FILLS FOR POND EMBANKMENTS SHALL BE COMPACTED AS PER MD-378 CONSTRUCTION SPECIFICATIONS. ALL OTHER FILLS SHALL BE COMPACTED SUFFICIENTLY SO AS TO BE STABLE AND PREVENT EROSION AND SLIPPAGE.
- PERMANENT SOD:
 - INSTALLATION OF SOD SHOULD FOLLOW PERMANENT SEEDING DATES. SEEDBED PREPARATION FOR SOD SHALL BE AS NOTED IN SECTION (B) ABOVE. PERMANENT SOD IS TO BE TALL FESCUE, STATE APPROVED SOD; LIME AND FERTILIZER PER PERMANENT SEEDING SPECIFICATIONS AND LIGHTLY IRRIGATE SOIL PRIOR TO LAYING SOD. SOD IS TO BE LAID ON THE CONTOUR WITH ALL ENDS TIGHTLY ADJUTING. JOINTS ARE TO BE STAGGERED BETWEEN ROWS. WATER AND ROLL OR TAMP SOD TO INSURE POSITIVE ROOT CONTACT WITH THE SOIL. ALL SLOPES STEEPER THAN 3:1, AS SHOWN, ARE TO BE PERMANENTLY SODDED OR PROTECTED WITH AN APPROVED EROSION CONTROL NETTING. ADDITIONAL WATERING FOR ESTABLISHMENT MAY BE REQUIRED. SOD IS NOT TO BE INSTALLED ON FROZEN GROUND. SOD SHALL NOT BE TRANSLANTED WHEN MOISTURE CONTENT (DRY OR WET) AND/OR EXTREME TEMPERATURE MAY ADVERSELY AFFECT ITS SURVIVAL. IN THE ABSENCE OF ADEQUATE RAINFALL, IRRIGATION SHOULD BE PERFORMED TO ENSURE ESTABLISHMENT OF SOD.
- MINING OPERATIONS:
 - SEDIMENT CONTROL PLANS FOR MINING OPERATIONS MUST INCLUDE THE FOLLOWING SEEDING DATES AND MIXTURES:
 - FOR SEEDING DATES OF FEBRUARY 1 THROUGH APRIL 30 AND AUGUST 15 THROUGH OCTOBER 31, USE SEED MIXTURE OF TALL FESCUE AT THE RATE OF 2 POUNDS PER 1,000 SQUARE FEET AND SERICEA LESPEDEZA AT THE MINIMUM RATE OF 0.5 POUNDS PER 1,000 SQUARE FEET.
- TOPSOIL SHALL BE APPLIED AS PER THE STANDARD AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS FROM THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- USE OF THESE VEGETATIVE ESTABLISHMENT SPECIFICATIONS DOES NOT PRECLUDE THE PERMITTEE OR CONTRACTOR FROM MEETING ALL OF THE REQUIREMENTS SET FORTH IN THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

 <p>WHITNEY BAILEY COX & MAGNANI, LLC 300 East Joppa Road Suite 200 Baltimore, MD 21286 MAIN 410.512.4500 FAX 410.324.4100 www.wbcm.com</p>	 <p>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 #34882 Expiration Date: 07/08/2023</p>	<p style="text-align: center;">REVISIONS</p> <table border="1"> <thead> <tr> <th>NO.</th> <th>DESCRIPTION</th> <th>BY</th> <th>DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>				NO.	DESCRIPTION	BY	DATE																	<p style="text-align: center;">ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS</p> <p style="text-align: right; font-size: 24pt;">98233</p>			
		NO.	DESCRIPTION	BY	DATE																								
<p>APPROVED <i>[Signature]</i> DATE 8/9/21 CHIEF ENGINEER</p>		<p>APPROVED <i>[Signature]</i> DATE 8/5/21 PROJECT MANAGER</p>		<p>SCALE: AS SHOWN DRAWN BY: M.M.H.H CHECKED BY: B.L. SHEET NO. 14 OF 45 PROJECT NO.: 2014017900 CONTRACT NO.: 2014017900</p>																									
<p>APPROVED <i>[Signature]</i> DATE 8/11/21 ASSISTANT CHIEF ENGINEER</p>		<p>APPROVED <i>[Signature]</i> DATE 8/6/21 CHIEF, RIGHT-OF-WAY</p>		<p style="text-align: center;">WB&A TRAIL - BRIDGE AT PATUXENT</p> <p style="text-align: center;">EROSION AND SEDIMENT CONTROL NOTES</p>																									



SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

WHITNEY BAILEY COX & MAGNANI, LLC
300 East Joppa Road Suite 200 Baltimore, MD 21286
MAIN 410.512.4500 FAX 410.324.4100 www.wbcm.com

ARCHITECTURE ENGINEERING CONSTRUCTION

STATE OF MARYLAND
PROFESSIONAL ENGINEER
No. 34682
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 #34682 Expiration Date: 07/06/2023

REVISIONS			
NO.	DESCRIPTION	BY	DATE

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

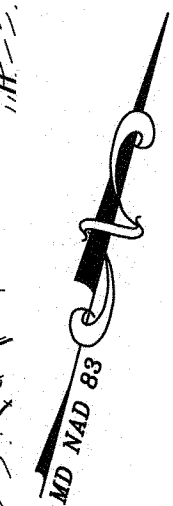
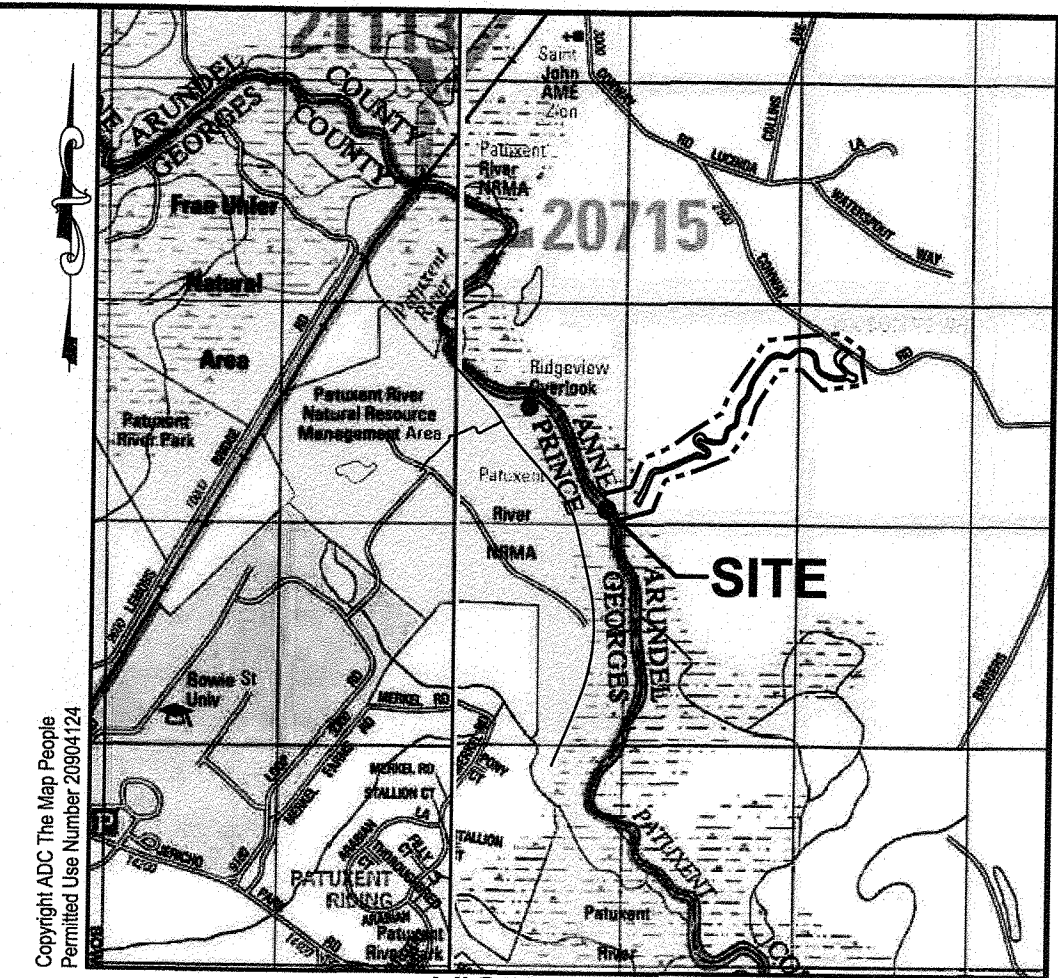
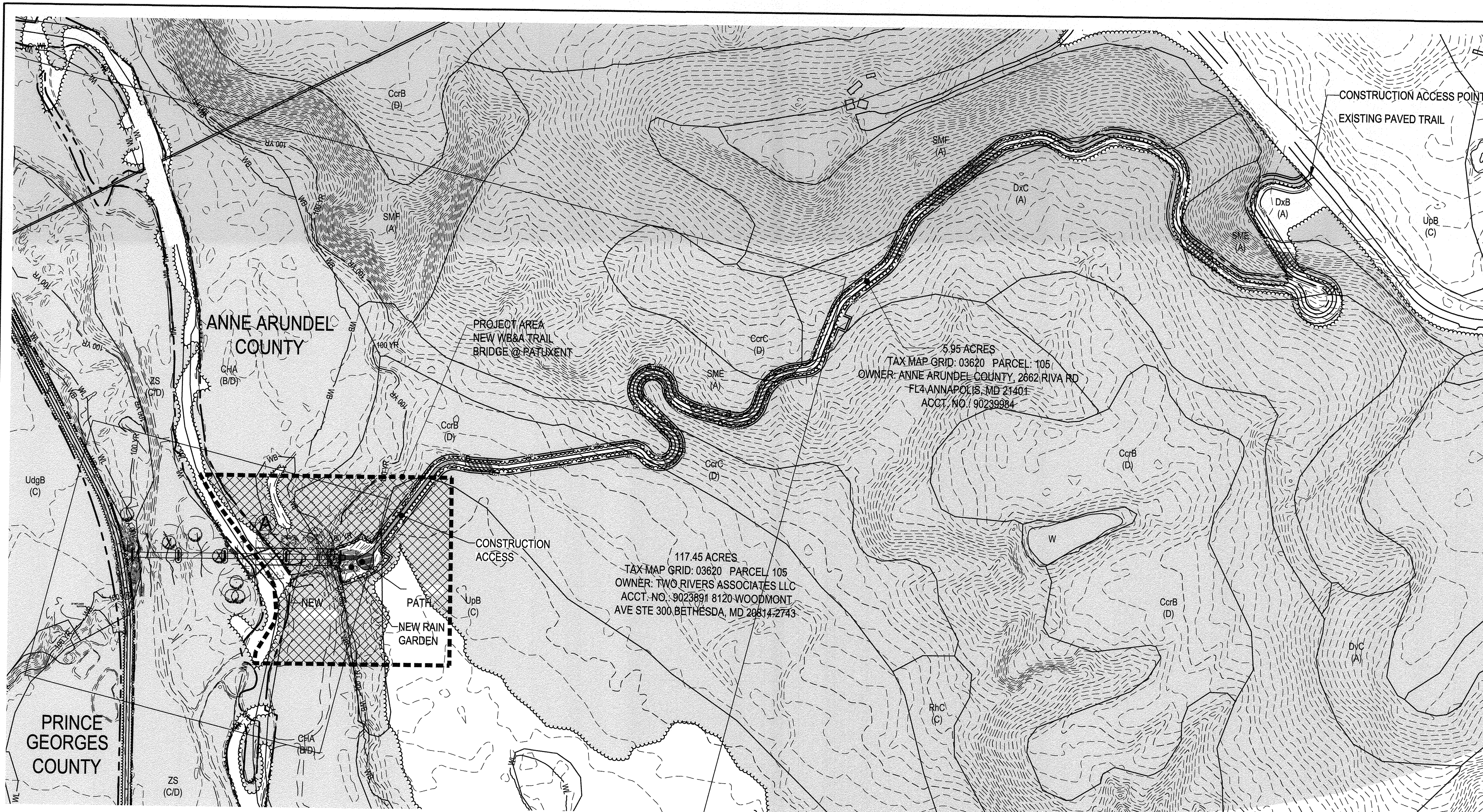
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WB&A TRAIL - BRIDGE AT PATUXENT

EROSION AND SEDIMENT CONTROL DETAILS

APPROVED	DATE	APPROVED	DATE
<i>[Signature]</i>	8/9/21	<i>[Signature]</i>	8/5/21
CHIEF ENGINEER		PROJECT MANAGER	
APPROVED	DATE	APPROVED	DATE
<i>[Signature]</i>	8/14/21	<i>[Signature]</i>	8/6/21
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT-OF-WAY	

SCALE: AS SHOWN
DRAWN BY: M.M.H.H.
CHECKED BY: B.L.
SHEET NO. 15 OF 45
PROJECT NO.: 2014017900
CONTRACT NO.: 2014017900



LEGEND

- BUILDING
- CONCRETE CURB AND GUTTER
- BITUMINOUS PAVEMENT
- CONCRETE PAVEMENT
- ELEVATION CONTOUR
- EXISTING FENCE
- PROPERTY LINE
- LIMIT OF DISTURBANCE
- 100 YEAR FLOODPLAIN
- WETLAND LINE
- WETLAND BUFFER
- MAPPED SOIL UNIT / HYDROLOGIC SOIL GROUP RATING
- EXISTING FOREST EXTENDING OUTSIDE THE PROJECT AREA
- EXISTING FOREST WITHIN THE PROJECT AREA
- FOREST SAMPLING DATA PLOT LOCATION
- STEEP SLOPES (15% OR GREATER)

CONSTRUCTION ACCESS

A - ANNE ARUNDEL
OFF OF CONWAY ROAD, ALONG EXISTING PAVED TRAIL. EXISTING TRAIL TO BE PROTECTED WITH CONSTRUCTION MATS DURING CONSTRUCTION. DAMAGED TRAIL SECTIONS TO BE REPAIRED IN-KIND AT THE END OF CONSTRUCTION. ASSUMES NO LARGE CRANE ACCESS NEEDED FOR BRIDGE DESIGN / CONSTRUCTION OPTION SELECTED.

OVERALL FOREST STAND DELINEATION

SCALE: 1" = 150'

FOREST STAND SUMMARY & WORKSHEET

PROPERTY NAME: WB & A TRAIL BRIDGE @ PATUXENT	
LOCATION: BOWIE, MD PRINCE GEORGE'S & ANNE ARUNDEL ADC MAP 5291 - GRID A/6	
PREPARED BY: MATTHEW J. MATHIAS, RLA DATE: OCTOBER 7, 2018	
STAND VARIABLE	STAND A (5.948 Acres)
1. DOMINANT SPECIES / CODOMINANT SPECIES	SOUTHERN RED OAK - QUERCUS FALCATA / WHITE OAK - QUERCUS ALBA / WILLOW OAK - QUERCUS RUBRUM / SWEET GUM - LIQUIDAMBAR STRYACIFLUA / BIRCH - BETULA / POPLAR - POPULUS
2. SUCCESSIONAL STAGE	LATE
3. BASAL AREA IN S.F. PER ACRE	65
4. SIZE CLASS OF DOMINANT SPECIES	12-29.9"
5. PERCENT OF CANOPY CLOSURE	90%
6. NUMBER OF TREE SPECIES PER ACRE	6
7. COMMON UNDERSTORY SPECIES PER ACRE	SWEET GUM / RED MAPLE / BLACK LOCUST / CHESTNUT / BIRCH
8. PERCENT OF UNDERSTORY COVER 3'-20" TALL	5%
9. NUMBER OF WOODY PLANT SPECIES 3'-20" TALL	3
10. COMMON HERBACEOUS SPECIES 0'-3" TALL	SEDGES / GRASSES / MOSSES / FERNS / GREENBRIER
11. % OF HERBACEOUS & WOODY PLANT COVER 0'-3" TALL	10%
12. LIST OF MAJOR INVASIVE PLANT SPECIES & % OF COVER	GREENBRIER / 10%
13. NUMBER OF STANDING DEAD TREES 6" DBH OR GREATER	0
14. COMMENTS	FSD INCLUDES PROPOSED LIMITS OF DISTURBANCE (5.95 AC.) WHICH IS REPRESENTATIVE OF A LARGER CONTIGUOUS FORESTED AREA EXTENDING OFF-SITE.

FOREST STAND SUMMARY & WORKSHEET C:2

HYDROLOGIC SOIL GROUP
ANNE ARUNDEL COUNTY, MARYLAND

MAP UNIT RATING SYMBOL	MAP UNIT NAME	SLOPE	HYDRIC	HSG RATING	K RATING
CCRB	CHRISTIANA-SASSAFRAS COMPLEX	2 TO 5%	NO	D	0.49
CHA	CODORUS AND HATBORO SOILS, FREQ. FLOODED	0 TO 2%	PARTIALLY	C	
UPB	UDORTHTENS, RECLAIMED GRAVEL PITS	0 TO 5%	NO	C	0.15

GEOLOGY (from soil survey):

THE PROJECT SITE CONSISTS OF SOILS HAVING A SLOW TO VERY SLOW INFILTRATION RATE (HIGH RUNOFF POTENTIAL) WHEN THOROUGHLY WET. THESE CONSIST CHIEFLY OF SOILS HAVING A LAYER THAT IMPEDES THE DOWNWARD MOVEMENT OF WATER OR SOILS OF MODERATELY FINE TEXTURE OR FINE TEXTURE. THESE SOILS HAVE A SLOW RATE OF WATER TRANSMISSION. IF A SOIL IS ASSIGNED TO A DUAL HYDROLOGIC GROUP (A/D, B/D, OR C/D), THE FIRST LETTER IS FOR DRAINED AREAS AND THE SECOND IS FOR UNDRAINED AREAS. ONLY THE SOILS THAT IN THEIR NATURAL CONDITION ARE IN GROUP D ARE ASSIGNED TO DUAL CLASSES.

EROSION FACTOR K INDICATES THE SUSCEPTIBILITY OF A SOIL TO SHEET AND RILL EROSION BY WATER. FACTOR K IS ONE OF SIX FACTORS USED IN THE UNIVERSAL SOIL LOSS EQUATION (USLE) TO PREDICT THE AVERAGE ANNUAL RATE OF SOIL LOSS BY SHEET AND RILL EROSION IN TONS PER ACRE PER YEAR. THE ESTIMATES ARE BASED PRIMARILY ON PERCENTAGE OF SILT, SAND, AND ORGANIC MATTER AND ON SOIL STRUCTURE AND SATURATED HYDRAULIC CONDUCTIVITY (KSAT). VALUES OF K RANGE FROM 0.02 TO 0.69. OTHER FACTORS BEING EQUAL, THE HIGHER THE VALUE, THE MORE SUSCEPTIBLE THE SOIL IS TO SHEET AND RILL EROSION BY WATER.

EROSION FACTOR KW (WHOLE SOIL) INDICATES THE ERODIBILITY OF THE WHOLE SOIL. THE ESTIMATES ARE MODIFIED BY THE PRESENCE OF ROCK FRAGMENTS.

FOREST STAND DELINEATION NARRATIVE

THE FSD INVESTIGATION INCLUDED THE PROPERTY BOUNDARY (NET TRACT AREA) AND A PORTION OF THE CONTIGUOUS FORESTED AREA EXISTING OUTSIDE THE LIMITS OF DISTURBANCE. THE FOREST DELINEATED WITHIN THE SITE WAS LATE SUCCESSIONAL AND PREDOMINATELY HARDWOOD FOREST. THE PATUXENT RIVER AND ASSOCIATED FLOOD PLAIN ARE ALONG THE WESTERN-MOST LOD BOUNDARY. MULTIPLE POCKET WETLANDS AND ASSOCIATED BUFFERS ARE PRESENT THROUGHOUT.

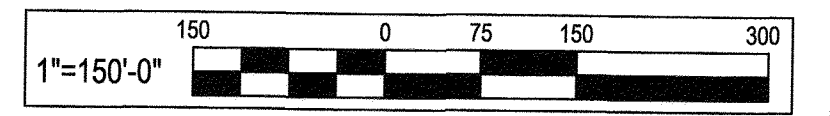
THE EXISTING FOREST STAND ON SITE (STAND A) IS APPROXIMATELY 5.95 ACRES TOTAL WITH MUCH OF THOSE ACRES RESIDING IN THE 100 YEAR FLOODPLAIN. THIS STAND IS REPRESENTATIVE OF A NORMAL FOREST WITH CANOPY AND SUBSTORY VEGETATION. THE FOREST STAND, MOSTLY HARDWOOD TREES, IS IN OVERALL GOOD CONDITION WITH DENSE 90% CANOPY COVER AND FAIR UNDERSTORY AND SPORADIC HERBACEOUS COVER. THE STAND HAS LOW AND FLAT TOPOGRAPHY, TYPICAL OF A LARGE FLOOD PLAIN. THE STAND PLOT A), 5.95 ACRES, AS PART OF THE OVERALL CONTIGUOUS FOREST, WAS DETERMINED TO BE LATE SUCCESSIONAL.

DOMINANT TREES SPECIES FOR STAND A, IN THE OVERSTORY LAYER, INCLUDE SOUTHERN RED OAK - QUERCUS FALCATA, WHITE OAK - QUERCUS ALBA, WILLOW OAK - QUERCUS RUBRUM, SWEET GUM - LIQUIDAMBAR STRYACIFLUA, BIRCH - BETULA AND POPLAR - POPULUS. THE DOMINANT SIZE CLASS OF 20-29.9" DBH AND > 30 INCH DBH WITH MANY ADDITIONAL TREES IN THE 12-19.9" DBH SIZE CLASS. COMMON UNDERSTORY SPECIES INCLUDED SWEET GUM, RED MAPLE, BLACK LOCUST, CHESTNUT AND BIRCH. COMMON SPECIES IN THE HERBACEOUS LAYER INCLUDE SEDGES, GRASSES, FERNS, MOSSES, GREENBRIER AND VARIOUS HARDWOOD SAPPLINGS. FOREST STAND A HAD A BASAL AREA OF 230 FT² /ACRE. NO SPECIMEN TREES WERE OBSERVED DURING THE FIELD INVESTIGATION.

STAND CONDITION: THE STAND A IS IN OVERALL GOOD CONDITION WITH A 90% CANOPY COVER AND GOOD UNDERSTORY AND HERBACEOUS COVER. THERE IS ONLY ONE INVASIVE SPECIES NOTED IN THE HERBACEOUS, UNDERSTORY TREES OR IN THE CANOPY LAYERS. THE STAND IS FLAT AND TREES PROVIDE GOOD COVER TO THE UNDERSTORY. THIS COVER IN ALL THE VEGETATIVE LAYERS PREVENTS EROSION AND IS PROVIDING GOOD STABILIZATION. THE STAND APPEARS TO HAVE A MODERATE WOODLAND SUITABILITY.

STAND FUNCTION: THE FOREST STAND PROVIDES WATER QUALITY, WILDLIFE HABITAT AND LIMITED RECREATIONAL USE AREA. THE STAND CONTAINS NO AREA WHICH CONTAIN PRIORITY RETENTION AREAS. THE STAND WAS RANKED AS PRIORITY 3 STAND.

CAUTION: IF THIS DRAWING IS A REDUCTION, USE THE GRAPHIC SCALES.

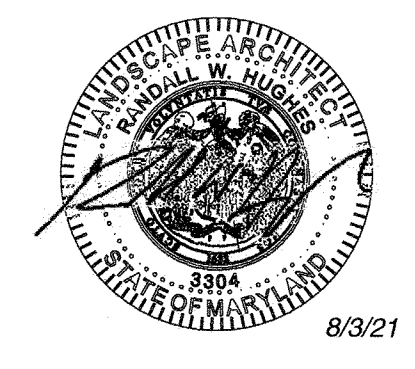


FOREST STAND DELINEATION NOTES

- TOTAL ANNE ARUNDEL COUNTY LOD AREA = 5.948 AC
- EXISTING LAND USE IS EXEMPT, PRIMARILY UNDEVELOPED FOREST AREA. ADJACENT LAND USE IS RESIDENTIAL & INSTITUTIONAL.
- SURFACE WATER BODIES (PATUXENT RIVER), WETLANDS, & ASSOCIATED BUFFERS ARE PRESENT THROUGHOUT A MAJORITY OF THE SITE. A FIELD WETLANDS DELINEATION WAS CONDUCTED PRIOR TO THE FOREST STAND DELINEATION. SEE PLAN.
- LARGE PORTION OF THE SITE ARE WITHIN THE 100-YEAR FLOODPLAIN. SEE PLAN.
- FIELD SAMPLING, SPECIMEN TREE DELINEATION AND FOREST ASSESSMENT PERFORMED BY WHITNEY, BAILEY, COX & MAGNANI, LLC IN OCTOBER 2018. TREE SIZES SHOWN ARE FROM FIELD MEASUREMENTS TAKEN WITH A FORESTRY DIAMETER TAPE. CONDITION NOTED IS OPINION BASED UPON VISUAL FIELD OBSERVATION.
- SOIL INFORMATION FROM WEB SOIL SURVEY. ANNE ARUNDEL COUNTY, MD - VERSION 17, SEPT. 10, 2018

WHITNEY BAILEY COX & MAGNANI, LLC
300 East Joppa Road Suite 200 Baltimore, MD 21286
MAIN 410.512.4500 FAX 410.324.4100
www.wbcm.com

ARCHITECTURE ENGINEERING CONSTRUCTION



REVISIONS			
NO.	DESCRIPTION	BY	DATE

SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

APPROVED: *[Signature]* DATE: 8/9/21
CHIEF ENGINEER

APPROVED: *[Signature]* DATE: 8/5/21
PROJECT MANAGER

APPROVED: *[Signature]* DATE: 8/11/21
ASSISTANT CHIEF ENGINEER

APPROVED: *[Signature]* DATE: 8/16/21
CHIEF, RIGHT-OF-WAY

98235

SCALE: 1" = 150'

DRAWN BY: M.M./H.H.

CHECKED BY: B.L.

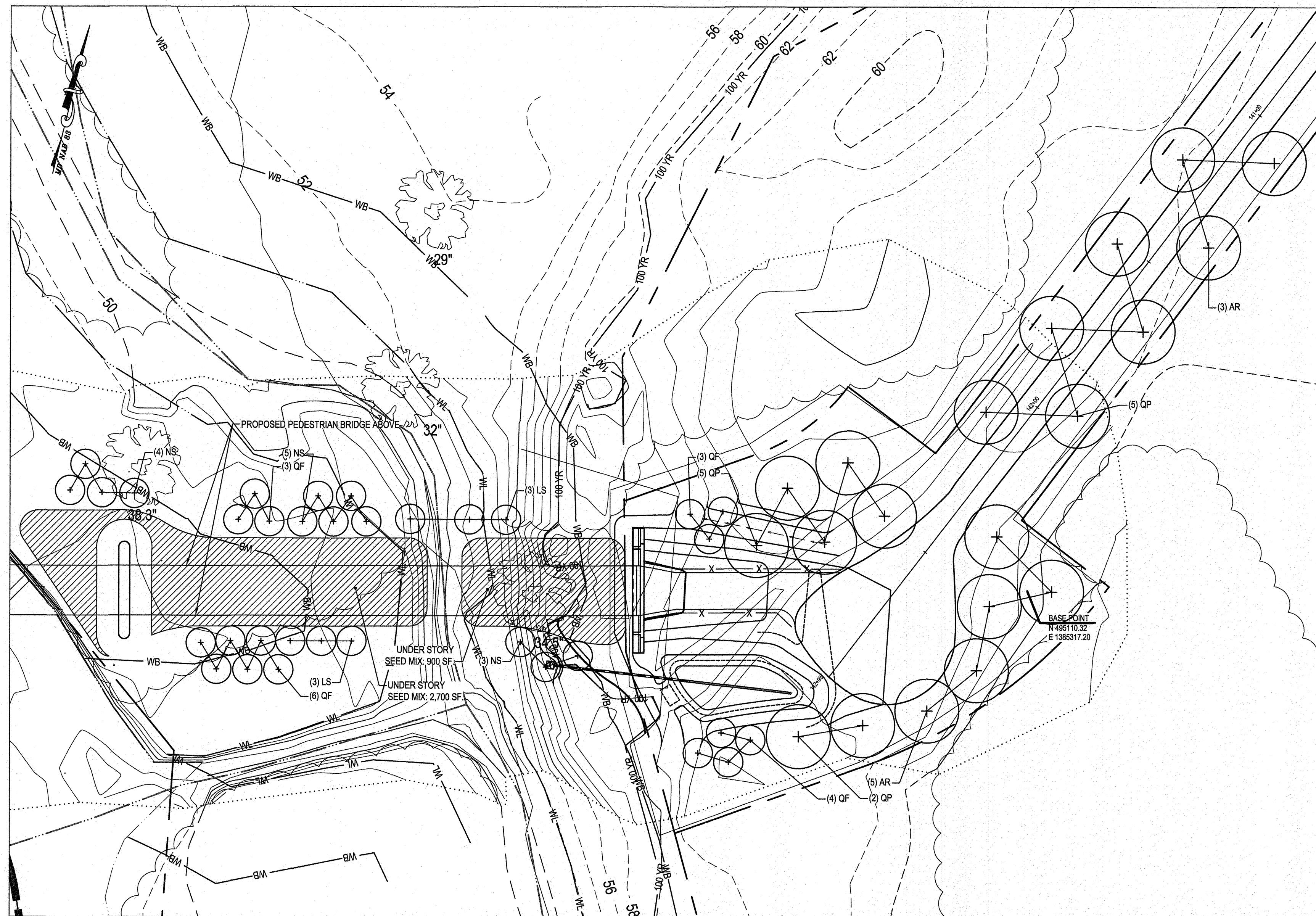
SHEET NO. 16 OF 45

PROJECT NO.: 2014017900

CONTRACT NO.: 2014017900

WB&A TRAIL - BRIDGE AT PATUXENT

FOREST STAND DELINEATION/ FOREST CONSERVATION PLAN



LANDSCAPE PLAN
SCALE: 1" = 10'

GENERAL NOTES:

- ALL PLANT MATERIAL SHALL CONFORM TO THE SIZES GIVEN IN THE PLANT LIST AND SHALL BE NURSERY GROWN IN ACCORDANCE WITH THE "AMERICAN STANDARDS FOR NURSERY STOCK, ANSI Z60.1-2004" LATEST EDITION PREPARED BY THE AMERICAN ASSOCIATION OF NURSEYMEN, 230 SOUTHERN BUILDING, WASHINGTON, DC, 20005.
- CONTRACTOR MUST VERIFY THE CORRECT LOCATION OF ANY EXISTING UTILITIES WHICH ARE UNDERGROUND, PRIOR TO PLANT INSTALLATION. THE CONTRACTOR SHALL CALL MISS UTILITY (1-800-257-7777) A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND REQUIREMENTS FOR CONSTRUCTION.
- ALL PLANT BEDS SHALL BE MULCHED WITH A MINIMUM OF 2" AND A MAXIMUM OF 3" LAYER OF MULCH WITHIN TWO DAYS AFTER PLANTING. THIS SHALL BE SHREDDED HARDWOOD BARK, AND SHALL COVER ENTIRELY THE PLANTING BED.
- ALL PLANTS SHALL BE GUARANTEED TO REMAIN ALIVE AND HEALTHY FOR A PERIOD OF TWO FULL YEARS AFTER INITIAL ACCEPTANCE. ANY REPLACEMENT PLANTS, REQUIREMENTS, ETC. AND METHOD OF PLACING SHALL COMPLY WITH THE REQUIREMENTS SPECIFIED HEREIN AND ON THE DRAWINGS.
- EXISTING SOIL IN BED AREAS SHALL BE AMENDED TO A DEPTH OF 12". SOIL MIX IN ALL BEDS SHALL BE 2/3 EXISTING SOIL, AND 1/3 ORGANIC MATERIAL SUCH AS LEAFGRO.
- PLANT MATERIAL AVAILABILITY MAY VARY AT THE TIME OF CONSTRUCTION. ANY SUBSTITUTIONS ARE TO BE OF EQUIVALENT TYPE AND SIZE (OR LARGER), AND MUST BE APPROVED BY LANDSCAPE ARCHITECT BEFORE INSTALLATION.
- WHERE THE CONDITION EXISTS THAT BALLED AND BURLAPPED TREES ARE DELIVERED IN WIRE BASKETS, THE WIRE BASKETS SHALL BE CUT DOWN THE SIDE OF EACH MESH AND PEELLED AWAY FROM THE ROOTBALL OR REMOVED IN ENTIRETY. NO PORTION OF THE WIRE BASKET SHALL REMAIN INTACT AROUND THE SIDES OF THE ROOTBALL OR EXTEND ABOVE FINISHED GRADE.
- ANY DAMAGE TO THE EXISTING UTILITIES, BUILDINGS, PAVING, CURB, WALLS, AND VEGETATION (NOT SO DESIGNATED FOR REMOVAL ON THESE PLANS) SHALL BE REPAIRED TO PREVIOUS CONDITION OR REPLACED BY THE CONTRACTOR AT HIS EXPENSE. ALL AREAS DISTURBED DURING CONSTRUCTION ARE TO BE SEEDED UNLESS NOTED OTHERWISE.
- ADJUST TREE LOCATIONS IN THE FIELD IF LOCATIONS SHOWN CONFLICT WITH EXISTING VEGETATION NOT PICKED UP IN SURVEY.
- SEED DISTURBED AREAS.

MINIMUM LANDSCAPE MAINTENANCE REQUIREMENTS:

- LAWN AREAS SHALL BE MOWED TO A HEIGHT OF 2 TO 3 INCHES AND NOT ALLOWED TO REACH A HEIGHT OF 4 INCHES BEFORE MOWING.
- ALL CURBS AND WALKS SHALL BE EDGED AS NEEDED.
- ALL LAWN AREAS ADJACENT TO BUILDING FACES OR STRUCTURES SHALL BE TRIMMED.
- A SLOW RELEASE NITROGEN BALANCED FERTILIZER WITH A 2-1-1 RATIO SHALL BE APPLIED AT A RATE OF 2 POUNDS OF NITROGEN PER 1000 SQUARE FEET IN SEPTEMBER, OCTOBER, AND FEBRUARY.
- LIME SHALL BE APPLIED AT THE RATE DETERMINED BY A SOILS REPORT.
- IT IS RECOMMENDED THAT LAWN AREAS BE TREATED IN MID-MARCH TO EARLY APRIL WITH PER-EMERGENT HERBICIDE (BETASAN) OR EQUAL APPLIED AT THE MANUFACTURER'S RECOMMENDED RATE.
- A POST-EMERGENT HERBICIDE (TRIMEC) OR EQUAL IS RECOMMENDED TO BE SPRAYED ON LAWN AREAS IN THE LATE SPRING OR THE EARLY FALL. FOLLOW MANUFACTURER'S RATES AND RECOMMENDATIONS.
- INSECTICIDES AND FUNGICIDES ARE RECOMMENDED FOR INSECT AND DISEASE CONTROL.
- RESEED BARE AREAS OF LAWN AS NECESSARY. YEARLY AERATION IS RECOMMENDED.
- ALL TRASH, LITTER, AND DEBRIS SHALL BE REMOVED FROM LAWN AREAS, PARKING LOTS, AND SHRUB BEDS AS NEEDED.
- MULCH ALL SHRUB AND GROUND COVER BEDS YEARLY WITH 3 INCHES OF HARD WOOD BARK.
- PERMIT SHRUBS AND TREES TO GROW AND ENLARGE TO THEIR DESIGN SIZE. CONSULT PROJECT LANDSCAPE ARCHITECT FOR DETAILS.
- PRUNE TREES IN ACCORDANCE WITH LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METRO-POLITAN AREAS.

WHITNEY BAILEY COX & MAGNANI, LLC
300 East Joppa Road Suite 200 Baltimore, MD 21286
MAIN 410.512.4500 FAX 410.324.4100 www.wbcm.com

ARCHITECTURE ENGINEERING CONSTRUCTION

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 #34581 Expiration Date: 07/08/2023

REVISIONS			
NO.	DESCRIPTION	BY	DATE

SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

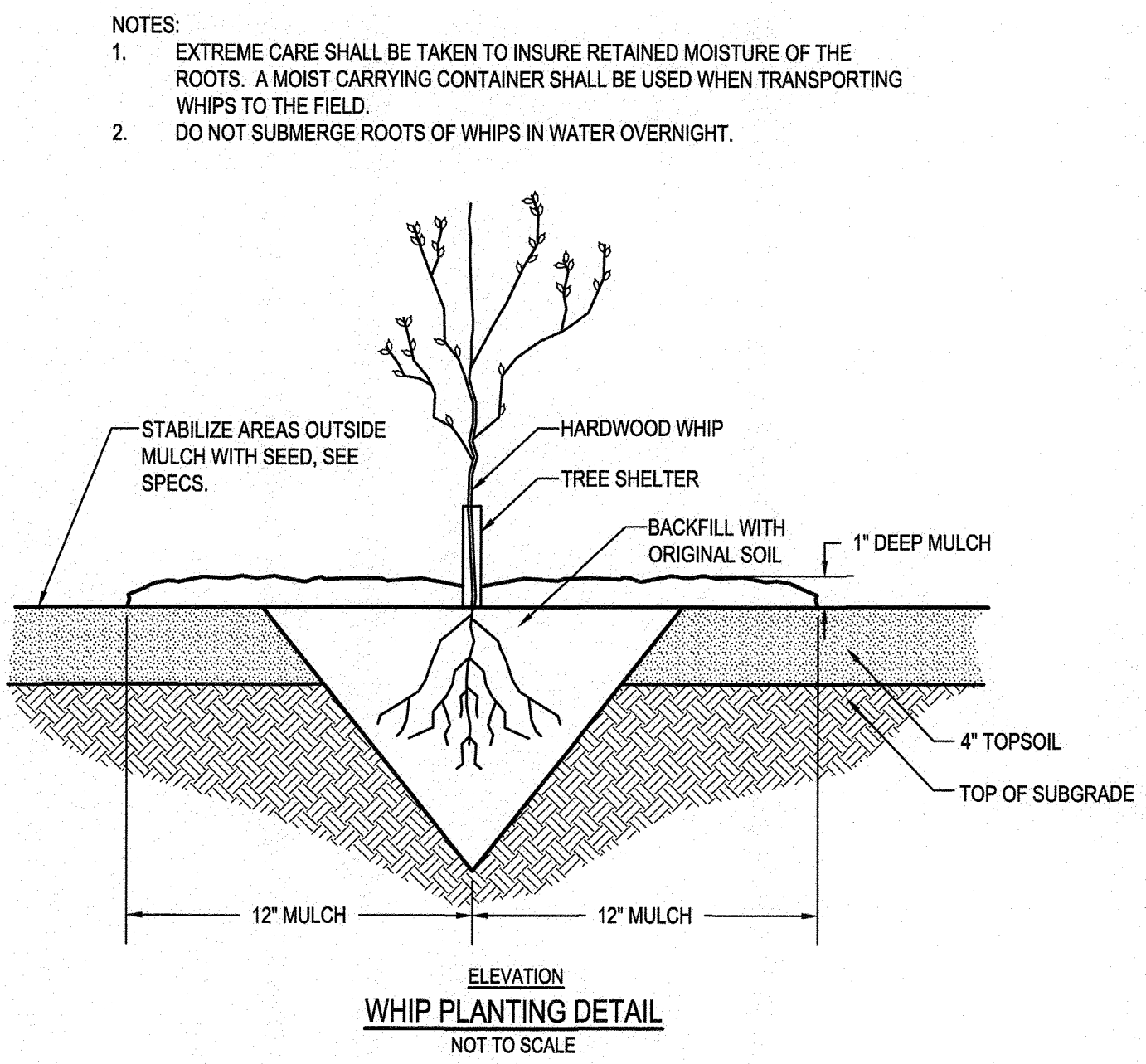
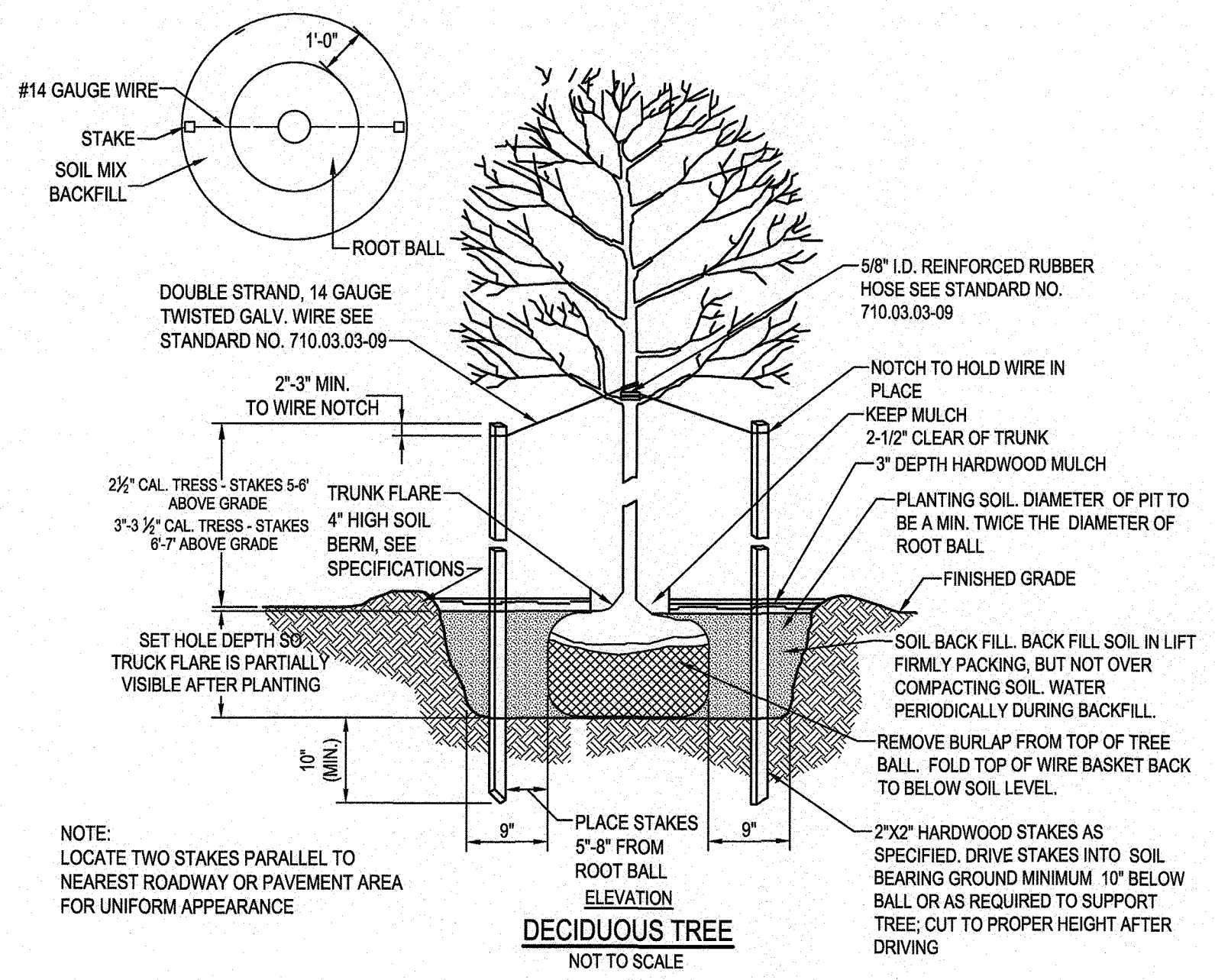
98236

WB&A TRAIL - BRIDGE AT PATUXENT

LANDSCAPE PLAN, NOTES AND DETAILS

APPROVED	DATE	APPROVED	DATE
	8/9/21		8/9/21
CHIEF ENGINEER		PROJECT MANAGER	
APPROVED	DATE	APPROVED	DATE
	8/11/21		8/11/21
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT-OF-WAY	

SCALE: 1" = 20'
DRAWN BY: M.M.H.H
CHECKED BY: B.L.
SHEET NO. 17 OF 45
PROJECT NO.: 2014017900
CONTRACT NO.: 2014017900



- NOTES:
- EXTREME CARE SHALL BE TAKEN TO INSURE RETAINED MOISTURE OF THE ROOTS. A MOIST CARRYING CONTAINER SHALL BE USED WHEN TRANSPORTING WHIPS TO THE FIELD.
 - DO NOT SUBMERGE ROOTS OF WHIPS IN WATER OVERNIGHT.

PLANT SCHEDULE						
Key	Qty.	Botanical Name	Common Name	Size (Min.)	Root	Remarks
Trees						
AR	8	Acer rubrum	Red Maple	2" Cal.	B&B	20' O.C.
LS	6	Liquidambar styraciflua	Sweet Gum	1 Gal.	Cont.	12' O.C.
NS	12	Nyssa sylvatica	Black Gum	1 Gal.	Cont.	12' O.C.
QF	16	Quercus falcata	Southern Red Oak	1 Gal.	Cont.	12' O.C.
QP	12	Quercus phellos	Willow Oak	2" Cal.	B&B	20' O.C.
	54	Total				

LANDSCAPE NOTES:

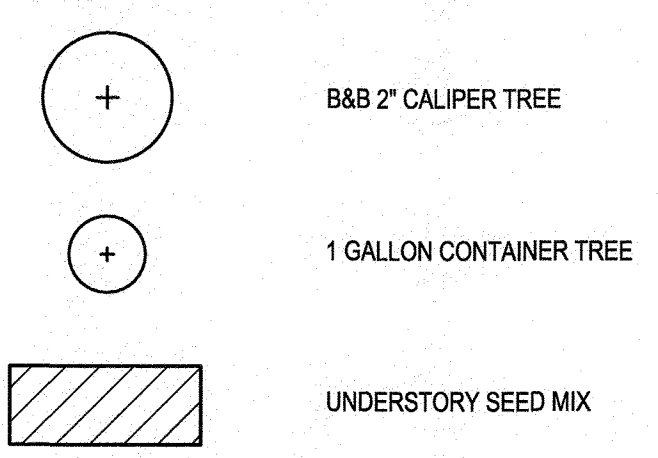
- MODIFICATION #15845 - STREAM, STEEP SLOPES, NON-TIDAL WETLANDS, FOREST CONSERVATION. APPROVAL DATE: JUNE 27, 2019. CONTAINED A CONDITION OF APPROVAL STATING THAT THE DISTURBED AREAS SHALL BE RETURNED TO PREEXISTING CONDITIONS TO THE MAXIMUM EXTENT PRACTICABLE. THE PROPOSED TREE REMOVAL SHALL BE MITIGATED BY REPLACEMENT AT A RATE OF 1:1.
- FOREST REMOVED = 12,563 SF AT 1:1 MITIGATION RATIO.
- REQUIRED TREE PLANTING RATES:
 - CONTAINER GROWN 1 GAL. = 350 TREES PER ACRE / 1 TREE = 124.5 SF
 - B&B 2" CAL. = 100 TREES PER ACRE / 1 TREE = 435.6 SF
- PROPOSED LANDSCAPE PLANTING
 - TREES = 12,945 SF TOTAL
 - 34 - 1 GAL. TREES AT 124.5 SF = 4,233 SF
 - 20 - 2" CAL. TREES AT 435.6 SF = 8,712 SF
 - UNDERSTORY NATIVE SPECIES SEEDING AREA = 3,600 SF
- AN APPROVED COST ESTIMATE AND SECURITY / BONDING IN THE APPROVED AMOUNT IS REQUIRED BEFORE ISSUANCE OF GRADING AND/OR BUILDING PERMITS.

UNDERSTORY SEED MIX

UNDERSTORY SEED MIX SHALL BE A FLOODPLAIN, RIPARIAN UNDERSTORY SPECIES MIXTURE MADE UP OF THE FOLLOWING, OR SIMILAR SPECIES. SEED AT A RATE OF 20 LBS PER ACRE.

% OF MIX	BOTANICAL NAME	COMMON NAME
20%	CAREX VULPINOIDEA	FOX SEDGE
10%	CAREX LURIDA	LURID SEDGE
10%	CAREX SCOPARIA	BLUNT BROOM SEDGE
10%	JUNCUS EFFUSUS	SOFT RUSH
10%	ASCLEPIAS INCARNATA	SWAMP MILKWEED
10%	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER
10%	ONOCLEA SENSIBILIS	SENSITIVE FERN
10%	CAREX STRICTA	TUSSOCK SEDGE
10%	LOBELIA SIPHILITICA	GREAT BLUE LOBELIA

PLANTING LEGEND



CAUTION: IF THIS DRAWING IS A REDUCTION, USE THE GRAPHIC SCALES.

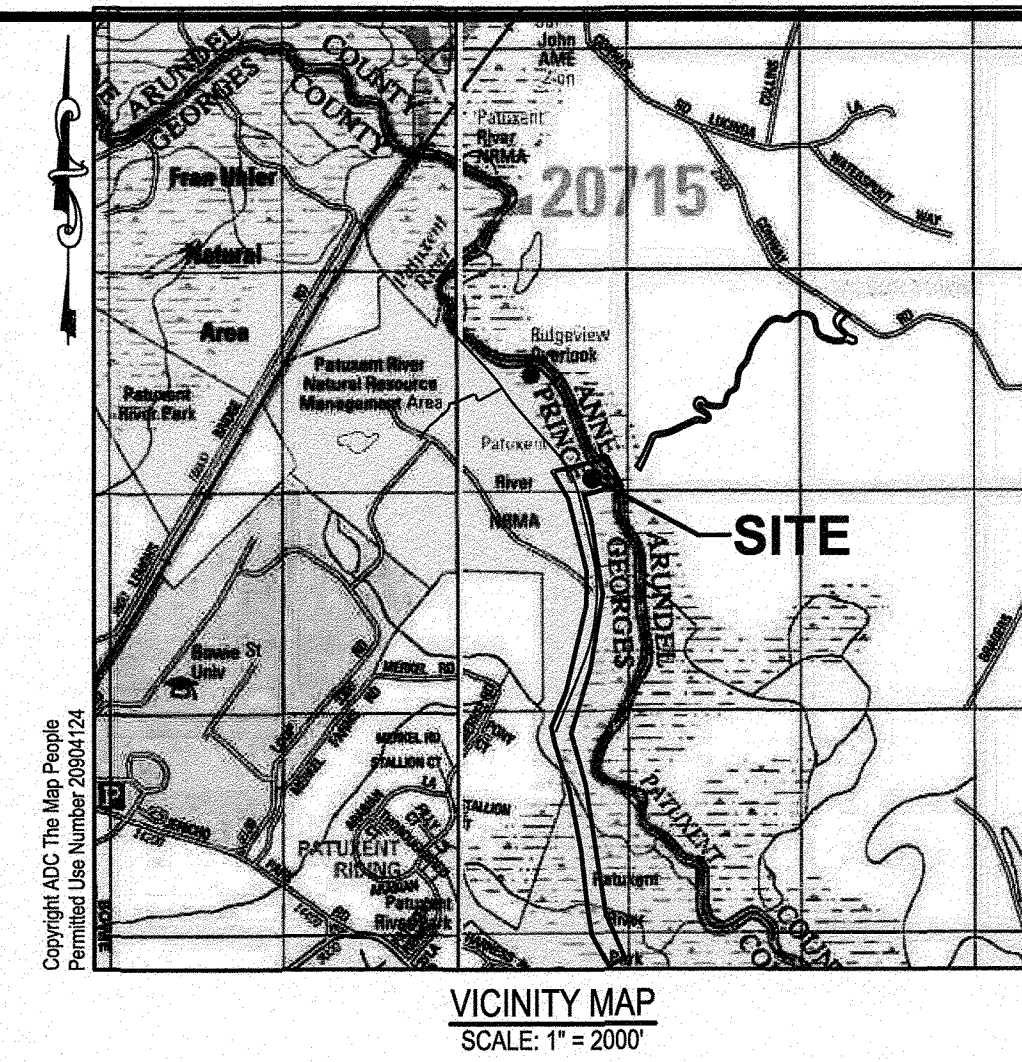
MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

PRINCE GEORGE'S COUNTY DEPARTMENT OF PARKS AND RECREATION

WB&A TRAIL - BRIDGE AT PATUXENT RIVER

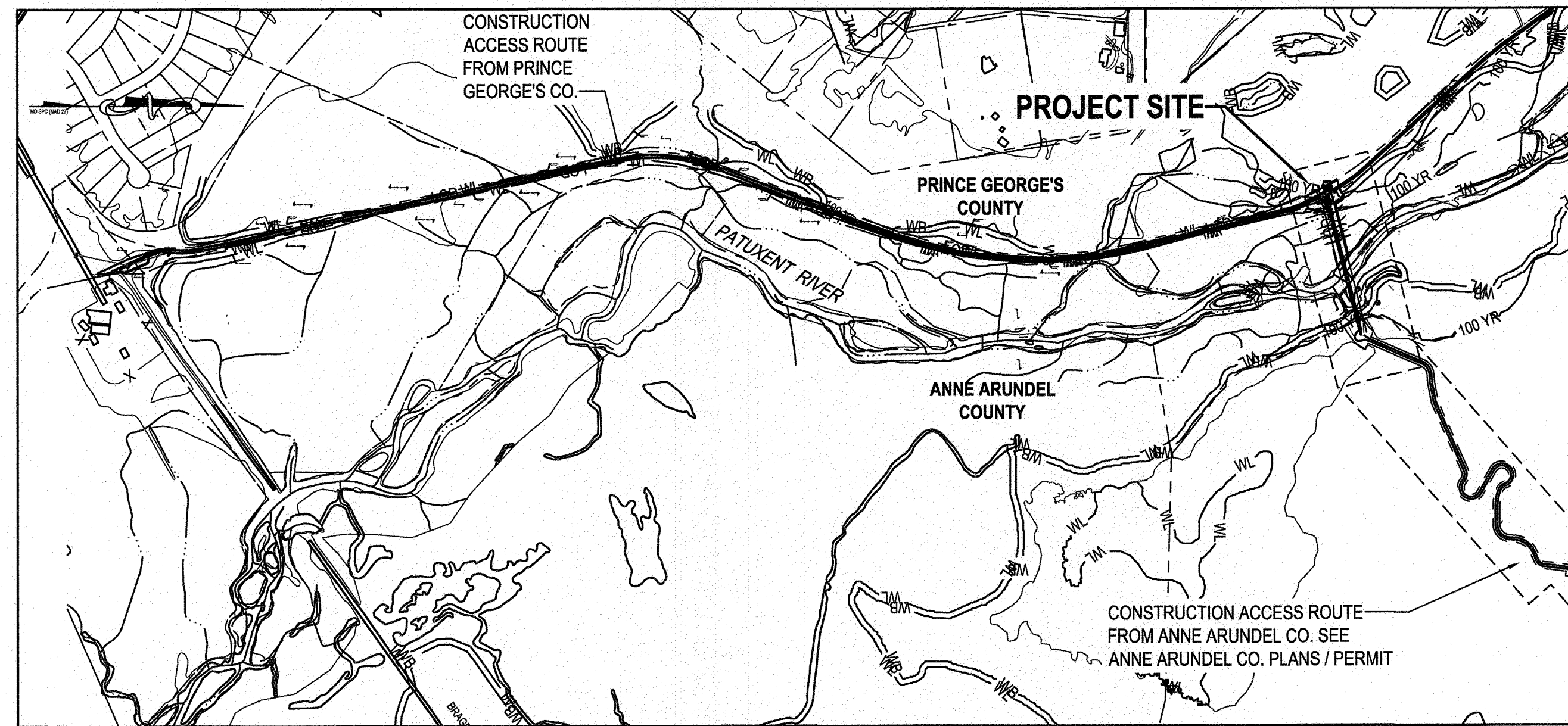
SITE DEVELOPMENT PLAN

PROJECT NO. P393600, CONTRACT NO. P393608



GENERAL NOTES:

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD-VERIFY ACTUAL SITE CONDITIONS PRIOR TO THE START OF ANY WORK. THERE IS NO WARRANTY OR GUARANTEE ON THE COMPLETENESS OR CORRECTNESS OF THE EXISTING CONDITION INFORMATION. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER PRIOR TO THE START OF ANY WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE OWNER PRIOR TO THE START OF ANY EXCAVATION WORK.
- THE CONTRACTOR SHALL STAKE-OUT ALL BASELINES OF CONSTRUCTION AND THE LOCATION OF ALL NEW CONSTRUCTION, AND VERIFY ALL SETBACKS, OFFSETS, AND CLEARANCES PRIOR TO START OF ANY WORK.
- ALL DISTURBED AREAS NOT STABILIZED WITH STRUCTURES, PAVING, STONE OR PLANTINGS SHALL BE STABILIZED WITH FOUR INCHES OF TOPSOIL, SEED, MULCH, AND WATER TO ESTABLISH AN ADEQUATE GROWTH OF GRASS.
- ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROJECT SPECIFICATIONS.
- CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AT ALL TIMES AND SHALL PROVIDE ALL NEEDED LABOR, EQUIPMENT, AND MATERIALS TO PROTECT THE PROJECT SITE FROM PONDING WATER AND FLOODING.
- NUMERICAL DIMENSIONS AND ELEVATIONS SHOWN SHALL SUPERSEDE ANY DISCREPANCY IN THE SCALING ON THE DRAWINGS.
- CONTRACTOR SHALL ARRANGE A PRECONSTRUCTION MEETING WITH THE OWNER AND DESIGNER PRIOR TO COMMENCEMENT OF WORK.
- CONTRACTOR SHALL SUBMIT, FOR REVIEW AND APPROVAL, A WORK PLAN ADDRESSING TRAFFIC CONTROL FOR VEHICLES AND PEDESTRIAN, AND LAYDOWN AND STAGING AREAS FOR EQUIPMENT AND MATERIALS.
- CONTRACTOR SHALL FOLLOW THE SEQUENCE OF CONSTRUCTION AS SHOWN ON SHEET 8 OF 16.
- EXISTING LAND USE IS EXEMPT, PRIMARILY UNDEVELOPED FOREST AREA. ADJACENT LAND USE IS RESIDENTIAL & INSTITUTIONAL.
- SURFACE WATER BODIES (PATUXENT RIVER), WETLANDS, & ASSOCIATED BUFFERS ARE PRESENT THROUGHOUT A MAJORITY OF THE SITE. A FIELD WETLANDS DELINEATION WAS CONDUCTED WITHIN THE LIMITS OF THE FSD FIELD INVESTIGATION AND ARE SHOWN ON THE PLAN. THE REMAINING AREAS ARE SHOWN FROM MAPPED SOURCES AND DESKTOP ANALYSIS.
- LARGE PORTION OF THE SITE ARE WITHIN THE 100-YEAR FLOODPLAIN. SEE PLAN.
- FIELD SAMPLING, SPECIMEN TREE DELINEATION AND FOREST ASSESSMENT PERFORMED BY WHITNEY, BAILEY, COX & MAGNANI, LLC IN OCTOBER 2018. TREE SIZES SHOWN ARE FROM FIELD MEASUREMENTS TAKEN WITH A FORESTRY DIAMETER TAPE. CONDITION NOTED IS OPINION BASED UPON VISUAL FIELD OBSERVATION. THERE WERE NO SPECIMEN TREES OBSERVED WITH THE LIMITS OF THE FSD FIELD INVESTIGATION.
- SOIL INFORMATION FROM WEB SOIL SURVEY. PRINCE GEORGES COUNTY, MD - VERSION 16, SEPT. 11, 2018
- NATURAL RESOURCES INVENTORY PLAN APPROVAL NUMBER: NRI-145-2019
- WOODLAND CONSERVATION LETTER OF EXEMPTION NUMBER: E-004-2020
- FLOODPLAIN PERMIT NUMBER: 86552-2018-0
- SITE CONCEPT PERMIT NUMBER: 54970-2018-0
- THE PROPOSED BRIDGE SHOWN ON THESE SITE PLANS IS BEING PERMITTED UNDER CASE NUMBER: 31922-2019-0.



LEGEND

EXISTING	NEW
BUILDING: EX. BLDG.	FULL DEPTH: FULL DEPTH
PAVING: EX. PAVING	OVERLAY: OVERLAY
CONCRETE WALK: EX. CONC.	
PROPERTY LINE: ---	
RIGHT-OF-WAY: ---	
EASEMENT: ---	
FENCE: X	
CONTOUR: ---15---	---15---
SPOT ELEVATION: x 14.85	+ 14.85
DECIDUOUS TREE: [Symbol]	
SHRUB: [Symbol]	
TREELINE: [Symbol]	
STREAM: [Symbol]	
FEMA FLOOD PLAIN: ---100 YR---	
COMPUTED FLOOD PLAIN: ---100 YR---	
WETLAND: WL	
WETLAND BUFFER: WB	
LIMIT OF DISTURBANCE: ---LOD---	
LIMIT OF WORK: ---LOW---	

INDEX OF DRAWINGS:

SHEET NO.	SHEET TITLE
18.	COVER SHEET
19.	BORING LOGS
20.	SITE PLAN
21.	BRIDGE CROSS SECTIONS
22.	SITE DETAILS
23.	STORMWATER MANAGEMENT PLAN AND DETAILS
24.	OVERALL ACCESS PLAN
25.	EROSION AND SEDIMENT CONTROL PLAN
26.	EROSION AND SEDIMENT CONTROL PLAN
27.	EROSION AND SEDIMENT CONTROL PLAN
28.	EROSION AND SEDIMENT CONTROL NOTES
29.	EROSION AND SEDIMENT CONTROL DETAILS
30.	TEMPORARY BRIDGE PLAN
31.	TEMPORARY BOARDWALK PLAN
32.	NATURAL RESOURCES INVENTORY / FOREST STAND DELINEATION
33.	NATURAL RESOURCES INVENTORY / FOREST STAND DELINEATION

GRADING CERTIFICATION

I hereby certify that this plan conforms to the requirements of subtitle 32, division 2 of the code of Prince George's County Water Resources Protection and Grading Code, and that I or my staff have inspected this site and that drainage flows from uphill properties onto this site, and from this site onto downhill properties, have been addressed in substantial accordance with applicable codes. And signed, sealed and dated by a Professional Engineer Licensed in the State of Maryland.

Signature: *[Signature]* MD License #: 34682 Date: 05/19/2020
Name: Blaine W. Linkous, P.E. (printed) WBCM, 410-512-4500

CONSULTANT'S CERTIFICATION

"I certify that this plan of erosion and sediment control represents a practicable and workable plan based on my personal knowledge of the site, and that this plan was designed and prepared in accordance with the requirements of the Prince George's Soil Conservation District and "Standards and Specifications for Soil Erosion and Sediment Control". I have reviewed this erosion and sediment control plan with the owner/developer."

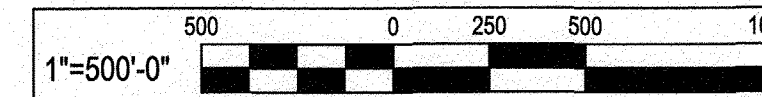
Signature: *[Signature]* MD License #: 34682 Date: 05/19/2020
Name: Blaine W. Linkous, P.E. (printed) WBCM, 410-512-4500
(Include seal, company name, address and phone number if not included elsewhere on plan).

OWNER'S/DEVELOPER'S CERTIFICATION

"I hereby certify that I have reviewed this erosion and sediment control plan and that any clearing, grading, drainage, construction and/or development will be done pursuant to this approved plan, including inspecting and maintaining controls and that any responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment approved training program for the control of erosion and sediment before beginning the project. Prince George's Soil Conservation District and the enforcement authority shall have the right of entry for periodic on-site evaluations."

Signature: *[Signature]* Date: 05/19/2020
Name (printed): Colleen A. Regotti, P.E. Title: Design and Construction Manager
Ph#: 301-454-1489 Firm: MNCPPC
Complete Address: 6600 Kenilworth Ave, Riverdale, MD 20737

CAUTION: IF THIS DRAWING IS A REDUCTION, USE THE GRAPHIC SCALES.



BMP & ESD AS-BUILT CERTIFICATION:

I HEREBY CERTIFY TO THE BEST OF MY KNOWLEDGE AND BELIEF THAT THE STORMWATER MANAGEMENT FACILITIES (BOTH BMP AND ESD) SHOWN ON THE PLANS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS APPROVED BY PRINCE GEORGE'S COUNTY DEPARTMENT OF PERMITTING, INSPECTIONS AND ENFORCEMENT.

SIGNATURE: _____
NAME: _____ DATE: _____
MD. REG. NO.: _____

NOTE: THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "MISS UTILITY" AT 1-800-257-7777 THREE DAYS PRIOR TO THE START OF ANY EXCAVATION WORK.

PERMIT NO. 18489-2020-0

PRINCE GEORGE'S SOIL CONSERVATION DISTRICT FINAL APPROVAL GRADING, EROSION AND SEDIMENT CONTROL	
FSC# 51-20	EXPIRATION DATE
POND (P#)	
DISTRICT SIGNATURE	APPROVAL DATE

SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

design	review and approval	review and approval
Randall Hughes landscape architect date	Park Planning and Development Division date	superintendent of parks date
() architect date	central maintenance date	park police date
Blaine Linkous engineer date	region date	
Hyunsook Hwang drawn by date	natural resources date	

WHITNEY BAILEY COX & MAGNANI, LLC
300 East Joppa Road Suite 200
Baltimore, MD 21286
410.512.4500 www.wbcm.com

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The Maryland-National Capital Park and Planning Commission

Prince George's County Department of Parks and Recreation
6600 Kenilworth Avenue
Riverdale, Maryland 20737
(301) 699-2481

ISSUED FOR PROCUREMENT ON _____

Rev. No.	Date	Description

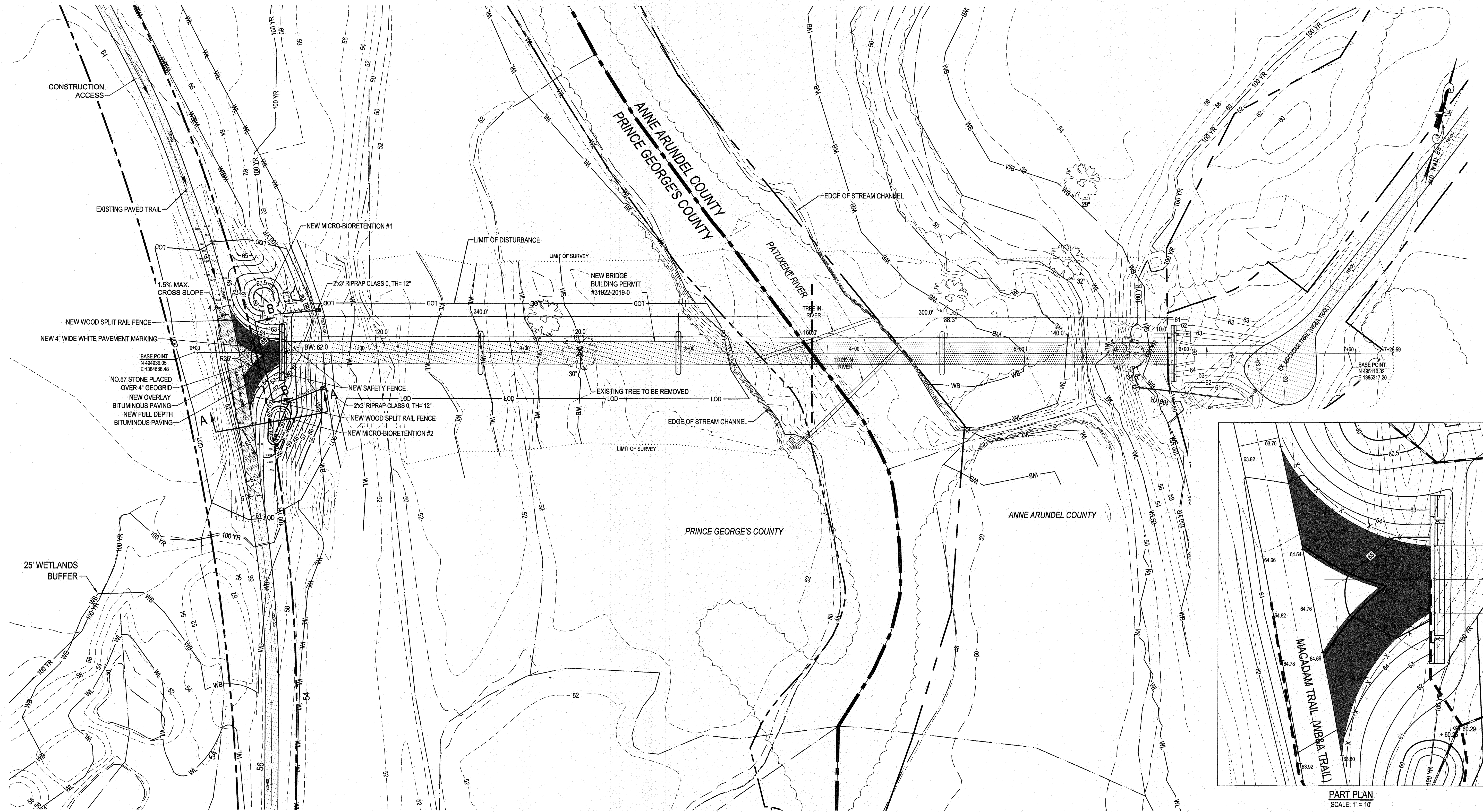
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License # 34682
Expiration Date: 07/08/23

SITE DEVELOPMENT PLAN
FINE GRADING PLAN
COVER SHEET

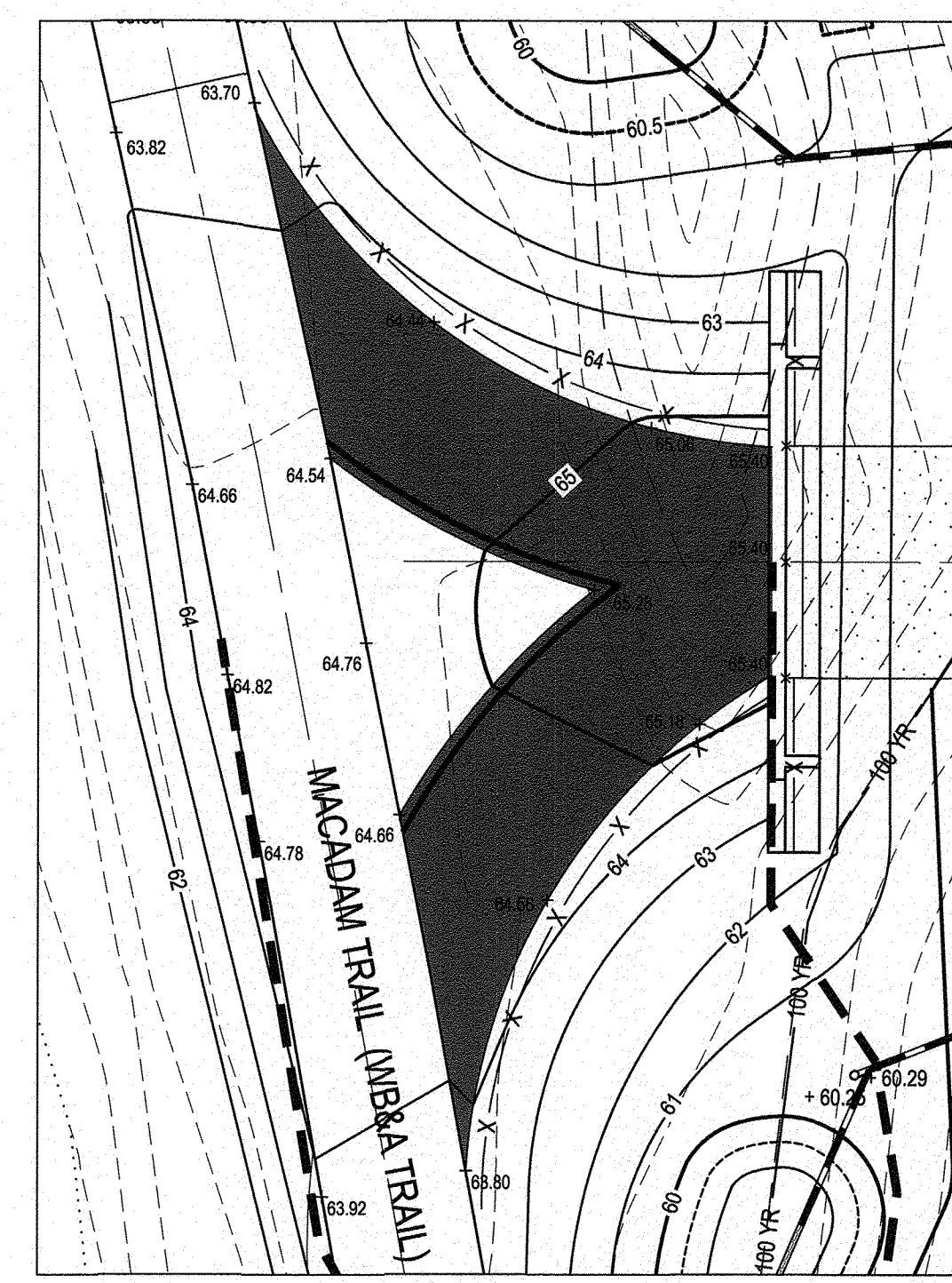
WB&A Trail - Bridge at Patuxent

9501 MERKEL FARMS ROAD & 8654 RACE TRACK ROAD, BOWIE, MD
ELECTION DISTRICT NO. 14, PRINCE GEORGE'S COUNTY, MD
TAX MAP 22 GRID F3 PARCELS 11, 14, 62
scale: AS SHOWN

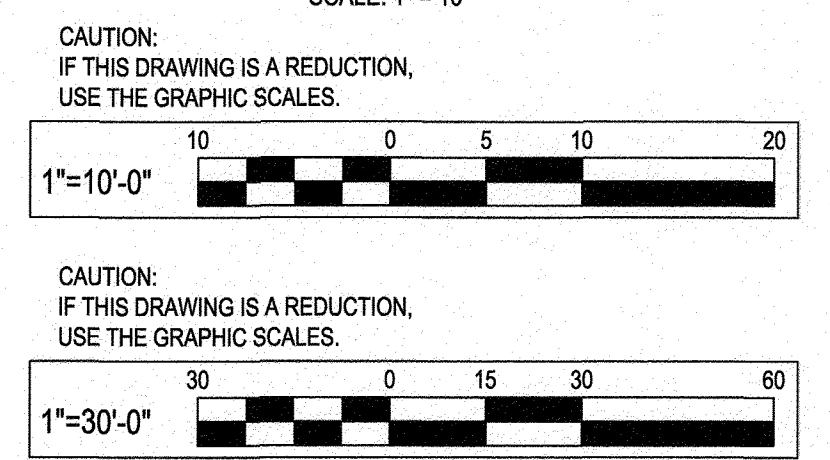
98237
Sheet 18 of 45



PLAN
SCALE: 1" = 30'



PART PLAN
SCALE: 1" = 10'



GEOMETRY POINT TABLE			
PT #	DESCRIPTION	NORTHING	EASTING
1	PATH TIE-IN	494931.95	1384670.96
2	PATH CORNER	494947.52	1384678.79
3	PATH TIE-IN	494951.19	1384661.88
4	PATH TIE-IN	494958.14	1384684.19
5	PATH TIE-IN	494862.33	1384691.71

NOTE:
FOR BRIDGE PROFILE AND CROSS SECTIONS SEE THE
PROFILE AND CROSS SECTIONS PLAN.

Stabilization practices on all projects must be in compliance with the requirements of COMAR 26.17.1.08 G regulations by January 9, 2013, regardless of when an Erosion and Sediment Control Plan was approved. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization must be completed within: Three (3) calendar days as to the surface of all perimeter dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and Seven (7) calendar days as to all other disturbed or graded areas on the project site not under active grading.

NOTE:
THIS CONSTRUCTION PLAN IS FOR DPEI SITE DEVELOPMENT
FINE GRADING PERMIT #5468-2019. APPROVED ONLY FOR
STORMWATER MANAGEMENT AND STORM DRAIN THEREOF.

PERMIT NO. 18489-2020-0 SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS FSC# 51-20; SHT3

design	review and approval	review and approval
Randall Hughes landscape architect date	Park Planning and Development Division date	superintendent of parks date
Blaine Linkous engineer date	central maintenance date	park police date
Hyunsook Hwang drawn by date	region date	natural resources date

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300 East Joppa Road Suite 200
Baltimore, MD 21286
410.512.4500 www.wbcm.com

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Commission

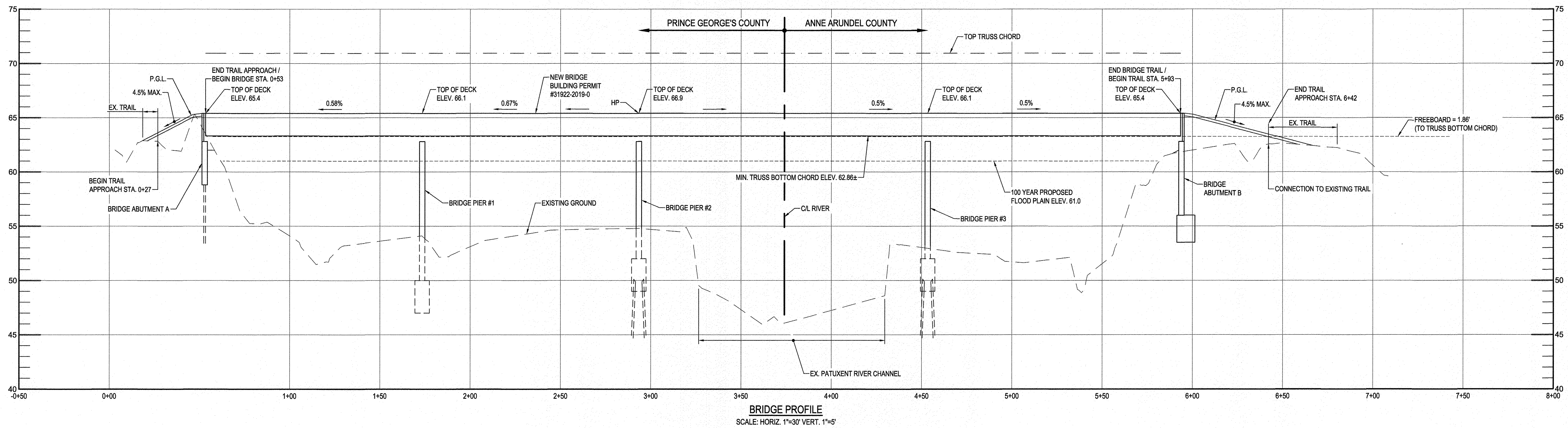
Prince George's County
Department of Parks and
Recreation
6600 Kenilworth Avenue
Riverdale, Maryland 20737
(301) 699-2481

ISSUED FOR PROCUREMENT ON		
REVISIONS		
Rev. No.	Date	Description

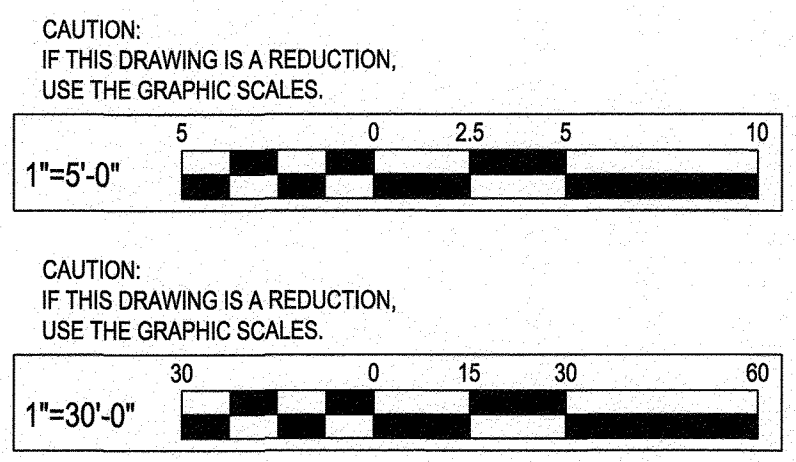
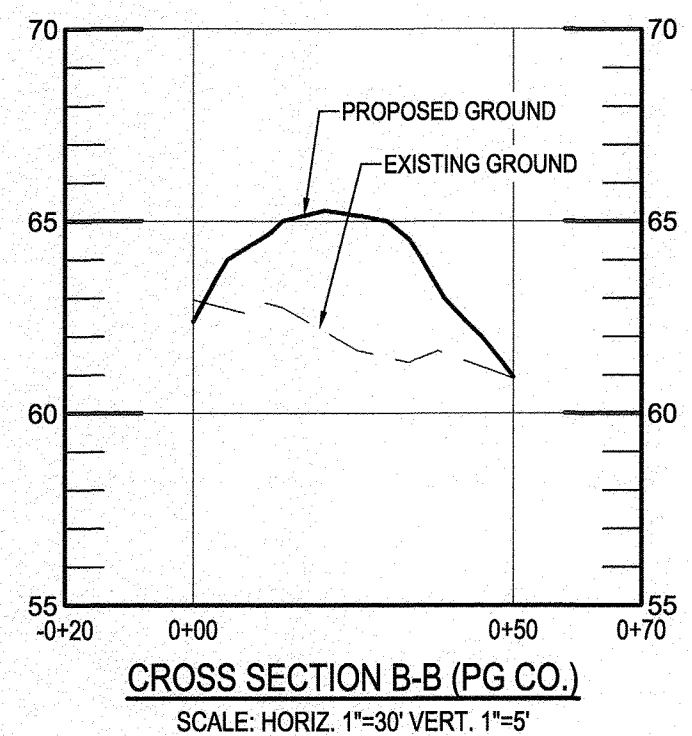
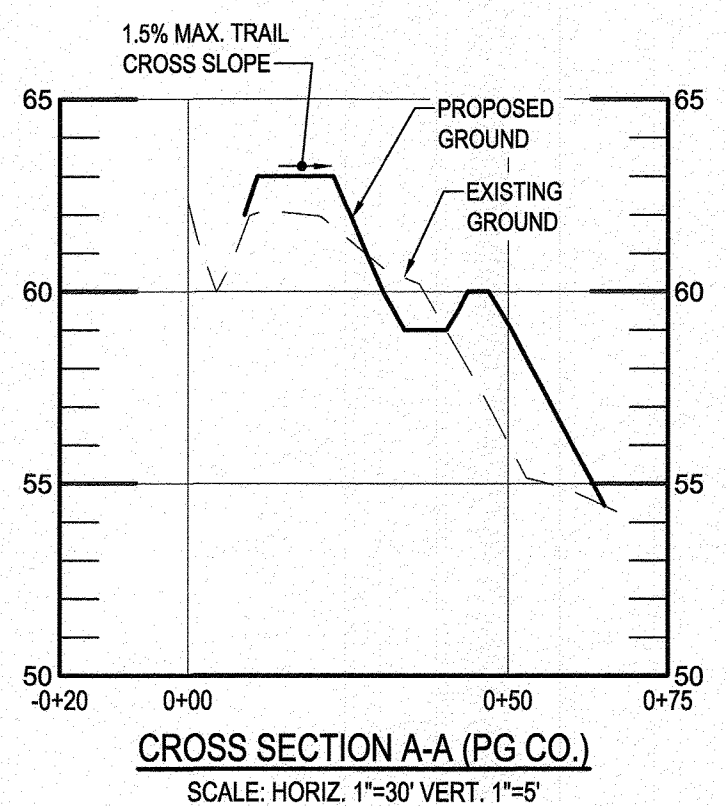
project SITE DEVELOPMENT PLAN **98239**

SITE PLAN

WB&A Trail - Bridge at Patuxent
9501 MERKEL FARMS ROAD & 8654 RACE TRACK ROAD, BOWIE, MD
ELECTION DISTRICT NO. 14, PRINCE GEORGE'S COUNTY, MD
TAX MAP 22 GRID F3 PARCELS 11, 14, 62
scale: AS SHOWN Sheet 20 of 45



NOTE:
PIER #3 AND ABUTMENT B TO BE CONSTRUCTED UNDER ANNE ARUNDEL COUNTY PERMITS.



PERMIT NO. 18489-2020-0 SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS FSC# 51-20; SHT4

design	review and approval	review and approval
Randall Hughes landscape architect	Park Planning and Development Division	superintendent of parks
Blaine Linkous architect	central maintenance	park police
Hyunsook Hwang engineer	region	
	natural resources	

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(301) 699-2481

ISSUED FOR PROCUREMENT ON _____

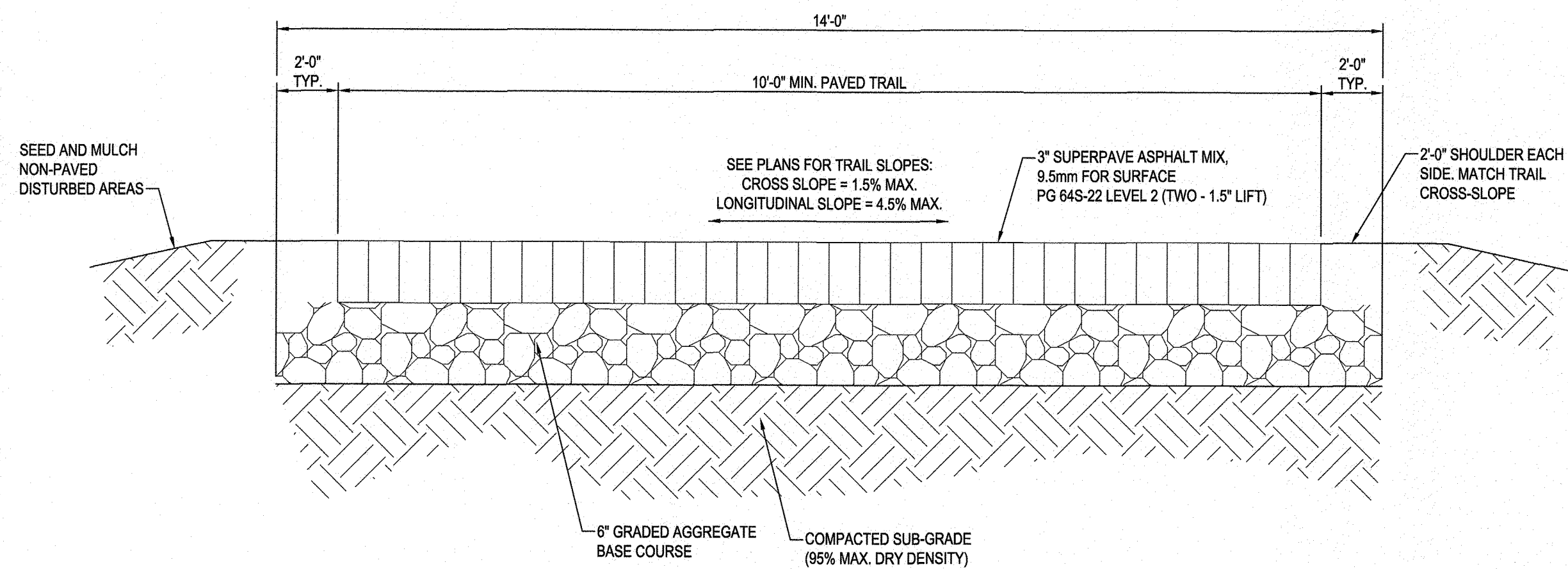
REVISIONS		
Rev. No.	Date	Description

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 # 34882
Expiration Date: 07/09/23

SITE DEVELOPMENT PLAN **98240**

BRIDGE CROSS SECTIONS

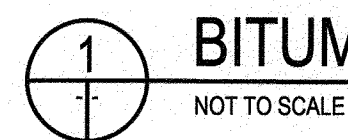
WB&A Trail - Bridge at Patuxent
9501 MERKEL FARMS ROAD & 8654 RACE TRACK ROAD, BOWIE, MD
ELECTION DISTRICT NO. 14, PRINCE GEORGE'S COUNTY, MD
TAX MAP 22 GRID F3 PARCELS 11, 14, 62
scale: AS SHOWN Sheet 21 of 45



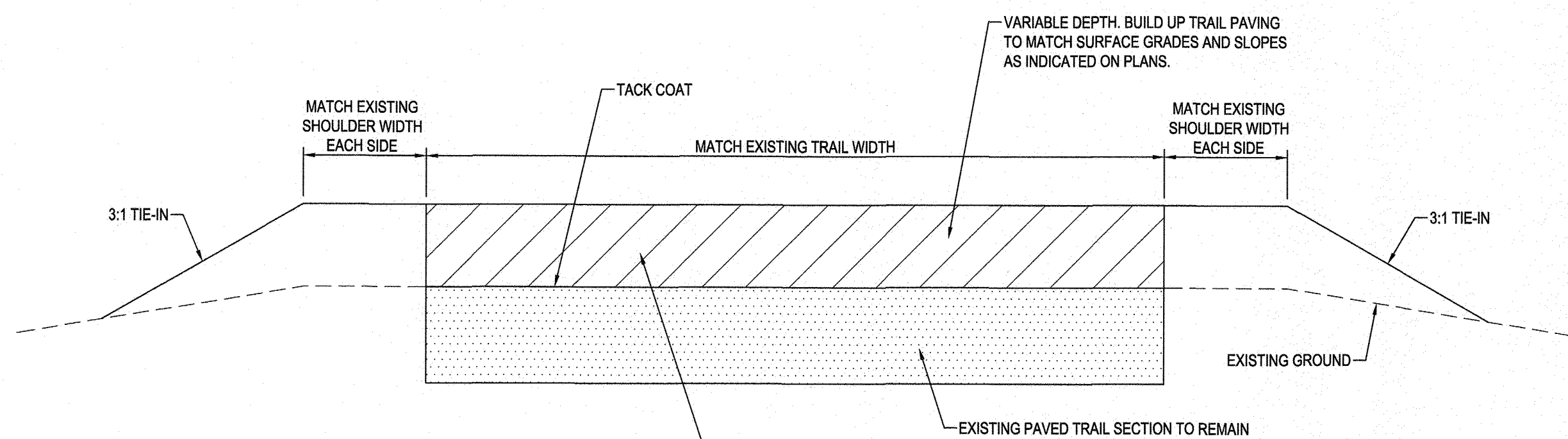
SECTION

STA. 0+26 TO STA. 0+51.5

BITUMINOUS TRAIL PAVING



NOT TO SCALE



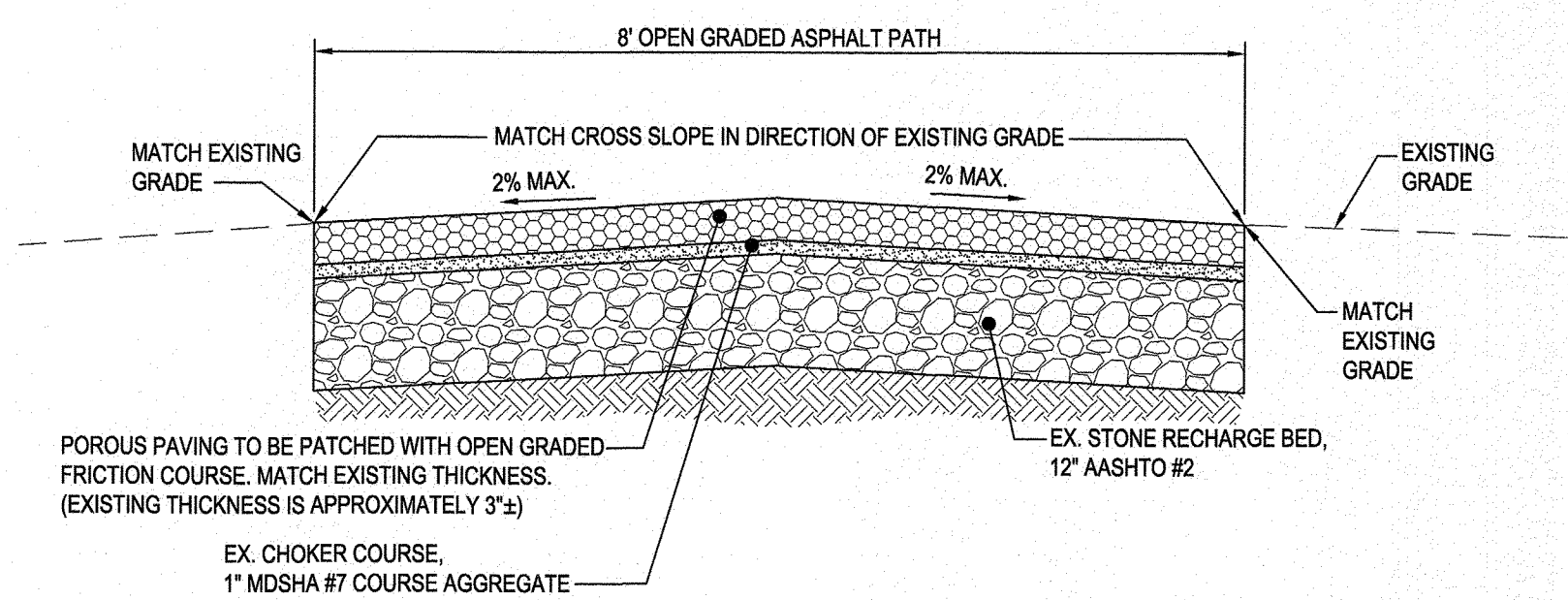
SECTION

STA. 253+76 TO STA. 254+92

BITUMINOUS TRAIL PAVING - OVERLAY AT EXISTING TRAIL

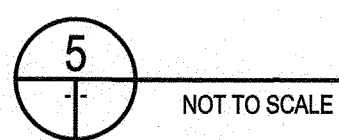


NOT TO SCALE

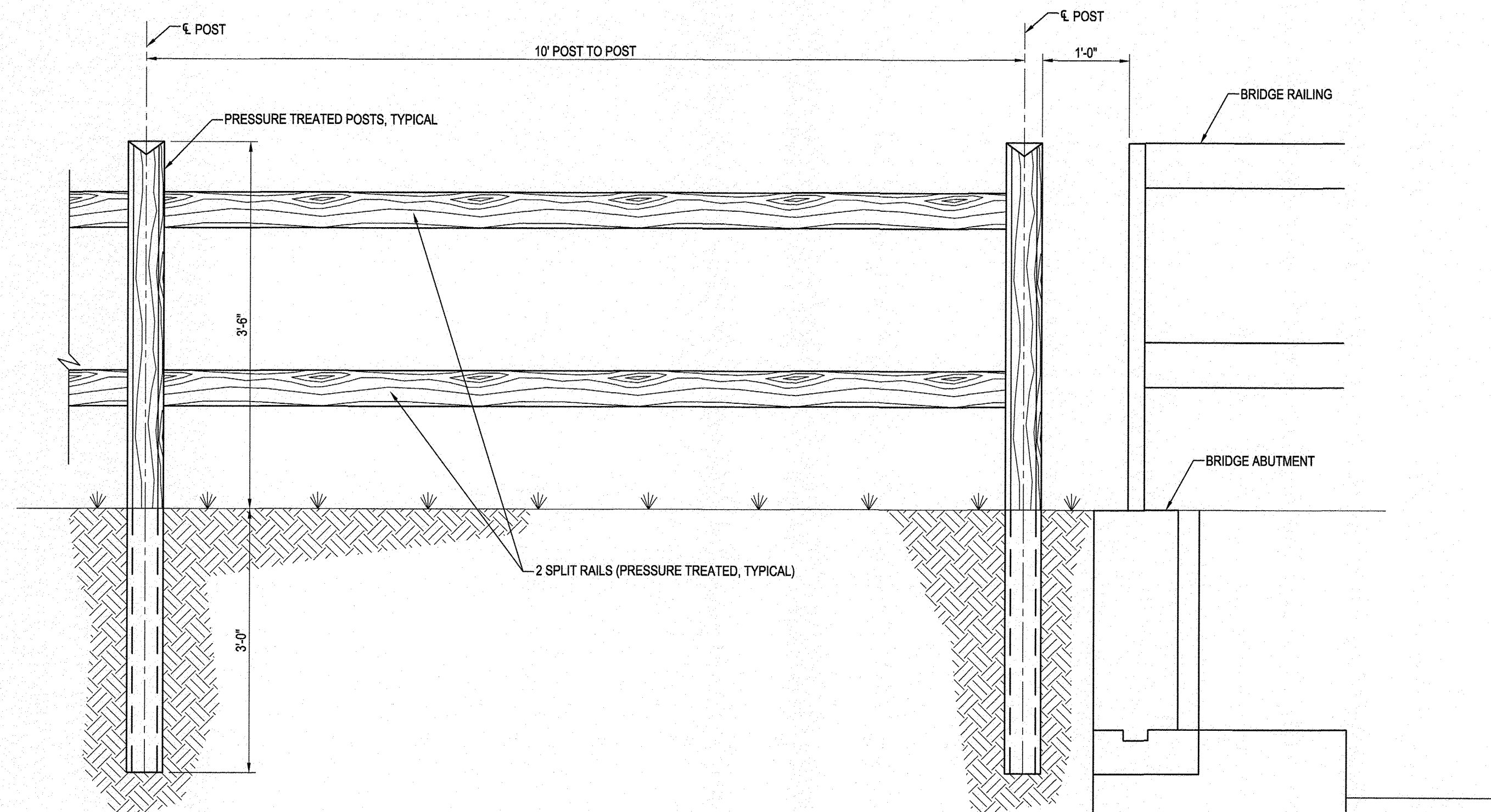


STA. 200+00 TO STA. 212+40

PATCHING FOR DAMAGED EXISTING POROUS BITUMINOUS TRAIL (FROM SCE TO EXISTING BOARDWALK)

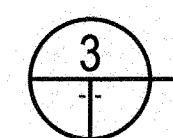


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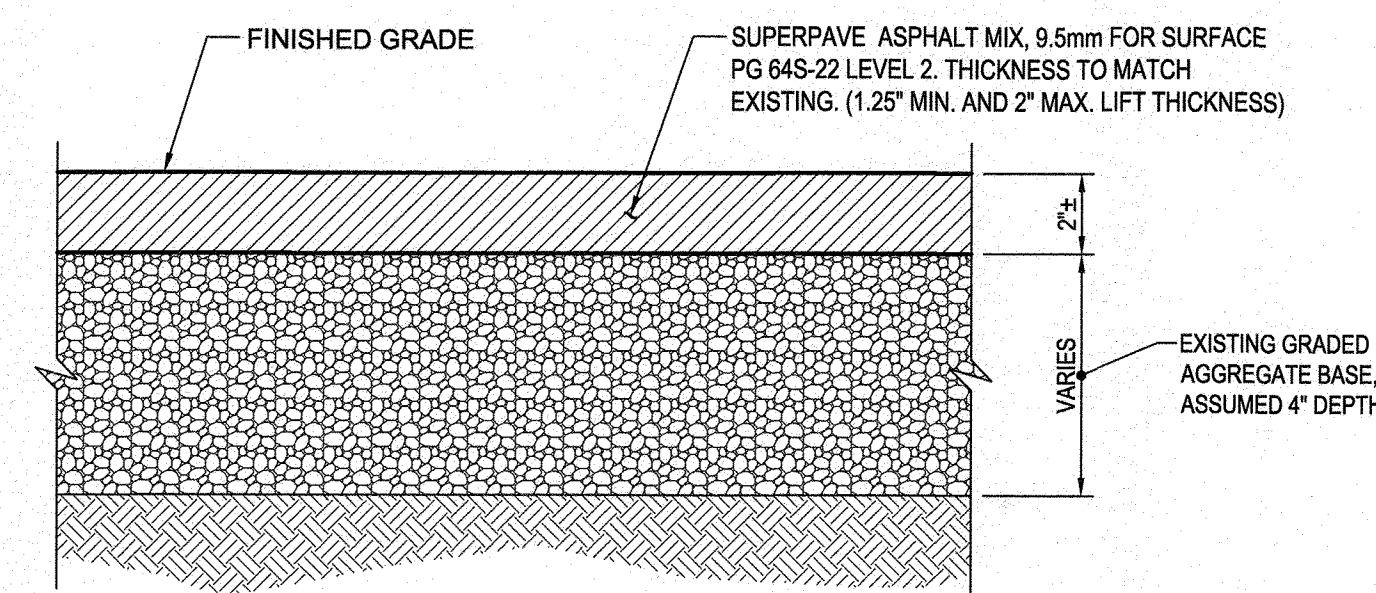


SECTION

SPLIT RAIL FENCE



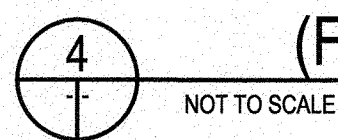
NOT TO SCALE



SECTION

STA. 213+40 TO STA. 253+76

PATCHING FOR DAMAGED EXISTING BITUMINOUS TRAIL (FROM EXISTING BOARDWALK TO NEW BRIDGE)



NOT TO SCALE

Jun 11, 2021 4:21pm Plot By: hhwang
 \\wcm\Users\hhwang\Projects\2014\14017900\Drawings\07-Site\2014017900-C500-Site-Details.dwg Tab: S11-22.Plot

design	review and approval	review and approval
Randall Hughes landscape architect	Park Planning and Development Division	superintendent of parks
Blaine Linkous engineer	central maintenance	park police
Hyunsook Hwang drawn by	region	
	natural resources	

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The Maryland-National Capital Park and Planning Commission

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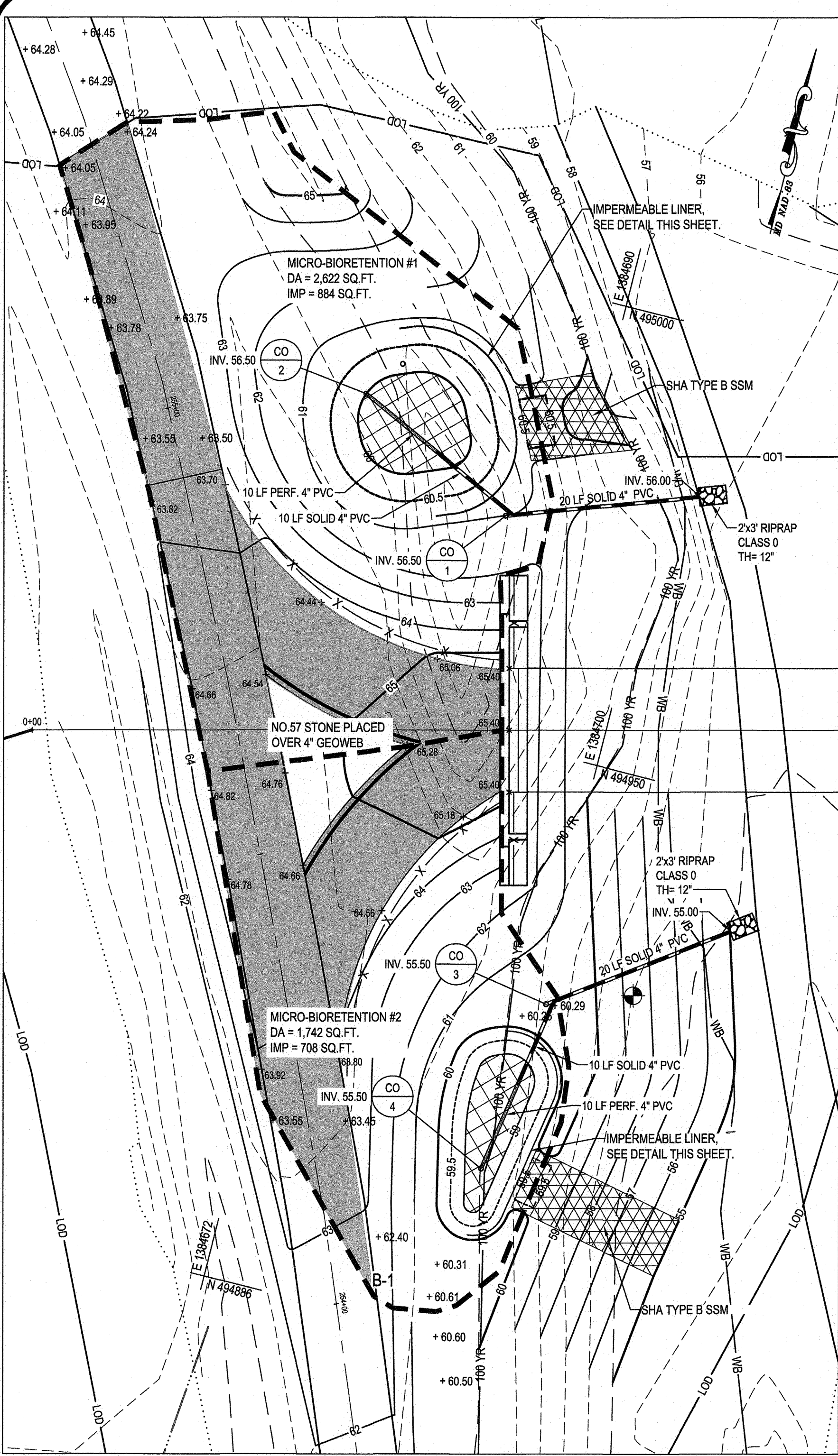
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License # 34882
 Expiration Date: 07/08/23

PERMIT NO. 18489-2020-0 SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS FSC# 51-20; SHT5

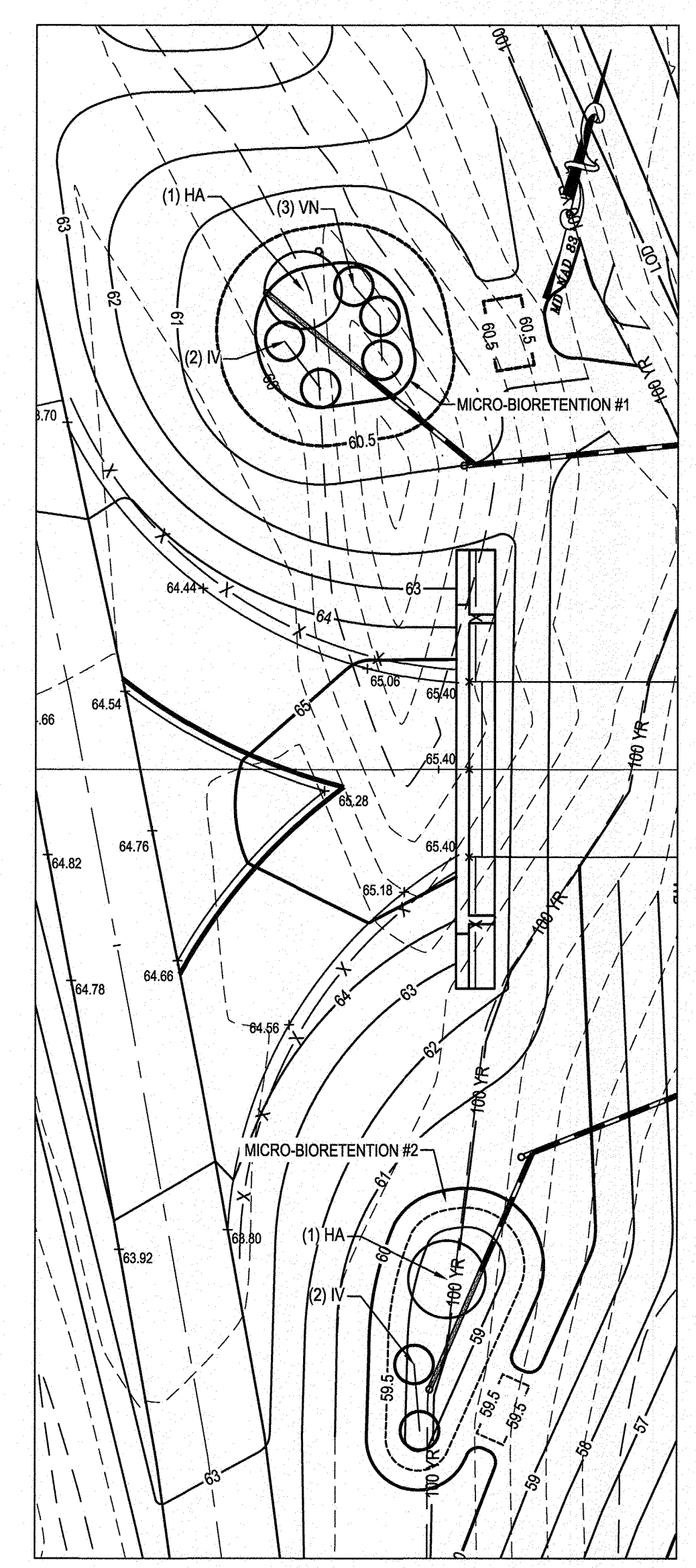
project SITE DEVELOPMENT PLAN **98241**

SITE DETAILS

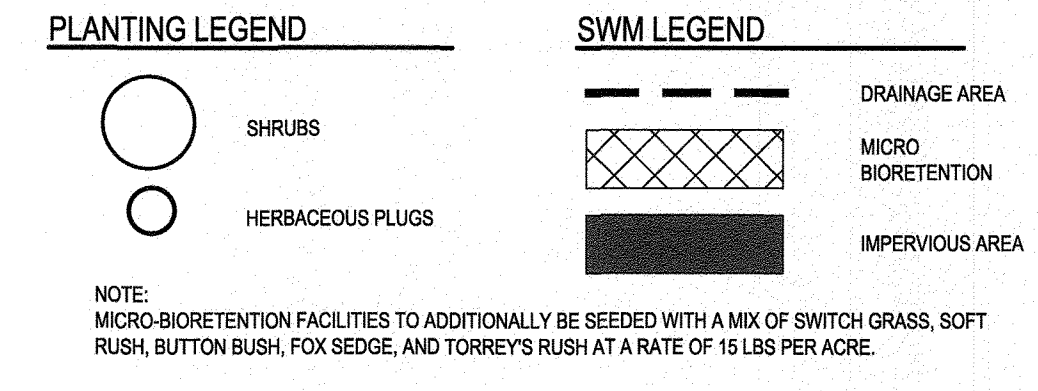
WB&A Trail - Bridge at Patuxent
 9501 MERKEL FARMS ROAD & 8654 RACE TRACK ROAD, BOWIE, MD
 ELECTION DISTRICT NO. 14, PRINCE GEORGE'S COUNTY, MD
 TAX MAP 22 GRID F3 PARCELS 11, 14, 62
 scale: AS SHOWN Sheet 22 of 45



PLAN (PRINCE GEORGE'S CO.)
SCALE: 1" = 10'



PLANTING PLAN (PRINCE GEORGE'S CO.)
SCALE: 1" = 10'



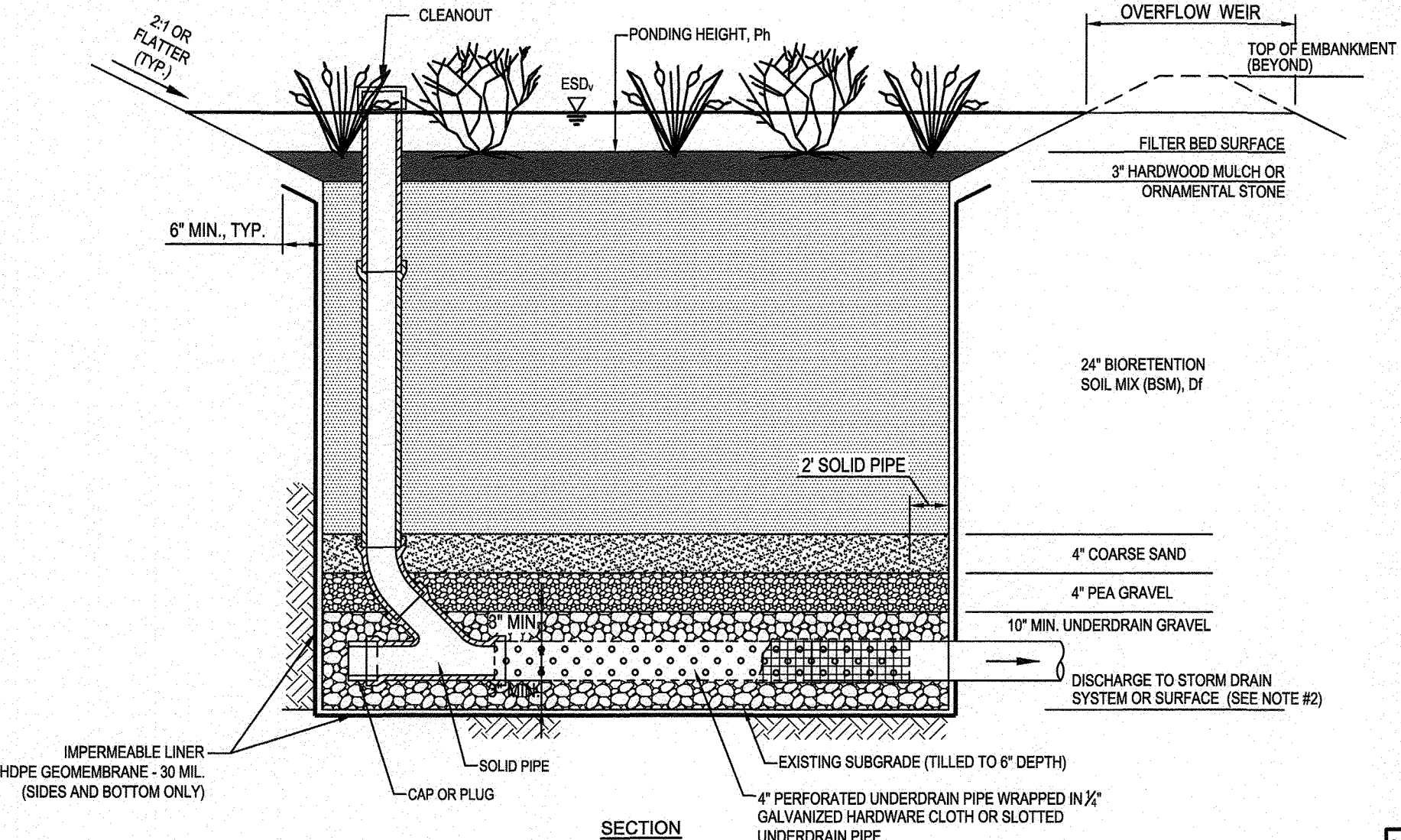
Prince George's County Plant Schedule

Key	Qty.	Botanical Name	Common Name	Size (Min.)	Root	Spacing
HA	2	Hamelis virginiana	Witch Hazel	18"-24"	Cont.	As shown
2	Total			18"-24"		As shown
Key	Qty.	Botanical Name	Common Name	Size (Min.)	Root	Spacing
IV	4	Iris versicolor	Iris, Blue Water	Plug	Cont.	36" on center
VN	3	Vernonia noveboracensis	New York Ironweed	Plug	Cont.	36" on center
7	Total					

MICRO-BIORETENTION ELEVATION TABLE

	MICRO BIORETENTION #1	MICRO BIORETENTION #2
ESD WSE	60.50	59.50
FACILITY SURFACE	60.00	59.00
TOP OF BSM MEDIA (BOTTOM OF MULCH)	59.75	58.75
TOP OF COURSE SAND	57.75	56.75
TOP OF PEA GRAVEL	57.42	56.42
TOP OF UNDERDRAIN GRAVEL	57.09	56.09
BOTTOM OF FACILITY	58.92	57.92
INV. UNDERDRAIN PIPE	56.50	55.50
TOP OF WEIR	60.50	59.50
TOP OF EMBANKMENT	61.00	60.00
10 YR WSE	60.58	59.58

NOTE: THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "MISS UTILITY" AT 1-800-257-7777 THREE DAYS PRIOR TO THE START OF ANY EXCAVATION WORK.



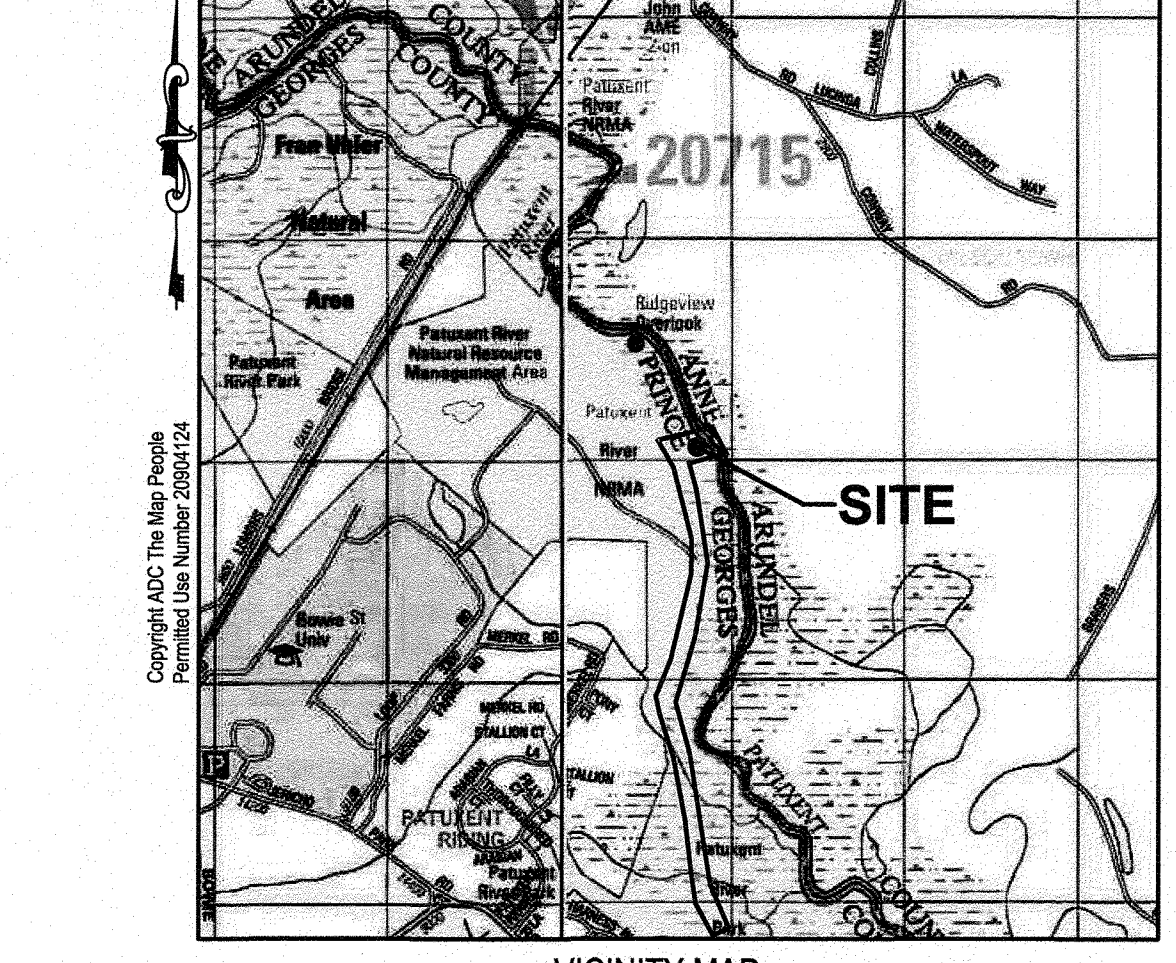
SECTION FOR MICRO-BIORETENTION WITH WEIR SPILLWAY
NOT TO SCALE

MAINTENANCE SCHEDULE:
AFTER CONSTRUCTION COMPLETION AND ACCEPTANCE OF THE WORK, INSPECTION AND MAINTENANCE SHALL BE THE RESPONSIBILITY OF ANNE ARUNDEL COUNTY OR PRINCE GEORGE'S COUNTY AS INDICATED. THE FACILITIES MUST DRAIN DOWN WITHIN 24 HOURS OF A RAINFALL EVENT.

INSPECTION ITEM	FREQUENCY OF INSPECTION	INSPECTION REQUIREMENTS	REMEDIAL ACTION
BIORETENTION BASIN	SEASONALLY AND AFTER A MAJOR STORM	FACILITY MUST DEWATER WITHIN 24 HOURS OF RAINFALL. NOTICEABLE DOORS, STAINED WATER ON THE FILTER SURFACE OR AT THE OUTLET, OR THE PRESENCE OF ALGAE OR AQUATIC VEGETATION ARE INDICATORS OF ANAEROBIC CONDITIONS, AND INADEQUATE DETERMINING OF THE FACILITY.	THE TOP THREE INCHES OF SOIL SHOULD BE REMOVED AND REPLACED WITH SOIL MATERIAL AS PER PLAN SPECIFICATIONS. FOLLOW UP INSPECTIONS MUST CONFIRM ADEQUATE DETERMINING. IF THE FACILITY DOES NOT FUNCTION AS INTENDED AFTER THE ABOVE ACTION, THE ENTIRE FILTER AND UNDERDRAIN SYSTEM MAY NEED MAINTENANCE. MORE APPROVAL MAY BE NECESSARY.
VEGETATION	SEASONALLY AND AFTER A MAJOR STORM	CHECK MULCH FOR ADEQUATE COVER, SEDIMENT ACCUMULATION, OR DISCOLORATION.	REPLACE AND REMOVE OLD MULCH AND EXCESS SEDIMENTS. PROVIDE ADEQUATE MULCH COVER ACCORDING TO APPROVED DESIGN.
MULCH LAYER	SEASONALLY AND AFTER A MAJOR STORM	CHECK MULCH FOR ADEQUATE COVER, SEDIMENT ACCUMULATION, OR DISCOLORATION.	REPLACE AND REMOVE OLD MULCH AND EXCESS SEDIMENTS. PROVIDE ADEQUATE MULCH COVER ACCORDING TO APPROVED DESIGN.
VEGETATIVE SURFACES	MONTHLY	COMPARE PLANT COMPOSITION WITH APPROVED PLANS. CHECK FOR INVASIVE SPECIES OR WEEDS. CHECK FOR DEAD OR DYING VEGETATION.	REMOVE AND REPLACE PLANTS IN ACCORDANCE WITH PLAN SPECIFICATIONS.
PLANT COMPOSITION AND HEALTH	MONTHLY	CHECK FOR EVIDENCE OF EROSION, RUNOFF CHANNELIZING, OR BARE SPOTS.	RE-SEED OR RE-PLANT IN ACCORDANCE WITH APPROVED LANDSCAPING PLANS. RE-GRADING MAY BE REQUIRED WHEN CONCENTRATED FLOW CAUSES RILLS OR GULLING THROUGH THE FACILITY.
VEGETATIVE COVER AND EROSION	MONTHLY	CHECK THAT THE FACILITY IS CLEAN OF TRASH AND DEBRIS. INLETS, OUTLETS, AND CONTRIBUTING AREAS AROUND THE FACILITY MUST BE CHECKED.	TRASH AND DEBRIS MUST BE DISPOSED OF IN AN ACCEPTABLE MANNER ACCORDING TO CURRENT REGULATIONS.
DEBRIS AND TRASH CLEANOUT	MONTHLY	CHECK FOR EVIDENCE OF STRUCTURAL DETERIORATION, SPALLING, OR CRACKING. INLET AND OUTLET STRUCTURES MUST BE IN GOOD CONDITION.	REPAIR TO GOOD CONDITION ACCORDING TO SPECIFICATIONS ON THE APPROVED PLANS.
STRUCTURAL COMPONENTS	ANNUALLY	CHECK FOR EVIDENCE OF EROSION, RILLS, OR GULLING.	STABILIZE ALL ERODED AREAS AND GRADE TO PROVIDE STABLE CONVEYANCE.
OUTLETS	SEASONALLY AND AFTER A MAJOR STORM	RIPRAP OUTLET MUST BE MAINTAINED IN GOOD FUNCTIONAL CONDITION.	REPAIR ACCORDING TO APPROVED PLAN.
PRETREATMENT	SEASONALLY AND AFTER A MAJOR STORM	CHECK FOR SEDIMENT ACCUMULATION.	WHEN SEDIMENT ACCUMULATIONS TO A DEPTH OF ONE HALF THE DESIGN PONDING DEPTH OR COVERS MORE THAN 25% OF THE FACILITY, SEDIMENT MUST BE REMOVED AND THE FACILITY RESTORED ACCORDING TO THE APPROVED DESIGN.
SEDIMENT ACCUMULATION	SEASONALLY AND AFTER A MAJOR STORM	CHECK FOR EROSION, FLOW BLOCKAGES, AND STABLE CONVEYANCE.	STABILIZE AND GRADE ACCORDING TO APPROVED PLAN.
GRASS CHANNEL CONVEYANCE SYSTEMS	ANNUALLY	CHECK THAT FLOW SPILLWAYS ARE FUNCTIONING AS DESIGNED AND THAT BYPASS IS OPERATING AS DESIGNED.	CONSTRUCTION MUST BE IN ACCORDANCE WITH APPROVED PLANS.

SPECIFICATIONS:
1. SEE CHART THIS SHEET.
2. THE CONTRACTOR SHALL SUBMIT SOIL TEST RESULTS (1 PER 30 CY BSM) TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. PERFORM SOIL TESTS REQUIRED FOR BOTH IMPORTED SOIL AND RE-USED / AMENDED TOP SOIL. SOIL TEST AND RESULTS SHALL INCLUDE AT A MINIMUM: PHOSPHORUS, ORGANIC MATTER, SOLUBLE SALTS, NUTRIENTS, AND TEXTURAL ANALYSIS.
3. MINIMIZE COMPACTION OF SUBGRADE SOILS IN BIORETENTION AREAS. CONTRACTOR SHALL TILL THE SUBGRADE SOILS TO A DEPTH OF 6" BELOW THE BOTTOM OF EACH FACILITY, WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 16". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.
4. PLANT MATERIAL SHALL BE REPRESENTATIVE OF SPECIES AND CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1-2004.

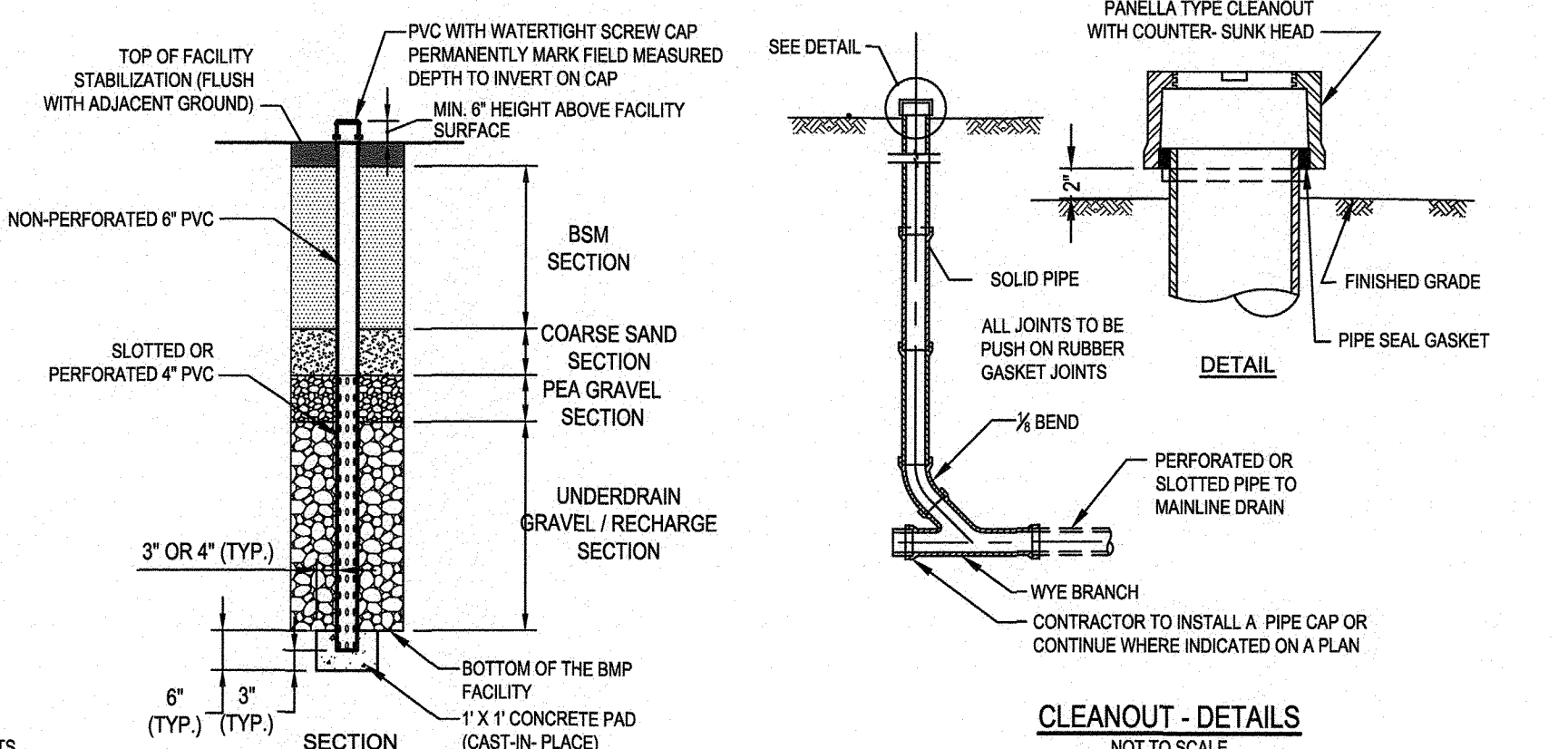
UTILITY CERTIFICATION:
I HEREBY CERTIFY THAT THE EXISTING AND/OR PROPOSED UNDERGROUND UTILITY INFORMATION SHOWN HEREON HAS BEEN CORRECTLY DUPLICATED FROM UTILITY COMPANY RECORDS, FURTHER, THAT THIS PROJECT HAS BEEN CAREFULLY COORDINATED WITH EACH INVOLVED UTILITY COMPANY, AND ALL AVAILABLE UNDERGROUND UTILITY INFORMATION RELATIVE TO THIS PLAN HAS BEEN SOLICITED FROM THEM.
Signature: *Blaine W. Linkous, P.E.* MD License#: 34682 Date: 06/24/2020
Name: Blaine W. Linkous, P.E. (printed) WBCM, 410-512-4500
(Include seal, company name, address and phone number if not included elsewhere on plan).



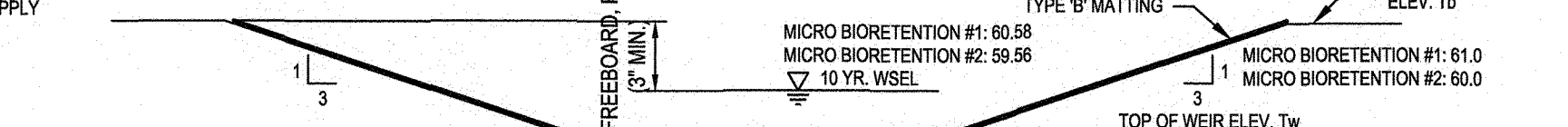
VICINITY MAP
SCALE: 1" = 2000'

MATERIALS SPECIFICATIONS FOR MICRO-BIORETENTION

MATERIAL	SPECIFICATION	SIZE	NOTES
PLANTINGS	SEE PLAN SHEET	N/A	PLANTINGS ARE SITE SPECIFIC
BSM	SHA BIORETENTION SOIL MIX (BSM) SECTION 920.01.05	N/A	MARYLAND STATE HIGHWAY ADMINISTRATION STANDARDS SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS DATED MAY 2017 INCLUDING AND ADDENDA THERETO. COPY TO BE KEPT ON-SITE
MULCH	SHREDDED HARDWOOD	AGED 6 MONTHS, MINIMUM, NO PINE OR WOOD CHIPS	
PEA GRAVEL	ASTM-D-448	NO. 20 OR NO. 30 (1/8" TO 3/8")	
ORNAMENTAL STONE	WASHED COBBLES	STONE: 2" TO 3"	
GEOTEXTILE		N/A	NONWOVEN GEOTEXTILE TABLE H-1 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
UNDERDRAIN GRAVEL	AASHTO M-43	NO. 57, 6, OR 67 (3/8" TO 3/4")	
IMPERMEABLE LINER (IF REQUIRED)	ASTM-D-4833 (THICKNESS) ASTM-D-4112 (TENSILE STRENGTH) 1.100LB, ELONGATION 200% ASTM-D-424 (TEAR RESISTANCE - 150LB./IN.) ASTM-D-471 (WATER ABSORPTION - 4% TO 24% WASS)	30-MIL THICKNESS	LAYER TO BE ULTRA-VIOLET RESISTANT. A GEOTEXTILE FABRIC SHOULD BE USED TO PROTECT THE LINER FROM PUNCTURE.
UNDERDRAIN PIPING	F 756, TYPE PS 28 AASHTO M-278 AASHTO M-252	4" TO 6"	SLOTTED OR PERFORATED PIPE. SLOTTED PIPE SHALL HAVE A MINIMUM OPEN AREA OF 1.5 SQ. IN. / LINEAR FOOT WITH A MAXIMUM SLOT LENGTH OF 2" AND MAXIMUM SLOT WIDTH OF 1/8" INCH. PERFORATED PIPE SHALL BE WRAPPED WITH 14 INCH GALVANIZED HARDWARE CLOTH.
CAST-IN-PLACE CONCRETE (IF REQUIRED)	MSHA MIX. NO. 3, F=5000 PSI @ 28 DAYS, NORMAL WEIGHT, AIR-ENTRAINED, REINFORCING TO MEET ASTM-615-09	N/A	ON-SITE TESTING OF CAST-IN-PLACE CONCRETE REQUIRED: 28 DAY STRENGTH AND SLUMP TEST. ALL CONCRETE DESIGN (CAST-IN-PLACE OR PRE-CAST) NOT USING PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS REQUIRES DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND. DESIGN TO INCLUDE MEETING ACI CODE 561R VERTICAL LOADING R-10 OR R-20; ALLOWABLE HORIZONTAL LOADING (BASED ON SOIL PRESSURES); AND ANALYSIS OF POTENTIAL CRACKING.
COARSE SAND	AASHTO-M6 OR ASTM-C-33	0.075" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DIBASE AND GRAVITONE (AASHTO) #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATE OR DOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "TRUCK DUST" CAN BE USED FOR SAND.
STABILIZATION MATTING	SHA SECTION 920.05		TYPE A, B, C, OR D AS NOTED ON PLAN / SECTION DETAILS MARYLAND STATE HIGHWAY ADMINISTRATION STANDARDS SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS DATED MAY 2017 INCLUDING AND ADDENDA THERETO. COPY TO BE KEPT ON-SITE



OBSERVATION WELL
NOT TO SCALE



SECTION OVERFLOW WEIR
NOT TO SCALE

INSPECTION:
REGULAR INSPECTIONS SHALL BE MADE DURING THE FOLLOWING STAGES OF CONSTRUCTION: CONTRACTOR SHALL NOTIFY THE ENGINEER-IN-CHARGE RESPONSIBLE FOR AS-BUILTS 48 HOURS PRIOR TO REQUIRED INSPECTION.
• DURING EXCAVATION TO SUBGRADE.
• DURING PLACEMENT AND BACKFILL OF UNDERDRAIN PIPE AND GRAVEL.
• DURING PLACEMENT OF GEOTEXTILE.
• DURING PLACEMENT OF BACKFILL AND PLANTING SOIL.
• DURING PLACEMENT OF MULCH.
• DURING PLACEMENT OF PLANTS.
• UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.

CAUTION:
IF THIS DRAWING IS A REDUCTION, USE THE GRAPHIC SCALES.
1"=10'-0"

PERMIT NO. 18489-2020-0

SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

FSC# 51-20; SHT6

Stormwater Management - Summary Table

SWM Summary Study Point #1 (Prince George's County)

ESD Practice type	ESD Practice	Number	Area of Filter A ² (ft ²)	Drainage Area (ft ²)	Impervious Area (ft ²)	%	Rv	Design Pe	Recharge Volume Provided (ft ³)	ESDv treated (ft ³)
M6	MICRO BIORETENTION	1	113	2,622	884	34%	0.35	1.8	11	139
M6	MICRO BIORETENTION	2	81	1,742	708	41%	0.42	2.0	8	120
Sub-total Provided Treatment by ESD measures			4,364	1,592		0.38			19	259
Required Treatment by ESD measures									17	246

design	review and approval	review and approval
Randall Hughes landscape architect date	Park Planning and Development Division date	superintendent of parks date
() architect date	central maintenance date	park police date
Blaine Linkous engineer date	region date	
Hyunsook Hwang drawn by date	natural resources date	

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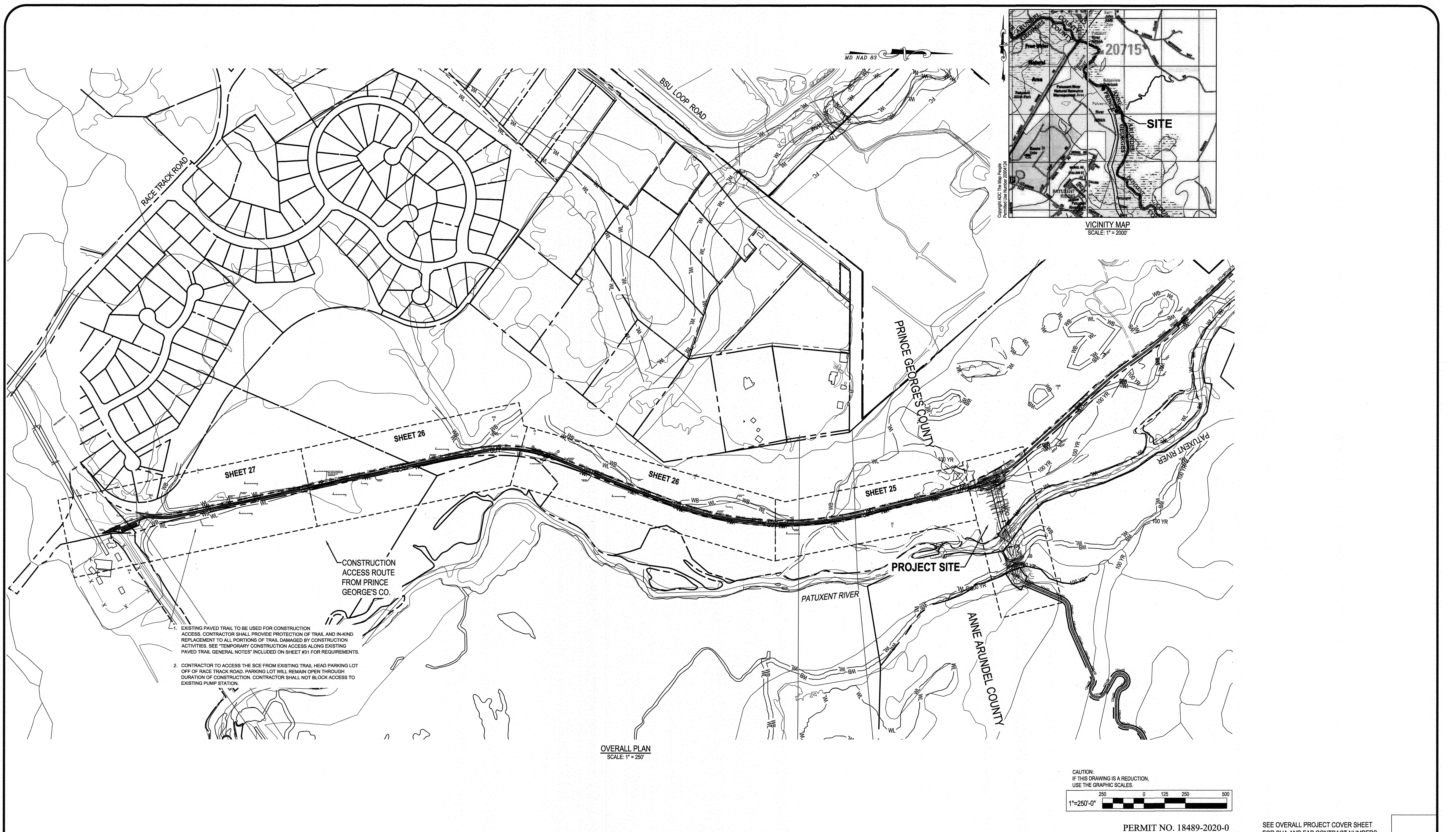
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Expiration Date: 07/08/22

project SITE DEVELOPMENT PLAN **98242**

STORMWATER MANAGEMENT PLAN AND DETAILS

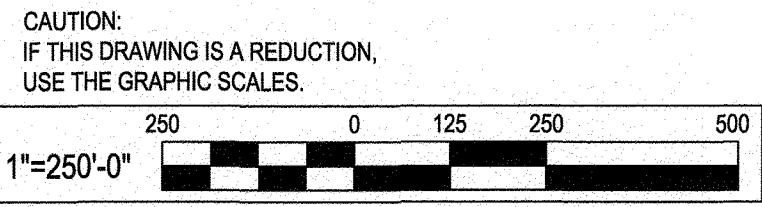
WB&A Trail - Bridge at Patuxent

9501 MERKEL FARMS ROAD & 8654 RACE TRACK ROAD, BOWIE, MD
ELECTION DISTRICT NO. 14, PRINCE GEORGE'S COUNTY, MD
TAX MAP 22 GRID F3 PARCELS 11, 14, 62
scale: AS SHOWN Sheet 23 of 45



1. EXISTING PAVED TRAIL TO BE USED FOR CONSTRUCTION ACCESS. CONTRACTOR SHALL PROVIDE PROTECTION OF TRAIL AND IN-KIND REPLACEMENT TO ALL PORTIONS OF TRAIL DAMAGED BY CONSTRUCTION ACTIVITIES. SEE "TEMPORARY CONSTRUCTION ACCESS ALONG EXISTING PAVED TRAIL GENERAL NOTES" INCLUDED ON SHEET #31 FOR REQUIREMENTS.
2. CONTRACTOR TO ACCESS THE SCE FROM EXISTING TRAIL HEAD PARKING LOT OFF OF RACE TRACK ROAD. PARKING LOT WILL REMAIN OPEN THROUGH DURATION OF CONSTRUCTION. CONTRACTOR SHALL NOT BLOCK ACCESS TO EXISTING PUMP STATION.

OVERALL PLAN
SCALE: 1" = 250'



PERMIT NO. 18489-2020-0

SEE OVERALL PROJECT COVER SHEET
FOR SHA AND FAP CONTRACT NUMBERS

design	review and approval	review and approval
Randall Hughes landscape architect	Park Planning and Development Division	superintendent of parks
Blaine Linkous engineer	central maintenance	park police
Hyunsook Hwang drawn by	region	natural resources

WHITNEY BAILEY COX & MAGNANI, LLC
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The Maryland-National Capital
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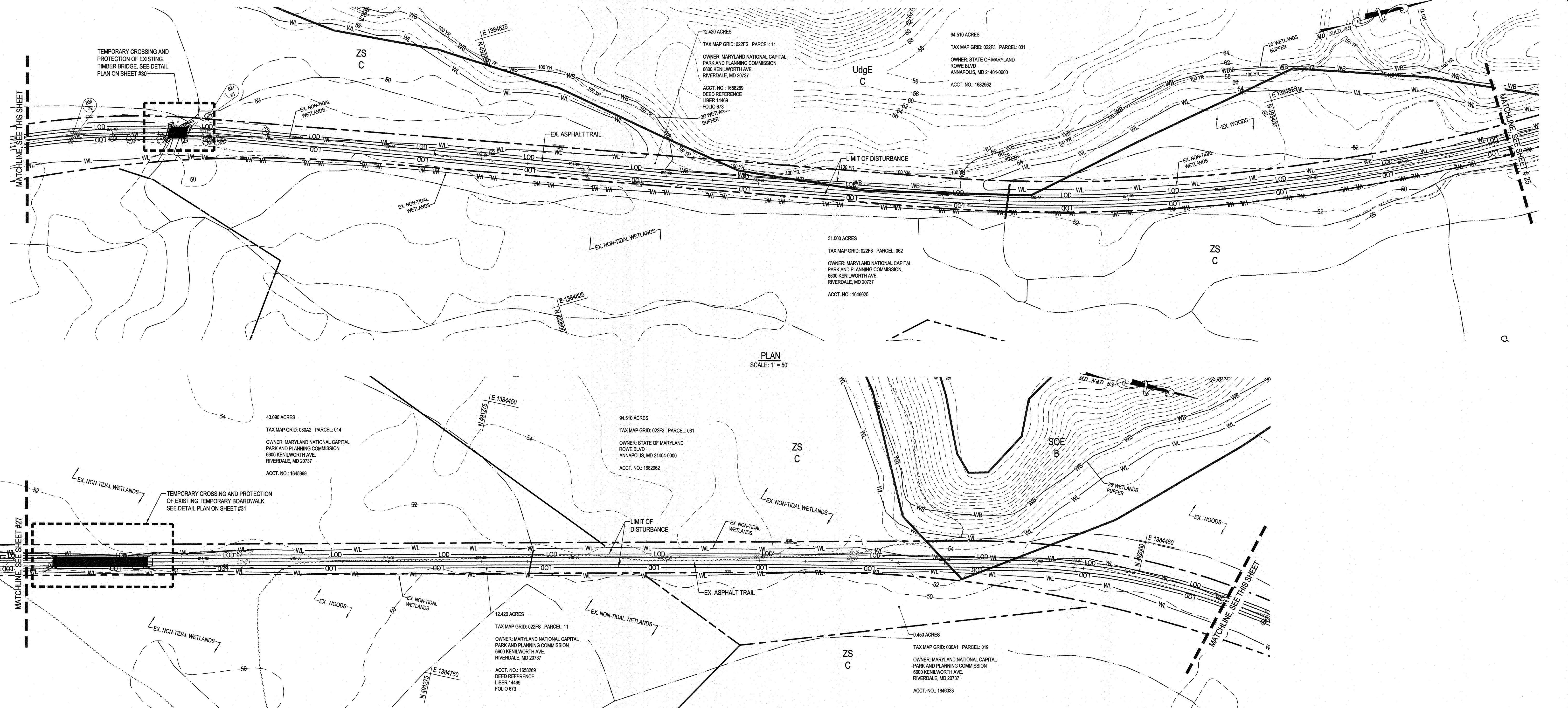
project

SITE DEVELOPMENT PLAN **98243**

OVERALL ACCESS PLAN

WB&A Trail - Bridge at Patuxent
9501 MERKEL FARMS ROAD & 8654 RACE TRACK ROAD, BOWIE, MD
ELECTION DISTRICT NO. 14, PRINCE GEORGE'S COUNTY, MD
TAX MAP 22 GRID F3 PARCELS 11, 14, 62
scale: AS SHOWN Sheet 24 of 45

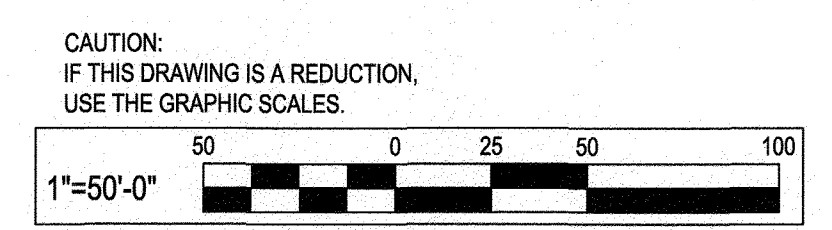
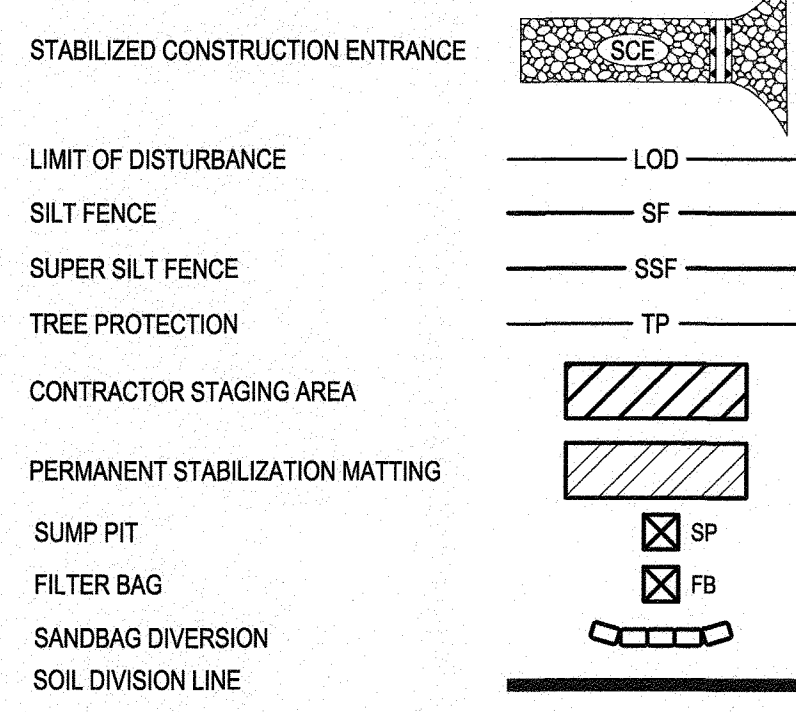
Jun 14, 2021 8:10am
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 Title: SH1-24.Plot



TEMPORARY CONSTRUCTION ACCESS ALONG EXISTING PAVED TRAILS GENERAL NOTES

1. THE CONTRACTOR SHALL PROVIDE MEANS AND METHODS FOR PROTECTION OF EXISTING PAVED ASPHALT TRAILS INDICATED FOR USE FOR CONSTRUCTION ACCESS ROUTES.
2. PERFORMANCE REQUIREMENTS:
 - a. DELEGATED DESIGN: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DESIGN AND/OR ENGINEERING THAT MAY BE NECESSARY FOR SELECTED PROTECTION MEASURES.
 - b. AS-BUILT SECTIONS OF THE EXISTING TRAILS ARE NOT AVAILABLE. THEY ARE ASSUMED TO BE STANDARD COUNTY TRAIL PAVING SECTION FOR PRIMARILY PEDESTRIAN LOADS.
 - c. THE CONTRACTOR IS RESPONSIBLE FOR THE INSPECTION AND VERIFICATION OF EXISTING CONDITIONS PRIOR TO THE START OF CONSTRUCTION.
 - d. PROTECTION MEASURES SHALL BE FULLY CONTAINED WITH THE PROJECT LIMITS OF DISTURBANCE AS INDICATED ON THE DRAWINGS.
 - e. ALL IMPACTS AND/OR DAMAGE TO THE EXISTING TRAIL SHALL BE RESTORED IN-KIND TO THE PRE-CONSTRUCTION CONDITION.
3. ACTION SUBMITTALS:
 - f. THE CONTRACTOR SHALL CONDUCT A PRECONSTRUCTION INSPECTION OF THE TRAIL TO DOCUMENT EXISTING CONDITIONS. THE OWNER SHALL BE NOTIFIED PRIOR TO THE INSPECTION. THE INSPECTION SUBMITTAL SHALL INCLUDE AT A MINIMUM: REPRESENTATIVE PHOTOGRAPHS AND DETAILED LIST OF ANY NOTED EXISTING DEFECTS OR DAMAGE.
 - g. THE CONTRACTOR SHALL CONDUCT A POST-CONSTRUCTION INSPECTION OF THE TRAIL. THIS SHALL BE CONDUCTED AS PART OF PROJECT SUBSTANTIAL COMPLETION. THE POST-CONSTRUCTION INSPECTION REPORT SHALL DOCUMENT THAT THE TRAIL CONDITION RELATIVE TO THE PRE-CONSTRUCTION CONDITION.
 - h. CONSTRUCTION ACCESS PLAN: CONTRACTOR SHALL PROVIDE A CONSTRUCTION ACCESS PLAN WITH THE SUBMISSION OF THE PRECONSTRUCTION INSPECTION SUMMARIZES THEIR APPROACH FOR PROTECTION AND/OR IN-KIND REPLACEMENT.
 - i. PRODUCT DATA: PROVIDE CUT SHEETS ON ALL PROPOSED PROTECTION MEASURES.

SEDIMENT CONTROL LEGEND



design	review and approval	review and approval
Randall Hughes landscape architect	Park Planning and Development Division	superintendent of parks
() architect	central maintenance	park police
Blaine Linkous engineer	region	
Hyunsook Hwang drawn by	natural resources	

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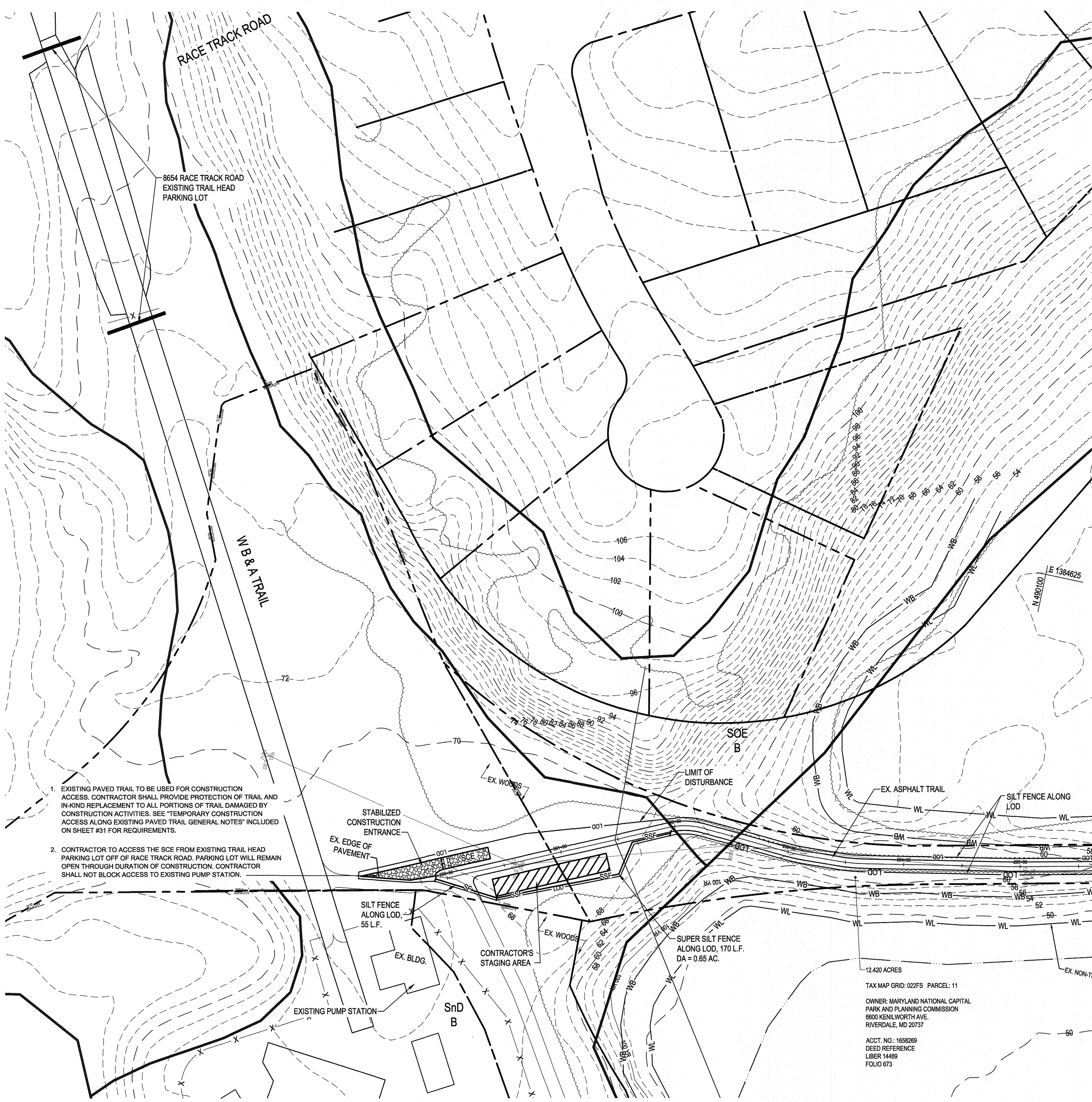
FSC# 51-20; SHT2

project SITE DEVELOPMENT PLAN **98245**

EROSION AND SEDIMENT CONTROL PLAN

WB&A Trail - Bridge at Patuxent

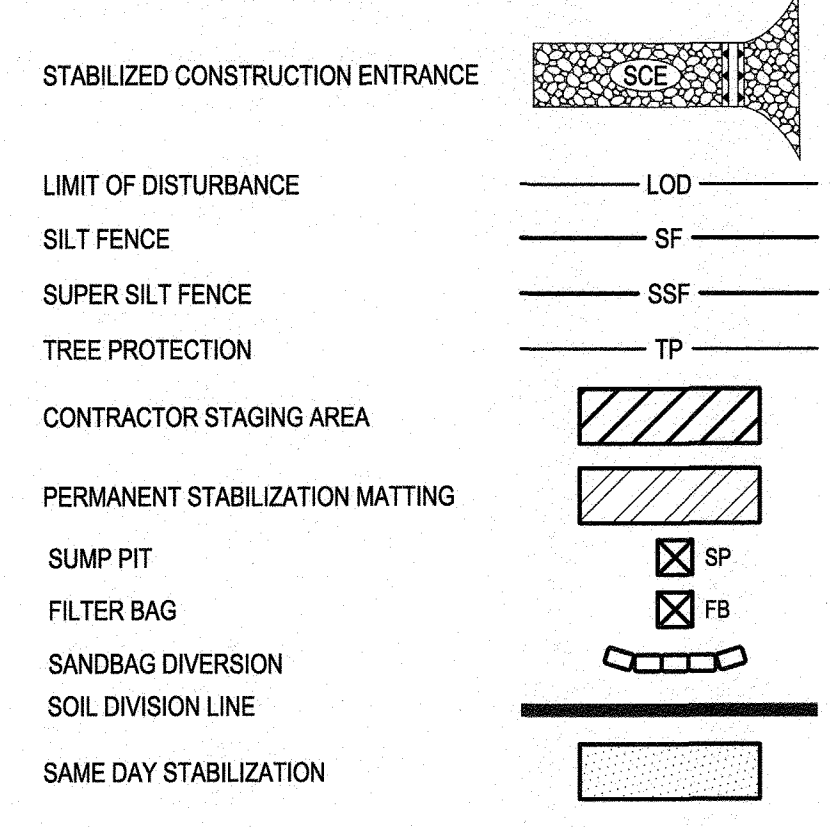
9501 MERKEL FARMS ROAD & 8654 RACE TRACK ROAD, BOWIE, MD
ELECTION DISTRICT NO. 14, PRINCE GEORGE'S COUNTY, MD
TAX MAP 22 GRID F3 PARCELS 11, 14, 62
scale: AS SHOWN Sheet 26 of 45



- BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS**
1. NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
 2. PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
 3. DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIALS FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
 4. PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
 5. REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
 6. RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
 7. ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (LOLIUM MULTIFLORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM SP.), OATS (UNIOLA SP.) AND/OR RYE (SECALE CEREALE). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.

8. AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
9. TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM:
 - A. USE I WATERS (WITHOUT YELLOW PERCH); IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE DURING ANY YEAR.
 - B. USE I WATERS (WITH YELLOW PERCH); IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD FEBRUARY 15 THROUGH JUNE 15, INCLUSIVE DURING ANY YEAR.
 - C. USE III WATERS; IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD OCTOBER 1 THROUGH APRIL 30, INCLUSIVE, DURING ANY YEAR.
 - D. USE IV WATERS; IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH MAY 31, INCLUSIVE, DURING ANY YEAR.
10. STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
11. CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

SEDIMENT CONTROL LEGEND



1. EXISTING PAVED TRAIL TO BE USED FOR CONSTRUCTION ACCESS. CONTRACTOR SHALL PROVIDE PROTECTION OF TRAIL AND IN-KIND REPLACEMENT TO ALL PORTIONS OF TRAIL DAMAGED BY CONSTRUCTION ACTIVITIES. SEE "TEMPORARY CONSTRUCTION ACCESS ALONG EXISTING PAVED TRAIL GENERAL NOTES" INCLUDED ON SHEET #31 FOR REQUIREMENTS.
2. CONTRACTOR TO ACCESS THE SCE FROM EXISTING TRAIL HEAD PARKING LOT OFF OF RACE TRACK ROAD. PARKING LOT WILL REMAIN OPEN THROUGH DURATION OF CONSTRUCTION. CONTRACTOR SHALL NOT BLOCK ACCESS TO EXISTING PUMP STATION.

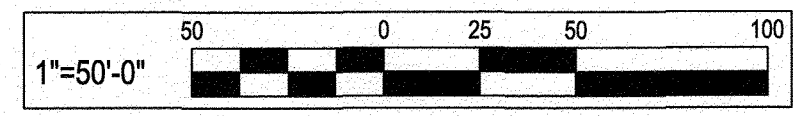
43.090 ACRES
 TAX MAP GRID: 030A2 PARCEL: 014
 OWNER: MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION
 6800 KENILWORTH AVE.
 RIVERDALE, MD 20737
 ACCT. NO.: 1645969

12.420 ACRES
 TAX MAP GRID: 022FS PARCEL: 11
 OWNER: MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION
 6800 KENILWORTH AVE.
 RIVERDALE, MD 20737
 ACCT. NO.: 1658269
 DEED REFERENCE: LIBER 14469 FOLIO 673

43.090 ACRES
 TAX MAP GRID: 030A2 PARCEL: 014
 OWNER: MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION
 6800 KENILWORTH AVE.
 RIVERDALE, MD 20737
 ACCT. NO.: 1645969

PLAN
 SCALE: 1" = 50'

CAUTION:
 IF THIS DRAWING IS A REDUCTION,
 USE THE GRAPHIC SCALES.



PERMIT NO. 18489-2020-0 SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

FSC# 51-20; SHT3

design	review and approval	review and approval
Randall Hughes landscape architect	Park Planning and Development Division	superintendent of parks
Blaine Linkous engineer	central maintenance	park police
Hyunsook Hwang drawn by	region	
	natural resources	

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The Maryland-National Capital Park and Planning Commission
 Prince George's County Department of Parks and Recreation
 6600 Kenilworth Avenue
 Riverdale, Maryland 20737
 (301) 699-2481

ISSUED FOR PROCUREMENT ON

REVISIONS		
Rev. No.	Date	Description

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.

project SITE DEVELOPMENT PLAN **98246**

EROSION AND SEDIMENT CONTROL PLAN

WB&A Trail - Bridge at Patuxent

9501 MERKEL FARMS ROAD & 8654 RACE TRACK ROAD, BOWIE, MD
 ELECTION DISTRICT NO. 14, PRINCE GEORGE'S COUNTY, MD
 TAX MAP 22 GRID F3 PARCELS 11, 14, 62

scale: AS SHOWN Sheet 27 of 45

PRINCE GEORGE'S COUNTY STANDARD EROSION AND SEDIMENT CONTROL GENERAL NOTES:

- THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL REQUIRED EASEMENT, RIGHT AND/OR RIGHTS-OF-WAY PURSUANT TO THE DISCHARGE FROM THE EROSION AND SEDIMENT CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS AND GRADING OR OTHER WORK TO BE PERFORMED ON ADJACENT OR DOWNSTREAM PROPERTIES AFFECTED BY THIS PLAN.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1) AND B) SEVEN (7) DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE, THE IN-PLACE SEDIMENT CONTROL MEASURES WILL BE MAINTAINED ON A CONTINUING BASIS UNTIL THE SITE IS PERMANENTLY STABILIZED AND ALL PERMIT REQUIREMENTS ARE MET.
- THE OWNER/DEVELOPER OR REPRESENTATIVE SHALL REQUEST THAT THE INSPECTION AUTHORITY APPROVE WORK COMPLETED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN, THE GRADING OR BUILDING PERMIT AND SHALL OBTAIN WRITTEN INSPECTION APPROVALS BY THE INSPECTOR AT THE FOLLOWING STAGES IN THE DEVELOPMENT OF THE SITE:
 - PRIOR TO THE START OF EARTH DISTURBANCE
 - UPON COMPLETION OF INSTALLATION OF TREE PROTECTION DEVICES, FOLLOWED BY THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, PRIOR TO PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL INITIAL APPROVAL BY THE INSPECTOR IS MADE;
 - UPON COMPLETION OF STRIPPING, THE STOCKPILING OF TOPSOIL, THE CONSTRUCTION OF TEMPORARY SEDIMENT AND EROSION CONTROL FACILITIES, DISPOSAL OF ALL WASTE MATERIAL AND PREPARATION OF THE GROUND;
 - UPON COMPLETION OF ROUGH GRADING, BUT PRIOR TO PLACING TOPSOIL, PERMANENT DRAINAGE OR OTHER SITE DEVELOPMENT IMPROVEMENTS AND GROUND COVERS;
 - PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT;
 - PRIOR TO THE REMOVAL OF SEDIMENT CONTROL PRACTICES; AND
 - UPON COMPLETION OF FINAL GRADING, REFORESTING, PERMANENT DRAINAGE AND EROSION CONTROL FACILITIES INCLUDING ESTABLISHED GROUND COVERS AND PLANTING, AND ALL OTHER WORK OF THE BUILDING PERMITS.

- REFERENCE 29 C. IN ALL SEQUENCE OF CONSTRUCTION.
- APPROVAL SHALL BE REQUESTED UPON FINAL STABILIZATION OF ALL SITES WITH DISTURBED AREAS IN EXCESS OF TWO ACRES BEFORE REMOVAL OF CONTROLS.
 - ALL PERMITS UNDER AN EROSION AND SEDIMENT CONTROL PLAN MUST AND CAN ONLY BE ISSUED TO THE OWNER/DEVELOPER THAT SIGNS THE CERTIFICATION ON THE PLAN. THE OWNER/DEVELOPER THAT SIGNS THE CERTIFICATION ON AN EROSION AND SEDIMENT CONTROL PLAN IS THE RESPONSIBLE PARTY REGARDLESS OF ANY SALE OF THE PROPERTY OR WORK OF SUBCONTRACTORS. EROSION AND SEDIMENT CONTROL PLANS ARE APPROVED FOR ONE OWNER/DEVELOPER ONLY.**
 - PGSCD APPROVAL OF AN EROSION AND SEDIMENT CONTROL PLAN, PURSUANT TO MEETING LOCAL PERMIT REQUIREMENTS FOR GRADING, BUILDING OR STREET PERMITS, ETC., IS VALID ONLY WHEN THE WORK TO BE PERFORMED UNDER THE PERMIT IS THE SAME AS (NO MORE/NO LESS THAN) THAT CONTAINED IN THE PLAN AS APPROVED BY THE PGSCD.
 - ANY CHANGES OR MODIFICATIONS TO AN APPROVED EROSION AND SEDIMENT CONTROL PLAN, NOT APPROVED BY THE PGSCD, SHALL INVALIDATE THE PLAN APPROVAL.
 - OFFSITE BORROW OR SPOIL AREAS MUST HAVE AN APPROVED AND ACTIVE EROSION AND SEDIMENT CONTROL PLAN.
 - TEMPORARY DESIGNED SEDIMENT BASINS SHALL BE REMOVED WITHIN 36 MONTHS AFTER THE BEGINNING OF CONSTRUCTION OF THE BASIN.
 - ON SMALL POND APPROVALS:
 - THE OWNER OR ENGINEER WILL NOTIFY PGSCD PROMPTLY IN WRITING WHEN CONSTRUCTION IS BEGUN AND WHEN CONSTRUCTION IS COMPLETED.
 - THE PROJECT SHALL BE CONSTRUCTED UNDER THE SUPERVISION OF THE ENGINEER-IN-CHARGE. WITHIN 30 DAYS OF THE COMPLETION OF CONSTRUCTION, THE ENGINEER-IN-CHARGE THAT DESIGNED THE STRUCTURE SHALL PROVIDE PGSCD WITH AN AS-BUILT PLAN AND SHALL CERTIFY, WITH THE ENGINEER'S SEAL, THAT THE MD378 POND WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS.
 - THE APPROVAL IS VALID ONLY FOR USE BY THE APPLICANT AND MAY NOT BE TRANSFERRED TO ANOTHER UNLESS WRITTEN APPROVAL FOR SUCH TRANSFER IS OBTAINED FROM PGSCD.

11. DISTURBED SURFACE AREA:	86,639 SF / 1.99 Ac.
VEGETATIVELY STABILIZED AREA:	15,365 SF
VOLUME OF SPOIL MATERIAL:	29 cubic yards
VOLUME OF CUT:	225 cubic yards
VOLUME OF BORROW MATERIAL:	0 cubic yards
VOLUME OF FILL:	206 cubic yards

12. SOIL TYPES:		
UtgB	UDORTHERENTS, RECLAIMED GRAVEL PITS	HSG C
ZS	ZEKIAH AND ISSUE SOILS, FREQ. FLOODED	HSG B/D

SEEDING AND MULCHING

- SEEDING
 - SPECIFICATIONS
 - ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE AND RATE OF SEED USED.
 - MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
 - INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED.
 - SOD OR SEED MUST BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
 - APPLICATION
 - DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
 - INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
 - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDING AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
 - DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
 - CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDS MUST BE FIRM AFTER PLANTING.
 - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
 - HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
 - IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHORUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE.
 - LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
 - MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
 - WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.
 - MULCHING
 - SPECIFICATIONS (IN ORDER OF PREFERENCE)
 - STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLLY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: ONLY STERILE STRAW MULCH SHOULD BE USED IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
 - WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE
 - WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
 - WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
 - WCFM MATERIALS ARE TO BE MANUFACTURED AND PACKAGED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
 - WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
 - WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.
 - APPLICATION: APPLY MULCH TO ALL SEEDING AREAS IMMEDIATELY AFTER SEEDING.
 - WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDING AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
 - WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 - ANCHORING: PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
 - A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD BE USED ON THE CONTOUR IF POSSIBLE.
 - WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 - SYNTHETIC BINDERS SUCH AS ACRYLIC CLR (AGRO-TACK), DCA, 70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
 - LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 5,000 FEET LONG.

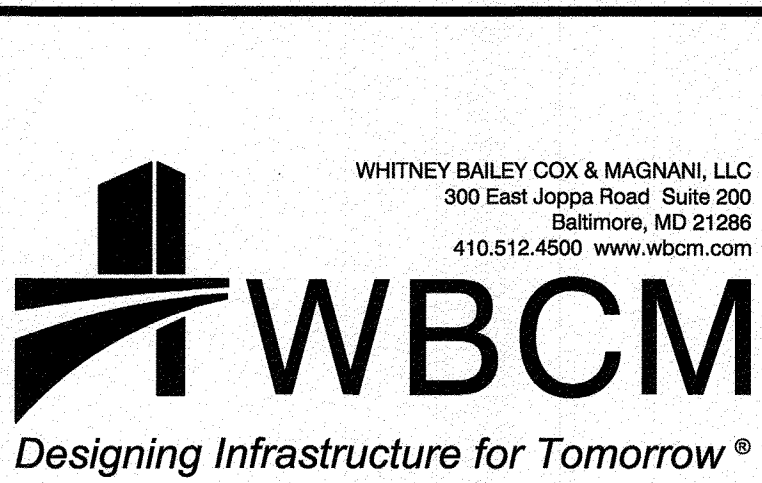
TEMPORARY STABILIZATION

Seed Mixture (Hardness Zone 6b)				Fertilizer Rate (10-20-20)	Lime Rate
Species	Application Rate	Seeding Dates	Depth		
ANNUAL RYEGRASS	40 lb/ac	3/1 - 5/15 8/1 - 10/15	1/2"	436 lb/ac (10 lb / 1000 sf)	2 tons/ac (90 lb / 1000 sf)
FOXTAIL MILLET	30 lb/ac	5/6 - 7/31	1/2"		

- FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
- IF STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY MULCH ALONE AS PRESCRIBED IN SECTION B-4-3 AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

PERMANENT STABILIZATION

- SEED MIXTURES
 - GENERAL USE
 - SEE PERMANENT SEEDING SUMMARY.
 - ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA, NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
 - FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
 - FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.
 - TURFGRASS MIXTURES
 - AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
 - SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
 - KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
 - KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
 - TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
 - KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 50 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1 1/2 TO 3 POUNDS PER 1000 SQUARE FEET.
 - NOTES:
 - TURFGRASS VARIETIES SHOULD BE SELECTED FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND"
 - CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE



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- IDEAL TIMES OF SEEDING
 - WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A)
 - CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)
 - SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)
- TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1/2 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSSE NO DIFFICULTY.
- IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEAR SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/4 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

PERMANENT SEEDING SUMMARY

Species	Application Rate	Seeding Dates	Depth	Fertilizer Rate (10-20-20)			Lime Rate
				N	P205	K20	
TALL FESCUE PERENNIAL RYE BIRDSFOOT TREFOIL	40 lb/ac 25 lb/ac 8 lb/ac						
CREeping RED FESCUE KENTUCKY BLUEGRASS	60 lb/ac 15 lb/ac	3/1 - 5/15 8/1 - 10/15	1/4"-1/2"	45 lb/ac (1 lb / 1000 sf)	90 lb/ac (2.0 lb / 1000 sf)	90 lb/ac (2.0 lb / 1000 sf)	2 tons/ac (100 lb / 1000 sf)
CREeping RED FESCUE CHEWING FESCUE KENTUCKY BLUEGRASS ROUGH BLUEGRASS	30 lb/ac 30 lb/ac 20 lb/ac 15 lb/ac						

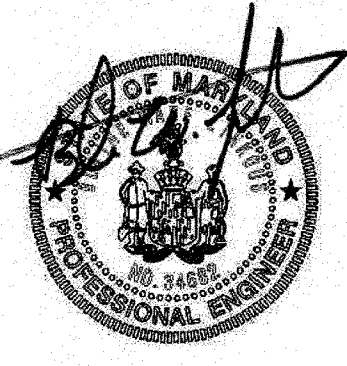
- * IF PLANTING DURING THIS TIME PERIOD ADD ANNUAL RYEGRASS TO THE MIX AT A RATE OF 40 LBS/AC.
- SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).
 - GENERAL SPECIFICATIONS
 - CLASS OF TURFGRASS SOD MUST BE MARYLAND OR VIRGINIA STATE CERTIFIED OR APPROVED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
 - SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS 1/8 INCH, AT THE TIME OF CUTTING. MEASUREMENT ON SOIL TEXTURE (UNTIL THEY ARE FIRMLY ESTABLISHED). THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.
 - STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
 - SOD MUST NOT BE HARVESTED OR TRANSPORTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
 - SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPORTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.
 - SOD INSTALLATION
 - DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
 - LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
 - WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
 - WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.
 - SOD MAINTENANCE
 - IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
 - AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
 - DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/2 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN GRASS HEIGHT BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED.

SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

- SOIL PREPARATION
 - TEMPORARY STABILIZATION
 - SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH. THE SOIL MUST BE IN THE BEST POSSIBLE CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
 - APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
 - INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
 - PERMANENT STABILIZATION
 - A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
 - SOIL PH BETWEEN 6.0 AND 7.0.
 - SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
 - SOIL CONTAINS LESS THAN 5 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WILL BE ACCEPTABLE.
 - SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
 - SOIL CONTAINS ENOUGH SPACE TO PERMIT SUFFICIENT ROOT PENETRATION.
 - APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
 - GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
 - APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
 - MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE. REMOVE LATERAL OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT. LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.
- TOPSOILING
 - TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
 - TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
 - TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLY OF MOISTURE AND PLANT NUTRIENTS.
 - THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
 - AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
 - TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
 - TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILTY LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY.
 - TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
 - TOPSOIL APPLICATION
 - EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
 - UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
 - TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
- SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
 - SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
 - FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
 - LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
 - LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
 - WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE(200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

NOTE TO CONTRACTOR: EROSION AND SEDIMENT CONTROL SHALL BE STRICTLY ENFORCED.

PERMIT NO. 18489-2020-0 SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS



project SITE DEVELOPMENT PLAN **98247**

EROSION AND SEDIMENT CONTROL NOTES

WB&A Trail - Bridge at Patuxent

9501 MERKEL FARMS ROAD & 8654 RACE TRACK ROAD, BOWIE, MD
ELECTION DISTRICT NO. 14, PRINCE GEORGE'S COUNTY, MD
TAX MAP 22 GRID F3 PARCELS 11, 14, 62
scale: AS SHOWN Sheet 28 of 45

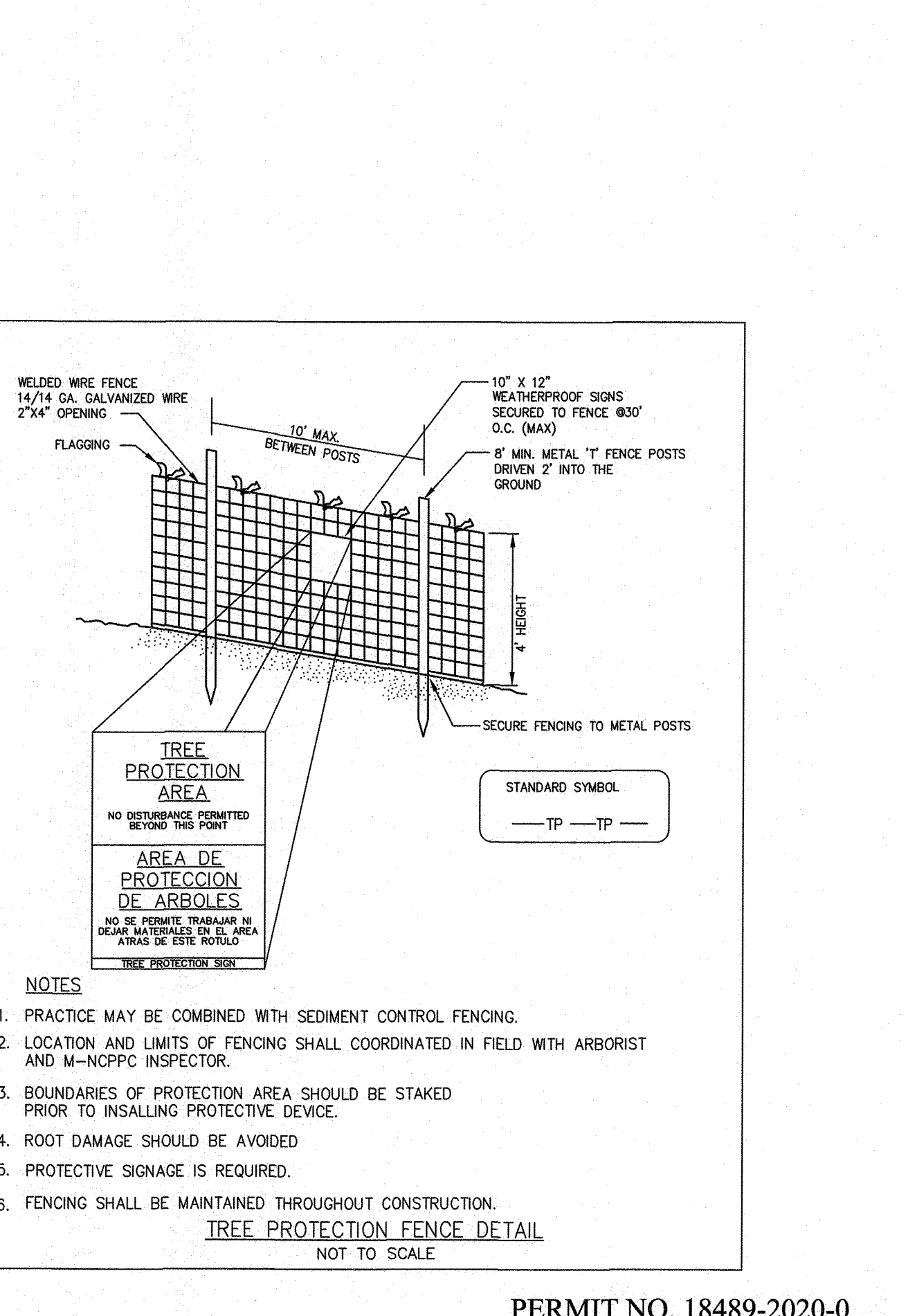
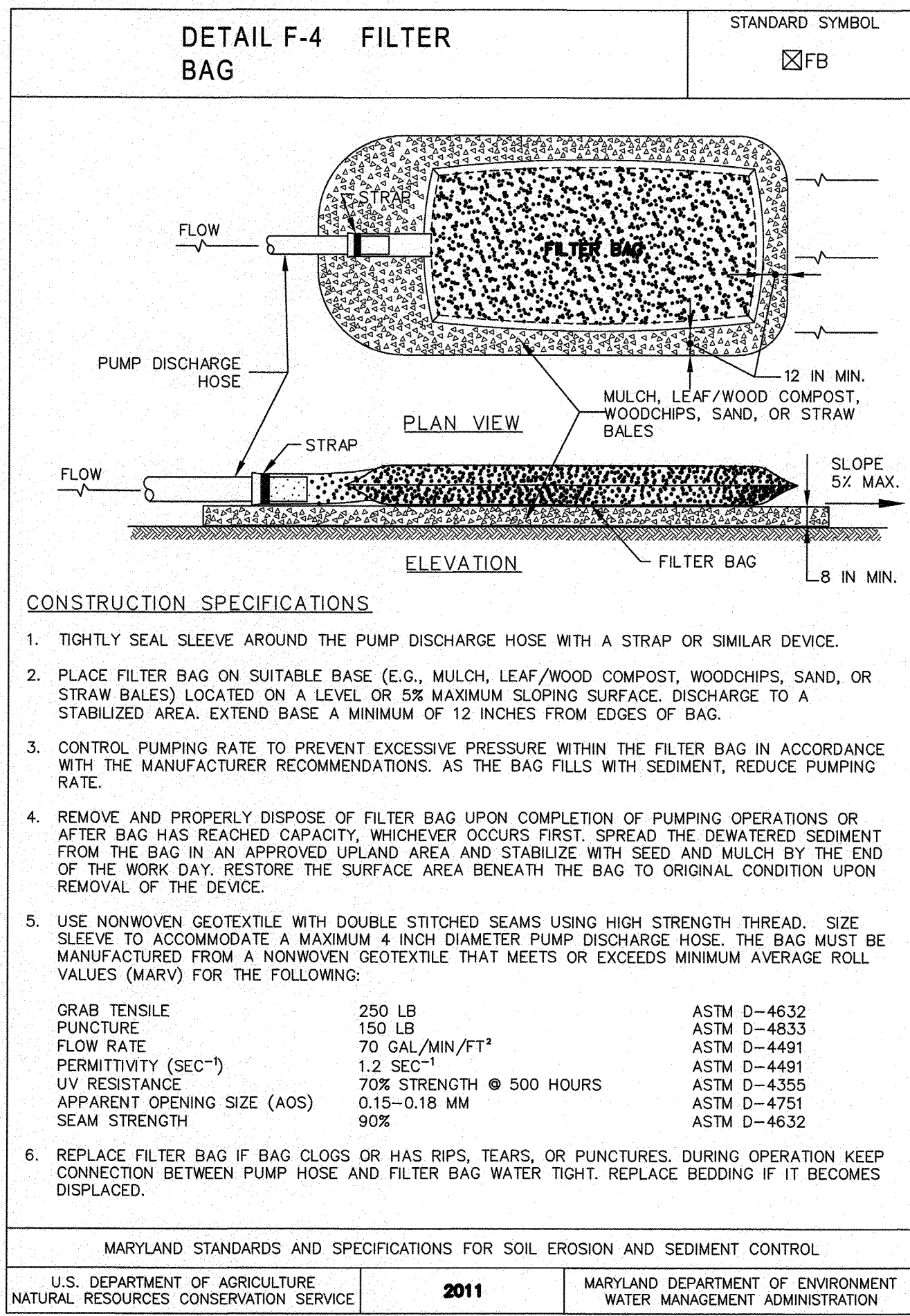
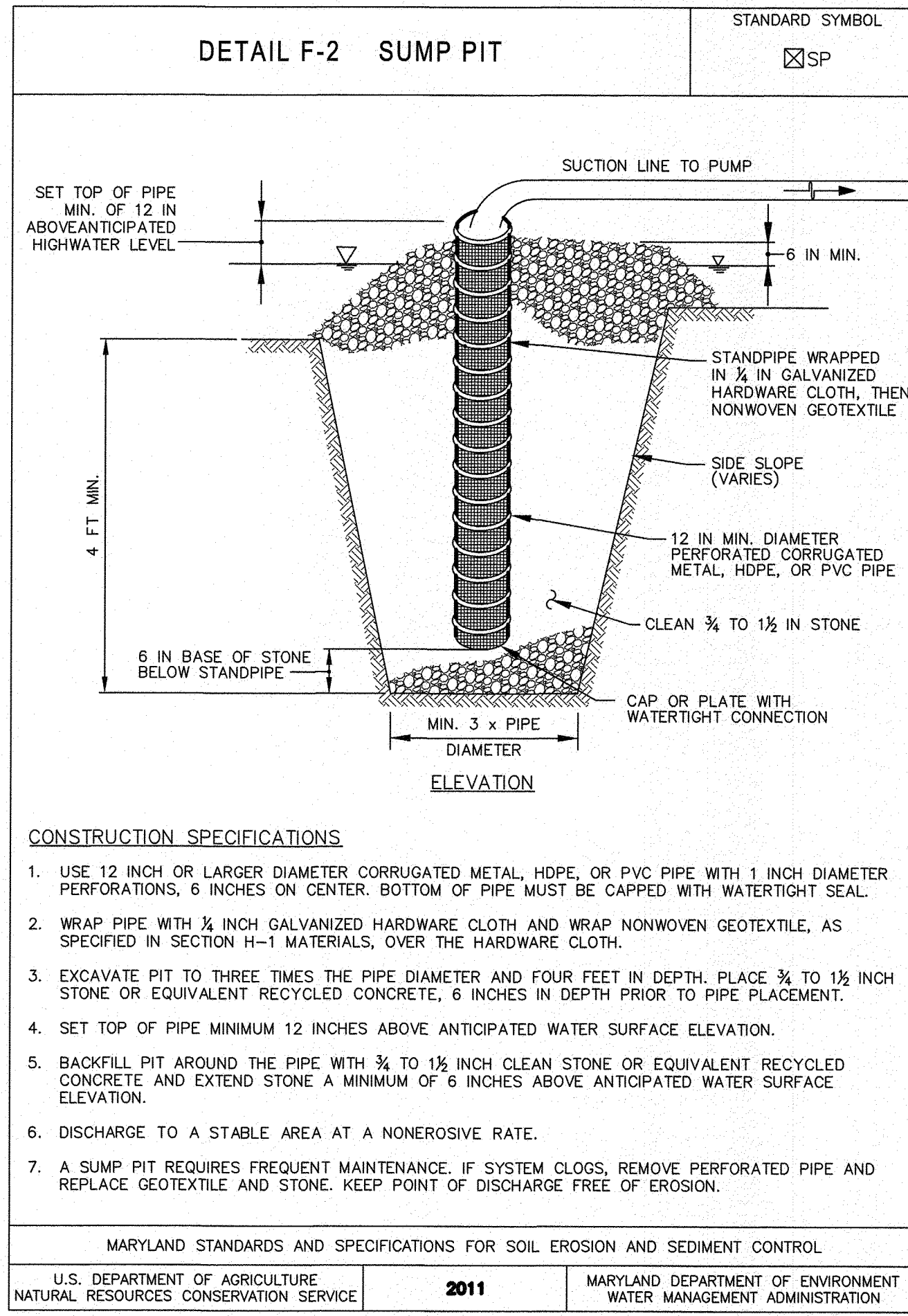
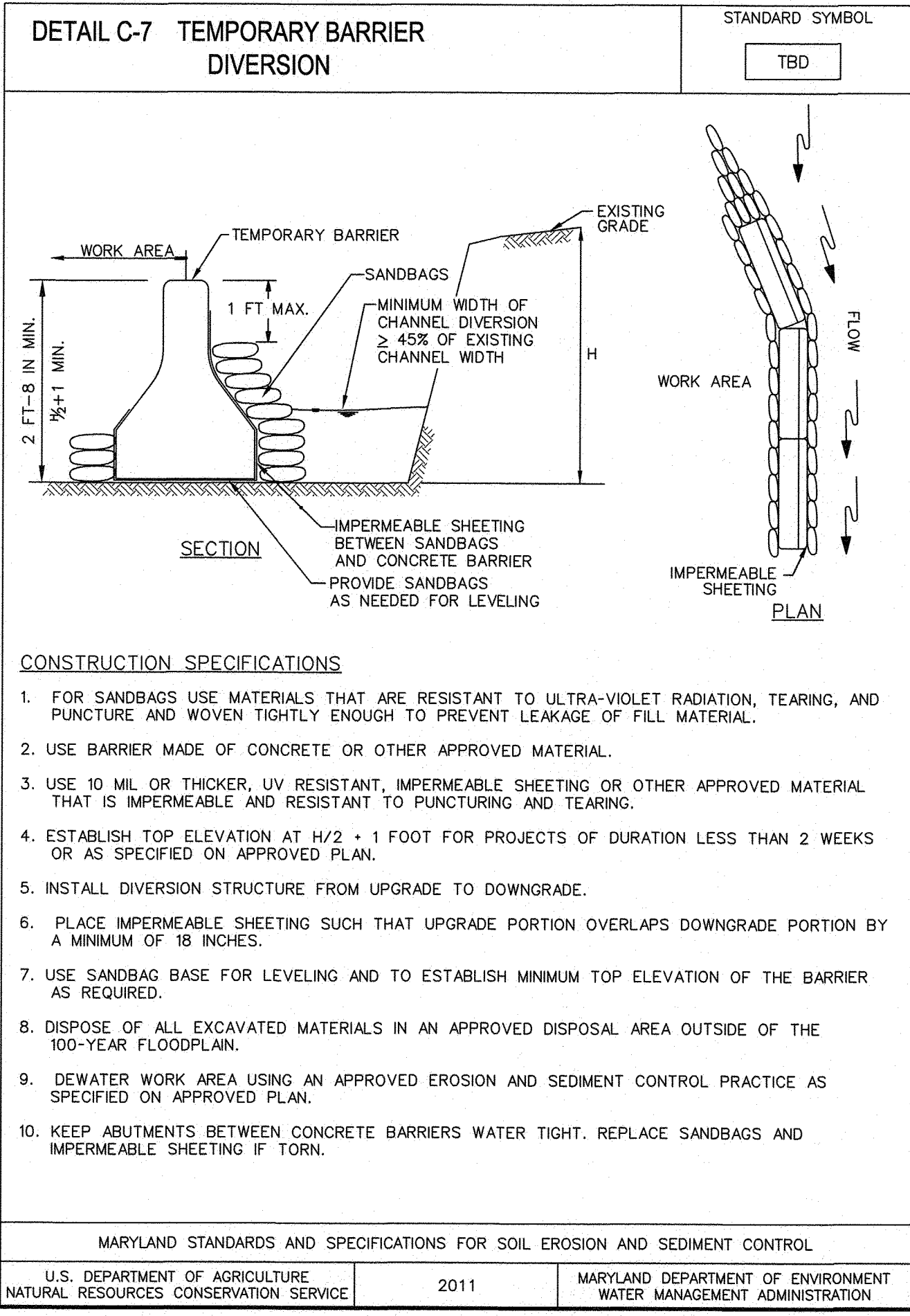
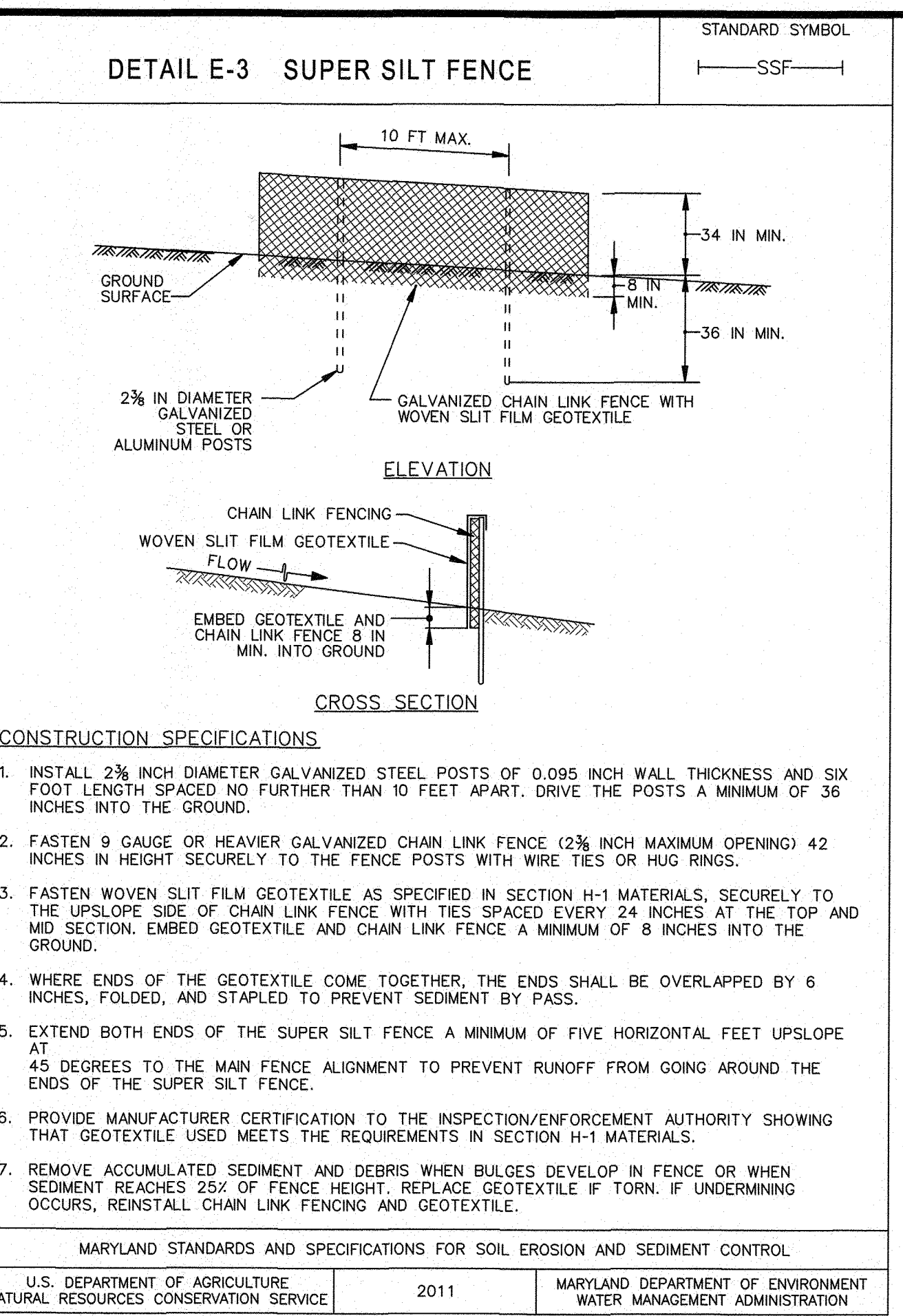
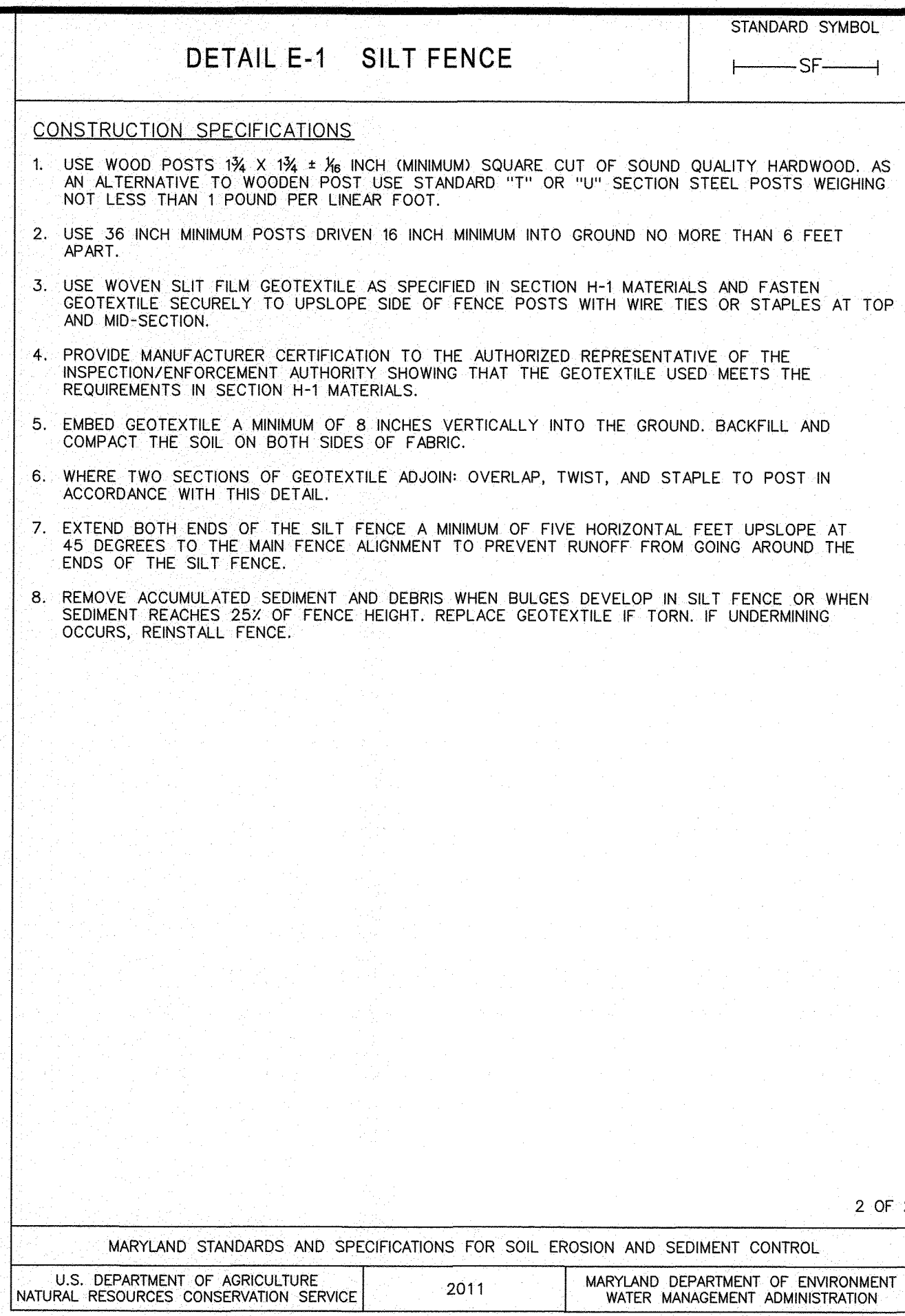
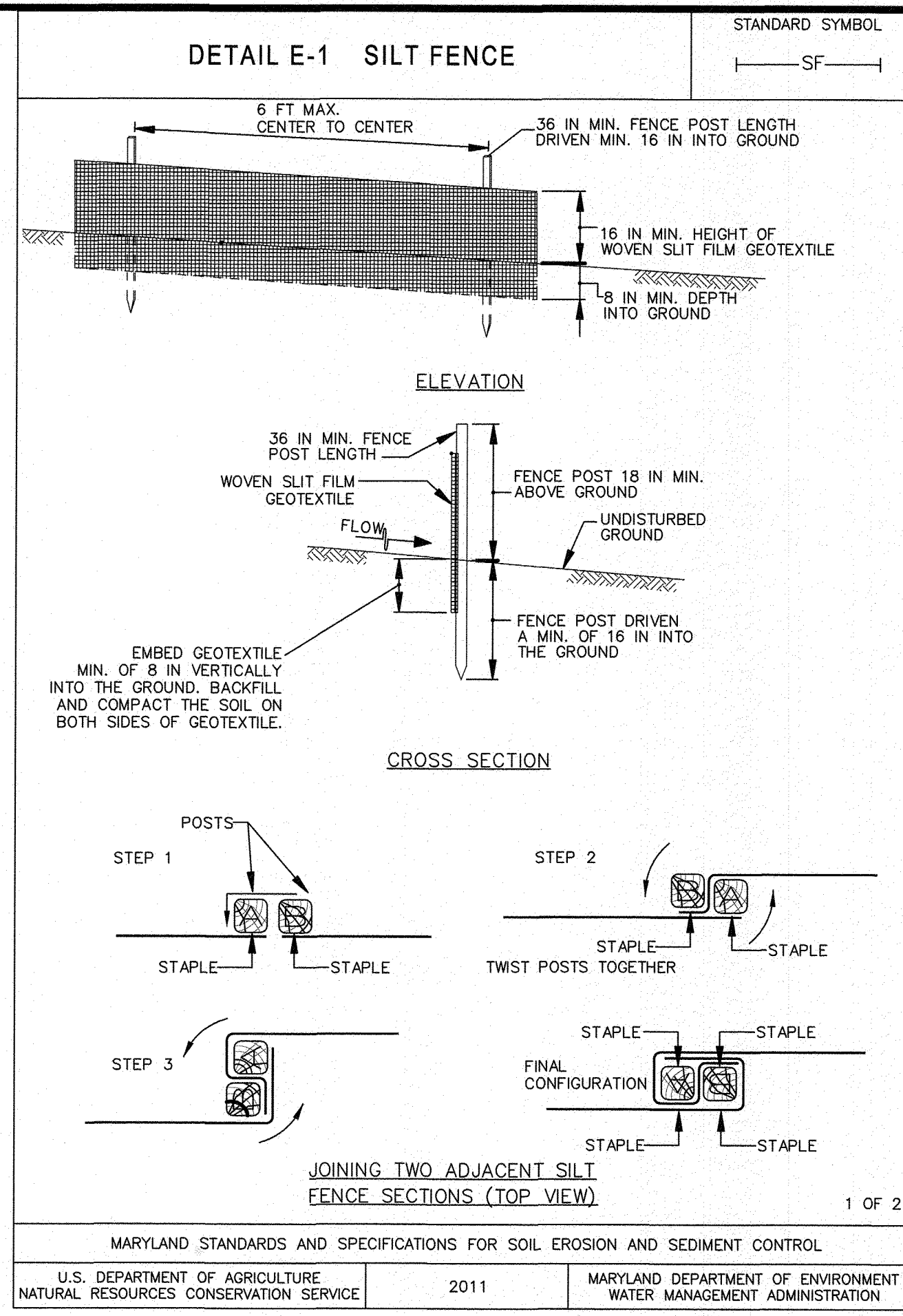
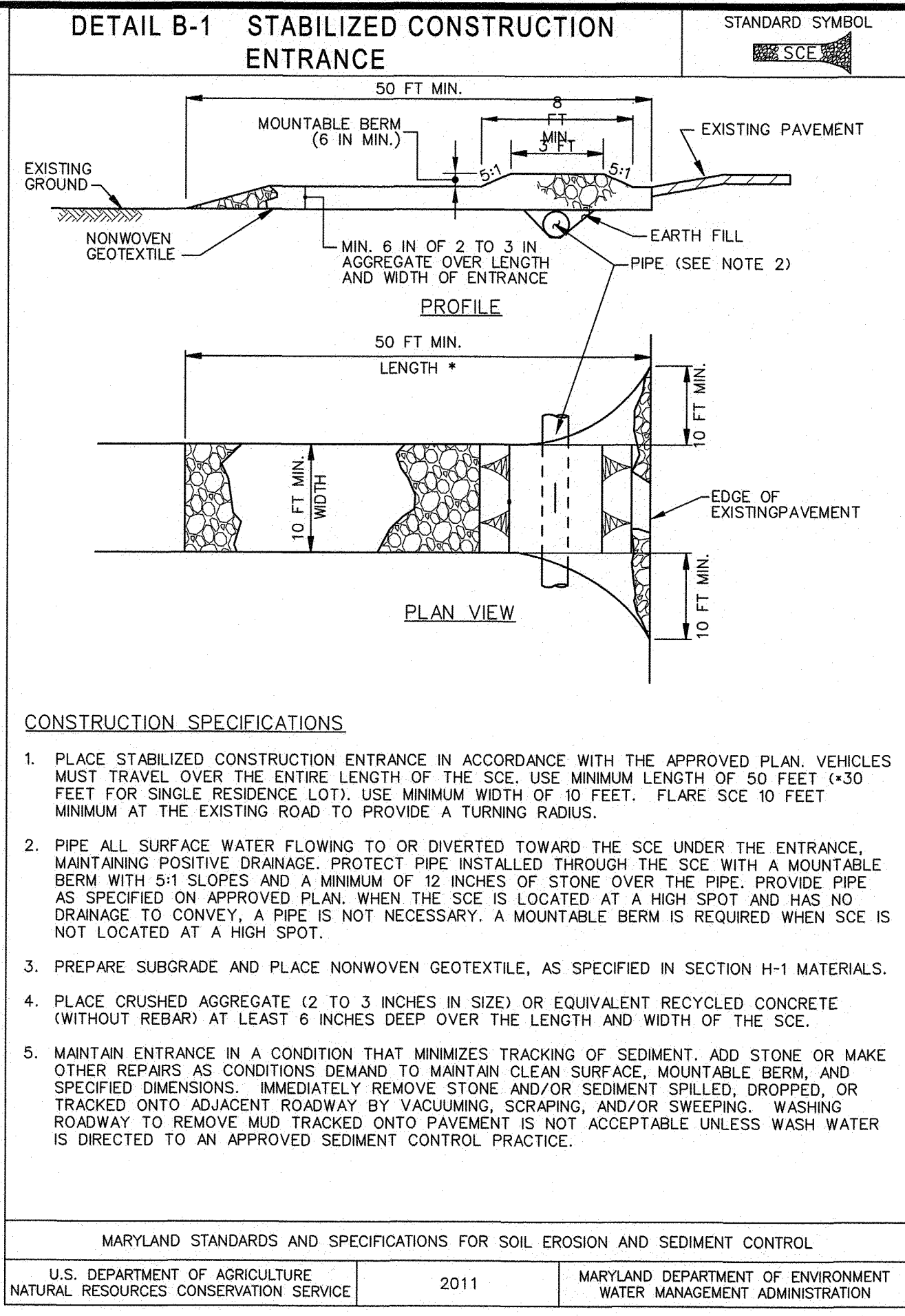
The Maryland-National Capital Park and Planning Commission

Prince George's County
Department of Parks and Recreation
6600 Kenilworth Avenue
Rivendale, Maryland 20737
(301) 699-2481

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REVISIONS		
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Jun 14, 2021 8:32am
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PERMIT NO. 18489-2020-0

SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

FSC# 51-20; SHT12

design	review and approval	review and approval
Randall Hughes landscape architect date	Park Planning and Development Division date	superintendent of parks date
() architect date	central maintenance date	park police date
Blaine Linkous engineer date	region date	 date
Hyunsook Hwang drawn by date	natural resources date	 date

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Rev. No.	Date	Description

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License # 34582
Expiration Date: 07/08/23

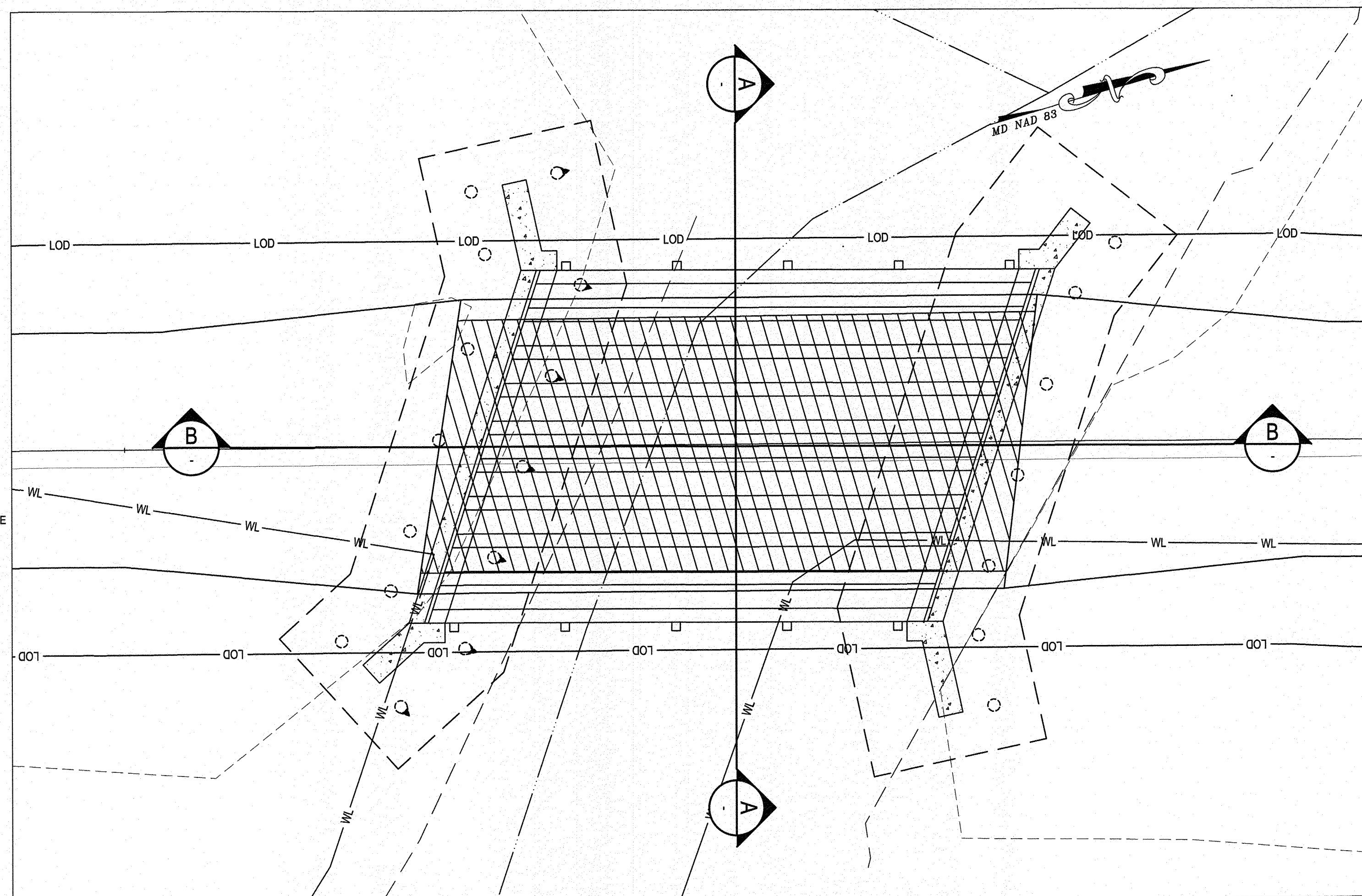
project SITE DEVELOPMENT PLAN **98248**

EROSION AND SEDIMENT CONTROL DETAILS

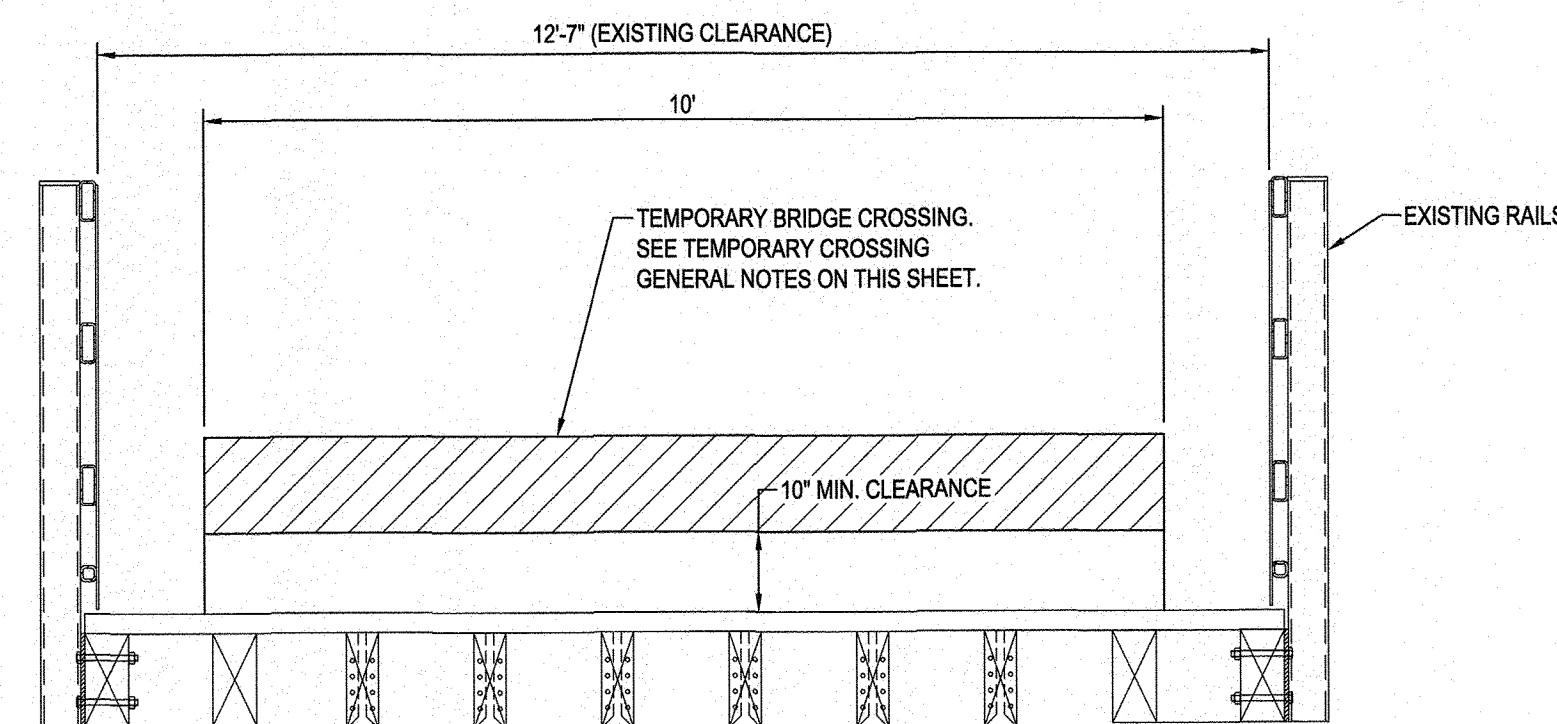
WB&A Trail - Bridge at Patuxent
9501 MERKEL FARMS ROAD & 8654 RACE TRACK ROAD, BOWIE, MD
ELECTION DISTRICT NO. 14, PRINCE GEORGE'S COUNTY, MD
TAX MAP 22 GRID F3 PARCELS 11, 14, 62
scale: AS SHOWN Sheet 29 of 45

TEMPORARY CROSSING GENERAL NOTES:

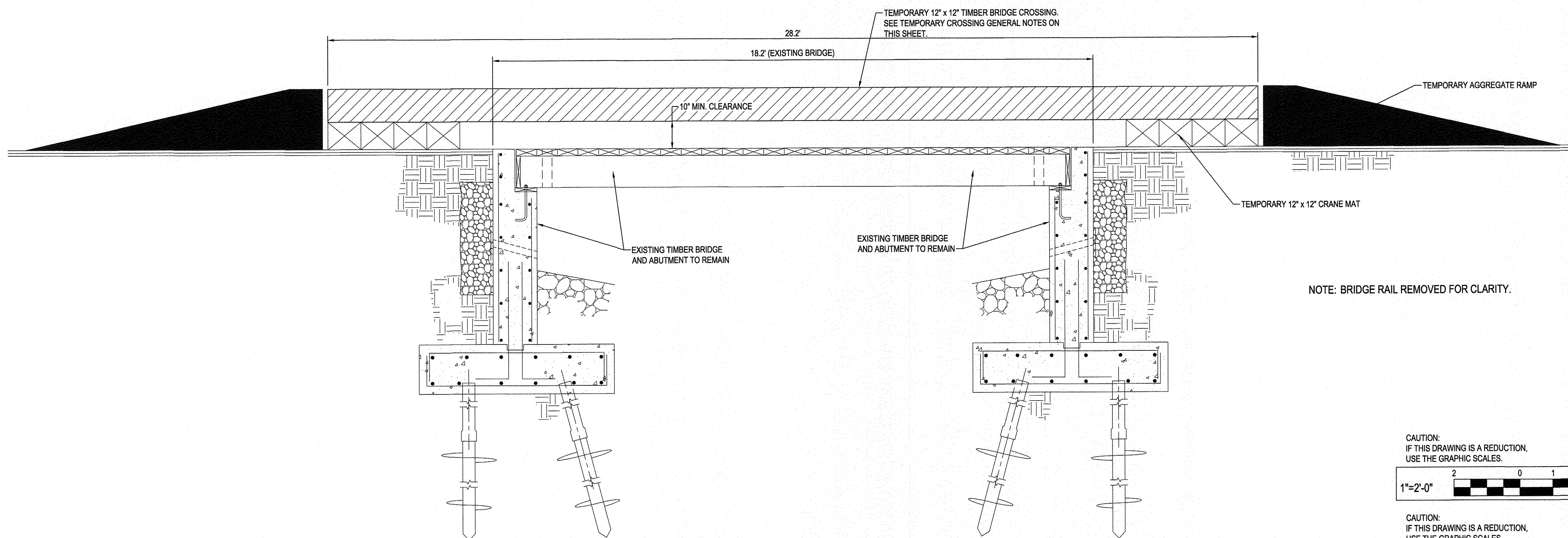
1. THE CONTRACTOR SHALL PROVIDE MEANS AND METHODS FOR TEMPORARY CONSTRUCTION ACCESS CROSSING OF EXISTING TIMBER BOARDWALK AND EXISTING TIMBER BRIDGE.
2. PERFORMANCE REQUIREMENTS:
 - a. DELEGATED DESIGN: THE CONTRACTOR SHALL PROVIDE FULL ENGINEERING DESIGN OF PROPOSED TEMPORARY BRIDGE CROSSINGS INCLUDING: ANY FOUNDATIONS, AND/OR PROVIDE TEMPORARY BRIDGES AND/OR ADDITIONAL ENGINEERED SUPPORTS AS REQUIRED FOR PROPOSED CONSTRUCTION EQUIPMENT AND VEHICLES THAT EXCEED THE MAXIMUM ALLOWABLE VEHICLE WEIGHT LIMIT OF THE EXISTING BOARDWALK AND/OR EXISTING BRIDGE. DELEGATED DESIGN SHALL BE SUBMITTED TO ENGINEER OF RECORD FOR REVIEW AND APPROVAL, THEN SUBMIT TO PRINCE GEORGE COUNTY, DPE, TUAN DUC AT THDUC@CO.PG.MD.US FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
 - b. PLANS AND/OR SECTIONS SHOWN ON THESE DRAWINGS ARE FOR REFERENCE PURPOSES ONLY AND ARE BASED UPON THE DESIGN RECORD DRAWINGS. THE ORIGINAL DESIGN RECORD DRAWINGS MAY BE MADE AVAILABLE TO THE CONTRACTOR FOR REFERENCE PURPOSES ONLY.
 - c. EXISTING BOARDWALK DESIGN LOADING: 10,000 LBS (GROSS VEHICLE WEIGHT)
 - d. EXISTING BRIDGE DESIGN LOADING: 10,000 LBS (GROSS VEHICLE WEIGHT)
 - e. THE CONTRACTOR IS RESPONSIBLE FOR THE INSPECTION AND VERIFICATION OF EXISTING CONDITIONS PRIOR TO THE START OF CONSTRUCTION.
 - f. PROTECTION MEASURES AND/OR TEMPORARY BRIDGE STRUCTURAL SHALL BE FULLY CONTAINED WITH THE PROJECT LIMITS OF DISTURBANCE AS INDICATED ON THE DRAWINGS.
 - g. ALL IMPACTS AND/OR DAMAGE TO THE EXISTING TRAIL SHALL BE RESTORED IN-KIND TO THE PRE-CONSTRUCTION CONDITION.
 - h. ALL IMPACTS AND/OR DAMAGE TO THE EXISTING BOARDWALK AND EXISTING BRIDGE SHALL BE RESTORED IN-KIND TO THE PRE-CONSTRUCTION CONDITION.
3. ACTION SUBMITTALS:
 - a. THE CONTRACTOR SHALL CONDUCT A PRECONSTRUCTION INSPECTION OF THE BOARDWALK AND BRIDGE TO DOCUMENT EXISTING CONDITIONS. THE OWNER SHALL BE NOTIFIED PRIOR TO THE INSPECTION. THE INSPECTION SUBMITTAL SHALL INCLUDE AT A MINIMUM, REPRESENTATIVE PHOTOGRAPHS AND DETAILED LIST OF ANY NOTED EXISTING DEFECTS OR DAMAGE.
 - b. THE CONTRACTOR SHALL CONDUCT A POST-CONSTRUCTION INSPECTION OF THE BOARDWALK AND BRIDGE. THIS SHALL BE CONDUCTED AFTER ALL TEMPORARY CROSSINGS AND/OR TEMPORARY SUPPORT MEASURES HAVE BEEN REMOVED AS PART OF PROJECT SUBSTANTIAL COMPLETION. THE POST-CONSTRUCTION INSPECTION REPORT SHALL DOCUMENT THAT THE EXISTING BOARDWALK AND/OR BRIDGE HAS BEEN TO THE PRE-CONSTRUCTION CONDITION.
 - c. DELEGATED DESIGN SUBMITTAL: FOR TEMPORARY BRIDGE AND/OR ADDITIONAL ENGINEERED SUPPORTS PROPOSED FOR CONSTRUCTION ACCESS CROSSING AND PROTECTION OF THE EXISTING BOARDWALK AND BRIDGE TO COMPLY WITH PERFORMANCE AND DESIGN CRITERIA INCLUDING SHOP DRAWINGS AND ENGINEERING ANALYSIS AND CALCULATIONS DATA SIGNED AND SEALED BY THE STATE OF MARYLAND PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION.
 - d. PRODUCT DATA: PROVIDE CUT SHEETS ON ALL PROPOSED CONSTRUCTION EQUIPMENT PROPOSED TO USE THIS CONSTRUCTION ACCESS ROUTE. SUBMITTAL SHALL INCLUDE: DESCRIPTION, SIZE, CLEARANCE, AND EQUIPMENT WEIGHT (LOADED AND UNLOADED).



PLAN
SCALE: 1" = 3'



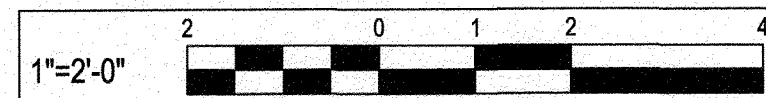
1 SECTION A-A
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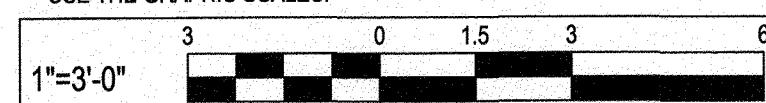
1 SECTION B-B
SCALE: 1" = 2'

NOTE: BRIDGE RAIL REMOVED FOR CLARITY.

CAUTION:
IF THIS DRAWING IS A REDUCTION,
USE THE GRAPHIC SCALES.



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IF THIS DRAWING IS A REDUCTION,
USE THE GRAPHIC SCALES.



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design	review and approval	review and approval
Randall Hughes landscape architect	Park Planning and Development Division	superintendent of parks
Blaine Linkous architect	central maintenance	park police
Hyunsook Hwang engineer	region	
	natural resources	

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License # 34692
Expiration Date: 07/08/23

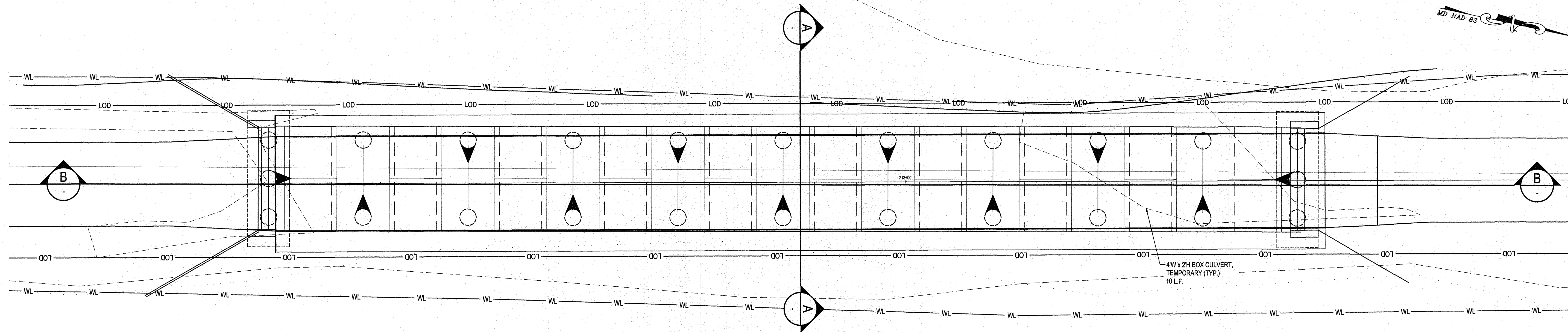
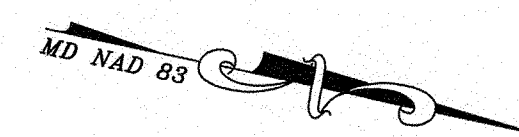
project SITE DEVELOPMENT PLAN **98249**

TEMPORARY BRIDGE PLAN

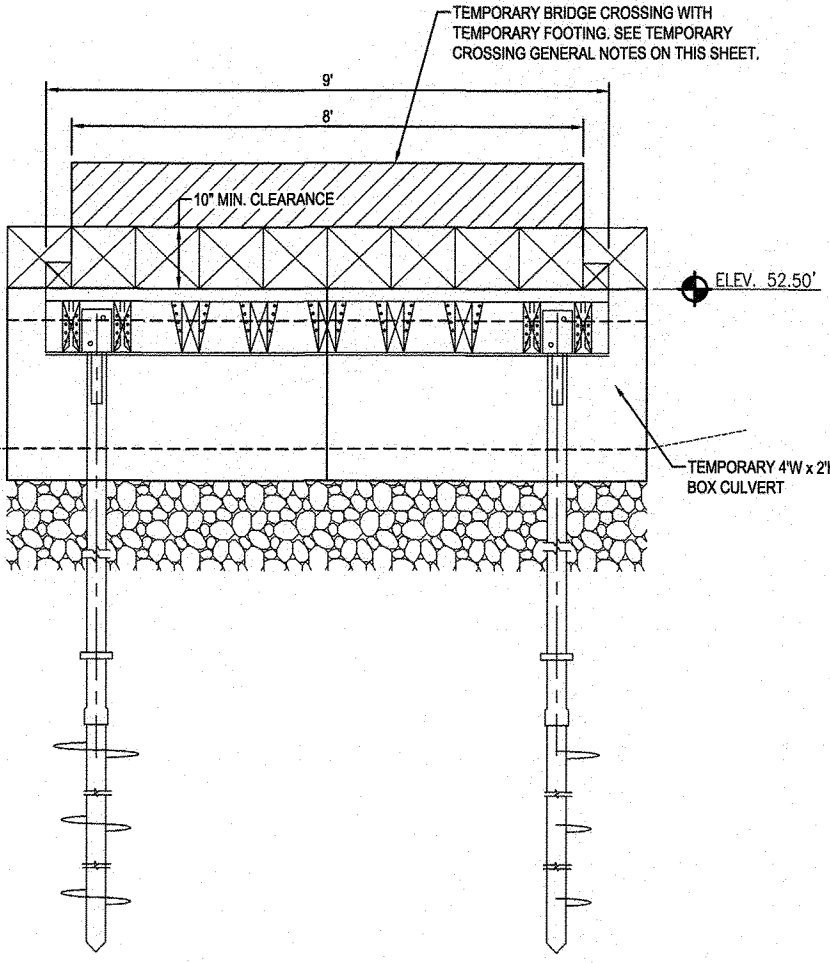
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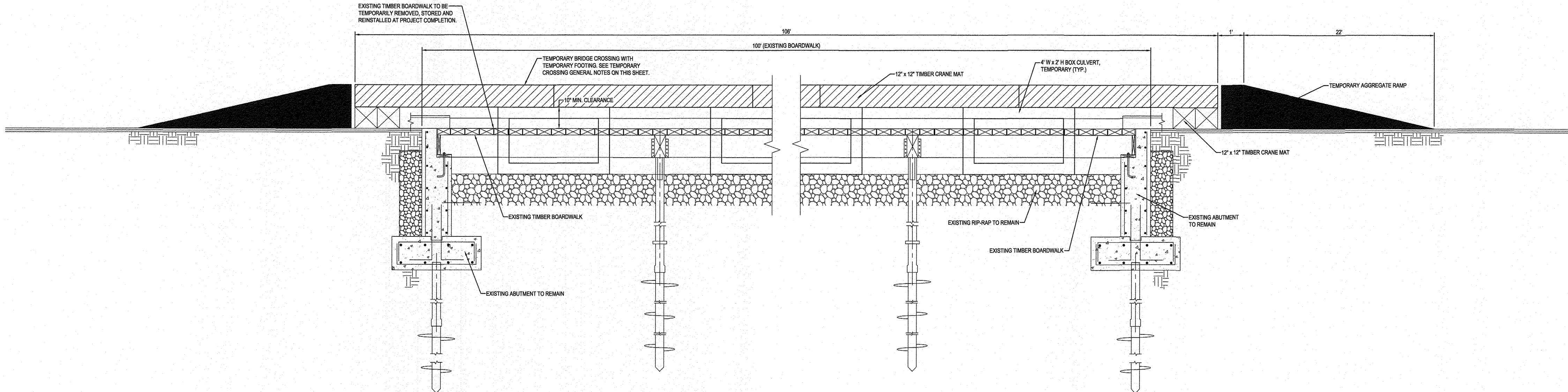
scale: AS SHOWN Sheet 30 of 45



PLAN
SCALE: 1" = 5'



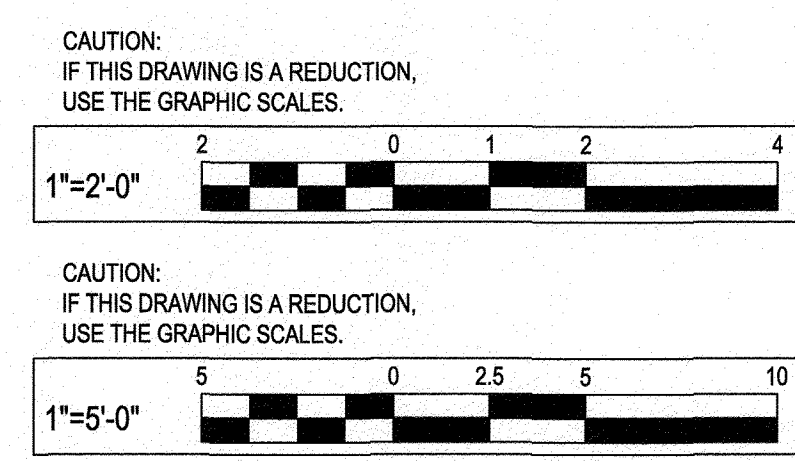
SECTION A-A
SCALE: 1" = 2'



SECTION B-B
SCALE: 1" = 2'

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Hyunsook Hwang drawn by	natural resources	

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300 East Joppa Road Suite 200
Baltimore, MD 21286
410.512.4500 www.wbcm.com

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The Maryland-National Capital Park and Planning Commission

Prince George's County Department of Parks and Recreation
6600 Kenilworth Avenue
Riverdale, Maryland 20737
(301) 699-2481

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Rev. No.	Date	Description

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 # 34982
Expiration Date: 07/08/23

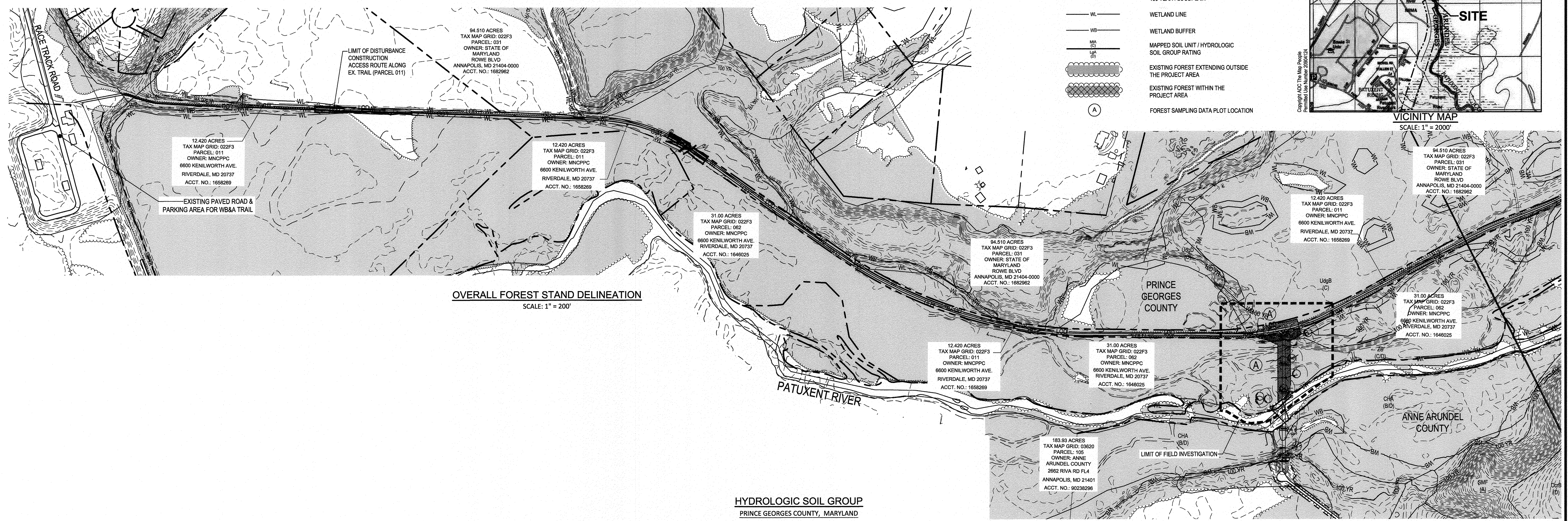
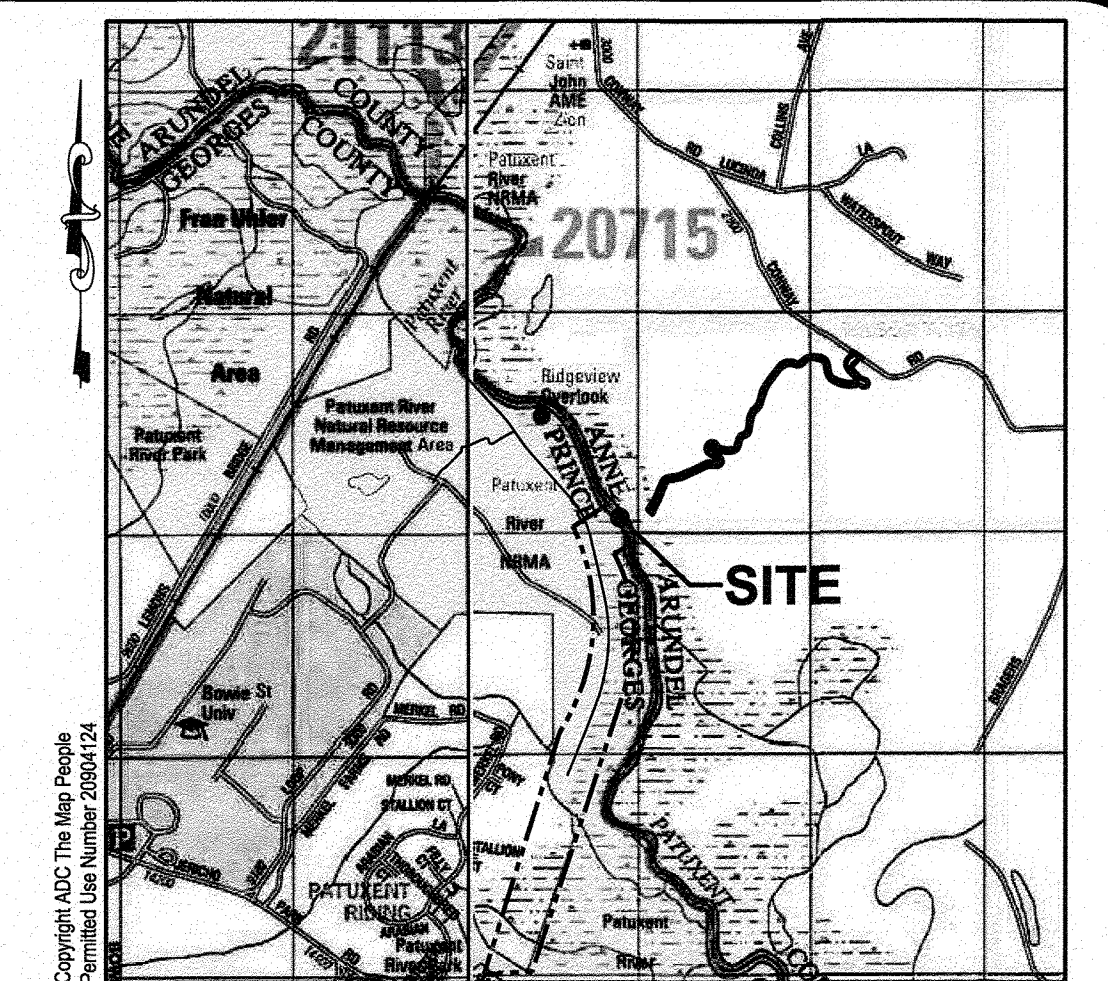
project SITE DEVELOPMENT PLAN **98250**

TEMPORARY BOARDWALK PLAN

WB&A Trail - Bridge at Patuxent
9501 MERKEL FARMS ROAD & 8654 RACE TRACK ROAD, BOWIE, MD
ELECTION DISTRICT NO. 14, PRINCE GEORGE'S COUNTY, MD
TAX MAP 22 GRID F3 PARCELS 11, 14, 62
scale: AS SHOWN Sheet 31 of 46

LEGEND

- BUILDING
- CONCRETE CURB AND GUTTER
- BITUMINOUS PAVEMENT
- CONCRETE PAVEMENT
- ELEVATION CONTOUR
- EXISTING FENCE
- PROPERTY LINE
- LIMIT OF DISTURBANCE
- 100 YEAR FLOODPLAIN
- WETLAND LINE
- WETLAND BUFFER
- MAPPED SOIL UNIT / HYDROLOGIC SOIL GROUP RATING
- EXISTING FOREST EXTENDING OUTSIDE THE PROJECT AREA
- EXISTING FOREST WITHIN THE PROJECT AREA
- FOREST SAMPLING DATA PLOT LOCATION



OVERALL FOREST STAND DELINEATION
SCALE: 1" = 200'

HYDROLOGIC SOIL GROUP
PRINCE GEORGES COUNTY, MARYLAND

MAP UNIT RATING SYMBOL	MAP UNIT NAME	SLOPE	HYDRIC	HSG RATING	K RATING
UdgB	UDORTMENTS, RECLAIMED GRAVEL PITS	0 TO 5%	NO	C	0.15
UdgDF	UDORTMENTS, RECLAIMED GRAVEL PITS	0 TO 5%	NO	C	0.15
ZS	ZEKIAH & ISSUE SOILS, FREQUENTLY FLOODED	0 TO 2%	NO	C/D	0.37

GEOLOGY (from soil survey):

THE PROJECT SITE CONSISTS OF SOILS HAVING A SLOW TO VERY SLOW INFILTRATION RATE (HIGH RUNOFF POTENTIAL) WHEN THOROUGHLY WET. THESE CONSIST CHIEFLY OF SOILS HAVING A LAYER THAT IMPEDES THE DOWNWARD MOVEMENT OF WATER OR SOILS OF MODERATELY FINE TEXTURE OR FINE TEXTURE. THESE SOILS HAVE A SLOW RATE OF WATER TRANSMISSION. IF A SOIL IS ASSIGNED TO A DUAL HYDROLOGIC GROUP (A/D, B/D, OR C/D), THE FIRST LETTER IS FOR DRAINED AREAS AND THE SECOND IS FOR UNDRAINED AREAS. ONLY THE SOILS THAT IN THEIR NATURAL CONDITION ARE IN GROUP D ARE ASSIGNED TO DUAL CLASSES.

EROSION FACTOR K INDICATES THE SUSCEPTIBILITY OF A SOIL TO SHEET AND RILL EROSION BY WATER. FACTOR K IS ONE OF SIX FACTORS USED IN THE UNIVERSAL SOIL LOSS EQUATION (USLE) AND THE REVISED UNIVERSAL SOIL LOSS EQUATION (RUSLE) TO PREDICT THE AVERAGE ANNUAL RATE OF SOIL LOSS BY SHEET AND RILL EROSION IN TONS PER ACRE PER YEAR. THE ESTIMATES ARE BASED PRIMARILY ON PERCENTAGE OF SILT, SAND, AND ORGANIC MATTER AND ON SOIL STRUCTURE AND SATURATED HYDRAULIC CONDUCTIVITY (K_{SAT}). VALUES OF K RANGE FROM 0.02 TO 0.69. OTHER FACTORS BEING EQUAL, THE HIGHER THE VALUE, THE MORE SUSCEPTIBLE THE SOIL IS TO SHEET AND RILL EROSION BY WATER.

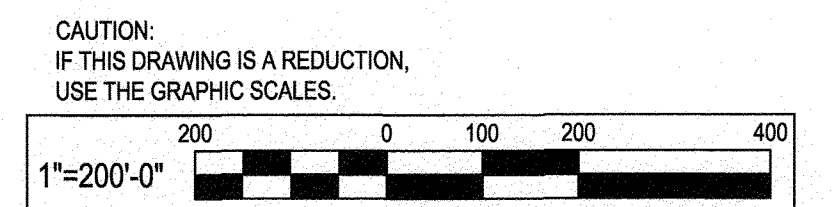
EROSION FACTOR K_w (WHOLE SOIL) INDICATES THE ERODIBILITY OF THE WHOLE SOIL. THE ESTIMATES ARE MODIFIED BY THE PRESENCE OF ROCK FRAGMENTS.

GENERAL INFORMATION TABLE

Layer Category	Layer Name	Value
Zone	Zoning (Zone)	R-O-S
Zone	Aviation Policy Area (APA)	N/A
Administrative	Tax Grid (TMG)	23-A3
Administrative	WSSC Grid (Sheet 20)	213NE13
Administrative	Planning Area (Plan Area)	3
Administrative	Election District (ED)	14.BOWIE
Administrative	Councilmanic District (CD)	4
Administrative	General Plan 2002 Tier (Tier)	RURAL
Administrative	Traffic Analysis Zone (COG)	1168
Administrative	Traffic Analysis Zone (PG)	2321

SITE STATISTICS TABLE

Site Statistics	Total
Gross Tract Area	43.42 Ac
Existing 100-Year Floodplain	0.237 Ac
Net Tract Area	1.711 Ac
Existing Woodland in the Floodplain	0.104 Ac
Existing Woodland Net Tract	0.459 Ac
Existing Woodlands Total	12.48 Ac
Existing PMA	0.00 Ac
Regulated Streams (linear feet of centerline)	0.00 Lf
Riparian (wooded) buffer up to 300 feet wide	0.00 Ac



SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

NRI-1

design	review and approval	review and approval
Randall Hughes landscape architect	Park Planning and Development Division	superintendent of parks
date	date	date
(c) architect	central maintenance	park police
date	date	date
Blaine Linkous engineer	region	
date	date	
Hyunsook Hwang drawn by	natural resources	
date	date	

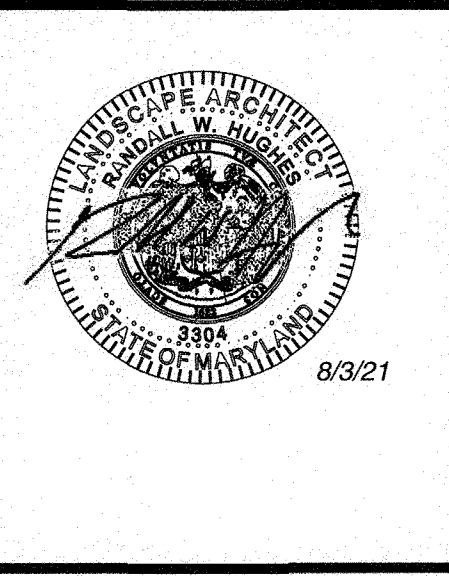
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98251

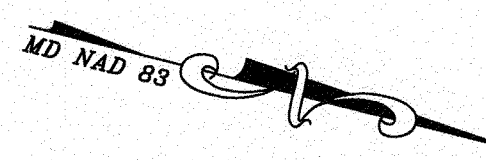
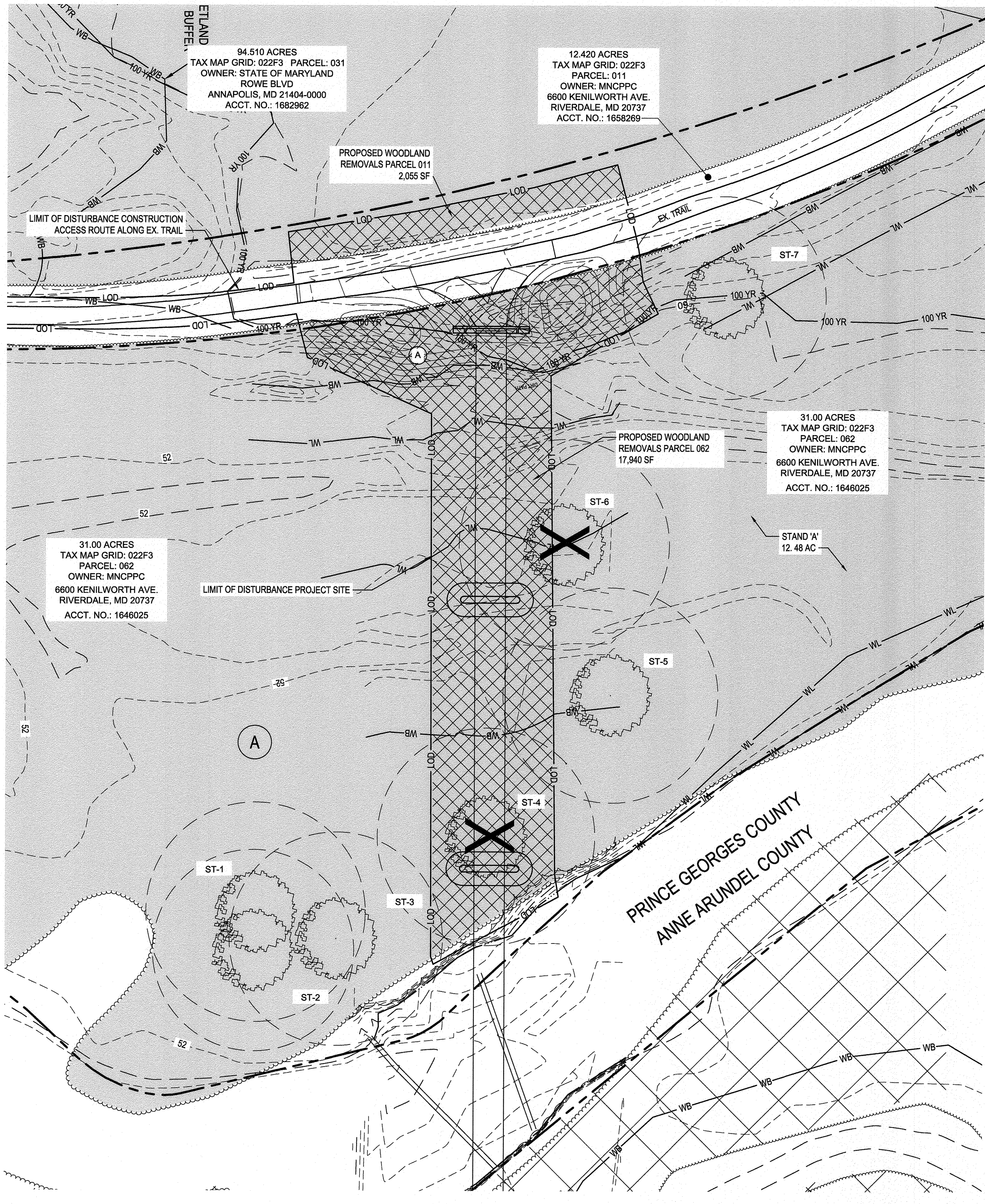
NATURAL RESOURCES INVENTORY / FOREST STAND DELINEATION

WB&A Trail - Bridge at Patuxent

9501 MERKEL FARMS ROAD & 8654 RACE TRACK ROAD, BOWIE, MD
ELECTION DISTRICT NO. 14, PRINCE GEORGE'S COUNTY, MD
TAX MAP 22 GRID F3 PARCELS 11, 14, 62

scale: AS SHOWN Sheet 32 of 45

Jun 14, 2021 8:52am Pdf By: hhwang
 \\wcm\cdata\projects\2014\1407900\Drawings\07_Site\20140407900-C800-Forest Conservation.dwg Tab: SHI-32 PG:15 NR-1



FOREST STAND DELINEATION NARRATIVE

THE PROJECT SITE IS 12.48 ACRES LOCATED ALONG THE PROPERTY OF THE WB & A TRAIL BRIDGE AT THE PATUXENT RIVER IN BOWIE, MARYLAND. THE STAND AND PROJECT ARE WITHIN BOTH PRINCE GEORGE'S AND ANNE ARUNDEL COUNTIES, ADC MAP 5291-GRID A/6 AND ZONED FOR OPEN SPACE, OS.

THE AREA OF THE FSD FIELD INVESTIGATION IS AS INDICATED ON THE PLAN IN THE AREA IMMEDIATELY SURROUNDING THE LIMITS OF DISTURBANCE (LOD) OF THE PROPOSED PROJECT SITE. THE REMAINING AREA SHOWN IS FROM DESKTOP ANALYSIS. THE FOREST DELINEATED WITHIN THE SITE WAS LATE SUCCESSIONAL AND PREDOMINATELY HARDWOOD FOREST. THE PATUXENT RIVER AND ASSOCIATED FLOOD PLAIN ARE ALONG THE WESTERN-MOST LOD BOUNDARY. MULTIPLE POCKET WETLANDS AND ASSOCIATED BUFFERS ARE PRESENT THROUGHOUT.

STAND 'A' EXTENDS BEYOND THE LIMIT OF THE FSD FIELD INVESTIGATION ENCOMPASSING THE NEAR ENTIRE 100-YEAR FLOODPLAIN AREA ALONG THE PATUXENT RIVER. THIS STAND IS REPRESENTATIVE OF A NORMAL FOREST WITH CANOPY AND SUBSTORY VEGETATION. THE FOREST STAND, MOSTLY HARDWOOD TREES, IS IN OVERALL GOOD CONDITION WITH DENSE 50% CANOPY COVER AND FAIR UNDERSTORY AND SPORADIC HERBACEOUS COVER. THE STAND HAS LOW AND FLAT TOPOGRAPHY, TYPICAL OF A LARGE FLOOD PLAIN. THE STAND (PLOT A), AS PART OF THE OVERALL CONTIGUOUS FOREST, WAS DETERMINED TO BE LATE SUCCESSIONAL.

STAND 'A' HAS SIX (6) TREE SPECIES PER ACRE. THE DOMINANT TREES SPECIES FOR STAND A, IN THE OVERSTORY LAYER, INCLUDE SOUTHERN RED OAK - QUERCUS FALCATA, WHITE OAK - QUERCUS ALBA, WILLOW OAK - QUERCUS RUBRA, SWEET GUM - LIQUIDAMBAR STYRACIFLUA, BIRCH - BETULA AND POPLAR - POPULUS. THE DOMINANT SIZE CLASS OF 20-29.9" DBH AND > 30 INCH DBH WITH MANY ADDITIONAL TREES IN THE 12-19.9" DBH SIZE CLASS. COMMON UNDERSTORY SPECIES INCLUDED SWEET GUM, RED MAPLE, BLACK LOCUST, CHESTNUT AND BIRCH. COMMON SPECIES IN THE HERBACEOUS LAYER INCLUDE SEDGES, GRASSES, FERNS, MOSSES, GREENBRIER AND VARIOUS HARDWOOD SAPLINGS. FOREST STAND A HAD A BASAL AREA OF 65 FT²/ACRE. NO SPECIMEN TREES WERE OBSERVED DURING THE FIELD INVESTIGATION.

STAND CONDITION: THE STAND A IS IN OVERALL GOOD CONDITION WITH A 90% CANOPY COVER AND GOOD UNDERSTORY AND HERBACEOUS COVER. THERE IS ONLY ONE INVASIVE SPECIES NOTED IN THE HERBACEOUS UNDERSTORY TREES OR IN THE CANOPY LAYERS. THE STAND IS FLAT AND TREES PROVIDE GOOD COVER TO THE UNDERSTORY. THIS COVER IN ALL THE VEGETATIVE LAYERS PREVENTS EROSION AND IS PROVIDING GOOD STABILIZATION. THE STAND APPEARS TO HAVE A MODERATE WOODLAND SUITABILITY.

STAND FUNCTION: THE FOREST STAND PROVIDES WATER QUALITY, WILDLIFE HABITAT AND LIMITED RECREATIONAL USE AREA. THE STAND CONTAINS NO AREA WHICH CONTAIN PRIORITY RETENTION AREAS. THE STAND WAS RANKED AS PRIORITY 3 STAND.

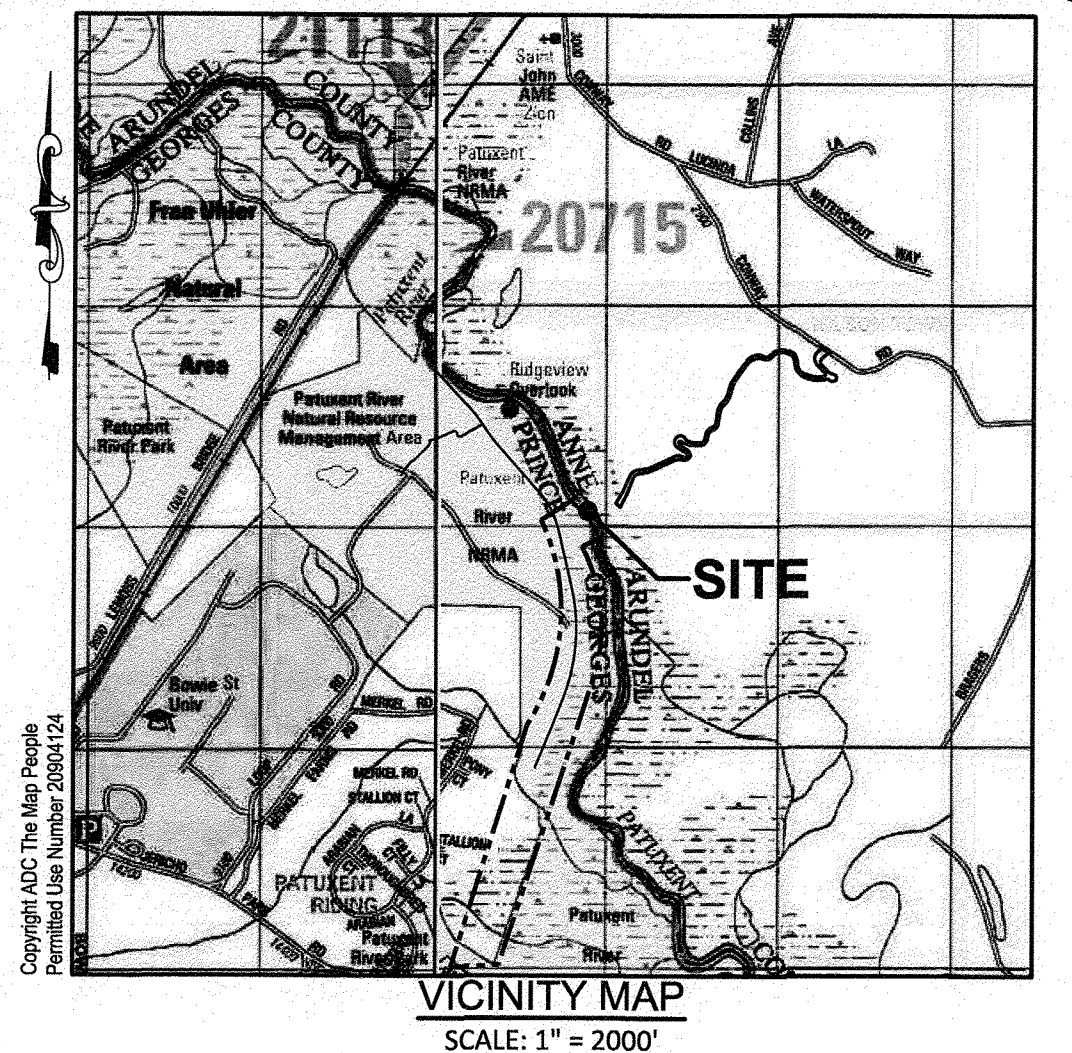
FOREST STAND DELINEATION NOTES

- EXISTING LAND USE IS EXEMPT, PRIMARILY UNDEVELOPED FOREST AREA. ADJACENT LAND USE IS RESIDENTIAL & INSTITUTIONAL.
- SURFACE WATER BODIES (PATUXENT RIVER), WETLANDS, & ASSOCIATED BUFFERS ARE PRESENT THROUGHOUT A MAJORITY OF THE SITE. A FIELD WETLANDS DELINEATION WAS CONDUCTED WITHIN THE LIMITS OF THE FSD FIELD INVESTIGATION AND ARE SHOWN ON THE PLAN. THE REMAINING AREAS ARE SHOWN FROM MAPPED SOURCES AND DESKTOP ANALYSIS.
- LARGE PORTION OF THE SITE ARE WITHIN THE 100-YEAR FLOODPLAIN. SEE PLAN.
- FIELD SAMPLING, SPECIMEN TREE DELINEATION AND FOREST ASSESSMENT PERFORMED BY WHITNEY, BAILEY, COX & MAGNANI, LLC IN OCTOBER 2018. TREE SIZES SHOWN ARE FROM FIELD MEASUREMENTS TAKEN WITH A FORESTRY DIAMETER TAPE. CONDITION NOTED IS OPINION BASED UPON VISUAL FIELD OBSERVATION. THERE WERE NO SPECIMEN TREES OBSERVED WITHIN THE LIMITS OF THE FSD FIELD INVESTIGATION.
- SOIL INFORMATION FROM WEB SOIL SURVEY, PRINCE GEORGE'S COUNTY, MD - VERSION 16, SEPT. 11, 2018

TREE NO.	SPECIES	DBH (in.)	CONDITION
ST #1	Yellow poplar / Liriodendron tulipifera	32.7	Good
ST #2	Yellow poplar / Liriodendron tulipifera	30	Good
ST #3	Quercus Bicolor / White Oak	31.8	Good
ST #4	Yellow poplar / Liriodendron tulipifera	32.4	Good
ST #5	Yellow poplar / Liriodendron tulipifera	32	Fair
ST #6	Biternut / Carya cordiformis	31.3	Poor
ST #7	Pin Oak / Quercus Phellos	30.2	Good

LEGEND

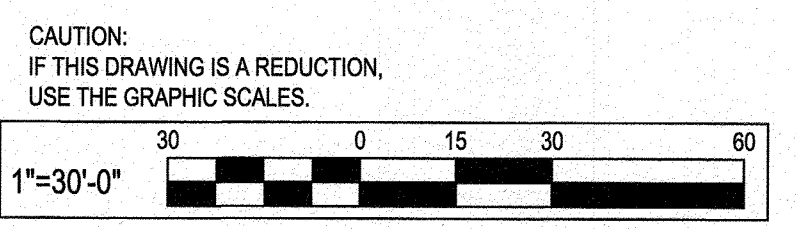
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- EXISTING FOREST WITHIN THE PROJECT AREA
- FOREST SAMPLING DATA PLOT LOCATION
- EXISTING SPECIMEN TREE
- CRITICAL ROOT ZONE (C.R.Z.)
- EXISTING TREE TO BE REMOVED



FOREST STAND SUMMARY & WORKSHEET

PROPERTY NAME:	WB & A TRAIL BRIDGE @ PATUXENT
LOCATION:	BOWIE, MD PRINCE GEORGE'S & ANNE ARUNDEL ADC MAP 5291 - GRID A/6
PREPARED BY:	WBCM
DATE:	AUGUST 16, 2019
STAND VARIABLE	
STAND A (12.48 Acres Area of Field Investigation)	
1. DOMINANT SPECIES / CODOMINANT SPECIES	YELLOW POPLAR / LIRIODENDRON TULIPIFERA, PAW PAW / ASIMINA TRILOBA, RED MAPLE / ACER RUBRA, SWEET GUM / LIQUIDAMBAR STYRACIFLUA
2. SUCCESSIONAL STAGE	LATE
3. BASAL AREA IN S.F. PER ACRE	67
4. SIZE CLASS OF DOMINANT SPECIES	>30" DBH
5. PERCENT OF CANOPY CLOSURE	95.6%
6. NUMBER OF TREE SPECIES PER ACRE	8
7. COMMON UNDERSTORY SPECIES PER ACRE	PAW PAW / ASIMINA TRILOBA, SPICEBUSH / LINDERA BENZOIN, MUSCLEWOOD / CARPINUS CAROLINIANA
8. PERCENT OF UNDERSTORY COVER 3'-20' TALL	40%
9. NUMBER OF WOODY PLANT SPECIES 3'-20' TALL	15
10. COMMON HERBACEOUS SPECIES 0'-3' TALL	SEDGES/ GRASSES/ MOSSES/ FERNS/ GREENBRIER
11. % OF HERBACEOUS & WOODY PLANT COVER 0'-3' TALL	60%
12. LIST OF MAJOR INVASIVE PLANT SPECIES & % OF COVER	Japanese stiltgrass / Microstegium vimineum, Honeysuckle / Lonicera japonica, Barberry / Berberis thunbergii 80%
13. NUMBER OF STANDING DEAD TREES 6" DBH OR GREATER	4
14. COMMENTS	FSD INCLUDES PROPOSED LIMITS OF DISTURBANCE (12.48 AC.) WHICH IS REPRESENTATIVE OF A LARGER CONTIGUOUS FORESTED AREA EXTENDING OFF-SITE. FLOOD PLAIN - PRIORITY ONE AREA. NEW OLD RAILROAD BRIDGE CROSSING
FOREST STAND SUMMARY & WORKSHEET	

C:2



SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

NRI-2

design	review and approval	review and approval
Randall Hughes landscape architect	Park Planning and Development Division	superintendent of parks
architect	central maintenance	park police
Blaine Linkous engineer	region	
Hyunsook Hwang drawn by	natural resources	

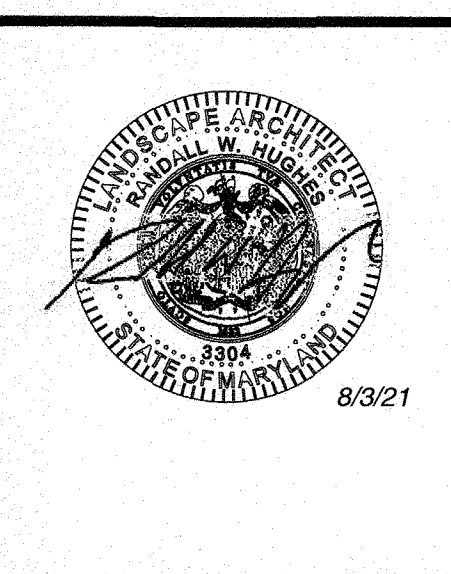
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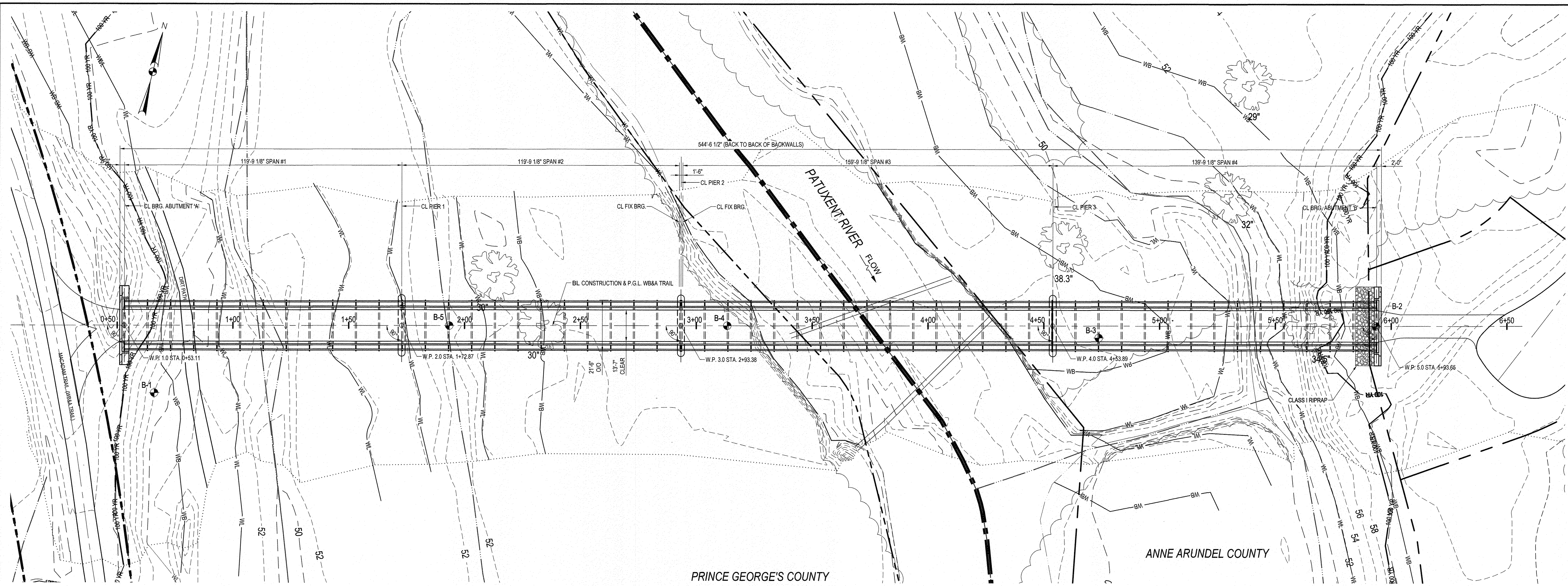


project **98252**

NATURAL RESOURCES INVENTORY / FOREST STAND DELINEATION

WB&A Trail - Bridge at Patuxent

9501 MERKEL FARMS ROAD & 8654 RACE TRACK ROAD, BOWIE, MD
ELECTION DISTRICT NO. 14, PRINCE GEORGE'S COUNTY, MD
TAX MAP 22 GRID F3 PARCELS 11, 14, 62
scale: AS SHOWN Sheet 33 of 45

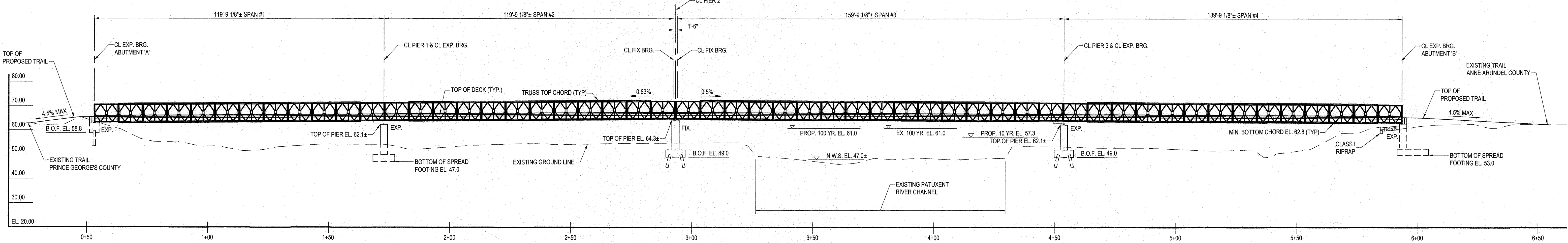


PRINCE GEORGE'S COUNTY

ANNE ARUNDEL COUNTY

PLAN

SCALE: 1" = 20'

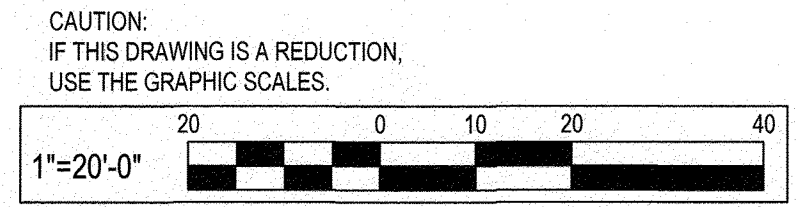


ELEVATION

SCALE: 1" = 20'

- NOTES:**
- FOR BORING LOGS SEE SHEET 4 AND 19.
 - FOR GENERAL NOTES SEE SHEET 35.
 - FOR GEOMETRIC LAYOUT SEE SHEET 36.
 - FOR PILE PLANS SEE SHEET 37.
 - FOR ABUTMENT A PLAN AND ELEVATION SEE SHEET 38.
 - FOR ABUTMENT B PLAN AND ELEVATION SEE SHEET 39.
 - FOR PIER 1 PLAN AND ELEVATION SEE SHEET 40.
 - FOR PIER 2 PLAN AND ELEVATION SEE SHEET 41.
 - FOR PIER 3 PLAN AND ELEVATION SEE SHEET 42.
 - FOR TYPICAL SECTION SEE SHEET 43.
 - FOR STANDARD DETAILS SEE SHEET 44.
 - DIMENSIONS AND ELEVATIONS SHOWN ON THIS SHEET ARE FOR BIDDING PURPOSES ONLY. THE CONTRACTOR SHALL COORDINATE WITH THE SUPERSTRUCTURE FABRICATOR TO LOCATE BEARINGS, SEAT ELEVATIONS AND SET OTHER NECESSARY DIMENSIONS, AS PART OF THE REQUIRED CONTRACTORS SHOP DRAWINGS SUBMISSION.

SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS



WBCM
ARCHITECTURE ENGINEERING CONSTRUCTION

WHITNEY BAILEY COX & MAGNANI, LLC
300 East Joppa Road, Suite 200, Baltimore, MD 21286
MAIN 410.512.4500 FAX 410.324.4100
www.wbcm.com

REVISIONS			
NO.	DESCRIPTION	BY	DATE

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

98253

WB&A TRAIL - BRIDGE AT PATUXENT

GENERAL PLAN AND ELEVATION

APPROVED <i>[Signature]</i> CHIEF ENGINEER	DATE 8/9/21	APPROVED <i>[Signature]</i> PROJECT MANAGER	DATE 8/11/21
APPROVED <i>[Signature]</i> ASSISTANT CHIEF ENGINEER	DATE 8/11/21	APPROVED <i>[Signature]</i> CHIEF, RIGHT-OF-WAY	DATE 8/9/21

SCALE: AS SHOWN
DRAWN BY: D.E.D.
CHECKED BY: J.M.R.
SHEET NO. 34 OF 45
PROJECT NO.: P393600
CONTRACT NO.: P393608

W:\wbc\m\Info\Projects\2014\14017900\Drawings\02-Bridge\2014017900-5101-GP01.dwg Jun 15, 2021 1:35pm Plot By: abinder

\\wbcml\c\Drawings\Projects\2014\14017900\Drawings\02-Bridge\2014073000-S102- General Notes.dwg Jul 23, 2021 4:04pm Plot By: bhwang

GENERAL NOTES:

SPECIFICATIONS:

- ANNE ARUNDEL COUNTY STANDARD SPECIFICATIONS FOR CONSTRUCTION AND STANDARD DETAILS DATED JANUARY 2001.
- PRINCE GEORGE'S COUNTY SPECIFICATIONS AND STANDARDS FOR ROADWAYS AND BRIDGES DATED MARCH 2012.
- 2015 INTERNATIONAL BUILDING CODE (IBC) WITH LOCAL AMENDMENTS
- 2015 INTERNATIONAL EXISTING BUILDING CODE (IEBC)
- 2015 NFPA 1 FIRE CODE AS AMENDED BY THE STATE FIRE PREVENTION CODE
- 2015 NFPA 101 LIFE SAFETY CODE AS AMENDED BY THE STATE FIRE PREVENTION CODE
- 2010 ADA STANDARDS
- COMAR 05.02.02 MARYLAND ACCESSIBILITY CODE
- PRINCE GEORGE'S COUNTY SUBTITLES 4 (BUILDING) AND 11 (FIRE)
- CODE OF MARYLAND (COMAR)
- MDOT SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED JULY 2021
- REVISIONS THEREOF AND ADDITIONS THERETO AND SPECIAL PROVISIONS FOR MATERIALS AND CONSTRUCTION.

DESIGN:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, EIGHTH EDITION, DATED NOVEMBER 2017 AND ALL INTERIMS.
 AASHTO LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES, SECOND EDITION, DATED DECEMBER 2009 AND ALL INTERIMS.
 CONCRETE: $f'_c = 3000$ PSI.
 REINFORCING STEEL: $f_y = 60,000$ PSI.

LOADING:

90 PSF PEDESTRIAN LIVE LOADING OR H-10 VEHICLE LIVE LOADING WITHOUT IMPACT. THE VEHICLE LIVE LOAD SHALL NOT BE PLACED IN COMBINATION WITH THE PEDESTRIAN LIVE LOAD.
 WIND SPEED OF 115 MPH.
 SEISMIC ZONE 1.
 2" FUTURE ASPHALT WEARING SURFACE.

CONCRETE:

ALL STRUCTURE CONCRETE SHALL BE MIX NO. 3 (3500 PSI).

REINFORCING STEEL:

REINFORCING STEEL SHALL CONFORM TO ASTM A 615 GRADE 60.
 ONLY GRADE 60 CAN BE USED ON THIS PROJECT.
 ALL SPLICES, NOT SHOWN, SHALL BE LAPPED PER MD SHA'S BAR LAP CHARTS. MINIMUM COVER FOR ANY BAR SHALL BE 2" UNLESS OTHERWISE NOTED, WITH THE EXCEPTION OF BARS AT THE TOP OF PIERS AND BARS AT THE BOTTOM AND SIDES OF ALL FOOTINGS WHICH SHALL HAVE 3" MINIMUM COVER.
 REINFORCING STEEL IN THE ABUTMENT BACKWALLS, CHEEKWALLS, ABUTMENT BRIDGE SEATS AND PIER BRIDGE SEATS SHALL BE EPOXY COATED.

PREFABRICATED BRIDGE SUPERSTRUCTURE:

THE CONTRACTOR SHALL SUBMIT FOR REVIEW AND APPROVAL THE DESIGN CALCULATIONS AND DESIGN DRAWINGS FOR THE PREFABRICATED PEDESTRIAN BRIDGE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MARYLAND, VERIFYING THAT THE PROPOSED STRUCTURE MEETS THE MINIMUM DESIGN CRITERIA OF AASHTO AND THE PROPOSED LOADINGS SHOWN ON THIS SHEET. NO MATERIAL SHALL BE ORDERED OR FABRICATED UNTIL WRITTEN APPROVAL IS RECEIVED FOR THE PROPOSED STRUCTURE. THE CONTRACTOR SHALL ALSO SUBMIT THE DRAWINGS FOR THE BRIDGE RAILING DETAILS INCLUDING THE SUPPORT CONNECTIONS WITH THE BRIDGE MEMBERS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MARYLAND FOR REVIEW AND APPROVAL.

THE MAXIMUM UNFACTORED SUPERSTRUCTURE REACTION THAT WAS USED IN DESIGN IS AS FOLLOWS

ABUTMENT A :	150 KIPS
PIER 1 :	322 KIPS
PIER 2 :	382 KIPS
PIER 3 :	409 KIPS
ABUTMENT B :	171 KIPS

DIMENSIONS AND ELEVATIONS SHOWN ON THE PLANS ARE FOR BIDDING PURPOSES ONLY. THE CONTRACTOR SHALL COORDINATE WITH THE PEDESTRIAN BRIDGE FABRICATOR TO LOCATE BEARINGS, SEAT ELEVATIONS AND SET OTHER NECESSARY DIMENSIONS.

THE BRIDGE SHALL MEET THE CRITERIA INDICATED ABOVE AND THE BRIDGE MUST FIT ON THE SUBSTRUCTURE UNITS DETAILED ON THE PLANS.

ALL PREFABRICATED STRUCTURAL STEEL INCLUDING BEARINGS, NUTS, BOLTS AND WASHERS SHALL BE HOT DIPPED GALVANIZED. ANY ALTERNATIVE COATING MUST HAVE PRIOR APPROVAL FROM THE COUNTY.

OPEN JOINTS ARE NOT PERMITTED OVER SUBSTRUCTURE UNITS.

STEEL PILES:

ALL PILES SHALL CONFORM TO ASTM A572, GRADE 50.

SPREAD FOOTINGS:

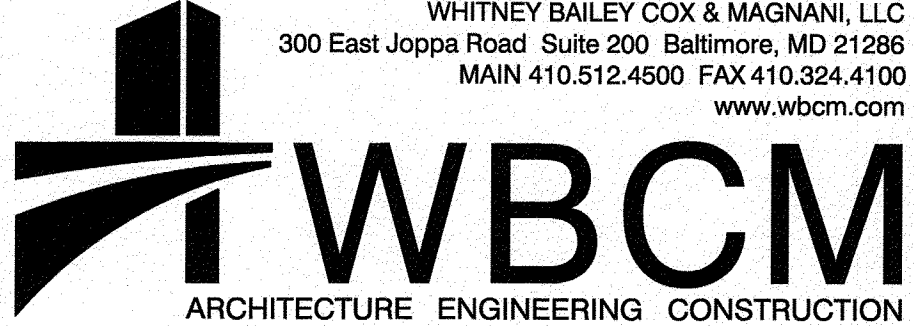
A GEOTECHNICAL ENGINEER SHALL OBSERVE FOOTING SUBGRADES PRIOR TO CONCRETE PLACEMENT TO EVALUATE WHETHER SUBGRADE SOILS ARE AS ANTICIPATED IN THE GEOTECHNICAL REPORT. COSTS ASSOCIATED WITH PROVIDING ON SITE SUPPORT AND APPROVAL OF SUBGRADE SHALL BE CONSIDERED INCIDENTAL TO THE PERTINENT STRUCTURE EXCAVATION ITEM.

KEYS:

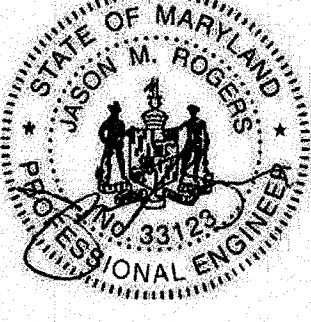
ALL CONCRETE CONSTRUCTION KEYS ARE NOMINAL SIZE.

SEE OVERALL PROJECT COVER SHEET
 FOR SHA AND FAP CONTRACT NUMBERS

- NOTES:**
1. FOR GENERAL PLAN AND ELEVATION SEE SHEET 34.
 2. FOR GEOMETRIC LAYOUT SEE SHEET 36.
 3. FOR PILE PLANS SEE SHEET 37.
 4. FOR ABUTMENT A PLAN AND ELEVATION SEE SHEET 38.
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 9. FOR TYPICAL SECTION SEE SHEET 43.
 10. FOR STANDARD DETAILS SEE SHEET 44.

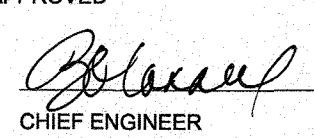
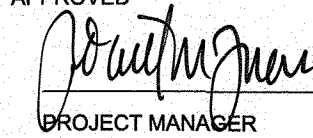
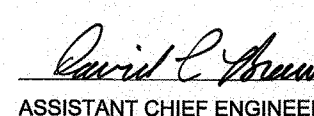



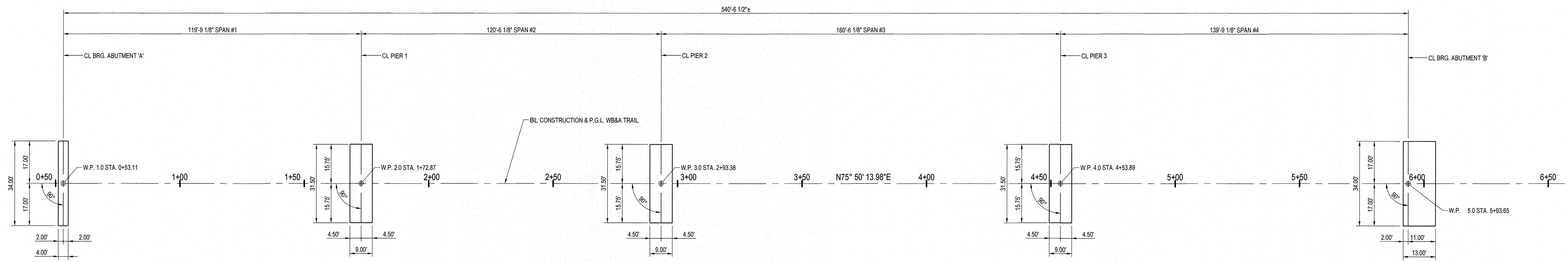
WHITNEY BAILEY COX & MAGNANI, LLC
 300 East Joppa Road Suite 200 Baltimore, MD 21286
 MAIN 410.512.4500 FAX 410.324.4100
 www.wbcm.com



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 License #33123 Expiration Date: 1/5/2022

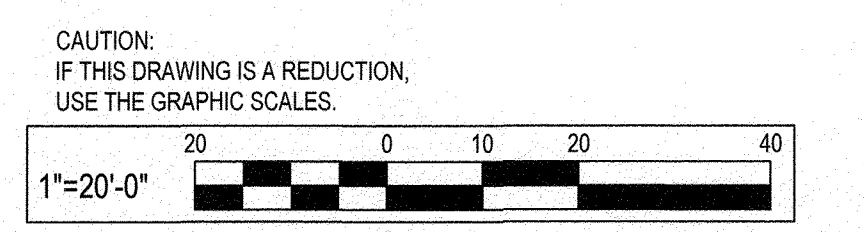
REVISIONS			
NO.	DESCRIPTION	BY	DATE

ANNE ARUNDEL COUNTY			
DEPARTMENT OF PUBLIC WORKS			
			98254
WB&A TRAIL - BRIDGE AT PATUXENT			
APPROVED	DATE	APPROVED	DATE
	8/9/21		8/11/21
CHIEF ENGINEER		PROJECT MANAGER	
APPROVED	DATE	APPROVED	DATE
	8/11/21		8/6/21
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT-OF-WAY	
SCALE:	AS SHOWN		
DRAWN BY:	D.E.D.		
CHECKED BY:	J.M.R.		
SHEET NO.	35 OF 45		
PROJECT NO.:	P393600		
CONTRACT NO.:	P393608		
GENERAL NOTES			



GEOMETRIC AND FOOTING LAYOUT
SCALE: 1" = 20'

WORKING POINT DATA				
W.P.	STATION	OFFSET	NORTHING	EASTING
1.0	0+53.11	0.00	494952.0423	1384689.9738
2.0	1+72.87	0.00	494981.3449	1384806.0937
3.0	2+93.38	0.00	495010.8309	1384922.9403
4.0	4+53.89	0.00	495050.1042	1385078.5719
5.0	5+93.65	0.00	495084.3003	1385214.0838



SEE OVERALL PROJECT COVER SHEET
FOR SHA AND FAP CONTRACT NUMBERS

- NOTES:
- FOR GENERAL PLAN AND ELEVATION SEE SHEET 34.
 - FOR GENERAL NOTES SEE SHEET 35.
 - FOR PILE PLANS SEE SHEET 37.
 - FOR ABUTMENT A PLAN AND ELEVATION SEE SHEET 38.
 - FOR ABUTMENT B PLAN AND ELEVATION SEE SHEET 39.
 - FOR PIER 1 PLAN AND ELEVATION SEE SHEET 40.
 - FOR PIER 2 PLAN AND ELEVATION SEE SHEET 41.
 - FOR PIER 3 PLAN AND ELEVATION SEE SHEET 42.
 - FOR TYPICAL SECTION SEE SHEET 43.
 - FOR STANDARD DETAILS SEE SHEET 44.

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ARCHITECTURE ENGINEERING CONSTRUCTION

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REVISIONS			
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ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

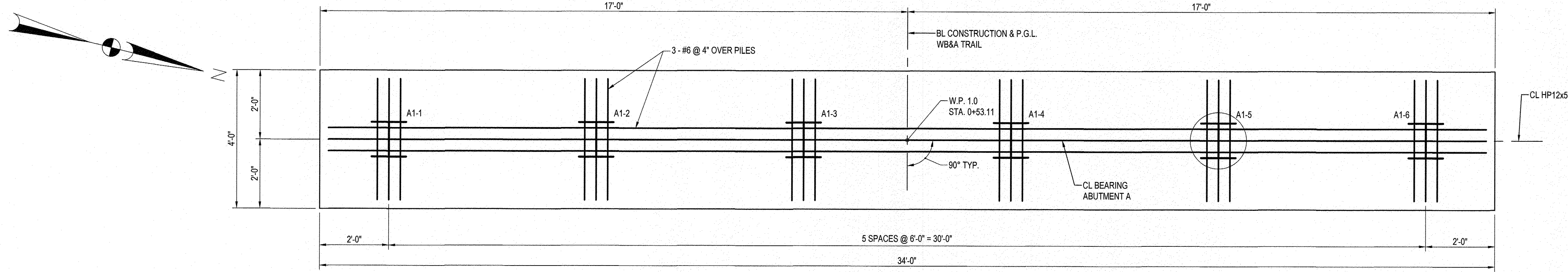
98255

WB&A TRAIL - BRIDGE AT PATUXENT

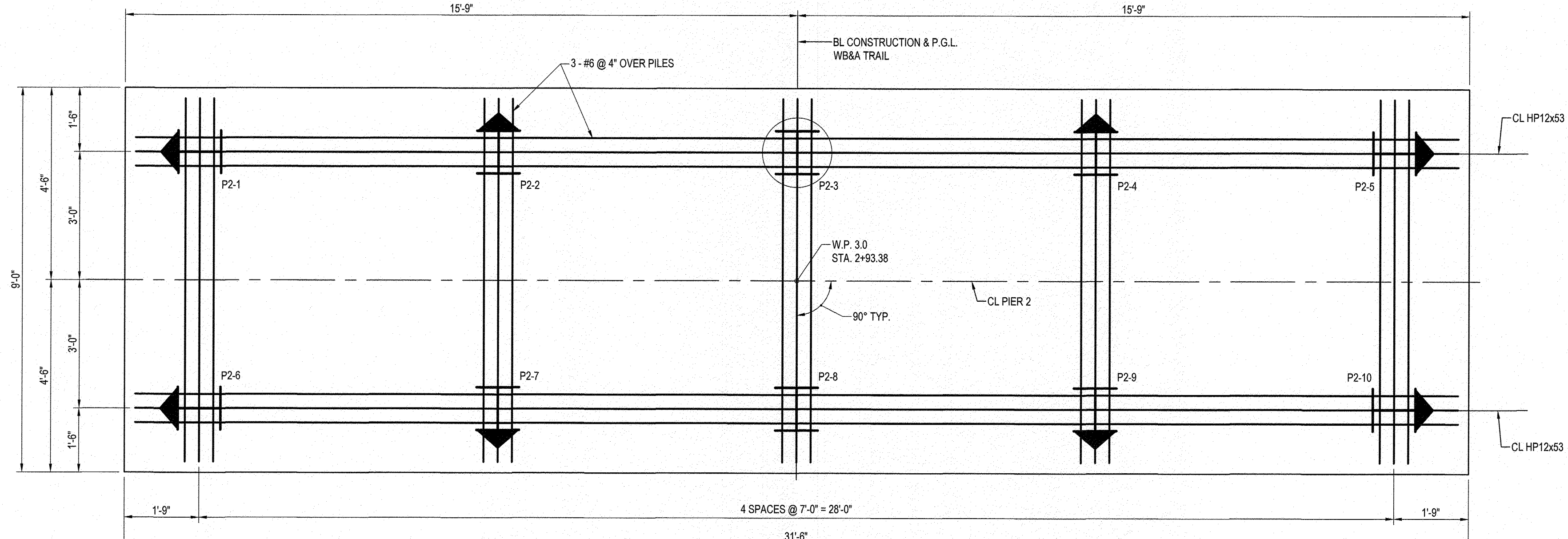
GEOMETRIC AND FOOTING LAYOUT

APPROVED <i>[Signature]</i> CHIEF ENGINEER	DATE 8/9/21	APPROVED <i>[Signature]</i> PROJECT MANAGER	DATE 8/11/21	SCALE: AS SHOWN
APPROVED <i>[Signature]</i> ASSISTANT CHIEF ENGINEER	DATE 8/11/21	APPROVED <i>[Signature]</i> CHIEF, RIGHT-OF-WAY	DATE 8/11/21	DRAWN BY: D.E.D.
SHEET NO. 36 OF 45				CHECKED BY: J.M.R.
PROJECT NO.: P393600				CONTRACT NO.: P393608

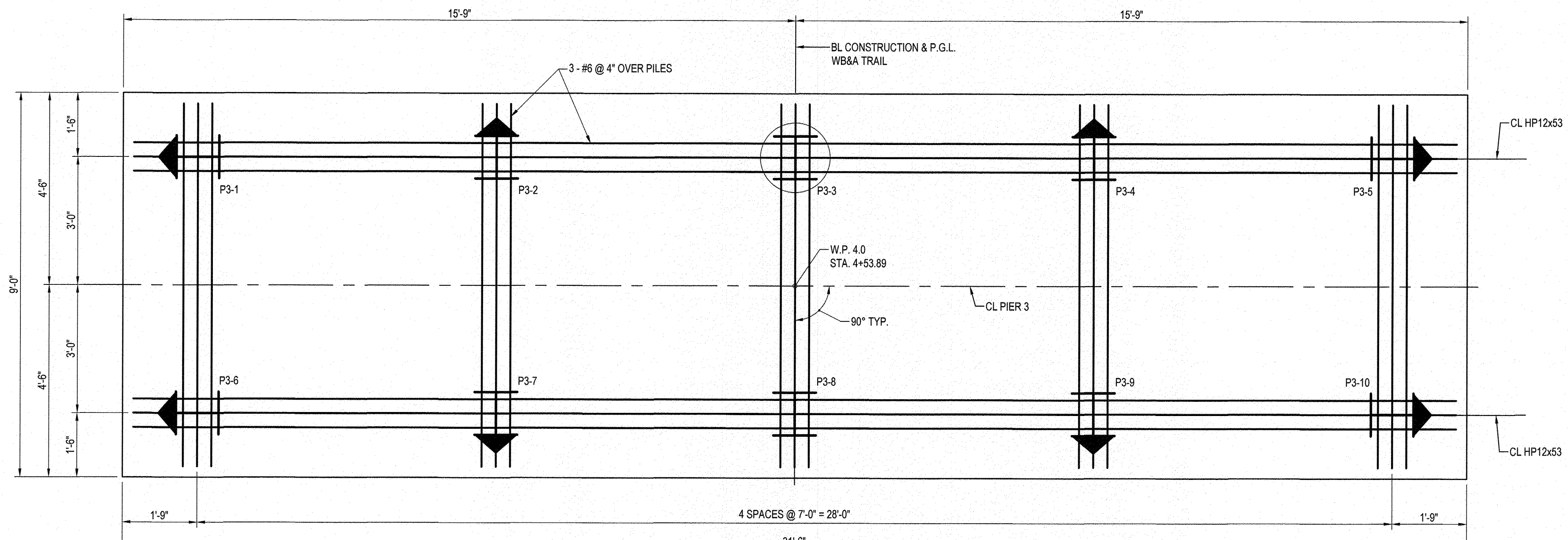
\\wbcmlc\l\Projects\2014\14017900\Drawings\02-Bridge\2014017900-S103-CL01.dwg Jun 16, 2021 - 1:40pm Plot By: cshinder



PILE PLAN ABUTMENT A
SCALE: 1/2" = 1'-0"



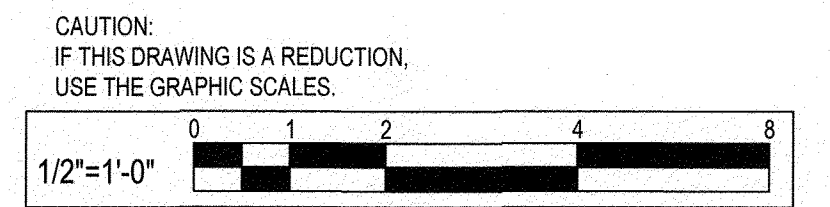
PILE PLAN PIER 2
SCALE: 1/2" = 1'-0"



PILE PLAN PIER 3
SCALE: 1/2" = 1'-0"

- NOTES:
1. PLUMB PILE DENOTED THIS:
 2. BATTERED PILE DENOTED THIS:
 3. PILES TO BE BATTERED IN DIRECTION OF ARROW AT 1:4 BATTER.
 4. TEST PILE DENOTED THIS:
 5. X1-# DENOTES PILE NUMBER LOCATION.
 6. PILES TO BE HP12x53 STEEL H PILING.
 7. THE MINIMUM DRIVING LOAD AND MINIMUM PENETRATION SHOWN ON THESE PLANS MUST BE ACHIEVED FOR EACH PILE. IF THE ESTIMATED TIP ELEVATION IS NOT REACHED OR IS EXCEEDED WHILE ACHIEVING THE MINIMUM DRIVING LOAD VALUE AND THE MINIMUM PENETRATION, THE PILE WILL BE CONSIDERED SATISFACTORY.
 8. 1 (KIP) = 1,000 (LBS)
 9. SHOP PLANS SHALL SHOW HOW REBARS ARE TO BE TIED AS WELL AS HOW THEY WILL BE HELD IN PLACE ABOVE PILING WHILE POUR IS BEING MADE.
 10. DYNAMIC PILE MONITORING AND CAPACITY ANALYSIS IN ACCORDANCE WITH CONTRACT SPECIFICATION SECTION 410 SHALL BE REQUIRED FOR TEST PILES.
 11. THE MINIMUM PILE DRIVING RESISTANCE AT ABUTMENT A, PIER 2, AND PIER 3 CONSIDER SCOUR.

PILE DATA							
SUBSTRUCTURE UNIT	PILE TYPE	REQUIRED HAMMER ENERGY (FT-LB)	MIN. PENETRATION ELEVATION	ESTIMATED TIP ELEVATION	LRFD FACTORED PILE LOAD (KIPS)	MINIMUM PILE DRIVING RESISTANCE (KIPS)	ACTUAL AVERAGE TIP ELEVATION
ABUTMENT A	HP12x53	51,200 (MAX.)	EL. 24.00	EL. 19.00	65	284	
PIER 2	HP12x53	51,200 (MAX.)	EL. 24.00	EL. 19.00	94	325	
PIER 3	HP12x53	51,200 (MAX.)	EL. 24.00	EL. 19.00	97	400	



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 2. FOR GENERAL NOTES SEE SHEET 35.
 3. FOR GEOMETRIC LAYOUT SEE SHEET 36.
 4. FOR ABUTMENT A PLAN AND ELEVATION SEE SHEET 38.
 5. FOR ABUTMENT B PLAN AND ELEVATION SEE SHEET 39.
 6. FOR PIER 1 PLAN AND ELEVATION SEE SHEET 40.
 7. FOR PIER 2 PLAN AND ELEVATION SEE SHEET 41.
 8. FOR PIER 3 PLAN AND ELEVATION SEE SHEET 42.
 9. FOR TYPICAL SECTION SEE SHEET 43.
 10. FOR STANDARD DETAILS SEE SHEET 44.

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License #33123 Expiration Date: 1/5/2022

REVISIONS			
NO.	DESCRIPTION	BY	DATE

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

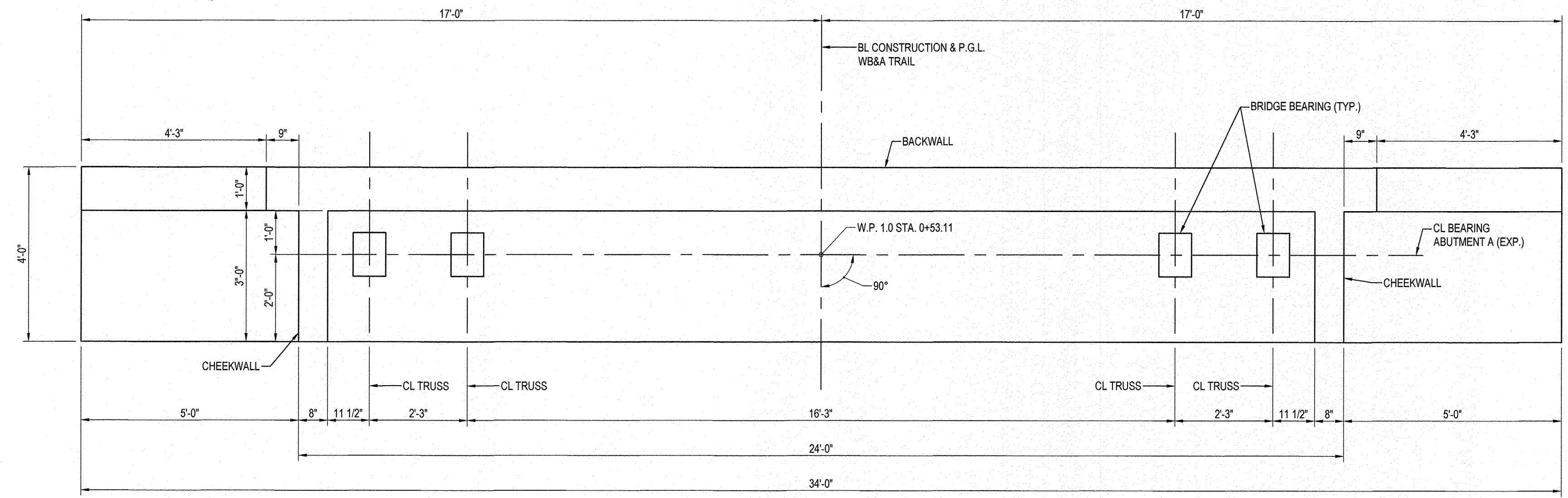
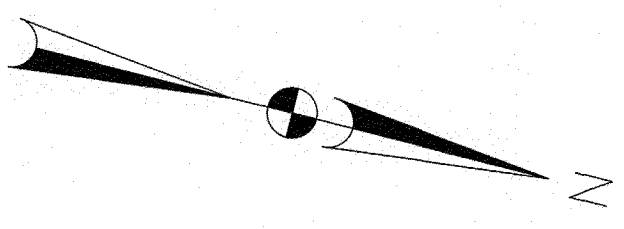
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WB&A TRAIL - BRIDGE AT PATUXENT

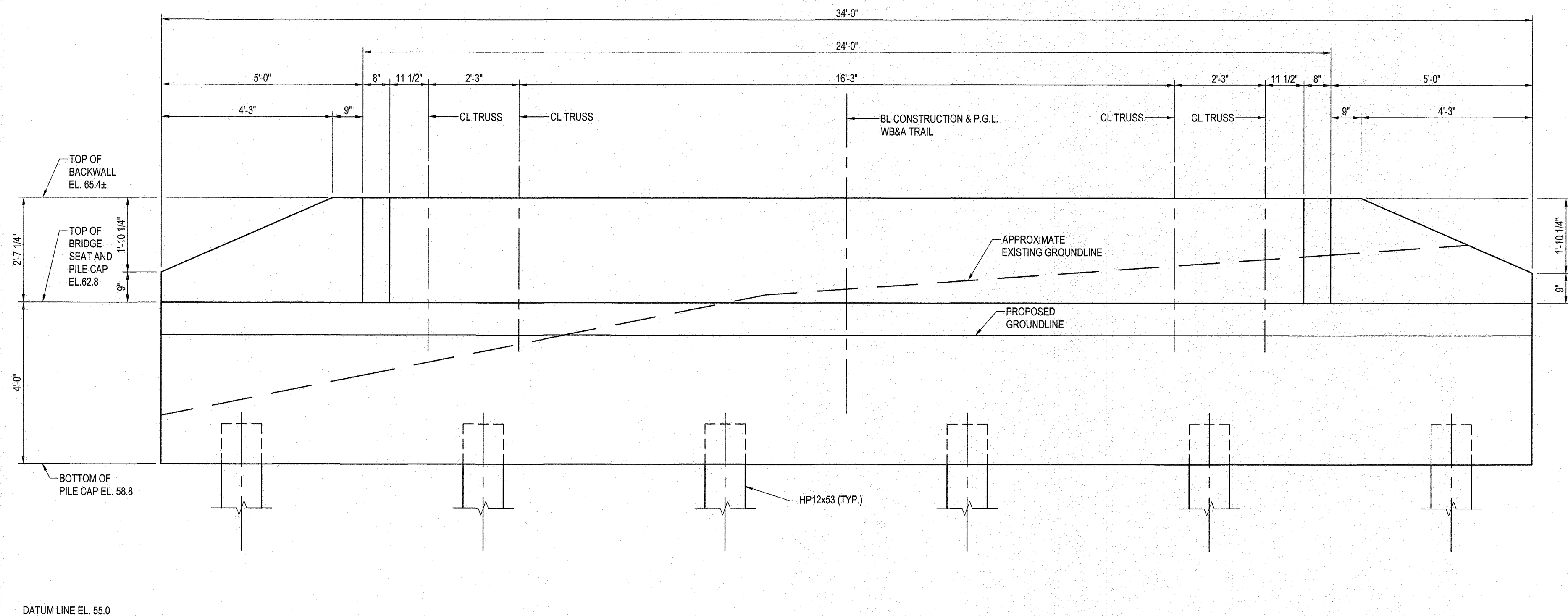
PILE PLANS

APPROVED CHIEF ENGINEER	DATE 8/9/21	APPROVED PROJECT MANAGER	DATE 8/11/21	SCALE: AS SHOWN
APPROVED ASSISTANT CHIEF ENGINEER	DATE 8/11/21	APPROVED CHIEF, RIGHT-OF-WAY	DATE 8/11/21	SHEET NO. 37 OF 45
PROJECT NO.: P393600				CONTRACT NO.: P393608

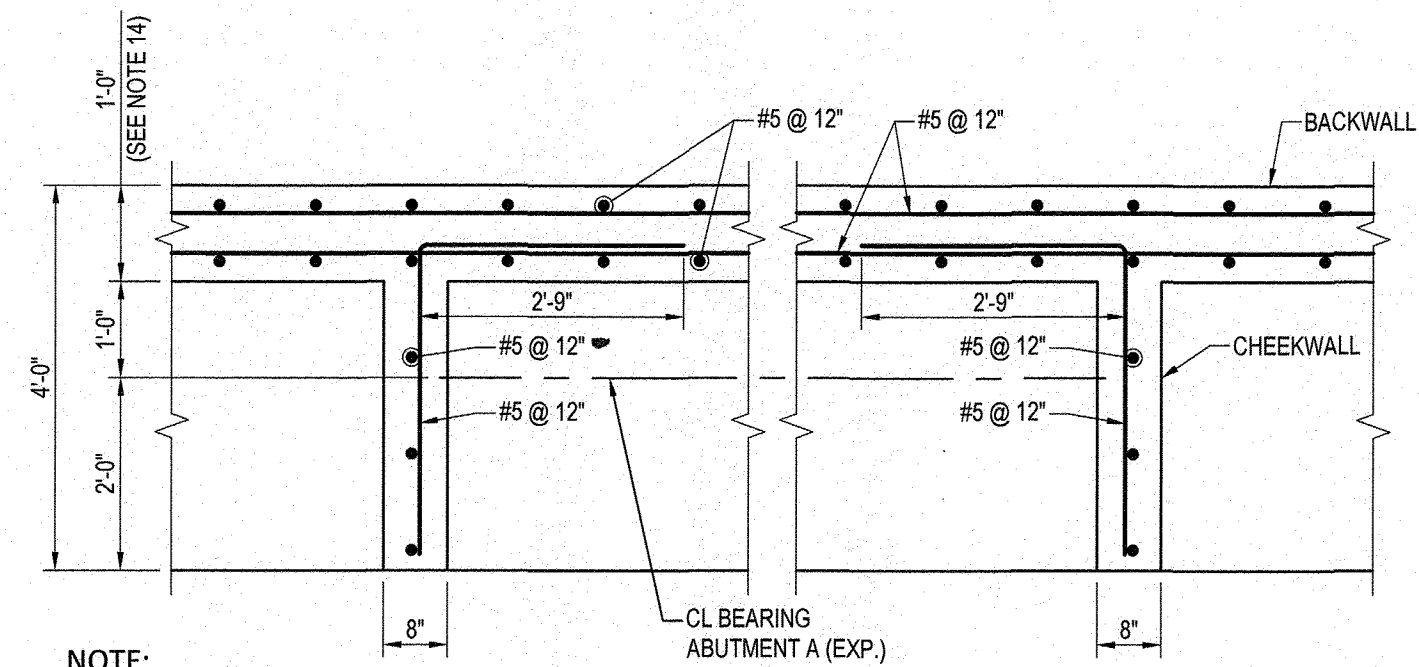
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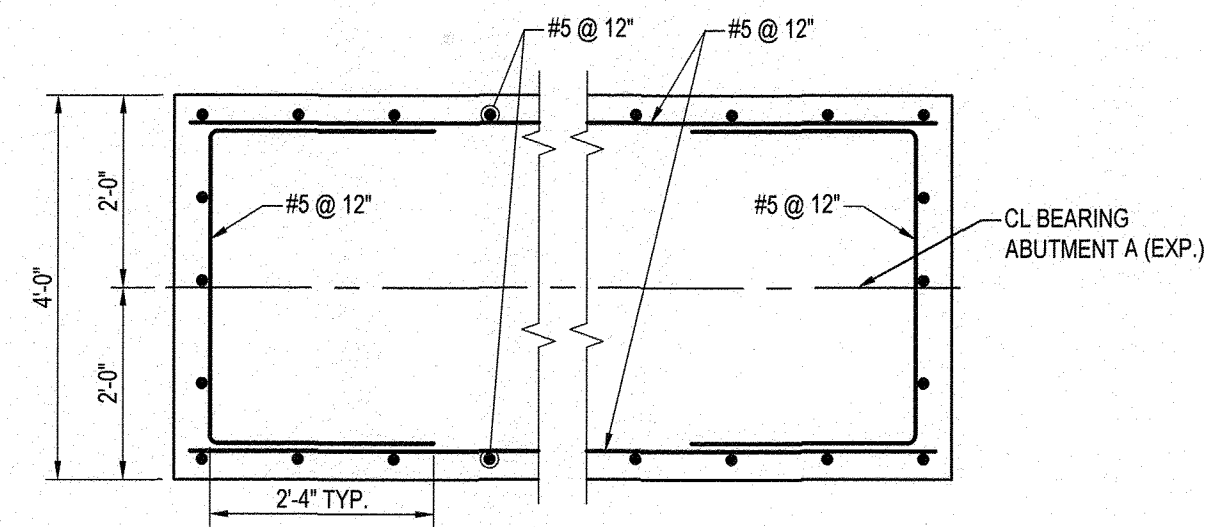
PLAN ABUTMENT A
SCALE: 1/2" = 1'-0"



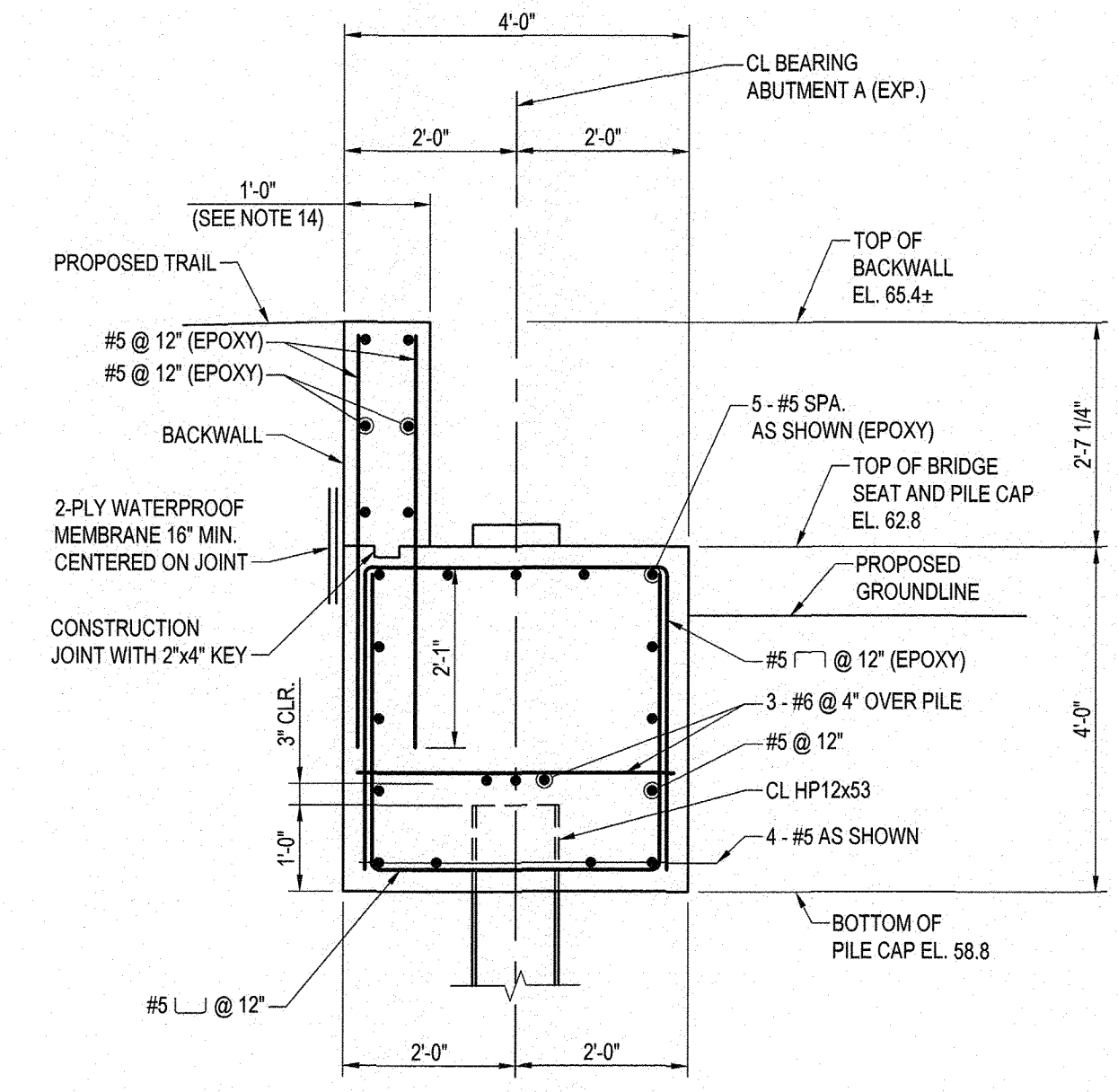
ELEVATION ABUTMENT A
SCALE: 1/2" = 1'-0"



ABOVE BRIDGE SEAT SECTION
SCALE: 1/2" = 1'-0"



BELOW BRIDGE SEAT SECTION
SCALE: 1/2" = 1'-0"



TYPICAL SECTION ABUTMENT A
SCALE: 1/2" = 1'-0"

- NOTES:**
- FOR GENERAL PLAN AND ELEVATION SEE SHEET 34.
 - FOR GENERAL NOTES SEE SHEET 35.
 - FOR GEOMETRIC LAYOUT SEE SHEET 36.
 - FOR PILE PLANS SEE SHEET 37.
 - FOR ABUTMENT B PLAN AND ELEVATION SEE SHEET 39.
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 - FOR PIER 2 PLAN AND ELEVATION SEE SHEET 41.
 - FOR PIER 3 PLAN AND ELEVATION SEE SHEET 42.
 - FOR TYPICAL SECTION SEE SHEET 43.
 - FOR STANDARD DETAILS SEE SHEET 44.
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 - BACKWALL AND CHEEKWALLS TO BE CONSTRUCTED AFTER BRIDGE IS IN PLACE.
 - COMPRESSION JOINT SEAL BY OTHERS BASED ON BRIDGE SELECTED AND MANUFACTURER RECOMMENDATIONS.
 - INCREASE BACKWALL WIDTH UP TO 1'-2" TO ACCOMMODATE THE SUPERSTRUCTURE FABRICATOR'S REQUIREMENT.
 - BEARINGS AND ANCHORAGE WILL BE DESIGNED AND DETAILED BY OTHERS.

NOTE:
THE CONTRACTOR SHALL ONLY BACKFILL ABUTMENT A UP TO THE BRIDGE SEAT ELEVATION DURING BRIDGE SUPERSTRUCTURE INSTALLATION

CAUTION:
IF THIS DRAWING IS A REDUCTION,
USE THE GRAPHIC SCALES.

SEE OVERALL PROJECT COVER SHEET
FOR SHA AND F&P CONTRACT NUMBERS

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License #33123 Expiration Date: 1/5/2022

REVISIONS			
NO.	DESCRIPTION	BY	DATE

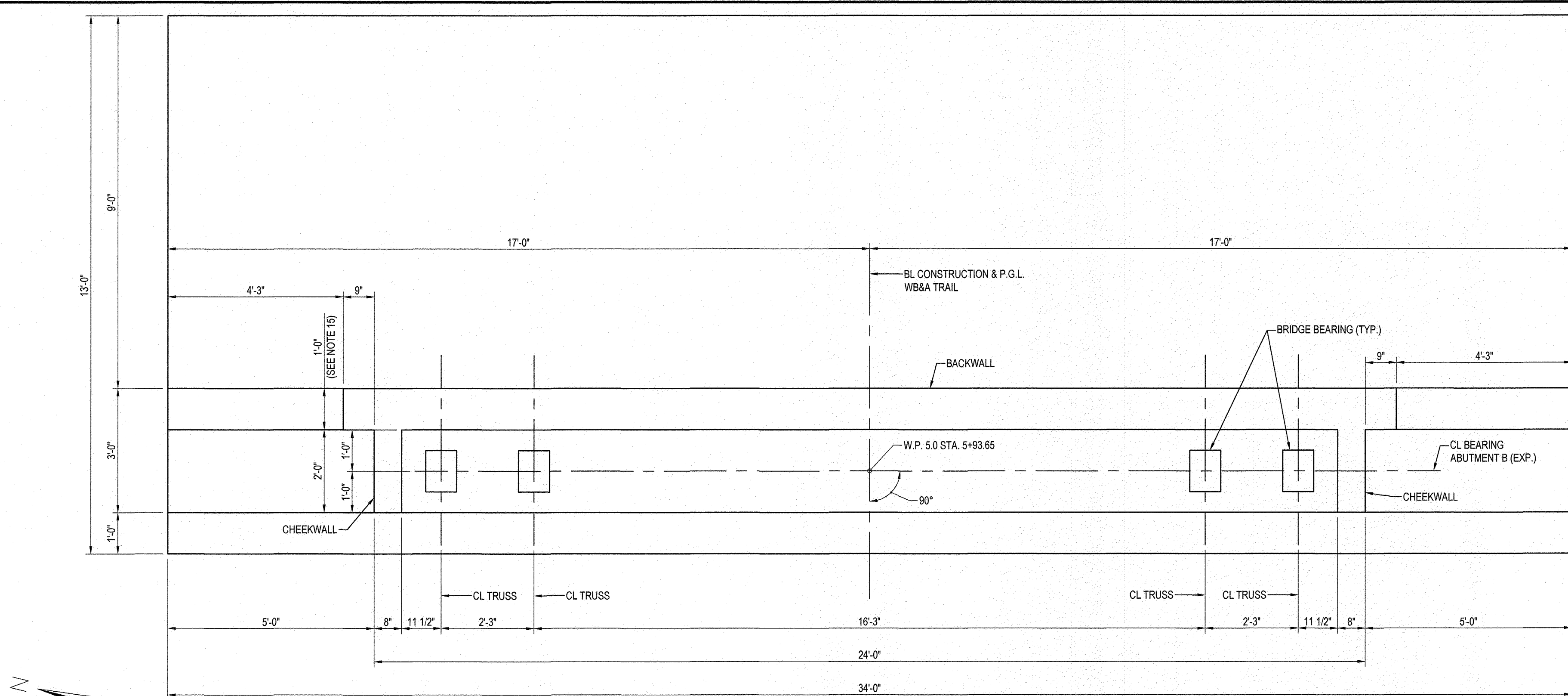
ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

98257

APPROVED <i>[Signature]</i> CHIEF ENGINEER	DATE 8/9/21	APPROVED <i>[Signature]</i> PROJECT MANAGER	DATE 5/11/21
APPROVED <i>[Signature]</i> ASSISTANT CHIEF ENGINEER	DATE 8/11/21	APPROVED <i>[Signature]</i> CHIEF, RIGHT-OF-WAY	DATE 8/6/21

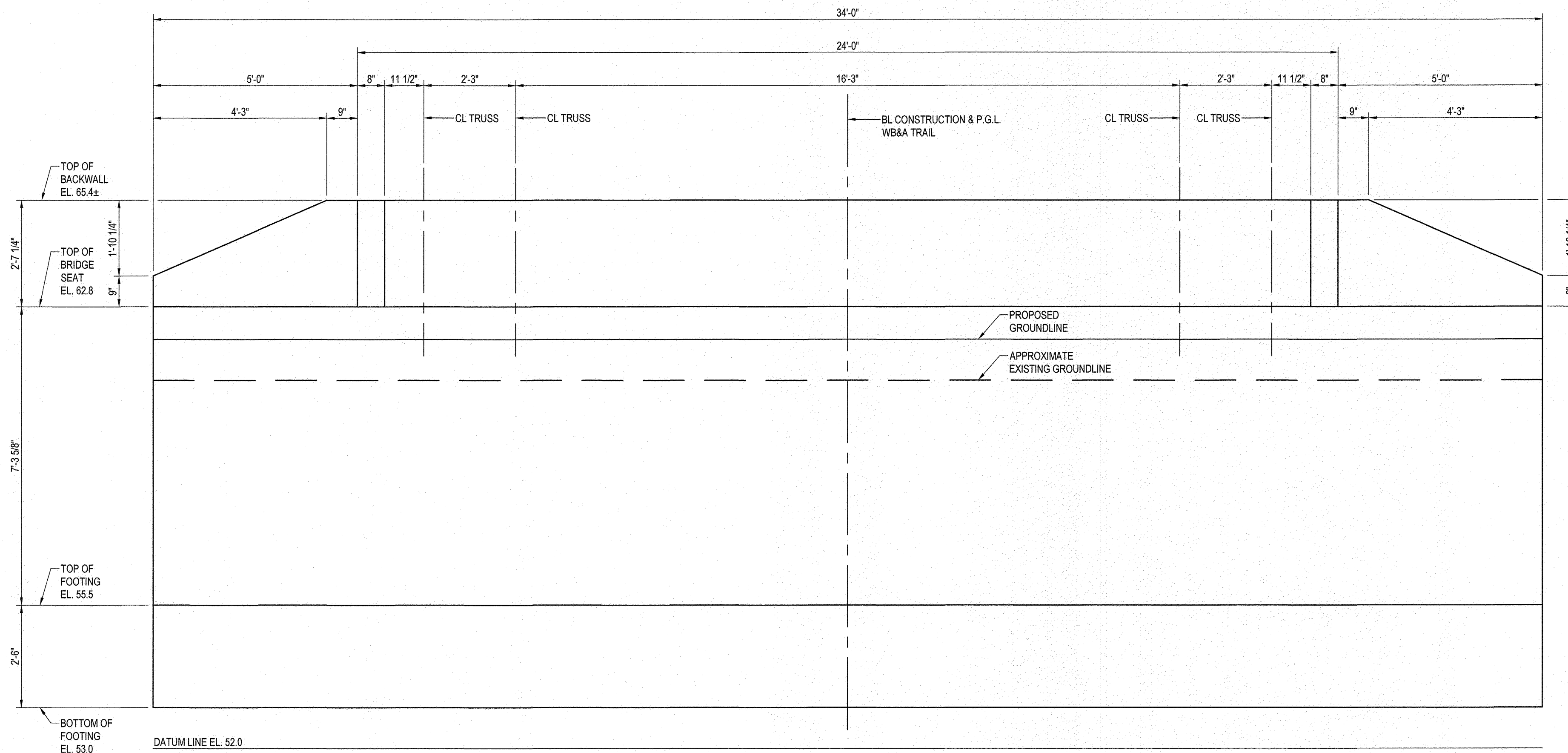
SCALE: AS SHOWN	WB&A TRAIL - BRIDGE AT PATUXENT
DRAWN BY: D.E.D.	
CHECKED BY: J.M.R.	
SHEET NO. 38 OF 45	ABUTMENT A PLAN AND ELEVATION
PROJECT NO.: P393600	
CONTRACT NO.: P393608	

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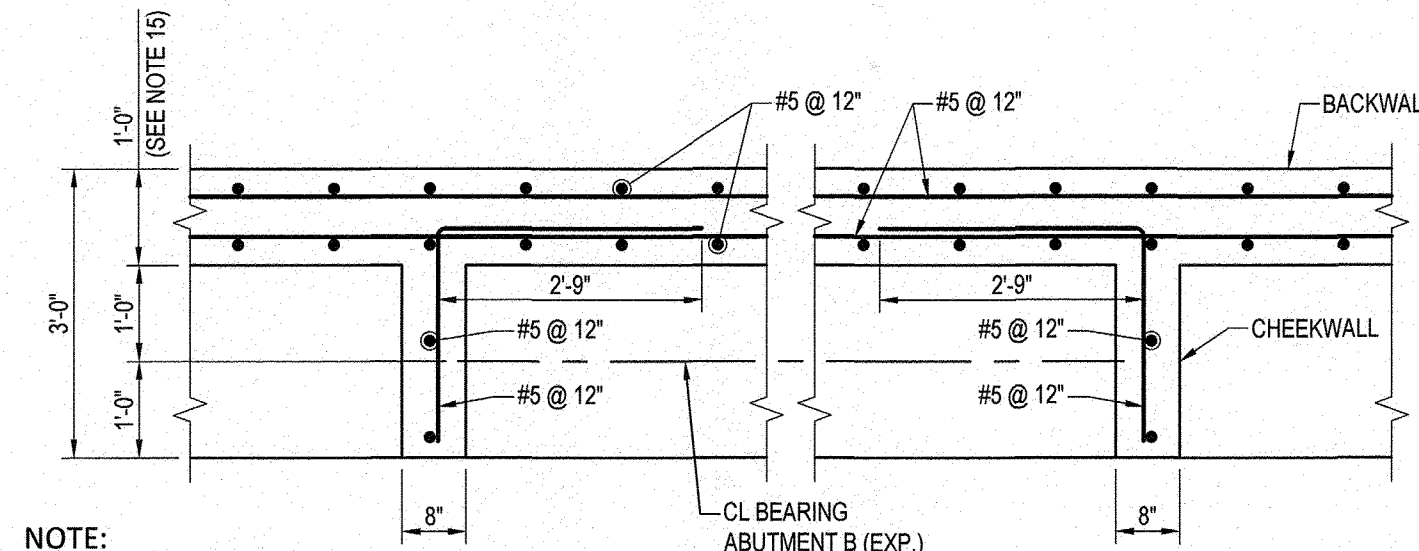
PLAN ABUTMENT B

SCALE: 1/2" = 1'-0"



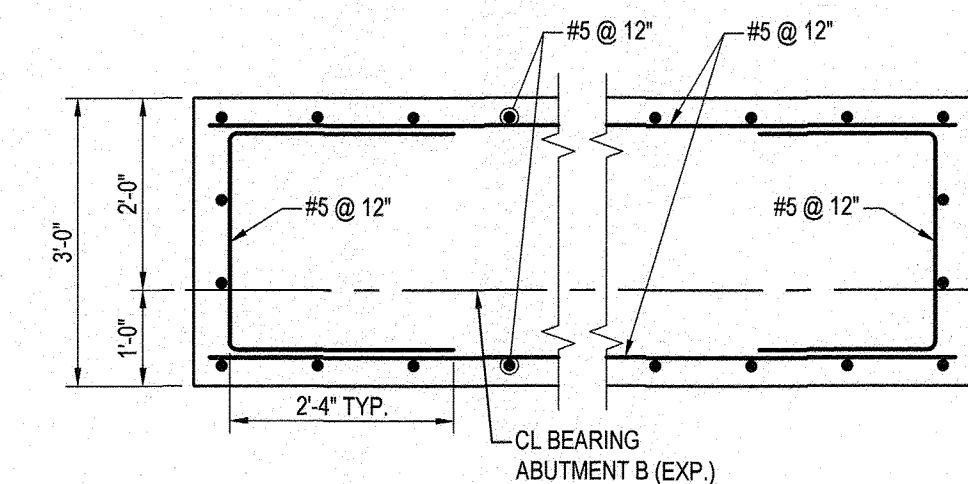
ELEVATION ABUTMENT B

SCALE: 1/2" = 1'-0"



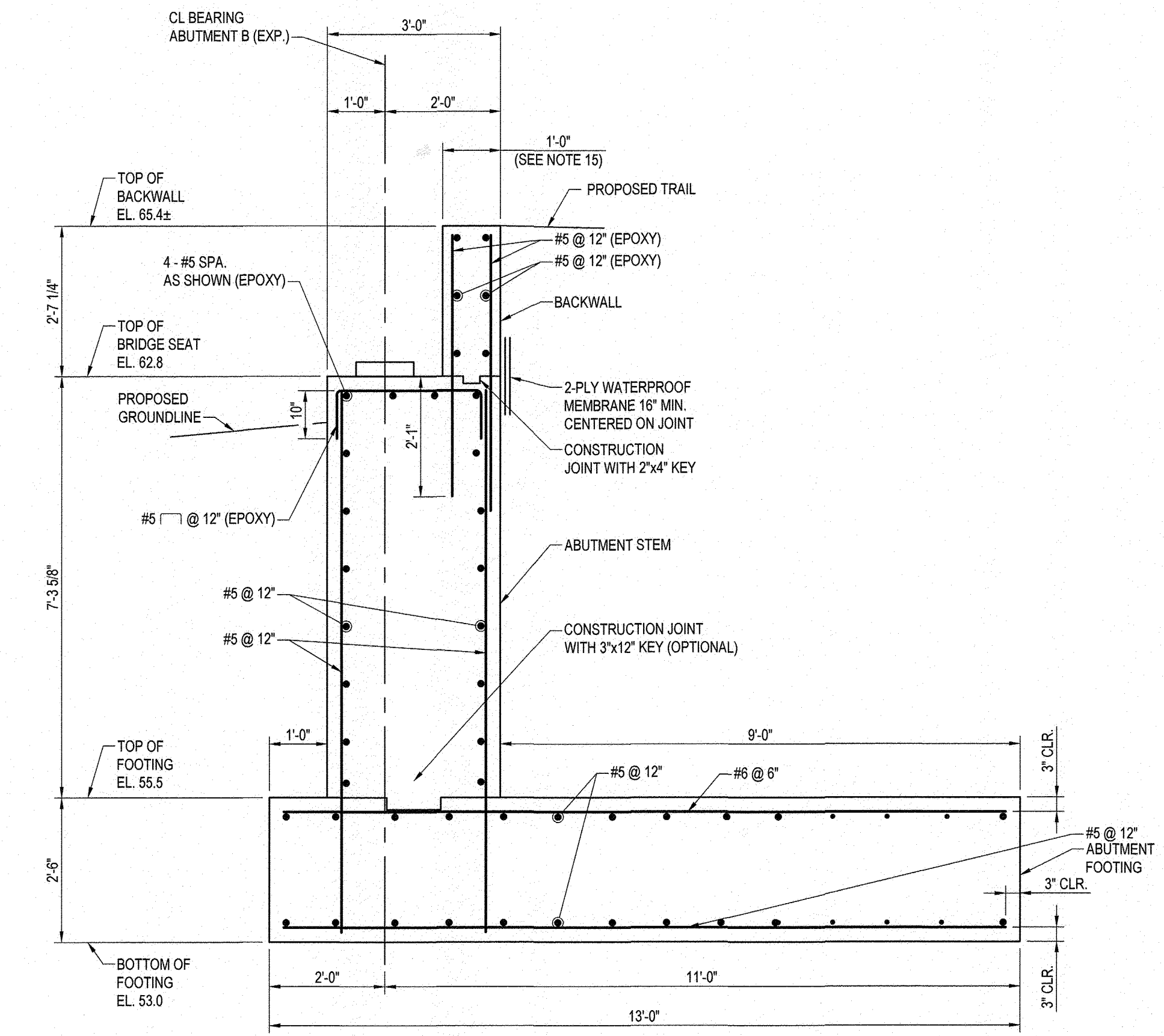
ABOVE BRIDGE SEAT SECTION

SCALE: 1/2" = 1'-0"



BELOW BRIDGE SEAT SECTION

SCALE: 1/2" = 1'-0"

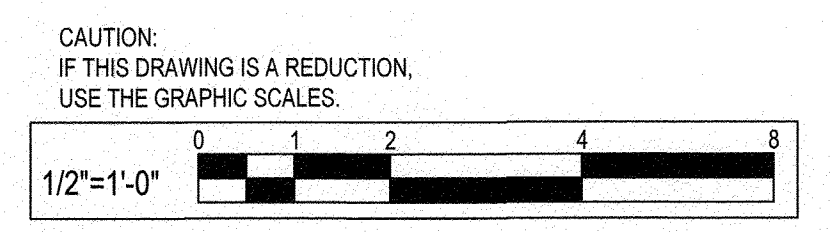


TYPICAL SECTION ABUTMENT B

SCALE: 1/2" = 1'-0"

FOUNDATION LOADING NOTE: APPLIED NET BEARING STRESS AT STRENGTH 1 LIMIT STATE AND SERVICE 1 LIMIT STATE TO BE 3.41 KSF AND 2.46 KSF RESPECTIVELY.

SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS



- NOTES:
- FOR GENERAL PLAN AND ELEVATION SEE SHEET 34.
 - FOR GENERAL NOTES SEE SHEET 35.
 - FOR GEOMETRIC LAYOUT SEE SHEET 36.
 - FOR PILE PLANS SEE SHEET 37.
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REVISIONS			
NO.	DESCRIPTION	BY	DATE

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

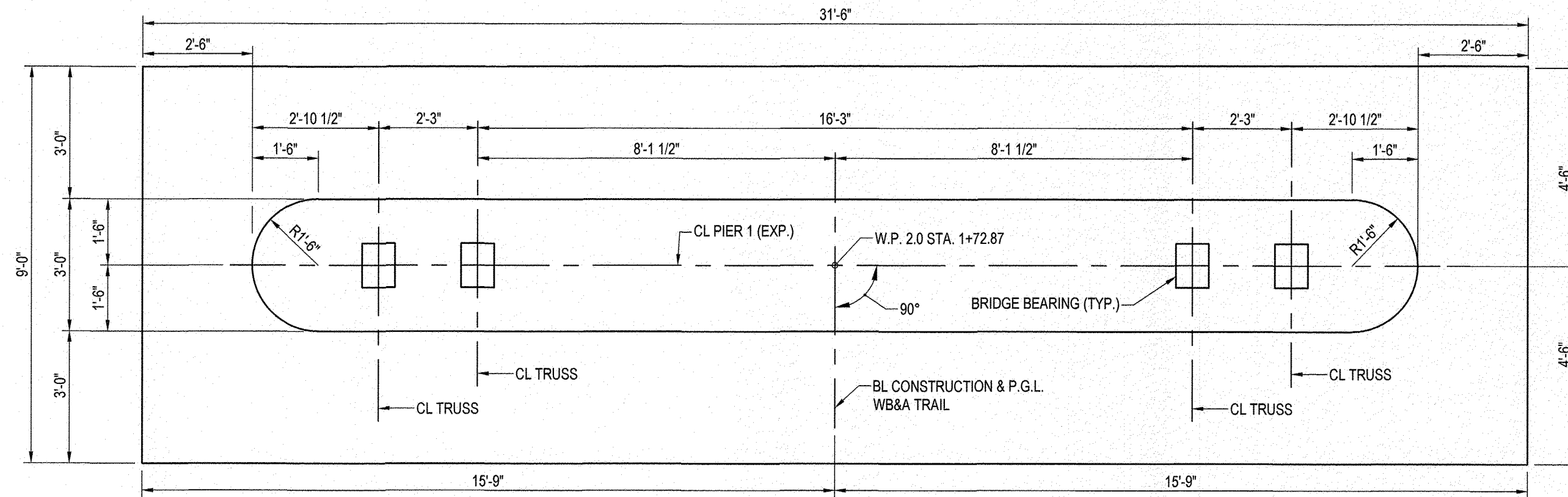
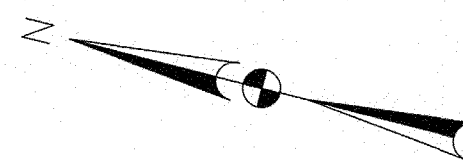
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WB&A TRAIL - BRIDGE AT PATUXENT

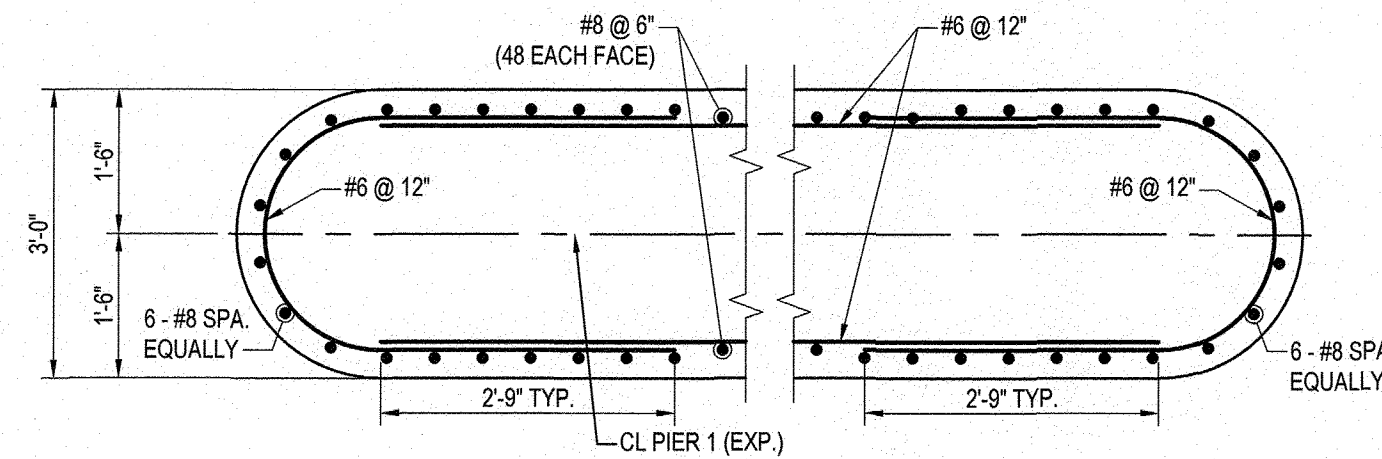
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APPROVED <i>[Signature]</i> ASSISTANT CHIEF ENGINEER	DATE 8/11/21	APPROVED <i>[Signature]</i> CHIEF, RIGHT-OF-WAY	DATE 8/6/21

SCALE: AS SHOWN	<p>PROJECT NO.: P393600</p> <p>CONTRACT NO.: P393608</p>
DRAWN BY: D.E.D.	
CHECKED BY: J.M.R.	

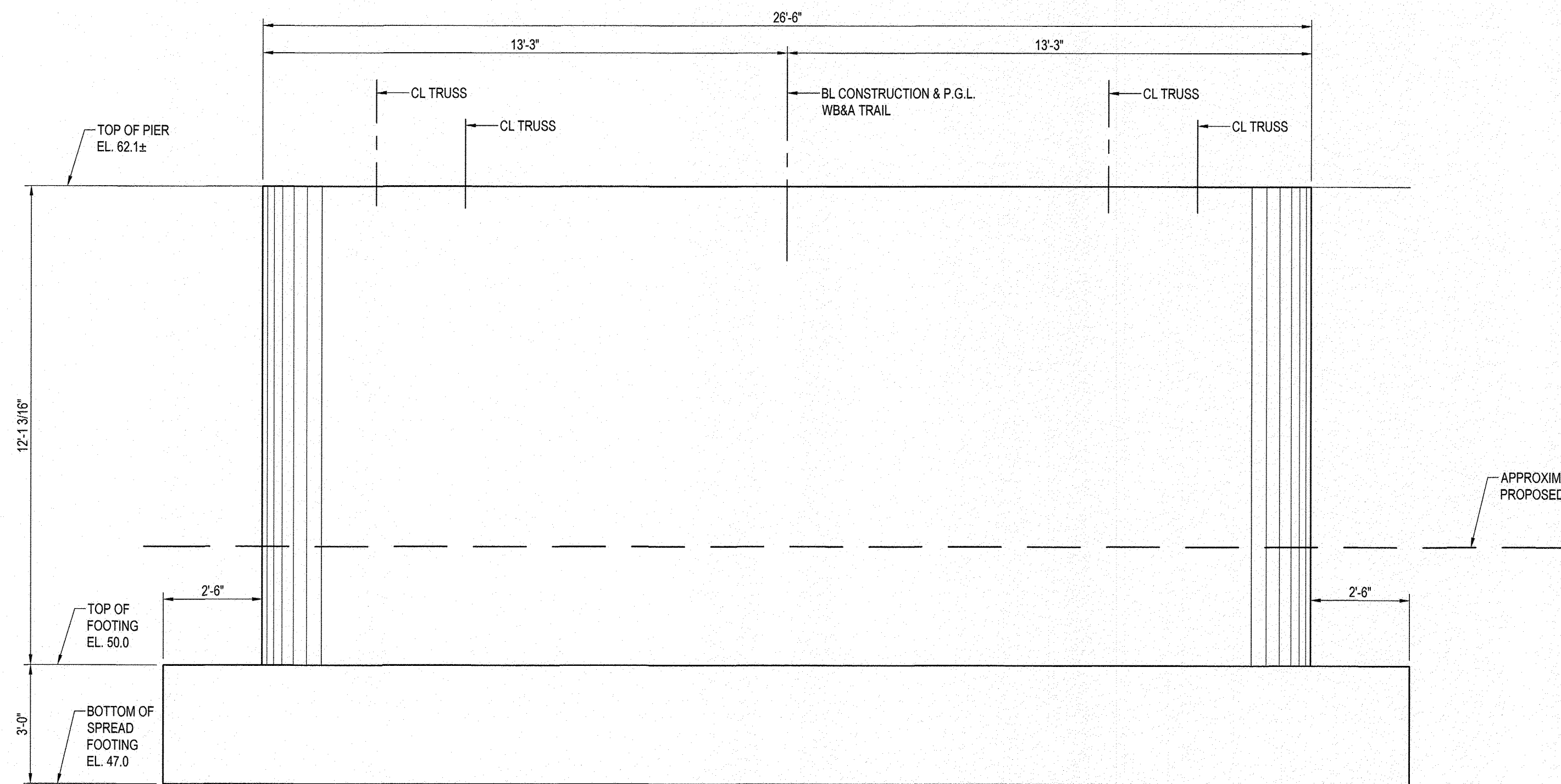
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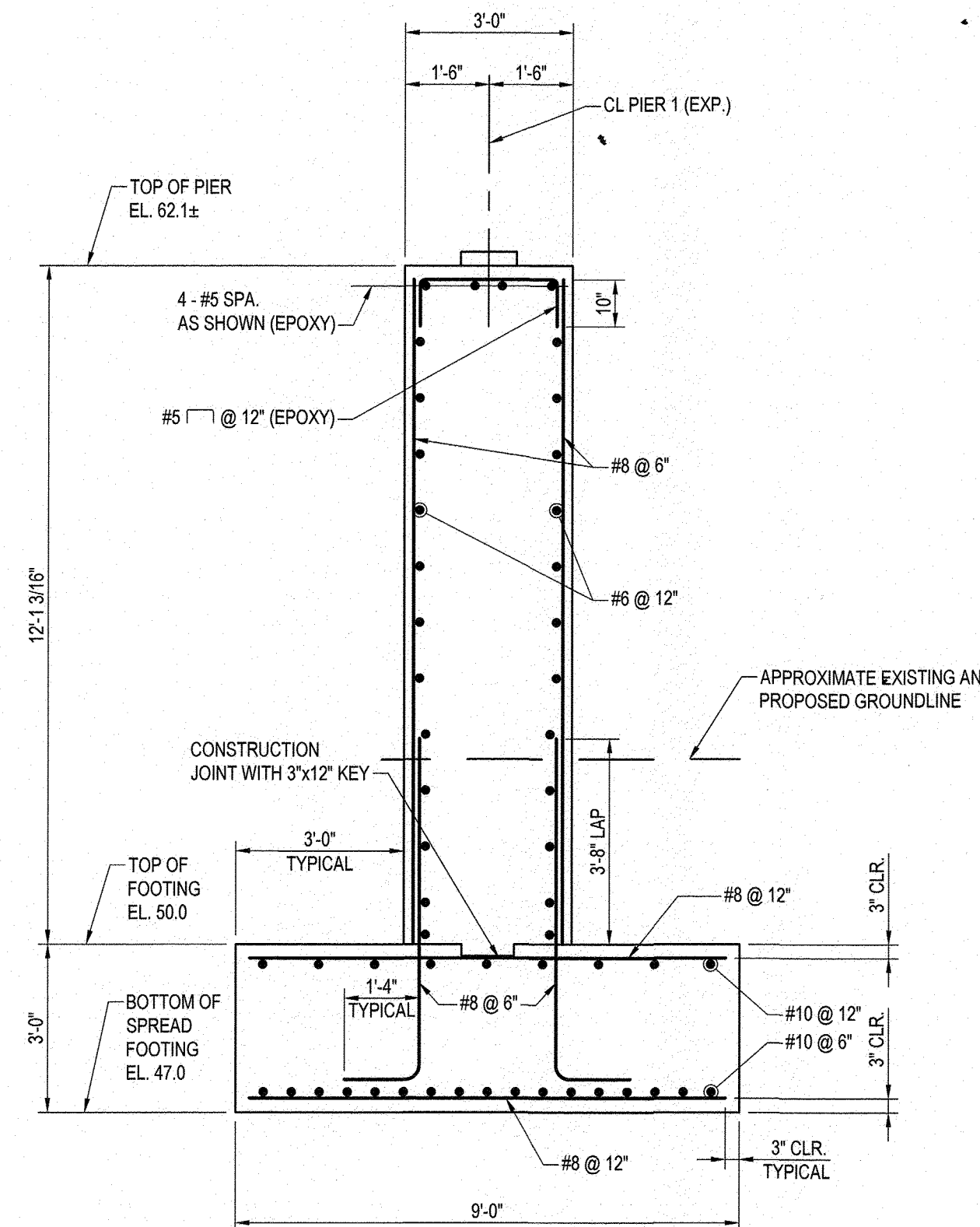
PLAN PIER 1
SCALE: 3/8" = 1'-0"



BELOW BRIDGE SEAT SECTION
SCALE: 1/2" = 1'-0"



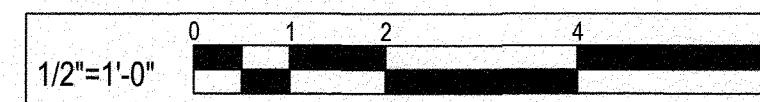
ELEVATION PIER 1
SCALE: 3/8" = 1'-0"



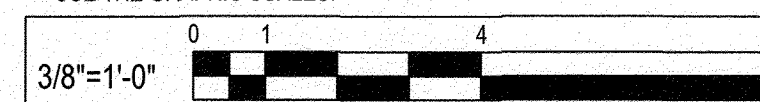
TYPICAL SECTION PIER 1
SCALE: 3/8" = 1'-0"

FOUNDATION LOADING NOTE: APPLIED NET BEARING STRESS AT STRENGTH 1 LIMIT STATE AND SERVICE 1 LIMIT STATE TO BE 3.38 KSF AND 2.58 KSF RESPECTIVELY.

CAUTION: IF THIS DRAWING IS A REDUCTION, USE THE GRAPHIC SCALES.



CAUTION: IF THIS DRAWING IS A REDUCTION, USE THE GRAPHIC SCALES.

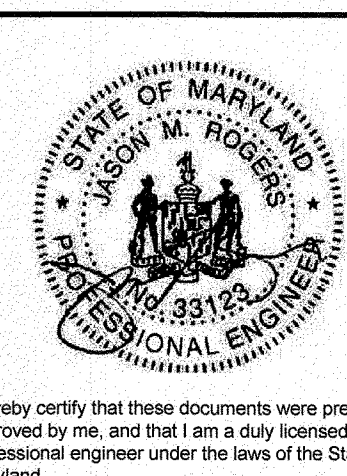


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REVISIONS			
NO.	DESCRIPTION	BY	DATE

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

98259

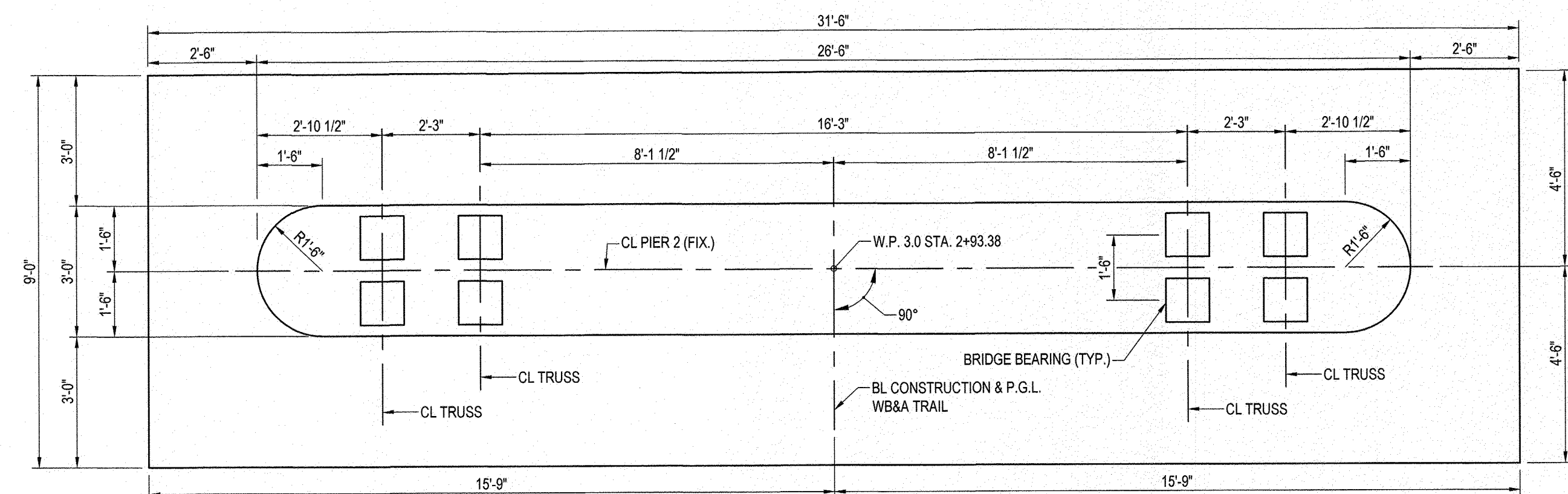
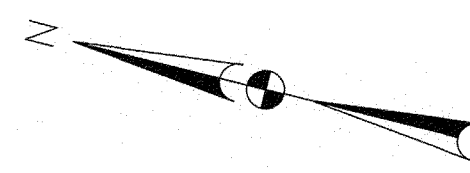
WB&A TRAIL - BRIDGE AT PATUXENT

PIER 1 PLAN AND ELEVATION

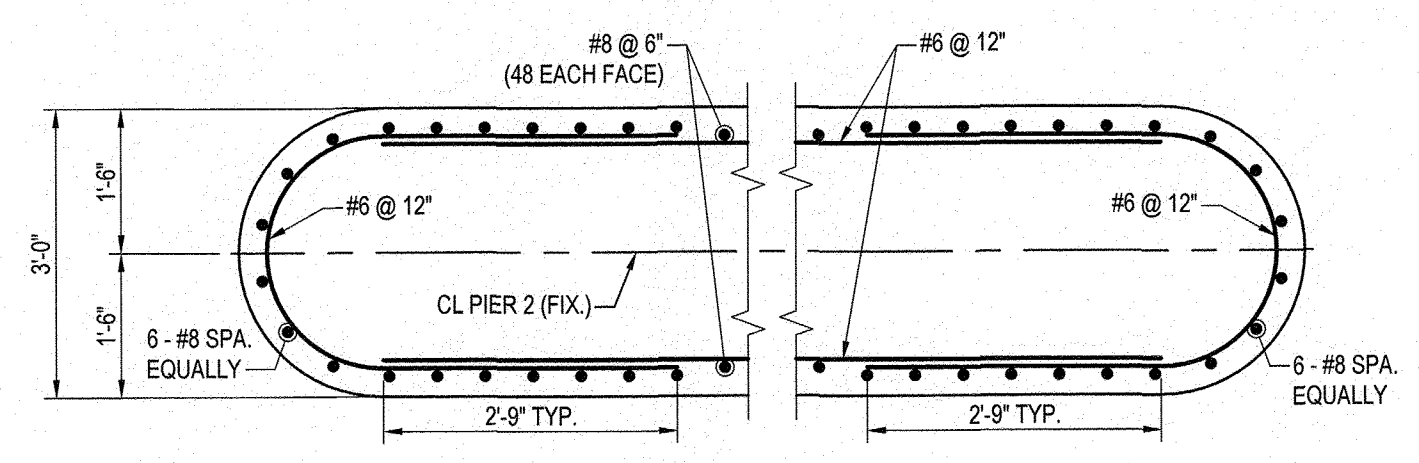
APPROVED <i>[Signature]</i> CHIEF ENGINEER	DATE 8/9/21	APPROVED <i>[Signature]</i> PROJECT MANAGER	DATE 8/11/21
APPROVED <i>[Signature]</i> ASSISTANT CHIEF ENGINEER	DATE 8/19/21	APPROVED <i>[Signature]</i> CHIEF, RIGHT-OF-WAY	DATE 8/16/21

SCALE: AS SHOWN	SHEET NO. 40 OF 45
DRAWN BY: D.E.D.	
CHECKED BY: J.M.R.	
PROJECT NO.: P393600	CONTRACT NO.: P393608
CONTRACT NO.: P393608	

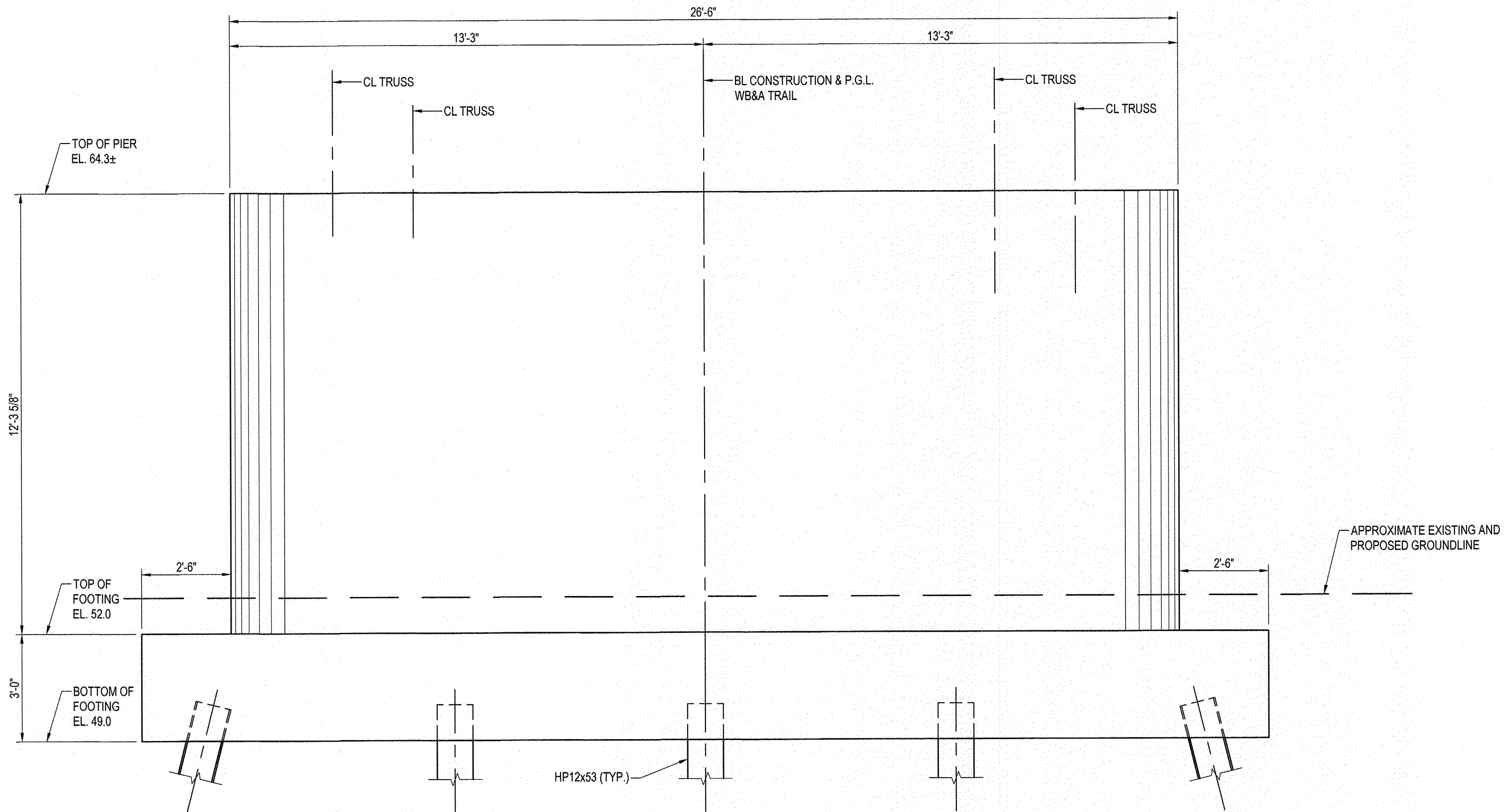
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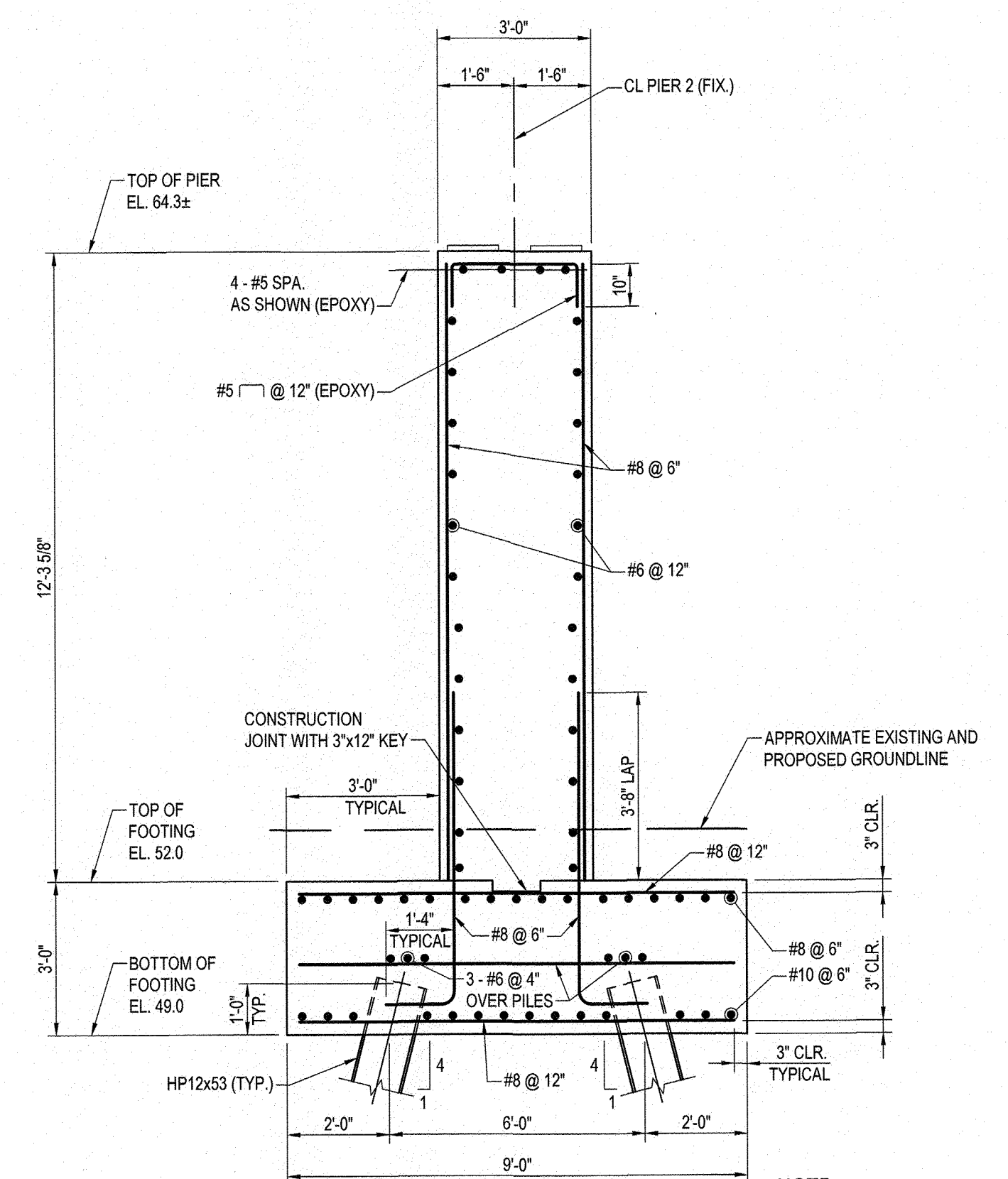
PLAN PIER 2
SCALE: 3/8" = 1'-0"



BELOW BRIDGE SEAT SECTION
SCALE: 1/2" = 1'-0"



ELEVATION PIER 2
SCALE: 3/8" = 1'-0"



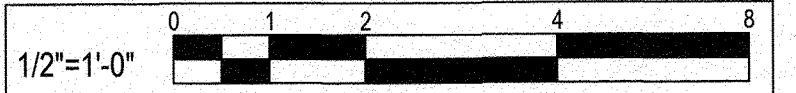
TYPICAL SECTION PIER 2
SCALE: 3/8" = 1'-0"

NOTE: BATTERED PILES SHOWN, PLUMB PILES SIMILAR.

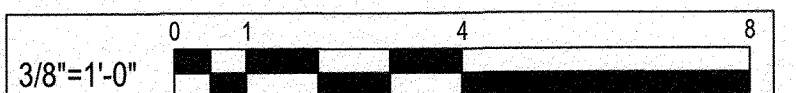
- NOTES:**
- FOR GENERAL PLAN AND ELEVATION SEE SHEET 34.
 - FOR GENERAL NOTES SEE SHEET 35.
 - FOR GEOMETRIC LAYOUT SEE SHEET 36.
 - FOR PILE PLANS SEE SHEET 37.
 - FOR ABUTMENT A PLAN AND ELEVATION SEE SHEET 38.
 - FOR ABUTMENT B PLAN AND ELEVATION SEE SHEET 39.
 - FOR PIER 1 PLAN AND ELEVATION SEE SHEET 40.
 - FOR PIER 3 PLAN AND ELEVATION SEE SHEET 42.
 - FOR TYPICAL SECTION SEE SHEET 43.
 - FOR STANDARD DETAILS SEE SHEET 44.
 - DIMENSIONS AND ELEVATIONS SHOWN ON THIS SHEET ARE FOR BIDDING PURPOSES ONLY. THE CONTRACTOR SHALL COORDINATE WITH THE SUPERSTRUCTURE FABRICATOR TO LOCATE BEARINGS, SEAT ELEVATIONS AND SET OTHER NECESSARY DIMENSIONS, AS PART OF THE REQUIRED CONTRACTORS SHOP DRAWINGS SUBMISSION.
 - COMPRESSION JOINT SEAL BY OTHERS BASED ON BRIDGE SELECTED AND MANUFACTURER RECOMMENDATIONS.
 - AT THE CONTRACTOR'S OPTION THE DOWEL AND STEM BAR MAY BE PLACED AS A CONTINUOUS BAR. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THIS OPTION.
 - BEARINGS AND ANCHORAGE WILL BE DESIGNED AND DETAILED BY OTHERS.

DATUM LINE EL. 40.0

CAUTION: IF THIS DRAWING IS A REDUCTION, USE THE GRAPHIC SCALES.



CAUTION: IF THIS DRAWING IS A REDUCTION, USE THE GRAPHIC SCALES.



SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS



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ARCHITECTURE ENGINEERING CONSTRUCTION

WHITNEY BAILEY COX & MAGNANI, LLC
300 East Joppa Road, Suite 200 Baltimore, MD 21286
MAIN 410.512.4500 FAX 410.324.4100
www.wbcm.com



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 #33123 Expiration Date: 1/5/2022

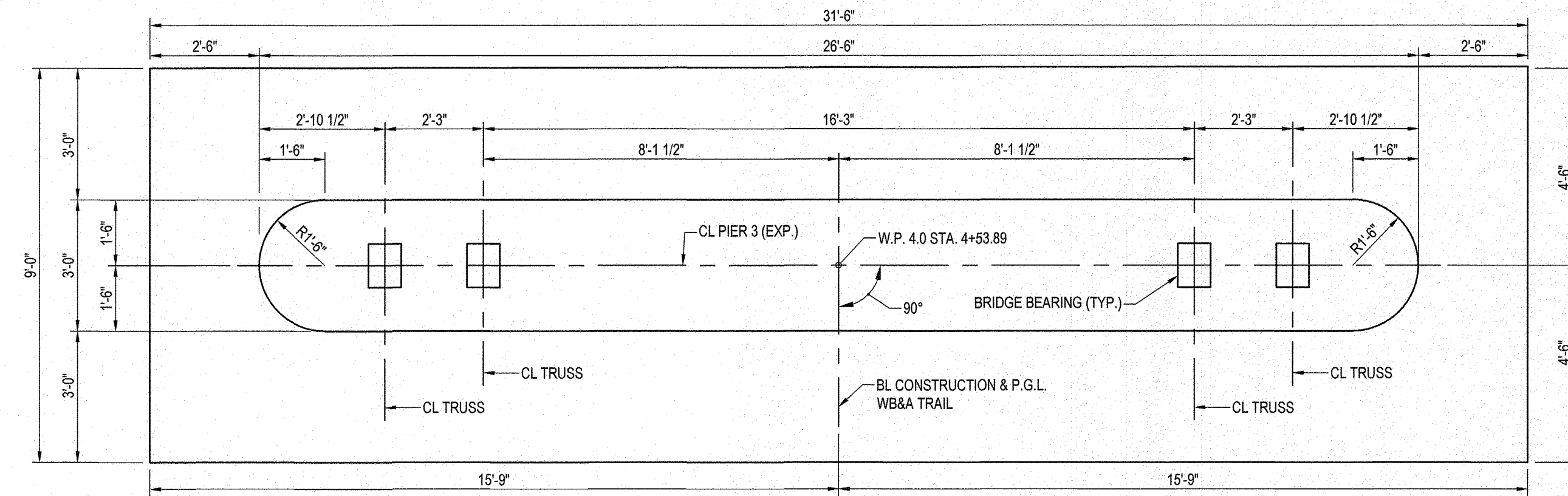
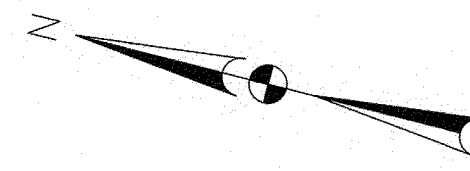
REVISIONS			
NO.	DESCRIPTION	BY	DATE

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

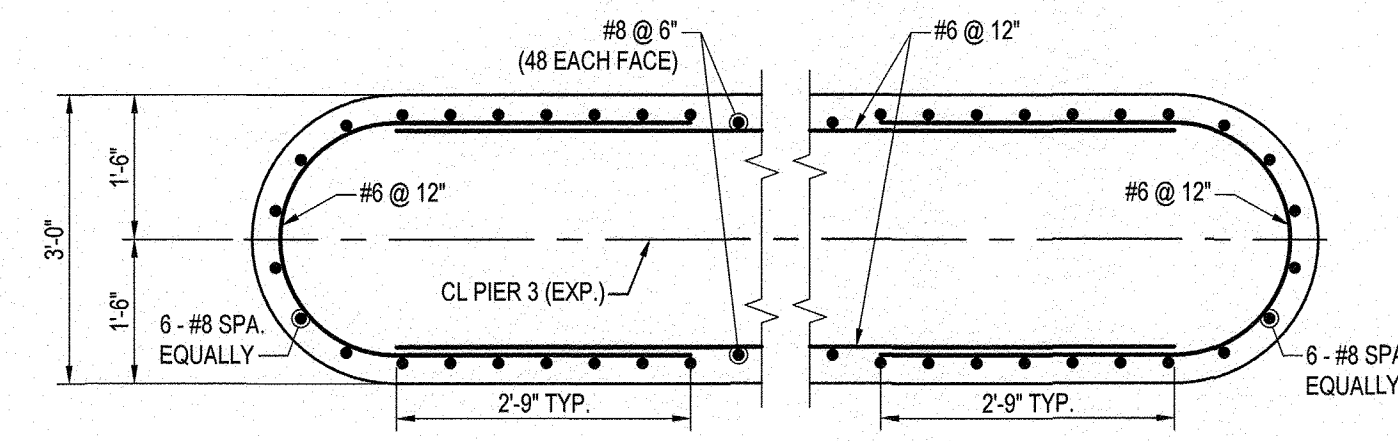
98260

WB&A TRAIL - BRIDGE AT PATUXENT

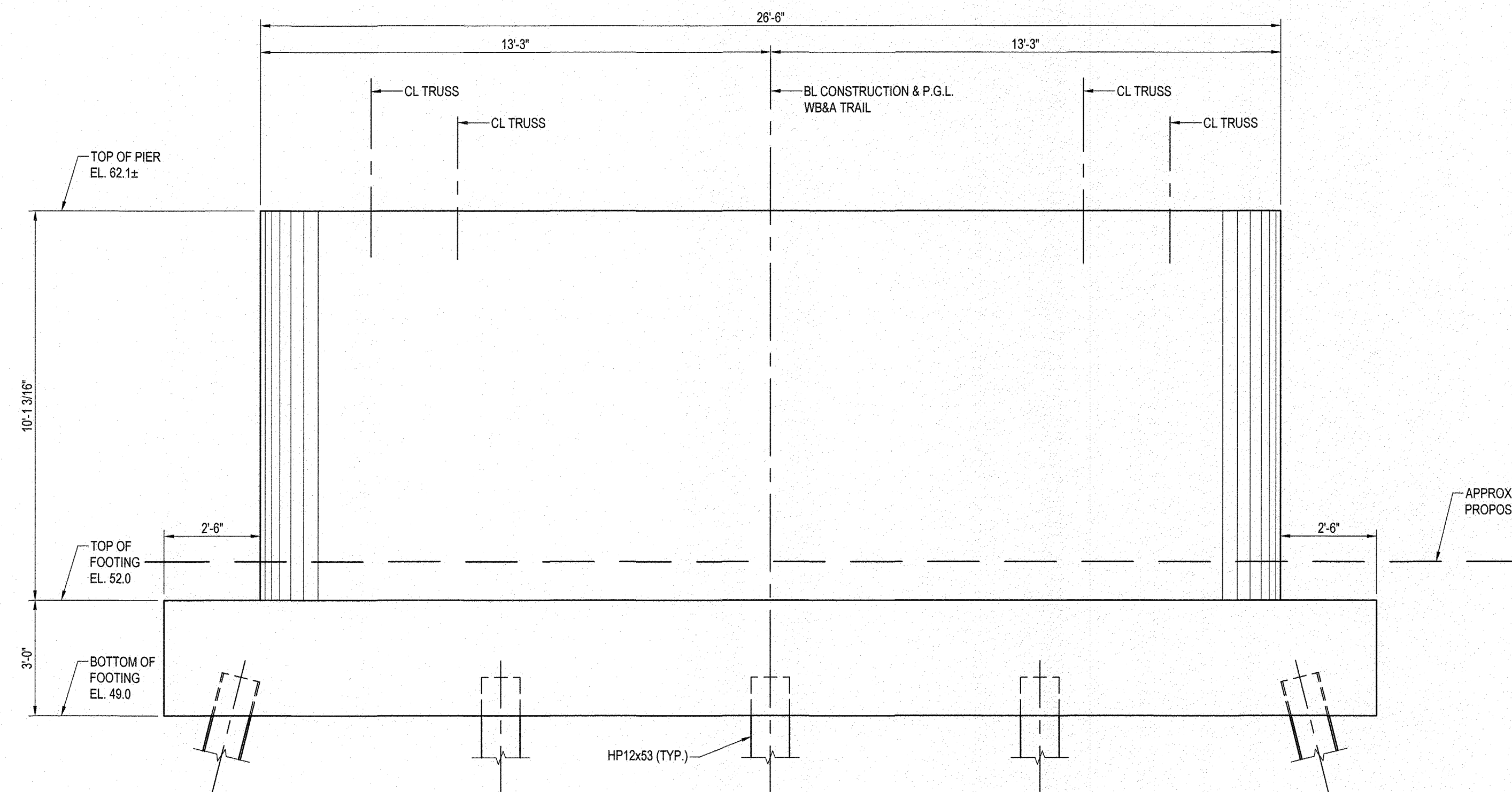
APPROVED <i>[Signature]</i> CHIEF ENGINEER	DATE 8/9/21	APPROVED <i>[Signature]</i> PROJECT MANAGER	DATE 8/11/21	SCALE: AS SHOWN	DRAWN BY: D.E.D. CHECKED BY: J.M.R.
APPROVED <i>[Signature]</i> ASSISTANT CHIEF ENGINEER	DATE 8/11/21	APPROVED <i>[Signature]</i> CHIEF, RIGHT-OF-WAY	DATE 8/11/21	SHEET NO. 41 OF 45 PROJECT NO.: P393600 CONTRACT NO.: P393608	PIER 2 PLAN AND ELEVATION



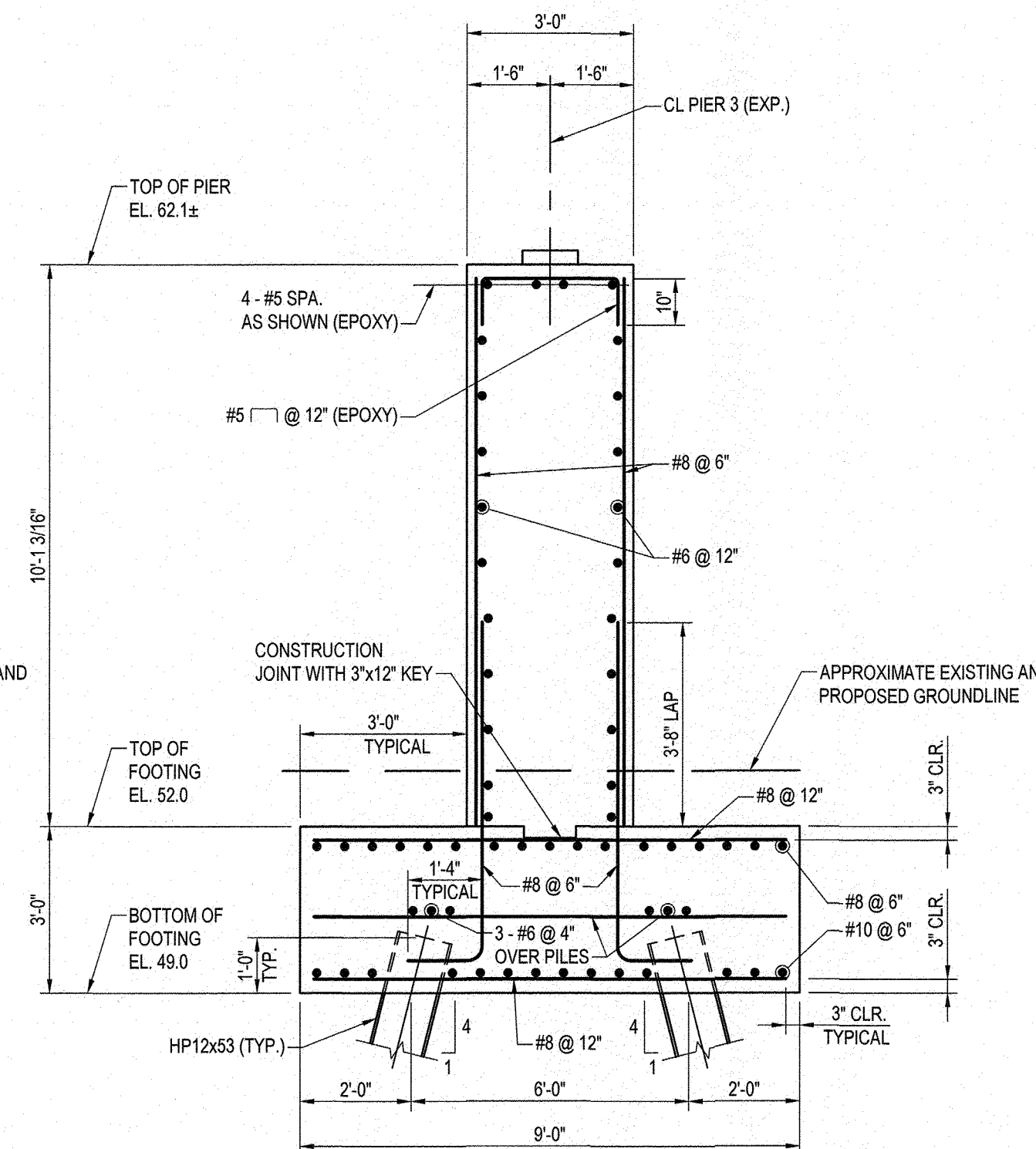
PLAN PIER 3
SCALE: 3/8" = 1'-0"



BELOW BRIDGE SEAT SECTION
SCALE: 1/2" = 1'-0"



ELEVATION PIER 3
SCALE: 3/8" = 1'-0"



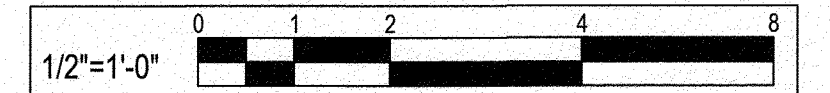
TYPICAL SECTION PIER 3
SCALE: 3/8" = 1'-0"

NOTE:
BATTERED PILES SHOWN,
PLUMB PILES SIMILAR.

DATUM LINE EL. 40.0

- NOTES:
- FOR GENERAL PLAN AND ELEVATION SEE SHEET 34.
 - FOR GENERAL NOTES SEE SHEET 35.
 - FOR GEOMETRIC LAYOUT SEE SHEET 36.
 - FOR PILE PLANS SEE SHEET 37.
 - FOR ABUTMENT A PLAN AND ELEVATION SEE SHEET 38.
 - FOR ABUTMENT B PLAN AND ELEVATION SEE SHEET 39.
 - FOR PIER 1 PLAN AND ELEVATION SEE SHEET 40.
 - FOR PIER 2 PLAN AND ELEVATION SEE SHEET 41.
 - FOR TYPICAL SECTION SEE SHEET 43.
 - FOR STANDARD DETAILS SEE SHEET 44.
 - DIMENSIONS AND ELEVATIONS SHOWN ON THIS SHEET ARE FOR BIDDING PURPOSES ONLY. THE CONTRACTOR SHALL COORDINATE WITH THE SUPERSTRUCTURE FABRICATOR TO LOCATE BEARINGS, SEAT ELEVATIONS AND SET OTHER NECESSARY DIMENSIONS, AS PART OF THE REQUIRED CONTRACTORS SHOP DRAWINGS SUBMISSION.
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SEE OVERALL PROJECT COVER SHEET
FOR SHA AND FAP CONTRACT NUMBERS

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MAIN 410.512.4500 FAX 410.324.4100
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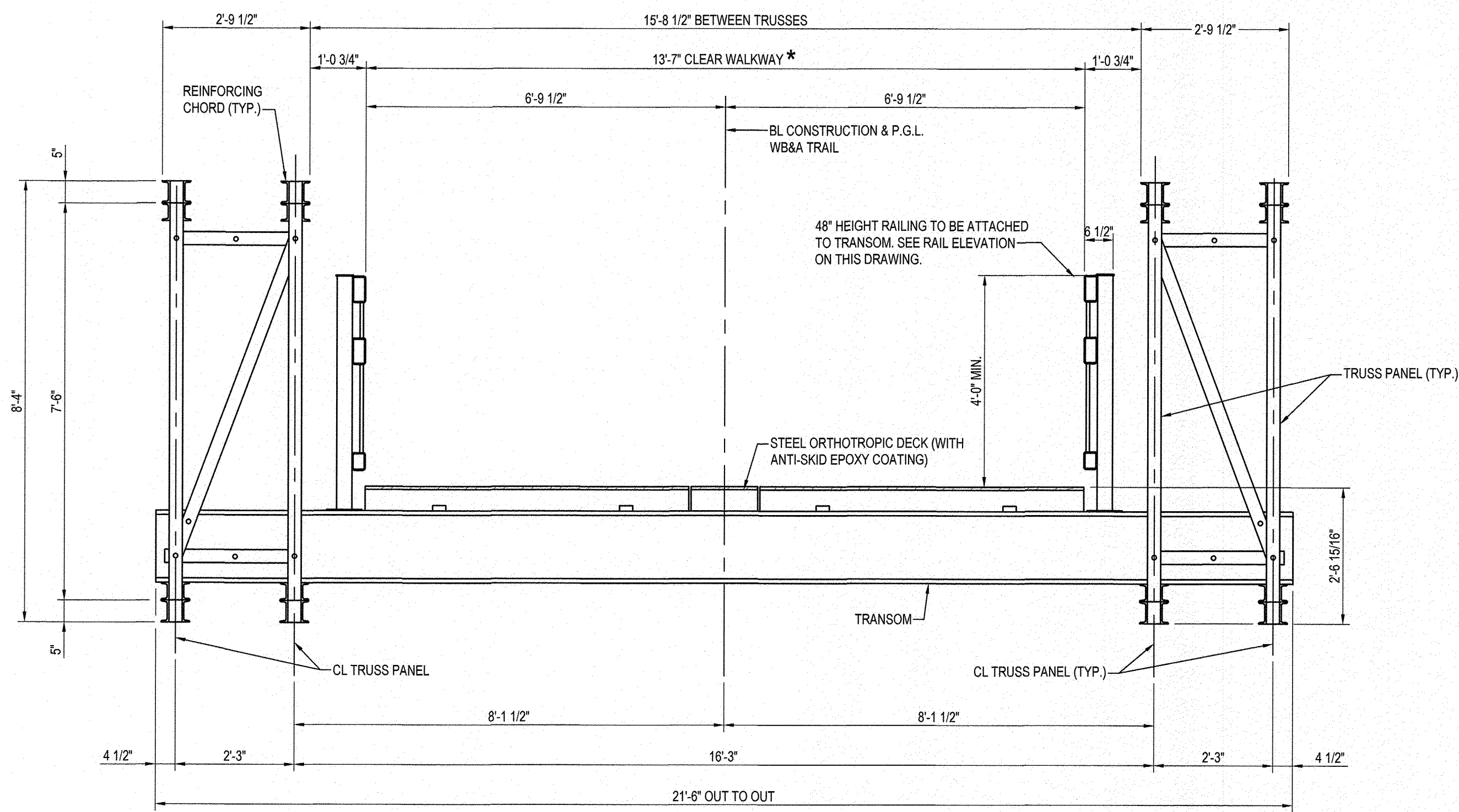
REVISIONS			
NO.	DESCRIPTION	BY	DATE

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

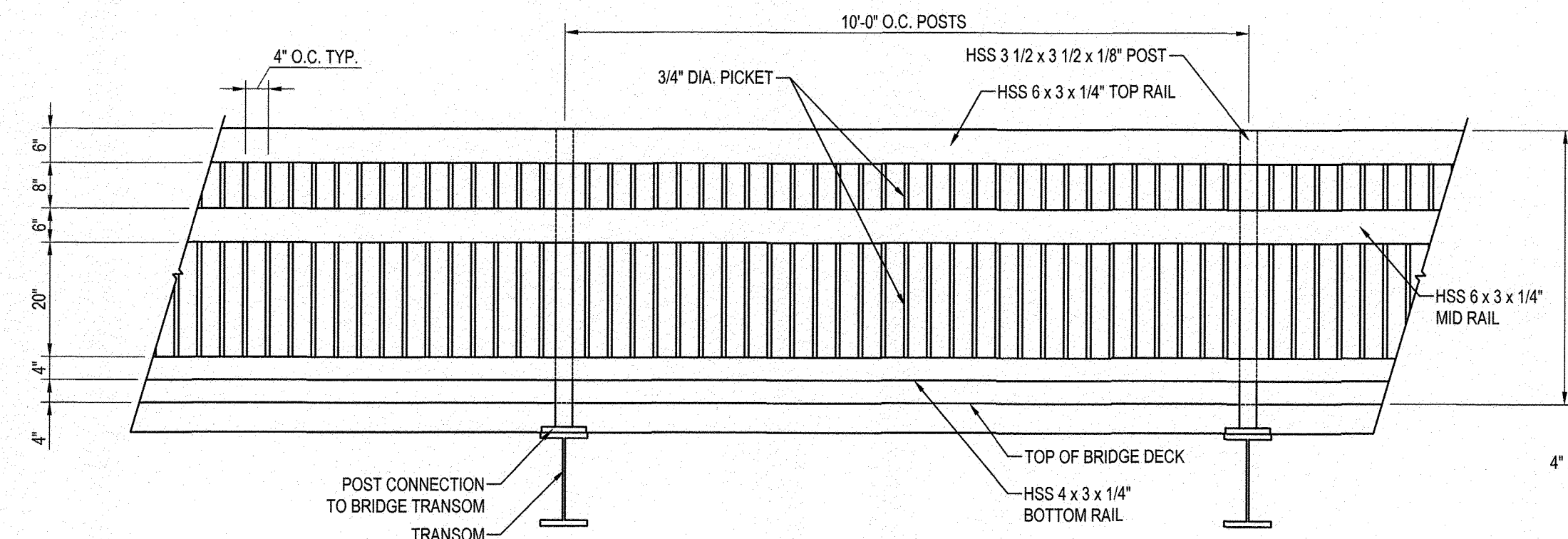
98261

APPROVED <i>[Signature]</i> CHIEF ENGINEER	DATE 8/9/21	APPROVED <i>[Signature]</i> PROJECT MANAGER	DATE 8/11/21	SCALE: AS SHOWN	WB&A TRAIL - BRIDGE AT PATUXENT
APPROVED <i>[Signature]</i> ASSISTANT CHIEF ENGINEER	DATE 8/11/21	APPROVED <i>[Signature]</i> CHIEF, RIGHT-OF-WAY	DATE 8/6/21	CHECKED BY: J.M.R.	
SHEET NO. 42 OF 45				PROJECT NO.: P393800	
				CONTRACT NO.: P393808	PIER 3 PLAN AND ELEVATION

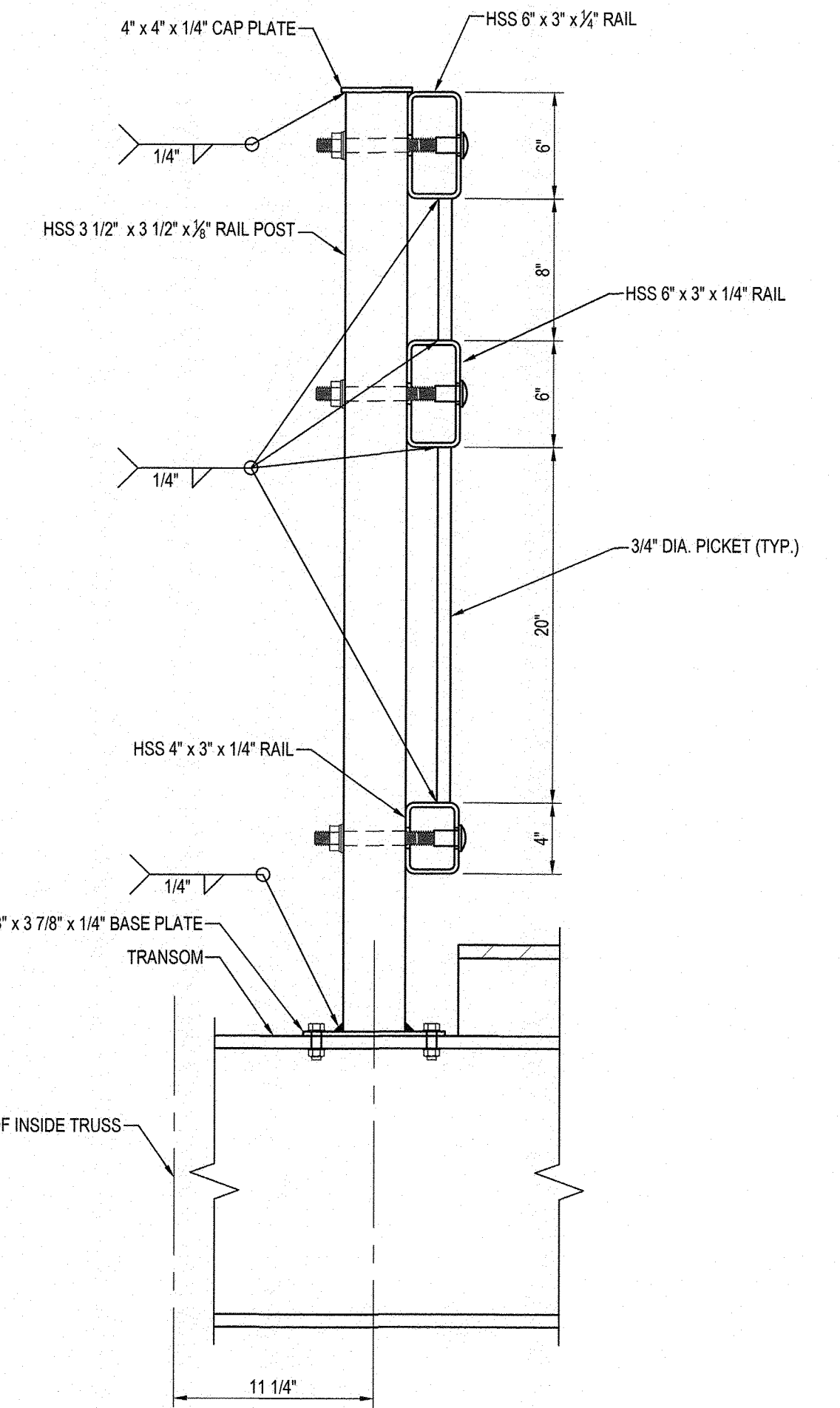
\\wbcmlc\cadd\Projects\2014\14017900\Drawings\02-Bridge\201407300-S109-P103.dwg Jun 16, 2021 - 4:01pm Plot By: chinder



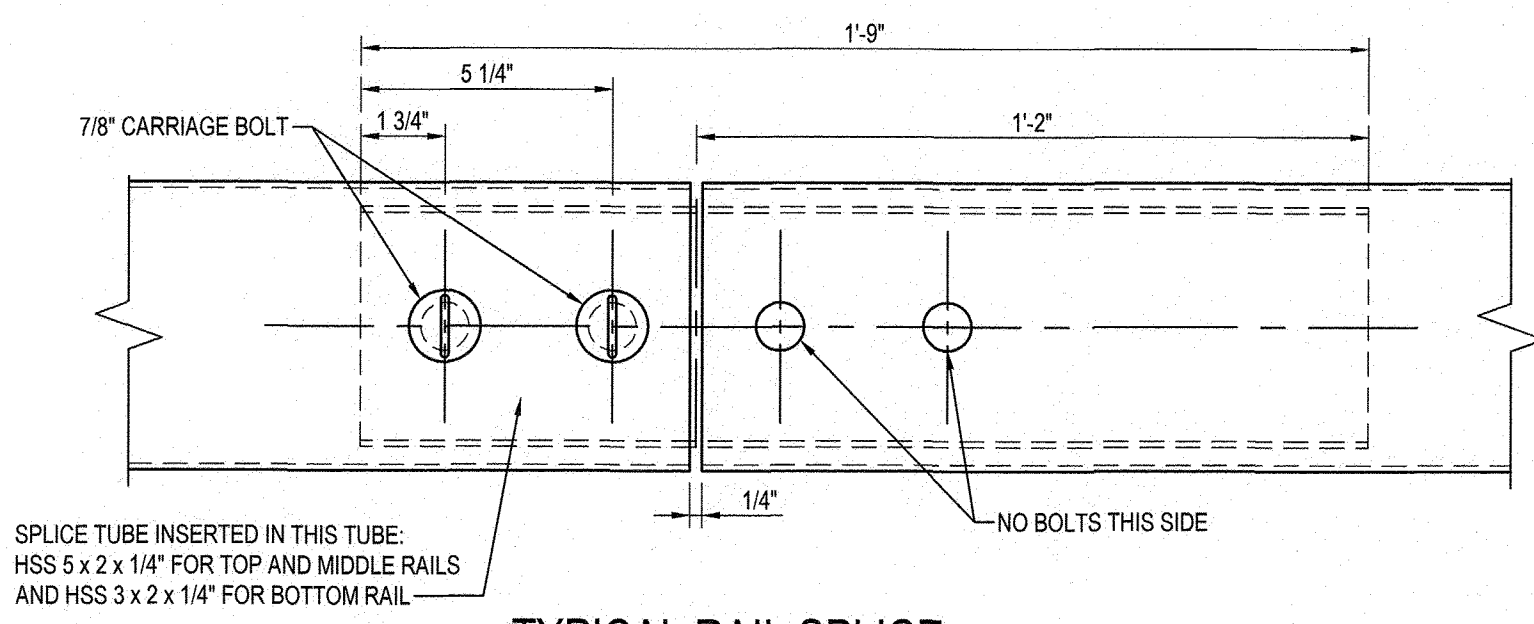
TYPICAL SECTION
SCALE: 1/2" = 1'-0"



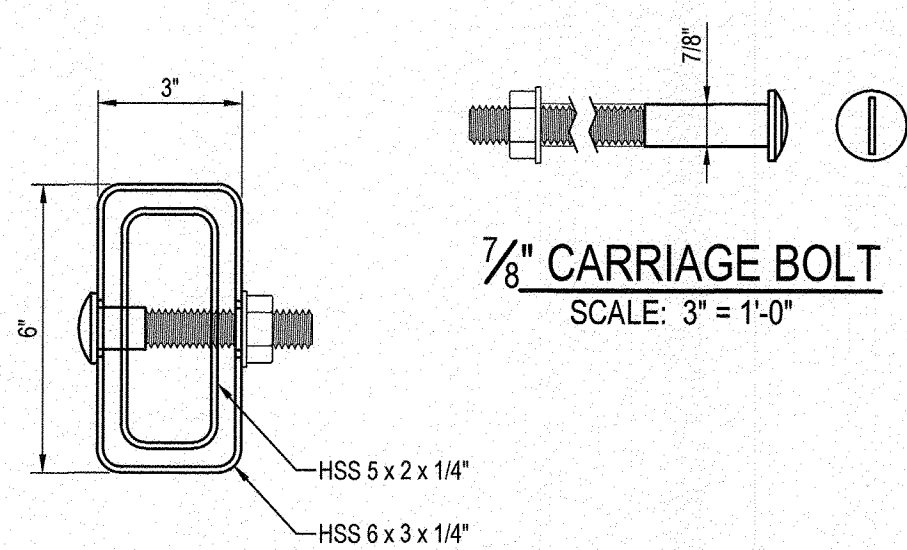
RAIL ELEVATION
SCALE: 1/2" = 1'-0"



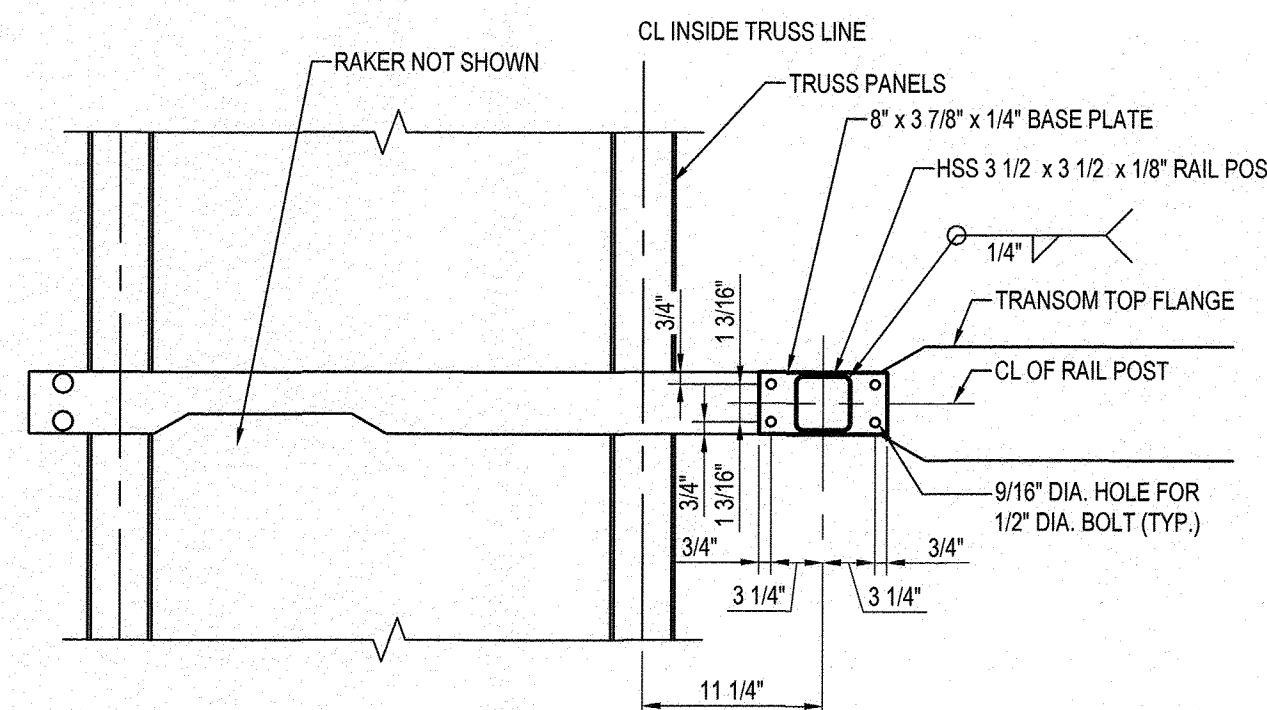
RAIL POST CONNECTION DETAIL AT TRANSOM - ELEVATION
SCALE: 1 1/2" = 1'-0"



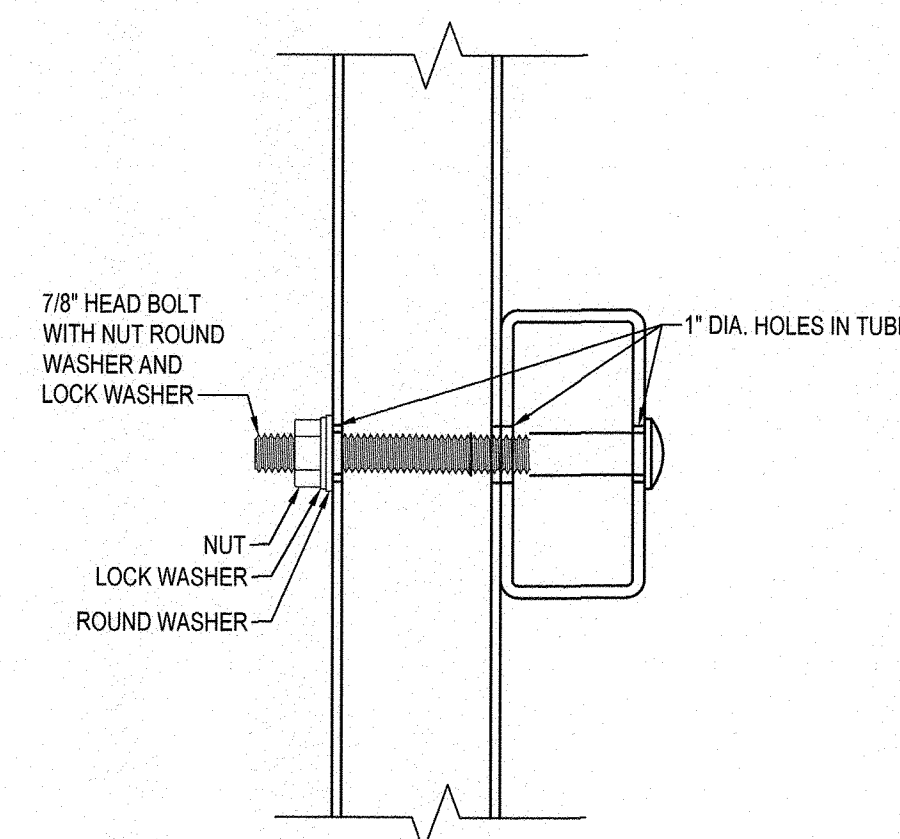
TYPICAL RAIL SPlice
SCALE: 3" = 1'-0"



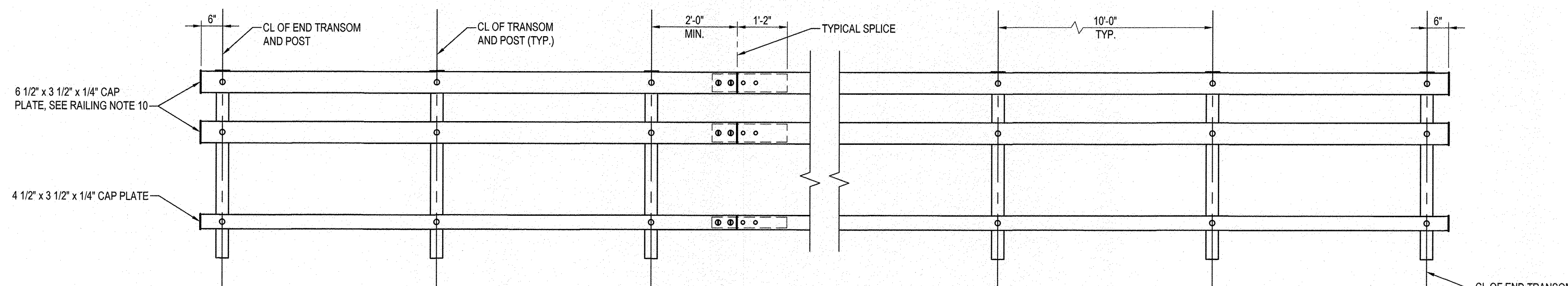
SPlice TUBE DETAILS
(TOP RAIL SHOWN)
SCALE: 3" = 1'-0"



RAIL POST CONNECTION DETAIL AT TRANSOM - PLAN
SCALE: 1" = 1'-0"



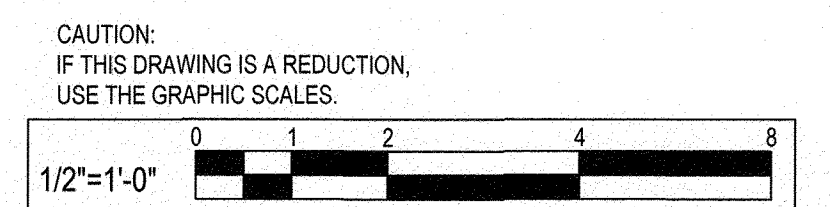
TYPICAL RAIL-TO-POST CONNECTIONS
SCALE: 3" = 1'-0"



RAIL LAYOUT - ELEVATION
SCALE: 1/2" = 1'-0"

NOTE:
PICKETS NOT SHOWN FOR CLARITY

- RAILING NOTES:**
1. RAILING POSTS, RAILS, PLATES, PICKETS AND FASTENERS SHALL BE GALVANIZED STEEL WITH POWDER COAT FINISH APPLIED AFTER FABRICATION. COLOR TO BE SELECTED BY OWNER.
 2. ALL RAIL POSTS SHALL BE SET PERPENDICULAR TO TOP OF TRANSOM.
 3. ALL RAILS SHALL BE INSTALLED PARALLEL TO THE GRADE OF THE ROADWAY.
 4. THE TYPICAL SPlice AND/OR EXPANSION JOINT SHALL BE LOCATED AT LEAST 2'-0" AWAY FROM CENTERLINE OF A RAIL POST.
 5. RAIL AND POSTS SHALL BE STRUCTURAL TUBING IN ACCORDANCE WITH ASTM A500 GRADE B, A618 OR A501.
 6. STEEL PLATES SHALL CONFORM TO ASTM A709 GRADE 50.
 7. ALL BOLTS SHALL BE ASTM F3125 GRADE A325 TYPE 1 GALVANIZED PER F2329 WITH HEX NUTS AND WASHERS AS SPECIFIED.
 8. END OF TUBE SECTIONS TO BE SAWED. ALL CUT ENDS SHALL BE TRUE AND SMOOTH AND CAPPED.
 9. ALL PICKETS SHALL HAVE A MINIMUM TENSILE STRENGTH OF 50 KSI.
 10. ALL CAP PLATES SHALL BE SHOP WELDED TO THE END OF TUBE WITH 1/4" FILLET WELD ALL AROUND.



SEE OVERALL PROJECT COVER SHEET FOR SHA AND F&P CONTRACT NUMBERS

- NOTES:**
1. FOR GENERAL PLAN AND ELEVATION SEE SHEET 34.
 2. FOR GENERAL NOTES SEE SHEET 35.
 3. FOR GEOMETRIC LAYOUT SEE SHEET 36.
 4. FOR PILE PLANS SEE SHEET 37.
 5. FOR ABUTMENT A PLAN AND ELEVATION SEE SHEET 38.
 6. FOR ABUTMENT B PLAN AND ELEVATION SEE SHEET 39.
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 10. FOR STANDARD DETAILS SEE SHEET 44.
 11. DIMENSIONS AND ELEVATIONS SHOWN ON THIS SHEET ARE FOR BIDDING PURPOSES ONLY. THE CONTRACTOR SHALL COORDINATE WITH THE SUPERSTRUCTURE FABRICATOR TO LOCATE BEARINGS, SEAT ELEVATIONS AND SET OTHER NECESSARY DIMENSIONS, AS PART OF THE REQUIRED CONTRACTORS SHOP DRAWINGS SUBMISSION.
 12. REINFORCING CHORDS NOT USED FOR END BAYS OF EACH SPAN, REINFORCING MAY NOT BE REQUIRED PER MANUFACTURER.
 13. BRIDGE RAILING AND FENCE TO BE DESIGNED AND DETAILED BY OTHERS, REFER TO SPECIAL PROVISION SECTION 430.
 14. DECK TO BE COATED WITH AN ANTI-SKID EPOXY COATING.

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WHITNEY BAILEY COX & MAGNANI, LLC
300 East Joppa Road, Suite 200 Baltimore, MD 21286
MAIN 410.512.4500 FAX 410.324.4100
www.wbcm.com

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 #33123 Expiration Date: 1/5/2022

REVISIONS			
NO.	DESCRIPTION	BY	DATE

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

98262

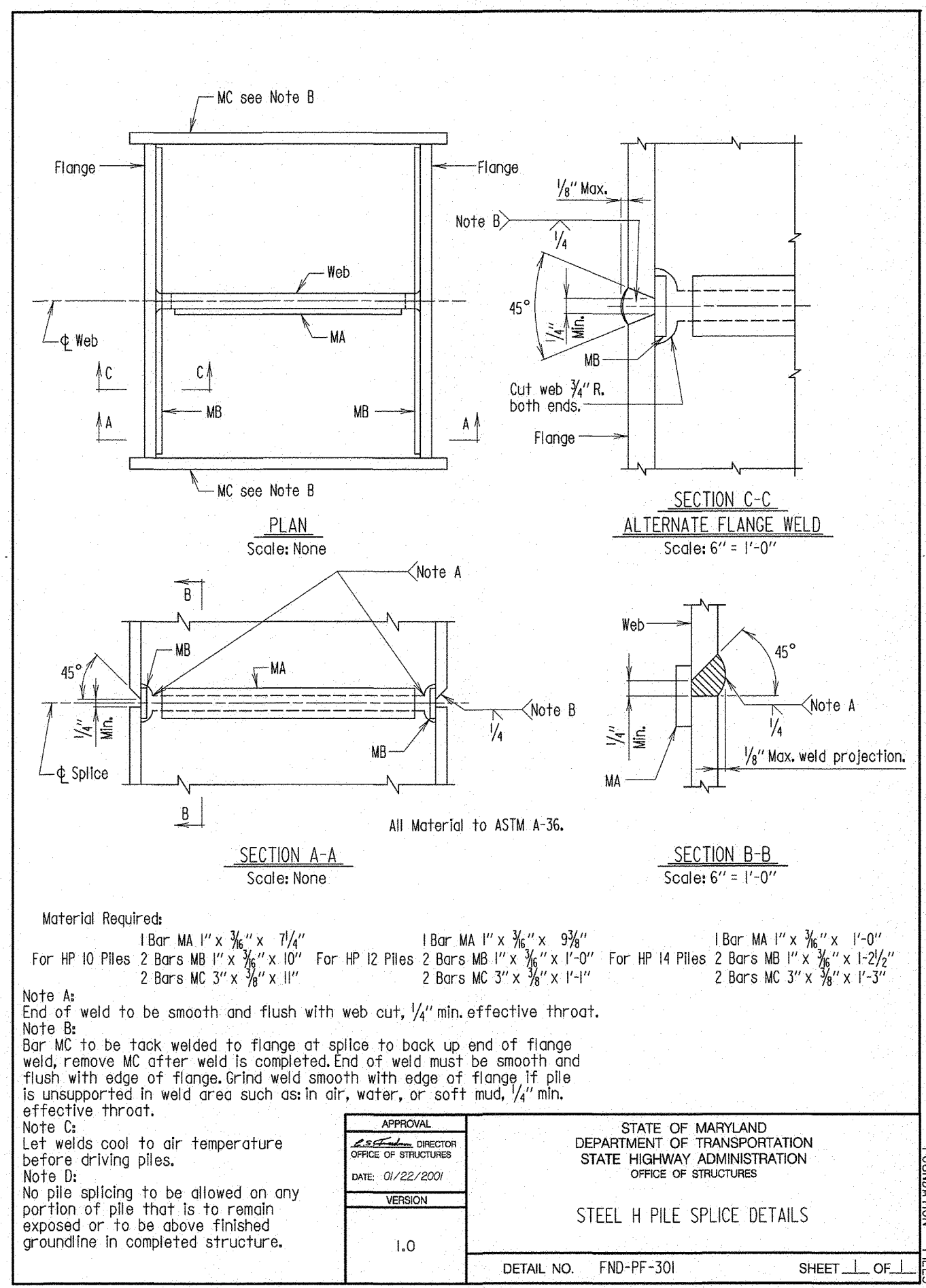
WB&A TRAIL - BRIDGE AT PATUXENT

TYPICAL SECTION

APPROVED <i>[Signature]</i> CHIEF ENGINEER	DATE 8/9/21	APPROVED <i>[Signature]</i> PROJECT MANAGER	DATE 8/11/21
APPROVED <i>[Signature]</i> ASSISTANT CHIEF ENGINEER	DATE 8/11/21	APPROVED <i>[Signature]</i> CHIEF, RIGHT-OF-WAY	DATE 8/6/21

SCALE: AS SHOWN
DRAWN BY: D.E.D.
CHECKED BY: J.M.R.
SHEET NO. 43 OF 45
PROJECT NO.: P393600
CONTRACT NO.: P393608

\\wbcm\lic\Draws\Projects\2014\14017900\Drawings\02-Bridge\2014017900-S110-SS01-R1.dwg Jun 16, 2021 4:07pm Plot By: cbinder



LOCATION CATEGORY A

BAR SIZE	CENTER TO CENTER SPACING				
	3"	4"	5"	6"	> 6"
#4	2'-5"	3'-11"	2'-10"	2'-5"	2'-10"
#5	3'-1"	4'-0"	3'-0"	3'-7"	3'-7"
#6	4'-5"	5'-9"	3'-7"	4'-8"	3'-7"
#7	6'-0"	7'-10"	4'-6"	5'-11"	4'-2"
#8	7'-10"	10'-3"	5'-11"	7'-8"	6'-2"
#9	10'-0"	13'-0"	7'-6"	9'-9"	7'-10"
#10	-	9'-6"	12'-5"	7'-7"	9'-11"
#11	-	11'-8"	15'-3"	9'-4"	12'-3"

Location Category A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as in footings, pier caps, etc.

LOCATION CATEGORY B

BAR SIZE	CENTER TO CENTER SPACING				
	3"	4"	5"	6"	> 6"
#4	1'-10"	2'-5"	1'-10"	2'-2"	1'-10"
#5	2'-5"	3'-7"	2'-4"	3'-5"	2'-4"
#6	3'-5"	5'-11"	2'-9"	4'-11"	2'-9"
#7	4'-8"	6'-11"	3'-6"	5'-3"	3'-2"
#8	6'-1"	9'-1"	4'-7"	6'-10"	3'-8"
#9	7'-8"	11'-6"	5'-9"	8'-8"	4'-6"
#10	-	7'-4"	10'-11"	5'-10"	8'-9"
#11	-	9'-0"	13'-6"	7'-2"	10'-9"

Location Category B - All bars not in Location Category A.

Legend:
 □ = Non-epoxy coated
 ■ = Epoxy coated

Notes:
 1. When bar lap is not specified on the Plans, the above dimensions shall be used.
 2. These bar laps do not apply when bar is in lightweight concrete. Greater lengths are required for this material.
 3. These bar laps only apply where the General Notes indicate Reinforcing Steel Design, fy = 60 ksi, and Concrete Design, fc = 3000 psi.
 4. These bar laps assume cover of 2". Greater lap lengths will be required for cover less than 2".
 5. These bar laps are Class B splices based on the development lengths in Std. No. REBAR-DL-101, Class B splices are 1.3 times the development length.
 6. Class A splices may be used when (a) the area of reinforcement provided is at least twice that required by analysis over the entire length of the lap splice and (b) one-half or less of the total reinforcement is spliced within the required lap splice length. Class A splices are 1.0 times the development length.

APPROVAL:
 STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 OFFICE OF STRUCTURES
 DATE: 03/22/2007
 VERSION: 1.0
 BAR LAP DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN MIX NO.3 (3500 P.S.I.) CONCRETE
 DETAIL NO. REBAR-BL-101 SHEET 1 OF 1

LOCATION CATEGORY A

BAR SIZE	CENTER TO CENTER SPACING				
	3"	4"	5"	6"	> 6"
#4	1'-10"	2'-5"	1'-10"	2'-2"	1'-10"
#5	2'-5"	3'-11"	2'-4"	3'-0"	2'-4"
#6	3'-5"	4'-5"	2'-9"	3'-7"	2'-9"
#7	4'-8"	6'-11"	3'-6"	4'-7"	3'-2"
#8	6'-1"	7'-11"	4'-7"	5'-11"	3'-8"
#9	7'-8"	10'-0"	5'-9"	7'-6"	4'-8"
#10	-	9'-6"	12'-5"	5'-10"	7'-8"
#11	-	11'-8"	15'-3"	7'-2"	9'-5"

Location Category A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as in footings, pier caps, etc.

LOCATION CATEGORY B

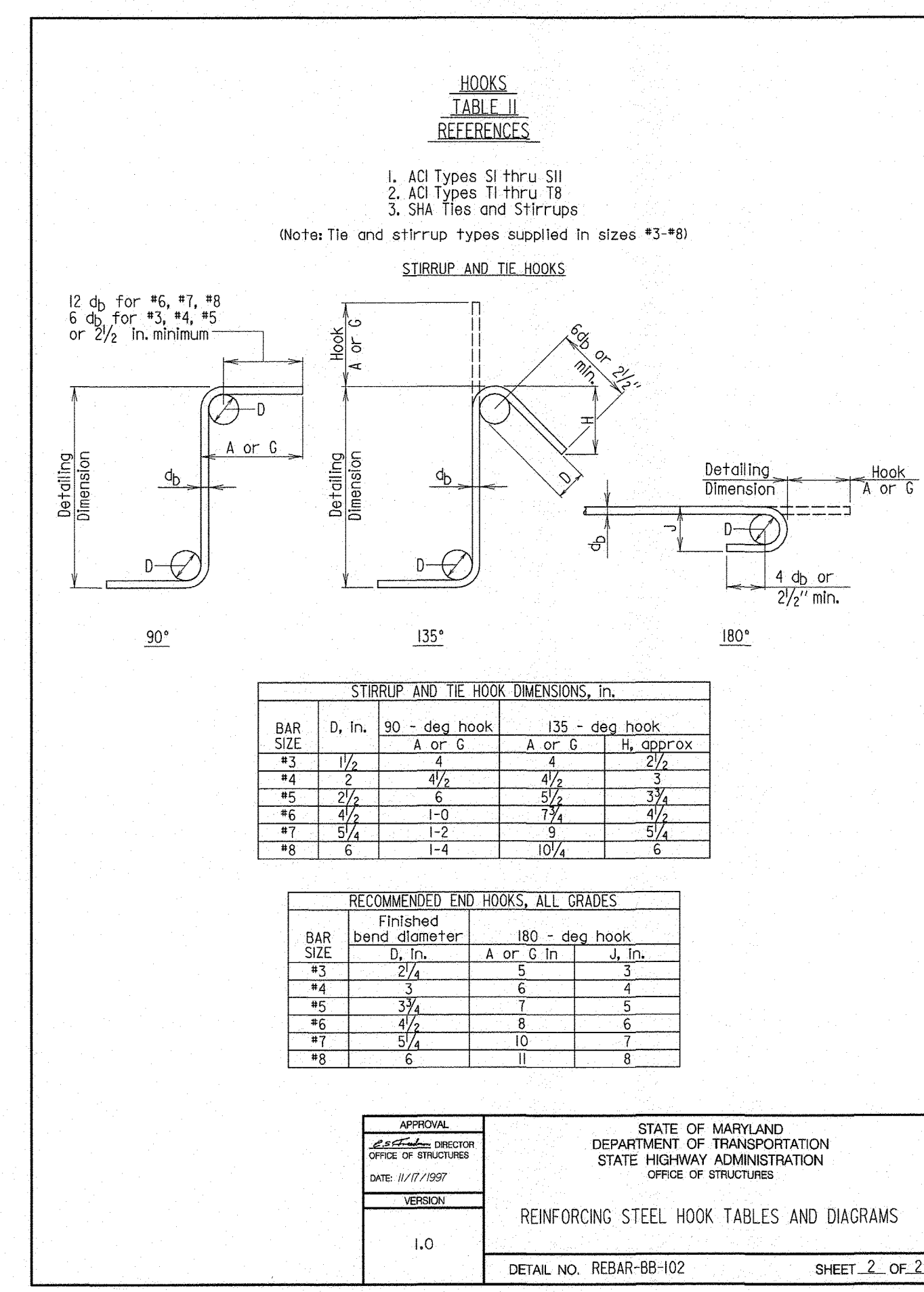
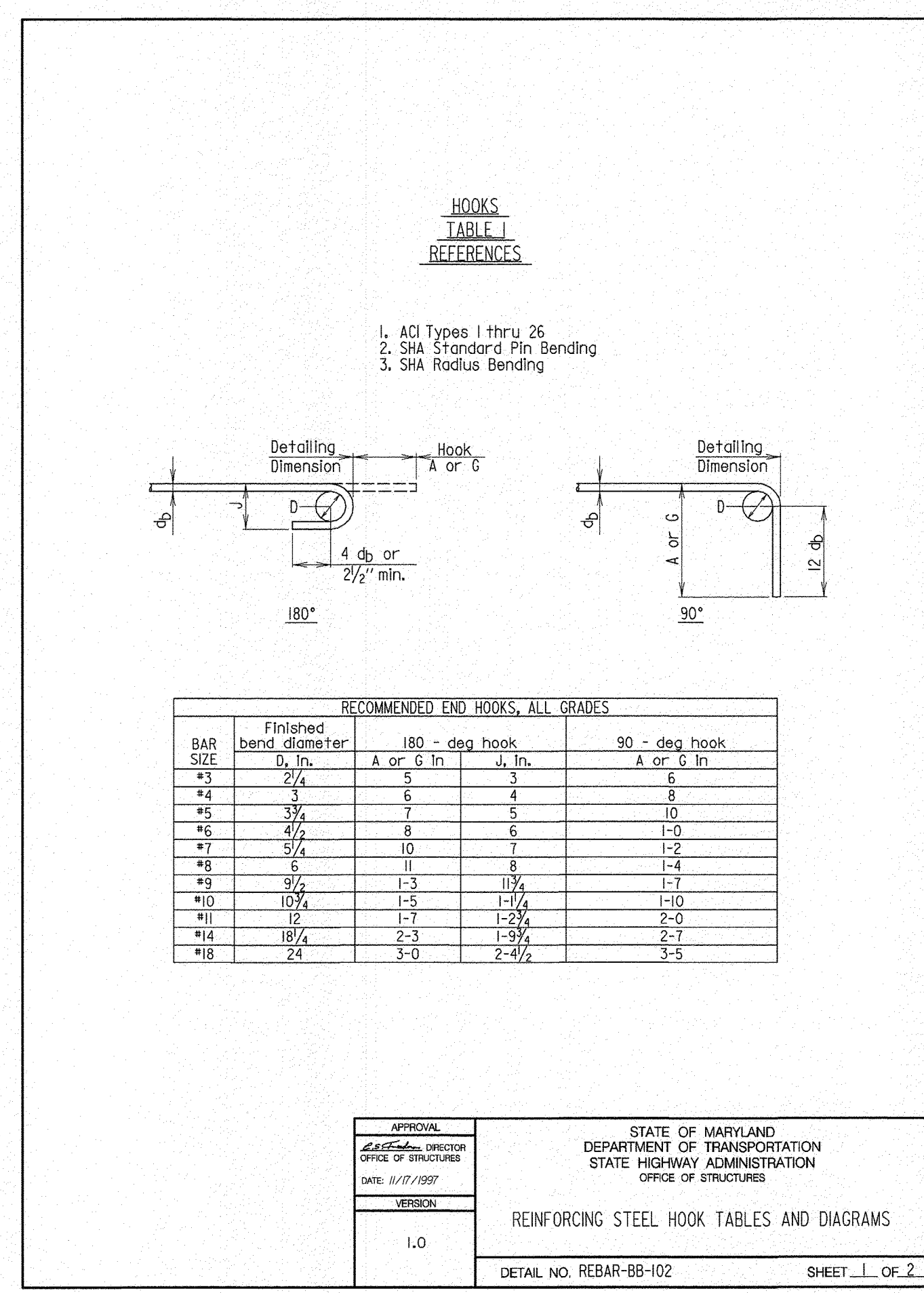
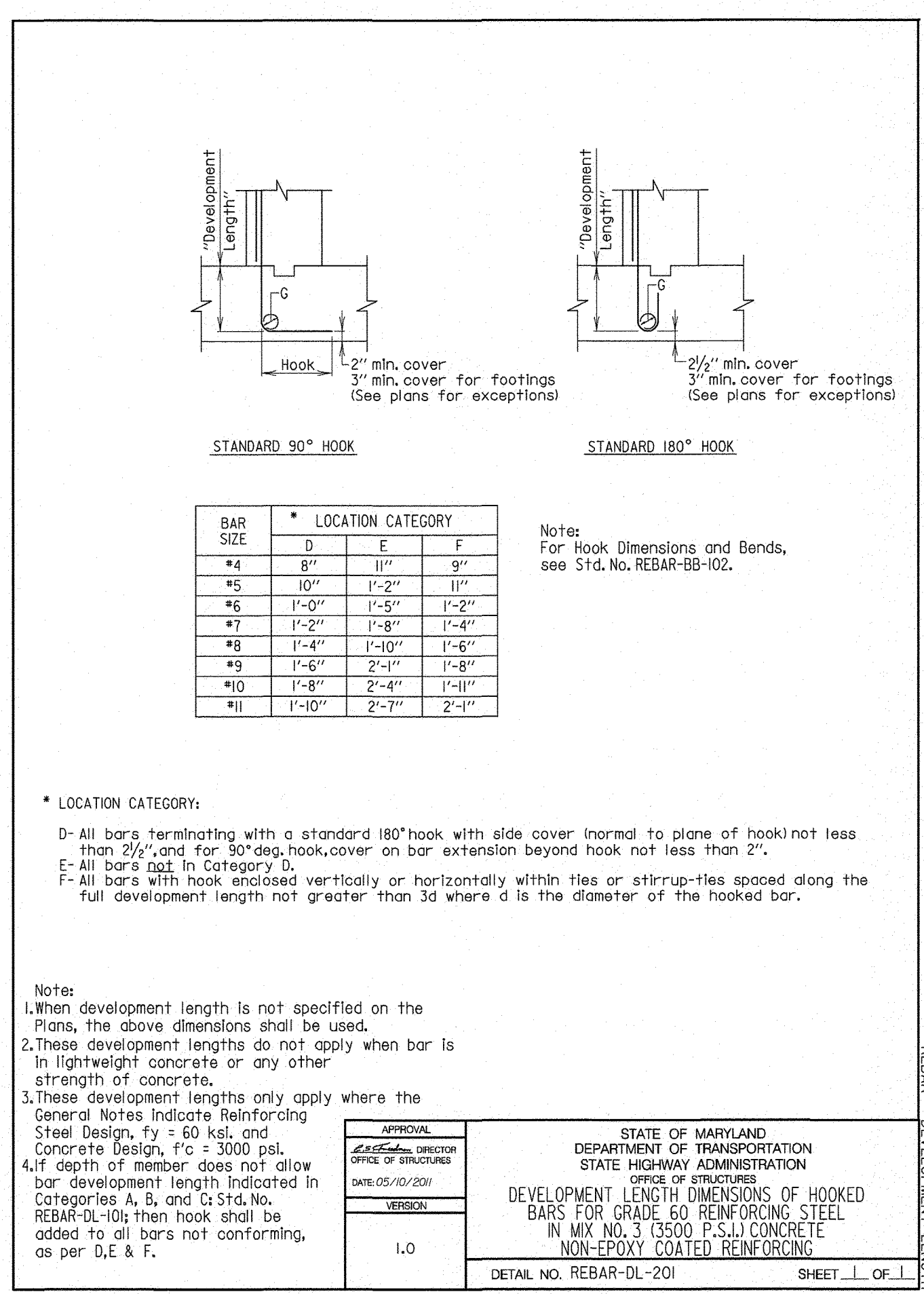
BAR SIZE	CENTER TO CENTER SPACING				
	3"	4"	5"	6"	> 6"
#4	1'-5"	2'-9"	1'-5"	1'-8"	1'-5"
#5	1'-10"	2'-9"	1'-9"	2'-8"	1'-9"
#6	2'-8"	3'-11"	2'-11"	3'-2"	2'-11"
#7	3'-7"	5'-4"	2'-8"	4'-0"	2'-6"
#8	4'-8"	7'-0"	3'-6"	5'-3"	2'-10"
#9	5'-11"	8'-10"	4'-5"	6'-8"	3'-7"
#10	-	5'-8"	8'-5"	4'-6"	6'-9"
#11	-	6'-11"	10'-4"	5'-7"	8'-4"

Location Category B - All bars not in Location Category A.

Legend:
 □ = Non-epoxy coated
 ■ = Epoxy coated

Notes:
 1. When development length is not specified on the Plans, the above dimensions shall be used.
 2. These development lengths do not apply when bar is in lightweight concrete. Greater lengths are required for this material.
 3. These development lengths only apply where the General Notes indicate Reinforcing Steel Design, fy = 60 ksi, and Concrete Design, fc = 3000 psi.
 4. These development lengths assume cover of 2". Greater development lengths will be required for cover less than 2".
 5. The Excess Reinforcement Factor was assumed to be 1.0 when calculating these dimensions.
 6. Atr was assumed to be 0 when calculating the Reinforcement Confinement Factor.
 7. If depth of member does not allow bar development length indicated in Location Categories A and B, then hooks shall be added to all bars not conforming, as per D, E, and F per Std. No. REBAR-DL-201.

APPROVAL:
 STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 OFFICE OF STRUCTURES
 DATE: 03/22/2007
 VERSION: 1.0
 DEVELOPMENT LENGTH DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN MIX NO.3 (3500 P.S.I.) CONCRETE
 DETAIL NO. REBAR-DL-101 SHEET 1 OF 1



SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

NOT TO SCALE

Plot By: cshieder Jun 16, 2021 2:07pm

WHITNEY BAILEY COX & MAGNANI, LLC
 300 East Joppa Road Suite 200 Baltimore, MD 21286
 MAIN 410.512.4500 FAX 410.324.4100
 www.wbcm.com

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 License #33123 Expiration Date: 1/5/2022

REVISIONS			
NO.	DESCRIPTION	BY	DATE

APPROVED: *David L. Brown* 8/9/21
 CHIEF ENGINEER

APPROVED: *David L. Brown* 8/11/21
 ASSISTANT CHIEF ENGINEER

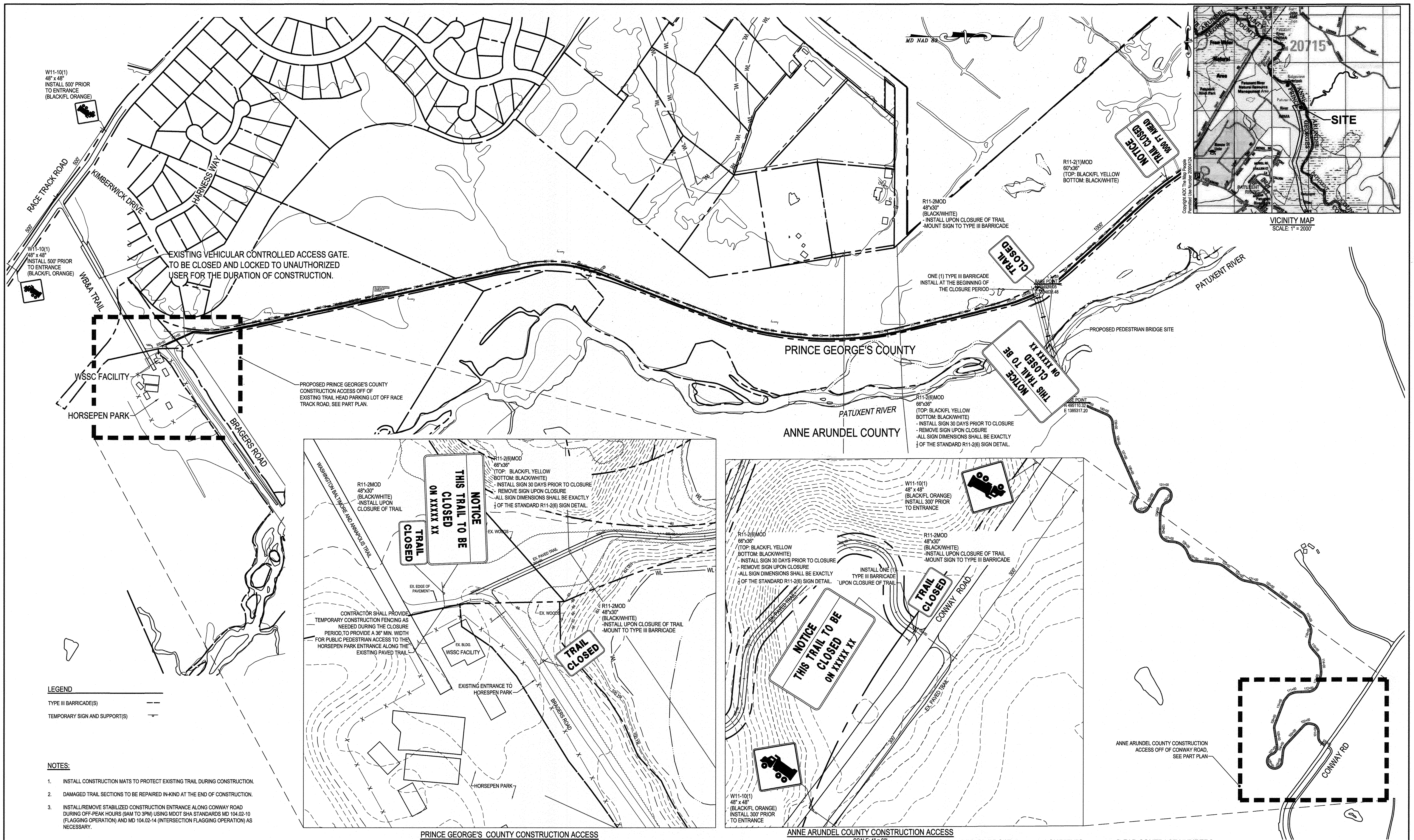
APPROVED: *David L. Brown* 8/11/21
 CHIEF, RIGHT-OF-WAY

ANNE ARUNDEL COUNTY
 DEPARTMENT OF PUBLIC WORKS

98263

SCALE: AS SHOWN
 DRAWN BY: D.E.D.
 CHECKED BY: J.M.R.
 SHEET NO. 44 OF 45
 PROJECT NO.: P393600
 CONTRACT NO.: P393608

WB&A TRAIL - BRIDGE AT PATUXENT
 STANDARD DETAILS

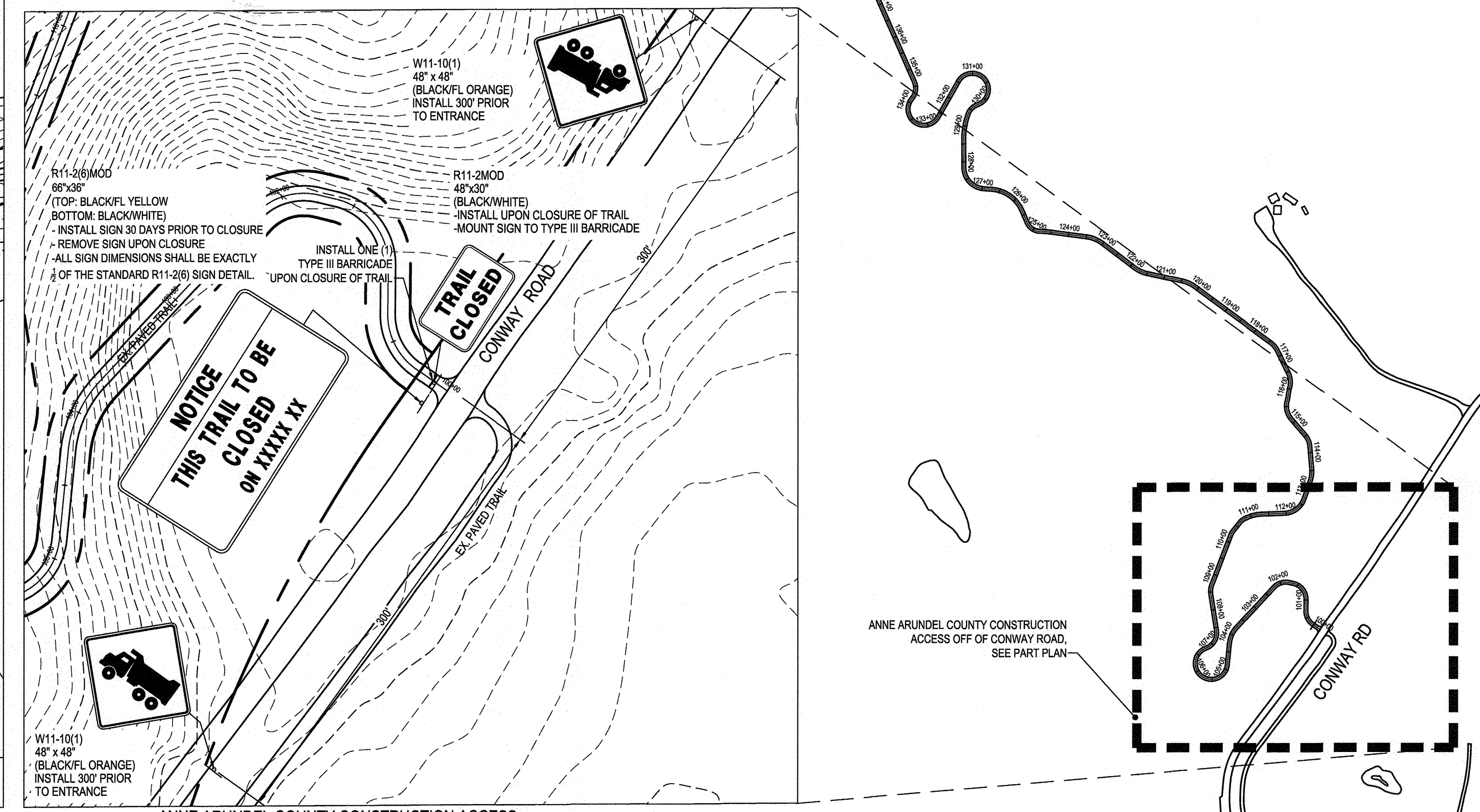
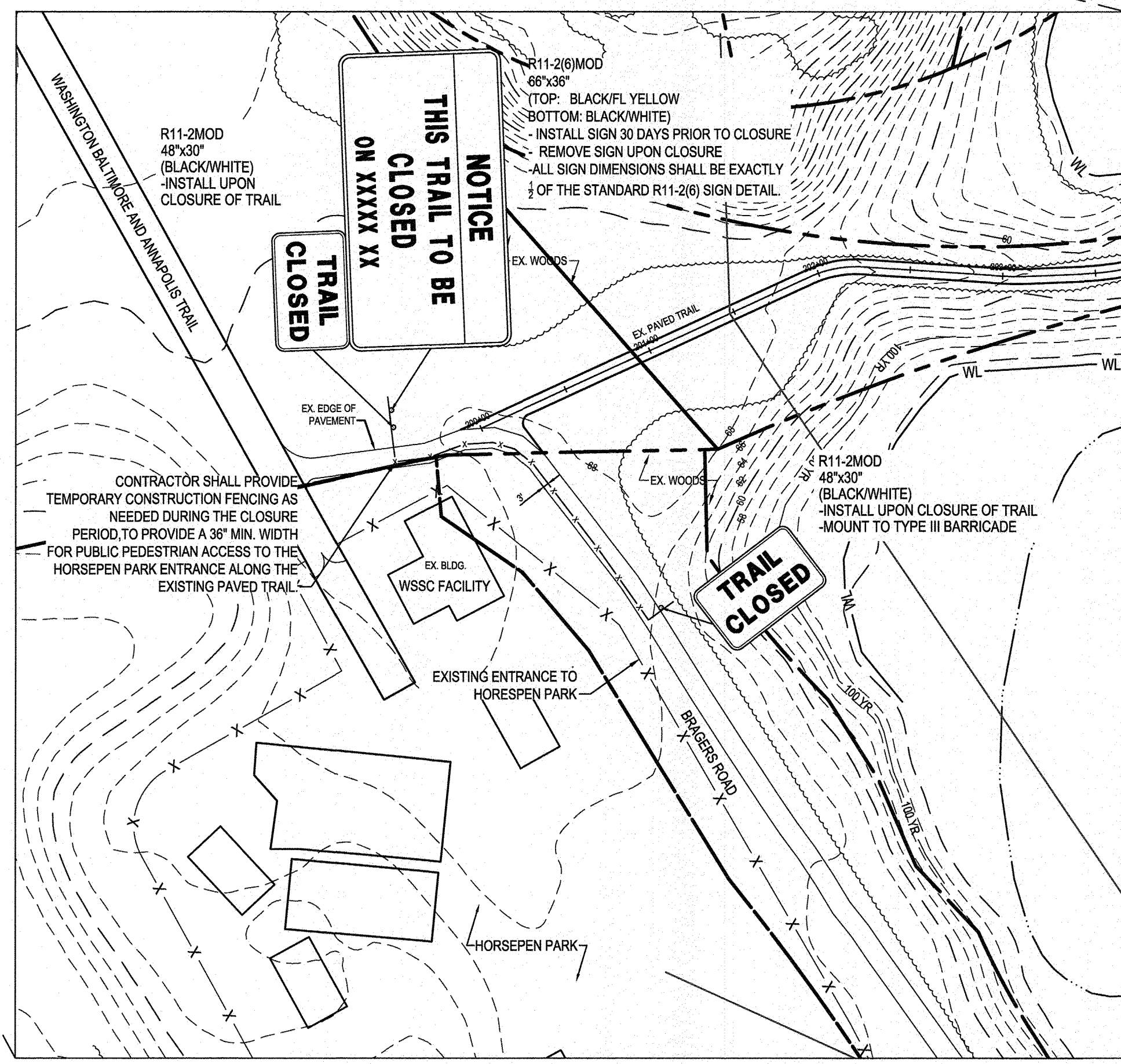
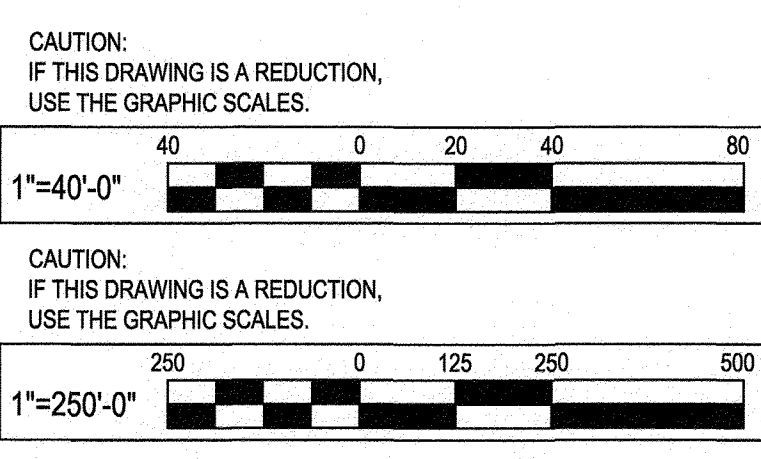


LEGEND

TYPE III BARRICADE(S)

TEMPORARY SIGN AND SUPPORT(S)

- NOTES:**
- INSTALL CONSTRUCTION MATS TO PROTECT EXISTING TRAIL DURING CONSTRUCTION.
 - DAMAGED TRAIL SECTIONS TO BE REPAIRED IN-KIND AT THE END OF CONSTRUCTION.
 - INSTALL/REMOVE STABILIZED CONSTRUCTION ENTRANCE ALONG CONWAY ROAD DURING OFF-PEAK HOURS (8AM TO 3PM) USING MDOT SHA STANDARDS MD 104.02-10 (FLAGGING OPERATION) AND MD 104.02-14 (INTERSECTION FLAGGING OPERATION) AS NECESSARY.



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MAIN 410.512.4500 FAX 410.324.4100
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License #34682 Expiration Date: 07/08/2023

REVISIONS			
NO.	DESCRIPTION	BY	DATE

SEE OVERALL PROJECT COVER SHEET FOR SHA AND FAP CONTRACT NUMBERS

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

APPROVED: *[Signature]* 8/9/21
CHIEF ENGINEER

APPROVED: *[Signature]* 8/11/21
PROJECT MANAGER

APPROVED: *[Signature]* 8/11/21
ASSISTANT CHIEF ENGINEER

APPROVED: *[Signature]* 8/6/21
CHIEF, RIGHT-OF-WAY

SCALE: 1" = 250'

DRAWN BY: M.M./H.H.
CHECKED BY: B.L.
SHEET NO. 45 OF 45
PROJECT NO.: 2014017900
CONTRACT NO.: 2014017900

98264
WB&A TRAIL - BRIDGE AT PATUXENT

TRAFFIC CONTROL PLAN