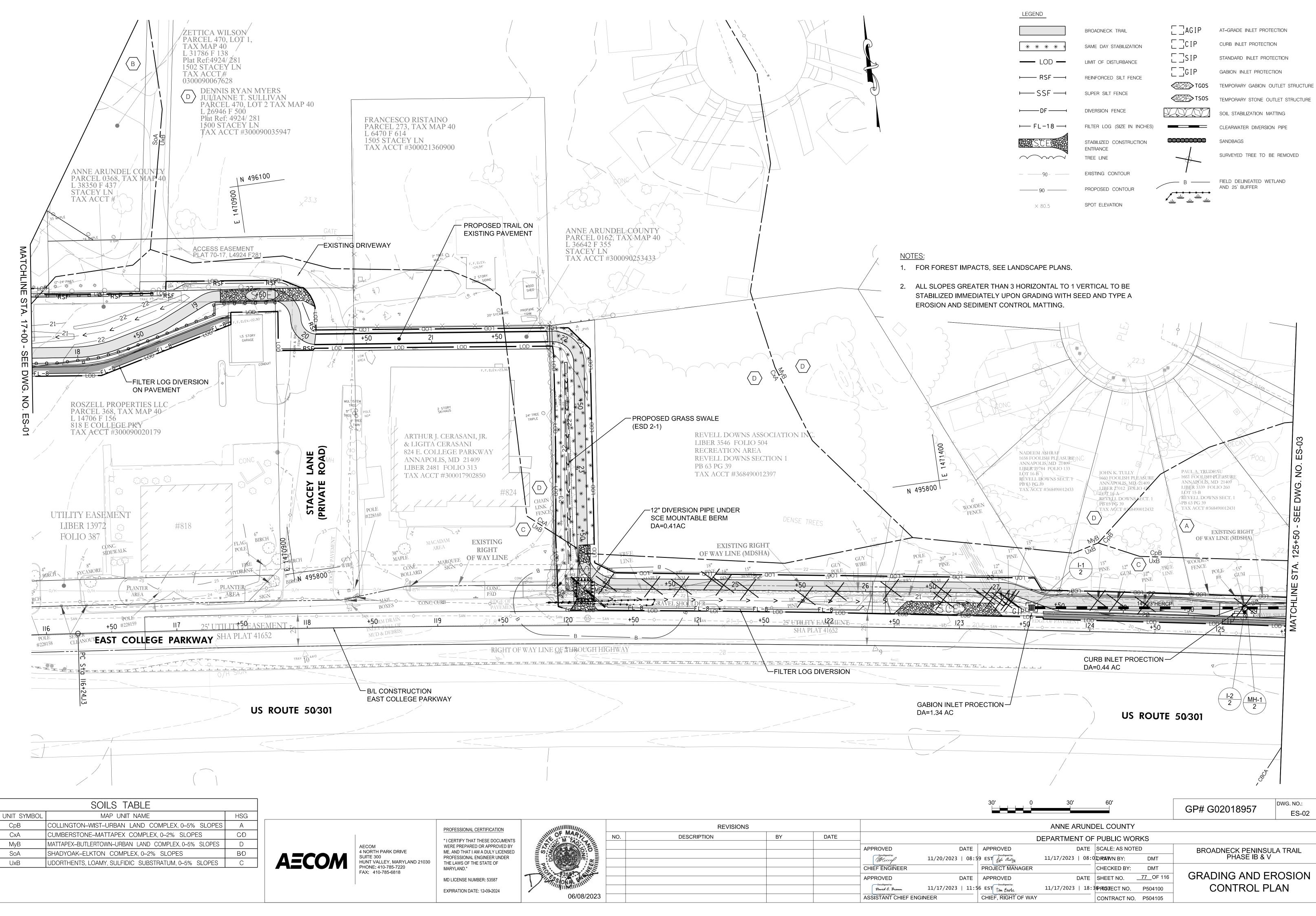


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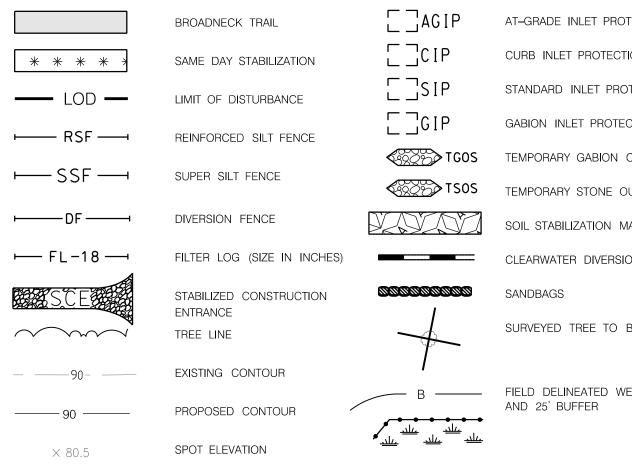
PROFESSIONAL CERTIFICATION			REVISIONS			
" I CERTIFY THAT THESE DOCUMENTS	OF MARL	NO.	DESCRIPTION	BY	DATE	
WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED						APPROVED
PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF						BBAB/3140032409
MARYLAND."						CHIEF ENGINEER
MD LICENSE NUMBER: 53587	1458 ONAL SHITT					
EXPIRATION DATE: 12-09-2024						David C. Brann
	06/08/2023					ASSISTANT CHIEF

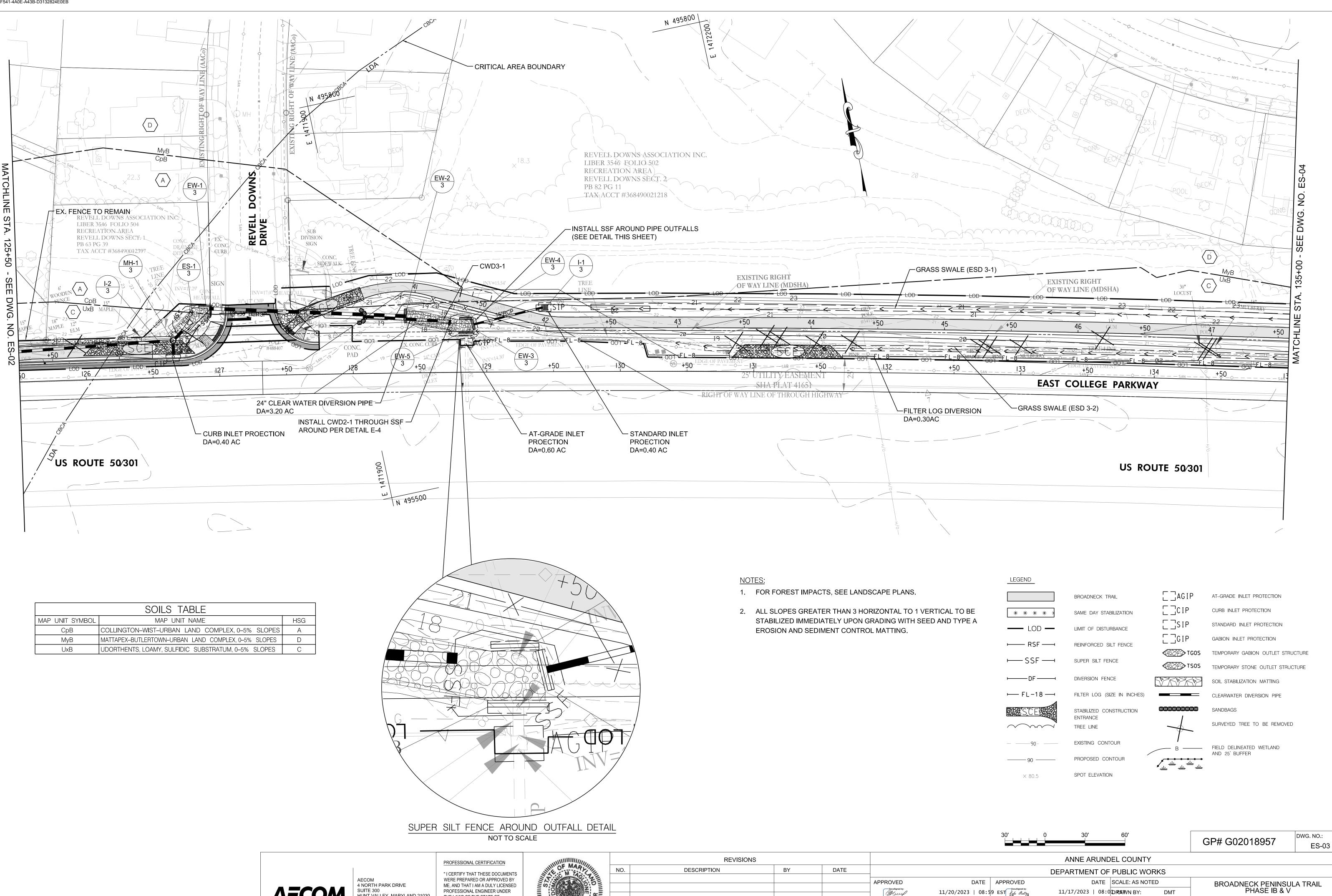


MAP UNIT SYMBOL	MAP UNIT NAME	HSG
СрВ	COLLINGTON-WIST-URBAN LAND COMPLEX, 0-5% SLOPES	А
СхА	CUMBERSTONE-MATTAPEX COMPLEX, 0-2% SLOPES	C/D
МуВ	MATTAPEX-BUTLERTOWN-URBAN LAND COMPLEX, 0-5% SLOPES	D
SoA	SHADYOAK-ELKTON COMPLEX, 0-2% SLOPES	B⁄D
UxB	UDORTHENTS, LOAMY, SULFIDIC SUBSTRATUM, 0-5% SLOPES	С

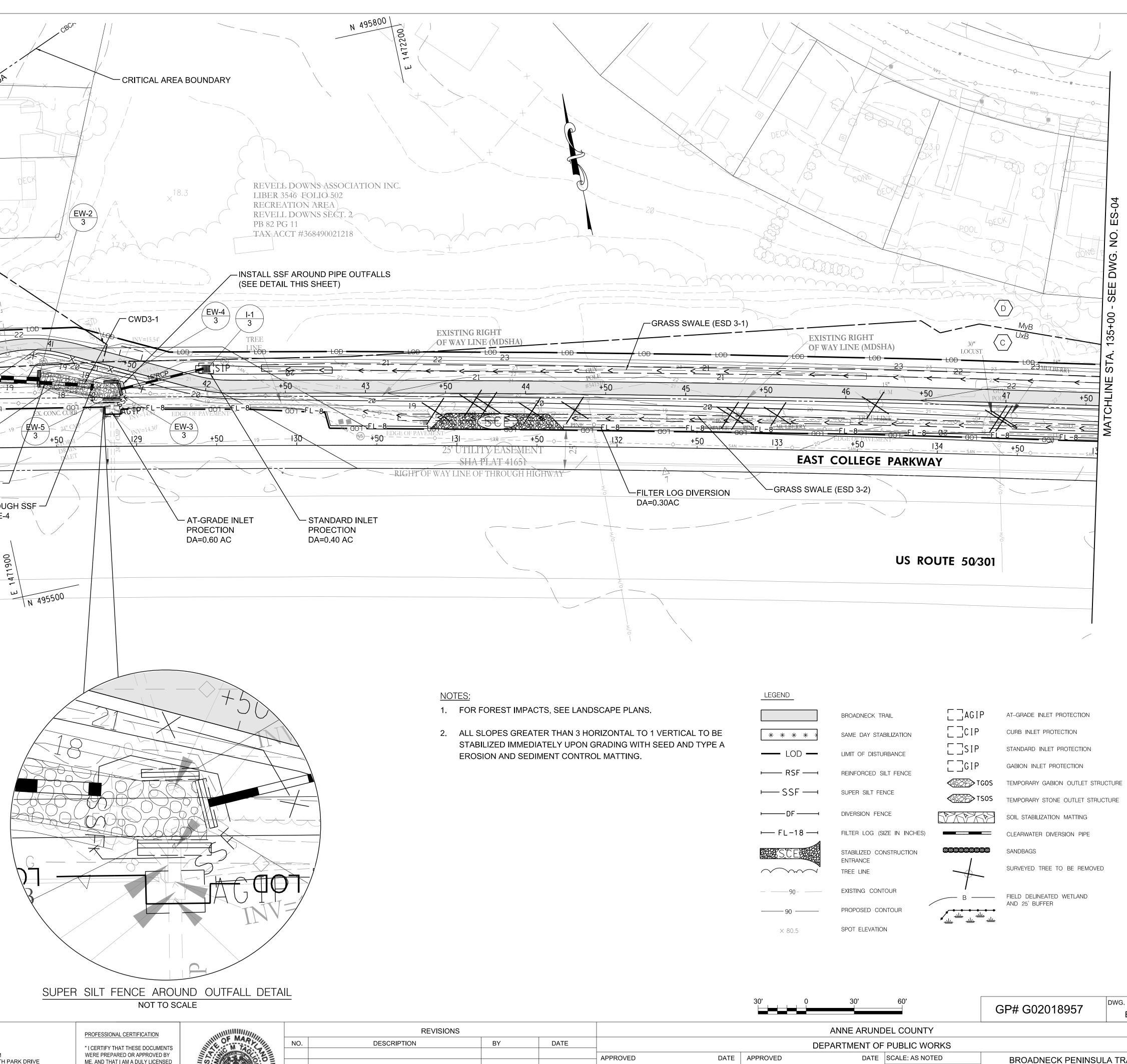








	SOILS TABLE	
MAP UNIT SYMBOL	MAP UNIT NAME	HSG
СрВ	COLLINGTON-WIST-URBAN LAND COMPLEX, 0-5% SLOPES	А
MyB	MATTAPEX-BUTLERTOWN-URBAN LAND COMPLEX, 0-5% SLOPES	D
UxB	UDORTHENTS, LOAMY, SULFIDIC SUBSTRATUM, 0–5% SLOPES	С



11/20/2023 | 08:59 EST Jule Buty

11/17/2023 | 11:56 EST Tom Burke

DATE APPROVED

PROJECT MANAGER

CHIEF, RIGHT OF WAY



PROFESSIONAL CERTIFICATION			REVISIONS					
" I CERTIFY THAT THESE DOCUMENTS	OF MARY	NO.	DESCRIPTION	BY	DATE			
WERE PREPARED OR APPROVED BY	S S CONTRACT						ROVED	
ME, AND THAT I AM A DULY LICENSED								
PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF							— DocuSigned by: DCxxxx	11/20
MARYLAND."	ER:					CHIE	F ENGINEER	
MD LICENSE NUMBER: 53587	Trassing						ROVED	
EXPIRATION DATE: 12-09-2024						(–DocuSigned by: David C. Brann	11/17
EAFIRATION DATE. 12-09-2024	06/08/2023					ASSI	STANT CHIEF EN	GINEER

GRADING AND EROSION CONTROL PLAN

DMT

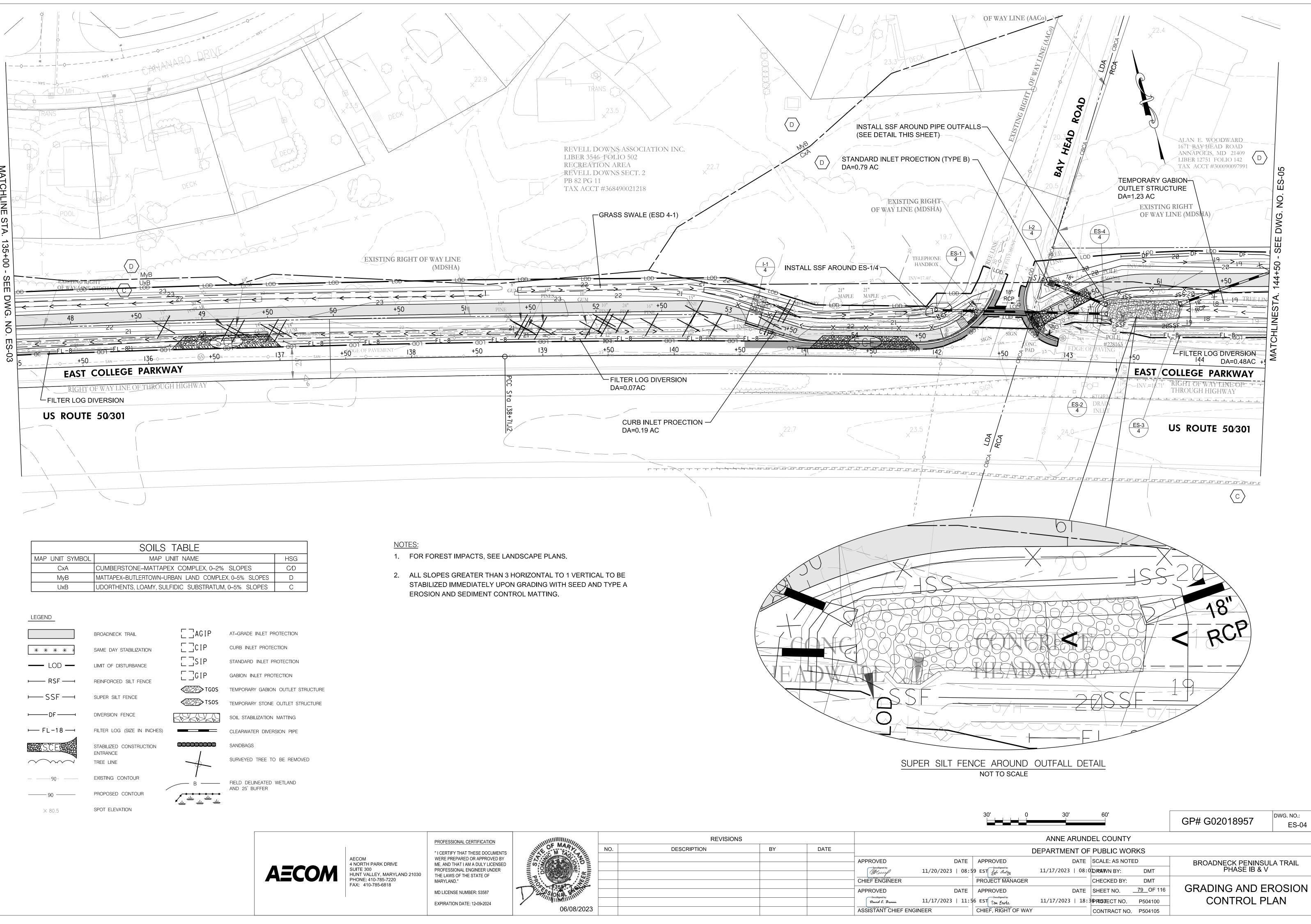
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CHECKED BY:

11/17/2023 | 18:3 PROJECT NO. P504100

DATE SHEET NO. <u>78</u>OF 116

CONTRACT NO. P504105



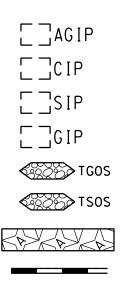
SOILS TABLE			
MAP UNIT SYMBOL	MAP UNIT NAME	HSG	
CxA	CUMBERSTONE-MATTAPEX COMPLEX, 0-2% SLOPES	C⁄D	
МуВ	MATTAPEX-BUTLERTOWN-URBAN LAND COMPLEX, 0-5% SLOPES	D	
UxB	UDORTHENTS, LOAMY, SULFIDIC SUBSTRATUM, 0-5% SLOPES	С	

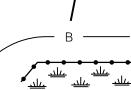


LEGEND
* * * * *
— LOD —
⊢ RSF — I
⊢ SSF – I
⊢DF
⊢ FL-18 →
SCE

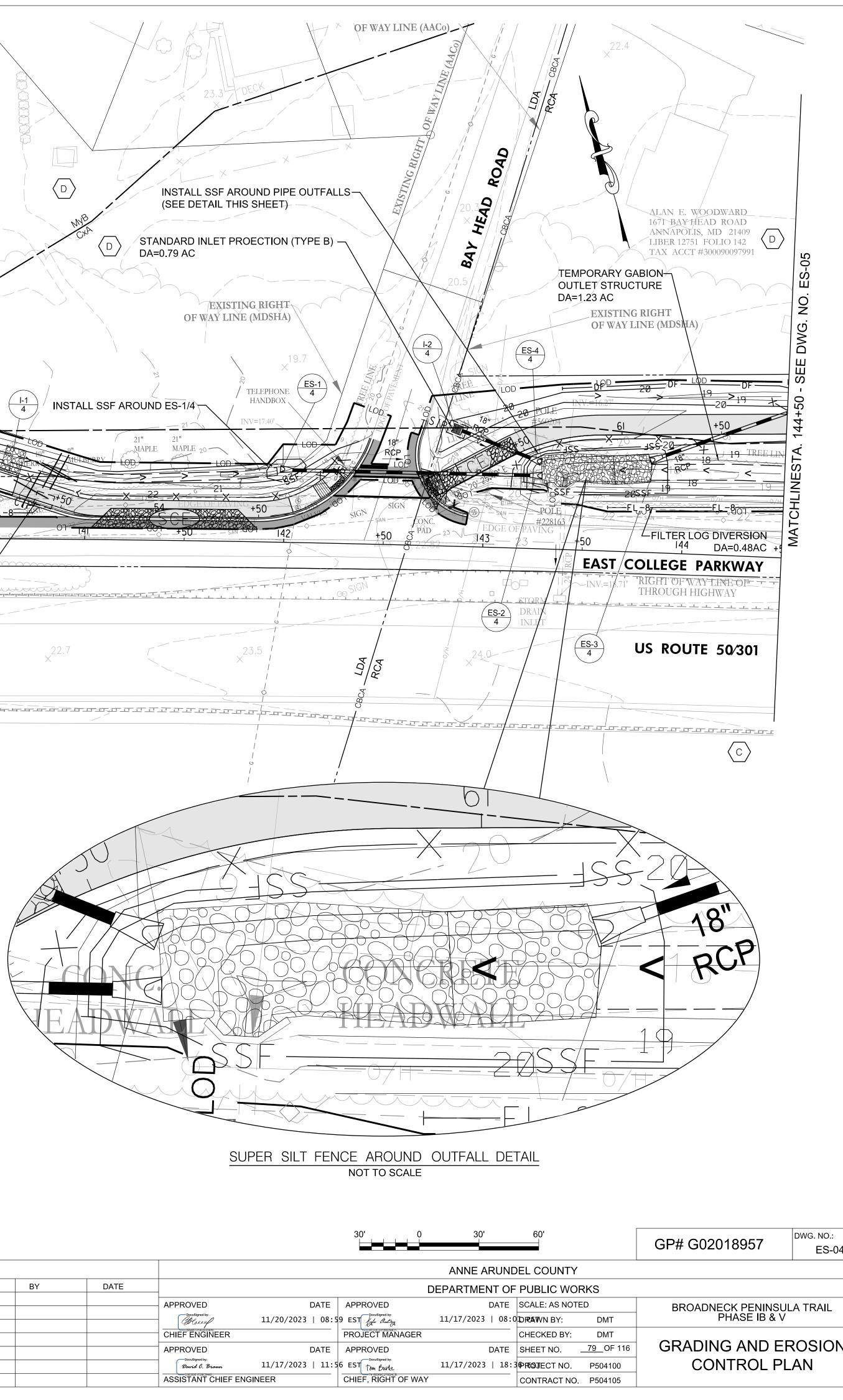
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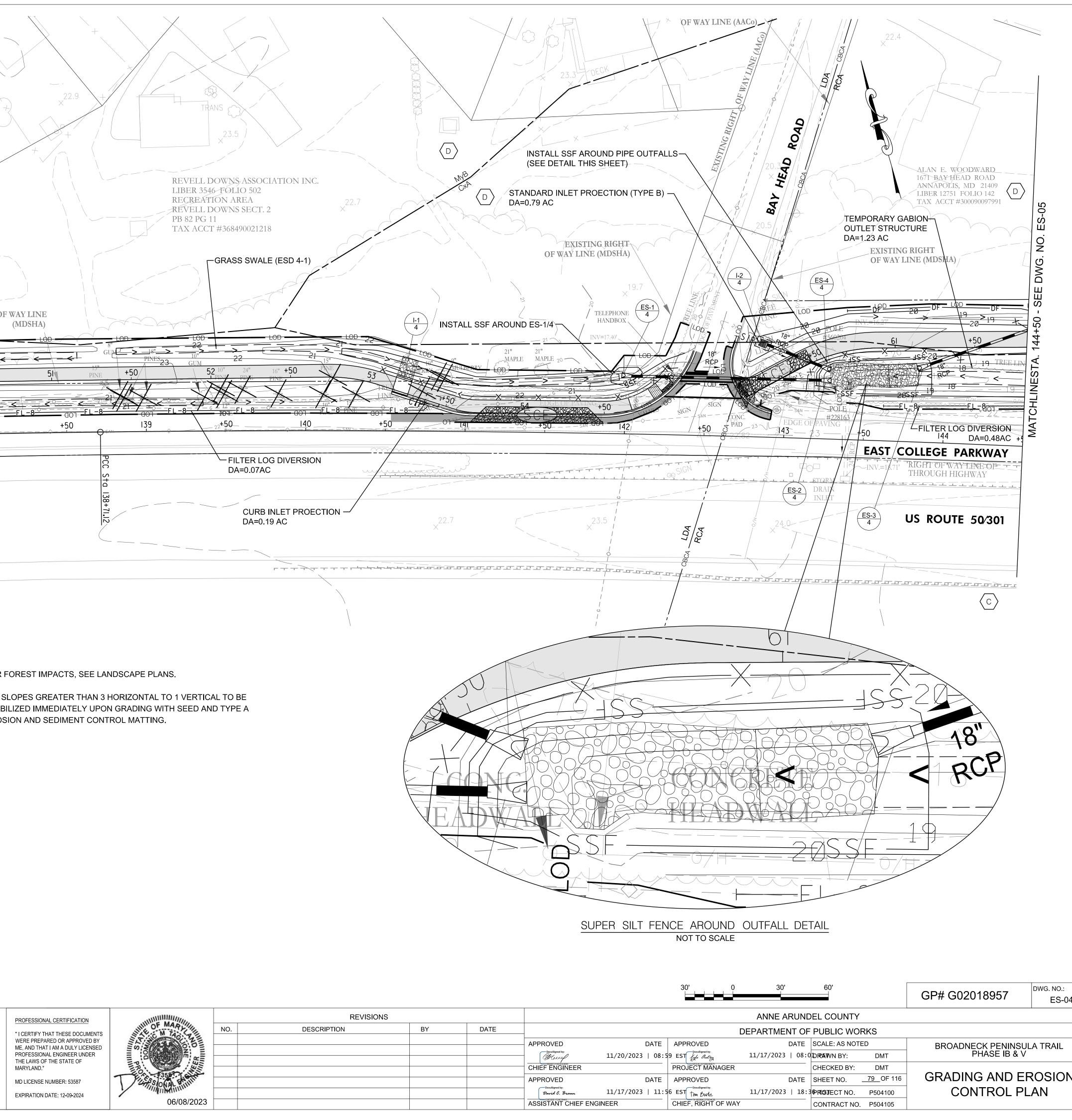
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SAME	DAY	STABILIZA	ATI(

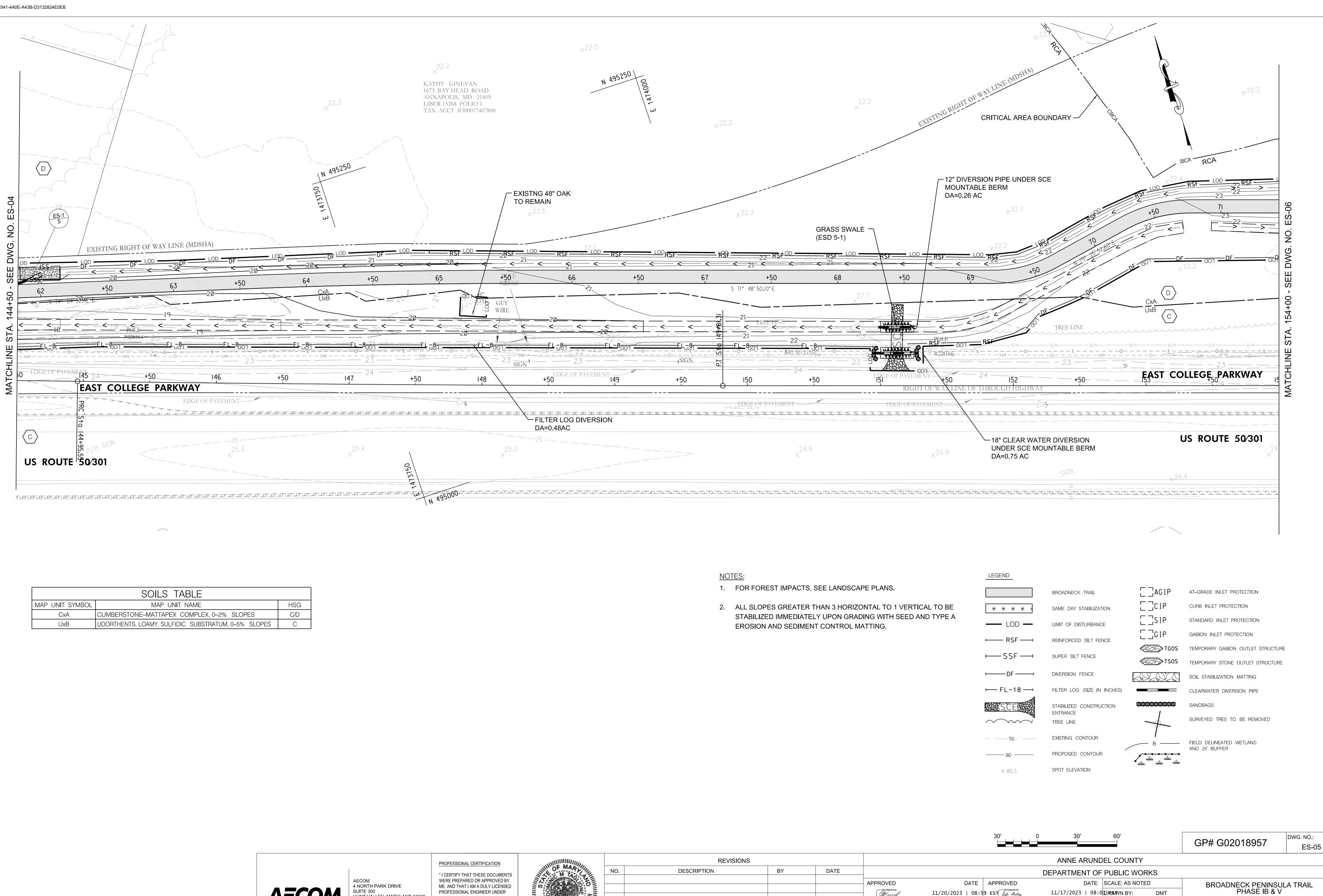












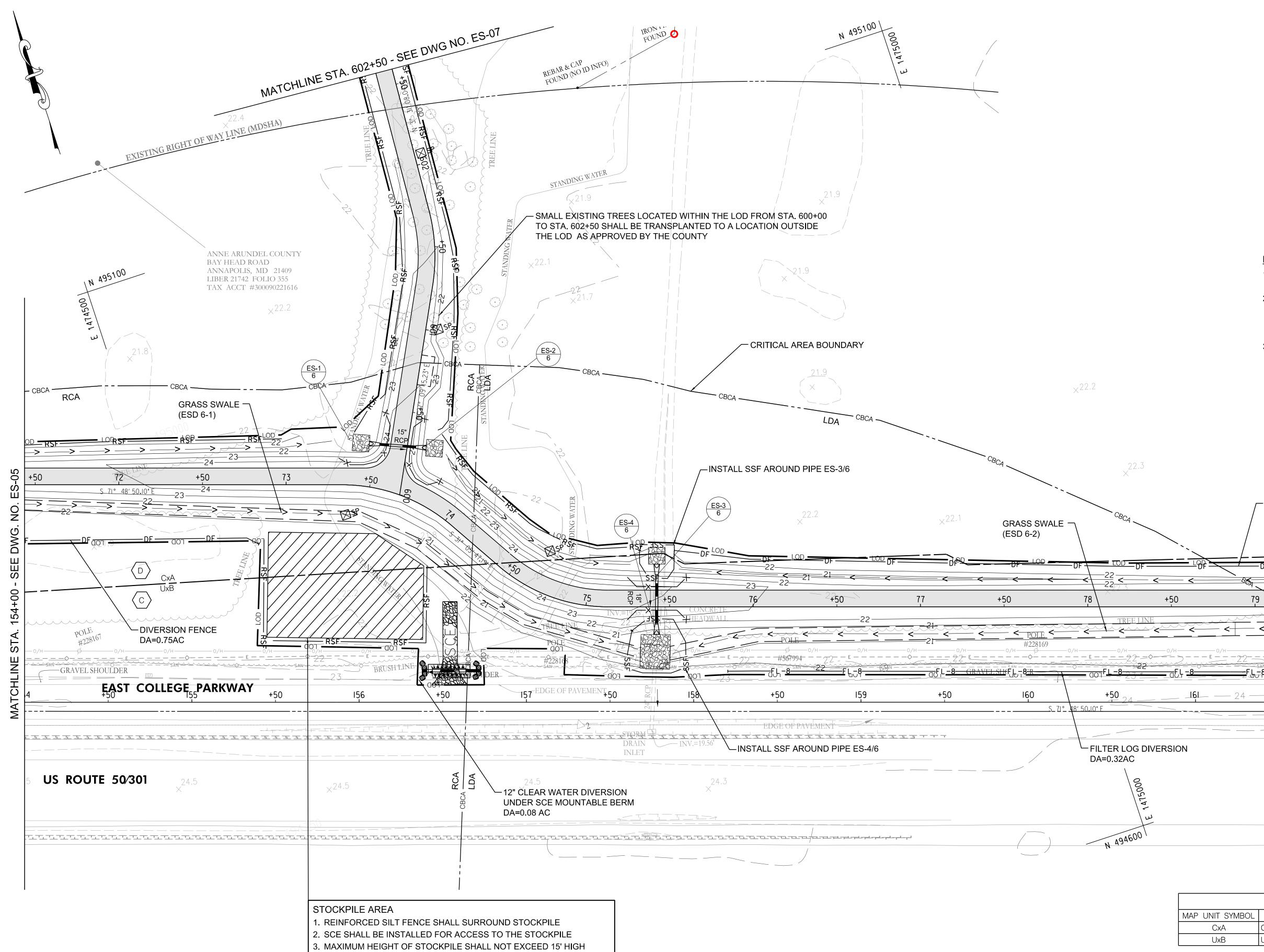
SOILS TABLE			
MAP UNIT SYMBOL	MAP UNIT NAME	HSG	
СхА	CUMBERSTONE-MATTAPEX COMPLEX, 0-2% SLOPES	C⁄D	
UxB	UDORTHENTS, LOAMY, SULFIDIC SUBSTRATUM, 0–5% SLOPES	С	



PROFESSIONAL CERTIFICATION REVISIONS	
Image: No. Description By Date Were PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND." NO. DESCRIPTION By DATE MD LICENSE NUMBER: 53587 EXPIRATION DATE: 12-09-2024 06/08/2023 NO. DESCRIPTION By DATE	11/20, 11/17, IGINEER

DEPARTMENT OF PUBLIC WORKS						
DATE	APPROVED	DATE	SCALE: AS NOTE	Ð	BROA	
11/20/2023 08:	9 EST Jule Autry	11/17/2023 08:0	ÐRA¶WN BY:	DMT		
	PROJECT MANAGER		CHECKED BY:	DMT		
DATE	APPROVED	DATE	SHEET NO.	<u>80</u> OF 116	GRAD	
11/17/2023 11:	I OM DWREC	11/17/2023 18:3	PROJECT NO.	P504100	C	
GINEER	CHIEF, RIGHT OF WAY		CONTRACT NO.	P504105		

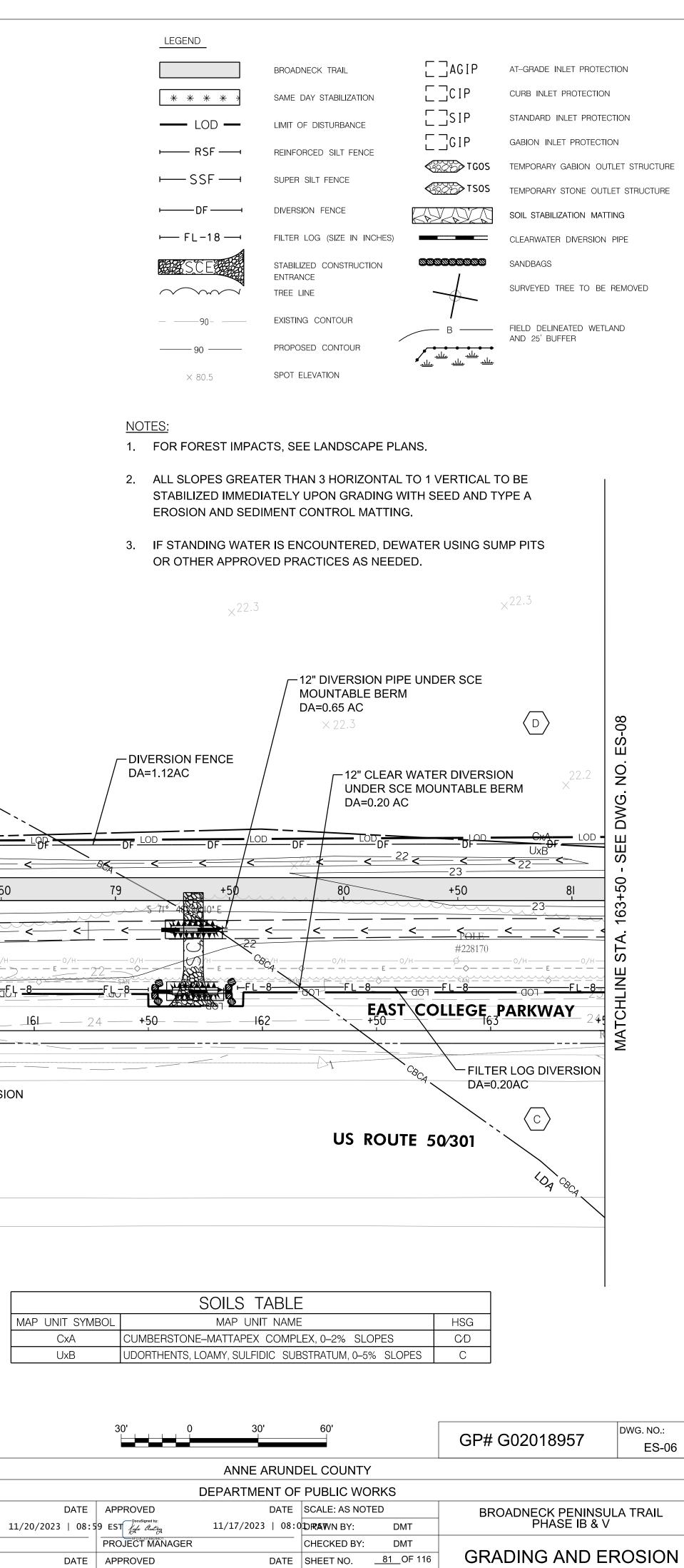
ADING AND EROSION CONTROL PLAN



- 4. STOCKPILE WILL BE COVERED WITH A 10 MIL PLASTIC
- 5. STOCKPILE WILL HOLD SALVAGED TOPSOIL TO BE PLACED ON-SITE
 - AECOM

AECOM 4 NORTH PARK DRIVE SUITE 300 HUNT VALLEY, MARYLAND 21030 PHONE: 410-785-7220 FAX: 410-785-6818

	PROFESSIONAL CERTIFICATION			REVISIONS				
	" I CERTIFY THAT THESE DOCUMENTS	OF MARL	NO.	DESCRIPTION	BY	DATE	_	
	WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER	S S S S S S S S S S S S S S S S S S S					APPROVED	11/2
С	THE LAWS OF THE STATE OF MARYLAND."	PRO PASE						, _
	MD LICENSE NUMBER: 53587 EXPIRATION DATE: 12-09-2024	Lanso or al minim					APPROVED DocuSigned by: David C. Brown	11/1
		06/08/2023					ASSISTANT CHIEF EN	IGINEER



CONTROL PLAN

MAP UNIT SYMBOL СхА UxB

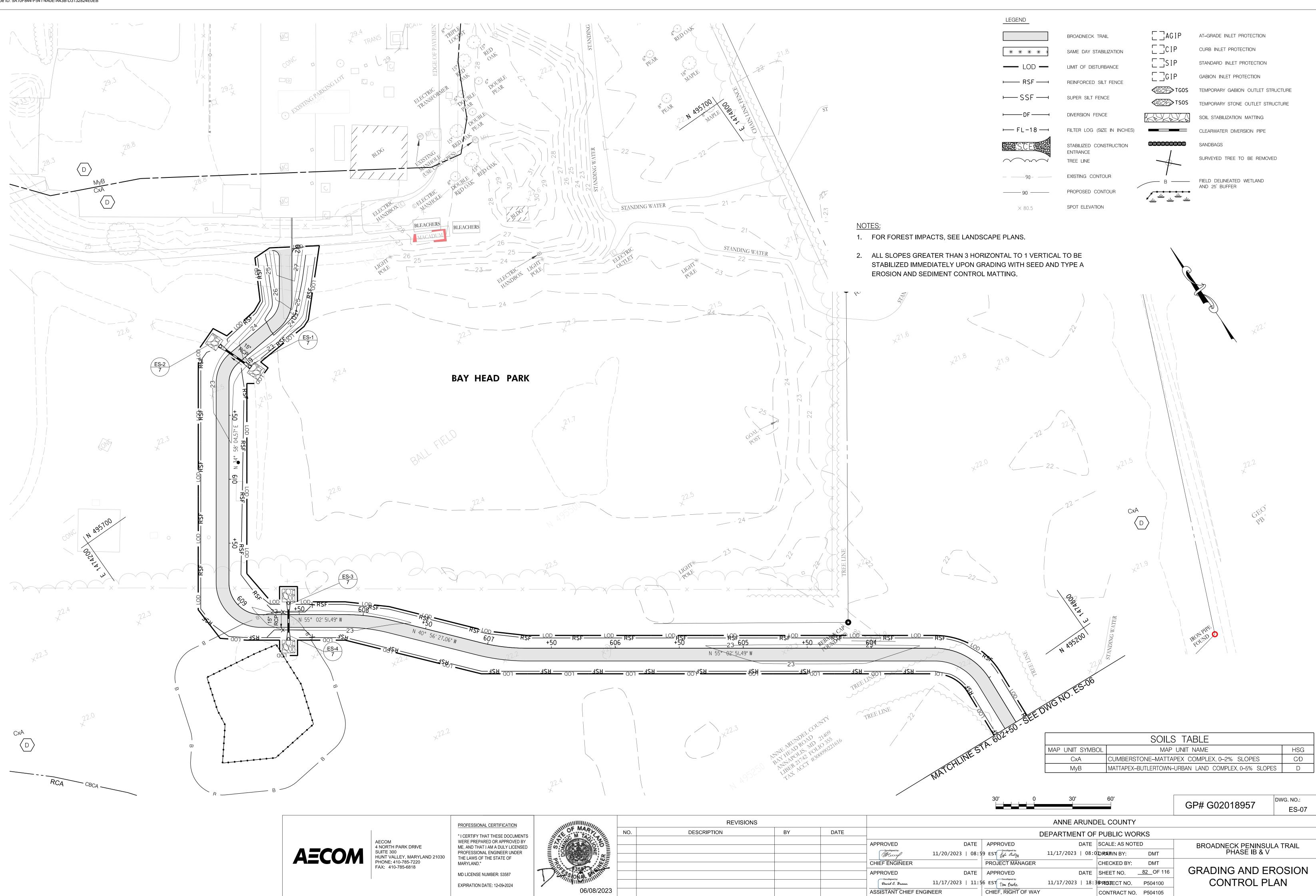
11/17/2023 | 18:36 REGJECT NO. P504100

CONTRACT NO. P504105

11/17/2023 | 11:56 EST Tom Burke

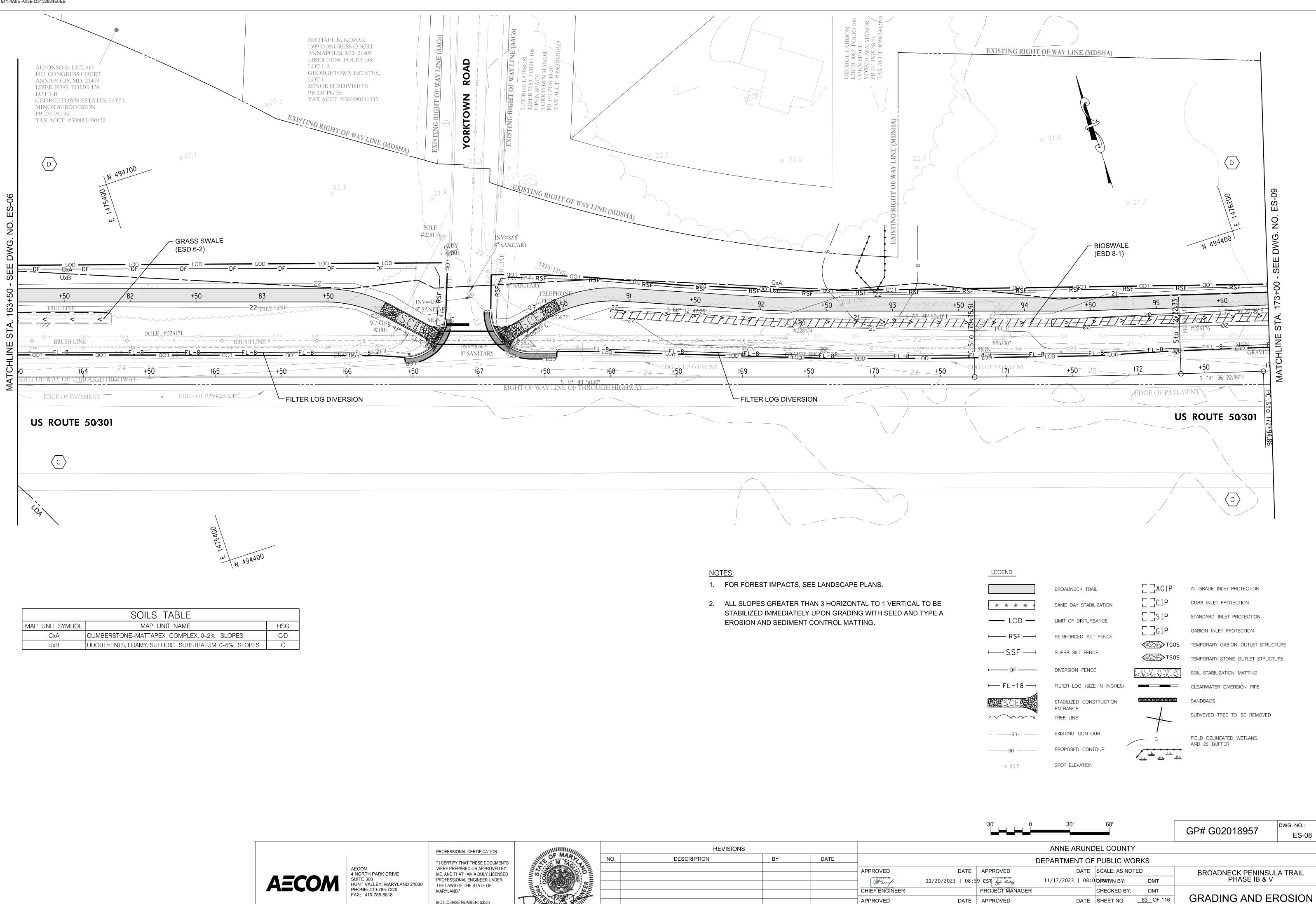
CHIEF, RIGHT OF WAY

+50



CONTRACT NO. P504105





	SOILS TABLE	
MAP UNIT SYMBOL	MAP UNIT NAME	HSG
СхА	CUMBERSTONE-MATTAPEX COMPLEX, 0-2% SLOPES	C⁄D
UxB	UDORTHENTS, LOAMY, SULFIDIC SUBSTRATUM, 0–5% SLOPES	С



11/17/2023 | 11:56 EST Tom Burke

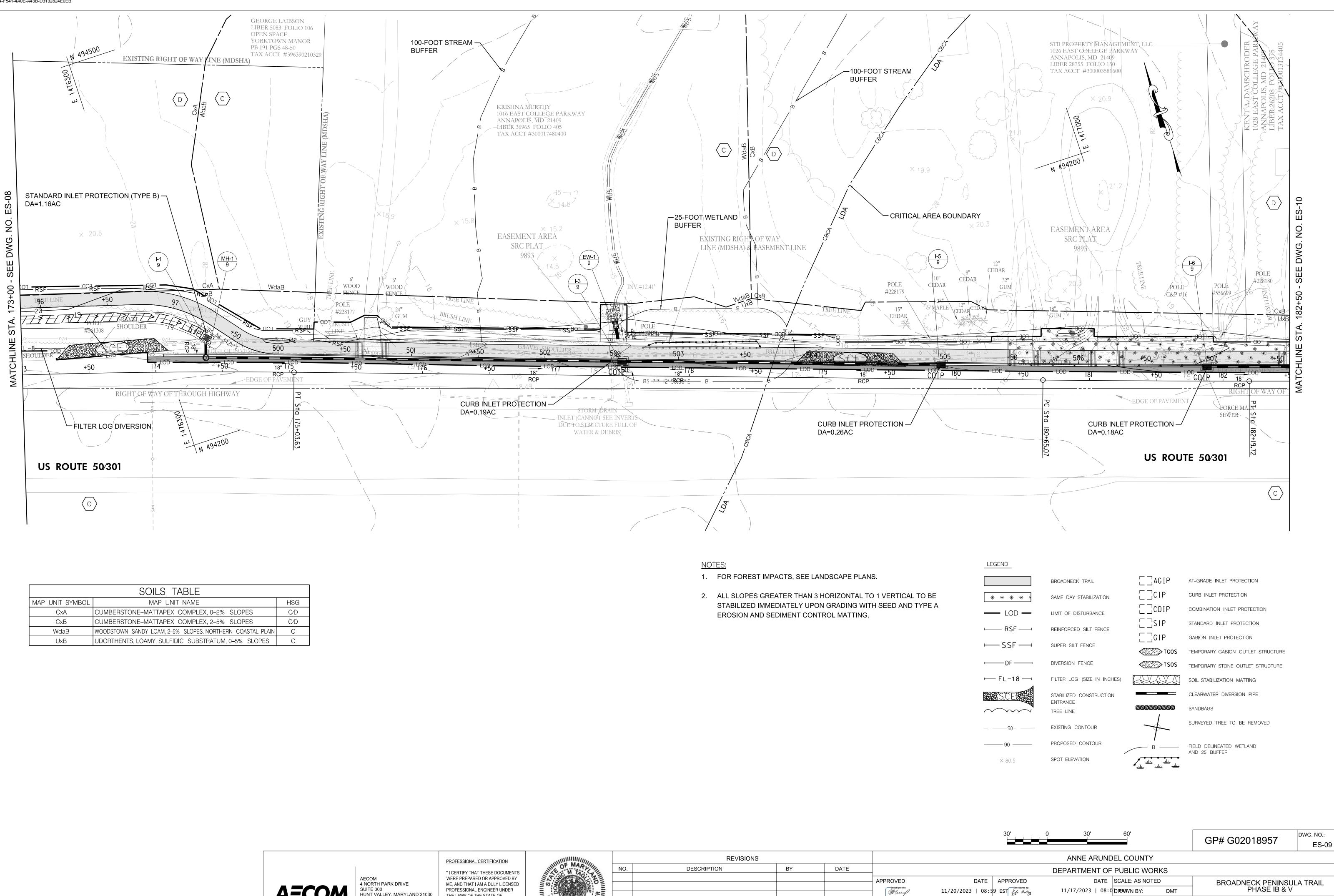
CHIEF, RIGHT OF WAY

11/17/2023 | 18:3 PROJECT NO. P504100

CONTRACT NO. P504105

PROFESSIONAL CERTIFICATION			REVISION	١S			
" I CERTIFY THAT THESE DOCUMENTS	OF MARL	NO.	DESCRIPTION	BY	DATE		
WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED	ES STATIONE					APPROVED	
PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF							11/20
MARYLAND."							۲
MD LICENSE NUMBER: 53587	T F478SONAL EMILITY						
EXPIRATION DATE: 12-09-2024	Y WINHING					David C. Braun	11/17
	06/08/2023					ASSISTANT CHIE	F ENGINEER

CONTROL PLAN



	SOILS TABLE	
MAP UNIT SYMBOL	MAP UNIT NAME	HSG
СхА	CUMBERSTONE-MATTAPEX COMPLEX, 0-2% SLOPES	C⁄D
СхВ	CUMBERSTONE-MATTAPEX COMPLEX, 2-5% SLOPES	C⁄D
WdaB	WOODSTOWN SANDY LOAM, 2-5% SLOPES. NORTHERN COASTAL PLAIN	С
UxB	UDORTHENTS, LOAMY, SULFIDIC SUBSTRATUM, 0–5% SLOPES	С



PROFESSIONAL CERTIFICATION			REVISION	S			
" I CERTIFY THAT THESE DOCUMENTS	OF MARL	NO.	DESCRIPTION	BY	DATE		
WERE PREPARED OR APPROVED BY ME, AND THAT AM A DULY LICENSED						APPROVED	
PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF						DocuSigned by:	11/20
MARYLAND."							
MD LICENSE NUMBER: 53587	Lanso onal shinin					APPROVED	
EXPIRATION DATE: 12-09-2024						David C. Braun	11/17
	06/08/2023					ASSISTANT CHIEF E	NGINEER

GRADING AND EROSION CONTROL PLAN

PROJECT MANAGER

CHIEF, RIGHT OF WAY

DATE APPROVED

11/17/2023 | 11:56 EST Tom Burke

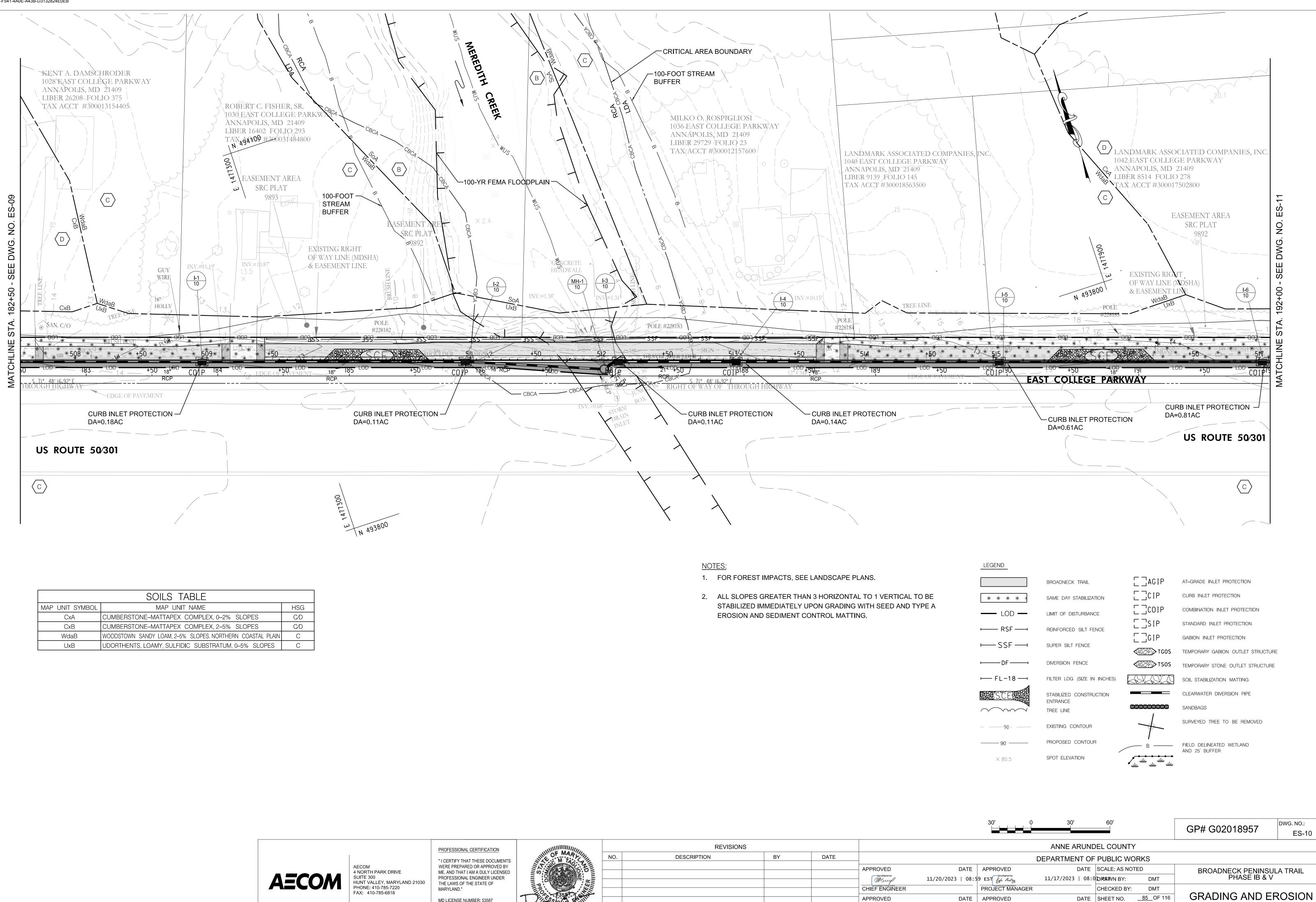
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11/17/2023 | 18:30 REGJECT NO. P504100

DATE SHEET NO. <u>84</u>OF 116

CONTRACT NO. P504105

DMT



	SOILS TABLE	
MAP UNIT SYMBOL	MAP UNIT NAME	HSG
СхА	CUMBERSTONE-MATTAPEX COMPLEX, 0-2% SLOPES	C⁄D
СхВ	CUMBERSTONE-MATTAPEX COMPLEX, 2-5% SLOPES	C/D
WdaB	WOODSTOWN SANDY LOAM, 2–5% SLOPES. NORTHERN COASTAL PLAIN	С
UxB	UDORTHENTS, LOAMY, SULFIDIC SUBSTRATUM, 0-5% SLOPES	С



11/17/2023 | 11:56 EST Tom Burke

CHIEF, RIGHT OF WAY

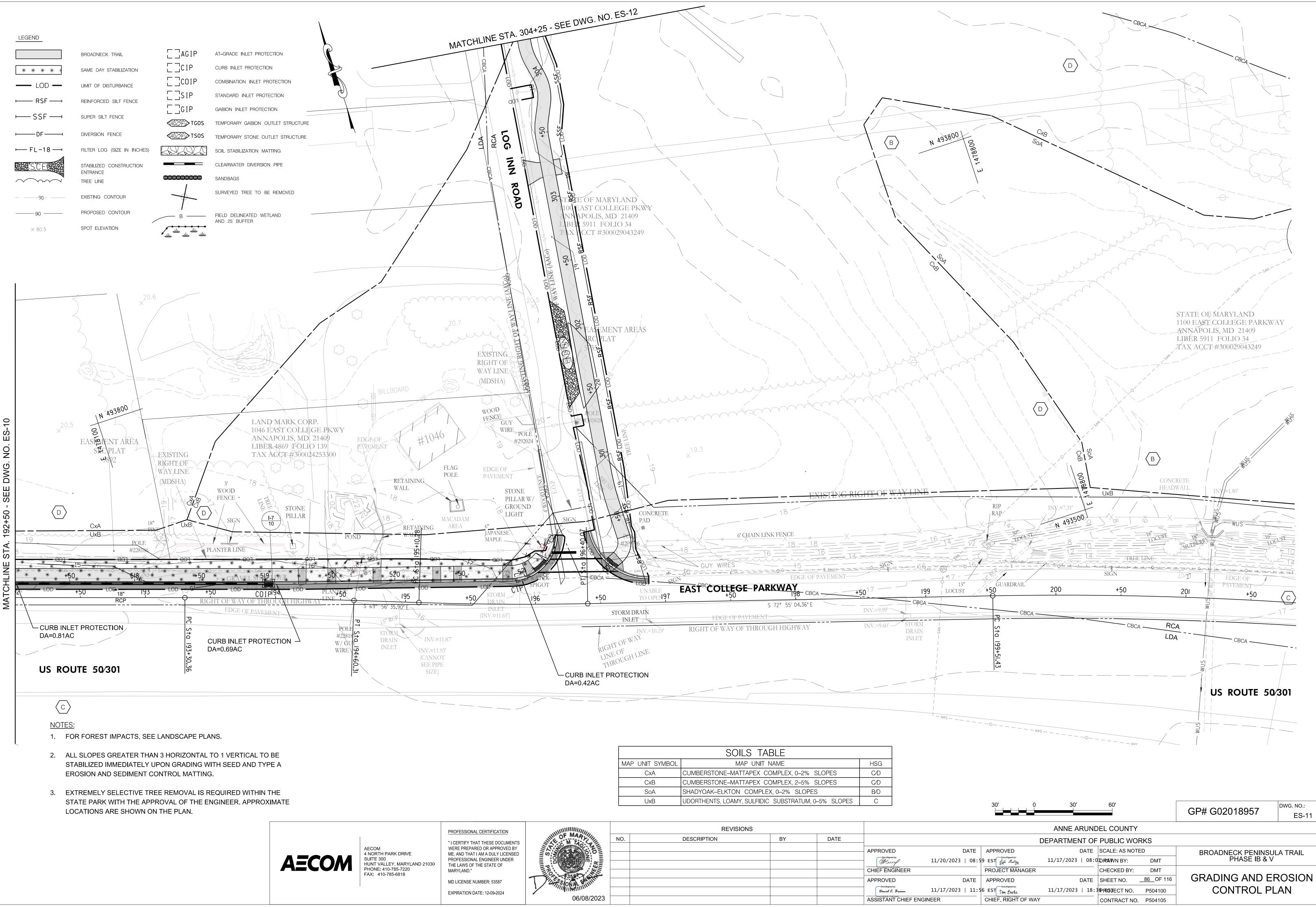
11/17/2023 | 18:30 REGJECT NO. P504100

CONTRACT NO. P504105

PROFESSIONAL CERTIFICATION			REVISION	٧S			
" I CERTIFY THAT THESE DOCUMENTS	OF MARL	NO.	DESCRIPTION	BY	DATE		
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PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF						DocuSigned by:	11/20
MARYLAND."						CHIEF ENGINEER	
MD LICENSE NUMBER: 53587	12495 ONAL EMILIE					APPROVED	
EXPIRATION DATE: 12-09-2024	06/08/2023					David C. Braun 	11/17
	06/06/2023					ASSISTANT CHIEF EN	IGINEER

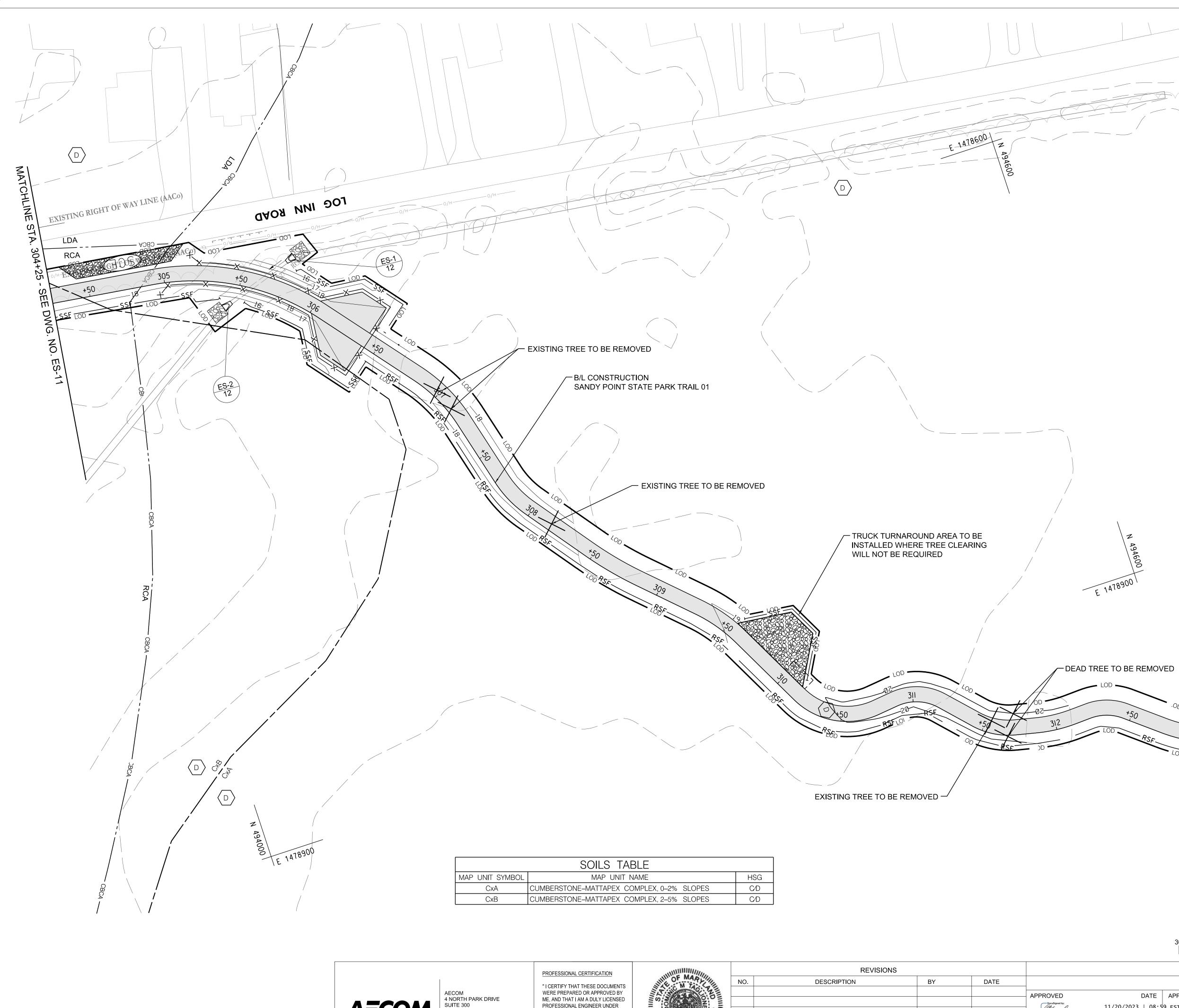
CONTROL PLAN





SOILS TABLE							
MAP UNIT SYMBOL	MAP UNIT NAME	HSG					
CxA	CUMBERSTONE-MATTAPEX COMPLEX, 0-2% SLOPES	C/D					
CxB	CUMBERSTONE-MATTAPEX COMPLEX, 2-5% SLOPES	C/D					
SoA	SHADYOAK-ELKTON COMPLEX, 0-2% SLOPES	B⁄D					
UxB	UDORTHENTS, LOAMY, SULFIDIC SUBSTRATUM, 0–5% SLOPES	С					

PROFESSIONAL CERTIFICATION			REVISIONS			
" I CERTIFY THAT THESE DOCUMENTS	OF MARL	NO.	DESCRIPTION	BY	DATE	
WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED						APPROVED
PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF						DocuSigned by:
MARYLAND."						CHIEF ENGINEEF
MD LICENSE NUMBER: 53587	THESE SOUND ENTITLE					APPROVED
EXPIRATION DATE: 12-09-2024	1 Ministrinit					DocuSigned by: David C. Brann
	06/08/2023					ASSISTANT CHIE



AECOM

AECOM 4 NORTH PARK DRIVE SUITE 300 HUNT VALLEY, MARYLAND 21030 PHONE: 410-785-7220 FAX: 410-785-6818

	SOILS TABLE	
CL	MAP UNIT NAME	HSG
	CUMBERSTONE-MATTAPEX COMPLEX, 0-2% SLOPES	C⁄D
	CUMBERSTONE-MATTAPEX COMPLEX, 2-5% SLOPES	C⁄D

	PROFESSIONAL CERTIFICATION			REVISIONS			
0	" I 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." MD LICENSE NUMBER: 53587 EXPIRATION DATE: 12-09-2024	06/08/2023	NO.	DESCRIPTION	BY	DATE	APPROVED DocuSigned by: Decusigned by: Decusigned by: Decusigned by: CHIEF ENGINEER APPROVED DocuSigned by: Dorid C. Brann ASSISTANT CHIEF

LEGEND:			
	BROADNECK TRAIL	[]AGIP	AT-GRADE INLET PROTECTION
* * * * *	SAME DAY STABILIZATION	[]CIP	CURB INLET PROTECTION
LOD	LIMIT OF DISTURBANCE	[]SIP	STANDARD INLET PROTECTION
⊢ RSF	REINFORCED SILT FENCE	[]GIP	GABION INLET PROTECTION
		TGOS	TEMPORARY GABION OUTLET STRUCTURE
└─── SSF ──¹	SUPER SILT FENCE	TSOS	TEMPORARY STONE OUTLET STRUCTURE
⊢DF	DIVERSION FENCE		SOIL STABILIZATION MATTING
⊢ FL-18 -	FILTER LOG (SIZE IN INCHES)		CLEARWATER DIVERSION PIPE
SCE	STABILIZED CONSTRUCTION		SANDBAGS
	TREE LINE		SURVEYED TREE TO BE REMOVED
— — 90- —	EXISTING CONTOUR	В —	FIELD DELINEATED WETLAND
90	PROPOSED CONTOUR		AND 25' BUFFER
× 80.5	SPOT ELEVATION		

NOTES:

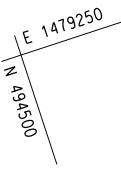
- 1. FOR FOREST IMPACTS, SEE LANDSCAPE PLANS.
- 2. ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL TO BE STABILIZED IMMEDIATELY UPON GRADING WITH SEED AND TYPE A EROSION AND SEDIMENT CONTROL MATTING.
- 3. EXTREMELY SELECTIVE TREE REMOVAL IS REQUIRED WITHIN THE STATE PARK WITH THE APPROVAL OF THE ENGINEER. APPROXIMATE LOCATIONS ARE SHOWN ON THE PLAN.

EXISTING TREE TO BE REMOVED $\langle D \rangle$ DWG. NO.: GP# G02018957 ES-12 ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS DATE APPROVED DATE SCALE: AS NOTED BROADNECK PENINSULA TRAIL PHASE IB & V 11/20/2023 | 08:59 EST Jule Cutry 11/17/2023 | 08:0DRAWN BY: DMT PROJECT MANAGER CHECKED BY: DMT **GRADING AND EROSION** DATE SHEET NO. <u>87</u>OF 116 DATE APPROVED CONTROL PLAN 11/17/2023 | 11:56 EST Tom Burke 11/17/2023 | 18:3 PEOJECT NO. P504100 CHIEF, RIGHT OF WAY F ENGINEER CONTRACT NO. P504105

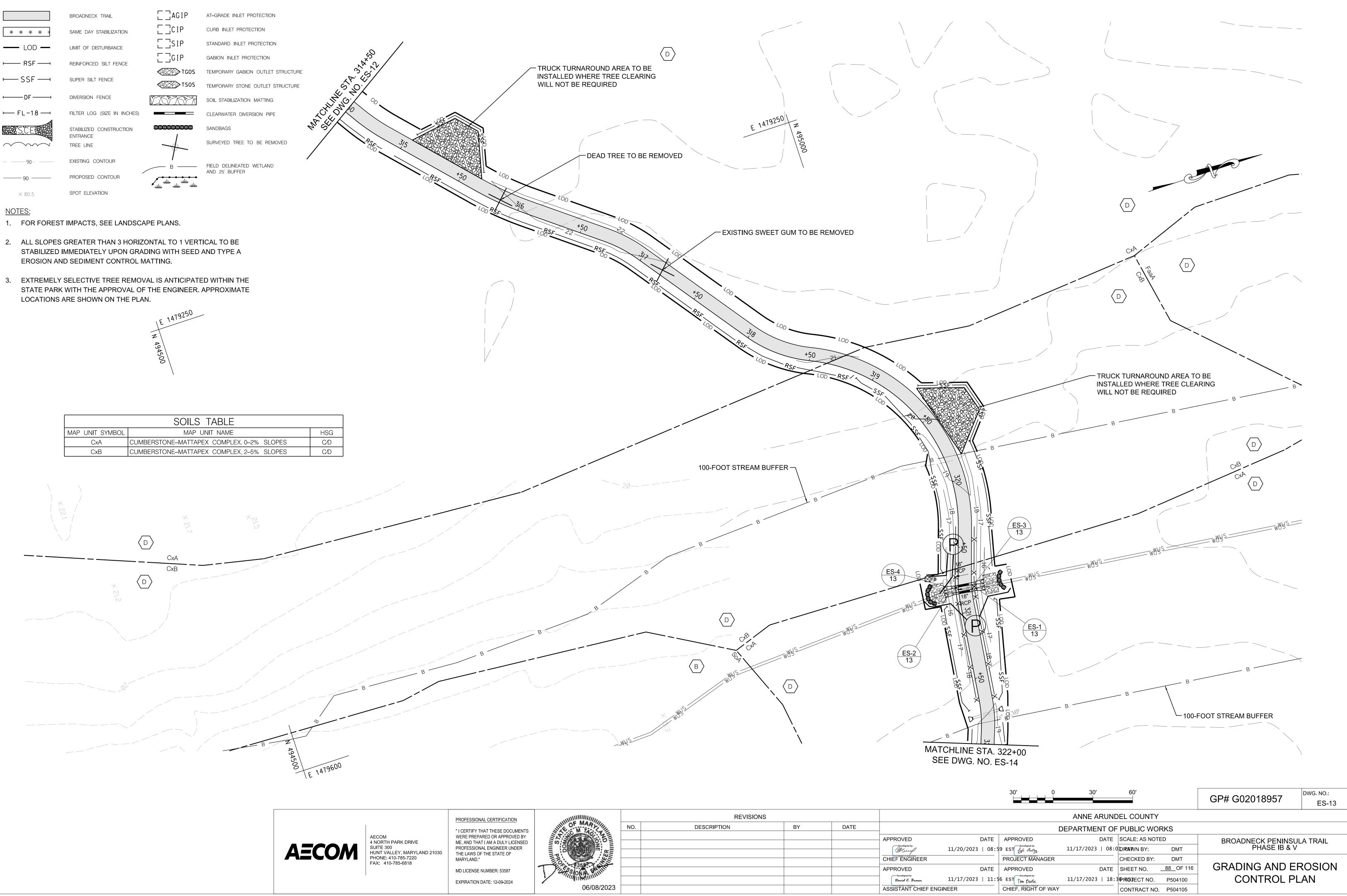
LEGEND:				
	BROADNECK TRAIL		AT-GRADE INLET PROTECTION	
* * * * *	SAME DAY STABILIZATION	[]CIP	CURB INLET PROTECTION	
LOD	LIMIT OF DISTURBANCE	[]SIP	STANDARD INLET PROTECTION	
⊢ RSF – I	REINFORCED SILT FENCE	[]GIP	GABION INLET PROTECTION TEMPORARY GABION OUTLET STRUCTURE TEMPORARY STONE OUTLET STRUCTURE SOIL STABILIZATION MATTING CLEARWATER DIVERSION PIPE SANDBAGS	
⊢ SSF – I	SUPER SILT FENCE	TGOS	TEMPORARY GABION OUTLET STRUCTURE	
		TSOS	TEMPORARY STONE OUTLET STRUCTURE	
└──── DF ────	DIVERSION FENCE		SOIL STABILIZATION MATTING	
⊢ FL-18 – •	FILTER LOG (SIZE IN INCHES)		CLEARWATER DIVERSION PIPE	ر مر
SCE	STABILIZED CONSTRUCTION	0000000000	SANDBAGS Nº SV	
	TREE LINE		SURVEYED TREE TO BE REMOVED	5 2 2 2
— — 90- —	EXISTING CONTOUR		FIELD DELINEATED WETLAND	
90	PROPOSED CONTOUR		AND 25' BUFFER	< 'Sz
× 80.5	SPOT ELEVATION	<u></u>		~
~ 00.5				

NOTES:

- 1. FOR FOREST IMPACTS, SEE LANDSCAPE PLANS.
- STABILIZED IMMEDIATELY UPON GRADING WITH SEED AND TYPE A EROSION AND SEDIMENT CONTROL MATTING.
- LOCATIONS ARE SHOWN ON THE PLAN.

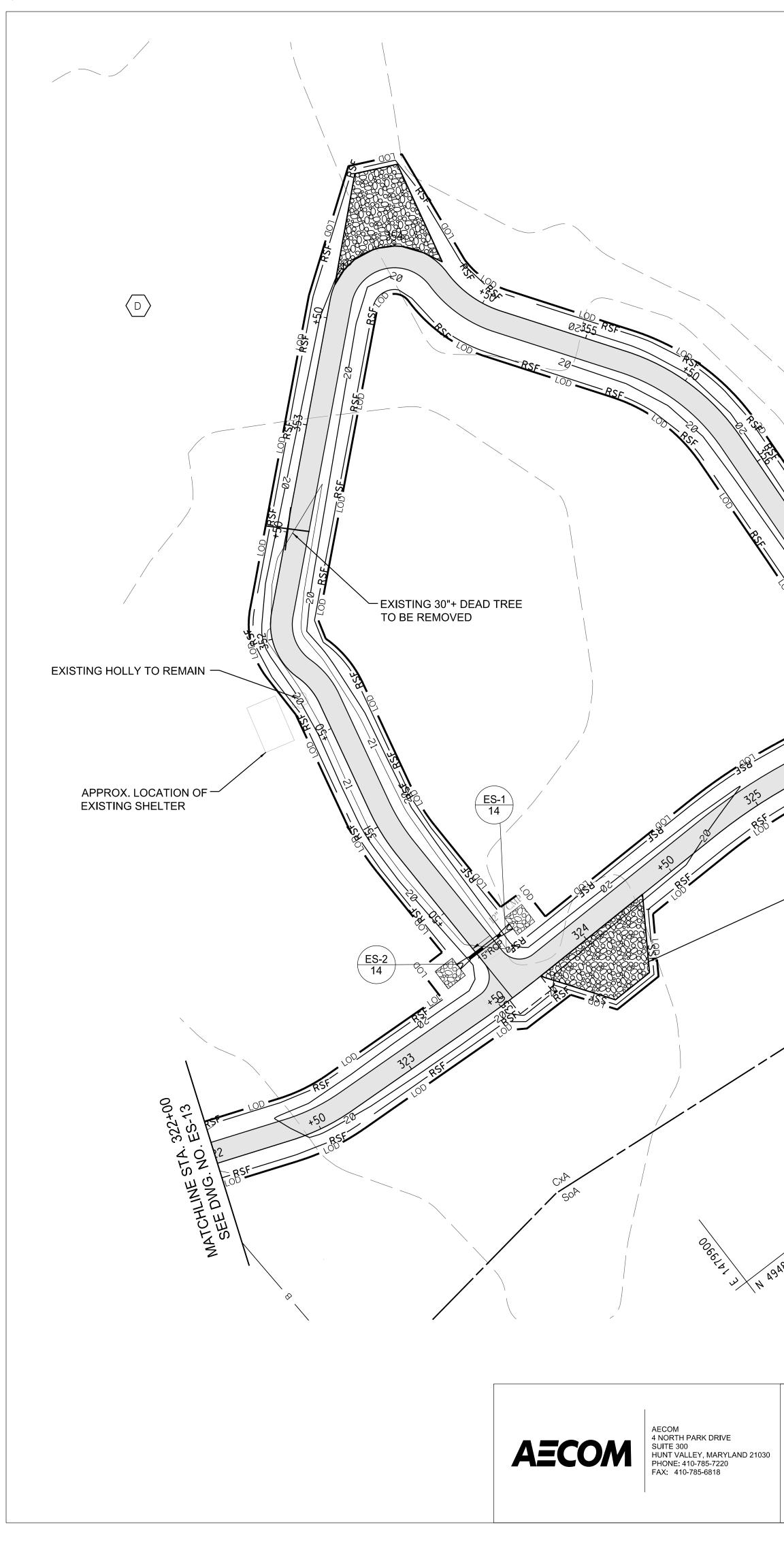


SOILS TABLE				
MAP UNIT SYMBOL	MAP UNIT NAME	HSG		
СхА	CUMBERSTONE-MATTAPEX COMPLEX, 0-2% SLOPES	C⁄D		
СхВ	CUMBERSTONE-MATTAPEX COMPLEX, 2-5% SLOPES	C⁄D		

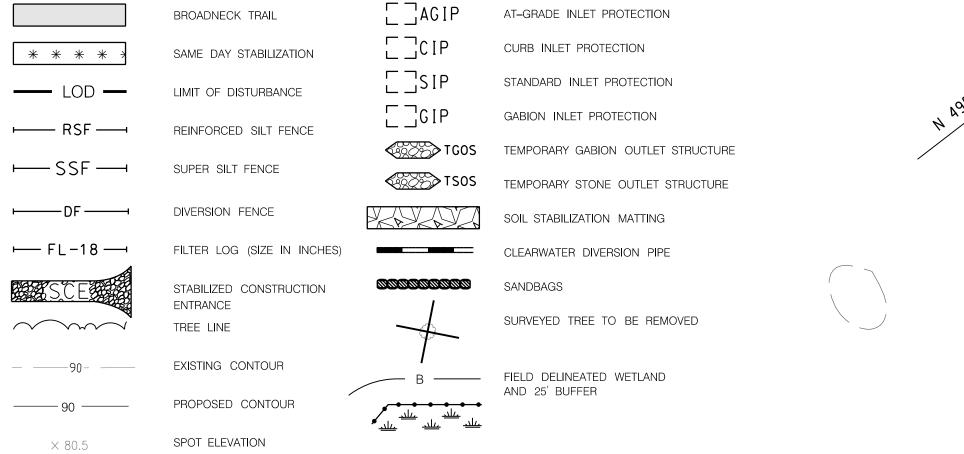




PROFESSIONAL CERTIFICATION			REVISIONS			
" I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY	OF MARL	NO.	DESCRIPTION	BY	DATE	APPROVED
ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND."	NOD NE					CHIEF ENGINEER
MD LICENSE NUMBER: 53587	THE SOCAL MULTIN					
EXPIRATION DATE: 12-09-2024	06/08/2023					David C. Braun COESDE 1728C5440 ASSISTANT CHIEF



LEGEND:



MAP UNIT SYMBOL MAP UNIT NAME	HSG
CXA CUMBERSTONE-MATTAPEX COMPLEX, 0-2% SLOPES	C/D
SoA SHADYOAK-ELKTON COMPLEX, 0-2% SLOPES	B⁄D

—— RSF —

(D)

RSF----

- TRUCK TURNAROUND AREA TO BE INSTALLED WHERE TREE CLEARING WILL NOT BE REQUIRED

NOTES:

1. FOR FOREST IMPACTS, SEE LANDSCAPE PLANS.

- 2. ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL TO BE STABILIZED IMMEDIATELY UPON GRADING WITH SEED AND TYPE A EROSION AND SEDIMENT CONTROL MATTING.
- 3. EXTREMELY SELECTIVE TREE REMOVAL IS REQUIRED WITHIN THE STATE PARK WITH THE APPROVAL OF THE ENGINEER. APPROXIMATE LOCATIONS ARE SHOWN ON THE PLAN.

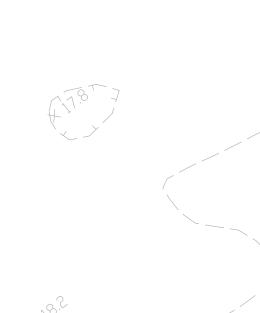
PROFESSIONAL CERTIFICATION

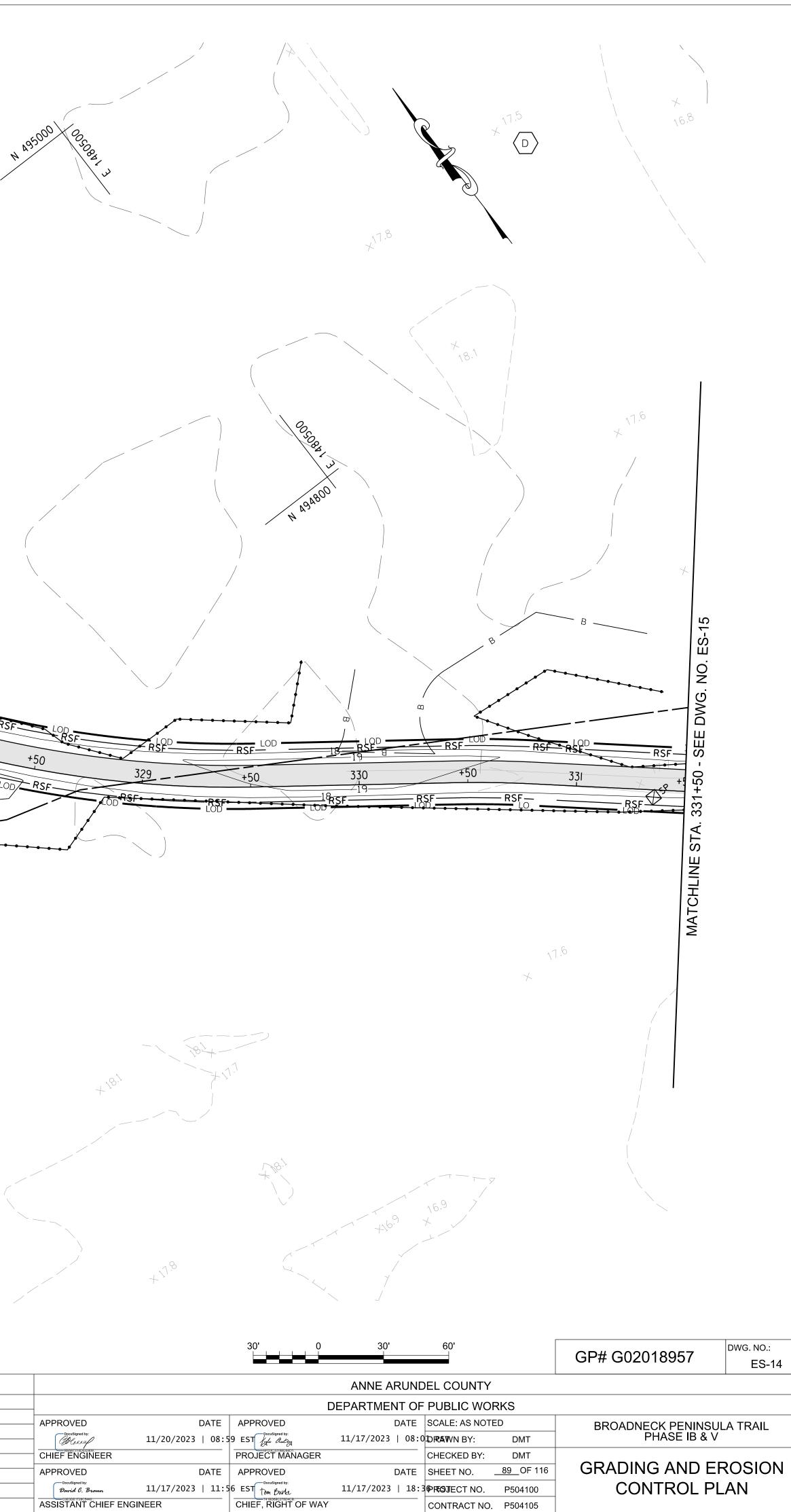
" I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND."

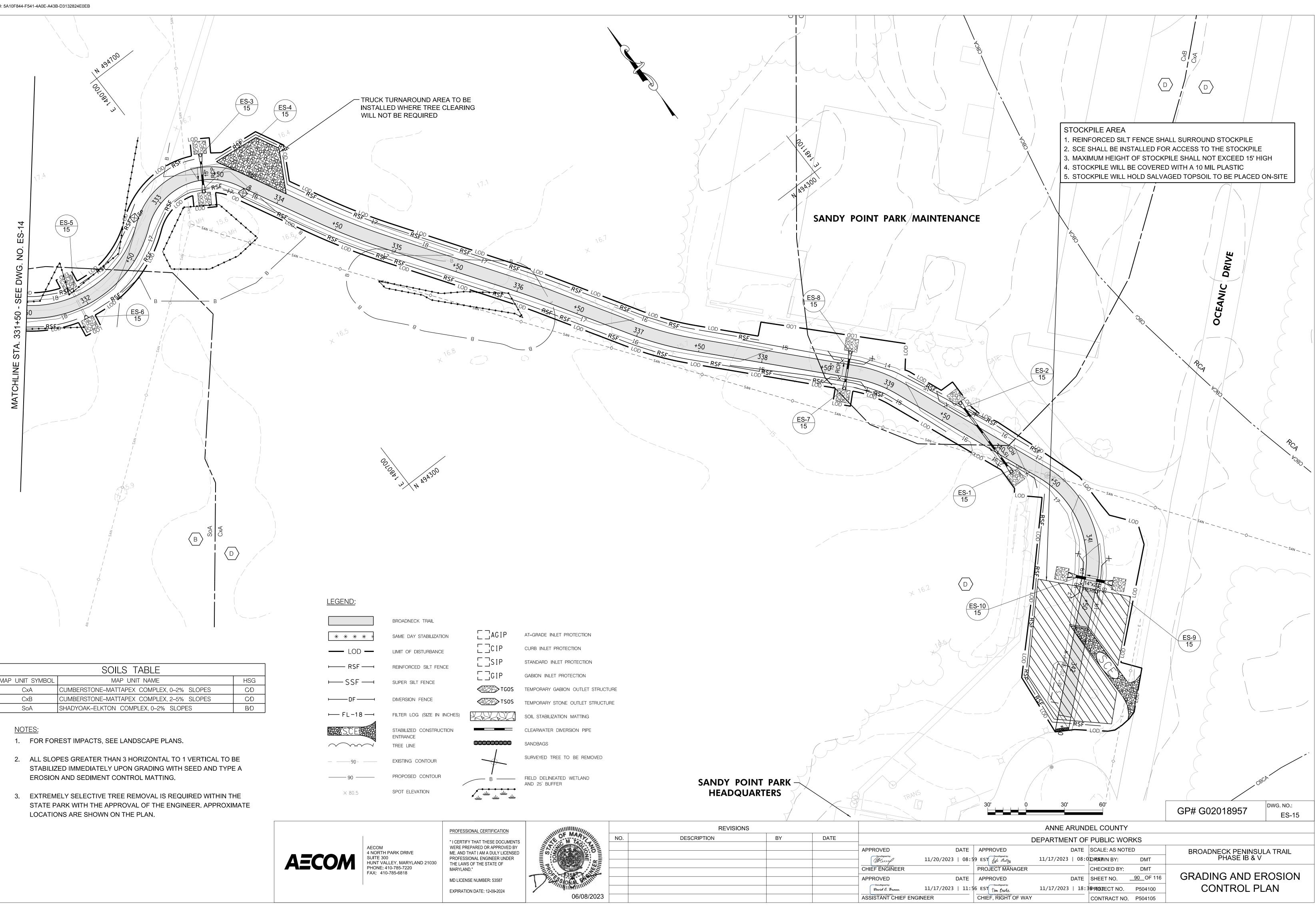
MD LICENSE NUMBER: 53587 EXPIRATION DATE: 12-09-2024



REVISIONS			
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			APPROVED DocuSigned by: David C. Braun
			ASSISTANT CHIEF E



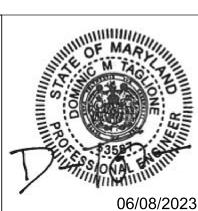




	SOILS TABLE	
MAP UNIT SYMBOL	MAP UNIT NAME	HSG
СхА	CUMBERSTONE-MATTAPEX COMPLEX, 0-2% SLOPES	C/D
СхВ	CUMBERSTONE-MATTAPEX COMPLEX, 2-5% SLOPES	C/D
SoA	SHADYOAK-ELKTON COMPLEX, 0-2% SLOPES	B⁄D

	BROADNECK TF
* * *	SAME DAY STA
_od —	LIMIT OF DISTU
RSF ——-	REINFORCED SI
SF —	SUPER SILT FEI
DF	DIVERSION FEN
-18	FILTER LOG (SI
CE	STABILIZED CON ENTRANCE
VWV N	TREE LINE
-90	EXISTING CONT
90 ———	PROPOSED CO





SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

- A. SOIL PREPARATION
- 1. TEMPORARY STABILIZATION
 - A. 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 BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
 - B. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
 - C. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS
- 2. PERMANENT STABILIZATION
 - A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
 - I. SOIL PH BETWEEN 6.0 AND 7.0.

II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM)

III. SOIL CONTAINS LESS THAN 40 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) WOULD BE ACCEPTABLE.

IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT

- V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
- B. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
- C. 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.
- D. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL
- E. 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 LARGE 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.
- **B. TOPSOILING**
- 1. 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.
- 2. 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.
- 3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:

FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS

- A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH. B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR
- C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
- D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
- AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
- 5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
 - A. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT 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 NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 11/2 INCHES IN DIAMETER.
 - B. 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.
 - C. 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.
- 6. TOPSOIL APPLICATION
 - A. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
 - B. 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 SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
 - C. 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.
- C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
- 1. 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.
- 2. 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.
- 3. 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.
- 4. 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.
- 5. 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.



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.

1. Permanent Seeding:

A. 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 stockpiling 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:

- a. Soil pH shall be between 6.0 and 7.0.
- b. Soluble salts shall be less than 500 parts per million (ppm).
- c. 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 serecia lespedeza is to be planted, then a sandy soil (< 30% silt plus clay) would be acceptable.
- d. Soil shall contain 1.5% minimum organic matter by weight.
- e. Soil must contain sufficient pore space to permit adequate root penetration. f. 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.
- Seedbed Preparation: Area to be seeded shall be loose and friable to a depth of at least 3-5 inches. The top layer shall be loosened 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.
- D. 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 pounds 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.
- ONLY BIODEGRADABLE NETTING AND ANCHORS MAY BE USED TO SECURE MULCH. PLASTIC NETTING IS NOT PERMITTED
- 2. 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.

3. 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.

4. 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 root contact with the soil. All slopes steeper than 3:1, as shown, are to be permanently sodded or protected to be installed on frozen ground. Sod shall not be transplanted 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.
- 5. 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.

- 6. 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
- 7. 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.

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

- NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT 2. ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
- 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.
- REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL 5 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
- RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, 6 WATERWAYS, OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
- ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL 7. 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.

CONSULTANT'S CERTIFICATION

"THE DEVELOPER'S PLAN TO CONTROL SILT AND EROSION IS ADEQUATE TO CONTAIN THE SILT AND EROSION ON THE PROPERTY COVERED BY THE PLAN." I CERTIFY THAT THIS PLAN OF EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THIS SITE, AND WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ANNE ARUNDEL SOIL CONSERVATION DISTRICT PLAN SUBMITTAL GUIDELINES AND THE CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SEDIMENT AND EROSION CONTROL. I HAVE REVIEWED THIS EROSION AND SEDIMENT CONTROL PLAN WITH THE OWNER/DEVELOPER.

MD P.E. LICENSE #	53587
NAME	DOMINIC M. T
FIRM NAME	AECOM
STREET ADDRESS	4 NORTH PAF
	HUNT VALLEY

(410) 785-72

PROFESSIONAL CERTIFICATION			REVISIONS	3			
" I 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." MD LICENSE NUMBER: 53587 EXPIRATION DATE: 12-09-2024	0F MAR 10 10 10 10 10 10 10 10 10 10	NO.	DESCRIPTION	BY	DATE	APPROVED DocuSigned by: CHIEF ENGINEER APPROVED DocuSigned by: David C. Brown ASSISTANT CHIEF E	1 1 INGINE

ends tightly abutting. Joints are to be staggered between rows. Water and roll or tamp sod to insure positive with an approved erosion control netting. Additional watering for establishment may be required. Sod is not

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

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GP# G02018957

DWG. NO.: ESN-01

BROADNECK PENINSULA TRAIL PHASE IB & V

EROSION AND SEDIMENT **CONTROL NOTES & DETAILS**

- AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
- TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM:
- USE I WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15. INCLUSIVE DURING ANY YEAR.
- USE III WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD OCTOBER 1 THORUGH APRIL 30, INCLUSIVE, DURING ANY YEAR.
- USE IV WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH MAY 31, INCLUSIVE, DURING ANY YEAR.
- STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL 10. BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
- CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

SEQUENCE OF CONSTRUCTION

- OBTAIN ALL NECESSARY PERMITS. CONDUCT A PRE-CONSTRUCTION MEETING: CONTRACTOR TO NOTIFY THE ANNE ARUNDEL COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS AT (410) 222-7780 AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION. WORK MAY NOT COMMENCE UNTIL THE PERMITTEE OR THE RESPONSIBLE PERSONNEL HAVE MET ON-SITE WITH THE SEDIMENT AND EROSION CONTROL INSPECTOR TO REVIEW THE APPROVED PLANS. (1 DAY)
- 2. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A. 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) B. SEVEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE

CONTROL INSPECTOR PRIOR TO COMMENCING WORK. (1 DAY)

EACH PHASE OF CONSTRUCTION MAY BE DONE CONCURRENTLY OR INDIVIDUALLY.

- PHASE I STA. 6+00 TO STA. 30+50 (PEREGOY PARK PLACE TO REVELL DOWNS) 3. EXISTING TOPOGRAPHY TO BE FIELD VERIFIED BY THE CONTRACTOR AND SEDIMENT
- 4. CLEAR AND GRUB MINIMAL AREAS AS TO INSTALL STABILIZED CONSTRUCTION ENTRANCES AND FOR THE INSTALLATION OF THE PERIMETER EROSION AND SEDIMENT CONTROLS. (5 DAYS)
- 5. INSTALL STABILIZED CONSTRUCTION ENTRANCES, REINFORCED SILT FENCE, SUPER SILT FENCE, SAND BAG DIVERSIONS, CLEAR WATER DIVERSION PIPES (CWD1-1A, CWD1-2A, AND CWD1-3), FILTER LOG DIVERSIONS, RIPRAP PROTECTION AND STORM DRAIN INLET PROTECTION AS SHOWN ON THE PLANS. (2 DAYS)
- 6. ONCE ALL E&S MEASURES ARE IN PLACE, CONTACT THE A.A. COUNTY INSPECTOR FOR APPROVAL OF SEDIMENT CONTROL INSTALLATION. INSPECTIONS AND PERMITS MAY REQUIRE THAT AN INSPECTION AND CERTIFICATION OF THE INSTALLATION OF SEDIMENT CONTROLS ALSO BE PERFORMED BY A DESIGN PROFESSIONAL PRIOR TO CONSTRUCTION COMMENCING, NO CLEARING OR SITE GRADING SHALL OCCUR UNTIL THE PROPER APPROVALS ARE RECEIVED. (2 DAYS)
- 7. UPON APPROVAL FROM THE INSPECTOR, THE STAGING AND STOCKPILE AREA SHALL BE CREATED USING A STABILIZED CONSTRUCTION ENTRANCE AND BE SURROUNDED ON ALL SIDES BY SUPER SILT FENCE. STOCKPILES NOT TO EXCEED 15' IN HEIGHT AND 2:1 SLOPES AND LOCATED WITHIN THE EXISTING LIMIT OF DISTURBANCE. (1 DAY)
- 8. INSTALL PROPOSED STORM DRAIN SYSTEMS ES-4/1 TO ES-5/1, I-1/1, AND 1-2/1 DURING DRY CONDITIONS WORKING DOWNSTREAM TO UPSTREAM. INSTALLATION OF STORM DRAIN SYSTEMS SHALL BE LIMITED TO THE AMOUNT OF WORK THAT CAN BE INSTALLED AND STABILIZED IN ONE (1) WORKING DAY. STOCKPILE TOPSOIL AND OTHER SALVAGEABLE MATERIAL ON SITE. IMMEDIATELY ATER COMPLETION REMOVE CWD1-2A AND INSTALL CWD1-2B AND CWD1-1B. (3 DAYS)
- 9. INSTALL THE PROPOSED FLEXAMAT (OR APPROVED EQUAL) DITCH AND OUTFALL PROTECTION DURING DRY CONDITIONS WORKING DOWNSTREAM TO UPSTREAM USING APPROVED DETWATERING PRACTICES, INCLUDING SUMP PITS, AS REQUIRED. INSTALLATION SHALL BE LIMITED TO THE AMOUNT OF WORK THAT CAN BE INSTALLED AND STABILIZED IN ONE (1) WORKING DAY. STOCKPILE TOPSOIL AND OTHER SALVAGEABLE MATERIAL ON SITE (10 DAYS)
- 10. PRIOR TO COMMENCING WORK BETWEEN STA, 20+00 AND STA, 30+50, DURING A THREE (3) DAY, DRY WEATHER NOAA FORECAST, INSTALL THE PROPOSED STORM DRAIN SYSTEM EW-1/3 TO EW-2/3 WORKING DOWNSTREAM TO UPSTREAM. INSTALL SSF AROUND EW-1/3 IMMEDIATELY AFTER COMPLETION. (3 DAYS)
- 11. INSTALL THE REMAINING PROPOSED STORM DRAIN SYSTEMS DURING DRY CONDITIONS WORKING DOWNSTREAM TO UPSTREAM. INSTALLATION OF STORM DRAIN SYSTEMS SHALL BE LIMITED TO THE AMOUNT OF WORK THAT CAN BE INSTALLED AND STABILIZED IN ONE (1) WORKING DAY. STOCKPILE TOPSOIL AND OTHER SALVAGEABLE MATERIAL ON SITE. (3) DAYS)
- 12. INSTALL NEW CURB AND GUTTER, DRIVEWAY APRONS, AND FULL DEPTH PAVEMENT WORKING DOWNSTREAM TO UPSTREAM AS SHOWN ON THE PLAN. CONSTRUCT ONLY THE AMOUNT OF CURB AND GUTTER THAT CAN BE STABILIZED IN ONE WORK DAY. (5 DAYS)
- 13. COMMENCE GRADING OPERATIONS AS SHOWN ON PLANS. ALL AREAS DISTURBED BY CONSTRUCTION AND NOT PROTECTED BY ESC MEASURES SHALL BE STABILIZED AT THE END OF EACH WORK DAY. STOCKPILES SHALL BE COVERED BY PLASTIC TARP AND COVERED WITH SANDBAGS AT THE END OF EACH WORK DAY WHEN WET WEATHER IS FORECASTED. (10 DAYS)
- 14. BEGIN PAVING OPERATIONS AS SHOWN ON PLANS AND PERFORM FINAL GRADING FOR DITCHES AND GRASS SWALES. STABILIZE SITE AT THE END OF EACH WORK DAY. (5 DAYS)
- 15. ONCE GRADING AND PAVING IS COMPLETE AND THE AREA IS 95% STABILIZED, BEGIN CONSTRUCTION ON THE SUBMERGED GRAVEL WETLAND. USE PROPER DEWATERING PRACTICES SUCH AS REMOVABLE PUMPING STATIONS, PORTABLE SEDIMENT TANKS, AND FILTER BAGS. (5 DAYS)
- 16. ONCE BIORETENTION FACILITY IS COMPLETE AND THE CONTRIBUTING AREA IS COMPLETELY STABILIZED, CONTACT AN A.A. COUNTY INSPECTOR FOR PHASE I INSPECTION BEFORE REMOVAL OF E&S CONTROLS. ONCE APPROVAL IS MET, REMOVE E&S CONTROL MEASURES. (2 DAYS)

PHASE II - STA. 40+00 TO 55+00 (REVELL DOWNS TO BAY HEAD ROAD)

- 17 MEET WITH AN A.A. COUNTY INSPECTOR TO REVIEW THE EROSION AND CONTROL PLANS. EXISTING TOPOGRAPHY SHALL BE FIELD INSPECTED PRIOR TO COMMENCEMENT OF WORK. (1 DAY)
- 18. CLEAR AND GRUB MINIMAL AREAS AS TO INSTALL STABILIZED CONSTRUCTION ENTRANCES AND FOR THE INSTALLATION OF THE PERIMETER EROSION AND SEDIMENT CONTROLS. (5 DAYS)
- 19 INSTALL STABILIZED CONSTRUCTION ENTRANCES, REINFORCE SILT FENCE, SUPER SILT FENCE, SAND BAG DIVERSIONS, CLEAR WATER DIVERSION PIPES, FILTER LOG DIVERSIONS. FILTER LOG CULVERT INLET PROTECTIONS, RIPRAP PROTECTION AND STORM DRAIN INLET PROTECTION AS SHOWN ON THE PLANS. (2 DAYS)
- 20. ONCE ALL E&S MEASURES ARE IN PLACE, CONTACT THE A.A. COUNTY INSPECTOR FOR APPROVAL OF SEDIMENT CONTROL INSTALLATION. INSPECTIONS AND PERMITS MAY REQUIRE THAT AN INSPECTION AND CERTIFICATION OF THE INSTALLATION OF SEDIMENT CONTROLS ALSO BE PERFORMED BY A DESIGN PROFESSIONAL PRIOR TO CONSTRUCTION COMMENCING. NO CLEARING OR SITE GRADING SHALL OCCUR UNTIL THE PROPER APPROVALS ARE RECEIVED. (2 DAYS)

- PER DETAIL ES-03 (3 DAYS)
- (3 DAYS)
- THE PLANS. (15 DAYS)
- WET WEATHER IS FORECASTED. (10 DAYS)

PHASE III - STA. 60+00 TO 84+50 / 600+00 TO 611+75 (BAY HEAD ROAD TO YORKTOWN ROAD AND BAY HEAD PARK SPUR)

- WORK. (1 DAY)
- ABOVE FOR PHASE III. (10 DAYS)
- AND AROUND ES-3/6 AND ES-4/6. (5 DAYS)
- DOWNSTREAM TO UPSTREAM. (25 DAYS)
- CONSTRUCTION OPERATIONS. (3 DAYS)
- WET WEATHER IS FORECASTED.

PHASE IV - STA. 90+00 TO 97+80 / 500+00 TO 521+50 (YORKTWON RD TO LOG INN RD)

- WORK. (1 DAY)
- ABOVE FOR PHASE IV. (10 DAYS)
- SALVAGEABLE MATERIAL ON SITE. (5 DAYS)
- MATERIAL ON SITE. (10 DAYS)



21. UPON APPROVAL FROM THE INSPECTOR, THE STAGING AND STOCKPILE AREA SHALL BE CREATED USING A STABILIZED CONSTRUCTION ENTRANCE AND BE SURROUNDED ON ALL SIDES BY SUPER SILT FENCE. STOCKPILES NOT TO EXCEED 15' IN HEIGHT AND 2:1 SLOPES AND LOCATED WITHIN THE EXISTING LIMIT OF DISTURBANCE. (1 DAY)

22. DURING A THREE (3) DAY, DRY WEATHER NOAA FORECAST, CONSTRUCT I-1/3 TO EW-2/3. INSTALLATION OF STORM DRAIN SYSTEMS SHALL BE LIMITED TO THE AMOUNT OF WORK THAT CAN BE INSTALLED AND STABILIZED IN ONE (1) WORKING DAY. IMMEDIATELY AFTER COMPLETION, INSTALL SSF AROUND OUTFALLS TO EXISTING STORM DRAIN SYSTEM

23. DURING A THREE (3) DAY, DRY WEATHER NOAA FORECAST, EXTEND EXISTING CULVERT AND CONSTRUCT ES-1/4 TO ES-2/4, AND I-1/4. INSTALLATION OF STORM DRAIN SYSTEMS SHALL BE LIMITED TO THE AMOUNT OF WORK THAT CAN BE INSTALLED AND STABILIZED IN ONE (1) WORKING DAY. INSTALL SSF AROUND ES-1/4 IMMEDIATELY AFTER COMPLETION

24. INSTALL NEW CURB AND GUTTER INCLUDING FULL DEPTH PAVEMENT WORKING DOWNSTREAM TO UPSTREAM AS SHOWN ON THE PLAN. CONSTRUCT ONLY THE AMOUNT OF CURB AND GUTTER THAT CAN BE STABILIZED IN ONE WORK DAY. (2 DAYS)

25. COMMENCE GRADING OPERATIONS AS SHOWN ON PLANS, WORKING DOWNSTREAM TO UPSTREAM FOR ALL PROPOSED SWALES. INSTALL TEMPORARY STONE OUTLET STRUCTURES AT THE DOWNSTREAM END OF THE PROPOSED SWALES AS INDICATED ON

26. ALL AREAS DISTURBED BY CONSTRUCTION AND NOT PROTECTED BY ESC MEASURES SHALL BE STABILIZED AT THE END OF EACH WORK DAY. STOCKPILES SHALL BE COVERED BY PLASTIC TARP AND COVERED WITH SANDBAGS AT THE END OF EACH WORK DAY WHEN

27. BEGIN PAVING OPERATIONS AS SHOWN ON PLANS AND PERFORM FINAL GRADING FOR DITCHES AND GRASS SWALES. STABILIZE SITE AT THE END OF EACH WORK DAY. (5 DAYS)

28. ONCE GRADING AND PAVING IS COMPLETE AND THE AREA IS 95% STABILIZED, CONTACT AN A.A. COUNTY INSPECTOR FOR PHASE I INSPECTION BEFORE REMOVAL OF E&S CONTROLS. ONCE APPROVAL IS MET, REMOVE E&S CONTROL MEASURES. (2 DAYS)

29. MEET WITH AN A.A. COUNTY INSPECTOR TO REVIEW THE EROSION AND CONTROL PLANS. EXISTING TOPOGRAPHY SHALL BE FIELD INSPECTED PRIOR TO COMMENCEMENT OF

30. ONCE APPROVED, REPEAT STEPS 18 THROUGH 21 BETWEEN THE STATION LIMIT SHOWN

31. INSTALL PROPOSED STORM DRAIN SYSTEMS 1-/4 TO ES-4/4, ES-1/5 TO ES-3/4, AND ES-3/6 TO ES-4/6 AND RIP-RAP OUTFALL PROTECTION DURING DRY CONDITIONS WORKING DOWNSTREAM TO UPSTREAM. INSTALLATION OF STORM DRAIN SYSTEMS SHALL BE LIMITED TO THE AMOUNT OF WORK THAT CAN BE INSTALLED AND STABILIZED IN ONE (1) WORKING DAY. STOCKPILE TOPSOIL AND OTHER SALVAGEABLE MATERIAL ON SITE. IMMEDIATELY AFTER COMPLETION INSTALL SSF AROUND OUTFALLS PER DETAIL ON ES-04

32. INSTALL NEW CURB AND GUTTER INCLUDING FULL DEPTH PAVEMENT WORKING DOWNSTREAM TO UPSTREAM AS SHOWN ON THE PLAN, CONSTRUCT ONLY THE AMOUNT OF CURB AND GUTTER THAT CAN BE STABILIZED IN ONE WORK DAY. (2 DAYS)

33. COMMENCE GRADING OPERATIONS AS SHOWN ON PLANS, WORKING DOWNSTREAM TO UPSTREAM FOR ALL PROPOSED SWALES. INSTALL THE REMAINING PROPOSED DRAINAGE SYSTEM (TRAIL CULVERTS) AS INDICATED ON THE PLANS DRY CONDITIONS WORKING

34. IN AREAS WHERE STANDING WATER AND WET CONDITIONS ARE ENCOUNTERED, USE APPROVED DEWATERING PRACTICES INCLUDING SUMP PITS TO FACILITATE THE

35. ALL AREAS DISTURBED BY CONSTRUCTION AND NOT PROTECTED BY ESC MEASURES SHALL BE STABILIZED AT THE END OF EACH WORK DAY. STOCKPILES SHALL BE COVERED BY PLASTIC TARP AND COVERED WITH SANDBAGS AT THE END OF EACH WORK DAY WHEN

36. BEGIN PAVING OPERATIONS AS SHOWN ON PLANS AND PERFORM FINAL GRADING FOR DITCHES AND GRASS SWALES. STABILIZE SITE AT THE END OF EACH WORK DAY. (10 DAYS)

37. ONCE GRADING AND PAVING IS COMPLETE AND THE AREA IS 95% STABILIZED, CONTACT AN A.A. COUNTY INSPECTOR FOR PHASE I INSPECTION BEFORE REMOVAL OF E&S CONTROLS. ONCE APPROVAL IS MET, REMOVE E&S CONTROL MEASURES. (2 DAYS)

38. MEET WITH AN A.A. COUNTY INSPECTOR TO REVIEW THE EROSION AND CONTROL PLANS. EXISTING TOPOGRAPHY SHALL BE FIELD INSPECTED PRIOR TO COMMENCEMENT OF

39. ONCE APPROVED, REPEAT STEPS 18 THROUGH 21 BETWEEN THE STATION LIMIT SHOWN

40. DURING A THREE (3) DAY, DRY WEATHER NOAA FORECAST, INSTALL I-3/9 AND THE CONNECTION TO THE EXISTING 24" RCP. THE FLOW IN THE EXISTING 24" RCP SHALL BE LEFT UNRESTRICTED AT THE END OF EACH WORK DAY. (1 DAYS)

41. INSTALL PROPOSED STORM DRAIN SYSTEMS DURING DRY CONDITIONS WORKING DOWNSTREAM TO UPSTREAM FROM I-3/9 TO I-1/9 AND I-3/9 TO I-5/9. INSTALLATION OF STORM DRAIN SYSTEMS SHALL BE LIMITED TO THE AMOUNT OF WORK THAT CAN BE INSTALLED AND STABILIZED IN ONE (1) WORKING DAY. STOCKPILE TOPSOIL AND OTHER

42. INSTALL PROPOSED STORM DRAIN SYSTEMS DURING DRY CONDITIONS WORKING DOWNSTREAM TO UPSTREAM BEGINNING WITH THE DOGHOUSE MANHOLE BOX CONSTRUCTION AT MH-1/10 MAINTAINING FLOW THROUGH THE EXISTING 36" RCP AT ALL TIMES. CONSTRUCT MH-1/10 TO I-6/9 AND MH-1/10 TO I-10/6. INSTALLATION OF STORM DRAIN SYSTEMS SHALL BE LIMITED TO THE AMOUNT OF WORK THAT CAN BE INSTALLED AND STABILIZED IN ONE (1) WORKING DAY. STOCKPILE TOPSOIL AND OTHER SALVAGEABLE

- 43. INSTALL PROPOSED MODIFIED 34" F-SHAPE TRAFFIC BARRIER WALL CURB WALL FROM STA 500+85 TO STA 504+00 AND PROPOSED MODIFIED 42" F-SHAPE TRAFFIC BARRIER WALL CURB WALL FROM STA 510+42 TO STA 513+25 AND COMPLETE ANY CORRESPONDING GRADING. INSTALLATION OF THE PROPOSED TRAFFIC BARRIER WALLS SHALL BE LIMITED TO THE AMOUNT OF WORK THAT CAN BE INSTALLED AND STABILIZED IN ONE (1) WORKING DAY. (15 DAYS)
- 44. COMMENCE GRADING OPERATIONS AS SHOWN ON PLANS, WORKING DOWNSTREAM TO UPSTREAM FOR ALL PROPOSED SWALES. (25 DAYS)
- 45. ALL AREAS DISTURBED BY CONSTRUCTION AND NOT PROTECTED BY ESC MEASURES SHALL BE STABILIZED AT THE END OF EACH WORK DAY. STOCKPILES SHALL BE COVERED BY PLASTIC TARP AND COVERED WITH SANDBAGS AT THE END OF EACH WORK DAY WHEN WET WEATHER IS FORECASTED.
- 46. INSTALL NEW CURB AND GUTTER INCLUDING FULL DEPTH PAVEMENT WORKING AND NEW DRIVEWAY ENTRANCES DOWNSTREAM TO UPSTREAM AS SHOWN ON THE PLAN. CONSTRUCT ONLY THE AMOUNT OF CURB AND GUTTER THAT CAN BE STABILIZED IN ONE WORK DAY. (10 DAYS)
- 47. BEGIN PAVING OPERATIONS AS SHOWN ON PLANS AND PERFORM FINAL GRADING FOR DITCHES AND GRASS SWALES. STABILIZE SITE AT THE END OF EACH WORK DAY. (10 DAYS)
- 48. ONCE GRADING AND PAVING IS COMPLETE AND THE AREA IS 95% STABILIZED, CONTACT AN A.A. COUNTY INSPECTOR FOR PHASE I INSPECTION BEFORE REMOVAL OF E&S CONTROLS. ONCE APPROVAL IS MET. REMOVE E&S CONTROL MEASURES. (2 DAYS)

PHASE V - SANDY POINT STATE PARK STA. 300+00 TO 342+52 (LOG INN ROAD TO OCEANIC DR) / LOOP TRAIL 500+00 TO 507+00

- 49. STAKEOUT OF TRAIL ALIGNMENT SHALL BE APPROVED BY ENGINEER PRIOR TO ANY CLEARING AND GRUBBING AND INSTALLATION OF PERIMETER CONTROLS. (5 DAYS)
- 50. UPON APPROVAL OF THE TRAIL ALIGNMENT, MEET WITH AN A.A. COUNTY INSPECTOR TO REVIEW THE EROSION AND CONTROL PLANS. EXISTING TOPOGRAPHY SHALL BE FIELD INSPECTED PRIOR TO COMMENCEMENT OF WORK. COORDINATE WITH THE STATE PARK SUPERINTENDENT OR REPRESENTATIVE PRIOR TO STARTING WORK. (1 DAY)
- 51. ONCE APPROVED, REPEAT STEPS 18 THROUGH 21 BETWEEN THE STATION LIMIT SHOWN ABOVE FOR PHASE V. (10 DAYS)
- 52. INSTALL ES-1/12 AND ES-2/12 ON EXISTING PIPE AND CORRESPONDING RIP-RAP OUTFALL PROTECTION DURING DRY CONDITIONS WORKING DOWNSTREAM TO UPSTREAM. (3 DAYS)
- 53. COMMENCE GRADING OPERATIONS AND AS SHOWN ON PLANS. ALL AREAS DISTURBED BY CONSTRUCTION AND NOT PROTECTED BY ESC MEASURES SHALL BE STABILIZED AT THE END OF EACH WORK DAY. STOCKPILES SHALL BE COVERED BY PLASTIC TARP AND COVERED WITH SANDBAGS AT THE END OF EACH WORK DAY WHEN WET WEATHER IS FORECASTED. (10 DAYS)
- 54. INSTALL TRUCK TURNAROUND AREAS EVERY 400' WITHIN STATE PARK AS NECESSARY FOR EASE OF CONSTRUCTION OPERATIONS. TRUCK TURNAROUNDS SHALL BE INSTALLED AS TO NOT REQUIRE TREE CLEARING.
- 55. ONCE THE OPERATION REACHES THE CULVERT CROSSING AT WUS, DURING A THREE DAY (3) DRY WEATHER NOAA FORECAST. INSTALL ES-2/13 TO ES-1/13. ES-3/13 TO ES-4/13 AND RIPRAP OUTFALL PROTECTION USING MDE'S PUMP AROUND PRACTICE. (3 DAYS)
- 56. ONCE CULVERT CROSSING IS STABILIZED AND TRAVERSABLE, CONTINUE GRADING OPERATIONS AND AS SHOWN ON PLANS. ALL AREAS DISTURBED BY CONSTRUCTION AND NOT PROTECTED BY ESC MEASURES SHALL BE STABILIZED AT THE END OF EACH WORK DAY.
- 57. INSTALL REMAINING PROPOSED DRAINAGE STRUCTURES INCLUDING RIP-RAP OUTFALL PROTECTION AS INDICATED ON THE PLAN DURING DRY CONDITIONS WORKING DOWNSTREAM TO UPSTREAM WHEN OPERATIONS REACH EACH CROSSING SYSTEM. (10 DAYS)
- 58. IN AREAS WHERE STANDING WATER AND WET CONDITIONS ARE ENCOUNTERED. USE APPROVED DEWATERING PRACTICES INCLUDING SUMP PITS TO FACILITATE THE CONSTRUCTION OPERATIONS. (3 DAYS)
- 59. INSTALL SPECIAL TRAIL SECTION FROM STA. 331+50 TO 334+50 INCLUDING THE 6" PERFORATED UNDERDRAIN IN NO. 3 STONE.
- 60. BEGIN PAVING OPERATIONS. STABILIZE SITE AT THE END OF EACH WORK DAY. (15 DAYS)
- 61. ONCE GRADING AND PAVING IS COMPLETE AND THE AREA IS 95% STABILIZED, CONTACT AN A.A. COUNTY INSPECTOR FOR PHASE I INSPECTION BEFORE REMOVAL OF E&S CONTROLS. ONCE APPROVAL IS MET, REMOVE E&S CONTROL MEASURES. (4 DAYS)

"I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY NO. DESCRIPTION BY DATE	PROFESSIONAL CERTIFICATION		REVISIONS				
ME, AND THAT I AM A DULY LICENSED APPROVED PROFESSIONAL ENGINEER UNDER Image: Chick of the state of MaryLaND." Image: Chick of the state of MaryLaND." Image: Chick of the state of	WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND." MD LICENSE NUMBER: 53587	BROTHER STREET	NO.	DESCRIPTION	BY	DATE	CHIEF ENGINEER

SEQUENCE OF CONSTRUCTION - GENERAL NOTES

1. THE EROSION AND SEDIMENT CONTROL MEASURES MUST BE IN PLACE AND FUNCTIONING PRIOR TO CLEARING THE ENTIRE SITE. CLEAR AND GRUB FOR EROSION AND SEDIMENT CONTROL MEASURES OR DEVICES ONLY ON COMMENCEMENT OF CONSTRUCTION.

2. MAINTAIN ALL SEDIMENT CONTROL PRACTICES ACCORDING TO THE MARYLAND 2011 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL ISSUED BY MARYLAND DEPARTMENT OF THE ENVIRONMENT AND AMENDMENTS BY THE ANNE ARUNDEL SOIL CONSERVATION DISTRICT UNTIL THE ENTIRE SITE IS STABILIZED.

3. STORM DRAIN SYSTEMS SHALL ALWAYS BE CONSTRUCTED FROM THE DOWNSTREAM ENDS. INLET PROTECTIONS SHALL BE INSTALLED AT EXISTING INLETS BEFORE ANY DISTURBANCE IN THE WORK AREA. FOR PROPOSED STRUCTURES, INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY AFTER COMPLETION. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUN OFF IS DIRECTED TO AN MDE APPROVED SEDIMENT CONTROL DEVICE. CONTRACTOR SHALL USE PORTABLE SEDIMENT TANK TO DEWATER THE WORKING AREA DURING CONSTRUCTION.

- 4. MAINTAIN ACCESS TO PRIVATE RESIDENCES AT ALL TIMES. ROADWAY SUBBASE SHALL BE STABILIZED WITH GRADED AGGREGATE BASE MATERIAL AT THE END OF EACH WORK DAY.
- 5. IT IS THE RESPONSIBILITY OF THE DEVELOPER TO SUBMIT AS-BUILT DRAWINGS TO ANNE ARUNDEL COUNTY CERTIFYING THAT THE STORMWATER MANAGEMENT FACILITIES WERE WITNESSED BY A PROFESSIONAL ENGINEER DURING CONSTRUCTION.
- 6. AT THE BEGINNING AND END OF THE JOB, IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO CLEAN ALL EXISTING AND PROPOSED DRAINAGE SYSTEMS OF SEDIMENT AND DEBRIS WITHIN THE PROJECT LIMITIS.

APPROXIMATE EARTHWORK BY PHASE

PHASE 1 – EARTHWORK 2.16 ACRES DISTURBED SURFACE AREA ACRES 1.46 VEGETATIVELY STABILIZED AREA _____ 872 CY VOLUME OF SPOIL MATERIAL _____ <u>1,990</u> CY VOLUME OF CUT CY VOLUME OF BORROW MATERIAL 300 _____ 1,117 CY

PHASE 2 – EARTHWORK

VOLUME OF FILL

DISTURBED SURFACE AREA1.57ACRESVEGETATIVELY STABILIZED AREA1.24ACRESVOLUME OF SPOIL MATERIAL100CYVOLUME OF CUT1,045CYVOLUME OF BOBBOW MATERIAL25CY		
DISTURBED SURFACE AREA	1.57	ACRES
VEGETATIVELY STABILIZED AREA	1.24	ACRES
VOLUME OF SPOIL MATERIAL	100	CY
VOLUME OF CUT	1,045	CY
VOLUME OF BORROW MATERIAL _	25	CY
VOLUME OF FILL	440	CY

PHASE 3 – EARTHWORK

DISTURBED SURFACE AREA	4.90	ACRES
VEGETATIVELY STABILIZED AREA	4.00	ACRES
VOLUME OF SPOIL MATERIAL	25	CY
VOLUME OF CUT	2,686	CY
VOLUME OF BORROW MATERIAL	350	CY
VOLUME OF FILL	2,076	CY

PHASE 4 – EARTHWORK

DISTURBED SURFACE AREA	2.00	ACRES
VEGETATIVELY STABILIZED AREA	0.85	ACRES
VOLUME OF SPOIL MATERIAL	385	CY
VOLUME OF CUT	1,699	CY
VOLUME OF BORROW MATERIAL	100	CY
VOLUME OF FILL	616	CY
VOLUME OF BORROW MATERIAL	100	CY

PHASE 5 – EARTHWORK

DISTURBED SURFACE AREA	4.03	ACRES
VEGETATIVELY STABILIZED AREA	2.79	ACRES
VOLUME OF SPOIL MATERIAL	15	CY
VOLUME OF CUT	432	CY
VOLUME OF BORROW MATERIAL	100	CY
VOLUME OF FILL	910	CY

TOTAL – EARTHWORK

DISTURBED SURFACE AREA	14.7	ACRES
VEGETATIVELY STABILIZED AREA	10.3	ACRES
VOLUME OF SPOIL MATERIAL	1,397	CY
VOLUME OF CUT	7,852	CY
VOLUME OF BORROW MATERIAL	875	CY
VOLUME OF FILL	5,159	CY

EARTHWORK NOTES:

1. THE EARTHWORK QUANTITIES FOR EACH PHASE ARE APPROXIMATE.

2. THE VOLUME OF SPOIL MATERIAL ACCOUNTS FOR PAVEMENT REMOVAL ONLY.

3. THE QUANTITIES HAVE NOT ACCOUNTED FOR EXCESS MOISTURE OR SHRINK/SWELL FACTORS.

4. TOPSOIL AND ROOTMAT HAVE BEEN EXCLUDED FROM THE EARTHWORK, NOR DO THEY REFLECT CONSIDERATION OF UNDERCUTTING OR REMOVAL OF UNSUITABLE MATERIAL.

5. EARTHWORK QUANTITIES ARE FOR INFORMATION PURPOSES ONLY. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY OF ACTUAL EARTHWORK QUANTITIES ENCOUNTERED DURING CONSTRUCTION. 6. AECOM MAKES NO GUARANTEE OF ACCURACY OF QUANTITIES OR BALANCE OF SITE.

GP# G02018957

DWG. NO.: ESN-02

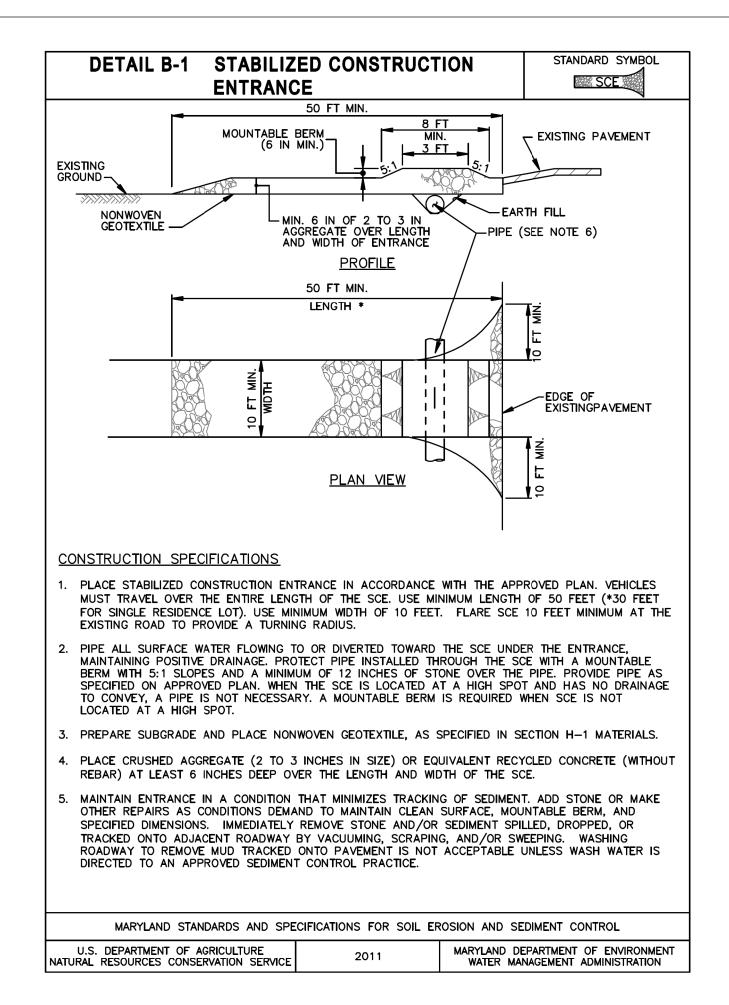
DATE APPROVED 11/20/2023 | 08:59 EST Jule autry PROJECT MANAGER DATE APPROVED 11/17/2023 | 11:56 EST tom Burley EF ENGINEER CHIEF, RIGHT OF WAY

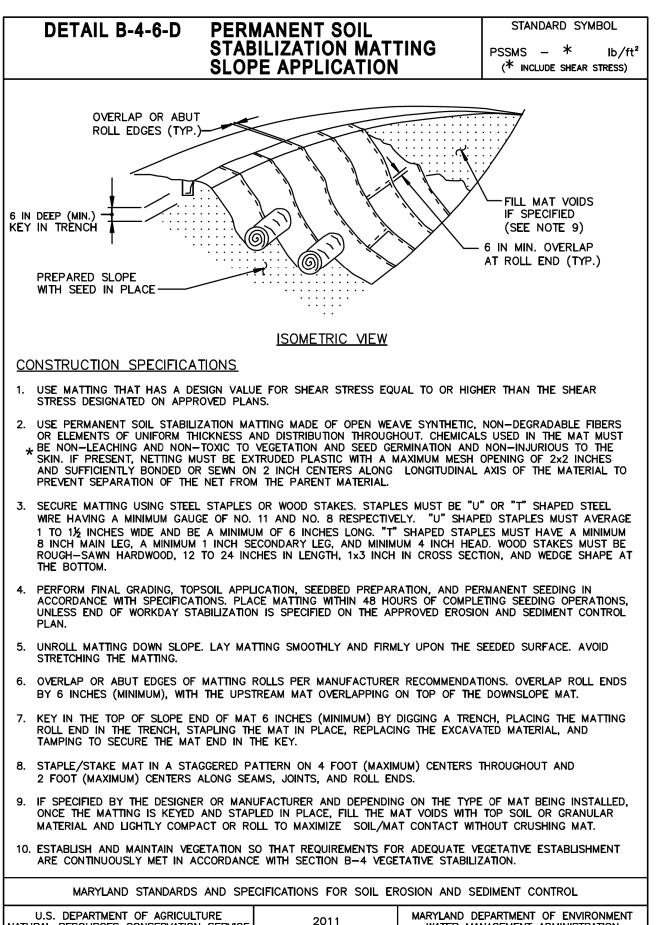
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ANNE ARUNDEL COUNTY

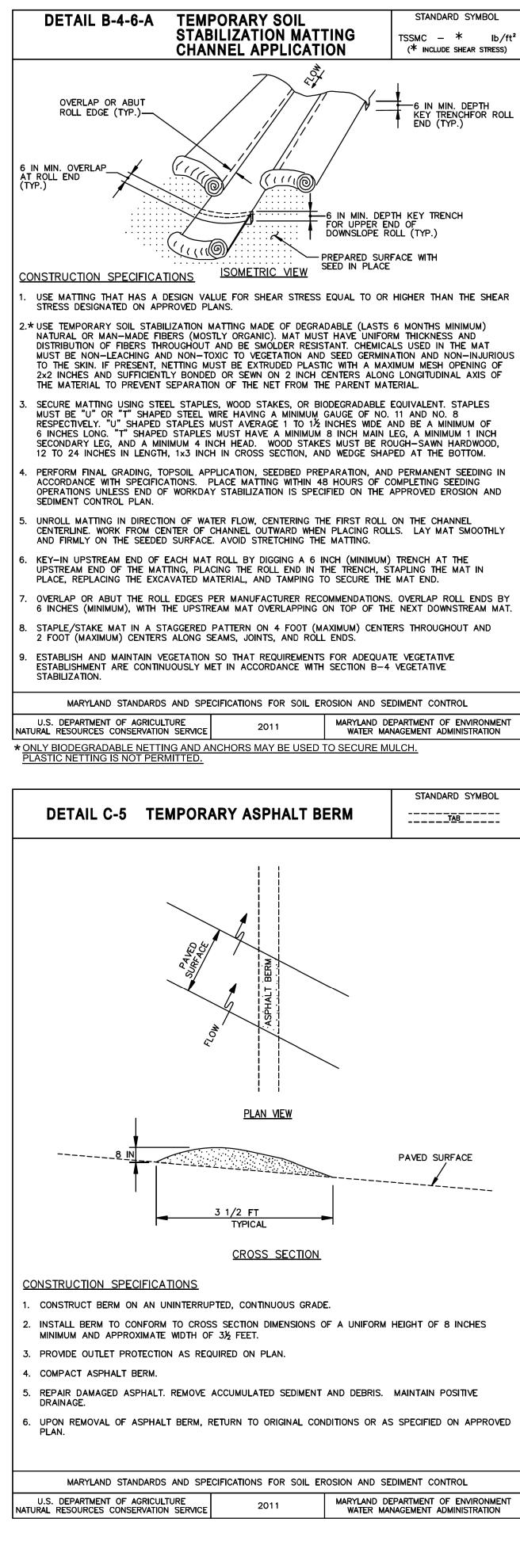
BROADNECK PENINSULA TRAIL PHASE IB & V

EROSION AND SEDIMENT **CONTROL NOTES & DETAILS**



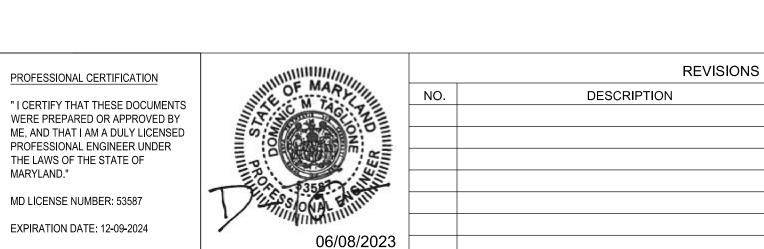


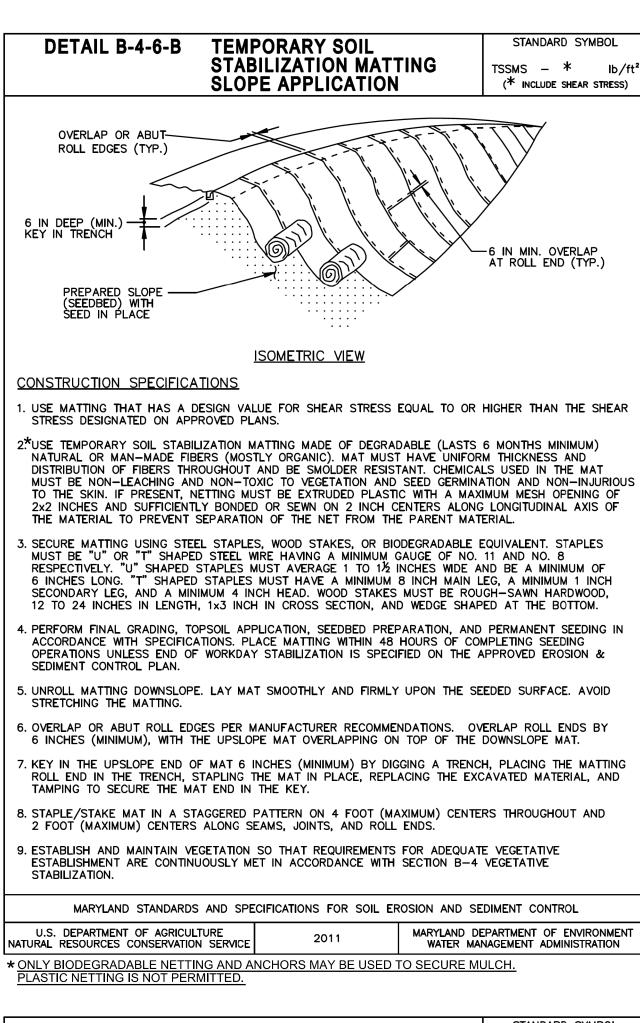
WATER MANAGEMENT ADMINISTRATION NATURAL RESOURCES CONSERVATION SERVICE * ONLY BIODEGRADABLE NETTING AND ANCHORS MAY BE USED TO SECURE MULCH. PLASTIC NETTING IS NOT PERMITTED.

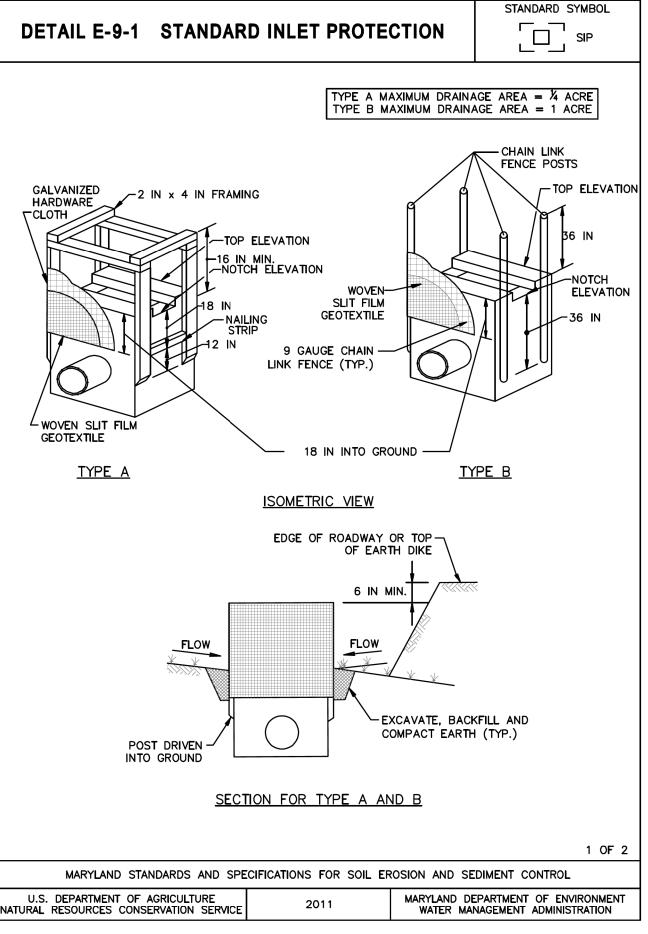




ECIFICATIONS FOR SOIL	EROSION AND SEDIMENT CONTROL
2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
ANCHORS MAY BE USED	D TO SECURE MULCH.







BY

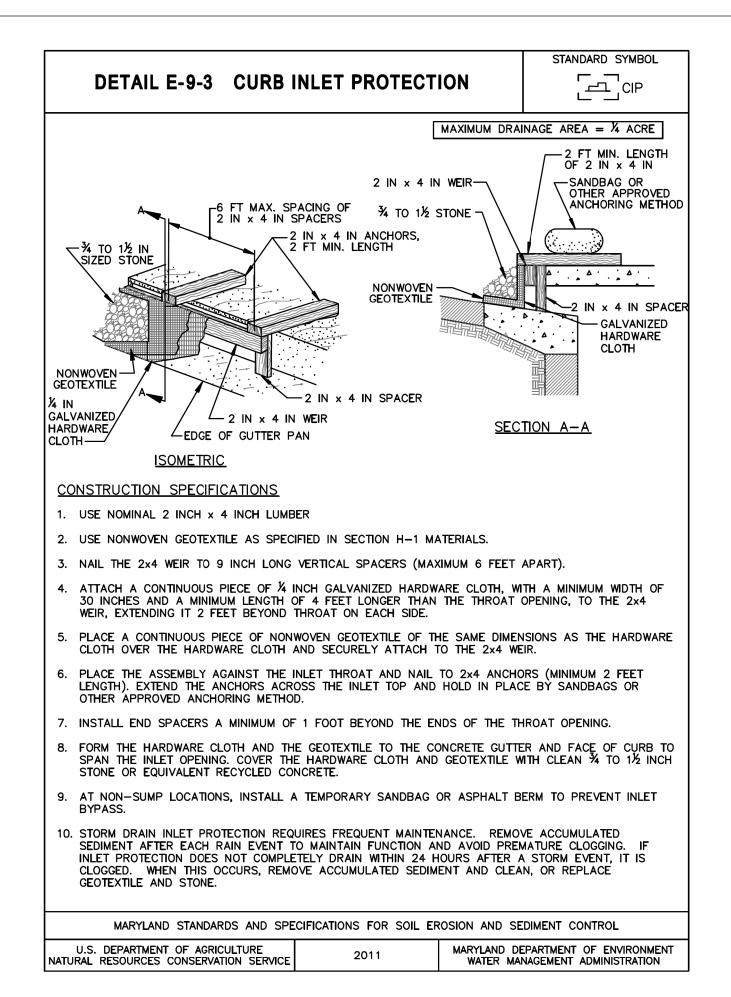
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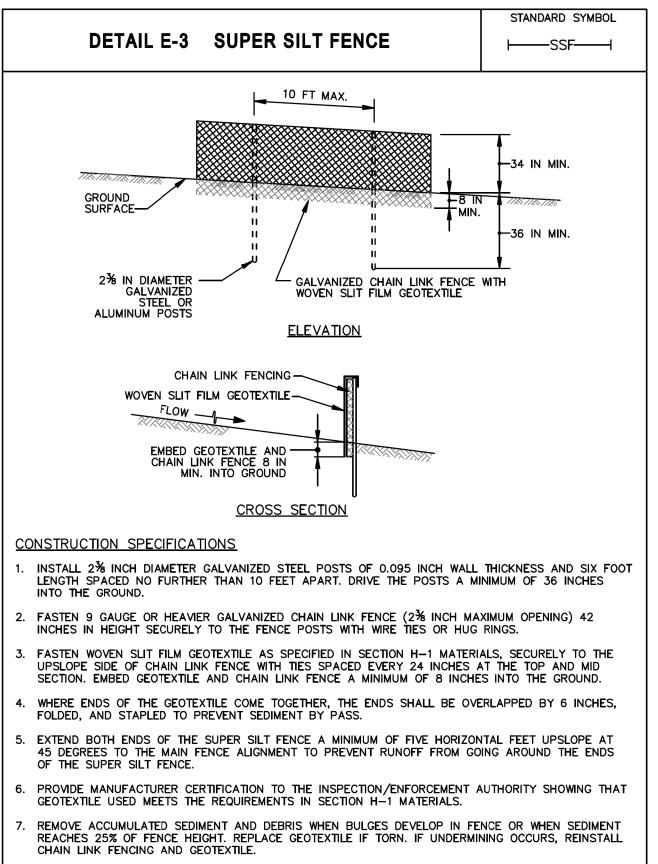


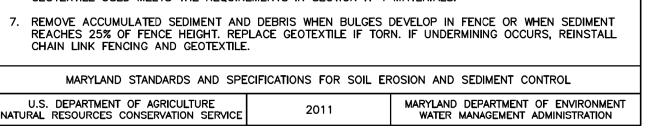
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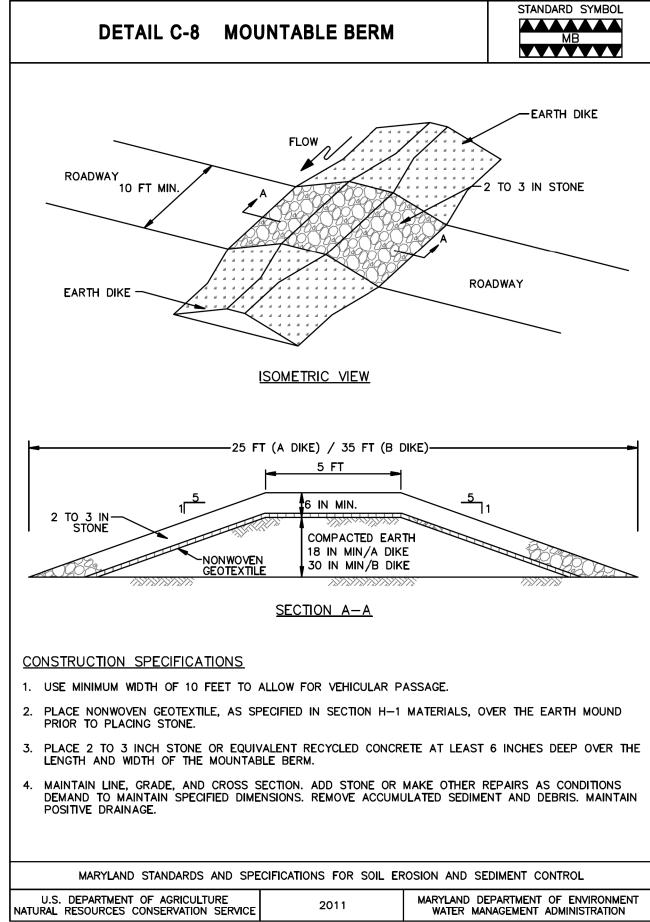
DETAIL B	ST	RMANENT SOIL ABILIZATION MA	TION	PSSMC -	RD SYMBOL * Ib/ft² E SHEAR STRESS)		
OVERLAI EDGES (6 IN MIN. OVERLAP AT ROLL END (TYP.)	P OR ABUT				TIED		
PREPARED FLOW- CHANNEL WITH SE IN PLACE	· · · · · · · · · · · · · · · · · · ·		6 IN DEEP KEY TRENC UPPER ENI DOWN SLO	Chi For	Έ.)		
CONSTRUCTION S 1. USE MATTING THA DESIGNATED ON A	T HAS A DESIGN V	ALUE FOR SHEAR STRESS E		IER THAN THE	SHEAR STRESS		
2.* USE PERMANENT ELEMENTS OF UNI NON-LEACHING AI PRESENT, NETTING SUFFICIENTLY BON	SOIL STABILIZATION FORM THICKNESS A ND NON-TOXIC TO MUST BE EXTRUD DED OR SEWN ON	MATTING MADE OF OPEN W ND DISTRIBUTION THROUGHO VEGETATION AND SEED GER ED PLASTIC WITH A MAXIMU 2 INCH CENTERS ALONG LO ROM THE PARENT MATERIAL	DUT. CHEMICALS U MINATION AND NOI M MESH OPENING NGITUDINAL AXIS (JSED IN THE I N—INJURIOUS OF 2×2 INCHE	MAT MUST BE TO THE SKIN. IF S AND		
WIRE HAVING A M 1 TO 1 ½ INCHES 8 INCH MAIN LEG,	NIMUM GAUGE OF WIDE AND BE A M A MINIMUM 1 INCH	LES OR WOOD STAKES. ST/ NO. 11 AND NO. 8 RESPECT INIMUM OF 6 INCHES LONG. I SECONDARY LEG, AND MIN INCHES IN LENGTH, 1×3 INC	IVELY. "U" SHAPE "T" SHAPED STA IMUM 4 INCH HEAI	ED STAPLES M PLES MUST H D. WOOD STAP	IUST AVERAGE AVE A MINIMUM KES MUST BE		
ACCORDANCE WITH UNLESS END OF V	SPECIFICATIONS.	PPLICATION, SEEDBED PREP PLACE MATTING WITHIN 48 I TION IS SPECIFIED ON THE	HOURS OF COMPLE	TING SEEDING	OPERATIONS,		
WORK FROM CENT	ER OF CHANNEL O	ATER FLOW, CENTERING THE JTWARD WHEN PLACING ROL CHING THE MATTING.					
 OVERLAP OR ABU BY 6 INCHES (MIN KEY IN THE TOP ROLL END IN THE 	T EDGES OF MATTIN IMUM), WITH THE U OF SLOPE END OF	NG ROLLS PER MANUFACTUR IPSTREAM MAT OVERLAPPING MAT 6 INCHES (MINIMUM) B THE MAT IN PLACE, REPLA	G ON TOP OF THE Y DIGGING A TREN	NEXT DOWNS	TREAM MAT. THE MATTING		
8. STAPLE/STAKE M/ 2 FOOT (MAXIMUN	AT IN A STAGGEREI) CENTERS ALONG) PATTERN ON 4 FOOT (MA SEAMS, JOINTS, AND ROLL	ENDS.				
ONCE THE MATTIN MATERIAL AND LIC 10. ESTABLISH AND M	G IS KEYED AND S HTLY COMPACT OR AINTAIN VEGETATIO	IANUFACTURER AND DEPEND TAPLED IN PLACE, FILL THE ROLL TO MAXIMIZE SOIL/M N SO THAT REQUIREMENTS ANCE WITH SECTION B-4 VE	MAT VOIDS WITH AT CONTACT WITH FOR ADEQUATE VE	TOP SOIL OR OUT CRUSHING	GRANULAR G MAT.		
MARYLAND U.S. DEPARTMENT		SPECIFICATIONS FOR SOIL			TROL F ENVIRONMENT		
NATURAL RESOURCES	CONSERVATION SERV	D ANCHORS MAY BE USE	WATER MA	NAGEMENT AD			
2. EXCAVATE COMP 3. FOR TYPE A, U	FILM GEOTEXTILE PLETELY AROUND SE NOMINAL 2 INC	S AS SPECIFIED IN SECTION THE INLET TO A DEPTH ON THE X 4 INCH CONSTRUCTION NER OF THE INLET. PLACE	F 18 INCHES BEL	OW THE NOTO	VEN 1 FOOT		
GALVANIZED HA GEOTEXTILE SEC AND MID SECTIO WEIR CREST. TH THEN FASTENED FOR TYPE B, US 6 FOOT LENGTH	RDWARE CLOTH TI URELY TO THE H/ IN. EMBED GEOTEX E ENDS OF THE (TO THE POST. SE 236 INCH DIAMI , DRIVEN A MINIMI	HE TOP PORTION OF THE GHTLY AROUND THE FRAM ARDWARE CLOTH WITH TIES (TILE AND HARDWARE CLO GEOTEXTILE MUST MEET AT ETER GALVANIZED STEEL F JM OF 36 INCHES BELOW (2) HEAVIER CHAIN LINK FEN	E AND FASTEN S SPACED EVERY TH A MINIMUM OF A POST, BE OVE POSTS OF 0.095 I THE WEIR CREST	ECURELY. FA 24 INCHES A 7 18 INCHES ERLAPPED AN INCH WALL TI AT EACH CO	STEN AT THE TOP BELOW THE ID FOLDED, HICKNESS AND DRNER OF THE		
THE FENCE POS TIES SPACED EX FENCE A MINIMU 4. BACKFILL AROUN NOTCH ELEVATIO 5. STORM DRAIN IN	TS WITH WIRE TIE /ERY 24 INCHES / IM OF 18 INCHES NO THE INLET IN IN ON THE ENDS ILET PROTECTION	S. FASTEN GEOTEXTILE SE AT THE TOP AND MID SEC BELOW THE WEIR CREST. LOOSE 4 INCH LIFTS AND AND TOP ELEVATION ON T REQUIRES FREQUENT MAIN NTAIN FUNCTION AND AVO	CURELY TO THE O TION. EMBED GEO COMPACT UNTIL S THE SIDES. TENANCE. REMOV	CHAIN LINK F TEXTILE AND SOIL IS LEVEI E ACCUMULA	ENCE WITH CHAIN LINK L WITH THE TED SEDIMENT		
PROTECTION DO	ES NOT COMPLETE	LY DRAIN WITHIN 24 HOUD CUMULATED SEDIMENT AND	RS AFTER A STOP	RM EVENT, IT	IS CLOGGED.		
					2 OF 2		
MARYLAND U.S. DEPARTMENT NATURAL RESOURCES (OF AGRICULTURE	SPECIFICATIONS FOR SOIL	MARYLAND D		F ENVIRONMENT		
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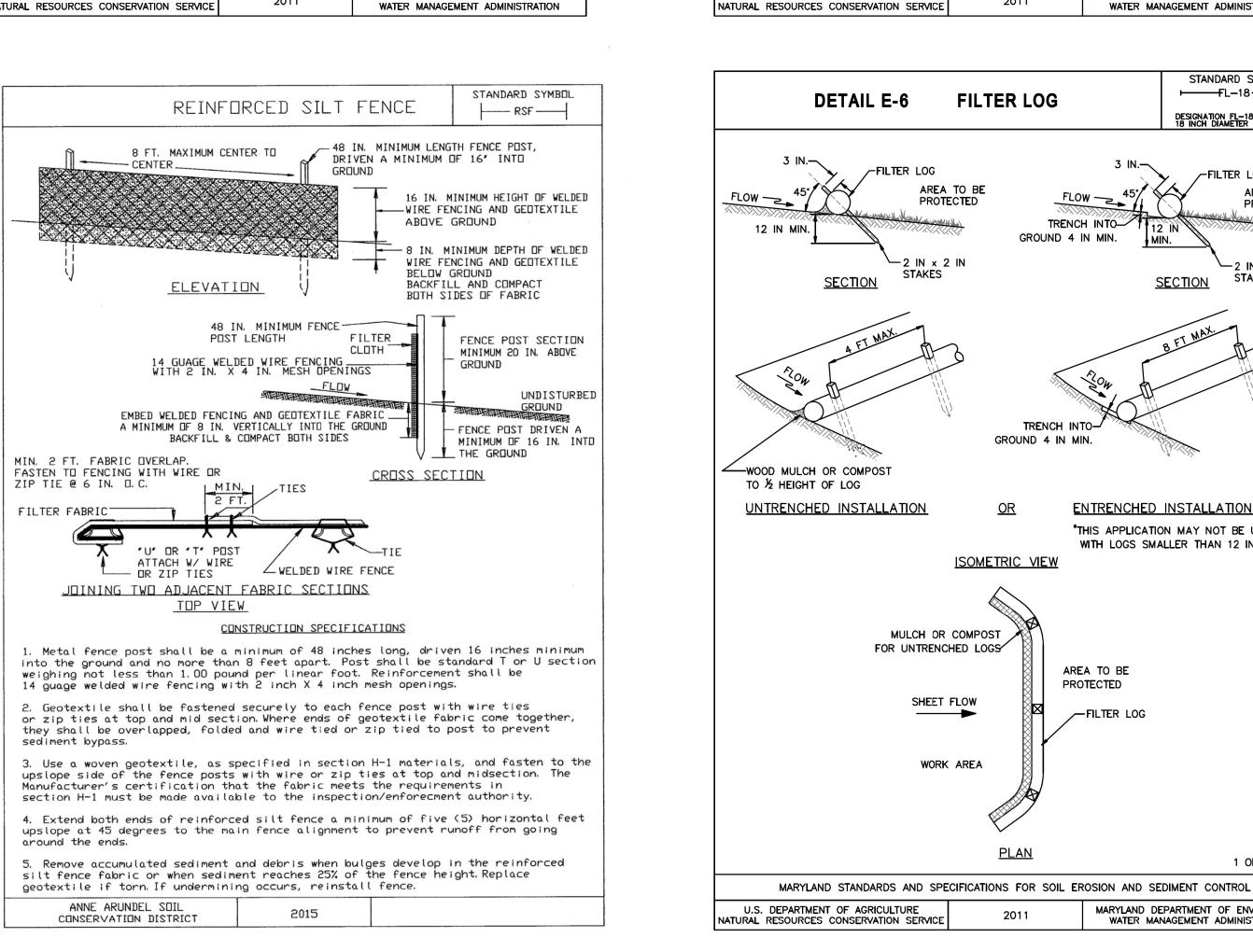
CHIEF, RIGHT OF WAY CONTRACT NO. P504105 UDINITIOL NUTES & DETAILS







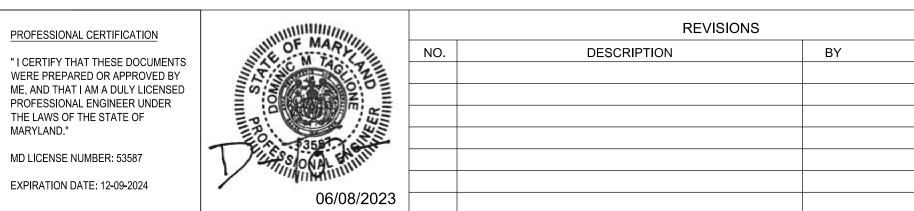




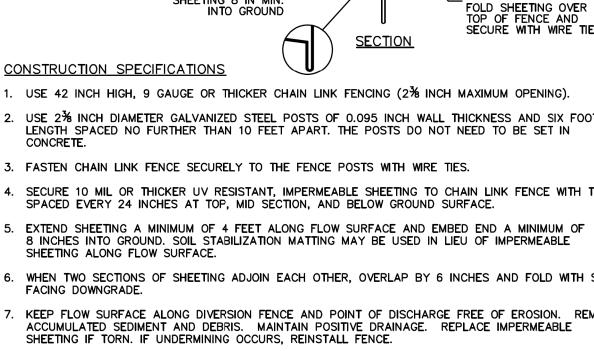


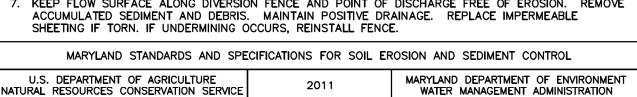
4 NORTH PARK DRIVE SUITE 300 HUNT VALLEY, MARYLAND 21030 PHONE: 410-785-7220 FAX: 410-785-6818

ent reaches 25% of t ng occurs, reinstall	height. Replace	
2015		



DATE APPROVED Alexen CHIEF ENGINEER APPROVED David C. Brann ASSISTANT CHIEF ENGINEER





FILTER LOG

FLOW

TRENCH INTO-

GROUND 4 IN MIN.

TRENCH INTO-

AREA TO BE PROTECTED

-FILTER LOG

GROUND 4 IN MIN.

OR

ISOMETRIC VIEW

<u>PLAN</u>

2011

45%

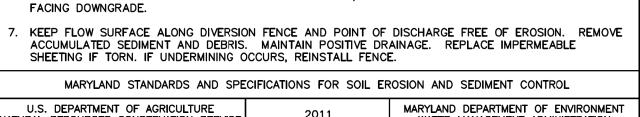
<u>SECTION</u>

ENTRENCHED INSTALLATION*

WITH LOGS SMALLER THAN 12 IN.

*THIS APPLICATION MAY NOT BE USED

FT MAX.



STANDARD SYMBOL ------FL--18------•

DESIGNATION FL-18 REFERS TO 18 INCH DIAMETER FILTER LOG.

-FILTER LOG

AREA TO BE

PROTECTED

-2 IN x 2 IN

STAKES

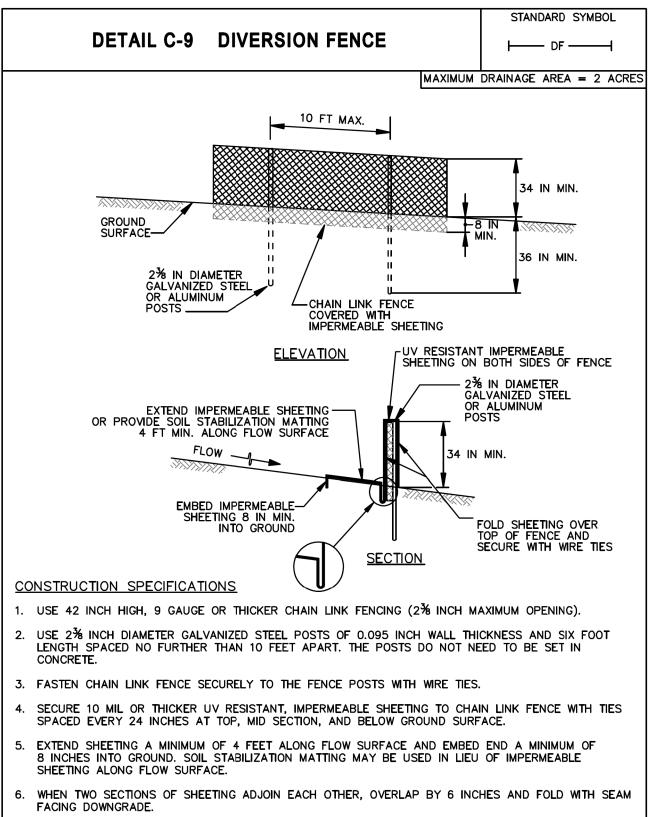
1 OF 2

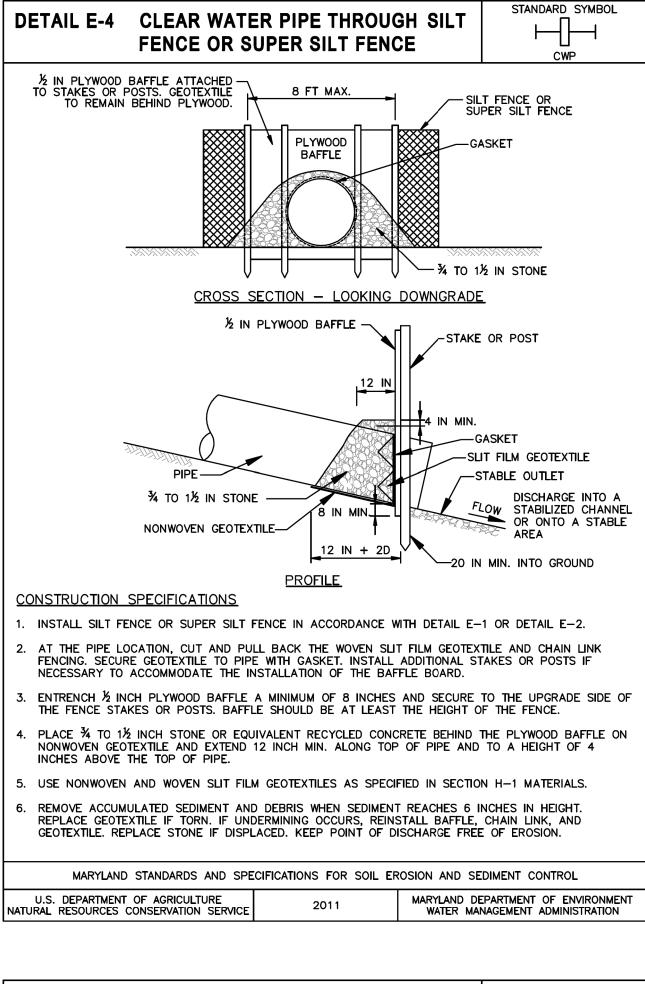
CHIEF, RIGHT OF WAY

11/17/2023 | 11:56 EST tom Burke

MARYLAND DEPARTMENT OF ENVIRONMENT

WATER MANAGEMENT ADMINISTRATION





							DARD SYMBOL	7
		DETAIL E-6	FILTERL	.OG		DESIGNATI 18 INCH D	ON FL-18 REFERS TO MAMETER FILTER LOG.	
<u>co</u>	NSTRUCTION	SPECIFICATIONS						
1.		TALLATION, CLEAR AL CH THAT MAY INTERFI					BRIS GREATER	
2.		ING UNIFORMLY WITH VED BIODEGRADABLE						
3.	THE BEGINNING	R LOGS PERPENDICUL G AND END OF THE I CH END TO PREVENT	NSTALLATION PO					
4.	FOR UNTRENCH	HED INSTALLATION BL LOG.	LOW OR HAND PL	ACE MULCH	OR COMPOS	t on uphil	L SIDE OF THE	
5.		LOG EVERY 4 FEET NIMUM OF 4 INCHES					ICH LOG INTO	
6.		MITH A MINIMUM NOM						
7.	WHEN MORE T	HAN ONE LOG IS NEE	EDED, OVERLAP E	NDS 12 INC	HES MINIMUM	AND STAK	Έ.	
8.	REPLACE MULC DISLODGING OC CONTINUOUSLY	IENT WHEN IT HAS A CH. REPLACE FILTER CCURS. REPLACE CLC (MEET REQUIREMENT VEGETATIVE STABILIZ	LOG IF TORN. RE OGGED FILTER LOG S FOR ADEQUATE	INSTALL FIL SS. FOR PEF	TER LOG IF UR MANENT APP	UNDERMININ LICATIONS,	G OR ESTABLISH AND	
							2 OF 2	
	MARYLAN	ID STANDARDS AND S	SPECIFICATIONS F	OR SOIL ER	OSION AND S		DNTROL]
		T OF AGRICULTURE	се 201	1			OF ENVIRONMENT ADMINISTRATION]
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							GP# G0	201895
		Δ		DEL COU	NTY	I_		
		DEPA	RTMENT OF		WORKS			
DATE 23 08	DocuSig	gned by:	DATE 17/2023 08:0	SCALE: AS		MT	BROAI	DNECK PE PHASE
		Autur II/. MANAGER		CHECKED		MT		
DATE			DATE			OF 116	EROSI	

11/17/2023 | 18:36 REGJECT NO. P504100

CONTRACT NO. P504105

NINSULA TRAIL IB & V

DWG NO .:

ESN-04

EROSION AND SEDIMENT CONTROL NOTES & DETAILS