

BEFORE YOU DIG CALL  
1-800-257-7777 OR DIAL 811



# DEPARTMENT OF PUBLIC WORKS

## BUREAU OF WATERSHED PROTECTION AND RESTORATION

### LPAX CROFTON GOLF STREAM RESTORATION SEGMENT 1

### FINAL DEISGN DRAWINGS

STORM ID 38108

PROJECT NO. B556900

CONTRACT NO. B556903

MAY 2023

#### INDEX OF DRAWINGS

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23	LS-02	PLANTING PLAN
24	LS-03	PLANTING DETAILS & NOTES
25	LS-04	PLANTING DETAILS

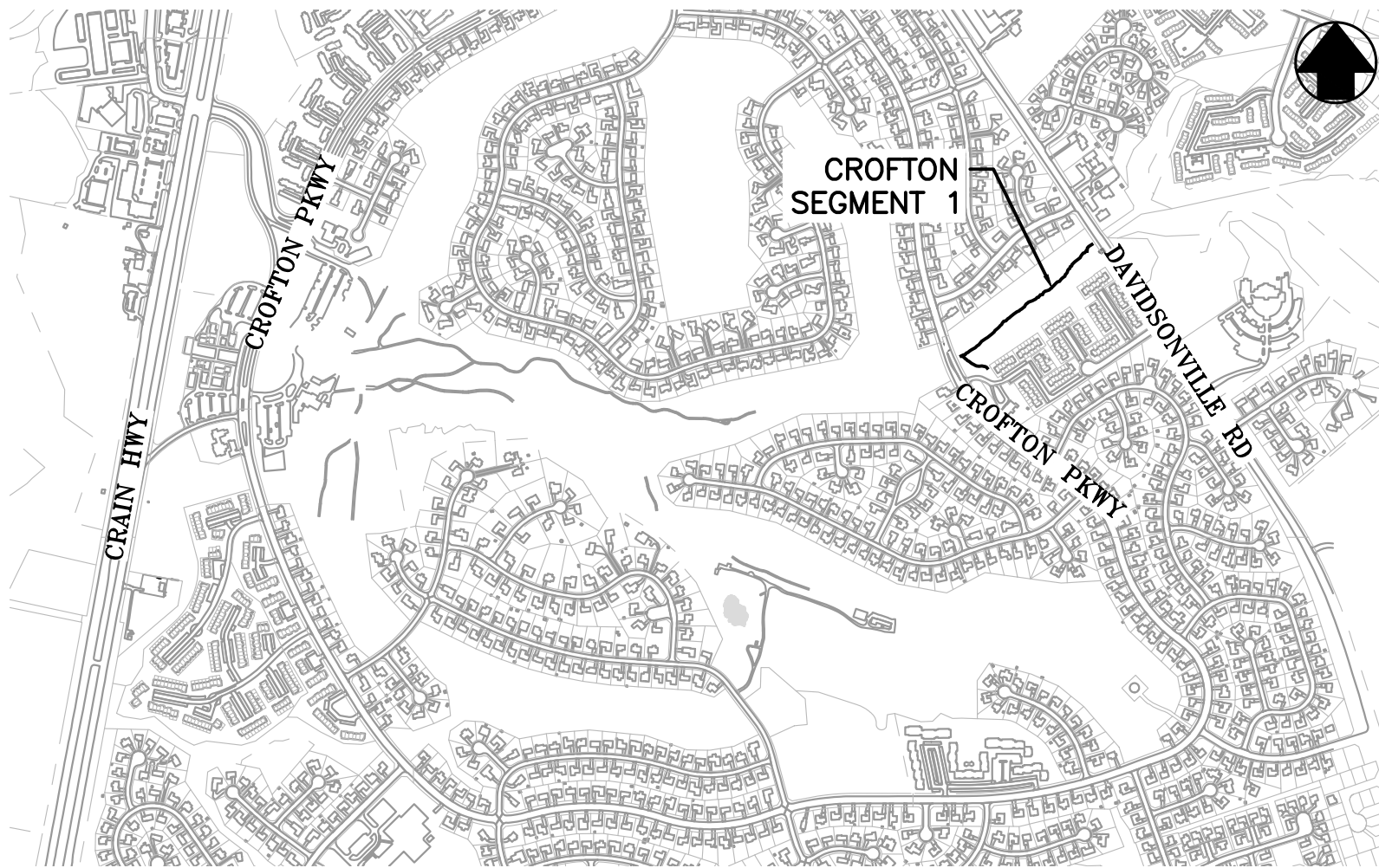
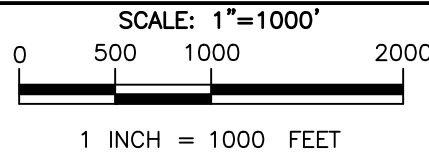
NOTE: SEE SHEET ES-05 FOR SEQUENCE OF CONSTRUCTION

THESE CONTRACT DRAWINGS ARE FOR PROPOSED WORK AT SEGMENT 1 (DAVIDSONVILLE ROAD TO CROFTON PARKWAY). THERE IS NO PROPOSED WORK ON THE CROFTON GOLF COURSE (SEGMENT 2). WORK ON SEGMENT 3 WILL BE CONSTRUCTED UNDER A SEPARATE CONSTRUCT.

#### SITE INFORMATION

1. OWNER/DEVELOPER:	ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS
2. OWNER/DEVELOPER INFORMATION:	2662 RIVA ROAD — MS 7217 ANNAPOLIS, MD 21401 410-222-4824 ATTN: NASRIN DAHLGREN
3. ENGINEER:	BAYLAND CONSULTANTS AND DESIGNERS, INC.
4. ENGINEER INFORMATION:	7455 NEW RIDGE ROAD, SUITE T HANOVER, MARYLAND 21076 PH: 410-694-9401
5. TAX MAP:	43
6. PARCEL:	16
7. PLAT REFERENCE:	49/29
8. AA COUNTY GRADING PERMIT NO:	G02019569
9. DISTRICT:	COUNCIL DISTRICT 7
10. ZONING:	R5 (RESIDENTIAL) AND OS (OPEN SPACE)
11. STREAM USE DESIGNATION:	USE 1
12. PROPERTY AREA:	10.7 ACRES
13. WATERSHED:	LITTLE PATUXENT RIVER (02-13-11-05)
14. SITE AREA LOCATED WITHIN CRITICAL AREA:	0 ACRES
15. MDE APPROVAL NUMBER:	22-NT-0269
16. USACE APPROVAL NUMBER:	202261790

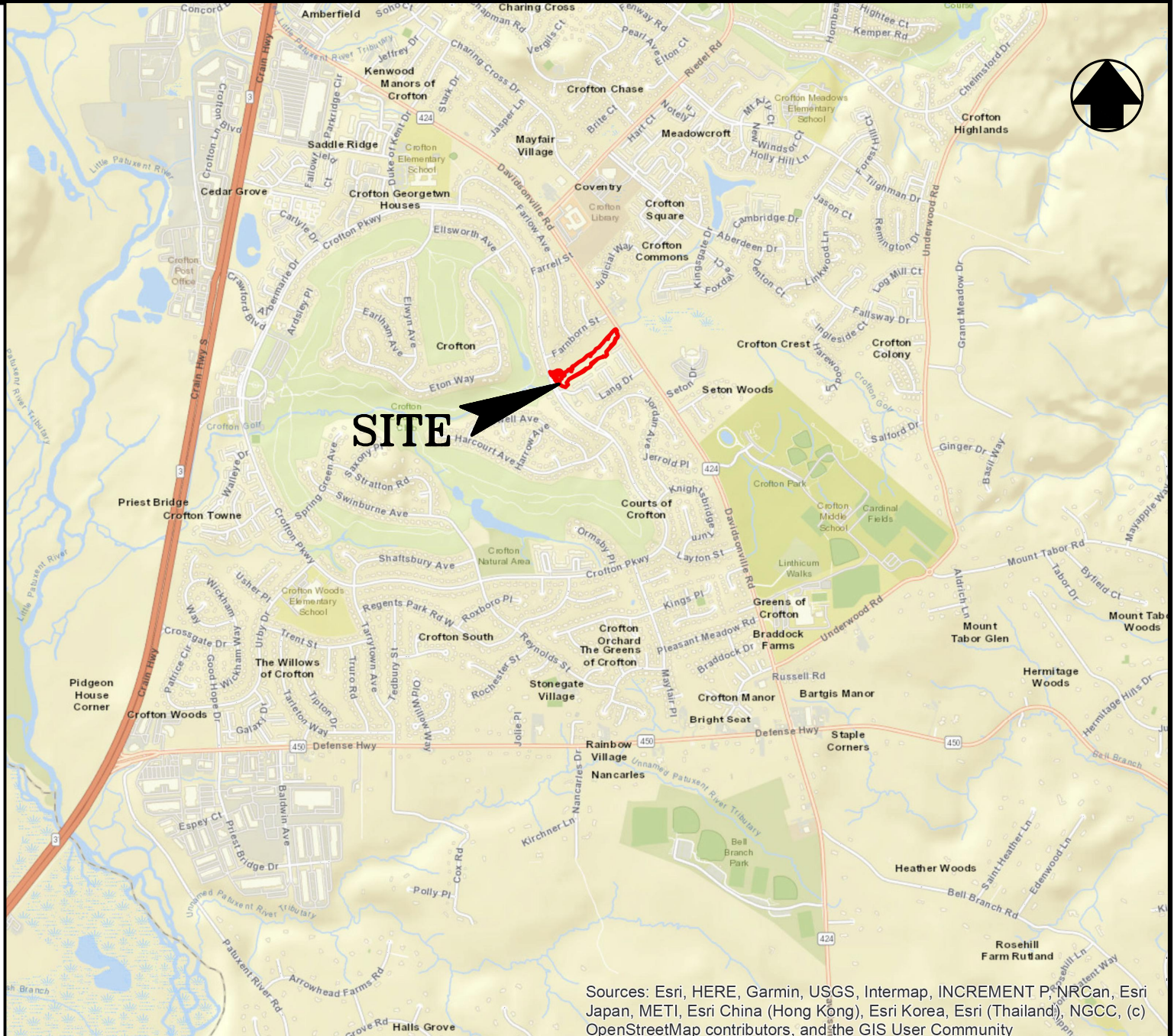
#### LOCATION MAP



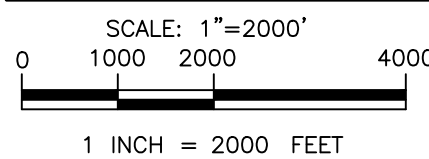
#### SITE ANALYSIS

1. TOTAL SEGMENT 1 AREA:	3.36 ACRES
1.1. PROPOSED DISTURBED AREA:	3.36 ACRES
2. TOTAL SEGMENT 1 AREA TO BE STABILIZED:	3.36 ACRES
2.1. TOTAL EX. IMP. AREA:	0.00 ACRES
2.2. TOTAL EX. IMP. AREA TO REMAIN:	0.00 ACRES
2.3. TOTAL PR. IMPERVIOUS AREA:	0.00 ACRES
2.4. TOTAL TO BE STABILIZED WITH VEGETATION:	3.13 ACRES
2.5. PROPOSED CHANNEL AREA:	0.23 ACRES
3. SEGMENT 1 PROPOSED IMPERVIOUS AREA:	0.00 ACRES
4. SEGMENT 1 ESTIMATED CUT:	5,970 CY
5. SEGMENT 1 ESTIMATED FILL:	1,355 CY

NOTE:  
THE EARTHWORK QUANTITIES SHOWN HEREON ARE FOR INFORMATION PURPOSES ONLY. BAYLAND MAKES NO GUARANTEES OF ACCURACY OF QUANTITIES OR BALANCE OF SITE. THE DEVELOPER AND CONTRACTOR SHALL TAKE FULL RESPONSIBILITY OF ACTUAL EARTHWORK QUANTITIES ENCOUNTERED DURING CONSTRUCTION. CUT/FILL QUANTITIES ARE BASED ON FINISHED GRADE AND DO NOT INCLUDE UNDERCUT FOR PROPOSED STRUCTURES.



#### VICINITY MAP



#### AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

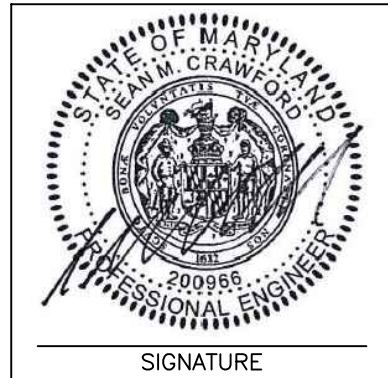
ENGINEER'S SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

PRINTED NAME \_\_\_\_\_ MD P.E. REGISTRATION NO. \_\_\_\_\_

#### 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 AASCD PLAN SUBMITTAL GUIDELINES AND THE CURRENT MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL. I HAVE REVIEWED THIS EROSION AND SEDIMENT CONTROL PLAN WITH THE OWNER / DEVELOPER

MD P.E. LICENSE # 200966  
NAME SEAN CRAWFORD  
FIRM NAME BAYLAND CONSULTANTS & DESIGNERS, INC.  
ADDRESS 7455 NEW RIDGE ROAD, SUITE T  
CITY HANOVER STATE MD ZIP CODE 21076



#### STORMWATER MANAGEMENT NOTE

THIS PROJECT IS A STREAM RESTORATION PROJECT AND NO NEW IMPERVIOUS AREA IS PROPOSED. THIS PROJECT WILL NOT RESULT IN HYDROLOGIC CHANGES.

Anne Arundel Soil Conservation District  
Sediment and Erosion Control Approval

*John Crawford*  
District Manager  
6-8-23  
Date

AASCD # 2022-0478

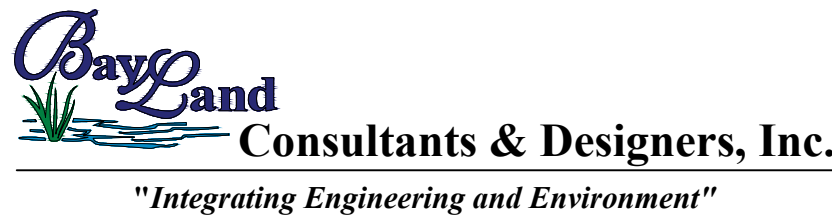
GP# G02019569

Pond # \_\_\_\_\_

#### PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NO. 200966, EXPIRATION DATE: 01/16/2025

TS-01



7455 New Ridge Road, Suite T Phone: (410) 694-9401  
Hanover, Maryland 21076 Fax: (410) 694-9105  
www.baylandinc.com

BAYLAND JOB NO. 5\_12701



DATE: 5/24/23

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS			
REVISED DATE	BY	APPROVED DATE	APPROVED DATE
		5/30/2023   12	5/26/2023   1
		CHIEF ENGINEER	DESIGNED BY: JWH DRAWN BY: MWS
		APPROVED DATE	PROJECT MANAGER DATE
		5/30/2023   09	5/30/2023   11
		DEPUTY DIRECTOR	CHECKED BY: SMC/GMS SHEET NO. 1 OF 25
			PROJECT NO. B556900 CONTRACT NO. B556903

LPAX CROFTON GOLF  
STREAM RESTORATION  
SEGMENT 1  
COVER SHEET



## GENERAL CONSTRUCTION NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ANNE ARUNDEL COUNTY STANDARD SPECIFICATIONS AND/OR DETAILS FOR CONSTRUCTION AND THE STATE HIGHWAY ADMINISTRATION'S DRAINAGE MANUAL. STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL CONSTRUCT "MISS UTILITY" AT 1-800-257-7777. A MINIMUM OF 48 HOURS IN ADVANCE OF ANY EXCAVATION, BORING, PILE DRIVING AND/OR DIGGING FOR THE LOCATION OF GAS, ELECTRIC, TELEPHONE, WATER AND SEWER LINES.
- WHILE WORKING NEAR GAS MAINS AND SERVICES, PROPER CAUTIONS AND PROCEDURES SHOULD BE FOLLOWED. IF SPANS OF GAS MAINS ARE TO BE EXPOSED DURING EXCAVATION, PLEASE CONTACT THE GGE GAS ENGINEERING DEPARTMENT AT 410-470-9573 TO ARRANGE APPROVAL OF SUPPORT METHODS AND INSPECTION. PLEASE MAINTAIN 4 FOOT HORIZONTAL AND 12 FOOT VERTICAL CLEARANCE BETWEEN EXISTING GAS FACILITIES AND ANY NEW PROPOSED FACILITIES.
- MECHANICAL EXCAVATION SHALL NOT BE CONDUCTED WITHIN 3 FEET HORIZONTALLY OR WITHIN 2 FEET VERTICALLY OF KNOWN UTILITY LOCATIONS. HAND OR SOFT DIGGING SHALL BE DONE WITHIN THESE LIMITS. UNDERGROUND UTILITIES, ONCE UNCOVERED, SHALL BE PROTECTED FROM BEING STRUCK BY EQUIPMENT.
- IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NATURALLY BE REQUIRED TO COMPLETE THE PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLETE SUCH WORK.
- ALL TREES WITH A DIAMETER GREATER THAN OR EQUAL TO 30 INCHES WITHIN THE LIMIT OF DISTURBANCE SHALL NOT BE REMOVED UNLESS PRIOR APPROVAL IS OBTAINED OR EXPLICITLY SHOWN ON THE PLANS TO BE REMOVED. ALL TREES WITHIN THE LIMIT OF DISTURBANCE THAT DO NOT REQUIRE REMOVAL SHALL BE PROTECTED PER THE TREE PROTECTION MEASURES ON THE PLANS.
- FOR FILL REQUIREMENTS REFER TO THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIALS TESTING IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. ALL MATERIALS TESTING SHALL BE COMPENSATED FOR AS PART OF THE APPROPRIATE PAY ITEM.
- ALL DISTURBED AREAS SHALL HAVE PERMANENT OR TEMPORARY STABILIZATION COMPLETED WITHIN:
  - END OF THE WORK DAY FOR AREAS WITHIN WATERWAYS.
  - THREE CALENDAR DAYS ON SLOPES GREATER THAN 3:1 AND TO THE SURFACE OF ALL PERIMETER SEDIMENT CONTROLS.
  - SEVEN CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS.
- DALL STABILIZATION MUST BE IN ACCORDANCE WITH MARYLAND DEPARTMENT OF AGRICULTURE FERTILIZER LAW.
- ALL DISTURBED AREAS WITH SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITH BIODEGRADABLE SOIL STABILIZATION MATTING THAT HAS A SUFFICIENT DESIGN SHEAR STRESS FOR THE APPLICATION. SOIL STABILIZATION MATTING SHALL ALSO BE INSTALLED IN OTHER LOCATIONS IN ACCORDANCE WITH SHEET DE-06.
- ALL PERMANENTLY STABILIZED AREAS SHALL INCLUDE 4 INCHES OF TOPSOIL WITH BIODEGRADABLE SOIL STABILIZATION MATTING OR 2 INCHES OF COMPOST IN ACCORDANCE WITH THESE PLANS, THE 2011 MDE SPECIFICATIONS, AND/OR AS DIRECTED BY THE COUNTY. SEE SHEET DE-06. ALL SUITABLE TOPSOIL SHALL BE SALVAGED & STOCKPILED ONSITE & AMENDED AS NECESSARY. ANY IMPORT OF TOPSOIL REQUIRES APPROVAL BY THE COUNTY.
- ALL STAKING, RESTAKING, AND CUT SHEETS SHALL BE PERFORMED OR DIRECTLY SUPERVISED BY A REGISTERED LAND SURVEYOR OR PROFESSIONAL ENGINEER AT THE CONTRACTOR'S EXPENSE.
- ALL CONSTRUCTION TO BE PERFORMED IN ACCORDANCE WITH STATE OF MARYLAND OCCUPATIONAL SAFETY LAWS.
- CONTRACTOR MUST ENSURE THAT COPIES OF FEDERAL, STATE, AND COUNTY PERMITS ARE POSTED ON SITE PRIOR TO THE START OF ANY WORK.
- ALL ROADS, PARKING LOTS, AND OTHER ASPHALT AREAS SHALL BE CLEANED AND CLEARED BY THE END OF EACH DAY. ANY MUD OR ROCKS TRACKED ON THE ROADWAYS SHALL BE SWEEP BEFORE THE END OF SHIFT EACH DAY.
- CONTRACTOR SHALL RESTORE ALL AREAS IMPACTED BY CONSTRUCTION ACTIVITY TO A CONDITION EQUAL TO OR BETTER THAN PRE-CONSTRUCTION CONDITIONS AT NO ADDITIONAL EXPENSE TO THE COUNTY. THIS SHALL INCLUDE BUT IS NOT LIMITED TO GRASS AREAS, ROADS, AND PAVED AREAS.
- THE CONDITIONS INDICATED BY SOIL BORINGS AS SPECIFIED ON THE CONTRACT DRAWINGS APPLY ONLY AT THE SPECIFIC LOCATION OF EACH BORING AT THE TIME THE BORINGS WERE MADE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY TO HIS/HER SATISFACTION OVER THE ENTIRE LENGTH OF FILL. EACH LAYER OF FILL MUST BE COMPACTED BY TRACKING OVER BY CONSTRUCTION EQUIPMENT OR OTHER MEANS/METHODS APPROVED BY THE COUNTY.

## STANDARD RESPONSIBILITY NOTES

- I (WE) CERTIFY THAT:
  - ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THIS SEDIMENT AND EROSION CONTROL PLAN, AND FURTHER, AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY THE ANNE ARUNDEL SOIL CONSERVATION DISTRICT (ASCD) BOARD OF SUPERVISORS OR THEIR AUTHORIZED AGENTS.
  - ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE FROM THE MARYLAND DEPARTMENT OF THE ENVIRONMENT'S APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.
 RESPONSIBLE PERSONNEL ON SITE: \_\_\_\_\_
- IF APPLICABLE, THE APPROPRIATE ENCLOSURE WILL BE CONSTRUCTED AND MAINTAINED ON SEDIMENT BASIN(S) INCLUDED IN THIS PLAN. SUCH STRUCTURE(S) WILL BE IN COMPLIANCE WITH THE ANNE ARUNDEL COUNTY CODE.
- THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHT, AND/OR RIGHTS-OF-WAY THAT MAY BE REQUIRED FOR THE SEDIMENT AND EROSION CONTROL PRACTICES, STORM WATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORM WATER ONTO OR ACROSS ADJACENT OR DOWNSTREAM PROPERTIES INCLUDED IN THE PLAN.
- FOR INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT AND/OR TEMPORARY STABILIZATION PER THE ASSGD VEGETATIVE ESTABLISHMENT SHALL BE COMPLETED WITHIN THREE CALENDAR DAYS FOR THE SURFACE OF ALL 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.
- THE GRADING AND SEDIMENT CONTROL APPROVAL ON THIS PLAN EXTENDS ONLY TO THOSE AREAS WITHIN THE LIMITS OF DISTURBANCE.
- THE APPROVAL OF THIS PLAN FOR SEDIMENT AND EROSION CONTROL DOES NOT RELIEVE THE DEVELOPER/CONSULTANT FROM COMPLYING WITH FEDERAL, STATE OR COUNTY REQUIREMENTS PERTAINING TO ENVIRONMENTAL ISSUES.
- THE DEVELOPER MUST REQUEST THAT THE SEDIMENT AND EROSION CONTROL INSPECTOR APPROVE WORK COMPLETED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN, THE GRADING OR BUILDING PERMIT, AND THE ORDINANCE.
- ALL MATERIAL SHALL BE TAKEN TO A SITE WITH AN APPROVED SEDIMENT AND EROSION CONTROL PLAN.
- FIRST PHASE INSPECTION AND APPROVAL OF THE SEDIMENT AND EROSION CONTROL INSPECTOR SHALL BE REQUIRED UPON COMPLETION OF THE INSTALLATION OF 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 THE INITIAL APPROVAL BY THE SEDIMENT AND EROSION CONTROL INSPECTOR IS GIVEN. INSPECTION AND PERMITS MAY ALSO REQUIRE THAT AN INSPECTION AND CERTIFICATION OF THE INSTALLATION OF SEDIMENT CONTROL ALSO BE PERFORMED BY A DESIGN PROFESSIONAL PRIOR TO CONSTRUCTION COMMENCING.
- APPROVAL FROM THE INSPECTOR MUST BE REQUESTED ON FINAL STABILIZATION OF ALL SITES PRIOR TO REMOVAL OF SEDIMENT AND EROSION CONTROLS.
- EXISTING TOPOGRAPHY MUST BE FIELD VERIFIED BY RESPONSIBLE PERSONNEL TO THE SATISFACTION OF THE SEDIMENT CONTROL INSPECTOR PRIOR TO COMMENCING WORK.

DocuSigned by:  
**Eric Midulsen**  
 4EDC1DC0E0B84A

SIGNATURE OF DEVELOPER/OWNER \_\_\_\_\_ DATE 5/30/2023 | 09:05 EDT

PRINT: NAME: ERIK MICHELSEN  
 TITLE: DEPUTY DIRECTOR  
 AFFILIATION: ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS  
 ADDRESS: 2662 RIVA ROAD, ANNAPOLIS, MARYLAND 21401  
 TELEPHONE NUMBER: 410-222-4240  
 EMAIL ADDRESS: PNMICH20@AACOUNTY.ORG

## GENERAL SITE NOTES

- TOPOGRAPHIC SURVEY PERFORMED BY BAYLAND CONSULTANTS & DESIGNERS, INC., DATED FEBRUARY 2017.
- HORIZONTAL AND VERTICAL CONTROL ESTABLISHED FROM REAL TIME KINEMATIC (RTK) GLOBAL POSITIONING SYSTEM (GPS) CONTROL POINTS. TRAVERSE POINTS ARE IRON REBAR UNLESS OTHERWISE SPECIFIED. COORDINATES AND BEARINGS SHOWN HEREON ARE REFERRED TO THE MARYLAND COORDINATE SYSTEM (NAD83/1991). ELEVATIONS SHOWN HEREON ARE REFERRED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD'88).
- THE EXISTING UTILITIES, GRADES, AND OBSTRUCTIONS SHOWN ARE FROM THE BEST AVAILABLE RECORDS AND SHALL BE VERIFIED BY THE CONTRACTOR TO THEIR SATISFACTION PRIOR TO CONSTRUCTION. NECESSARY PRECAUTIONS SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT EXISTING UTILITIES AND ANY DAMAGE TO THEM SHALL BE REPAIRED IMMEDIATELY AT THEIR OWN EXPENSE.
- CONTOURS SHOWN OUTSIDE OF EXTENT OF FIELD RUN SURVEY AS INDICATED BY THE "EXTENT OF FIELD RUN TOPOGRAPHY" BOUNDARY ARE BASED ON ANNE ARUNDEL COUNTY 2017 LIDAR TOPOGRAPHY.
- PROPERTY LINES SHOWN ARE BASED ON BEST AVAILABLE PLAT AND DEED RECORDS AND PROPERTY CORNER SURVEY PERFORMED BY BAYLAND IN MARCH 2019.
- ONLY TREES WITH A 30" DIAMETER OR GREATER WERE FIELD LOCATED AND ARE SHOWN ON THE PLANS.
- WETLAND DELINEATION WAS PERFORMED BY BAYLAND CONSULTANTS AND DESIGNERS, INC DATED MAY THROUGH JUNE 2017. WETLANDS AND ASSOCIATED BUFFERS MAY BE SHOWN AS DISCONTINUOUS/OPEN LINES AND HATCHES IF THEY EXTEND PAST THE LIMITS OF DELINEATION SHOWN ON THE PLANS.
- ALL ROCK, INCLUDING RIPRAP, SHOWN IN PLAN VIEW AND PROFILE ARE SYMBOLIC AND DO NOT REPRESENT INDIVIDUAL STONES. SEE ROCK SIZE TABLES ON DETAILS SHEETS DE-02 TO DE-05 FOR PROPOSED ROCK SIZES.
- FEMA FIRM #2403030139E AND #2403030145E EFFECTIVE OCTOBER 16, 2012 SHOW THAT THE PROJECT SITE IS PARTIALLY WITHIN ZONE A SPECIAL FLOOD HAZARD AREA SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD.
- THE CROFTON GOLF TRIBUTARY IS A TRIBUTARY TO THE LITTLE PATUXENT RIVER (MD WATERSHED BASIN CODE: 02131105) WHICH IS A USE 1 STREAM WITH A STREAM CLOSURE PERIOD FROM MARCH 1ST THROUGH JUNE 15TH.
- THE PROJECT SITE IS NOT LOCATED WITHIN THE CRITICAL AREA.

PARCEL TABLE	
NO.	PARCEL INFO.
14	TAX ID# 02-202-00229518 ERIC GERBER 1742 LAUREL CT T.M. 43 GRID 7 P. 16 LOT 14 DEED: /33542/00060 PLAT: 49/29 0.05 AC.
15	TAX ID# 02-202-00229519 JOHN A & DEBORAH C KOSTAKOS 1748 LAURAANCE CT T.M. 43 GRID 7 P. 16 LOT 15 DEED: /12591/00389 PLAT: 49/29 0.05 AC.
16	TAX ID# 02-202-00229520 ANDREW J HARVAN & KATHRYN A LEOGRAND 1746 LAURAANCE CT T.M. 43 GRID 7 P. 16 LOT 16 DEED: /36864/00228 PLAT: 49/29 0.05 AC.
17	TAX ID# 02-20-201864720 BRIAN V MCALLISTER & NAOMI R CARRIGAN 1748 LAURAANCE CT T.M. 43 GRID 7 P. 16 LOT 17 DEED: /38189/00352 PLAT: 49/29 0.05 AC.
18	TAX ID# 02-202-07541850 DAVID S & JONATHAN M BRAXTON 1750 LAURAANCE CT T.M. 43 GRID 7 P. 16 LOT 18 DEED: /07788/00727 PLAT: 49/29 0.05 AC.
19	TAX ID# 02-202-00229523 JUAN J & ANNY G BAZAN MENDEZ 1752 LAURAANCE CT T.M. 43 GRID 7 P. 16 LOT 19 DEED: /29038/00389 PLAT: 49/29 0.05 AC.
20	TAX ID# 02-202-00229524 SUSANA L & JOSE G VELARDE 1754 LAURAANCE CT T.M. 43 GRID 7 P. 16 LOT 20 DEED: /15211/00183 PLAT: 49/20 0.05 AC.
21	TAX ID# 02-202-00229525 DANIEL SCHWARTZ 1756 LAURAANCE CT T.M. 43 GRID 7 P. 16 LOT 21 DEED: /34832/00198 PLAT: 49/29 0.08 AC.
44	TAX ID# 02-202-00229548 MARIO E MELERDEZ HERNANDEZ & EMILIA MARIANA SUAREZ PEREZ 1758 SANDY CT T.M. 43 GRID 7 P. 16 LOT 44 DEED: 30061/424 PLAT: 49/29 0.08 AC.
45	TAX ID# 02-202-00229549 EDMUND J & REBECCA A CURRY 1760 SANDY CT T.M. 43 GRID 7 P. 16 LOT 45 DEED: 36702/00171 PLAT: 49/29 0.05 AC.

PARCEL TABLE	
NO.	PARCEL INFO.
46	TAX ID# 02-202-00229551 MORGAN LOFTIS 1762 SANDY CT T.M. 43 GRID 7 P. 16 LOT 46 DEED: 34057/00288 PLAT: 49/29 0.05 AC.
47	TAX ID# 02-202-00229552 MICHELLE E HEIM 1764 SANDY CT T.M. 43 GRID 7 P. 16 LOT 47 DEED: 16951/778 PLAT: 49/29 0.05 AC.
48	TAX ID# 02-202-00229553 NIKOLAOS & KRISTIA L RAFILIDIS 1766 SANDY CT T.M. 43 GRID 7 P. 16 LOT 48 DEED: 36087/00435 PLAT: 49/29 0.05 AC.
49	TAX ID# 02-202-00229554 MICHAEL SIFFLE 1768 SANDY CT T.M. 43 GRID 7 P. 16 LOT 49 DEED: 16931/779 PLAT: 49/29 0.05 AC.
50	TAX ID# 02-202-00229555 JAMES H CREASON 1770 SANDY CT T.M. 43 GRID 7 P. 16 LOT 50 DEED: 34181/00043 PLAT: 49/29 0.05 AC.
51	TAX ID# 02-202-00229556 DAVID M & ROXANNE M SPEIGHT 1772 SANDY CT T.M. 43 GRID 7 P. 16 LOT 51 DEED: 34665/00087 PLAT: 49/29 0.05 AC.
71	TAX ID# 02-202-00229576 RALPH A & SHARON D MACMILLAN 1800 LANG DR T.M. 43 GRID 7 P. 16 LOT 71 DEED: 27050/274 PLAT: 49/9 0.08 AC.
72	TAX ID# 02-202-00229577 LINDA J FORD 1802 LANG DR T.M. 43 GRID 7 P. 16 LOT 72 DEED: 27203/164 PLAT: 49/29 0.05 AC.
73	TAX ID# 02-202-00229578 BRIAN ROSTON 1804 LANG DR T.M. 43 GRID 7 P. 16 LOT 73 DEED: 32012/500 PLAT: 49/29 0.05 AC.
74	TAX ID# 02-202-00229579 LINDA MITCHELL 1806 LANG DR T.M. 43 GRID 7 P. 16 LOT 74 DEED: 19380/621 PLAT: 49/29 0.05 AC.

PARCEL TABLE	
NO.	PARCEL INFO.
75	TAX ID# 02-202-00229580 ROBERT S & TEDD LEE KERNO 1808 LANG DR T.M. 43 GRID 7 P. 16 LOT 75 DEED: 20208/465 PLAT: 49/29 0.05 AC.
76	TAX ID# 02-202-00229581 PAMELA K NEUMAN 1810 LANG DR T.M. 43 GRID 7 P. 16 LOT 76 DEED: 8555/772 PLAT: 49/29 0.05 AC.
77	TAX ID# 02-202-00229582 JOHN MCULLLEN 1812 LANG DR T.M. 43 GRID 7 P. 16 LOT 77 DEED: 36694/79 PLAT: 49/29 0.08 AC.
78	TAX ID# 02-202-00229583 EDMOND D GUILLENEA & CINDY S CARDOSO 1814 LANG DR T.M. 43 GRID 7 P. 16 LOT 78 DEED: 33364/295 PLAT: 49/29 0.08 AC.
79	TAX ID# 02-202-00229584 JOHN MAENNER & SAMANTHA GRIM 1816 LANG DR T.M. 43 GRID 7 P. 16 LOT 79 DEED: 33667/207 PLAT: 49/29 0.05 AC.
80	TAX ID# 02-202-00229585 CASEY & RACHEL COOKE 1818 LANG DR T.M. 43 GRID 7 P. 16 LOT 80 DEED: 29690/469 PLAT: 49/29 0.05 AC.
81	TAX ID# 02-202-00229586 JOSE C & VILMA E BASCOPE 1820 LANG DR T.M. 43 GRID 7 P. 16 LOT 81 DEED: 8555/722 PLAT: 49/29 0.05 AC.
82	TAX ID# 02-202-00229587 GREGORY A MORRIS 1822 LANG DR T.M. 43 GRID 7 P. 16 LOT 82 DEED: 31470/86 PLAT: 49/29 0.05 AC.
83	TAX ID# 02-202-00229588 BRIAN & ANNAMARIA AZAR 1824 LANG DR T.M. 43 GRID 7 P. 16 LOT 83 DEED: 32556/190 PLAT: 49/29 0.08 AC.

## ABBREVIATION KEY

AC	ACRES
APPROX.	APPROXIMATELY
BRL	BUILDING RESTRICTION LINE
BLDG	BUILDING
C	CONCRETE PIPE
CCB	CLAY CHANNEL BLOCK
CL	CLASS
CMP	CORRUGATED METAL PIPE
CRZ	CRITICAL ROOT ZONE
CY	CUBIC YARDS
DBH	DIAMETER AT BREAST HEIGHT
DIP	DUCTILE IRON PIPE
DWG	COUNTY DRAWING NUMBER
EA	EACH
ELEV.	ELEVATION
ESC	EROSION AND SEDIMENT CONTROL
EX	EXISTING
EXD	EXISTING CONDITIONS AND DEMOLITION
F	FOLIO
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FES	FLARED END SECTION
FIRM	FLOOD INSURANCE RATE MAP
HDPE	HIGH DENSITY POLYETHYLENE
HVF	HIGH VISIBILITY FENCE
INV.	INVERT
L	LIBER
LOC	LOG GRADE CONTROL
LOD	LIMIT OF DISTURBANCE
MB	MOUNTABLE BERM
MH	MANHOLE
OF	OUTFALL
P	PLAT BOOK
PAGE	PAGE
PROPOSED	PROPOSED
INV.	INVERT
RCP	REINFORCED CONCRETE PIPE
RSC	REGENERATIVE STREAM CONVEYANCE
RR	RR
SE	SEGMENT 1
S3	SEGMENT 3
SCE	STABILIZED CONSTRUCTION ENTRANCE
SD	STORM DRAIN
STA	STATION
SSMH	SANITARY SEWER
SFA	SANITARY SEWER MANHOLE
SF	SQUARE FEET
SFH	SPECIAL FLOOD HAZARD AREA
SQ	SQUARE YARDS
TBR	TO BE REMOVED
TPT	TREE PROTECTION FENCING
TYP	TYPICAL
UNK	UNKNOWN
W	WATER MAIN
WSE	WATER SURFACE ELEVATION
XS	CROSS SECTION

TRAVERSE POINT	TPS# 1
SOIL BORING LOCATION	BL
EX. PROPERTY LINE	---
EX. EASEMENT	---
EX. MAJOR CONTOUR	---
EX. MINOR CONTOUR	---
EX. WATERS OF THE US	---
EX. INTERMITTENT CHANNEL	---
EX. EPHEMERAL CHANNEL	---
EX. ROAD	---
EX. TREELINE	---
EX. THALWEG	---
EX. 100-YR FLOODPLAIN BOUNDARY DELINEATED BY BAYLAND	---
EX. 100-YR FEMA FLOODPLAIN BOUNDARY	---
EX. 25' NON-TIDAL WETLAND BUFFER	---
EX. NON-TIDAL WETLANDS	---
EX. SEWER & MANHOLE	---
EX. STORM DRAIN, INLET & MANHOLE	---
EX. WATER & VALVE	---
EX. UTILITY POLE	---
EX. PEDESTAL	---
EX. SIGN	---
EX. CHAINLINK FENCE	---
EX. WOODEN FENCE	---
EX. CONCRETE	---

## EXISTING SPECIMEN TREE SURVEY TABLE

TREE ID	DBH, in	ABBR	LATIN NAME	COMMON NAME	CONDITION/NOTES
T7 (TBR)	35.0	LT	LIRIODENDRON TULIPIFERA	TULIP POPLAR	FAIR
T10 (TBR)	31.4	LT	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
T13 (TBR)	34.5	LT	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
T19 (TBR)	38.0	LT	LIRIODENDRON TULIPIFERA	TULIP POPLAR	MULTI-STEM, GOOD
T20 (TBR)	30.7	LT	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
T23 (TBR)	30.4	LT	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
T24 (TBR)	32.9	LT	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
T32	34.8	LT	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
T33	34.8	OR	QUERCUS RUBRA	NORTHERN RED OAK	GOOD
T38	37.2	LT	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
T40	31.0	AR	ACER RUBRUM	RED MAPLE	GOOD
T41	32.6	LT	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
T43	31.5	LT	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
T44	32.1	LT	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
T48	34.7	LT	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
T49	32.2	QF	QUERCUS FALCATA	SOUTHERN RED OAK	GOOD
T50	32.0	LT	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
T51	31.0	LT	LIRIODENDRON TULIPIFERA	TULIP POPLAR	GOOD
T59	34.0	QF	QUERCUS FALCATA	SOUTHERN RED OAK	GOOD
T67	34.0	QF	QUERCUS FALCATA	SOUTHERN RED OAK	GOOD

(TBR) = TO BE REMOVED

## SOIL BORING LOG

BORING B-1	
DEPTH(ELEV.)	CLASSIFICATION
0.0' (86.9)	86.9 GROUND SURFACE
	BROWN SAND, DRY (SW-SM)
2.0' (84.9)	GREY/RED SILTY SAND, DRY (SM)
2.5' (84.4)	DARK GREY SILTY SAND, MOIST/WET/ODOR (SM)
4.5' (82.4)	
BOTTOM EL. 82.4	
SCALE: NOT TO SCALE	

## SOIL BORING LOG

BORING B-2	
DEPTH(ELEV.)	CLASSIFICATION
0.0' (87.4)	87.4 GROUND SURFACE
	BROWN SAND, DRY (SW-SM)
1.0' (86.4)	RED/GREY SILTY SAND, DRY (SM)
2.5' (83.9)	
BOTTOM EL. 83.9	
SCALE: NOT TO SCALE	

## SOIL BORING LOG



BORING B-3	
DEPTH(ELEV.)	CLASSIFICATION
0.0' (85.8)	85.8 GROUND SURFACE
0.5' (85.3)	BROWN SAND, DRY (SW-SC)
	RED/GREY CLAYEY SAND, DRY (SC)
2.5' (83.3)	
4.5' (81.3)	DARK GREY CLAY WITH TRACE SAND, WET (CL)
BOTTOM EL. 81.3	
SCALE: NOT TO SCALE	

## SOIL BORING LOG

BORING B-4	
DEPTH(ELEV.)	CLASSIFICATION
0.0' (86.6)	86.6 GROUND SURFACE
1.0' (85.6)	BROWN SAND, DRY (SW-SC)
	RED/GREY CLAY, MOIST (CL)
3.0' (83.6)	
4.5' (82.1)	DARK GREY CLAY WITH TRACE SAND, WET (CL)
BOTTOM EL. 82.1	
SCALE: NOT TO SCALE	

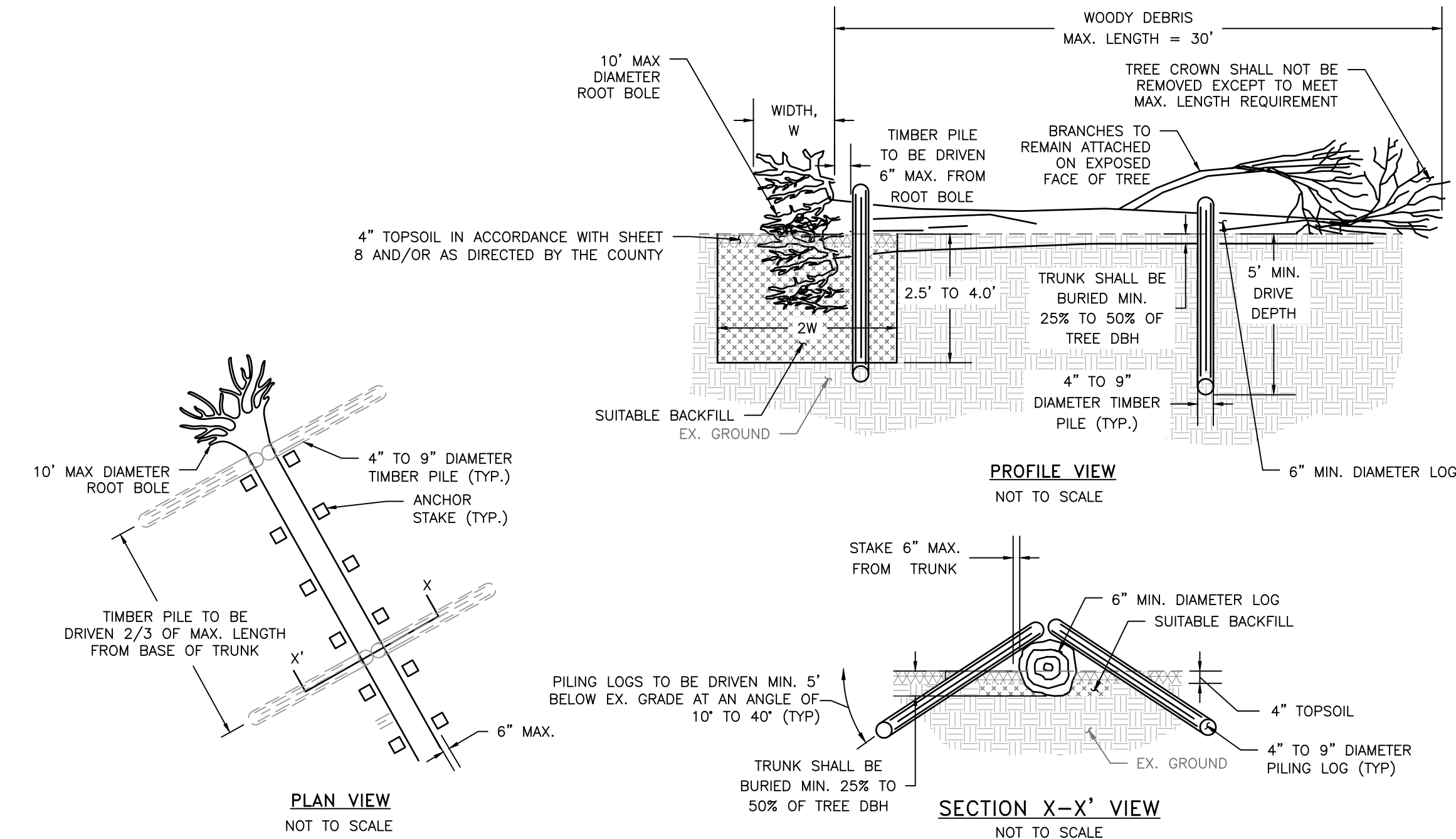
AB-01

## ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS

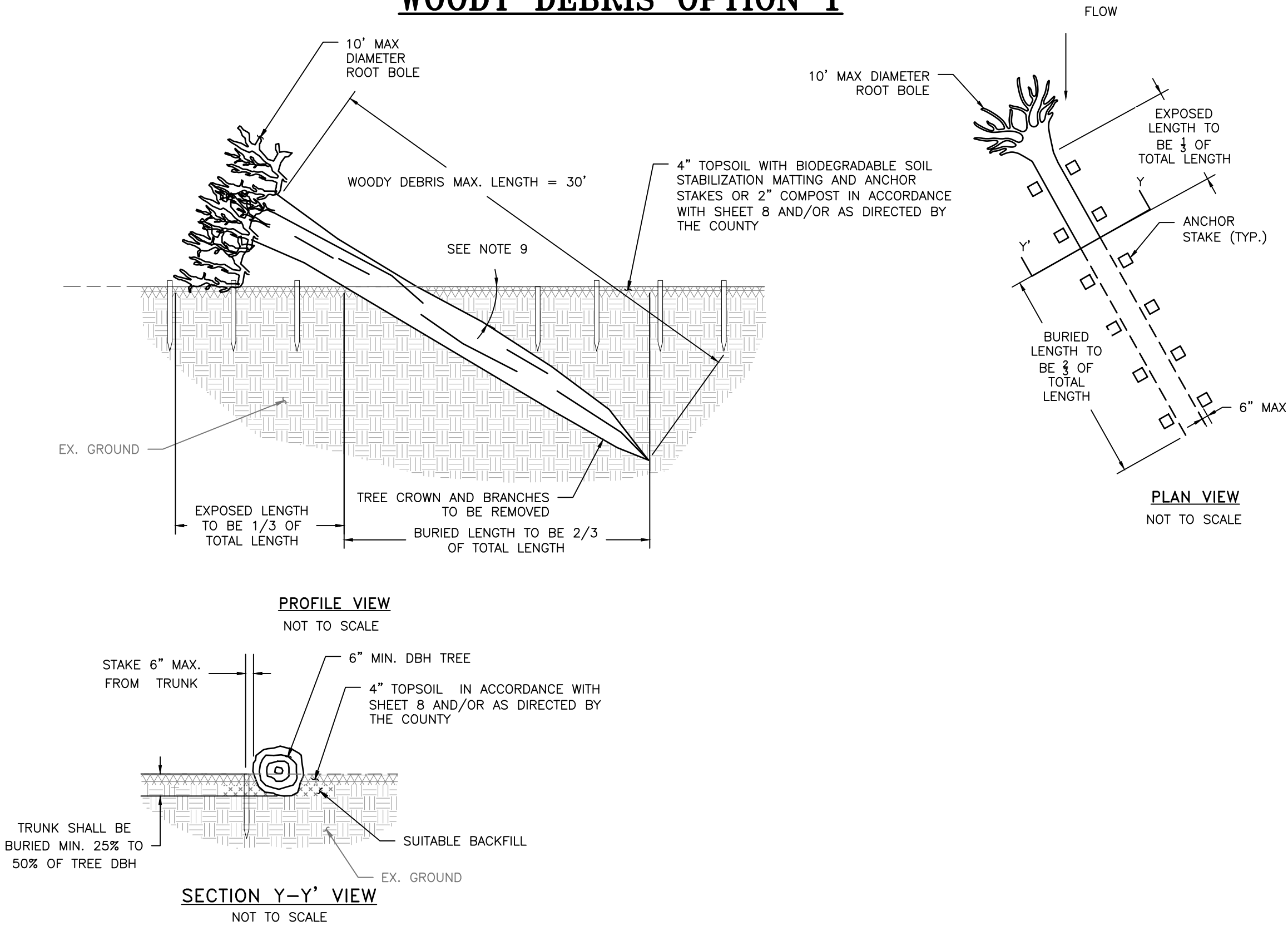
REVISED	DATE	APPROVED	DATE	SCALE:	AS SHOWN
DATE	BY	DATE	DATE	DATE	DATE
		APPROVED BY: 	5/30/2023   12:17 PM	5/26/2023   11:05 AM	5/24/23
		CHIEF ENGINEER		PROJECT MANAGER	
		APPROVED BY: 	5/30/2023   09:05 EDT	5/30/2023   11:05 AM	5/24/23
		DEPUTY DIRECTOR		CHIEF, RIGHT OF WAY	

LPAX CROFTON GOLF  
 STREAM RESTORATION  
 SEGMENT 1  
 GENERAL NOTES, PROP. INFO., SOIL  
 BORINGS, & SPECIMEN TREE SURVEY





## WOODY DEBRIS OPTION 1

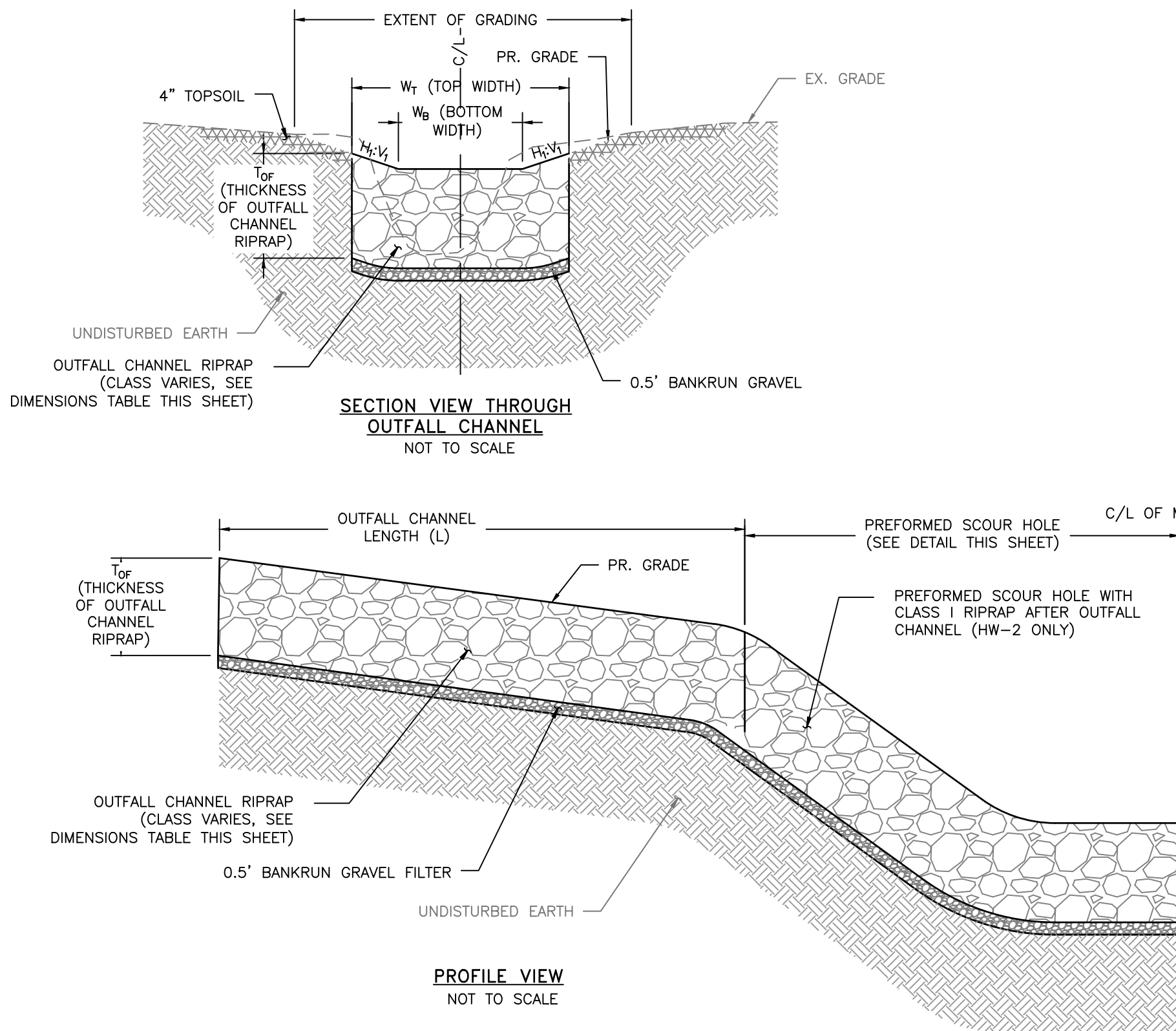


## WOODY DEBRIS OPTION 2

### WOODY DEBRIS DETAILS

#### NOTES:

- EXISTING TREES TO BE REMOVED WITHIN THE LIMIT OF DISTURBANCE SHALL BE INSTALLED ONSITE AS WOODY DEBRIS. TREES SHALL NOT BE DISPOSED OF OFFSITE WITHOUT PERMISSION FROM THE COUNTY.
- ALL REMOVED TREES THAT ARE NOT USED IN OTHER PROPOSED STRUCTURES SHALL BE PLACED WITHIN THE FLOODPLAIN FOLLOWING THE SPECIFICATIONS WITHIN THE WOODY DEBRIS DETAIL.
- WOODY DEBRIS SHALL BE PLACED AT THE DIRECTION OF THE ENGINEER/COUNTY AND WITHIN THE FLOODPLAIN A MINIMUM OF 5 FEET FROM THE PROPOSED CHANNEL TOP OF BANK AND VALLEY WALL TOE OF SLOPE AND A MINIMUM OF 10 FEET LATERAL AND VERTICAL CLEARANCE FROM ALL UTILITIES.
- IF REQUIRED BY THE ENGINEER/COUNTY, BRANCHES SHALL BE PRUNED FROM PORTION OF TREE TO BE BURIED BELOW GRADE.
- TIMBER FOR USE IN PROPOSED WOODY DEBRIS STRUCTURE SHALL BE HARVESTED ON SITE. NO INVASIVE SPECIES SHALL BE UTILIZED.
- PILE LOGS SHALL BE DRIVEN IN 5 FEET BELOW FINISHED GRADE.
- WOODY DEBRIS SHALL ALWAYS BE ORIENTED WITH THE ROOT BOLE UPSTREAM.
- ANCHOR STAKES NEAREST TO TRUNK SHALL BE 6" MAX. FROM TRUNK.
- ANGLE OF INSTALLATION MAY RANGE FROM 30 DEGREES TO VERTICAL (90 DEGREES) AS DIRECTED BY THE COUNTY.



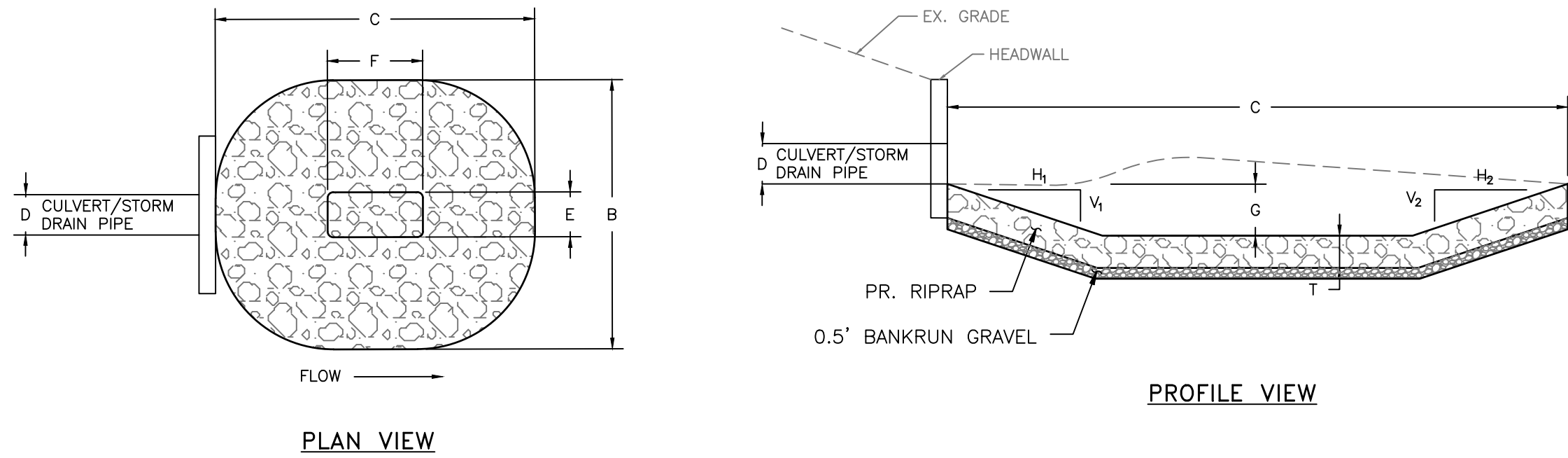
### OUTFALL CHANNEL DETAIL

#### OUTFALL CHANNEL NOTES:

- RIPRAP AND BANK RUN GRAVEL SHALL BE AS INDICATED ON SHEET DE-04.
- FOR ANCHOR STAKE AND SOIL STABILIZATION MATTING REQUIREMENTS, SEE SHEET DE-03.
- REFER TO THE PROFILES AND CROSS SECTIONS FOR PROPOSED GRADES.
- SMALL AND LARGE STONES SHALL BE MIXED TO MINIMIZE VOID SPACES. STONE MUST BE PLACED IN A MANNER TO PROMOTE INTERLOCKING. DUMPING OF STONE WILL NOT BE PERMITTED.
- RIPRAP SHALL BE PLACED IN LAYERS WITH A MAXIMUM THICKNESS OF 12 INCHES. STREAMBED MATERIAL SHALL BE WASHED INTO EACH LIFT OF RIFLE STABILITY MIX TO ENSURE SURFACE FLOW.
- STONE MUST BE BLUE/GREY/BROWN IN COLOR. NO WHITE STONE SHALL BE ALLOWED.

### OUTFALL CHANNEL DIMENSIONS

STRUCTURE ID	ALIGNMENT	START STA.	END STA.	OUTFALL CHANNEL RIPRAP CLASS	W <sub>T</sub> (FT.)	W <sub>B</sub> (FT.)	T <sub>OF</sub> (IN.)	L (FT.)	H <sub>1</sub> V <sub>1</sub>
HW-2	HW-2	290+07.1	290+18.9	CLASS 1 (D <sub>50</sub> =9.5"; D <sub>100</sub> =15.0")	8.3	7.2	19	11.8	3:1



### PREFORMED SCOUR HOLE DETAIL

NOT TO SCALE

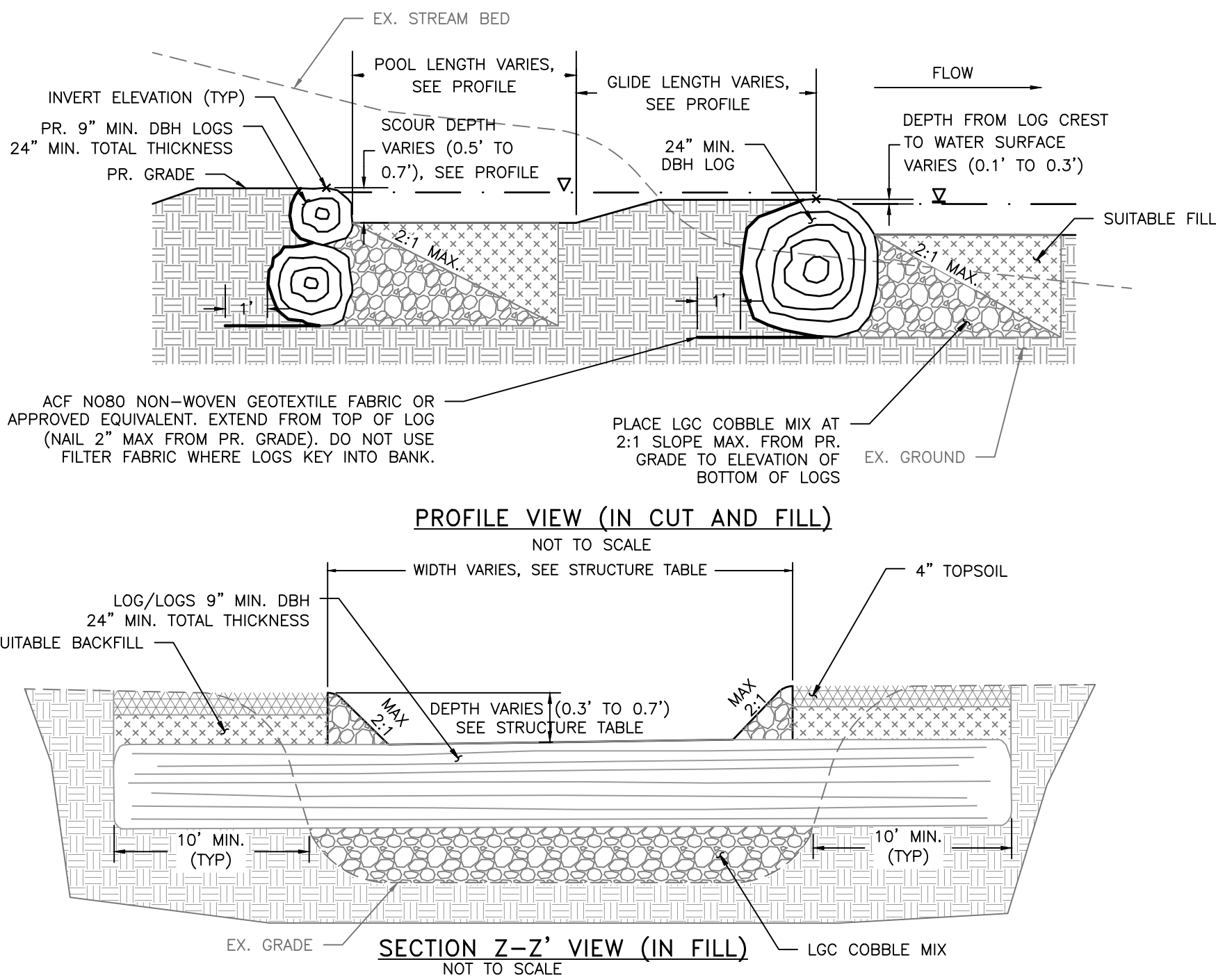
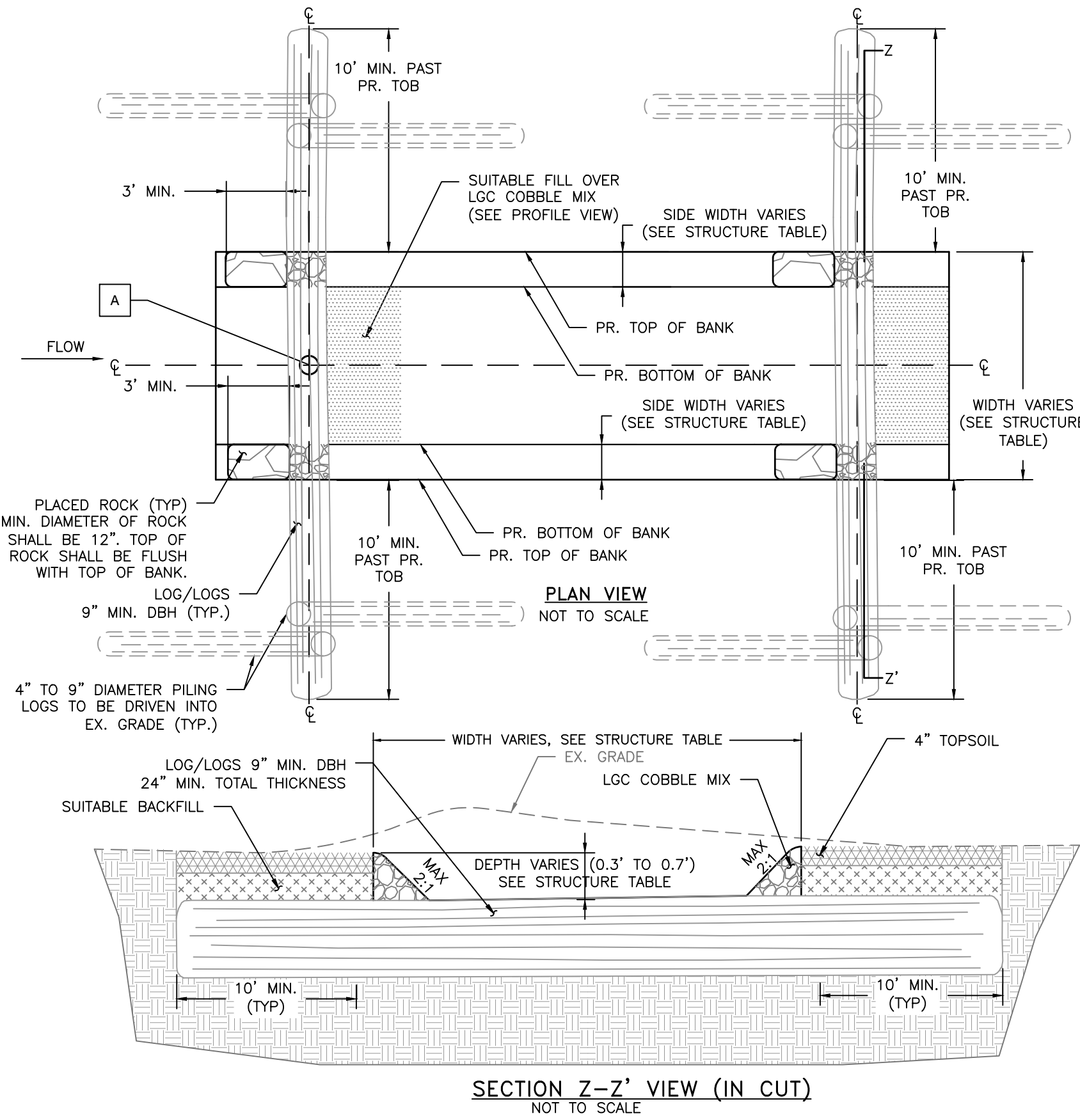
### PREFORMED SCOUR HOLE STRUCTURE TABLE

ALIGNMENT	START STATION	END STATION	B (FT.)	C (FT.)	D (IN.)	E (FT.)	F (FT.)	G (FT.)	H1:V1	H2:V2	T (IN.)
MAIN STEM SEGMENT 1	0+32.7	0+60.7	27.3	28.0	48	9.8	12.2	2.4	3:1	3:1	19
PR. J180007 ALIGNMENT	280+07.7	280+32.1	16.0	24.4	24	6.2	13.0	1.8	3:1	3:1	32
PR. HW-2 ALIGNMENT	290+18.9	290+38.9	13.0	20.0	15	3.8	8.0	2.0	3:1	3:1	19

DE-01

 <b>Bayland Consultants &amp; Designers, Inc.</b> "Integrating Engineering and Environment" 7455 New Ridge Road, Suite T Hanover, Maryland 21076 www.baylandinc.com BAYLAND JOB NO. 5_12701	 DATE: 5/24/23	<b>ANNE ARUNDEL COUNTY</b> <b>DEPARTMENT OF PUBLIC WORKS</b>			
		REVISED DATE	BY	APPROVED DATE	APPROVED DATE
				 CHIEF ENGINEER APPROVED DATE 5/30/2023   09:05 EDT Earl M. Burt DEPUTY DIRECTOR	 CHIEF OF WAY APPROVED DATE 5/26/2023   11:17 EDT Earl M. Burt CHIEF OF WAY
		SCALE: AS SHOWN		DESIGNED BY: JGH 5/24/23 DRAWN BY: MWS 5/24/23 CHECKED BY: SMC/CMS 5/24/23 SHEET NO. 3 OF 25 PROJECT NO. B556900 CONTRACT NO. B556903	
<b>LPAX CROFTON GOLF STREAM RESTORATION SEGMENT 1 STREAM RESTORATION DETAILS</b>					

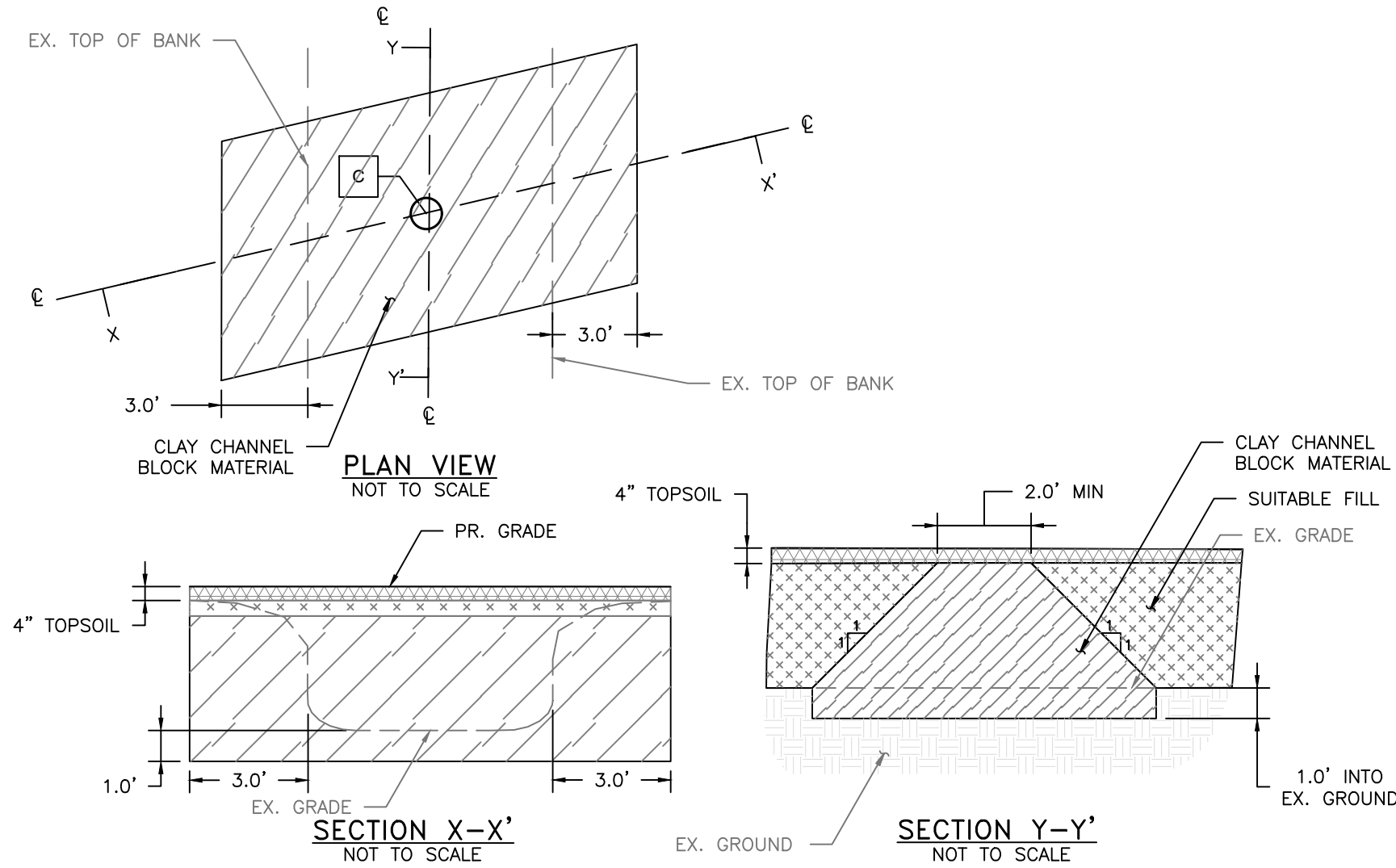




- NOTES:
- CROSS-SECTIONAL DIMENSIONS AND LONGITUDINAL SPACING OF STRUCTURE VARIES. SEE STRUCTURE TABLE AND PROFILE FOR DIMENSIONS OF EACH INDIVIDUAL STRUCTURE.
  - UP TO TWO LOGS MAY BE UTILIZED TO ACHIEVE REQUIRED TOTAL THICKNESS OF 24", AND EACH LOG SHALL HAVE A 9" MIN. DIAMETER. WHERE TWO LOGS ARE UTILIZED, THE SMALLER OF THE TWO LOGS SHALL BE THE TOP LOG. LOGS MEETING THE 24" MIN. DIAMETER REQUIREMENT SHALL BE UTILIZED FIRST AND THE SUPPLY THEREOF SHALL BE EXHAUSTED PRIOR TO EXERCISING THE TWO LOG OPTION.
  - ANCHOR STAKES NEAREST TO LOGS SHALL BE INSTALLED NO MORE THAN 6" FROM LOGS.

LOG GRADE CONTROL STRUCTURE TABLE

STRUCTURE ID	POINT ID	ALIGNMENT	NORTHING	EASTING	STA	ELEV.	DEPTH	WIDTH	SIDE WIDTH
S1-LGC-01	A	PR. MAINSTEM SEGMENT 1	488,495.57	1,403,490.27	0+61.20	85.6	0.3	4.0	0.6
S1-LGC-02	A	PR. MAINSTEM SEGMENT 1	488,432.90	1,403,457.91	1+40.00	85.5	0.3	4.0	0.6
S1-LGC-03	A	PR. MAINSTEM SEGMENT 1	488,381.31	1,403,410.40	2+30.00	85.4	0.3	4.0	0.6
S1-LGC-04	A	PR. MAINSTEM SEGMENT 1	488,306.96	1,403,354.65	3+50.00	85.3	0.3	4.0	0.6
S1-LGC-05	A	PR. MAINSTEM SEGMENT 1	488,198.19	1,403,310.27	4+80.00	85.2	0.3	4.0	0.6
S1-LGC-06	A	PR. MAINSTEM SEGMENT 1	488,195.24	1,403,178.81	6+20.00	85.1	0.3	4.0	0.6
S1-LGC-07	A	PR. MAINSTEM SEGMENT 1	488,138.90	1,403,163.16	6+80.00	85.0	0.3	4.0	0.6
S1-LGC-08	A	PR. MAINSTEM SEGMENT 1	488,105.16	1,403,143.71	7+20.00	84.8	0.3	4.0	0.6
S1-LGC-09	A	PR. MAINSTEM SEGMENT 1	488,095.38	1,403,105.94	7+60.00	84.6	0.3	4.0	0.6
S1-LGC-10	A	PR. MAINSTEM SEGMENT 1	488,084.95	1,403,068.76	8+00.00	84.4	0.3	4.0	0.6
S1-LGC-11	A	PR. MAINSTEM SEGMENT 1	488,049.44	1,403,056.57	8+39.00	84.2	0.3	4.0	0.6
S1-LGC-12	A	PR. MAINSTEM SEGMENT 1	488,011.82	1,403,050.32	8+78.00	84.0	0.3	4.0	0.6
S1-LGC-13	A	PR. MAINSTEM SEGMENT 1	487,991.45	1,403,018.48	9+17.00	83.8	0.3	4.0	0.6
S1-LGC-14	A	PR. MAINSTEM SEGMENT 1	487,997.52	1,402,982.29	9+54.00	83.6	0.3	4.0	0.6
S1-LGC-15	A	PR. MAINSTEM SEGMENT 1	488,003.53	1,402,946.06	9+91.00	83.4	0.3	4.0	0.6
S1-LGC-16	A	PR. MAINSTEM SEGMENT 1	487,986.54	1,402,914.14	10+28.00	83.2	0.3	4.0	0.6
S1-LGC-17	A	PR. MAINSTEM SEGMENT 1	487,952.75	1,402,901.53	10+65.00	83.0	0.3	4.0	0.6
S1-LGC-18	A	PR. MAINSTEM SEGMENT 1	487,916.91	1,402,892.85	11+02.00	82.8	0.3	4.0	0.6
S1-LGC-19	A	PR. MAINSTEM SEGMENT 1	487,894.78	1,402,864.25	11+39.00	82.6	0.3	4.0	0.6
S1-LGC-20	A	PR. MAINSTEM SEGMENT 1	487,892.03	1,402,827.46	11+76.00	82.4	0.3	4.0	0.6
S1-LGC-21	A	PR. MAINSTEM SEGMENT 1	487,885.83	1,402,791.29	12+13.00	82.2	0.3	4.0	0.6
S1-LGC-22	A	PR. MAINSTEM SEGMENT 1	487,866.04	1,402,760.09	12+50.00	82.0	0.3	4.0	0.6
S1-LGC-23	A	PR. MAINSTEM SEGMENT 1	487,847.19	1,402,728.34	12+87.00	81.8	0.5	4.0	1.0
S1-LGC-24	A	PR. MAINSTEM SEGMENT 1	487,839.12	1,402,706.81	13+10.00	81.6	0.7	4.0	1.4



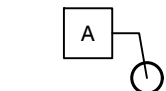
CLAY CHANNEL BLOCK DETAILS

- NOTES:
- CLAY CHANNEL BLOCK MATERIAL (CLAY FILL) SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION SYSTEM (USCS) DESIGNATIONS SC, CH, OR CL, WITH A MINIMUM OF 35 PERCENT PASSING THE #200 SIEVE. CLAY FILL SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 2", AND FROZEN OR OBJECTIONABLE MATERIAL. MATERIAL USED FOR CLAY CHANNEL BLOCK CONSTRUCTION SHALL BE APPROVED BY THE ENGINEER PRIOR TO USE.
  - CLAY CHANNEL BLOCK MATERIAL SHALL BE COMPACTED TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY. COMPACTED CLAY FILL SHALL CONFORM TO A MINIMUM 93 PERCENT OF MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO METHOD T-99 OR ASTM D698. CLAY FILL SHALL BE PLACED IN 8-INCH MAXIMUM LIFTS AND EACH LIFT SHALL BE COMPACTED WITH ROLLERS. MATERIAL SHOULD BE AERATED OR UNIFORMLY WETTED AS NEEDED TO BRING THE MOISTURE CONTENT WITHIN TWO (2) PERCENT OF OPTIMUM. THE UPPER SURFACE OF EACH CLAY LIFT SHOULD BE SCARIFIED PRIOR TO PLACEMENT OF THE NEXT LIFT; HOWEVER, THE FINAL LIFT OF CLAY SHALL NOT BE SCARIFIED. IN INSTANCES WHERE GROUNDWATER IS ENCOUNTERED DURING EXCAVATION FOR, OR DURING INSTALLATION OF CLAY CHANNEL BLOCKS, THE CONTRACTOR MAY NEED TO OPERATE SUMP PIT OR OTHER DEWATERING DEVICE(S) TO DRAWDOWN LOCAL GROUNDWATER AND TO ALLOW FOR REQUIRED COMPACTION.
  - COMPACTION OF THE CLAY CHANNEL BLOCK SHALL BE WITNESSED BY THE COUNTY INSPECTOR. THE COUNTY, AT THEIR SOLE DISCRETION, MAY EITHER ACCEPT COMPACTION AS APPROPRIATE OR REQUIRE ITS FURTHER TESTING BY A GEOTECHNICAL ENGINEER.
  - CLAY CHANNEL BLOCK DIMENSIONS MAY BE ADJUSTED IN THE FIELD UNDER THE SUPERVISION OF THE ENGINEER.
  - FOR SUITABLE FILL AND STREAMBED MATERIAL AND SUBMITTAL REQUIREMENTS, SEE SHEET DE-04

CLAY CHANNEL BLOCK STRUCTURE TABLE

STRUCTURE ID	POINT ID	NORTHING	EASTING
S1-CCB-01	C	488,470.95	1,403,463.60
S1-CCB-02	C	488,386.65	1,403,379.58
S1-CCB-03	C	488,275.69	1,403,282.65
S1-CCB-04	C	488,165.00	1,403,128.79
S1-CCB-05	C	487,950.17	1,402,869.00

DE-02



PROPOSED STRUCTURE  
STAKEOUT LOCATION  
(TYP.) SEE STRUCTURE  
TABLE THIS SHEET



7455 New Ridge Road, Suite T Phone: (410) 694-9401  
Hanover, Maryland 21076 Fax: (410) 694-9105  
www.baylandinc.com

BAYLAND JOB NO. 5\_12701



DATE: 5/24/23

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS									
REVISED		APPROVED		DATE		APPROVED		DATE	
DATE		BY		5/30/2023		5/26/2023		11/17/2023	
		CHIEF ENGINEER				PROJECT MANAGER			
		APPROVED		DATE		APPROVED		DATE	
		DEPUTY DIRECTOR		5/30/2023		5/30/2023		11/17/2023	
						CHIEF, RIGHT OF WAY			
								SHEET NO. 4 OF 25	
								PROJECT NO. B556900	
								CONTRACT NO. B556903	

LPAX CROFTON GOLF  
STREAM RESTORATION  
SEGMENT 1  
STREAM RESTORATION DETAILS



RIFFLE-WEIR CONSTRUCTION SPECIFICATIONS

MATERIALS

THE CONTRACTOR WILL NOT BE GRANTED AN EXTENSION OF EXTRA TIME OR EXTRA COMPENSATION DUE TO DELAY CAUSED BY SAMPLING, TESTING, APPROVAL OR DISAPPROVAL OF THE MATERIALS UNDER THE REQUIREMENTS OF THESE SPECIFICATIONS. THE MATERIAL SHALL BE AS SPECIFIED ON THE RIFFLE-WEIR ROCK SIZE TABLE AND HEREIN. IF SUFFICIENT MATERIAL IS NOT AVAILABLE FROM THE SITE, THE CONTRACTOR SHALL OBTAIN MATERIAL FROM A QUARRY AND PROVIDE A CERTIFICATE VERIFYING THAT THE STONE MEETS THE SPECIFIED REQUIREMENTS AND/OR A SAMPLE OF STONE TO THE COUNTY FOR APPROVAL PRIOR TO INSTALLATION. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE ALL NECESSARY ARRANGEMENTS WITH THE SOURCE OF SUPPLY IN A TIMELY FASHION, SO THAT THE CONTRACTOR SHALL MAINTAIN AN ADEQUATE SUPPLY OF ALL MATERIALS AND THAT WORK SHALL NOT BE UNNECESSARILY DELAYED DUE TO INSUFFICIENT SUPPLY.

- BOULDERS – BOULDERS SHALL BE AS SPECIFIED ON THE RIFFLE-WEIR ROCK SIZE TABLE. BOULDERS SHALL BE GRANITE, OBLONG, AND FLAT IN APPEARANCE, AND DARK BROWN OR DARK GRAY IN COLOR. IN GENERAL, FOOTER ROCKS SHALL BE SELECTED TO BE THE LARGEST ROCKS AVAILABLE. FOOTER ROCKS SHALL BE PLACED AT THE BOTTOM AND DOWNSTREAM SIDE OF THE TRENCH. BOULDERS MUST HAVE A MINIMUM DRY UNIT WEIGHT OF 160 LBS/CF.
- SUBANGULAR SILICA COBBLE – SHALL MEET THE STONE SIZES SPECIFIED IN THE RIFFLE-WEIR ROCK SIZE TABLE. COBBLE SHALL BE COMPOSED OF A WELL-GRADED MIXTURE OF STONE SIZE SO THAT 50% OF THE PIECES BY WEIGHT SHALL BE LARGER THAN THE D50 SIZE. A WELL GRADED MIXTURE IS A MIXTURE COMPOSED PRIMARILY OF LARGER STONE SIZES BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE LARGE VOIDS BETWEEN THE STONES. ANGULAR SILICA COBBLE SHALL BE DARK BROWN OR DARK GRAY IN COLOR. NO WHITE STONE SHALL BE ALLOWED. THE ROCK SHALL BE FREE FROM LAMINATIONS AND WEAK CLEAVAGES AND SHALL NOT DISINTEGRATE FROM THE ACTION OF AIR, WATER, HANDLING OR PLACING.
- RIPRAP – RИPRAP SHALL BE AS SPECIFIED IN SECTION 901.02.01 OF THE MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, LATEST EDITION AND ANY ADDENDA THERETO. RИPRAP SHALL BE COMPOSED OF A WELL-GRADED MIXTURE OF STONE SIZE SO THAT 50% OF THE PIECES BY WEIGHT SHALL BE LARGER THAN THE D50 SIZE. A WELL GRADED MIXTURE IS A MIXTURE COMPOSED PRIMARILY OF LARGER STONE SIZES BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE LARGE VOIDS BETWEEN THE STONES. RИPRAP MUST BE OF APPROPRIATE COLOR; NO WHITE STONE SHALL BE ALLOWED. RИPRAP SHALL BE GRANITE WITH A MINIMUM DRY UNIT WEIGHT OF 160 LBS/CF.
- BANK RUN GRAVEL FILTER SHALL MEET THE AGGREGATE GRADING REQUIREMENTS AS SPECIFIED IN AGGREGATE BASE AND SUBBASE COURSES OF AASCD SPECIFICATION 02621.02.C OR AS DIRECTED BY THE COUNTY. IT SHALL BE A MIX OF EQUAL PARTS BANK RUN GRAVEL SUBBASE COURSE AND COARSE AGGREGATE FOR BASE COURSE.
- SUITABLE FILL – SUITABLE FILL MATERIAL SHALL BE FREE FROM VEGETATIVE MANNER, ORGANICS, FROZEN MATERIAL, ROCKS/STONES GREATER THAN ONE AND A HALF INCHES IN ANY DIMENSION, WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR OTHER DELETERIOUS MATERIALS. THE MATERIAL SHALL NOT CONTAIN MICA IN QUANTITIES, WHICH, IN THE JUDGMENT OF THE AGENT ARE SUFFICIENT TO AFFECT COMPACTION CHARACTERISTICS. SUITABLE FILL SHALL COMPLY WITH AASHTO GROUPS A-1-A, A-1-B, A-3 OR A-2-4 WITH 35 PERCENT MAXIMUM PASSING THE NUMBER 200 SIEVE AND A MINIMUM DRY UNIT WEIGHT OF 80 POUNDS PER CUBIC FOOT. SUITABLE FILL SHALL BE NON-MANUFACTURED, NATIVE FILL MATERIAL MEETING THE SPECIFICATIONS. CRUSHED STONE MATERIAL IS NOT ALLOWABLE. CONCRETE SAND MAY BE SUBSTITUTED FOR SUITABLE FILL WITH COUNTY APPROVAL.
- COMPOST – COMPOST SHALL HAVE A PH BETWEEN 5.0 AND 7.0. IT SHALL BE STABLE AND NOT REHEAT UPON RESTACKING. COMPOST SHALL HAVE A MOISTURE CONTENT BETWEEN 30 AND 55 PERCENT, AND A PARTICLE SIZE OF 0.5 INCHES OR LESS. COMPOST SHALL BE SOURCE-SEPARATED COMPOST (TYPE B), APPROVED BY THE MARYLAND DEPARTMENT OF AGRICULTURE (MDA). COMPOST SHALL BE PRODUCED BY AN MDA CERTIFIED COMPOST OPERATOR AND HAVE A SOLUBLE SALT CONCENTRATION NOT THE EXCEED 5 DS (MMHOS/CM). THE SOURCE-SEPARATED COMPOST SHALL BE ONE OF THE FOLLOWING TYPES:  
A. TREE LEAF COMPOST  
B. NON-TREE LEAF COMPOST. WHEN COMPOST IS FROM LAWN CLIPPINGS, IT SHALL BE TESTED IN CONFORMANCE WITH COMAR 15.18.04.05.
- STREAMBED MATERIAL FOR USE SHALL CONSIST OF SALVAGED SAND, GRAVEL AND COBBLE MATERIAL FROM THE TOP SIX (6) TO TWELVE (12) INCHES OF THE EXISTING STREAM CHANNEL IN AREAS OF CUT. STREAMBED MATERIAL INCLUDES ALL-NATURAL STONE WITHIN THE CHANNEL AND MAY RANGE IN DIAMETER FROM ONE (1) MILLIMETER TO SIX (6) INCHES. STREAMBED MATERIAL SHALL BE STORED ONSITE IN STOCKPILE AREAS DESIGNATED ON CONTRACT DRAWINGS FOR USE IN CONSTRUCTING STRUCTURES AND THE PROPOSED STREAM BED AS DESCRIBED IN THE CONTRACT DOCUMENTS. WITH COUNTY APPROVAL, BANK RUN GRAVEL MAY BE USED IN PLACE OF STREAMBED MATERIAL IF SUFFICIENT SALVAGED MATERIAL IS NOT AVAILABLE TO PROVIDE THE MATERIAL NEEDED PER THE CONTRACT DOCUMENTS.
- FOR ANCHOR STAKE AND SOIL STABILIZATION MATTING REQUIREMENTS, SEE SHEET DE-04.

SUBMITTALS

- THE CONTRACTOR SHALL PROVIDE CERTIFICATIONS OF COMPLIANCE STATING THAT ALL ITEMS FURNISHED ARE IN ACCORDANCE WITH AND MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- PRIOR TO THE START OF WORK ON THIS ITEM, THE CONTRACTOR SHALL SUBMIT THE SOURCE OF SUPPLY OF STONE TO THE COUNTY FOR REVIEW AND APPROVAL. IF REQUIRED BY THE COUNTY, THE CONTRACTOR AND THE COUNTY OR ITS REPRESENTATIVE WILL JOINTLY VISIT THE SOURCE SITES TO DETERMINE WHETHER THE STONE MEETS THE SPECIFIED REQUIREMENTS AND WHETHER THERE ARE SUFFICIENT QUANTITIES OF THE STONE TO MEET THE PROJECT REQUIREMENTS. THE CONTRACTOR WILL NOT BE GRANTED AN EXTENSION OF TIME OR EXTRA COMPENSATION DUE TO DELAY CAUSED BY SAMPLING, TESTING, APPROVAL OR DISAPPROVAL OF MATERIAL UNDER THE REQUIREMENTS OF THESE SPECIFICATIONS. THE CONTRACTOR SHALL SUBMIT TO THE COUNTY A CERTIFICATE VERIFYING THE FOLLOWING:  
A. STONE CLASSIFICATION  
B. STONE DENSITY (I.E., WEIGHT PER CUBIC FOOT)  
C. WEIGHT OF STONE BEING SUPPLIED.  
D. STONE QUALITY SHALL MEET ALL OF THE ABOVE SPECIFICATIONS.
- THE CONTRACTOR SHALL PROVIDE PHOTOGRAPHIC DOCUMENTATION OF ALL ROCK INCLUDING BOULDERS, SUBANGULAR COBBLE AND RИPRAP TO VERIFY COLOR REQUIREMENTS.
- THE CONTRACTOR SHALL PROVIDE A CERTIFICATION FOR REVIEW AND APPROVAL THAT VERIFIES THE BANK RUN GRAVEL MEETS THE REQUIRED GRADATION. MATERIAL MAY NOT BE INSTALLED WITHOUT PRIOR APPROVAL.
- THE CONTRACTOR SHALL OBTAIN A COMPOST SAMPLE AND SUBMIT THE SAMPLE AND CERTIFICATE WITH THE SOURCES AND SPECIFICATIONS OF THE COMPOST TO THE COUNTY FOR APPROVAL.
- THE CONTRACTOR SHALL FURNISH SPECIFICATIONS AND A SOURCE OF SOIL STABILIZATION MATTING TO THE COUNTY FOR REVIEW AND APPROVAL.
- ANY UNAPPROVED MATERIAL BROUGHT TO THE PROJECT SITE THAT IS NOT APPROVED WILL BE REMOVED AND REPLACED AT NO EXPENSE TO THE COUNTY.

CONSTRUCTION

- THE RIFFLE-WEIRS SHALL BE INSTALLED ACCORDING TO THE SEQUENCE OF CONSTRUCTION, THE CONSTRUCTION DRAWINGS, THESE SPECIFICATIONS, AND AS DIRECTED BY THE COUNTY.
- THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO CONSTRUCT, INSTALL, AND MAINTAIN THE RIFFLE-WEIRS AS SHOWN ON THE CONTRACT DRAWINGS AND DESCRIBED IN THESE SPECIFICATIONS OR AS DIRECTED BY THE COUNTY.
- THE CONTRACTOR SHALL REVIEW THE DETAILS AND SPECIFICATIONS WITH THE ENGINEER PRIOR TO CONSTRUCTION.
- USING PUMP AROUND TECHNIQUES, THE STREAM SHALL BE DIVERTED AND THE CONSTRUCTION AREA DETERAED AS SHOWN ON THE APPROVED EROSION AND SEDIMENT CONTROL PLANS.
- THE CONTRACTOR SHALL STAKE OUT THE EXTENTS OF EACH STRUCTURE AND IF REQUIRED, REVIEW THE STAKEOUT WITH THE COUNTY PRIOR TO CONSTRUCTION. AT A MINIMUM, THE FIRST RIFFLE-WEIR STRUCTURE STAKEOUT MUST BE REVIEWED AND APPROVED BY THE COUNTY PRIOR TO CONSTRUCTION.
- SUITABLE FILL SHALL BE USED FOR FILLING THE FACILITY BOTTOM TO ACHIEVE THE GRADE NECESSARY FOR THE INSTALLATION OF THE STRUCTURES. SUITABLE FILL SHALL BE PLACED IN LIFTS NO MORE THAN EIGHT (8) INCHES THICK AND COMPACTED.
- ONE ROW OF WEDGE BOULDER SHALL BE PLACED BEGINNING INVERT OF THE RIFFLE-WEIR AS SHOWN ON THE CONSTRUCTION DRAWINGS. 6 INCHES OF BANK RUN GRAVEL FILTER SHALL BE PLACED UNDER THE BOULDERS. BOULDERS SHALL BE ARRANGED HORIZONTALLY IN THE CENTER OF THE CHANNEL AND THE ARMS ON EITHER SIDE OF THE CHANNEL SHALL BE EXTENDED PARABOLICALLY AT APPROXIMATELY A 20 DEGREE ANGLE LONGITUDINALLY TO THE CENTER OF THE POOL OR AS DIRECTED BY THE ENGINEER. THE BOULDERS SHALL BE ARRANGED TO MAXIMIZE INTERLOCKING. THE FACE OF THE BOULDERS SHALL BE TILTED DOWNSTREAM TO OCCUPY HALF OF THE INCLINE MADE UP OVER THE ENTIRE LENGTH OF THE RIFFLE-WEIR.
- ONCE THE BOULDERS HAVE BEEN PLACED, FILL WITH 75 PERCENT RИPRAP/COBBLE MIX AND 25 PERCENT BOULDERS TO FORM THE BACKSIDE OF THE RIFFLE-WEIR. BOULDERS SHALL BE SPACED REGULARLY THROUGHOUT THE BACKSIDE OF THE RIFFLE-WEIR. A MINIMUM OF SIX (6) INCHES OF BANKRUN GRAVEL MATERIAL SHALL BE USED TO SEPARATE THE SUITABLE FILL OR EXISTING GRADE AND THE BACKSIDE OF THE RIFFLE-WEIR. SMALL RИPRAP/COBBLE APRONS SHALL BE PLACED FROM THE BOULDERS TO THE DOWNSTREAM POOL INVERT AS WELL AS FROM THE UPSTREAM RIFFLE-WEIR INVERT TO 4 FEET UPSTREAM OF THE RIFFLE-WEIR UPSTREAM INVERT. SMALL AND LARGE STONES SHALL BE MIXED TO MINIMIZE VOID SPACE.
- COBBLE/RIPRAP MIX SHOULD BE PLACED IN VERTICAL LIFTS OF NO MORE THAN EIGHT (8) INCHES DEEP. STREAMBED MATERIAL SHALL BE WASHED INTO THE MIX AFTER EACH LAYER IS PLACED TO MINIMIZE VOID SPACE IN THE MIXTURE EXCEPT FOR THE TOP 4 INCHES WHICH DO NOT REQUIRE STREAMBED MATERIAL. STONE SHALL BE PLACED IN A MANNER SO THAT IT SHINGLES IN A DOWNSTREAM DIRECTION, MINIMIZES VOID SPACE AND PROMOTES INTERLOCKING. DUMPING OF STONE WILL NOT BE PERMITTED. VOID SPACE MUST BE MINIMIZED TO THE SATISFACTION OF THE ENGINEER PRIOR TO ACCEPTANCE OF EACH CONSTRUCTED STEP.
- OBSERVE DURING AND AFTER STORMS TO NOTE FLOW OVER WEIRS AND ADD ADDITIONAL SMALL ROCK AND STREAMBED MATERIAL IN STRATEGIC LOCATIONS TO FILL VOIDS INCLUDING ALONG THE SHOULDERS OF THE WEIRS. WITHIN THE BASEFLOW PATH, THE TOP 4 INCHES OF THE RИPRAP/COBBLE MIX DO NOT REQUIRE STREAMBED MATERIAL.
- ONCE THE RIFFLE-WEIR-POOL COMBINATION IS COMPLETE, THE ENTIRE SURFACE SHALL BE STABILIZED. ANY DISTURBED AREA SHALL BE TEMPORARILY STABILIZED IN ACCORDANCE WITH CONTRACT DOCUMENTS AT THE END OF EACH WORKING DAY.
- SURFACE ELEVATIONS OF THE STRUCTURES SHALL CONFORM TO THE PROPOSED DESIGN STREAM PROFILES AND CROSS SECTIONS SPECIFIED IN THE CONTRACT DOCUMENTS. TOLERANCES OF THE FINISHED STRUCTURE ARE AS FOLLOWS:  
SURFACE ELEVATION: +/- 0.2 FEET  
SLOPE: +/- 0.1 PERCENT
- PLACED MATERIAL NOT CONFORMING TO THE SPECIFIED LIMITS SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST.

RIFFLE-WEIR DATA TABLE

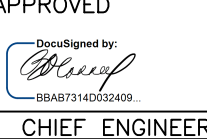

	S1-RW-01	S1-RW-02
L <sub>WEIR</sub> (WEIR LENGTH)	12 FT.	12 FT.
L <sub>POOL</sub> (POOL LENGTH)	26 FT.	N/A
H <sub>F</sub> (POOL DEPTH)	2.0 FT.	2.0 FT.
W <sub>WEIR</sub> (WEIR WIDTH)	26.0 FT.	26.0 FT.
D <sub>WEIR</sub> (WEIR DEPTH)	2.0 FT.	2.0 FT.
W <sub>DROP</sub> (DROP ACROSS WEIR)	1.5 FT.	1.5 FT.
H <sub>1</sub> V <sub>1</sub> (WEIR DOWNSTREAM SLOPE)	4:1	4:1
H <sub>2</sub> V <sub>2</sub> (WEIR UPSTREAM SLOPE)	3:1	3:1
H <sub>3</sub> V <sub>3</sub> (WEIR SIDE SLOPE)	6.5:1	6.5:1
H <sub>4</sub> V <sub>4</sub> (POOL SIDE SLOPE)	3:1	N/A
D <sub>W</sub> (DEPTH OF MATERIAL)	2 FT.	2 FT.
L <sub>RUN</sub> (LENGTH OF RUN)	8 FT.	0.5 FT.

CONCRETE SAND MAY BE SUBSTITUTED FOR SUITABLE FILL WITH WRITTEN APPROVAL FROM THE COUNTY.

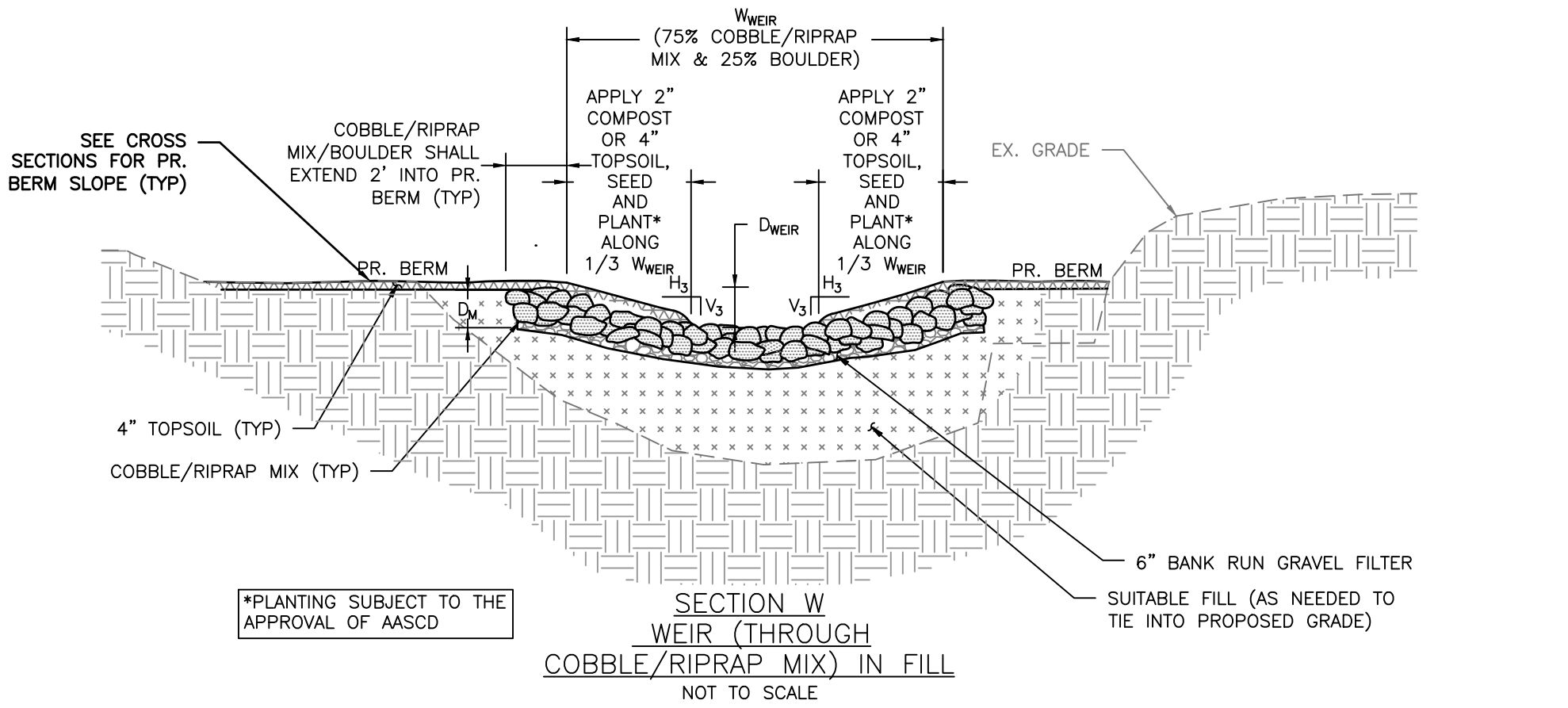
PERMANENT STABILIZATION FOR DISTURBED FLOODPLAIN/TERRACE ADJACENT TO THE RESTORED STREAM CHANNEL WILL CONSIST OF PLACING A MINIMUM OF 4 INCHES OF TOPSOIL IN ACCORDANCE WITH THESE DETAILS. BIODEGRADABLE SOIL STABILIZATION MATTING WITH 4 INCHES OF TOPSOIL SHALL BE USED IN WHERE SLOPES ARE 3:1 OR GREATER AND AT THE DIRECTION OF THE COUNTY AND/OR ENGINEER.

DE-03

ANNE ARUNDEL COUNTY  
DEPARTMENT OF PUBLIC WORKS

REVISED	DATE	BY	APPROVED	DATE	APPROVED	DATE	SCALE:	AS SHOWN
				5/30/2023	12:17 PM	5/26/2023	1:1	1:1
			CHIEF ENGINEER				DRAWN BY:	WMS 5/24/23
			APPROVED				CHECKED BY:	SMC/MCS 5/24/23
				5/30/2023	09:05	5/30/2023	1:1	1:1
			DEPUTY DIRECTOR				SHEET NO.	5 OF 25
							PROJECT NO.	B556900
							CONTRACT NO.	B556903

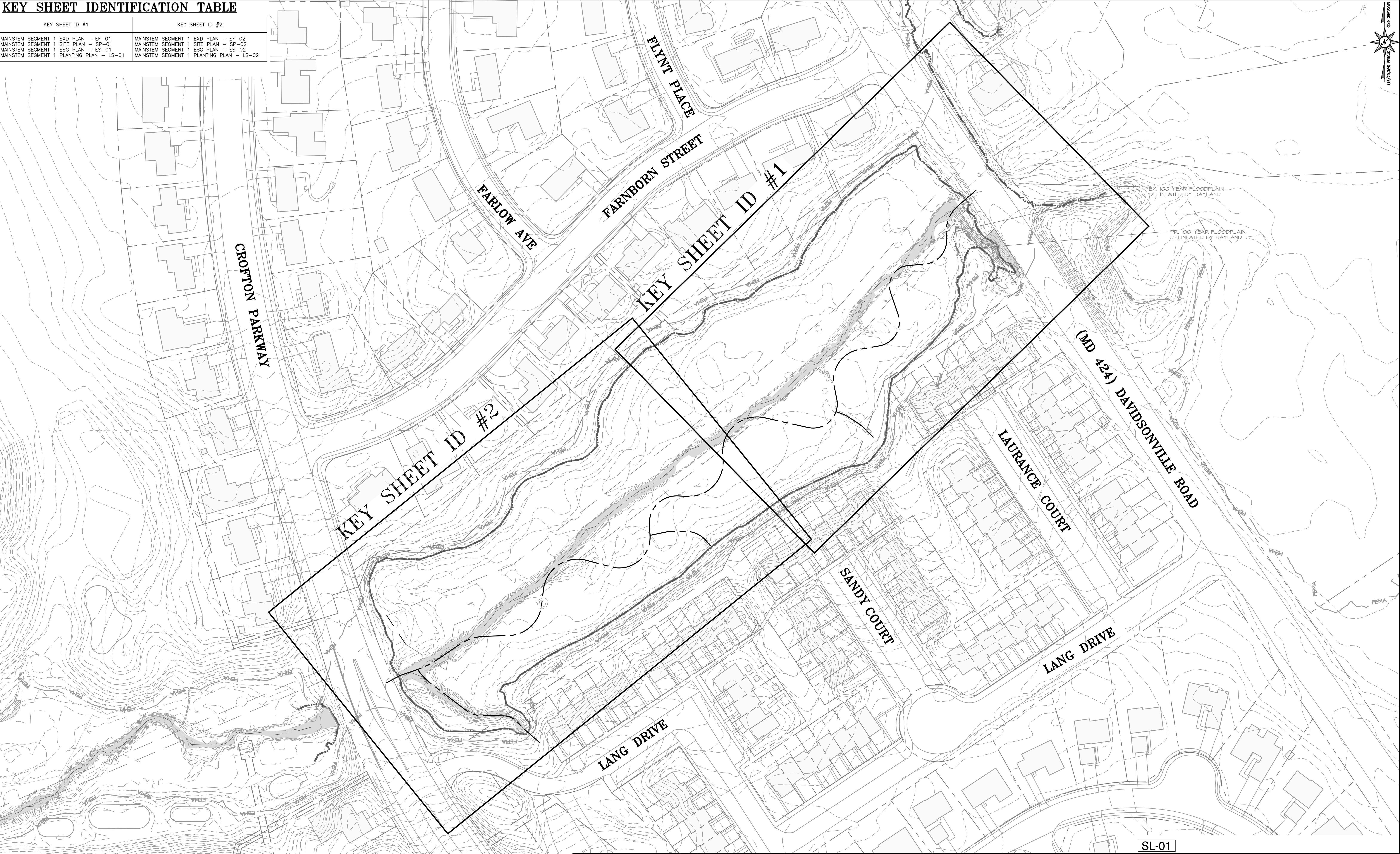
LPAX CROFTON GOLF STREAM  
RESTORATION SEGMENT 1  
STREAM RESTORATION DETAILS





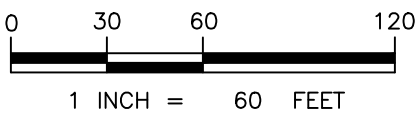
KEY SHEET IDENTIFICATION TABLE

KEY SHEET ID #1	KEY SHEET ID #2
MAINSTEM SEGMENT 1 EXD PLAN - EF-01	MAINSTEM SEGMENT 1 EXD PLAN - EF-02
MAINSTEM SEGMENT 1 SITE PLAN - SP-01	MAINSTEM SEGMENT 1 SITE PLAN - SP-02
MAINSTEM SEGMENT 1 ESC PLAN - ES-01	MAINSTEM SEGMENT 1 ESC PLAN - ES-02
MAINSTEM SEGMENT 1 PLANTING PLAN - LS-01	MAINSTEM SEGMENT 1 PLANTING PLAN - LS-02



SL-01

KEY SHEET  
SCALE: 1" = 60'



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www.baylandinc.com

BAYLAND JOB NO. 5\_12701



DATE: 5/24/23

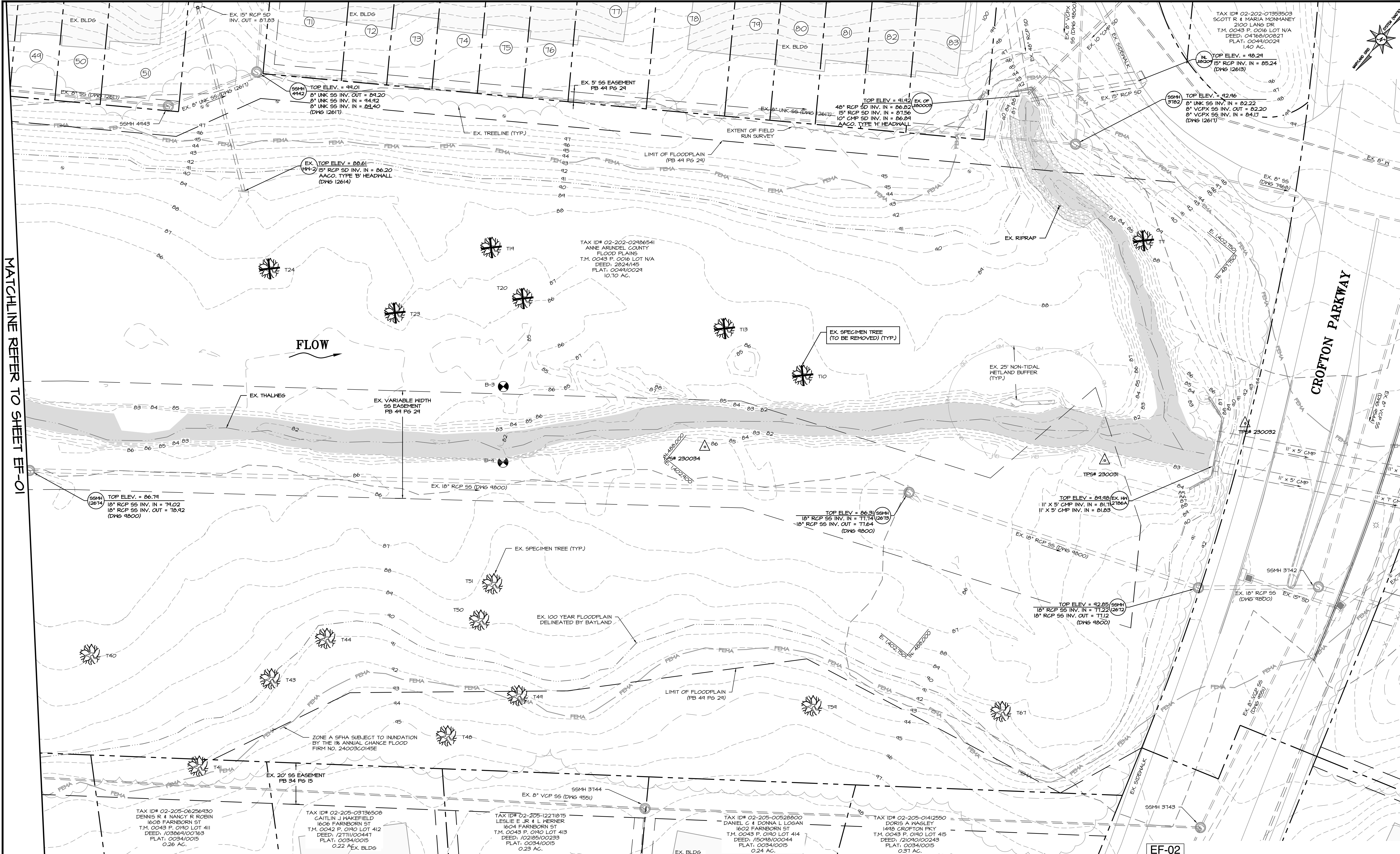
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				DRAWN BY: MKS	5/24/23
				PROJECT MANAGER	
				CHECKED BY: SMC/GMS	5/24/23
				SHEET NO.	6 OF 25
				PROJECT NO. B556900	
				CONTRACT NO. B556903	

LPAX CROFTON GOLF  
STREAM RESTORATION  
SEGMENT 1  
KEY SHEET



LPAX CROFTON GOLF  
STREAM RESTORATION  
SEGMENT 1  
EXD PLAN



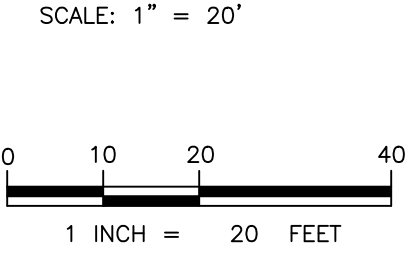


MATCHLINE REFER TO SHEET EF-01

CROFTON PARKWAY

- NOTES:
1. FOR EX. SPECIMEN TREE SURVEY, SEE SHEET DE-01.
  2. FOR SOIL BORING LOGS, SEE SHEET DE-01.
  3. FOR ADDITIONAL PROPERTY OWNER INFORMATION, SEE SHEET AB-01.
  4. EX. ROCK WITHIN THE LIMITS OF PROPOSED WORK CAN BE REMOVED, STOCKPILED, AND REUSED IF IT MEETS MATERIAL SPECIFICATIONS AND WITH THE APPROVAL OF THE ENGINEER.
  5. WETLAND DELINEATION WAS PERFORMED BY BAYLAND CONSULTANTS AND DESIGNERS, INC. DATED MAY & JUNE, 2016. DISCONTINUOUS WETLAND BOUNDARY AND ASSOCIATED BUFFER INDICATES WETLAND EXTENDS PAST LIMIT OF DELINEATION.
  6. EXISTING TREES TO BE REMOVED WITHIN THE LIMIT OF DISTURBANCE SHALL NOT BE DISPOSED OF OFFSITE WITHOUT COUNTY PERMISSION.

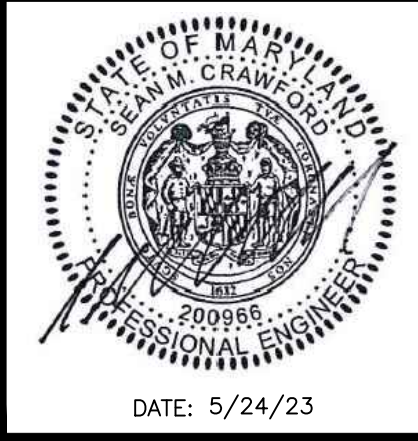
**EXISTING CONDITIONS  
AND DEMOLITION PLAN**



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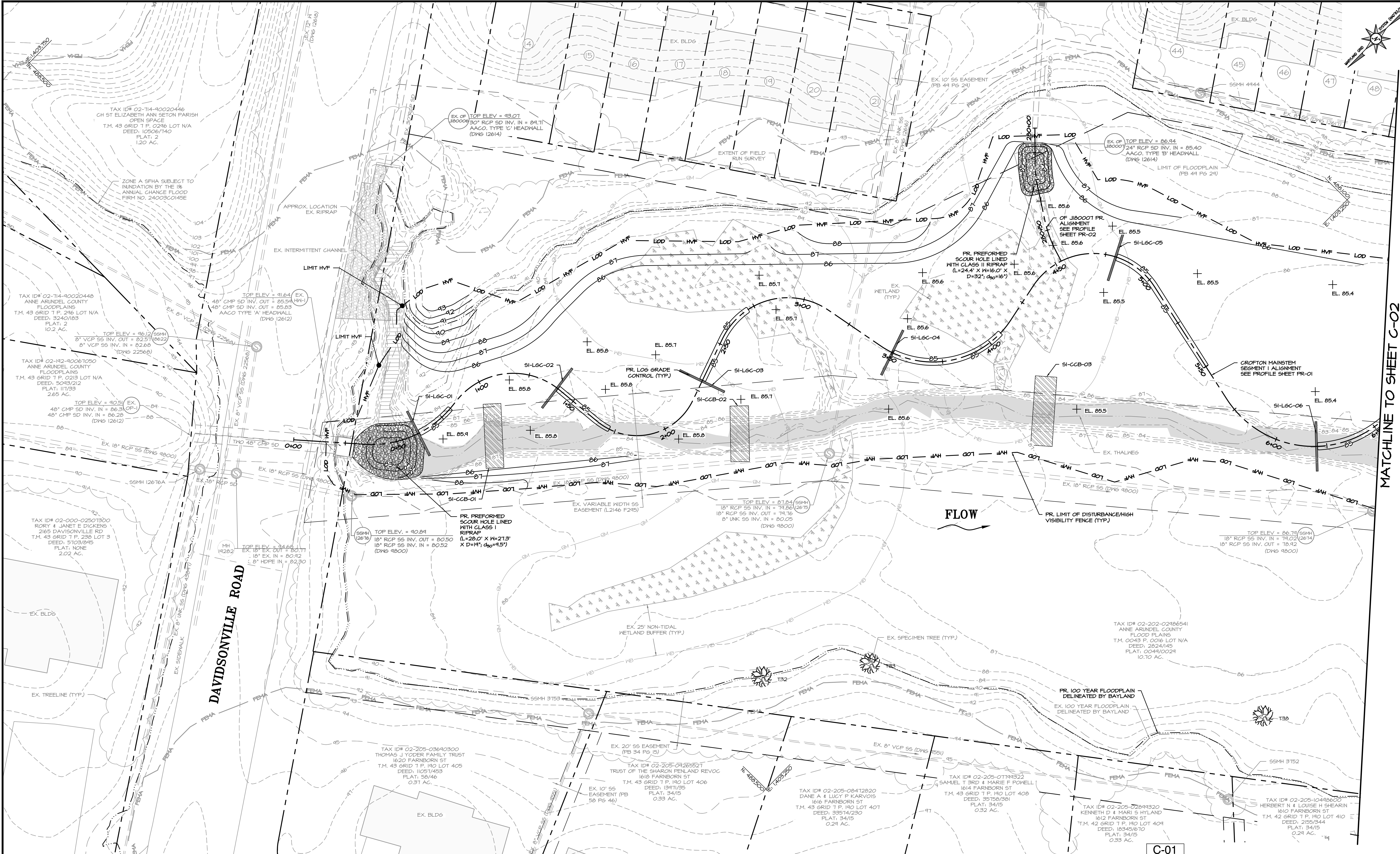
BAYLAND JOB NO. 5\_12701



ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS											
REVISED		APPROVED		DATE		APPROVED		DATE		SCALE: 1" = 20'	
DATE		BY				DATE				DESIGNED BY: JWH	
				5/30/2023		12:17 PM		5/26/2023		5/24/23	
		CHIEF ENGINEER				PROJECT MANAGER				DRAWN BY: MWS	
										5/24/23	
		APPROVED		DATE		APPROVED		DATE		CHECKED BY: SMC/CMS	
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										PROJECT NO. B556900	
										CONTRACT NO. B556903	

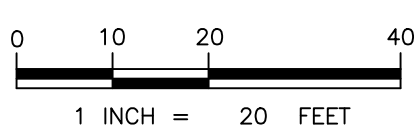
**LPAX CROFTON GOLF  
STREAM RESTORATION  
SEGMENT 1  
EXD PLAN**





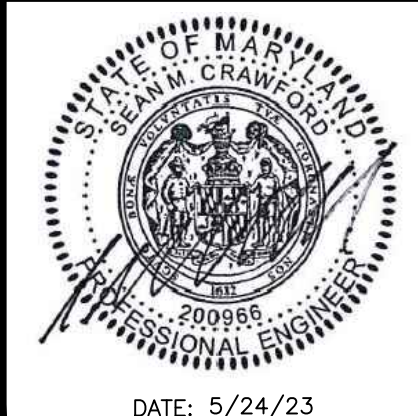
NOTES:  
1. FOR EX. SPECIMEN TREE SURVEY, SEE SHEET AB-01.  
2. ROCKS SHOWN ON PLAN ARE SYMBOLIC AND DO NOT REPRESENT INDIVIDUAL STONES. SEE ROCK SIZING TABLES ON SHEET DE-03 FOR ACTUAL DIMENSIONS.  
3. FOR STRUCTURE DETAILS, SEE SHEETS DE-01 TO DE-03.  
4. FOR ADDITIONAL PROPERTY OWNER INFORMATION, SEE SHEET AB-01.  
5. THE FLOODPLAIN SHALL BE "ROUGH GRADED". FLOODPLAIN MICROTOPOGRAPHY SHALL CONSIST OF MOUNDS AND PITS RANDOMLY SPACED WITH VARYING DEPTHS BUT SHALL NOT BE MORE THAN 0.5' DEEP. SEE DETAIL SHEET DE-01 FOR ADDITIONAL INFORMATION.  
6. WOODY DEBRIS SHALL BE INSTALLED IN THE FLOODPLAIN IN ACCORDANCE WITH THE DETAIL ON SHEET DE-01 AND AS DIRECTED BY THE COUNTY/ENGINEER.

**SITE PLAN**  
SCALE: 1" = 20'



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BAYLAND JOB NO. 5\_12701



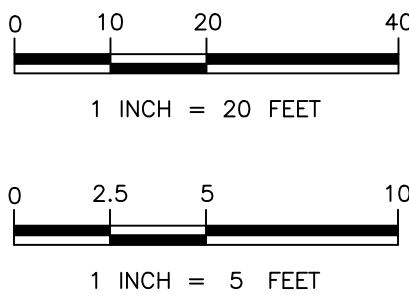
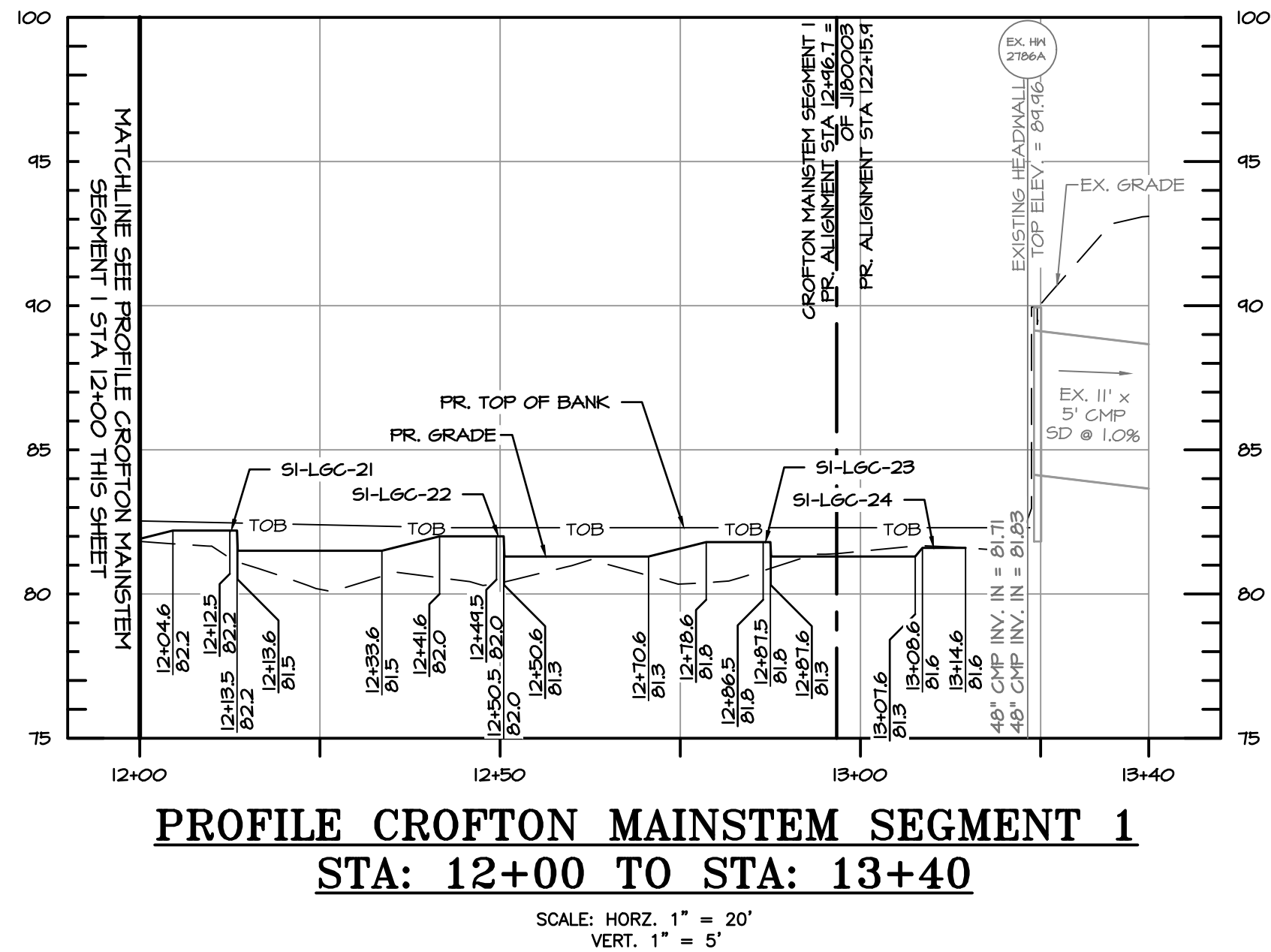
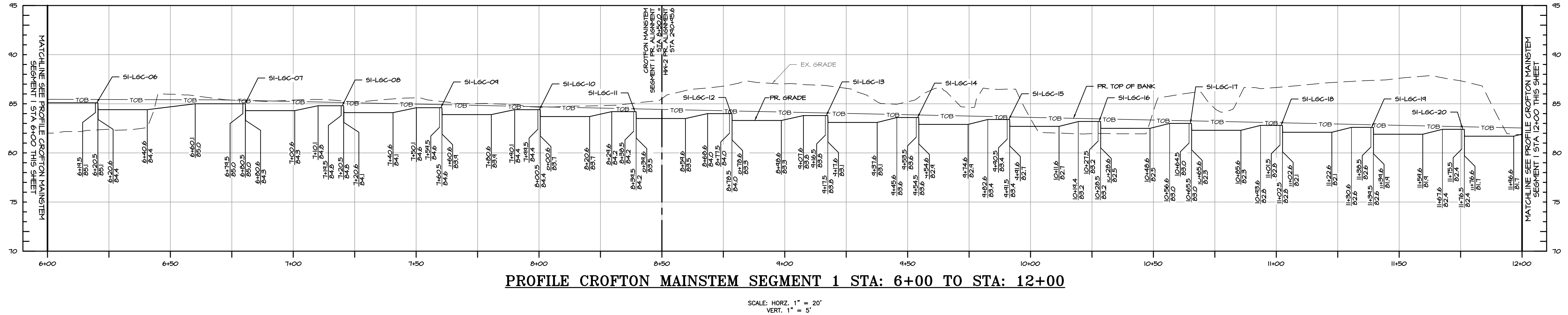
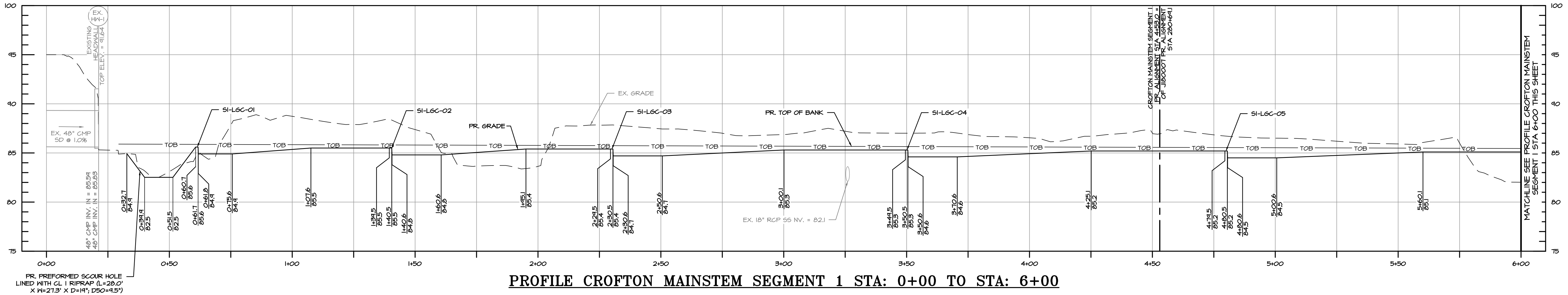
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS											
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DATE		BY		DATE		DATE		DATE		DESIGNED BY: JWH 5/24/23	
		CHIEF ENGINEER				PROJECT MANAGER				DRAWN BY: MWS 5/24/23	
APPROVED		DATE		APPROVED		DATE		CHECKED BY: MWS/GMS 5/24/23		SHEET NO. 9 OF 25	
DEPUTY DIRECTOR		5/30/2023   09		5/30/2023   09		CHIEF, RIGHT OF WAY		5/30/2023   11		PROJECT NO. B556900	
										CONTRACT NO. B556903	

**LPAX CROFTON GOLF  
STREAM RESTORATION  
SEGMENT 1  
SITE PLAN**









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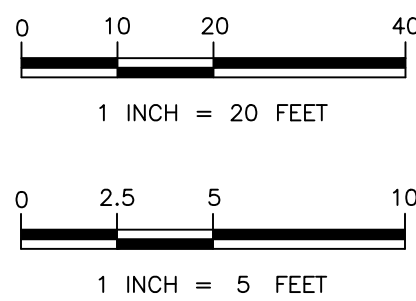
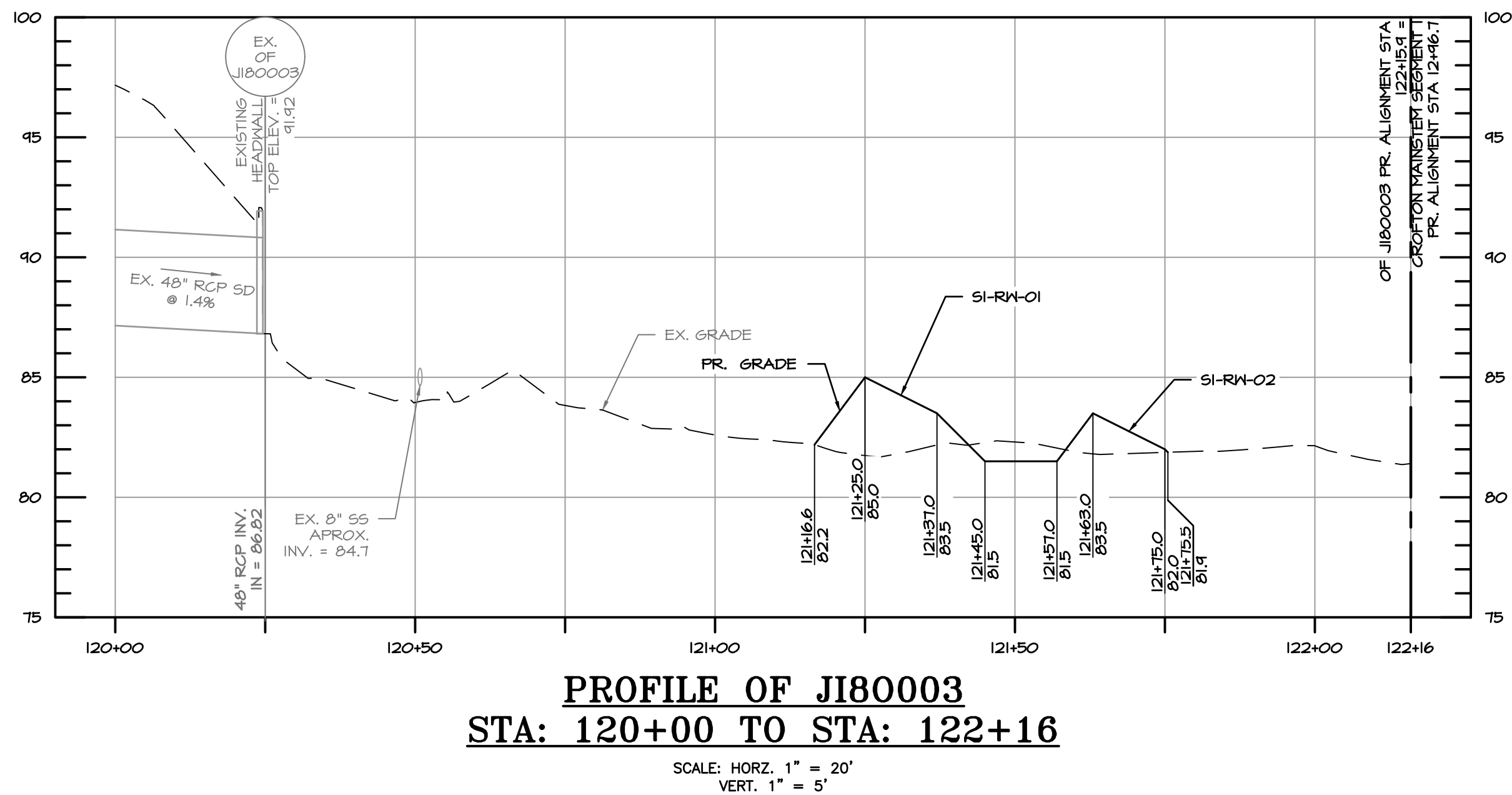
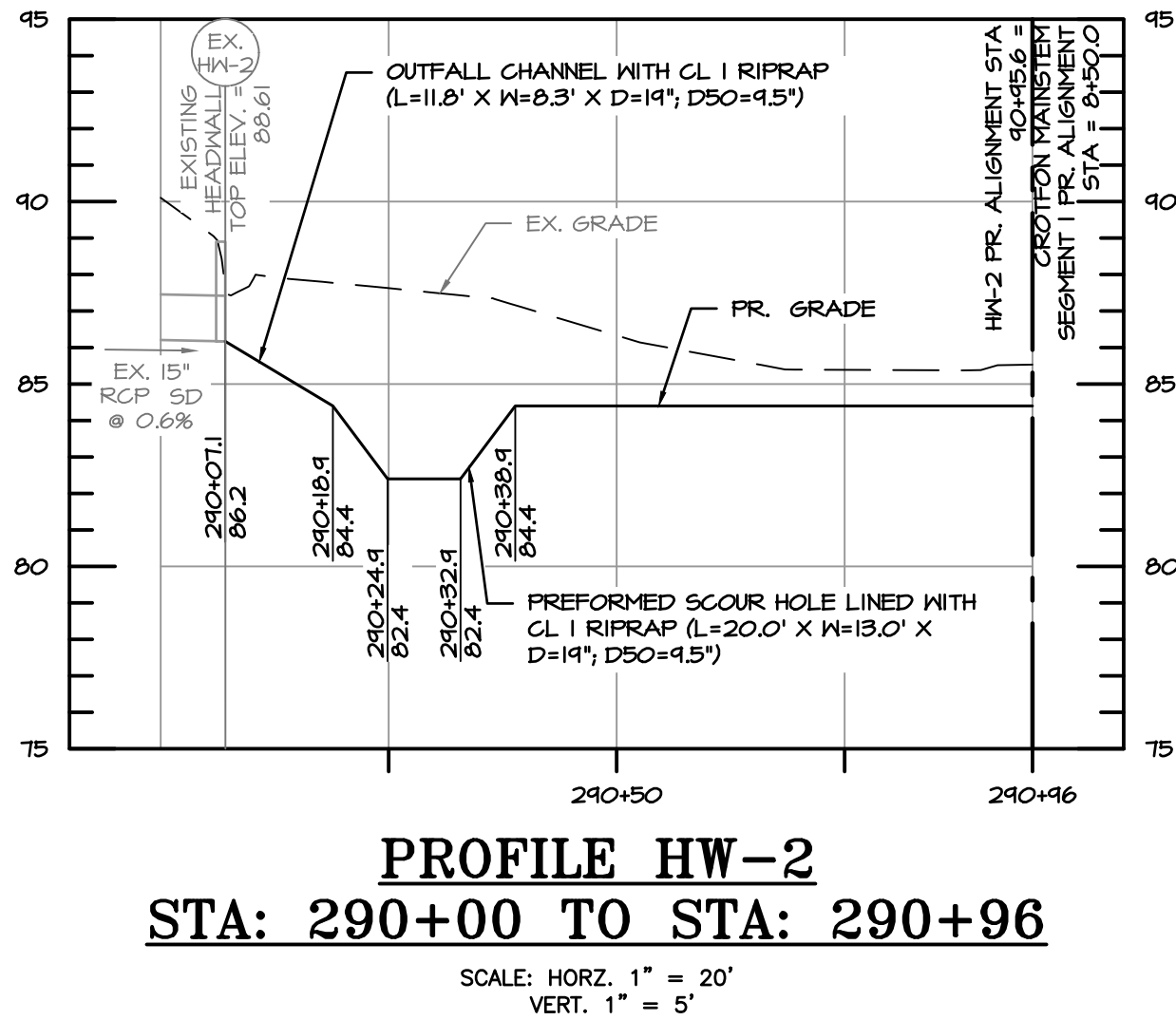
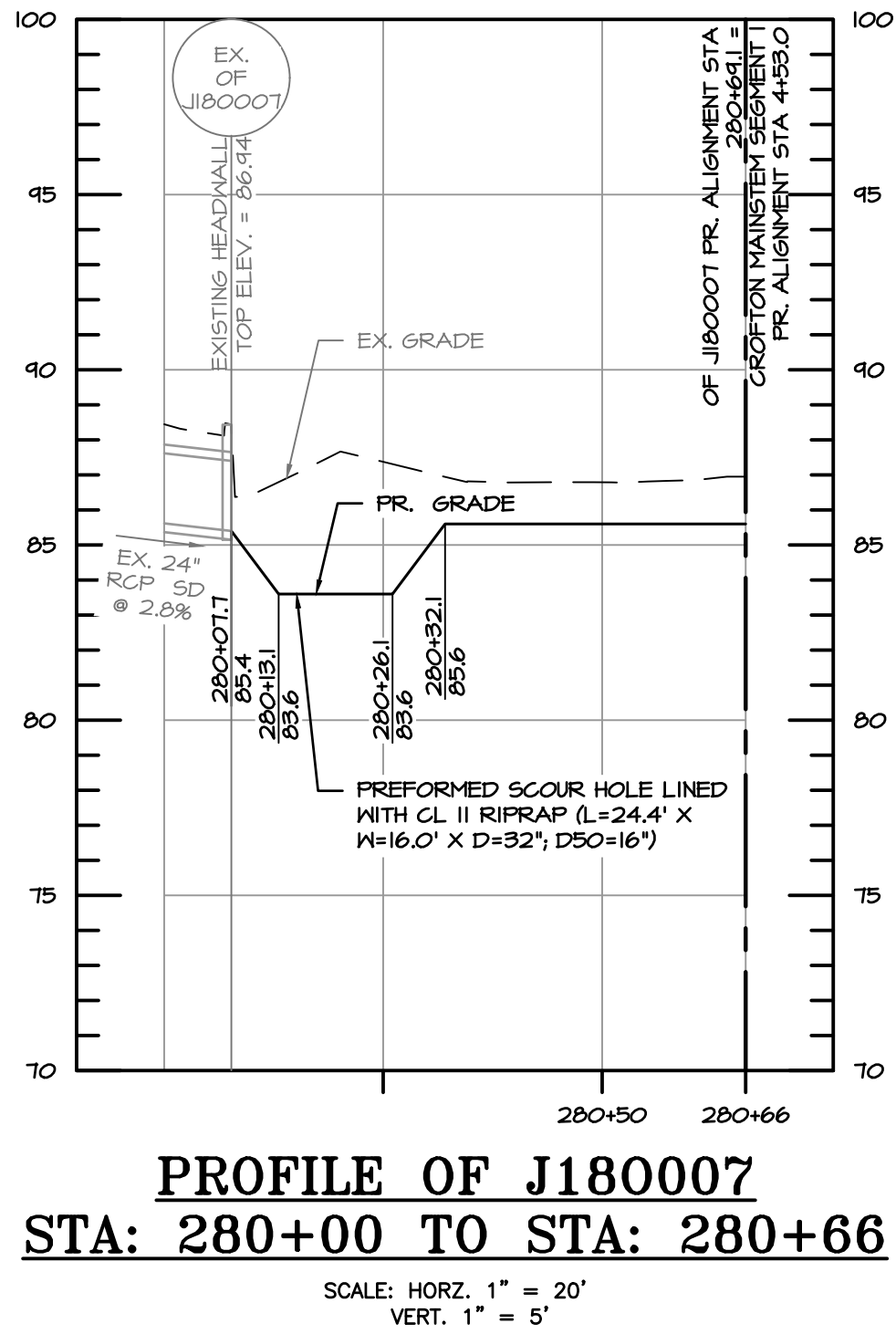
BAYLAND JOB NO. 5\_12701

STATE OF MARYLAND  
SEAL OF THE PROFESSIONAL ENGINEER  
DATE: 5/24/23

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS					
REVISED	DATE	APPROVED	DATE	APPROVED	DATE
DATE	BY	DATE	BY	DATE	BY
		5/30/2023	12	5/26/2023	11
		CHIEF ENGINEER		PROJECT MANAGER	
		APPROVED	DATE	APPROVED	DATE
		5/30/2023	09	5/30/2023	11
		DEPUTY DIRECTOR		CHIEF, RIGHT OF WAY	

LPAX CROFTON GOLF  
STREAM RESTORATION  
SEGMENT 1  
PROFILE





**Bayland**  
Consultants & Designers, Inc.  
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www.baylandinc.com  
BAYLAND JOB NO. 5\_12701

STATE OF MARYLAND  
SEAN W. CRAWFORD  
PROFESSIONAL ENGINEER  
DATE: 5/24/23

**PR-02**

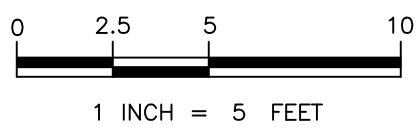
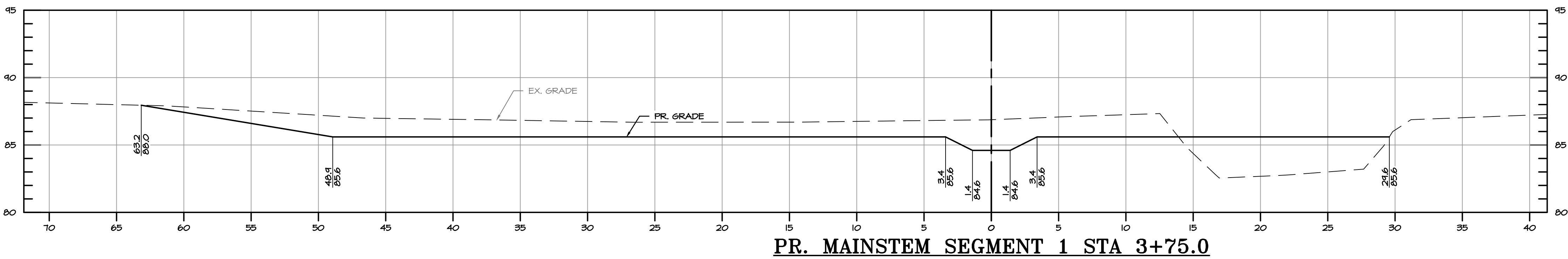
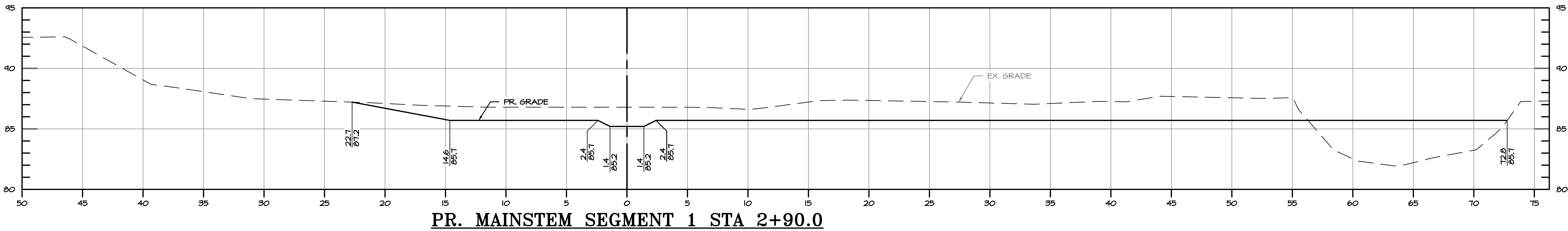
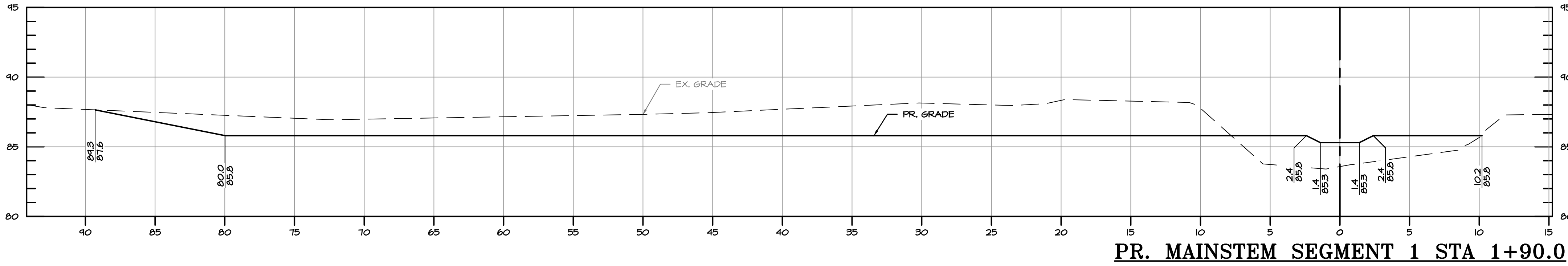
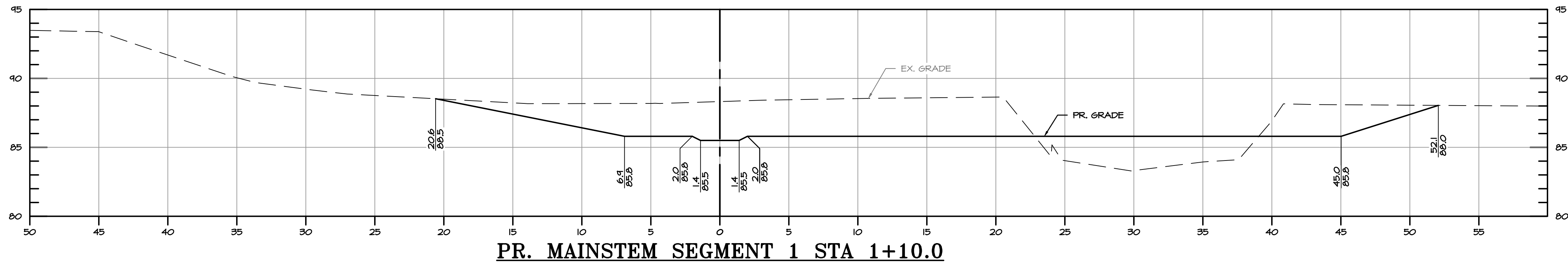
**ANNE ARUNDEL COUNTY**  
**DEPARTMENT OF PUBLIC WORKS**

REVISED	DATE	BY	APPROVED	DATE	APPROVED	DATE	SCALE:
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			APPROVED		APPROVED		
			5/30/2023	09:05 PM	5/30/2023	11:47 AM	
			DEPUTY DIRECTOR		CHIEF, RIGHT OF WAY		

DESIGNED BY:	CHECKED BY:	SHEET NO.	PROJECT NO.	CONTRACT NO.
John Vallejo	SMC/GMS	12 OF 25	B556900	B556903

**LPAX CROFTON GOLF**  
**STREAM RESTORATION**  
**SEGMENT 1**  
**PROFILE**





**Bayland Consultants & Designers, Inc.**  
"Integrating Engineering and Environment"

7455 New Ridge Road, Suite T Phone: (410) 694-9401  
Hanover, Maryland 21076 Fax: (410) 694-9105  
www.baylandinc.com

BAYLAND JOB NO. 5\_12701



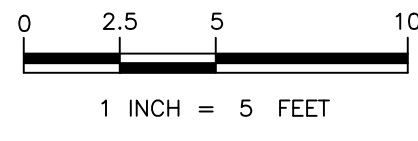
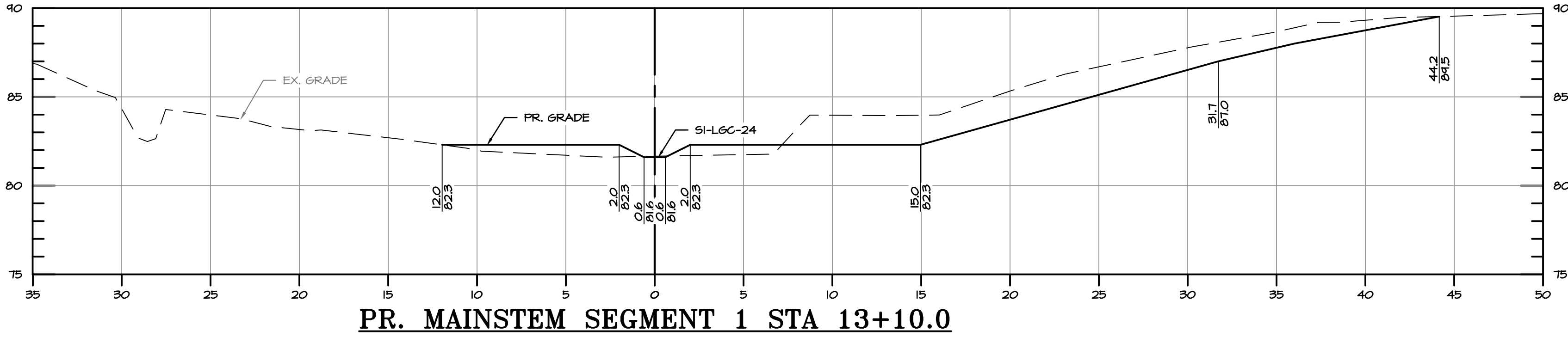
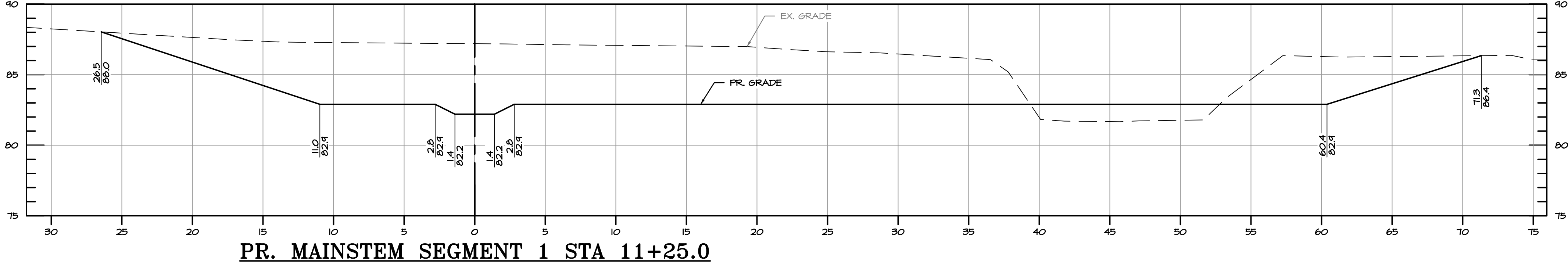
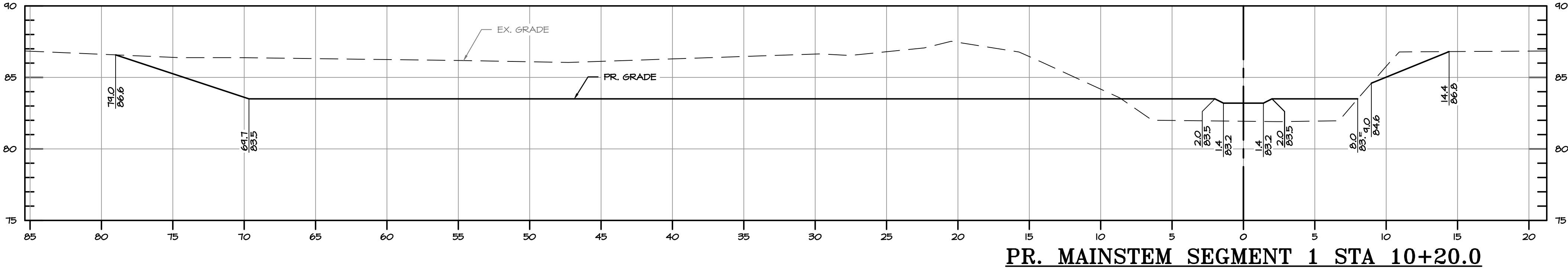
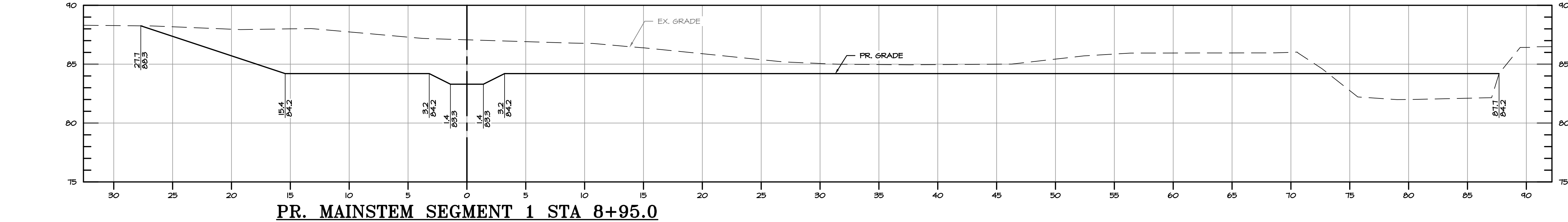
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DEPARTMENT OF PUBLIC WORKS			
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LPAX CROFTON GOLF  
STREAM RESTORATION  
SEGMENT 1  
CROSS SECTIONS









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BAYLAND JOB NO. 5\_12701

STATE OF MARYLAND  
SEAN W. CRAWFORD  
Professional Engineer  
No. 200958  
DATE: 5/24/23

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS			
REVISED DATE	BY	APPROVED DATE	APPROVED DATE
		5/30/2023   12:17 PM	5/26/2023   11:47 AM
		CHIEF ENGINEER	PROJECT MANAGER
		APPROVED DATE	APPROVED DATE
		5/30/2023   09:05 AM	5/30/2023   11:47 AM
		DEPUTY DIRECTOR	CHIEF, RIGHT OF WAY

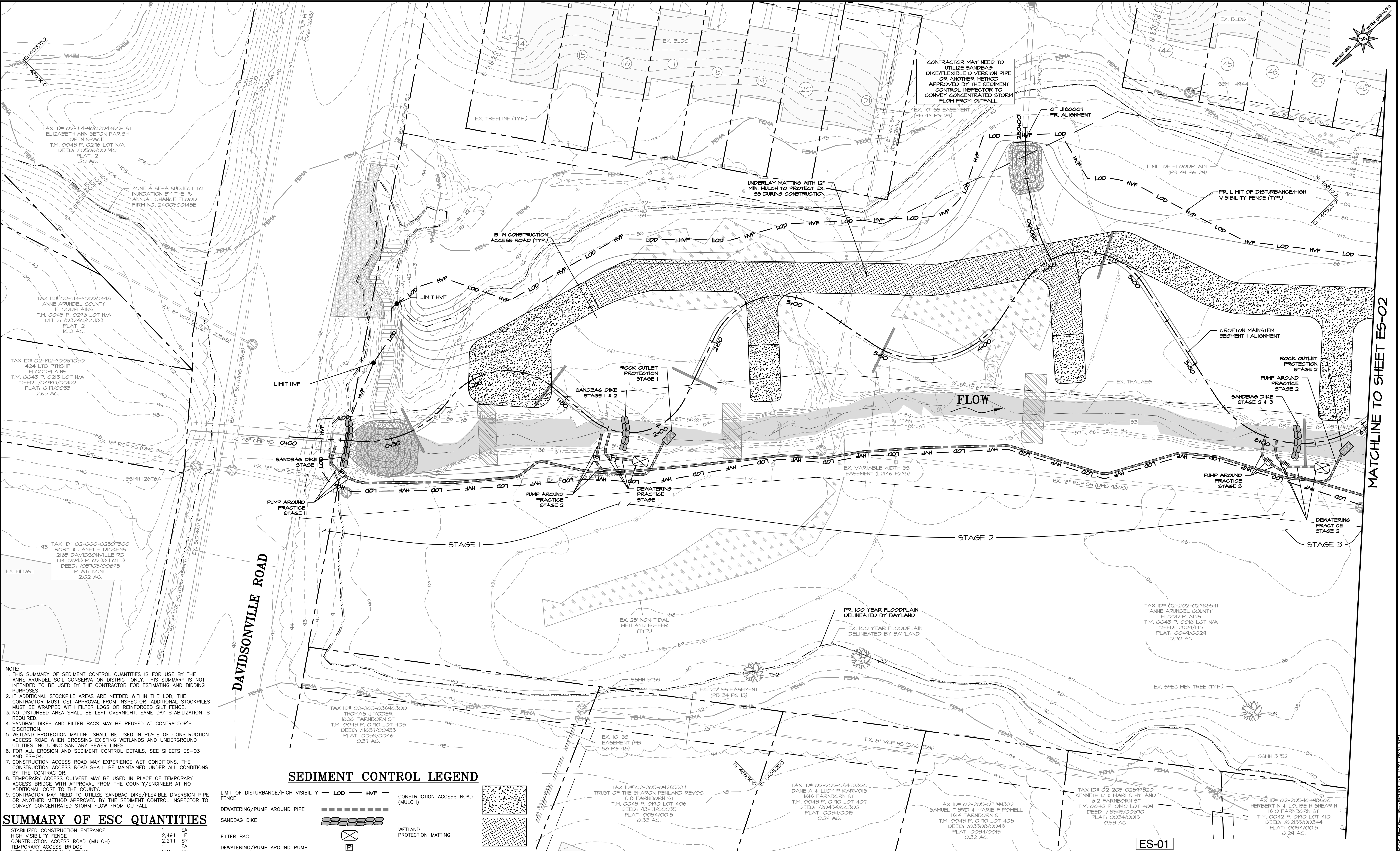
CS-03	
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	DRAWN BY: MKS 5/24/23
	CHECKED BY: SMC/GMS 5/24/23
	SHEET NO. 15 OF 25
	PROJECT NO. B556900
	CONTRACT NO. B556903

**LPAX CROFTON GOLF  
STREAM RESTORATION  
SEGMENT 1  
CROSS SECTIONS**









- NOTE:
1. THIS SUMMARY OF SEDIMENT CONTROL QUANTITIES IS FOR USE BY THE ANNE ARUNDEL SOIL CONSERVATION DISTRICT ONLY. THIS SUMMARY IS NOT INTENDED TO BE USED BY THE CONTRACTOR FOR ESTIMATING AND BIDDING PURPOSES.
  2. IF ADDITIONAL STOCKPILE AREAS ARE NEEDED WITHIN THE LOD, THE CONTRACTOR MUST GET APPROVAL FROM INSPECTOR. ADDITIONAL STOCKPILES MUST BE WRAPPED WITH FILTER LOGS OR REINFORCED SILT FENCE.
  3. NO DISTURBED AREA SHALL BE LEFT OVERNIGHT. SAME DAY STABILIZATION IS REQUIRED.
  4. SANDBAG DIKES AND FILTER BAGS MAY BE REUSED AT CONTRACTOR'S DISCRETION.
  5. WETLAND PROTECTION MATTING SHALL BE USED IN PLACE OF CONSTRUCTION ACCESS ROAD WHEN CROSSING EXISTING WETLANDS AND UNDERGROUND UTILITIES INCLUDING SANITARY SEWER LINES.
  6. FOR ALL EROSION AND SEDIMENT CONTROL DETAILS, SEE SHEETS ES-03 AND ES-04.
  7. CONSTRUCTION ACCESS ROAD MAY EXPERIENCE WET CONDITIONS. THE CONSTRUCTION ACCESS ROAD SHALL BE MAINTAINED UNDER ALL CONDITIONS BY THE CONTRACTOR.
  8. TEMPORARY ACCESS CULVERT MAY BE USED IN PLACE OF TEMPORARY ACCESS BRIDGE WITH APPROVAL FROM THE COUNTY/ENGINEER AT NO ADDITIONAL COST TO THE COUNTY.
  9. CONTRACTOR MAY NEED TO UTILIZE SANDBAG DIKE/FLEXIBLE DIVERSION PIPE OR ANOTHER METHOD APPROVED BY THE SEDIMENT CONTROL INSPECTOR TO CONVEY CONCENTRATED STORM FLOW FROM OUTFALL.

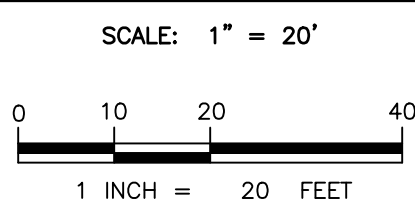
### SUMMARY OF ESC QUANTITIES

STABILIZED CONSTRUCTION ENTRANCE	1	EA
HIGH VISIBILITY FENCE	2,491	LF
CONSTRUCTION ACCESS ROAD (MULCH)	2,211	SY
TEMPORARY ACCESS BRIDGE	1	EA
WETLAND PROTECTION MATTING	561	SY
REINFORCED SILT FENCE	240	LF
MOUNTABLE BERMS	45	LF
STAGE 1		
PUMP AROUND PRACTICE/DEWATERING PIPE	204	LF
PUMP AROUND PRACTICE/DEWATERING PUMPS	2	EA
SANDBAG DIKES	23	LF
FILTER BAGS	1	EA
ROCK OUTLET PROTECTION	1	EA
STAGE 2		
PUMP AROUND PRACTICE/DEWATERING PIPE	415	LF
PUMP AROUND PRACTICE/DEWATERING PUMPS	2	EA
SANDBAG DIKES	17	LF
FILTER BAGS	1	EA
ROCK OUTLET PROTECTION	1	EA

### SEDIMENT CONTROL LEGEND

LIMIT OF DISTURBANCE/HIGH VISIBILITY FENCE	LOD	HVF	CONSTRUCTION ACCESS ROAD (MULCH)	
DEWATERING/PUMP AROUND PIPE			WETLAND PROTECTION MATTING	
SANDBAG DIKE				
FILTER BAG				
DEWATERING/PUMP AROUND PUMP				
ROCK OUTLET PROTECTION				

### EROSION AND SEDIMENT CONTROL PLAN



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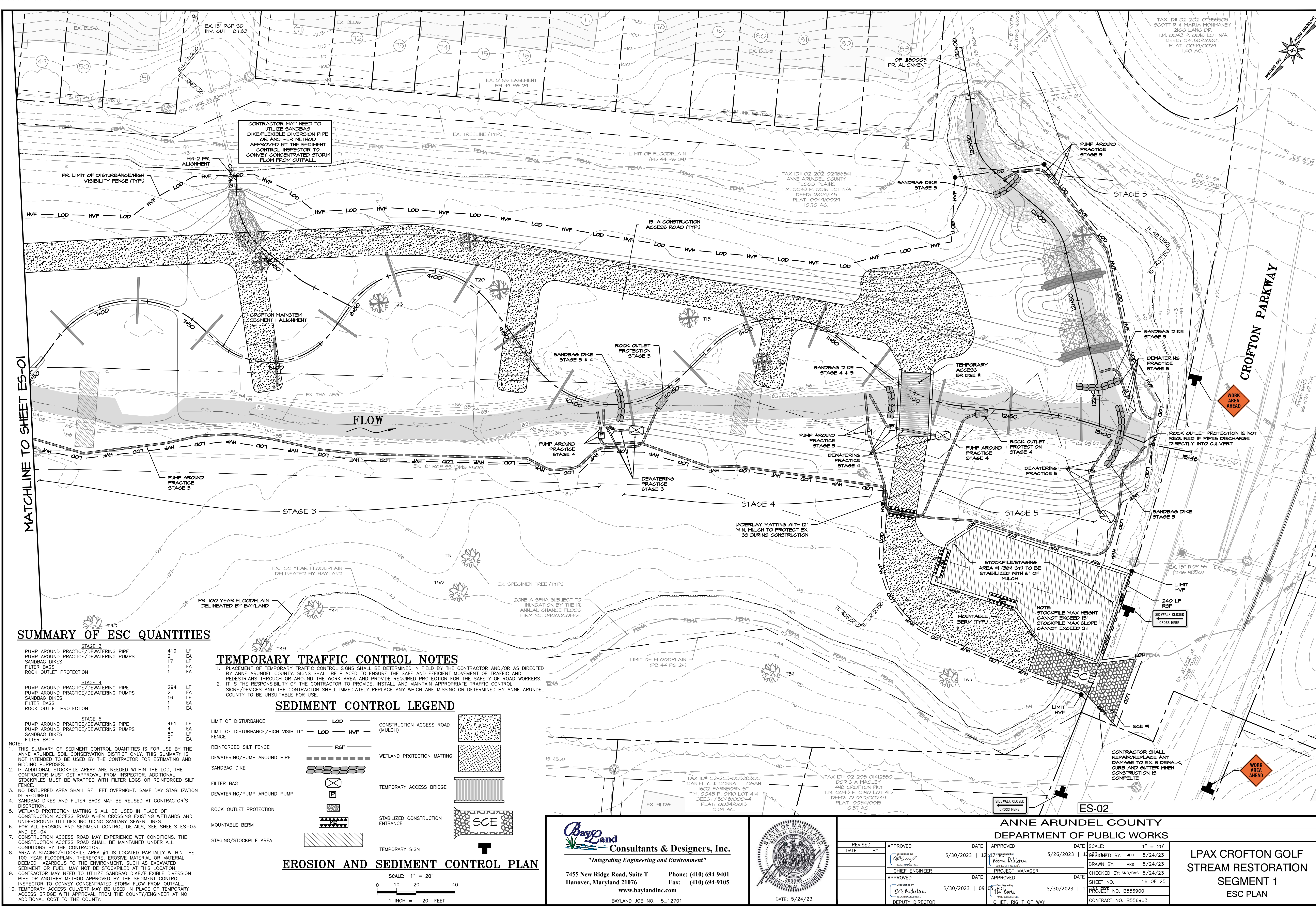


REVISED				APPROVED				DATE			
DATE	BY	APPROVED	DATE	DATE	BY	APPROVED	DATE	DATE	BY	APPROVED	DATE
			5/30/2023	12	17		5/26/2023	11	17		5/24/2023
		CHIEF ENGINEER				PROJECT MANAGER				CHECKED BY: SMC/GMS	5/24/23
		APPROVED	DATE	APPROVED	DATE	APPROVED	DATE			SHEET NO.	17 OF 25
			5/30/2023	09	05		5/30/2023	11	05	PROJECT NO. B556900	
		DEPUTY DIRECTOR				CHIEF, RIGHT OF WAY				CONTRACT NO. B556903	

**LPAX CROFTON GOLF  
STREAM RESTORATION  
SEGMENT 1  
ESC PLAN**

MATCHLINE TO SHEET ES-02





SUMMARY OF ESC QUANTITIES

STAGE 3			
PUMP AROUND PRACTICE/DEWATERING PIPE	419	LF	
PUMP AROUND PRACTICE/DEWATERING PUMPS	2	EA	
SANDBAG DIKES	17	LF	
FILTER BAGS	1	EA	
ROCK OUTLET PROTECTION	1	EA	
STAGE 4			
PUMP AROUND PRACTICE/DEWATERING PIPE	294	LF	
PUMP AROUND PRACTICE/DEWATERING PUMPS	2	EA	
SANDBAG DIKES	16	LF	
FILTER BAGS	1	EA	
ROCK OUTLET PROTECTION	1	EA	
STAGE 5			
PUMP AROUND PRACTICE/DEWATERING PIPE	461	LF	
PUMP AROUND PRACTICE/DEWATERING PUMPS	4	EA	
SANDBAG DIKES	89	LF	
FILTER BAGS	2	EA	

NOTE: 1. THIS SUMMARY OF SEDIMENT CONTROL QUANTITIES IS FOR USE BY THE ANNE ARUNDEL SOIL CONSERVATION DISTRICT ONLY. THIS SUMMARY IS NOT INTENDED TO BE USED BY THE CONTRACTOR FOR ESTIMATING AND BIDDING PURPOSES.

2. IF ADDITIONAL STOCKPILE AREAS ARE NEEDED WITHIN THE LOD, THE CONTRACTOR MUST GET APPROVAL FROM INSPECTOR. ADDITIONAL STOCKPILES MUST BE WRAPPED WITH FILTER LOGS OR REINFORCED SILT FENCE.

3. NO DISTURBED AREA SHALL BE LEFT OVERNIGHT. SAME DAY STABILIZATION IS REQUIRED.

4. SANDBAG DIKES AND FILTER BAGS MAY BE REUSED AT CONTRACTOR'S DISCRETION.

5. WETLAND PROTECTION MATTING SHALL BE USED IN PLACE OF CONSTRUCTION ACCESS ROAD WHEN CROSSING EXISTING WETLANDS AND UNDERGROUND UTILITIES INCLUDING SANITARY SEWER LINES.

6. FOR ALL EROSION AND SEDIMENT CONTROL DETAILS, SEE SHEETS ES-03 AND ES-04.

7. CONSTRUCTION ACCESS ROAD MAY EXPERIENCE WET CONDITIONS. THE CONSTRUCTION ACCESS ROAD SHALL BE MAINTAINED UNDER ALL CONDITIONS BY THE CONTRACTOR.

8. AREA A STAGING/STOCKPILE AREA #1 IS LOCATED PARTIALLY WITHIN THE 100-YEAR FLOODPLAIN. THEREFORE, EROSION, EROSION, OR MATERIAL DEEMED HAZARDOUS TO THE ENVIRONMENT, SUCH AS EXCAVATED SEDIMENT OR FUEL, MAY NOT BE STOCKPILED AT THIS LOCATION.

9. CONTRACTOR MAY NEED TO UTILIZE SANDBAG DIKE/FLEXIBLE DIVERSION PIPE OR ANOTHER METHOD APPROVED BY THE SEDIMENT CONTROL INSPECTOR TO CONVEY CONCENTRATED STORM FLOW FROM OUTFALL.

10. TEMPORARY ACCESS CULVERT MAY BE USED IN PLACE OF TEMPORARY ACCESS BRIDGE WITH APPROVAL FROM THE COUNTY/ENGINEER AT NO ADDITIONAL COST TO THE COUNTY.

TEMPORARY TRAFFIC CONTROL NOTES

1. PLACEMENT OF TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE DETERMINED IN FIELD BY THE CONTRACTOR AND/OR AS DIRECTED BY ANNE ARUNDEL COUNTY. SIGNS SHALL BE PLACED TO ENSURE THE SAFE AND EFFICIENT MOVEMENT OF TRAFFIC AND PEDESTRIANS THROUGH OR AROUND THE WORK AREA AND PROVIDE REQUIRED PROTECTION FOR THE SAFETY OF ROAD WORKERS.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE, INSTALL AND MAINTAIN APPROPRIATE TRAFFIC CONTROL SIGNS/DEVICES AND THE CONTRACTOR SHALL IMMEDIATELY REPLACE ANY WHICH ARE MISSING OR DETERMINED BY ANNE ARUNDEL COUNTY TO BE UNSUITABLE FOR USE.

SEDIMENT CONTROL LEGEND

LIMIT OF DISTURBANCE	LOD	CONSTRUCTION ACCESS ROAD (MULCH)
LIMIT OF DISTURBANCE/HIGH VISIBILITY FENCE	LOD HVF	
REINFORCED SILT FENCE	RSF	
DEWATERING/PUMP AROUND PIPE		WETLAND PROTECTION MATTING
SANDBAG DIKE		
FILTER BAG		TEMPORARY ACCESS BRIDGE
DEWATERING/PUMP AROUND PUMP		
ROCK OUTLET PROTECTION		STABILIZED CONSTRUCTION ENTRANCE
MOUNTABLE BERM		
STAGING/STOCKPILE AREA		TEMPORARY SIGN

EROSION AND SEDIMENT CONTROL PLAN



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Fax: (410) 694-9105

BAYLAND JOB NO. 5\_12701

DANIEL C. & DONNA L. LOGAN  
1602 FARBORN ST  
T.M. 0043 P. 0190 LOT 414  
DEED: 15018/00044  
PLAT: 0034/0015  
0.24 AC.

DATE: 5/24/23

REVISED		APPROVED		DATE		APPROVED		DATE		SCALE:	
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		CHIEF ENGINEER				PROJECT MANAGER				CHECKED BY: SMG/CMS	
										SHEET NO. 18 OF 25	
		APPROVED		DATE		APPROVED		DATE		PROJECT NO. B556900	
		DEPUTY DIRECTOR				CHIEF, RIGHT OF WAY				CONTRACT NO. B556903	

**LPX CROFTON GOLF STREAM RESTORATION**

**SEGMENT 1**

**ESC PLAN**



ANNE ARUNDEL COUNTY STANDARD SCD NOTES FOR STABILIZATION FOR STREAM RESTORATION ACTIVITY

- TEMPORARY STABILIZATION NOTES:
- TEMPORARY STABILIZATION FOR ANY DISTURBED AREAS ON THE FLOODPLAIN AND TERRACES ADJACENT TO THE RESTORED STREAM CHANNEL SHALL BE CONSIDERED ACHIEVED USING ONE OF THE FOLLOWING MEASURES.
  - THE DISTURBED AREA IS UNIFORMLY COVERED WITH 2 TO 4 INCHES OF WOOD CHIPS.
  - THE DISTURBED AREA HAS BEEN SEEDED WITH ANNUAL RYE GRASS FOLLOWING THE TEMPORARY SEEDING APPLICATION PERIODS FOUND UNDER THE ANNE ARUNDEL SOIL CONSERVATION DISTRICT'S (AASCD) VEGETATIVE ESTABLISHMENT SPECIFICATION OR 2011 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. NO SOIL TEST, LIME, OR FERTILIZER WILL BE REQUIRED.
- PERMANENT STABILIZATION NOTES:
- PERMANENT STABILIZATION FOR CONSTRUCTED STREAM BANKS GREATER THAN 6 INCHES SHALL BE CONSIDERED ACHIEVED WHEN ALL STREAM BANKS ARE SEEDED (NATIVE SEED MIX) AND LINED WITH A FULLY BIODEGRADABLE STABILIZATION MATTING WITH APPROPRIATE STRENGTH PROPERTIES DEPENDENT ON LOCAL SHEAR STRESS CONDITIONS.
  - PERMANENT STABILIZATION FOR DISTURBED FLOODPLAIN AND TERRACES ADJACENT TO THE RESTORED STREAM CHANNEL SHALL BE CONSIDERED ACHIEVED USING ONE OF THE FOLLOWING MEASURES:
    - THE DISTURBED AREA IS COVERED WITH 2 TO 4 INCHES OF COMPOST (APPLIED OVER ANY WOOD CHIPS USED FOR TEMPORARY STABILIZATION) AND THE NATIVE PLANTING PLAN (INCLUDING PERMANENT SEEDING) HAS BEEN IMPLEMENTED.
    - THE DISTURBED AREA IS COVERED WITH 2 TO 4 INCHES OF WOOD CHIPS TRACKED INTO SOIL AND THE NATIVE PLANTING PLAN (INCLUDING PERMANENT SEEDING) HAS BEEN IMPLEMENTED.
    - THE DISTURBED AREA IS COVERED WITH 2 TO 4 INCHES OF TOPSOIL (FURNISHED OR SALVAGED) AND FULLY BIODEGRADABLE STABILIZATION MATTING INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND A NATIVE PLANTING PLAN (INCLUDING PERMANENT SEEDING) HAS BEEN IMPLEMENTED, REGARDLESS OF SOIL TREATMENT.
    - THE DISTURBED AREAS SHALL RECEIVE HYDROSEEDING OR FLEXIBLE GROWTH MEDIUM (FGM) AFTER THE ESTABLISHMENT OF FINAL GRADES AND MICROTOPOGRAPHY (IF APPLICABLE) IN ACCORDANCE WITH THE PROJECT CONSTRUCTION DETAILS OR LANDSCAPING PLANS.
    - THE DISTURBED AREA HAS ADEQUATE VEGETATIVE ESTABLISHMENT WITH 95% GROUND COVER.

ANNE ARUNDEL COUNTY STANDARD SCD NOTES FOR STABILIZATION FOR SPSC PROJECTS

- TEMPORARY STABILIZATION NOTES (INCLUDE ONE OF THE FOLLOWING):
- TEMPORARY STABILIZATION FOR ANY AREA OF EARTH DISTURBANCE AROUND THE POOLS AND RIFLE ZONES OF A SPSC (E.G., STEP POOL STORM CONVEYANCE SYSTEM) SHALL BE CONSIDERED ACHIEVED WHEN UNIFORMLY COVERING THE AREA WITH 2 TO 4 INCHES OF WOOD CHIPS. ANNUAL RYE MAY BE UTILIZED FOR THE TEMPORARY SEEDING APPLICATION PERIOD FOUND UNDER THE ANNE ARUNDEL SOIL CONSERVATION DISTRICT'S (AASCD) VEGETATIVE ESTABLISHMENT SPECIFICATION OR 2011 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- PERMANENT STABILIZATION NOTES (INCLUDE ONE OF THE FOLLOWING):
- PERMANENT STABILIZATION FOR AN AREA OF EARTH DISTURBANCE OF A SPSC SHALL BE CONSIDERED ACHIEVED WHEN THE AREA IS COVERED WITH 2 TO 4 INCHES OF COMPOST (APPLIED OVER ANY WOOD CHIPS USED FOR TEMPORARY STABILIZATION) OR 2 TO 4 INCHES OF WOOD CHIPS TRACKED INTO SOIL AND A (NATIVE PLANTS) PLANTING PLAN HAS BEEN IMPLEMENTED, REGARDLESS OF SOIL TREATMENT.
  - PERMANENT STABILIZATION FOR AN AREA OF EARTH DISTURBANCE OF A SPSC SHALL BE CONSIDERED ACHIEVED WHEN THE BANKS AND FLOODPLAIN ARE COVERED WITH FULLY BIODEGRADABLE STABILIZATION MATTING INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND A (NATIVE PLANTS) PLANTING PLAN HAS BEEN IMPLEMENTED.
  - ALL DISTURBED AREAS SHALL RECEIVE HYDROSEEDING OR FLEXIBLE GROWTH MEDIUM (FGM) AFTER THE ESTABLISHMENT OF FINAL GRADES AND MICROTOPOGRAPHY (IF APPLICABLE) IN ACCORDANCE WITH THE PROJECT LANDSCAPING PLANS.

- NOTES:
- FOR TEMPORARY AND PERMANENT SEED MIXES SEE PLANTING DETAILS SHEET LS-03.
  - PERMANENT STABILIZATION FOR SEGMENT 1 SHALL CONSIST OF 4 INCHES OF TOPSOIL.
  - FOR THE ENTIRE PROJECT, ANY PROPOSED GRADES STEEPER THAN 3:1 AND/OR WHERE DIRECTED BY THE COUNTY MUST BE STABILIZED WITH 4 INCHES OF TOPSOIL WITH BIODEGRADABLE STABILIZATION MATTING.

BEST MANAGEMENT PRACTICES FOR WORKING IN NON TIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS AND 100 YEAR FLOODPLAINS

- NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NON TIDAL WETLANDS, NON TIDAL WETLAND BUFFERS, WATERWAYS OR THE 100-YEAR FLOODPLAIN.
- PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NON TIDAL WETLANDS, NON TIDAL WETLAND BUFFERS, WATERWAYS OR THE 100 YEAR FLOODPLAIN.
- DO NOT USE EXCAVATED MATERIAL AS BACK FILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACK FILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
- PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NON TIDAL WETLANDS, NON TIDAL WETLAND BUFFERS, OR WATERWAYS OR THE 100 YEAR FLOOD PLAIN.
- REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NON TIDAL WETLANDS, NON TIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100 YEAR FLOOD PLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
- RECTIFY ANY NON TIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS OR 100 YEAR FLOOD PLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
- ALL STABILIZATION IN THE NON TIDAL WETLAND AND NON TIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (LOLIUM MULTIFLORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM SP.), OATS (UNIOIA 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 NON TIDAL 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.
- 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 1 WATERS.
- STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
- CULVERTS SHALL BE CONSTRUCTED AND ANY RIP RAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

CARE OF WATER DURING CONSTRUCTION

- CLEAR WATER DIVERSIONS FROM POINT SOURCES MAY BE OMITTED IF NO BASE FLOW IS PRESENT.
- BECAUSE OF SEASONAL VARIATIONS IN FLOW, THE SIZE OF PUMP, AND THE SIZE AND TYPE OF PIPING NECESSARY TO CONVEY CLEAR WATER FOR ANY PUMPED CLEAR WATER DIVERSIONS, SHALL BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE SEDIMENT CONTROL INSPECTOR. CARE SHOULD BE TAKEN BY THE CONTRACTOR AS TO NOT OVER OR UNDERSIZE THE PUMP/PIPING NECESSARY TO CONVEY ANY BASE FLOW.
- CLEAR WATER DIVERSION AND DEWATERING PRACTICES INCLUDING ALL ASSOCIATED PIPES, PUMPS AND SEDIMENT FILTRATION DEVICES SHALL BE FIELD LOCATED BY THE CONTRACTOR AND ARE SHOWN ON THE PLANS TO ILLUSTRATE POTENTIAL ALIGNMENTS AND PLACEMENT.
- CLEAR WATER DIVERSION AND DEWATERING PRACTICES INCLUDING ALL ASSOCIATED PIPES, PUMPS AND SEDIMENT FILTRATION DEVICES MAY BE RELOCATED WITHIN THE LIMIT OF DISTURBANCE TO ACCOMMODATE CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST.
- THE CONTRACTOR SHALL SUFFICIENTLY DEWATER THE WORK AREA BEFORE COMMENCING ANY GRADING OPERATIONS. ADDITIONAL SUMP PITS, AT NO ADDITIONAL COST, MAY BE NECESSARY AT LOCATIONS WHERE GROUNDWATER IS INFILTRATING THE WORK AREA.
- DEWATERING OF THE WORK AREA MAY REQUIRE ADDITIONAL TREATMENT BEYOND AN APPROVED DEWATERING PRACTICE TO REDUCE TURBIDITY IN THE DISCHARGE TO RECEIVING WATERS.
- ANY FUEL SHALL BE STORED ABOVE THE 100-YR FLOOD ELEVATION.
- THE CONTRACTOR SHALL ENSURE THAT ALL SEDIMENT CONTROLS ARE IN WORKING CONDITION AT THE END OF EACH WORKING DAY TO PREVENT SEDIMENT LADEN MATERIAL FROM DISCHARGING FROM THE WORK AREA.

EXCAVATION NOTES

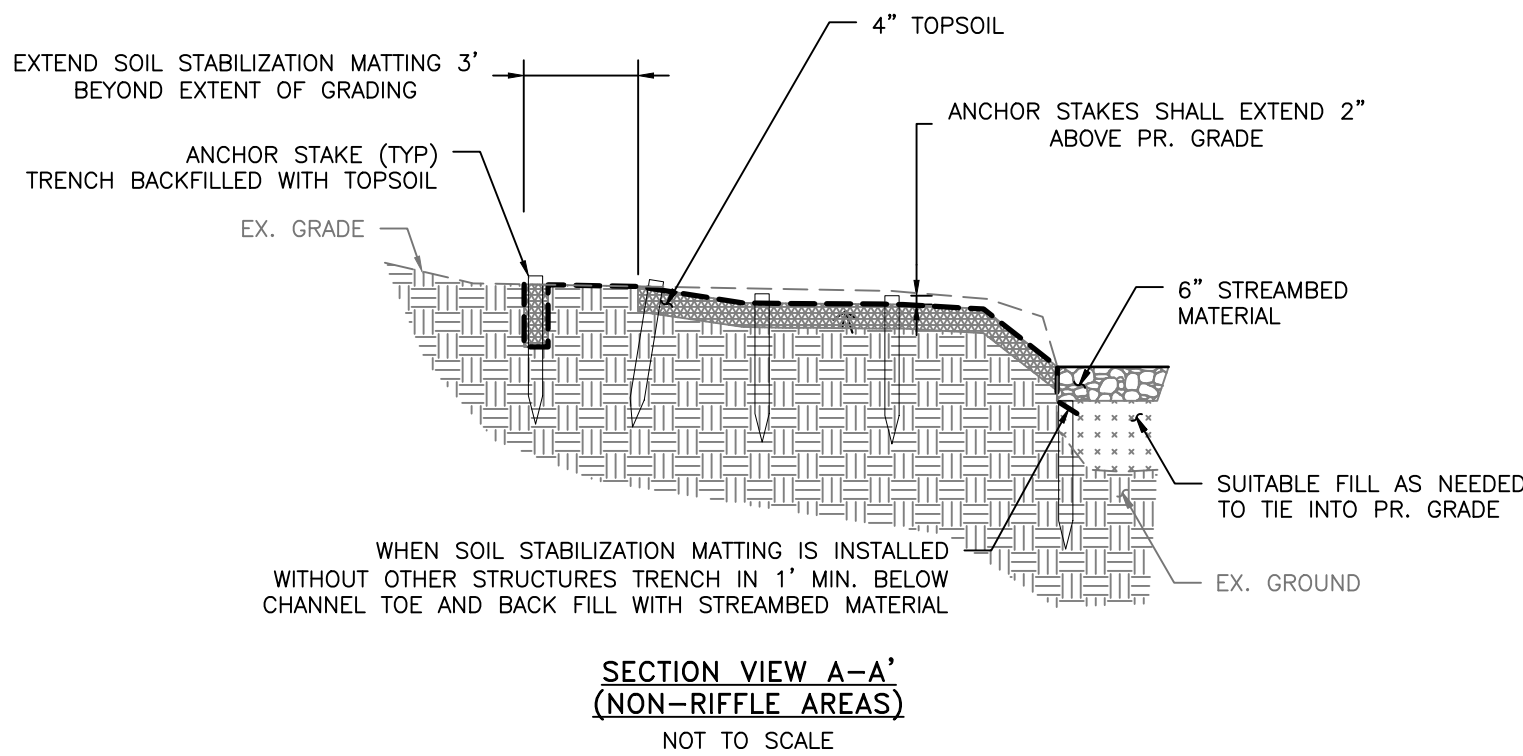
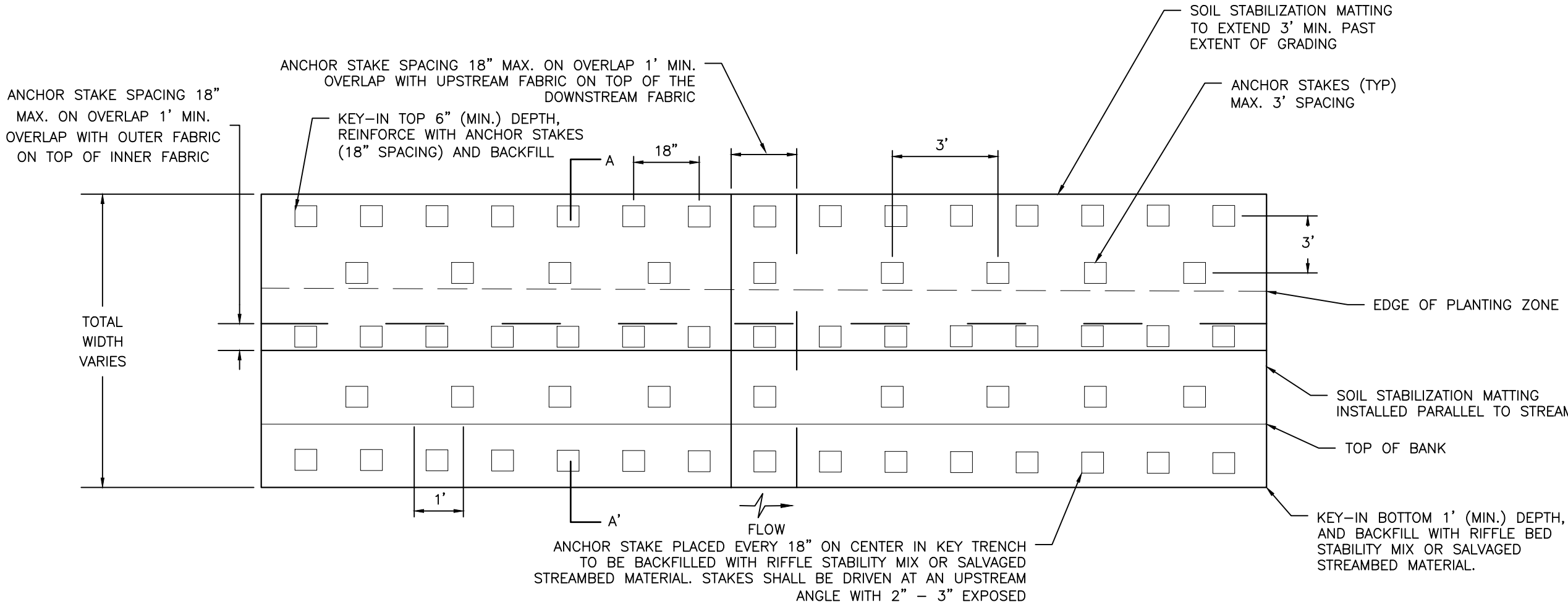
- AT A MINIMUM ANY SATURATED SEDIMENT TO BE REMOVED SHALL BE PARTIALLY DEWATERED ON-SITE BEFORE ANY TRANSPORT ACTIVITY.
- EXCAVATED STREAM BED MATERIAL SHALL BE SAVED AND REUSED WHERE APPROPRIATE. SALVAGED STREAMBED MATERIAL MUST BE APPROVED BY THE ENGINEER.
- UNUSABLE EXCAVATED STREAM BED MATERIAL SHALL BE TRANSPORTED TO A DISPOSAL SITE IN LINED TRUCKS.
- THE DISPOSAL SITE SHALL HAVE AN ACTIVE GRADING PERMIT.
- CONTRACTOR SHALL KEEP STREET, PARKING LOTS AND OTHER PAVED AREAS FREE OF ANY EXCAVATED MATERIAL. IF NECESSARY, CONTRACTOR MAY BE REQUIRED TO PERFORM ROUTINE STREET SWEEPING AND/OR STREET CLEANING.

STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

- A. 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 LOOSENEED, 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.
    - 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 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.
      - SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
      - SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE 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 LOOSENEED 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 WHERE WET 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 FRABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.
- B. 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 SUPPLIES 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, 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 CHINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN DIAMETER.
    - 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
- 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 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.
  - 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)
- 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 MODIFICATION OF STANDARDS, SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS 6B: IRREGULARITIES IN THE SURFACE SHALL BE ALLOWED WITHIN AREAS DESIGNATED FOR FLOODPLAIN MICROTOPOGRAPHY.

FOR SEEDING AND MULCHING REQUIREMENTS, SEE SHEET LS-03.



ANCHOR STAKE DETAILS

NOT TO SCALE

ES-03

- NOTES:
- SOIL STABILIZATION MATTING SHALL BE A BIODEGRADABLE WOVEN MATTING OF COIR MADE FROM HIGH STRENGTH COCONUT FIBER.
  - SOIL STABILIZATION MATTING SHALL BE A MINIMUM OF 0.35 INCHES THICK, WITH A MINIMUM WEIGHT OF 20.6 OUNCES PER SQUARE YARD.
  - AREAS TO BE COVERED WITH SOIL STABILIZATION MATTING SHALL BE RAKED TO GRADE, AND ANY ROCKS OR OTHER DEBRIS LARGER THAN 2 IN. SHALL BE REMOVED. SEEDING SHALL BE APPLIED PER THE MIXES AND RATES SPECIFIED ON SHEETS LS-03 THROUGH LS-04, AND STRAW MULCH SHALL BE PLACED IMMEDIATELY AFTER SEEDING.

PLAN VIEW  
NOT TO SCALE



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DATE: 5/24/23

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS					
REVISED		APPROVED		DATE	
DATE	BY	DATE	BY	DATE	BY
		5/30/2023	12:17 PM	5/26/2023	11:05 AM
		CHIEF ENGINEER		PROJECT MANAGER	
		APPROVED		APPROVED	
		5/30/2023	09:05 AM	5/30/2023	11:05 AM
		DEPUTY DIRECTOR		CHIEF, RIGHT OF WAY	

LPAX CROFTON GOLF  
STREAM RESTORATION  
SEGMENT 1  
EROSION & SEDIMENT CONTROL  
DETAILS AND NOTES







SEQUENCE OF CONSTRUCTION

NOTES FOR ALL PHASES OF CONSTRUCTION:

- STREAM CLOSURE PERIOD FOR USE I STREAMS IN MARYLAND IS MARCH 1 – JUNE 15.
- NOTIFY THE DEPARTMENT OF INSPECTIONS AND PERMITS (410-222-7780) AT LEAST 48 HOURS BEFORE COMMENCING WORK. WORK MAY NOT COMMENCE UNTIL THE PERMITTEE OR THE RESPONSIBLE PERSONNEL HAVE MET ON SITE WITH THE EROSION AND SEDIMENT CONTROL INSPECTOR TO REVIEW THE APPROVED PLANS.
- LOD AND NON-TIDAL WETLANDS FOR ALL PHASES AND STAGES MUST BE FIELD MARKED PRIOR TO CLEARING OF TREES AND/OR OTHER LAND DISTURBANCES.
- CLEAR MINIMUM AREA NECESSARY TO INSTALL SEDIMENT CONTROLS AND THE STAGING/LAYDOWN AREAS. MECHANICAL STABILIZATION WILL BE REQUIRED ON THE STAGING/LAYDOWN AREAS AND HEAVY USE AREAS, INCLUDING TRAVEL LANES. WOOD CHIPS MAY BE UTILIZED WITH APPROVAL FROM INSPECTIONS AND PERMITS.
- INSTALL SEDIMENT CONTROL DEVICES ACCORDING TO THE STAGING OPERATIONS. ONCE SEDIMENT CONTROLS HAVE BEEN INSTALLED, CONTACT THE INSPECTOR FOR APPROVAL OF SEDIMENT CONTROL INSTALLATION PRIOR TO COMMENCING WORK; INSPECTIONS AND PERMITS MAY REQUIRE THAT AN INSPECTION AND CERTIFICATION OF THE INSTALLATION OF SEDIMENT CONTROL ALSO BE PERFORMED BY A DESIGN PROFESSIONAL PRIOR TO CONSTRUCTION COMMENCING.
- WORK SHALL BE LIMITED TO AREAS THAT CAN BE COMPLETED AND STABILIZED AT THE END OF EACH WORKING DAY. NO UNSTABILIZED AREAS SHALL BE LEFT OVERNIGHT.
- THE SEQUENCE IS INTENDED TO CONVEY INSTALLATION OF SEDIMENT CONTROLS AND GENERAL INSTRUCTION TO THE CONTRACTOR, THE SEQUENCE MAY BE ADJUSTED IN THE FIELD WITH THE SEDIMENT CONTROL INSPECTOR'S PERMISSION TO ACCOMMODATE CONTRACTOR'S MEANS AND METHODS.
- EXISTING TOPSOIL, SPOIL MATERIAL, STREAMBED MATERIAL, AND ROCK SHALL BE SALVAGED AND STOCKPILED SEPARATELY ON SITE. ALL UNSUITABLE MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR.
- WETLAND PROTECTION MATTING WITH 12 INCHES OF MULCH SHALL BE UTILIZED TO PROVIDE ACCESS ANYWHERE THE CONSTRUCTION ACCESS ROAD CROSSES OVER WETLANDS DELINEATED ON THE PLANS AS WELL AS ADDITIONAL DELINEATED WETLANDS OUTSIDE OF THE ACCESS ROAD WHERE CONSTRUCTION TRAFFIC WILL BE PRESENT OR OVERTOP OF AND WITHIN 5' OF UNDERGROUND UTILITIES.
- STOCKPILE AREA #1 IS LOCATED PARTIALLY WITHIN THE 100-YEAR FLOODPLAIN. EROSION MATERIAL OR MATERIAL DEEMED HAZARDOUS TO THE ENVIRONMENT, SUCH AS EXCAVATED SEDIMENT OR FUEL, MAY NOT BE STOCKPILED WITHIN THE 100-YEAR FLOODPLAIN.
- IF ADDITIONAL STOCKPILE AREAS ARE NEEDED WITHIN THE EXISTING LIMIT OF DISTURBANCE, THE CONTRACTOR MUST GET APPROVAL FROM THE INSPECTOR AND WRAP THE STOCKPILES WITH FILTER LOGS OR REINFORCED SILT FENCE.
- ONCE EACH AREA IS 95% STABILIZED AND WITH SEDIMENT CONTROL INSPECTOR'S APPROVAL, REMOVE ANY REMAINING EROSION AND SEDIMENT CONTROLS AND STABILIZE ANY AREAS DISTURBED WITH NATIVE SEED MIX. IMMEDIATELY STABILIZE ANY DISTURBED AREAS THAT RESULT FROM THE REMOVAL OF THE EROSION AND SEDIMENT CONTROLS.
- PUMP AROUND PRACTICES CONSIST OF PUMPED CLEAR WATER DIVERSION SETUPS INCLUDING SANDBAG DIKES, HOSES, AND ROCK OUTLET PROTECTION. DEWATERING PRACTICES CONSIST OF DIRTY WATER SETUPS INCLUDING SANDBAG DIKES, HOSES, FILTER BAGS, AND IF REQUIRED, SLUMP PITS, AND ANY ADDITIONAL ITEMS NECESSARY TO PERFORM DEWATERING OPERATIONS AS SHOWN ON THE PLANS.
- PUMP AROUND AND DEWATERING PRACTICES THAT ARE SHOWN ON THE CONTRACT DRAWINGS SHALL BE FIELD LOCATED BY THE CONTRACTOR AND ARE SHOWN ON THE CONTRACT DRAWINGS TO ILLUSTRATE POTENTIAL ALIGNMENT AND PLACEMENT ONLY. FLOW MUST BE DIVERTED AROUND THE WORK AREA AND THE WORK AREA MUST BE ISOLATED FROM STREAM FLOW.
- STAGES MAY BE COMBINED INTO LONGER PUMP AROUND PRACTICE SETUPS WITH SEDIMENT CONTROL INSPECTOR APPROVAL.

SEGMENT 1 MAINSTEM FROM DAVIDSONVILLE ROAD TO CROFTON PARKWAY. PLAN SHEETS ES-01 AND ES-02	APPROXIMATE DAYS
1.THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF INSPECTIONS AND PERMITS (410-222-7780) AT LEAST 48 HOURS BEFORE COMMENCING WORK. WORK MAY NOT COMMENCE UNTIL THE PERMITTEE OR THE RESPONSIBLE PERSONNEL HAVE MET ON SITE WITH THE SEDIMENT CONTROL INSPECTOR TO REVIEW THE APPROVED PLANS.	1 DAY
2.DEMARCAT E LOD AND NON-TIDAL WETLANDS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS FOR AREA A. THESE MUST BE FIELD MARKED PRIOR TO CLEARING OF TREES AND/OR OTHER LAND DISTURBANCES.	3 DAYS
3.INSTALL HIGH VISIBILITY FENCING AND TREE PROTECTION MEASURES IN ACCORDANCE WITH THE APPROVED PLANS FOR AREA A.	3 DAYS
4.CLEAR AND GRUB MINIMUM AREA REQUIRED TO INSTALL SCE #1. STOCKPILE/STAGING AREA #1 INCLUDING MOUNTABLE BERMS AND ASSOCIATED PERIMETER SEDIMENT CONTROLS INCLUDING REINFORCED SILT FENCE. CLEAR AND GRUB MINIMUM AREA REQUIRED TO INSTALL THE ENTIRE CONSTRUCTION ACCESS ROAD FOR AREA A INCLUDING MOUNTABLE BERMS AND TEMPORARY ACCESS BRIDGE #1.	3 DAYS
5.INSTALL SCE #1. STOCKPILE/STAGING AREA #1 INCLUDING MOUNTABLE BERMS AND ASSOCIATED PERIMETER SEDIMENT CONTROLS INCLUDING REINFORCED SILT FENCE. STOCKPILE/STAGING AREA #1 IS PARTIALLY WITHIN THE 100 YEAR FLOODPLAIN BOUNDARY. THEREFORE EROSION MATERIAL OR MATERIAL DEEMED HAZARDOUS TO THE ENVIRONMENT SUCH AS EXCAVATED SEDIMENT OR FUEL, MAY NOT BE STOCKPILED AT THIS LOCATION. INSTALL THE ENTIRE CONSTRUCTION ACCESS ROAD FOR AREA A INCLUDING MOUNTABLE BERMS AND TEMPORARY ACCESS BRIDGE #1.	3 DAYS
	SUBTOTAL
STAGE 1 (MAINSTEM FROM STA 0+00 TO APPROX. STA 1+80; PLAN SHEET ES-01)	13 DAYS

1.CLEAR AND GRUB REMAINING AREA NECESSARY TO COMPLETE PROPOSED WORK WITHIN STAGE 1 AND INSTALL REMAINING STAGE 1 SEDIMENT CONTROL DEVICES INCLUDING PUMP AROUND AND DEWATERING PIPES AND PUMPS, SANDBAG DIKES, FILTER BAG, AND ROCK OUTLET PROTECTION. CONTRACTOR MAY ELECT TO INSTALL ADDITIONAL CLEAR WATER DIVERSION PRACTICES AT NO ADDITIONAL COST. USE AND RELOCATE AS NEEDED.	1 DAY
2.ONCE APPROVAL HAS BEEN OBTAINED FROM THE SEDIMENT CONTROL INSPECTOR, BEGIN WORK FOR STAGE 1. WORKING IN THE MAINSTEM FROM STA 0+00 TO APPROX. STA 1+80, FILL/GRADE THE EXISTING STREAM CHANNEL AND EXCAVATE THE NEW CHANNEL AS SHOWN ON THE PLANS. THE NEW CHANNEL SHALL BE CUT PRIOR TO FILLING THE OLD CHANNEL TO MAINTAIN STREAMFLOW DURING A PRECIPITATION EVENT. INSTALL PROPOSED STRUCTURES IN ACCORDANCE WITH THE PLANS. EXCAVATE THE FLOODPLAIN IN ACCORDANCE WITH THE PLANS AND REMOVE THE CONSTRUCTION ACCESS ROAD AS NEEDED TO COMPLETE PROPOSED WORK. IMMEDIATELY STABILIZE ANY DISTURBED AREA.	5 DAYS
3.STABILIZE ANY REMAINING DISTURBED AREA. WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, SHUT DOWN AND REMOVE/RELOCATE STAGE 1 PUMP AROUND AND DEWATERING PRACTICES AS NECESSARY.	1 DAY
4.COMPLETE PERMANENT STABILIZATION AND INSTALL REMAINING PLANT MATERIAL AS SHOWN ON THE PLANTING PLAN.*	1 DAY
	STAGE 1 SUBTOTAL
STAGE 2 (MAINSTEM FROM APPROX. STA 1+80 TO APPROX. STA 6+15 AND OF-J180007; PLAN SHEET ES-01)	8 DAYS

1.CLEAR AND GRUB REMAINING AREA NECESSARY TO COMPLETE PROPOSED WORK WITHIN STAGE 2 AND INSTALL REMAINING SEDIMENT CONTROL DEVICES INCLUDING PUMP AROUND AND DEWATERING PIPES AND PUMPS, SANDBAG DIKES, FILTER BAG AND ROCK OUTLET PROTECTION. CONTRACTOR MAY ELECT TO INSTALL ADDITIONAL CLEAR WATER DIVERSION PRACTICES AT NO ADDITIONAL COST. USE AND RELOCATE AS NEEDED.	1 DAY
2.ONCE APPROVAL HAS BEEN OBTAINED FROM THE SEDIMENT CONTROL INSPECTOR, BEGIN WORK FOR STAGE 2. FROM APPROX. STA 1+80 TO APPROX. STA 6+15, FILL/GRADE THE EXISTING STREAM CHANNEL AND EXCAVATE THE NEW CHANNEL AS SHOWN ON THE PLANS. THE NEW CHANNEL SHALL BE CUT PRIOR TO FILLING THE OLD CHANNEL TO MAINTAIN STREAMFLOW DURING A PRECIPITATION EVENT. INSTALL PROPOSED STRUCTURES IN ACCORDANCE WITH THE PLANS. EXCAVATE THE FLOODPLAIN IN ACCORDANCE WITH THE PLANS AND REMOVE THE CONSTRUCTION ACCESS ROAD AS NEEDED TO COMPLETE PROPOSED WORK. COMPLETE PROPOSED WORK AT OUTFALL J180006 AS SHOWN ON THE PLANS. IMMEDIATELY STABILIZE ANY DISTURBED AREA.	15 DAYS
3.STABILIZE ANY REMAINING DISTURBED AREA. WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, SHUT DOWN AND REMOVE/RELOCATE STAGE 2 PUMP AROUND AND DEWATERING PRACTICES AS NECESSARY.	1 DAY
4.COMPLETE PERMANENT STABILIZATION AND INSTALL REMAINING PLANT MATERIAL AS SHOWN ON THE PLANTING PLAN.*	2 DAYS
	STAGE 2 SUBTOTAL
STAGE 3 (MAINSTEM FROM APPROX. STA 6+15 TO APPROX. STA 10+20 AND HW-2; PLAN SHEETS ES-01 AND ES-02)	19 DAYS

1.CLEAR AND GRUB REMAINING AREA NECESSARY TO COMPLETE PROPOSED WORK WITHIN STAGE 3 AND INSTALL REMAINING SEDIMENT CONTROL DEVICES INCLUDING PUMP AROUND AND DEWATERING PIPES AND PUMPS, SANDBAG DIKES, FILTER BAG AND ROCK OUTLET PROTECTION. CONTRACTOR MAY ELECT TO INSTALL ADDITIONAL CLEAR WATER DIVERSION PRACTICES AT NO ADDITIONAL COST. USE AND RELOCATE AS NEEDED.	1 DAY
2.ONCE APPROVAL HAS BEEN OBTAINED FROM THE SEDIMENT CONTROL INSPECTOR, BEGIN WORK FOR STAGE 3. WORKING IN THE MAINSTEM FROM APPROX. STA 6+15 TO APPROX. STA 10+20, FILL/GRADE THE EXISTING STREAM CHANNEL AND EXCAVATE THE NEW CHANNEL AS SHOWN ON THE PLANS. THE NEW CHANNEL SHALL BE CUT PRIOR TO FILLING THE OLD CHANNEL TO MAINTAIN STREAMFLOW DURING A PRECIPITATION EVENT. INSTALL PROPOSED STRUCTURES IN ACCORDANCE WITH THE PLANS. EXCAVATE THE FLOODPLAIN IN ACCORDANCE WITH THE PLANS AND REMOVE THE CONSTRUCTION ACCESS ROAD AS NEEDED TO COMPLETE PROPOSED WORK. COMPLETE PROPOSED WORK AT HW-2 AS SHOWN ON THE PLANS. IMMEDIATELY STABILIZE ANY DISTURBED AREA.	15 DAYS
3.STABILIZE ANY DISTURBED AREA. WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, SHUT DOWN AND REMOVE/RELOCATE STAGE 3 PUMP AROUND AND DEWATERING PRACTICES AS NECESSARY.	1 DAY
4.COMPLETE PERMANENT STABILIZATION AND INSTALL REMAINING PLANT MATERIAL AS SHOWN ON THE PLANTING PLAN.*	2 DAYS
	STAGE 3 SUBTOTAL
	19 DAYS

STAGE 4 (MAINSTEM FROM APPROX. STA 10+20 TO APPROX. STA 11+85; PLAN SHEET ES-02)	APPROXIMATE DAYS
1.CLEAR AND GRUB REMAINING AREA NECESSARY TO COMPLETE PROPOSED WORK WITHIN STAGE 4 AND INSTALL REMAINING SEDIMENT CONTROL DEVICES INCLUDING PUMP AROUND AND DEWATERING PIPES AND PUMPS, SANDBAG DIKES, FILTER BAG, AND ROCK OUTLET PROTECTION. CONTRACTOR MAY ELECT TO INSTALL ADDITIONAL CLEAR WATER DIVERSION PRACTICES AT NO ADDITIONAL COST. USE AND RELOCATE AS NEEDED.	1 DAY
2.ONCE APPROVAL HAS BEEN OBTAINED FROM THE SEDIMENT CONTROL INSPECTOR, BEGIN WORK FOR STAGE 4. WORKING IN THE MAINSTEM FROM APPROX. STA 10+20 TO APPROX. STA 11+85, FILL/GRADE THE EXISTING STREAM CHANNEL AND EXCAVATE THE NEW CHANNEL AS SHOWN ON THE PLANS. THE NEW CHANNEL SHALL BE CUT PRIOR TO FILLING THE OLD CHANNEL TO MAINTAIN STREAMFLOW DURING A PRECIPITATION EVENT. INSTALL PROPOSED STRUCTURES IN ACCORDANCE WITH THE PLANS. EXCAVATE THE FLOODPLAIN IN ACCORDANCE WITH THE PLANS AND REMOVE THE CONSTRUCTION ACCESS ROAD AS NEEDED TO COMPLETE PROPOSED WORK. IMMEDIATELY STABILIZE ANY DISTURBED AREA.	5 DAYS
3.STABILIZE ANY REMAINING DISTURBED AREA. WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, SHUT DOWN AND REMOVE/RELOCATE STAGE 4 PUMP AROUND AND DEWATERING PRACTICES AS NECESSARY.	1 DAY
4.COMPLETE PERMANENT STABILIZATION AND INSTALL REMAINING PLANT MATERIAL AS SHOWN ON THE PLANTING PLAN.*	2 DAYS
	STAGE 4 SUBTOTAL
STAGE 5 (MAINSTEM FROM APPROX. STA 11+85 TO CROFTON PARKWAY AND OUTFALL J180003; PLAN SHEET ES-02)	9 DAYS
1.CLEAR AND GRUB REMAINING AREA NECESSARY TO COMPLETE PROPOSED WORK WITHIN STAGE 5 AND INSTALL REMAINING SEDIMENT CONTROL DEVICES INCLUDING PUMP AROUND AND DEWATERING PIPES AND PUMPS, SANDBAG DIKES, FILTER BAG, AND ROCK OUTLET PROTECTION. CONTRACTOR MAY ELECT TO INSTALL ADDITIONAL CLEAR WATER DIVERSION PRACTICES AT NO ADDITIONAL COST. USE AND RELOCATE AS NEEDED.	1 DAY
2.ONCE APPROVAL HAS BEEN OBTAINED FROM THE SEDIMENT CONTROL INSPECTOR, BEGIN WORK FOR STAGE 5 FROM APPROX. STA 11+85 TO CROFTON PARKWAY, FILL/GRADE THE EXISTING STREAM CHANNEL AND EXCAVATE THE NEW CHANNEL AS SHOWN ON THE PLANS. THE NEW CHANNEL SHALL BE CUT PRIOR TO FILLING THE OLD CHANNEL TO MAINTAIN STREAMFLOW DURING A PRECIPITATION EVENT. INSTALL PROPOSED STRUCTURES IN ACCORDANCE WITH THE PLANS. EXCAVATE THE FLOODPLAIN IN ACCORDANCE WITH THE PLANS AND REMOVE THE CONSTRUCTION ACCESS ROAD AS NEEDED TO COMPLETE PROPOSED WORK. COMPLETE PROPOSED WORK AT OUTFALL J180003 AS SHOWN ON THE PLANS. IMMEDIATELY STABILIZE ANY DISTURBED AREA.	10 DAYS
3.STABILIZE ANY DISTURBED AREA. WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, SHUT DOWN AND REMOVE/RELOCATE STAGE 5 DEWATERING PRACTICE AS NECESSARY.	1 DAY
4.COMPLETE PERMANENT STABILIZATION AND INSTALL REMAINING PLANT MATERIAL AS SHOWN ON THE PLANTING PLAN.*	2 DAYS
5.ONCE AREA IS 95% STABILIZED AND WITH SEDIMENT CONTROL INSPECTOR APPROVAL, REMOVE ANY REMAINING EROSION AND SEDIMENT CONTROLS AND STABILIZE ANY DISTURBED AREAS.	2 DAYS
	STAGE 5 SUBTOTAL
*ALTERNATIVELY, WITH APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR, ALL PLANT MATERIAL CAN BE INSTALLED AFTER CONSTRUCTION IS COMPLETE USING ATV/LOW DISTURBANCE METHODS. ANY AREAS DISTURBED SHALL BE IMMEDIATELY STABILIZED.	16 DAYS

APPROXIMATE TOTAL
84 DAYS

ANNE ARUNDEL SOIL CONSERVATION DISTRICT DETAILS AND SPECIFICATIONS FOR 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.

B.SEEDED PREPARATION: AREA TO BE SEEDDED SHALL BE LOOSE AND FRIABLE TO A DEPTH OF AT LEAST 3-5 INCHES. THE TOP LAYER SHALL BE LOOSEENED 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.

C.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 SEEDDED 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.

E.SECURING STRAW MULCH: STRAW MULCH SHALL BE SECURED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE MOVEMENT BY WIND OR WATER. THE FOLLOWING METHODS ARE PERMITTED:

- i. 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.
- ii. 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.
- iii. 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.
- iv. LIGHTWEIGHT PLASTIC NETTING MAY BE USED TO SECURE MULCH. THE NETTING WILL BE STAPLED TO THE GROUND ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

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 ENDS TIGHTLY ABUTTING. 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 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.

ES-05

**Bayland Consultants & Designers, Inc.**  
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Fax: (410) 694-9105

BAYLAND JOB NO. 5\_12701

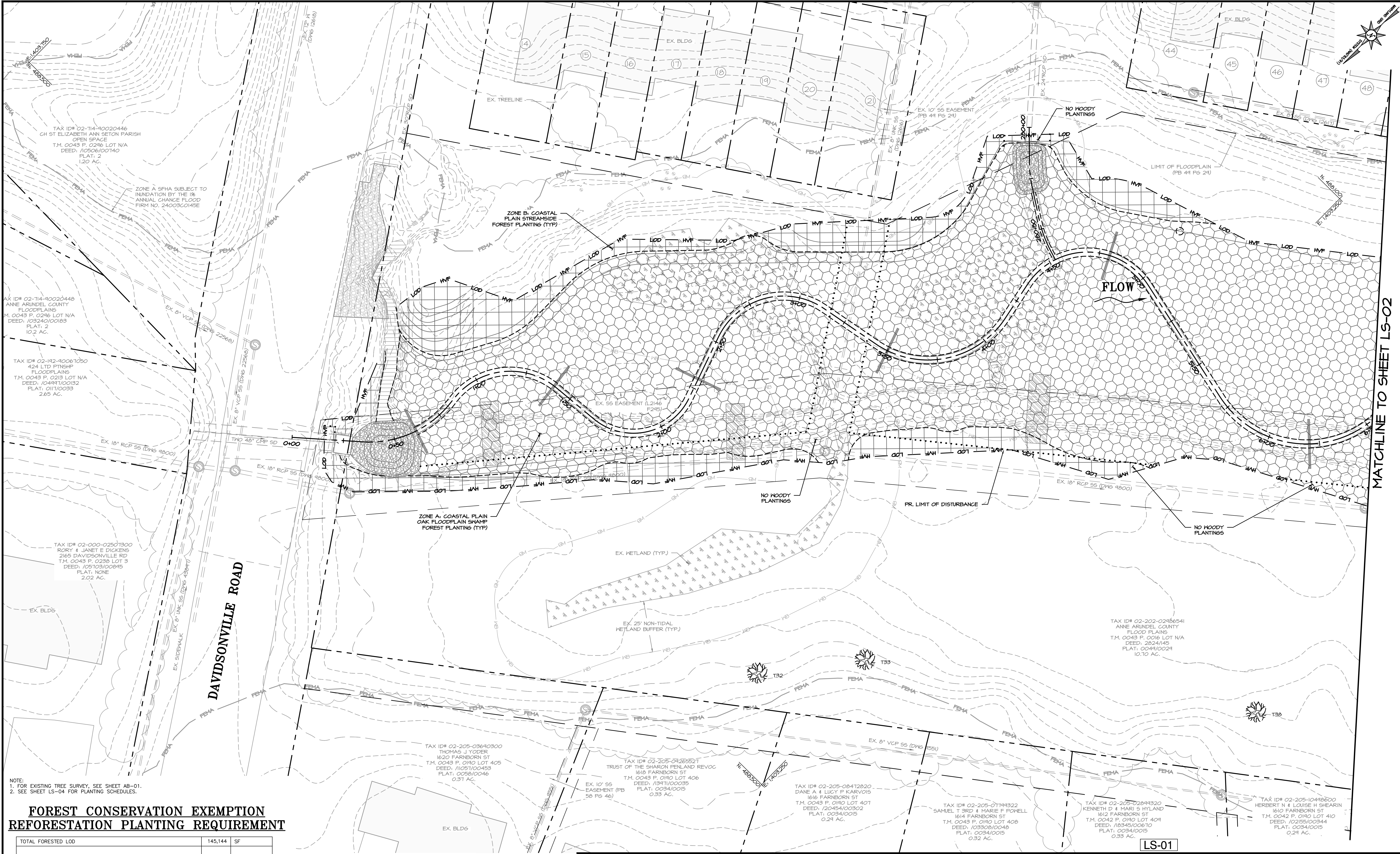
DATE: 5/24/23

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS				
REVISED	APPROVED	DATE	APPROVED	DATE
DATE	BY		DATE	
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	CHIEF ENGINEER			
	APPROVED	DATE	APPROVED	DATE
		5/30/2023	09:05 PM	5/30/2023
	DEPUTY DIRECTOR			
			CHIEF, RIGHT OF WAY	

SCALE:	AS SHOWN
DRAWN BY:	JWH 5/24/23
CHECKED BY:	SMC/GMS 5/24/23
SHEET NO.	21 OF 25
PROJECT NO.	B556900
CONTRACT NO.	B556903

LPAX CROFTON GOLF  
STREAM RESTORATION  
SEGMENT 1  
SEQUENCE OF  
CONSTRUCTION





NOTE:  
 1. FOR EXISTING TREE SURVEY, SEE SHEET AB-01.  
 2. SEE SHEET LS-04 FOR PLANTING SCHEDULES.

### FOREST CONSERVATION EXEMPTION REFORESTATION PLANTING REQUIREMENT

TOTAL FORESTED LOD	145,144	SF
<b>STAND F1</b>		
GROSS LOD WITHIN STAND	145,144	SF
DEDUCTION FOR STREAM CHANNEL W/O TREES	20,614	SF
FORESTED PUBLIC UTILITY AREA DEDUCTION	12,445	SF
NET LOD WITHIN STAND	112,085	SF
TREE DENSITY	207	TREES/ACRE
EQUIVALENT TREES REMOVED IN STAND	533	TREES
<b>TOTAL TREES REMOVED IN FOREST CONSERVATION EXEMPTION AREA</b>		
	533	TREES

### STREAM PLANTING KEY

ZONE A: COASTAL PLAIN OAK FLOODPLAIN SWAMP FOREST PLANTING

ZONE B: COASTAL PLAIN STREAMSIDE FOREST PLANTING

WOODY/NON-WOODY PLANTING BREAK

PLANTING PLAN

SCALE: 1" = 20'

0 10 20 40

1 INCH = 20 FEET

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 Hanover, Maryland 21076  
 www.baylandinc.com  
 BAYLAND JOB NO. 5\_12701

DATE: 5/24/23

REVISED	DATE	BY	APPROVED	DATE

APPROVED: *Erik Midulieu* 5/30/2023 | 09  
 DEPUTY DIRECTOR

**ANNE ARUNDEL COUNTY**  
 DEPARTMENT OF PUBLIC WORKS

DATE	BY	APPROVED	DATE
5/30/2023	12	5/26/2023	11

APPROVED: *James Valbygren* 5/30/2023 | 05  
 CHIEF, RIGHT OF WAY

SCALE: 1" = 20'

DESIGNED BY: JWH 5/24/23

DRAWN BY: MWS 5/24/23

PROJECT MANAGER

CHECKED BY: SMC/GMS 5/24/23

SHEET NO. 22 OF 25

PROJECT NO. B556900

CONTRACT NO. B556903

**LPAX CROFTON GOLF STREAM RESTORATION SEGMENT 1 PLANTING PLAN**

\\pdc01\cadd\proj\2023\LPAX\_CROFTON\_GOLF\_STREAM\_RESTORATION\_SEG1\Sheet\_Plan\_Segment\_1\_LS-01.dwg 5/24/2023 2:50:11 PM



NOTE:  
1. FOR EXISTING TREE SURVEY, SEE SHEET AB-01.  
2. SEE SHEET LS-04 FOR PLANTING SCHEDULES.

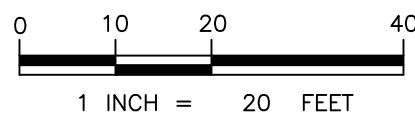
### STREAM PLANTING KEY

ZONE A: COASTAL PLAIN OAK FLOODPLAIN SWAMP FOREST PLANTING  
ZONE B: COASTAL PLAIN STREAMSIDE FOREST PLANTING

WOODY/NON-WOODY PLANTING BREAK

### PLANTING PLAN

SCALE: 1" = 20'



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DATE: 5/24/23

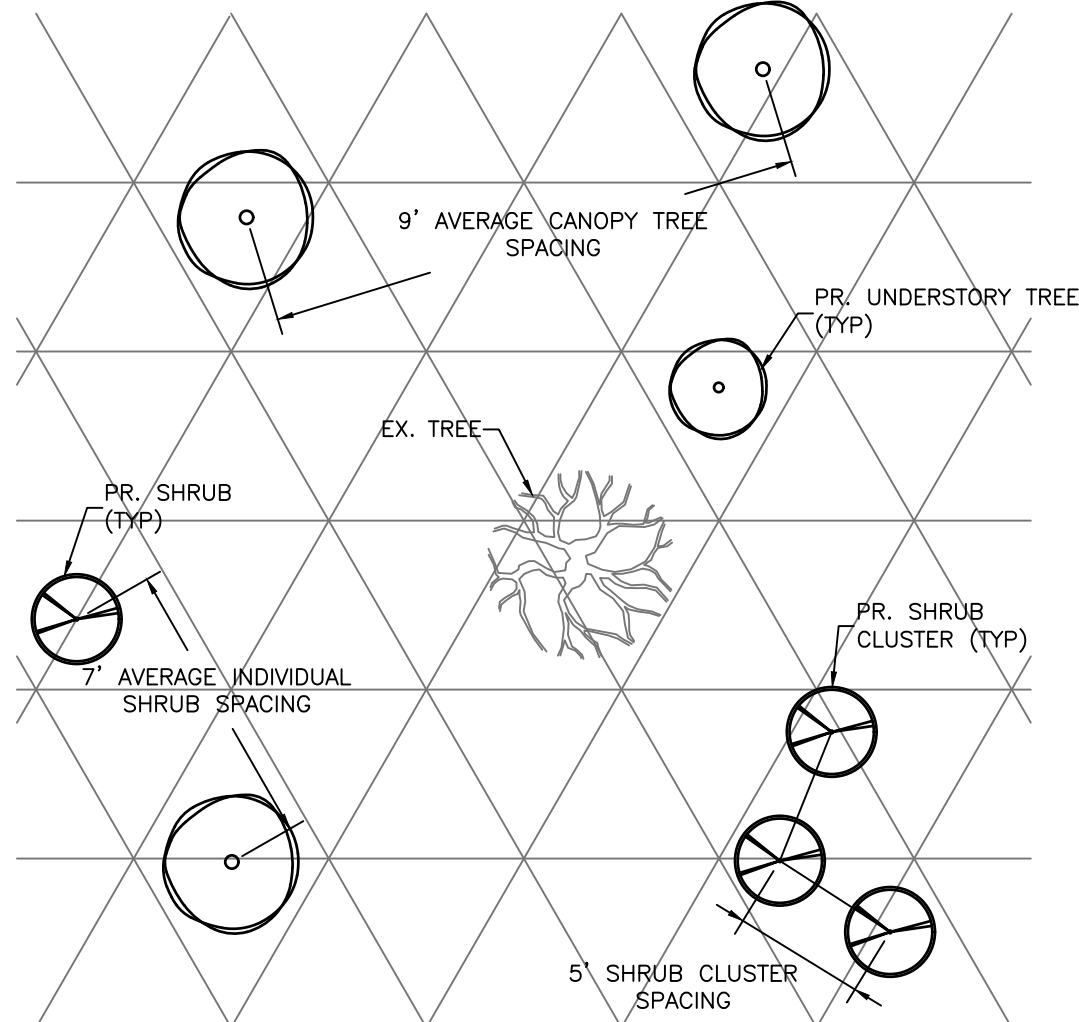
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS											
REVISED		APPROVED		DATE		APPROVED		DATE		SCALE: 1" = 20'	
DATE		BY		5/30/2023		12:17 PM		5/26/2023		DRAWN BY: JWH	
		CHIEF ENGINEER				PROJECT MANAGER				DRAWN BY: MKS	
		APPROVED		DATE		APPROVED		DATE		CHECKED BY: SMC/GMS	
		DEPUTY DIRECTOR		5/30/2023		5/30/2023		12:17 PM		SHEET NO. 23 OF 25	
						CHIEF, RIGHT OF WAY				PROJECT NO. B556900	
										CONTRACT NO. B556903	

LPAX CROFTON GOLF  
STREAM RESTORATION  
SEGMENT 1  
PLANTING PLAN

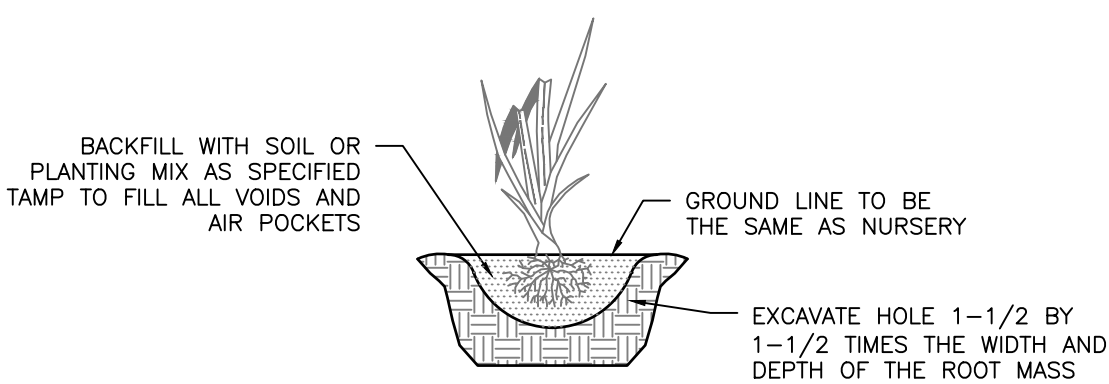


## GENERAL PLANTING NOTES

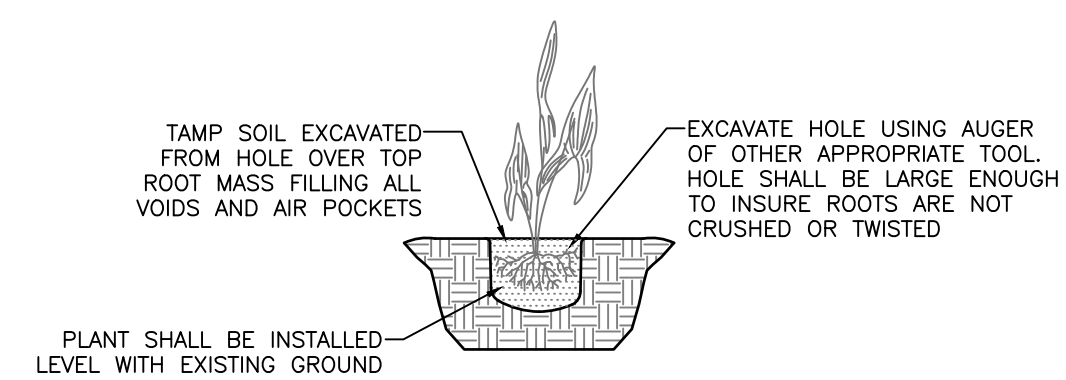
1. ALL PLANT MATERIALS SHALL BE NURSERY GROWN AND SHALL CONFORM TO AMERICAN ASSOCIATION OF NURSERYMEN, INC. STANDARDS.
2. CONTRACTOR IS RESPONSIBLE TO VERIFY ALL UTILITY LOCATIONS PRIOR TO PLANTING MATERIAL. IF CONFLICTS ARISE, THE ENGINEER MUST BE NOTIFIED PRIOR TO ANY GROUND BREAKING.
3. WETLAND PLANTING WILL BE ACCOMPLISHED BETWEEN MARCH 15TH AND MAY 15TH (SPRING PLANTING SEASON) OR SEPTEMBER 15TH AND NOVEMBER 15TH (FALL PLANTING SEASON).
4. TREES AND SHRUBS SHALL BE PLANTED FROM MARCH 1 TO JUNE 15 AND FROM SEPTEMBER 15 TO DECEMBER 15. PLANTING MAY BE CONTINUED DURING THE WINTER MONTHS PROVIDED THERE IS NO FROST IN THE GROUND AND FROST FREE TOPSOIL PLANTING MIXTURES ARE USED. HERBACEOUS PLUGS AND QUARTS SHALL BE PLANTED BETWEEN MARCH 15 AND MAY 15 OR BETWEEN SEPTEMBER 15 AND NOVEMBER 15, UNLESS OTHERWISE DIRECTED BY THE COUNTY.
5. NO CONTAINER-GROWN MATERIAL SHALL BE PLANTED IF NOT ACCLIMATED TO THE CURRENT WEATHER CONDITIONS. CONTRACTOR IS RESPONSIBLE FOR GENERAL MAINTENANCE INCLUDING WATERING.
6. ALL PLANTING MATERIAL AND PLANTING METHODS SHALL CONFORM TO CONSTRUCTION SPECIFICATIONS AND DETAILS.
7. ALL DISTURBED AREAS NOT EXPLICITLY HATCHED FOR REPLANTING SHALL BE STABILIZED IN ACCORDANCE WITH STANDARD PERMANENT STABILIZATION METHODS.



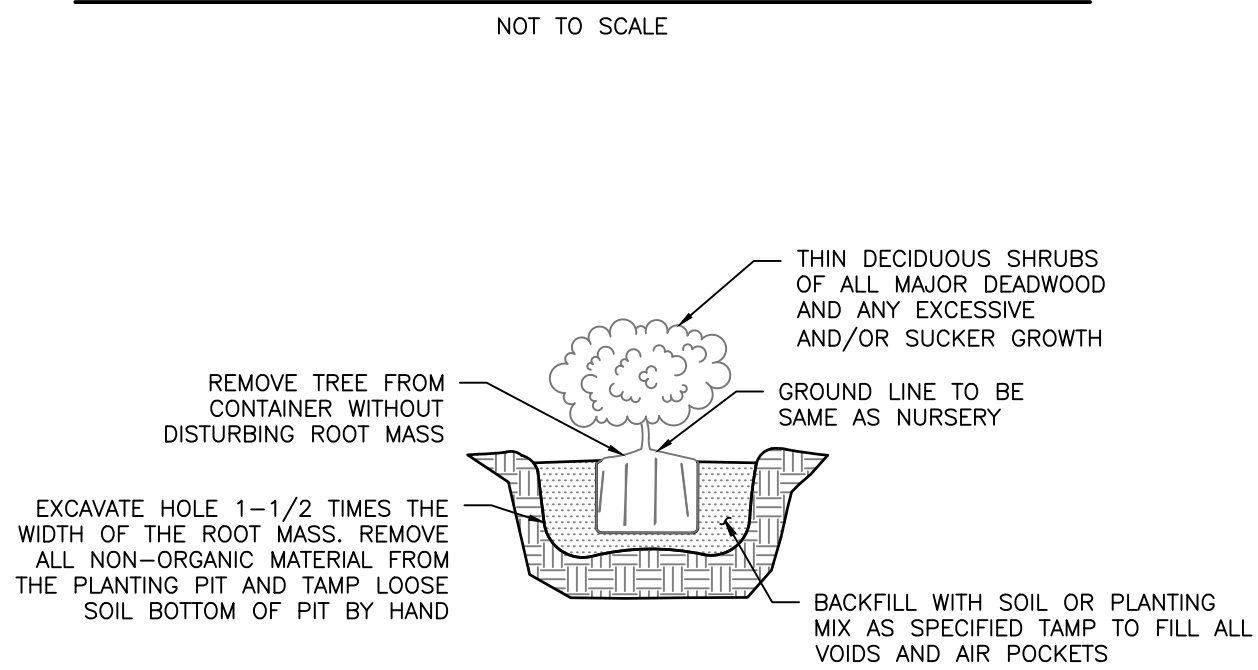
**TYPICAL 30'X30' NATURALIZED  
FOREST PLANTING DETAIL**



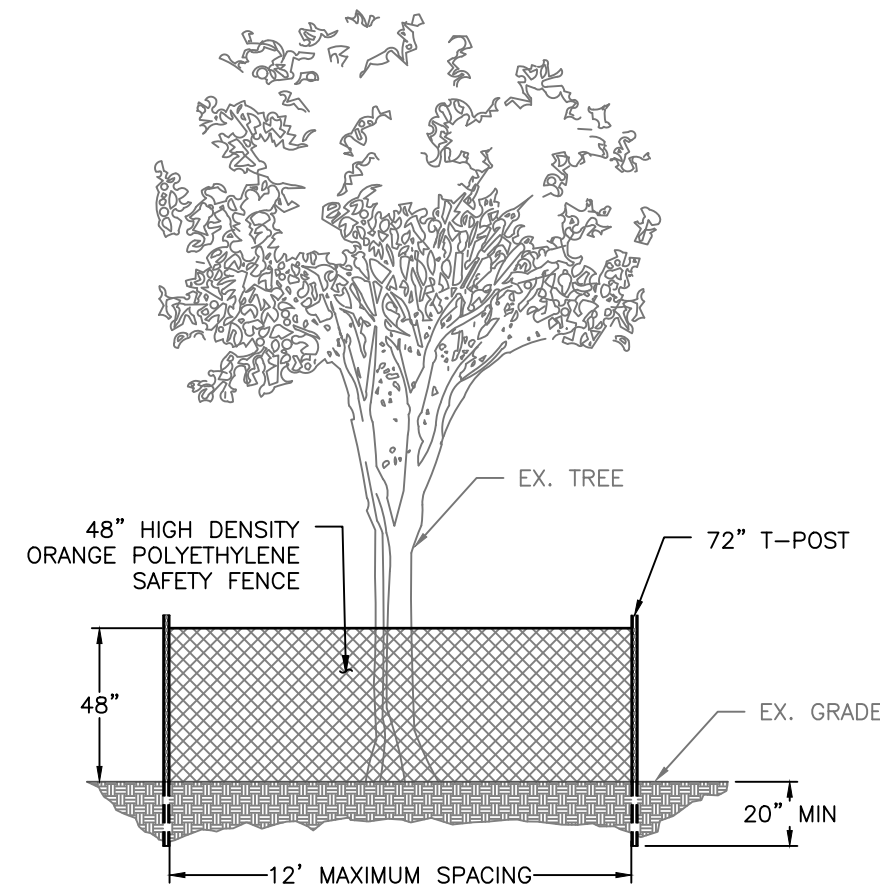
## HERBACEOUS PLANTING – QUART



## HERBACEOUS PLANTING – PLUG



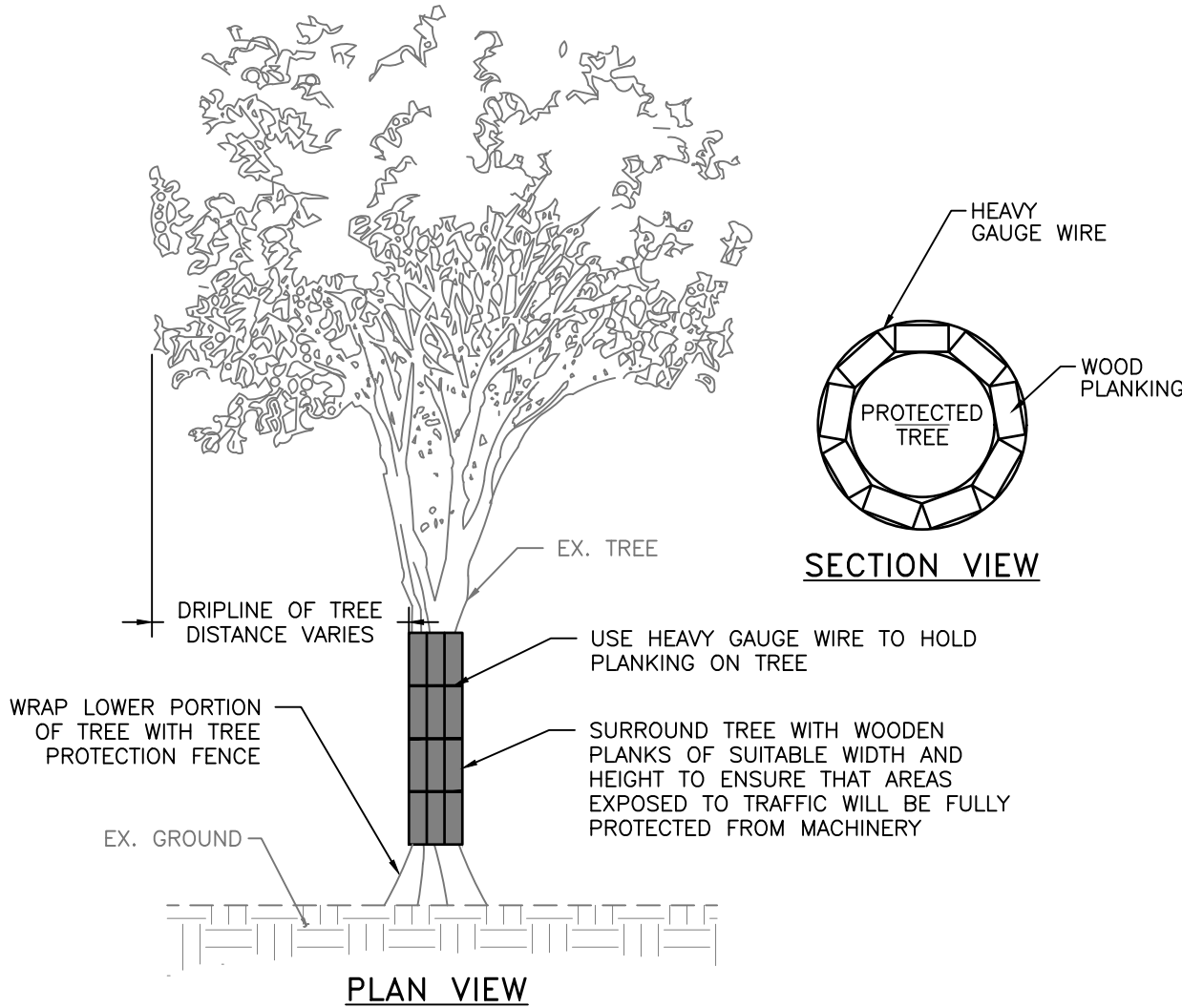
### SHRUB PLANTING – CONTAINER GROWN



- NOTES:
1. WHEN PRACTICABLE, INSTALL HIGH VISIBILITY 3 FEET OUTSIDE OF THE DRIP LINE OF THE TREE.
  2. T-POST SHALL BE SPACED A MAXIMUM OF 12' O/C. AVOID ROOT DAMAGE WHEN PLACING THE T-POSTS.
  3. THE HIGH VISIBILITY FENCE SHOULD BE FASTENED SECURELY TO THE T-POSTS WITH WIRE OR ZIP TIES.
  4. THE FENCING MUST REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION; ANY CHANGE OF THE PROTECTIVE FENCING MUST BE APPROVED.

### TREE PROTECTION DETAIL

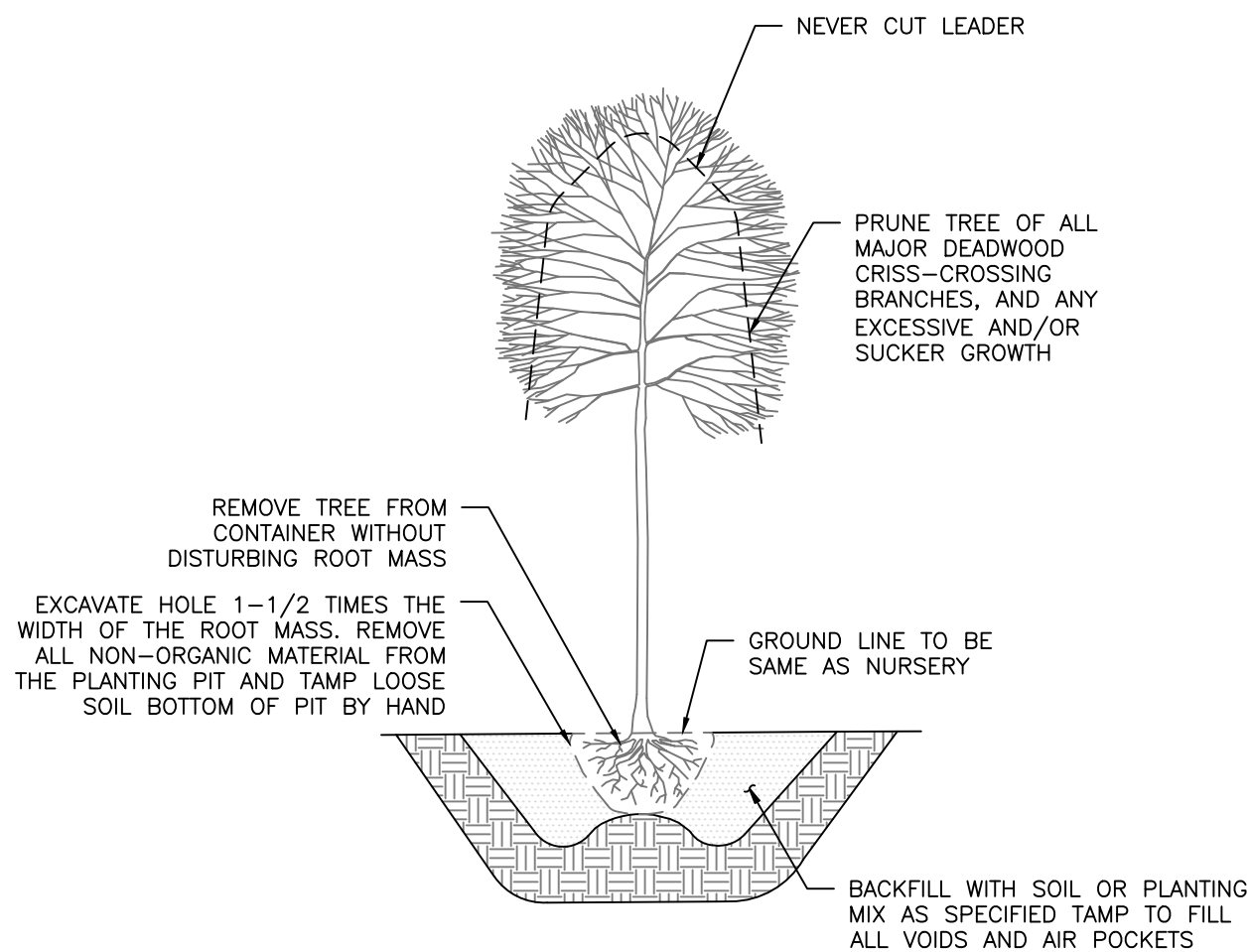
NOT TO SCALE



- NOTE:  
1. DO NOT NAIL OR STAPLE INTO TREE TRUNK

## TREE PLANKING DETAIL

NOT TO SCALE



## TREE PLANTING – CONTAINER GROWN

NOT TO SCALE

## TEMPORARY SEEDING SUMMARY

HARDINESS ZONE (FROM FIGURE B.3): 7a SEED MIXTURE (FROM TABLE B.1)				FERTILIZER RATE (10-20-20)	LIME RATE
NO.	SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	SEEDING DEPTHS	
1	ANNUAL RYEGRASS	40 (11lb/1000 sf)	2/15 - 4/30 8/15 - 11/30	0.5"	
2	BARLEY	96 (2.2lb/1000 sf)	2/15 - 4/30 8/15 - 11/30	0.5"	
3	OATS	72 (1.7lb/1000 sf)	2/15 - 4/30 8/15 - 11/30	0.5"	
4	RYE	112 (2.8lb/1000 sf)	2/15 - 4/30 8/15 - 11/30	0.5"	
5	FOXTAIL MILLET	30 (0.7lb/1000 sf)	5/1 - 8/14	0.5"	

## PERMANENT SEEDING SUMMARY

HARDNESS ZONE (FROM FIGURE B.3): 7a SEED MIXTURE (FROM TABLE B.3)					MIX 8 FERTILIZER RATE (10-10-10) MIX 11 FERTILIZER RATE (20-10-10)			LIME RATE
NO.	SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	SEEDING DEPTHS	N	P2O5	K2O	
8	TALL FESCUE	100	2/15 – 4/30 8/15 – 10/31	1/2" – 1/2"	45 lb/ac (1.0 lb/1000 sf)	45 lb/ac (1.0 lb/1000 sf)	45 lb/ac (1.0 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
11	CREEPING RED FESCUE CHEWINGS FESCUE KENTUCKY BLUEGRASS	30 30 20	2/15 – 4/30 8/15 – 10/31	1/2" – 1/2"	45 lb/ac (2.0 lb/1000 sf)	45 lb/ac (1.0 lb/1000 sf)	45 lb/ac (1.0 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)

NOTES:

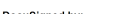


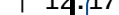
1. SEEDING RATES FOR THE WARM-SEASON GRASSES ARE IN POUNDS OF PURE LIVE SEED (PLS). ACTUAL PLANTING RATES SHALL BE ADJUSTED TO REFLECT PERCENT SEED GERMINATION AND PURITY, AS TESTED. ADJUSTMENTS ARE USED TO DETERMINE NEEDS FOR THE COOL-SEASON GRASSES. SEEDING RATES LISTED ABOVE ARE FOR TEMPORARY SEEDINGS, WHEN PLANTED ALONE, WHEN PLANTED AS A NURSE CROP WITH PERMANENT SEED MIXES. USE 1/3 THE SEEDING RATE LISTED ABOVE FOR BARLEY, OATS, AND WHEAT. FOR SMALLER-SEEDED GRASSES (ANNUAL RYEGRASS, PEARL MILLET, FOXTAIL MILLET), DO NOT EXCEED MORE THAN 5X (BY WEIGHT) OF THE OVERALL PERMANENT SEEDING MIX. CEREAL RYE GENERALLY SHOULD NOT BE USED AS A NURSE CROP, UNLESS PLANTING IS DONE IN WINTER IN A COLD CLIMATE. CEREAL RYE IS NOT RECOMMENDED FOR OTHER TEMPORARY SEEDINGS. CEREAL RYE HAS ALLOPATHIC PROPERTIES THAT INHIBIT THE GERMINATION AND GROWTH OF OTHER PLANTS. IF IT MUST BE USED AS A NURSE CROP, SEED AT 1/3 OF THE RATE LISTED ABOVE. OATS ARE THE RECOMMENDED NURSE CROP FOR WARM-SEASON GRASSES.
2. FOR SANDY SOILS, PLANT SEEDS AT TWICE THE DEPTH LISTED ABOVE.
3. THE PLANTING DATES LISTED ARE AVERAGES FOR EACH ZONE AND MAY REQUIRE ADJUSTMENT TO REFLECT LOCAL CONDITIONS, ESPECIALLY NEAR THE BOUNDARIES OF THE ZONE.

## STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

1. SEEDING
1. 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 18 MONTHS 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 OF SEED AND SEEDING RATE.
  - 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 PURIFIED 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 INOCULANTS COOL AND ON CRESLES UNTIL USE. TEMPERATURES ABOVE 75°F TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
  - SOD OR SEED MUST NOT 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.
2. APPLICATION
- DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROU 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 CULTPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
  - CULTPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED 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 SOLUBLE NITROGEN: P205 (PHOSPHOROUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE.
    - LIME: USE ONLY GOOD 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.
- B. MULCHING
1. MULCH MATERIALS (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, MOLDED, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE SOIL BACTERIA ARE BEING INTRODUCED.
  - 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 PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED AND FERTILIZER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BATTER-LIKE COVER COAT, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST PROVIDE 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.
2. APPLICATION
- APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
  - WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED 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.
3. ANCHORING
- PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR PLYSTER. 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 DRIVEN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS. SINCE LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY, IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
    - 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 DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TACK II OR CRACKACK ARE COMMONLY AVAILABLE. FOLLOW APPLICATION RATES AS SPECIFIED ON THE LABEL. WHEN USED 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'S RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

LS-03

ANNE ARUNDEL COUNTY  
DEPARTMENT OF PUBLIC WORKS

REVISED	APPROVED	DATE	APPROVED	DATE	SCALE:
DATE	BY				
	 <small>Decommissioned by</small> <b>CHIEF ENGINEER</b>	5/30/2023   12:17 PM	 <small>Decommissioned by</small> <b>PROJECT MANAGER</b>	5/26/2023   1:05 PM	<b>CHECKED BY:</b> JQH 5/24/23 <b>DRAWN BY:</b> MKS 5/24/23 <b>CHECKED BY:</b> SMC/GMC 5/24/23
	 <small>Decommissioned by</small> <b>DEPUTY DIRECTOR</b>	5/30/2023   09:05 PM	 <small>Decommissioned by</small> <b>CHIEF, CRFT OF WAY</b>	5/30/2023   1:05 PM	<b>SHEET NO.</b> 24 OF 25 <b>PROJECT NO.</b> B556900 <b>CONTRACT NO.</b> B556903

LPAX CROFTON GOLF  
STREAM RESTORATION  
SEGMENT 1  
PLANTING DETAILS & NOTES



ZONE A: COASTAL PLAIN OAK FLOODPLAIN SWAMP  
FOREST PLANTING SCHEDULE – 99,378 SF

BOTANICAL NAME/ TECHNICAL DESCRIPTION	COMMON NAME	INDICATOR STATUS	SIZE	TYPE	SPACING/LOCATION*	QUANTITY
OVERSTORY TREES						
BETULA NIGRA	RIVER BIRCH	FACW	3–4 FT	CONTAINER	RANDOM AT A MIN. OF 9' OC, ABOVE INUNDATED AREAS	60
QUERCUS PALUSTRIS	PIN OAK	FACW	3–4 FT	CONTAINER	RANDOM AT A MIN. OF 9' OC, HIGHEST ELEVATIONS IN ZONE	30
QUERCUS PHELLOS	WILLOW OAK	FACW	3–4 FT	CONTAINER	RANDOM AT A MIN. OF 9' OC, HIGHEST ELEVATIONS IN ZONE	35
QUERCUS BICOLOR	SWAMP WHITE OAK	FACW	3–4 FT	CONTAINER	RANDOM AT A MIN. OF 9' OC, HIGHEST ELEVATIONS IN ZONE	30
QUERCUS MICHAUXII	SWAMP CHESTNUT OAK	FACW	3–4 FT	CONTAINER	RANDOM AT A MIN. OF 9' OC, HIGHEST ELEVATIONS IN ZONE	25
SALIX NIGRA	BLACK WILLOW	OBL	3–4 FT	CONTAINER	RANDOM AT A MIN. OF 9' OC, ABOVE INUNDATED AREAS	100
UNDERSTORY TREES						
MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA	FACW	2–3 FT	CONTAINER	RANDOM AT A MIN. OF 8' OC, ABOVE INUNDATED AREAS	25
SHRUBS						
ALNUS SERRULATA	SMOOTH ALDER	FACW	2–3 FT	CONTAINER	RANDOM AT A MIN. OF 7' OC, ABOVE INUNDATED AREAS	40
CEPHALANTHUS OCCIDENTALIS	COMMON BUTTONBUSH	OBL	2–3 FT	CONTAINER	RANDOM AT A MIN. OF 7' OC, ABOVE INUNDATED AREAS	60
CORNUS AMOMUM	SILKY DOGWOOD	FACW	2–3 FT	CONTAINER	RANDOM AT A MIN. OF 7' OC, ABOVE INUNDATED AREAS	35
ILEX VERTICILLATA	COMMON WINTERBERRY	FACW	2–3 FT	CONTAINER	RANDOM AT A MIN. OF 7' OC, ABOVE INUNDATED AREAS	40
ITEA VIRGINICA	VIRGINIA SWEETSPIRE	FACW	2–3 FT	CONTAINER	RANDOM AT A MIN. OF 7' OC , ABOVE INUNDATED AREAS	35
ROSA PALUSTRIS	SWAMP ROSE	OBL	2–3 FT	CONTAINER	RANDOM AT A MIN. OF 7' OC, ABOVE INUNDATED AREAS	35
SAMUCUS CANADENSIS	COMMON ELDERBERRY	FACW	2–3 FT	CONTAINER	RANDOM AT A MIN. OF 7' OC, ABOVE INUNDATED AREAS	35
VIBURNUM NUDUM	POSSUM HAW	FACW	2–3 FT	CONTAINER	RANDOM AT A MIN. OF 7' OC, ABOVE INUNDATED AREAS	35
HERBACEOUS						
QUARTS						
OSMUNDA CINNAMOMEA	CINNAMON FERN	FACW	QUART	CONTAINER	RANDOM AT A MIN. OF 3' O.C. ABOVE INUNDATED AREAS	100
OSMUNDA REGALIS	ROYAL FERN	OBL	QUART	CONTAINER	RANDOM AT A MIN. OF 3' O.C., ABOVE INUNDATED AREAS	100
WOODWARDIA AEREOLATA	NETTED CHAIN FERN	OBL	QUART	CONTAINER	RANDOM AT A MIN. OF 3' O.C., ABOVE INUNDATED AREAS	100
PLUGS						
ALISMA SUBCORDATUM	WATER PLANTAIN	OBL	PLUG	TRAY/CONTAINER	RANDOM AT A MIN OF 18" O.C., 0–6" OF WATER	150
HIBISCUS MOSCHEUTOS	ROSE MALLOW	OBL	PLUG	TRAY/CONTAINER	RANDOM AT A MIN OF 18" O.C., ABOVE PERMANENT POOL – 3" OF WATER	200
IRIS VERSICOLOR	BLUEFLAG IRIS	OBL	PLUG	TRAY/CONTAINER	RANDOM AT A MIN OF 18" O.C., ABOVE PERMANENT POOL – 3" OF WATER	200
SAURURUS CERNUUS	LIZARD'S TAIL	OBL	PLUG	TRAY/CONTAINER	RANDOM AT A MIN OF 18" O.C., ABOVE PERMANENT POOL – 6" OF WATER	200
PELTANDRA VIRGINICA	ARROW ARUM	OBL	PLUG	TRAY/CONTAINER	RANDOM AT A MIN OF 18" O.C., 0–6" OF WATER	150
PONTEDERIA CORDATA	PICKERELWEED	OBL	PLUG	TRAY/CONTAINER	RANDOM AT A MIN OF 18" O.C., 0–6" OF WATER	150
SCHOENOPLECTUS TABERNAEMONTANI	SOFT STEM BULRUSH	OBL	PLUG	TRAY/CONTAINER	RANDOM AT A MIN OF 18" O.C., 0–6" OF WATER	200
SAGITTARIA LATIFOLIA	DUCK POTATO	OBL	PLUG	TRAY/CONTAINER	RANDOM AT A MIN OF 18" O.C., 0–6" OF WATER	100
SEEDING						
NATIVE SEED MIX (ERNMX 131 OR EQUIVALENT)	NATIVE WETLAND SEED MIX	N/A	N/A	SEED	THROUGHOUT ZONE	57.0 LBS
COVER/NURSE CROP, SEE TABLE FOR RATE & DATES					ABOVE INUNDATED AREAS	NA

\* PLANT SPACING IS THE MINIMUM SPACING. PLANTINGS SHOULD BE INSTALLED AS SPECIFIED RELATIVE TO WETLAND HYDROLOGY/  
TOPOGRAPHIC RELIEF. PLANTINGS MAY BE CLUSTERED. WITH THE EXCEPTION OF THE NATIVE SEED MIX, SPECIFIED QUANTITIES ARE NOT  
INTENDED TO COVER THE ENTIRE ZONE.

COVER/NURSE CROP SEED  
MIX COMPOSITION

SEEDING RATE	BOTANICAL NAME	COMMON NAME	SEEDING DATE
30 LB/AC	SECALE CEREAL	CEREAL RYE	11/1–2/28
30 LB/AC	AVENA SATIVA	GRAIN OATS	3/1–4/30
10 LB/AC	SETARIA ITALICA	FOXTAIL MILLET	5/1–8/31
10 LB/AC	LOLIUM MULTIFLORUM	ANNUAL RYEGRASS	9/1–10/31

ZONE B: COASTAL PLAIN STREAMSIDE  
FOREST PLANTING SCHEDULE – 37,920 SF

BOTANICAL NAME/ TECHNICAL DESCRIPTION	COMMON NAME	INDICATOR STATUS	SIZE	TYPE	SPACING/LOCATION	QUANTITY
OVERSTORY TREES						
CARYA GLABRA	PIGNUT HICKORY	FACU	2–3 FT	CONTAINER	NATURALIZED AT 8' OC HIGHER ELEVS IN ZONE	18
DIOSPYROS VIRGINIANA	COMMON PERSIMMON	FAC	3–4 FT	CONTAINER	NATURALIZED AT 9' OC THROUGHOUT ZONE	35
NYSSA SYLVATICA	BLACK GUM	FAC	3–4 FT	CONTAINER	NATURALIZED AT 9' OC THROUGHOUT ZONE	40
PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	FACW	3–4 FT	CONTAINER	NATURALIZED AT 9' OC THROUGHOUT ZONE	15
PINUS RIGIDA	PITCH PINE	FACU	3–4 FT	CONTAINER	NATURALIZED AT 9' OC THROUGHOUT ZONE	20
QUERCUS PALUSTRIS	PIN OAK	FACW	3–4 FT	CONTAINER	NATURALIZED AT 9' OC THROUGHOUT ZONE	32
QUERCUS PHELLOS	WILLOW OAK	FACW	3–4 FT	CONTAINER	NATURALIZED AT 9' OC THROUGHOUT ZONE	35
QUERCUS BICOLOR	SWAMP WHITE OAK	FACW	3–4 FT	CONTAINER	NATURALIZED AT 9' OC THROUGHOUT ZONE	32
QUERCUS MICHAUXII	SWAMP CHESTNUT OAK	FACW	3–4 FT	CONTAINER	NATURALIZED AT 9' OC THROUGHOUT ZONE	10
ULMUS AMERICANA	AMERICAN ELM	FAC	3–4 FT	CONTAINER	NATURALIZED AT 9' OC THROUGHOUT ZONE	25
UNDERSTORY TREES						
AMELANCHIER CANADENSIS	SERVICEBERRY	FAC	2–3 FT	CONTAINER	NATURALIZED AT 8' OC THROUGHOUT ZONE	15
ASIMINA TRILOBA	PAW PAW	FAC	2–3 FT	CONTAINER	NATURALIZED AT 8' OC THROUGHOUT ZONE IN GROUPS OF 3	21
CARPINUS CAROLINIANA	IRONWOOD	FAC	2–3 FT	CONTAINER	NATURALIZED AT 8' OC THROUGHOUT ZONE	20
ILEX OPACA	AMERICAN HOLLY	FAC	2–3 FT	CONTAINER	NATURALIZED AT 8' OC THROUGHOUT ZONE	20
MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA	FACW	2–3 FT	CONTAINER	NATURALIZED AT 8' OC THROUGHOUT ZONE	20
SHRUBS						
ARONIA MELANOCARPA	BLACK CHOKEBERRY	FAC	2–3 FT	CONTAINER	NATURALIZED AT 7' OC THROUGHOUT ZONE	25
CLETHRA ALNIFOLIA	COASTAL SWEETPEPPERBUSH	FACW	2–3 FT	CONTAINER	NATURALIZED AT 7' OC THROUGHOUT ZONE	25
LINDERA BENZOIN	SPICEBUSH	FACW	2–3 FT	CONTAINER	NATURALIZED AT 7' OC THROUGHOUT ZONE	25
VIBURNUM DENTATUM	SOUTHERN ARROWWOOD	FAC	2–3 FT	CONTAINER	NATURALIZED AT 7' OC THROUGHOUT ZONE	25
VIBURNUM PRUNIFOLIUM	BLACK HAW	FACU	2–3 FT	CONTAINER	NATURALIZED AT 7' OC HIGHER ELEVS IN ZONE	20
SEEDING						
NATIVE SEED MIX (ERNMX 154 OR EQUIVALENT)	NATIVE FLOODPLAIN SEED MIX	N/A	N/A	SEED	THROUGHOUT ZONE	23.5 LB
COVER/NURSE CROP, SEE TABLE FOR RATE & DATES						

NATIVE WETLAND MEADOW  
SEED MIX COMPOSITION

% COMPOSITION	BOTANICAL NAME	COMMON NAME
25.60%	CAREX VULPINOIDEA	FOX SEDGE
15.00%	CAREX LURIDA	LURID SEDGE
14.00%	CAREX LUPULINA	HOP SEDGE
12.00%	CAREX SCOPARIA	BLUNT BROOM SEDGE
6.4%	CAREX STIPATA	AWL SEDGE
5.0%	ELYMUS VIRGINICUS	VIRGINIA WILD RYE
4.0%	VERBENA HASTATA	BLUE VERVAIN
3.7%	SPARGANIUM EURYCARPUM	PA ECOTYPE (GIANT BUR REED
3.0%	ASCLEPIAS INCARNATA	SWAMP MILKWEED
3.0%	JUNCUS EFFUSUS	SOFT RUSH
2.0%	BIDENS CERNUA	NODDING BUR MARIGOLD
1.5%	SPARGANIUM AMERICANUM	EASTERN BUR REED
1.0%	HELENIUM AUTUMNALE	COMMON SNEEZEWEED
1.0%	VERNONIA NOVEBORACENSIS	NEW YORK IRONWEED
0.6%	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER
0.5%	EUPATORIUM PERFOLIATUM	PA ECOTYPE (BONESET
0.5%	LOBELIA SIPHILITICA	GREAT BLUE LOBELIA
0.5%	SCIRPUS CYPERINUS	WOOLGRASS
0.4%	ASTER PRENANTHOIDES	ZIGZAG ASTER
0.3%	EUPATORIUM FISTULOSUM	JOE PYE WEED



FOREST CONSERVATION EXEMPTION  
TREE PLANTING SUMMARY

ZONE A: COASTAL PLAIN OAK FLOODPLAIN SWAMP FOREST	305	TREES
ZONE B: COASTAL PLAIN STREAMSIDE FOREST	357	TREES
TOTAL	662	TREES
TREE REQUIREMENT FROM FSD PLOT CALCULATIONS (SEE ALSO TABLE ON SHEET 25	533	TREES
REQUIREMENT MET	YES	

NATIVE FLOODPLAIN SEED MIX  
COMPOSITION

% COMPOSITION	BOTANICAL NAME	COMMON NAME
23.00%	CAREX VULPINOIDEA	FOX SEDGE
20.50%	PANICUM CLANDESTINUM	DEERTONGUE
20.00%	ELYMUS VIRGINICUS	VIRGINIA WILD RYE
10.00%	ANDROPOGON GERARDII	BIG BLUESTEM
4.20%	CAREX LUPULINA	HOP SEDGE
4.00%	CAREX LURIDA	LURID SEDGE
4.00%	CAREX SCOPARIA	BLUNT BROOM SEDGE
3.00%	JUNCUS EFFUSUS	SOFT RUSH
3.00%	VERBENA HASTATA	BLUE VERVAIN
2.00%	HELIOPSIS HELIANTHOIDES	OXEYE SUNFLOWER
1.00%	ASCLEPIAS INCARNATA	SWAMP MILKWEED
1.00%	CINNA ARUNDINACEA	WOOD REEDGRASS
0.60%	EUPATORIUM PERFOLIATUM	BONESET
0.40%	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER
0.40%	ASTER UMBELLATUS	FLAT TOPPED WHITE ASTER
0.30%	ALISMA SUBCORDATUM	MUD PLANTAIN
0.30%	HELENIUM AUTUMNALE	COMMON SNEEZEWEED
0.30%	MONARDA FISTULOSA	WILD BERGAMOT
0.30%	ONOCLEA SENSIBILIS	SENSITIVE FERN
0.30%	PYCNANTHEMUM TENUIFOLIUM	NARROWLEAF MOUNTAINMINT
0.30%	SCIRPUS ATROVIRENS	GREEN BULRUSH
0.30%	SCIRPUS CYPERINUS	WOOLGRASS
0.20%	CHELONE GLABRA	TURTLEHEAD
0.20%	PENTHORUM SEDODES	DITCH STONECROP
0.20%	SOLIDAGO RUGOSA	WRINKLELEAF GOLDENROD
0.10%	CAREX STRICTA	TUSSOCK SEDGE
0.10%	LOBELIA SIPHILITICA	GREAT BLUE LOBELIA

LS-04

 <b>Bayland Consultants &amp; Designers, Inc.</b> "Integrating Engineering and Environment"  7455 New Ridge Road, Suite T      Phone: (410) 694-9401 Hanover, Maryland 21076      Fax: (410) 694-9105  www.baylandinc.com  BAYLAND JOB NO. 5_12701	 DATE: 5/24/23	<table><tr><th colspan="4">ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS</th></tr><tr><td>REVISED</td><td>DATE</td><td>APPROVED</td><td>DATE</td></tr><tr><td>DATE</td><td>BY</td><td>DATE</td><td>BY</td></tr><tr><td></td><td></td><td>5/30/2023   12:17 PM</td><td>5/26/2023   11:07 AM</td></tr><tr><td></td><td></td><td>CHIEF ENGINEER</td><td>PROJECT MANAGER</td></tr><tr><td></td><td></td><td>APPROVED</td><td>DATE</td></tr><tr><td></td><td></td><td>5/30/2023   09:05 EDT</td><td>5/30/2023   11:07 AM</td></tr><tr><td></td><td></td><td>DEPUTY DIRECTOR</td><td>CHIEF, RIGHT OF WAY</td></tr></table>	ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS				REVISED	DATE	APPROVED	DATE	DATE	BY	DATE	BY			5/30/2023   12:17 PM	5/26/2023   11:07 AM			CHIEF ENGINEER	PROJECT MANAGER			APPROVED	DATE			5/30/2023   09:05 EDT	5/30/2023   11:07 AM			DEPUTY DIRECTOR	CHIEF, RIGHT OF WAY	<table><tr><td>SCALE: AS SHOWN</td></tr><tr><td>DRAWN BY: JKH 5/24/23</td></tr><tr><td>CHECKED BY: SMS/GMS 5/24/23</td></tr><tr><td>SHEET NO. 25 OF 25</td></tr><tr><td>PROJECT NO. B556900</td></tr><tr><td>CONTRACT NO. B556903</td></tr></table> <div>LPAx CROFTON GOLF STREAM RESTORATION SEGMENT 1 PLANTING DETAILS</div>	SCALE: AS SHOWN	DRAWN BY: JKH 5/24/23	CHECKED BY: SMS/GMS 5/24/23	SHEET NO. 25 OF 25	PROJECT NO. B556900	CONTRACT NO. B556903
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