



WATERS EDGE COMMUNITY SHORELINE RESTORATION

DECEMBER 2025

OWNER'S/DEVELOPER'S CERTIFICATION

I/WE HEREBY CERTIFY THAT ALL CLEARING, GRADING, CONSTRUCTION AND DEVELOPMENT WILL BE DONE IN ACCORDANCE WITH THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION WILL HAVE A CERTIFICATION IN TRAINING FROM THE MARYLAND DEPARTMENT OF HIGHWAY ADMINISTRATION. BEFORE BEGINNING THE PROJECT, I ALSO AUTHORIZE THE RIGHT OF ENTRY TO PERFORM PERIODIC ON-SITE EVALUATION AND INSPECTIONS BY THE HARFORD SOIL CONSERVATION DISTRICT, THE MARYLAND DEPARTMENT OF THE ENVIRONMENT AND/OR THEIR AUTHORIZED AGENTS.

OWNER/DEVELOPER SIGNATURE _____ DATE _____

NAME _____ PRINTED NAME AND TITLE _____

ENGINEER'S CERTIFICATION

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT THIS PLAN HAS BEEN DESIGNED AND PREPARED IN ACCORDANCE WITH THE 2011 STATE OF MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

ENGINEER'S SIGNATURE _____ DATE _____

SEPEHR BAHRALOU 21194 PRINTED NAME _____ MD P.E. REGISTRATION NO. _____

GENERAL CONSTRUCTION NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS AND MATERIALS, LATEST EDITION AND ANY ADDENDA THERETO.
- THE EXISTING UTILITIES 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 SERVICES AND MAINS AND ANY DAMAGE TO THEM SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S OWN EXPENSE.
- THE CONTRACTOR SHALL CONTACT "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.
- MACHINICAL EXCAVATION SHALL NOT BE CONDUCTED WITHIN 3 FEET HORIZONTALLY OR WITHIN 2 FEET VERTICALLY OF KNOWN UTILITY LOCATIONS. HAND OR MACHINICAL 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.
- NO TREES SHALL BE REMOVED UNLESS PRIOR APPROVAL IS OBTAINED OR EXPLICITLY SHOWN ON THE PLANS TO BE REMOVED. ALL TREES TO REMAIN WITHIN AND/OR NEAR THE WORK AREA SHALL BE PROTECTED AS NECESSARY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIALS TESTING INCLUDING CONCRETE, FLOWABLE FILL, HOT MIX ASPHALT AND FILL COMPACTION. ALL MATERIALS TESTING SHALL BE PERFORMED BY THE CONTRACTOR AND SHALL BE COMPENSATED FOR AS PART OF THE APPROPRIATE PAY ITEM.
- ALL DISTURBED AREAS SHALL HAVE PERMANENT OR TEMPORARY STABILIZATION COMPLETED WITHIN:

 - 8.A. END OF THE WORK DAY FOR AREAS WITHIN WATERWAYS.
 - 8.B. THREE CALENDAR DAYS FOR SLOPES GREATER THAN 3:1 AND TO THE SURFACE OF ALL PERIMETER SEDIMENT CONTROLS.
 - 8.C. SEVEN CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS.

- 8.D. ALL STABILIZATION MUST BE IN ACCORDANCE WITH MARYLAND DEPARTMENT OF AGRICULTURE (MDA) FERTILIZER LAW.
- ALL DISTURBED AREAS WITH SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITH 100% BIODEGRADABLE SOIL STABILIZATION MATTING THAT HAS A SUFFICIENT DESIGN SHEAR STRESS FOR THE APPLICATION OR AS SHOWN ON THE APPROVED SEDIMENT AND EROSION CONTROL PLANS.
- ALL PERMANENTLY STABILIZED AREAS SHALL INCLUDE A MINIMUM OF 4" OF TOPSOIL PER THE 2011 MDE SPECIFICATIONS.
- ALL STAKING, RESTAKING, AND CUT SHEETS SHALL BE PERFORMED 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.
- ALL ROADS SHALL BE CLEANED AND CLEARED BY THE END OF EACH DAY. ANY MUD OR ROCKS TRACKED ON THE ROADWAYS SHALL BE SWEEPED BEFORE THE END OF SHIFT EACH DAY.
- CONTRACTOR SHALL RESTORE ALL AREAS IMPACTED BY CONSTRUCTION ACTIVITY. THIS SHALL INCLUDE BUT IS NOT LIMITED TO GRASS AREAS, ROADS, PAVED AREAS, ETC...

PROJECT INFORMATION

- OWNER/DEVELOPER: HARFORD COUNTY DEPT. OF PUBLIC WORKS CONTACT: REBECCA OAKS 212 SOUTH BOND STREET, 1ST FLOOR BEL AIR, MD 21014 PHONE: (410) 612-1612
- OWNER/DEVELOPER INFORMATION: 7455 NEW RIDGE ROAD, SUITE T HANOVER, MARYLAND 21076 PH: 410-684-9401
- ENGINEER: BAYLAND CONSULTANTS AND DESIGNERS, INC.
- ENGINEER INFORMATION: 7455 NEW RIDGE ROAD, SUITE T HANOVER, MARYLAND 21076 PH: 410-684-9401
- TAX MAP: 63
- PARCEL: 368
- HARFORD COUNTY GRADING PERMIT NO: TBD
- DISTRICT: 01
- ZONING: URBAN RESIDENTIAL DISTRICT R3 & R4
- PROPERTY AREA: 14.15 ACRES
- WATERSHED: BUSH RIVER
- MDE TIDAL WETLANDS PERMIT NO: #XX-XXXX
- SITE AREA LOCATED WITHIN CRITICAL AREA: 0.14 ACRES
- U.S. ARMY CORPS OF ENGINEERS PERMIT NO:

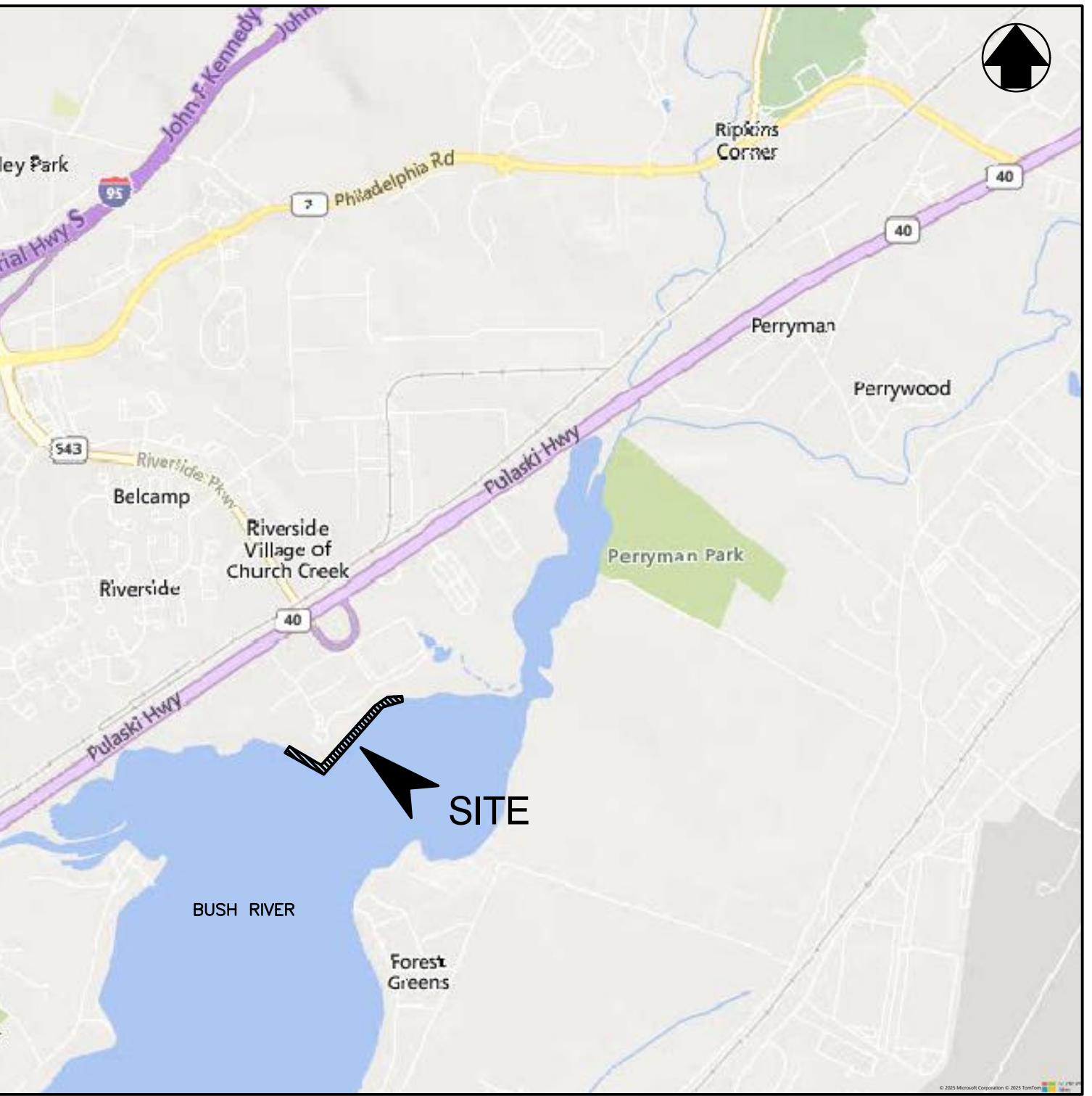
EROSION AND SEDIMENT CONTROL PLAN #:	_____
TECHNICAL REVIEW BY:	_____
HARFORD SOIL CONSERVATION DISTRICT	
APPROVED BY:	_____
HARFORD SOIL CONSERVATION DISTRICT	

SITE ANALYSIS

- TOTAL SITE AREA: 14.15 AC
- TOTAL DISTURBED AREA: 0.14 AC
- AREA TO BE PAVED: 0 AC
- AREA TO BE STABILIZED: 0.14 AC
- ESTIMATED CUT: 0 CY
- ESTIMATED FILL: TBD CY
- TOPSOIL: TBD CY

NPDES ID PT. N: 656,173.06 E: 1,528,816.55

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.



LOCATION MAP

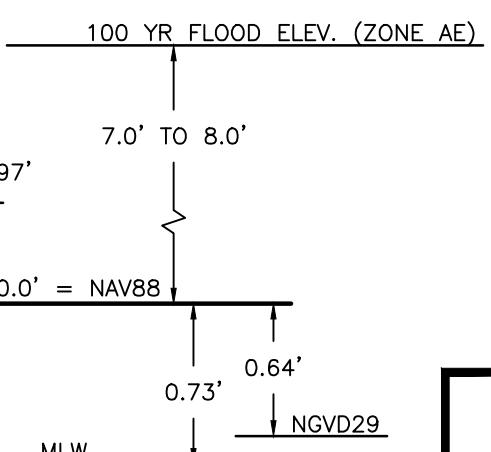
SCALE: 1"=2000'

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 HARFORD SOIL CONSERVATION DISTRICT (HSCD) 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 HARFORD 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 HSCD 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.

SIGNATURE OF DEVELOPER/OWNER _____ DATE _____

PRINT: NAME: HARFORD COUNTY DEPT. OF PUBLIC WORKS (REBECCA OAKS)
TITLE: PROJECT MANAGER
AFFILIATION: 212 SOUTH BOND STREET, 1ST FLOOR
ADDRESS: BEL AIR, MD 21014
TELEPHONE NUMBER: (410) 612-1612
EMAIL ADDRESS: ROAKS@HARFORDCOUNTYMD.GOV



DATUM CONVERSIONS

NOT TO SCALE
NOTE: DATUM COMPARISON BASED ON NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) VDATUM FROM SITE LOCATION (LONG) -76°13'56.0", (LAT) 38°27'58.6".



BILLING NO. XXXXXX

PROFESSIONAL CERTIFICATION

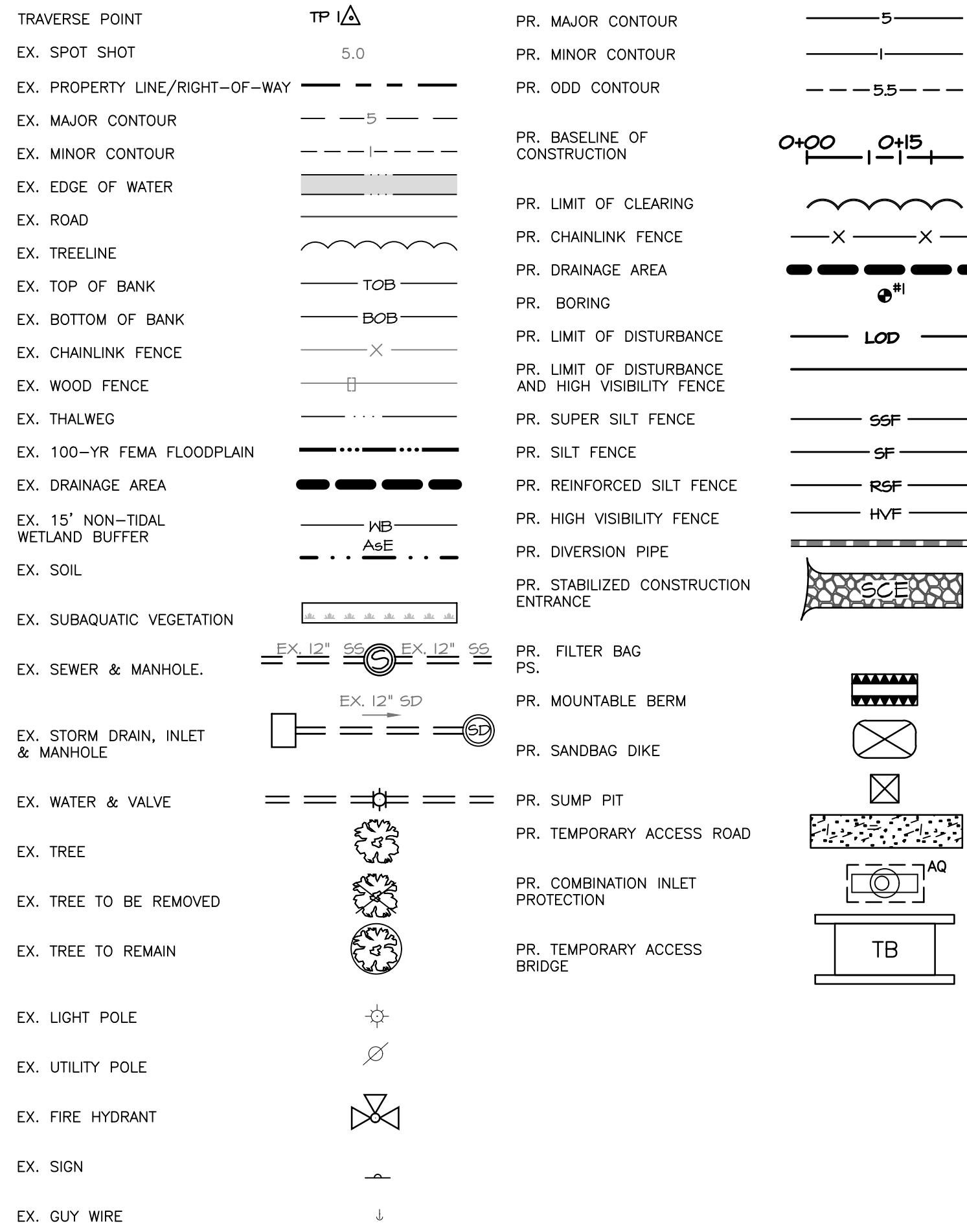
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 14920, EXPIRATION DATE: 05/12/2026.

Sheet List Table	
SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	GENERAL NOTES
3	KEY SHEET
4	EXISTING CONDITIONS
5	EXISTING CONDITIONS
6	SITE PLAN
7	SITE PLAN
8	LIVING SHORELINE CROSS-SECTIONS & DETAILS
9	STORMWATER OUTFALL CROSS-SECTIONS & DETAILS
10	PLANTING PLAN & DETAILS
11	EROSION & SEDIMENT CONTROL DETAILS

60% DESIGN SCHEMATIC

HARFORD COUNTY, MARYLAND	
WATERS EDGE COMMUNITY SHORELINE RESTORATION COVER SHEET	
DRAWN BY : JRH	SCALE : AS SHOWN
DESIGNED BY : JRH	DATE : 12/23/25
REVIEWED BY : JRH	
SHEET NO. 1 OF 11	

LEGEND



SEQUENCE OF CONSTRUCTION

1 ESTABLISH ALL PERMITS HAVE BEEN OBTAINED. PERMITS SHALL BE DISPLAYED ON SITE AT ALL TIMES THROUGHOUT THE DURATION OF THE PROJECT. 1 DAY

2 THE CONTRACTOR SHALL CALL "MISS UTILITY" (1-800-257-7777) A MINIMUM OF TWO WEEKS IN ADVANCE OF ANY EXCAVATION, BORING, PILE DRIVING AND/OR DIGGING FOR THE LOCATION OF GAS, ELECTRIC, TELEPHONE, WATER AND SEWER LINES. 3. THE CONTRACTOR SHALL NOTIFY THE HARFORD COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF CONSTRUCTION MANAGEMENT (410-638-3217) AT LEAST THREE (3) DAYS PRIOR TO STARTING CONSTRUCTION, AND M.D.E. INSPECTIONS AND COMPLIANCE (410-537-3510) AT LEAST TEN (10) DAYS PRIOR TO COMMENCING TIDAL WORK. WORK MAY NOT COMMENCE UNTIL THE PERMITTEE OR THE RESPONSIBLE PERSONNEL HAVE MET ON SITE WITH THE SEDIMENT AND EROSION CONTROL INSPECTOR TO REVIEW THE APPROVED PLANS. 1 DAY

3. PRIOR TO BEGINNING EXCAVATION, THE CONTRACTOR MUST VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES WITHIN THE PROJECTED WORK AREA. 1 DAY

4. HOLD A PRE-CONSTRUCTION MEETING BETWEEN PROJECT REPRESENTATIVES INCLUDING BUT NOT LIMITED TO HARFORD COUNTY REPRESENTATIVES, DNR REPRESENTATIVES, ENGINEER, CONTRACTORS, UTILITY REPRESENTATIVES, INSPECTOR, ETC. 1 DAY

5. CLEAR MINIMUM AREA NECESSARY TO INSTALL ANY REQUIRED ACCESS, AND EROSION AND SEDIMENT CONTROL MEASURES. THIS SHALL INCLUDE BUT NOT BE LIMITED TO STABILIZED CONSTRUCTION ENTRANCE, TURBIDITY CURTAIN, AND ANY OTHER SEDIMENT EROSION CONTROLS AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR. NO CLEARING OR GRADING IS TO BE DONE EXCEPT WHEN NECESSARY FOR THE INSTALLATION OF SEDIMENT CONTROLS. 5 DAYS

6. ONCE THE 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. 1 DAY

7. BRING IN AND PLACE RIPRAP & SAND/GRAVEL/COBBLE MATERIAL IN ACCORDANCE WITH "GREEN HEADLAND BREAKWATER & SHINGLE BEACH SAND/GRAVEL/COBBLE ASSEMBLY NOTE" ON SHEET 8. 90 DAYS

8. INSTALL THE STORMWATER OUTFALLS BY FIRST PLACING BOTH SIDES OF THE IMBRICATED STONE CHANNEL WALLS, OUTER GABION STONE, AND COBBLE OUTFALL IN BETWEEN, AS SHOWN ON THE SITE PLANS & SHEET 8. FINISH GRADING THE ADJACENT SHINGLE BEACH AS NECESSARY TO SUPPORT THE IMBRICATED STONE CHANNEL WALLS. LAY THE PIPE EXTENSION DOWN, AND COVER WITH THE WELL-GRADED SHINGLE BEACH MIX. ENCASE THE END OF THE PIPE EXTENSION IN GABION STONE AND ANCHOR BOULDERS. 21 DAYS

9. PLACE SAND FILL AND GRADE AS SHOWN ON THE PLANS IN ACCORDANCE WITH "GENERAL CONSTRUCTION NOTES (NOTE 8)" ON SHEET 1. NO MORE AREA SHALL BE DISTURBED BY GRADING/EXCAVATION THAN CAN BE PROTECTED BY STONE BREAKWATERS OR SAND/GRAVEL/COBBLE STRUCTURES AND/OR STABILIZED BY THE END OF EACH WORKING DAY. THE INTENTION OF THIS RESTRICTION IS TO ENSURE GRADING OPERATIONS DO NOT OUT-PACE STABILIZATION EFFORTS. STOCKPILE ALL MATERIAL SUITABLE FOR REUSE AND/OR AS DIRECTED BY THE ENGINEER. 90 DAYS

10. INSTALL THE GREEN RIPRAP THAT IS LOCATED ABOVE THE PROPOSED SHORELINE ONCE ALL SAND AND SHINGLE BEACH FILL HAS BEEN PLACED. WASH IN SAND AND GRAVEL INTO THE VOID SPACES. INSTALL COIR LOG WITH TIMBER STAKES. 14 DAYS

11. INSTALL MARSH PLANTINGS AND SHRUBS AS SHOWN ON THE PLANS. INSTALL GOOSE AND DEER PROTECTION FENCING. 30 DAYS

12. REMOVE LEFTOVER STOCKPILED MATERIALS IF ANY. STABILIZE IMPACTED AREAS WITH SEED. 5 DAYS

13. ONCE THE AREA HAS BEEN 95% STABILIZED AND WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES. IMMEDIATELY STABILIZE ANY DISTURBED AREAS THAT RESULT FROM THE SEDIMENT CONTROL DEVICES. 1 DAY

261 DAYS

NOTES:

1. NO EQUIPMENT OR MATERIAL STORAGE IS ALLOWED OUTSIDE THE LIMITS OF DISTURBANCE (LOD).
2. CONTRACTOR MAY LIMP AND TRIM ANY OVERHANGING BRANCHES THAT MAY BE DAMAGED AS A RESULT OF TRUCK TRAFFIC. TREE REMOVAL SHALL BE AT THE DISCRETION OF HARFORD COUNTY.
3. CONTRACTOR TO USE TEMPORARY DELINEATED STOCKPILE AREA AS NECESSARY. MAXIMUM HEIGHT SHALL NOT EXCEED 15 FT AND MAXIMUM SLOPE SHALL NOT EXCEED 2:1. TEMPORARILY STABILIZE STOCKPILES AS PER THE STABILIZATION SPECIFICATIONS OR COVER THE STOCKPILE WITH PLASTIC TARP AND ANCHOR AT END AND SIDE.
4. CONTRACTOR TO CLEAR DEBRIS, OVERHANGING LIMBS, FALLEN TREES, AND TREES IN DANGER OF FALLING ALONG THE BEACH AT THE DISCRETION OF HARFORD COUNTY. FALLEN TREES AND WOODY DEBRIS SHALL BE REMOVED FROM THE SITE.
5. CONTRACTOR SHALL REMOVE TEMPORARY ACCESS ROADS UPON PROJECT COMPLETION. THIS SHALL INCLUDE WOOD CHIPS, GEOTEXTILE FABRIC, CONSTRUCTION MATTING, ETC. CONTRACTOR SHALL RESTORE ORIGINAL GRADE AND VEGETATIVELY STABILIZE DISTURBED AREAS WITH PERMANENT SEED MIX OR ACCORDING TO DESIGNATED PLANTING SCHEDULE OR AS DIRECTED BY PROJECT MANAGER.
6. TURBIDITY CURTAIN TO BE PLACED AND MAINTAINED AROUND THE PERIMETER OF THE ACTIVE WORK AREAS DURING SEDIMENT CAUSING ACTIVITIES AND UNTIL THE FILL HAS BECOME CONSOLIDATED.

60% DESIGN SCHEMATIC

HARFORD COUNTY, MARYLAND

WATERS EDGE COMMUNITY SHORELINE
RESTORATION
GENERAL NOTES

S/C PLAN # XXXXX	REVISIONS
GP # XXXXX-XXXX	
BILLING NO. XXXXXX	
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. 14920, EXPIRATION DATE: 05/12/2026.	
DRAWN BY : JRH	SCALE : SCALE: AS SHOWN
DESIGNED BY : JRH	DATE : 12/23/25
REVIEWED BY : JRH	
	SHEET NO. 2 OF 11



NOTES

1. TOPOGRAPHY AND BATHYMETRY SURVEYED BY BAYLAND CONSULTANTS AND DESIGNERS INC. DATED DECEMBER 3, 2024 AND OCTOBER 21, 2025.
2. REFERENCED TO MLW DATUM. MLW = +1.37' MLW PER NOAA'S VDATUM.
3. THE LATEST HARFORD COUNTY GIS, ROAD, LIDAR, AND BUILDING PLANIMETRICS DATA WERE USED TO CREATE THIS BASEMAP.



"Integrating Engineering and Environment"

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Hanover, Maryland 21076
Phone: (410) 694-9401
Fax: (410) 694-9105
www.baylandinc.com
BAYLAND JOB NO. 4_4702

0 30 60 120
1 INCH = 60 FEET

BILLING NO. XXXXXX

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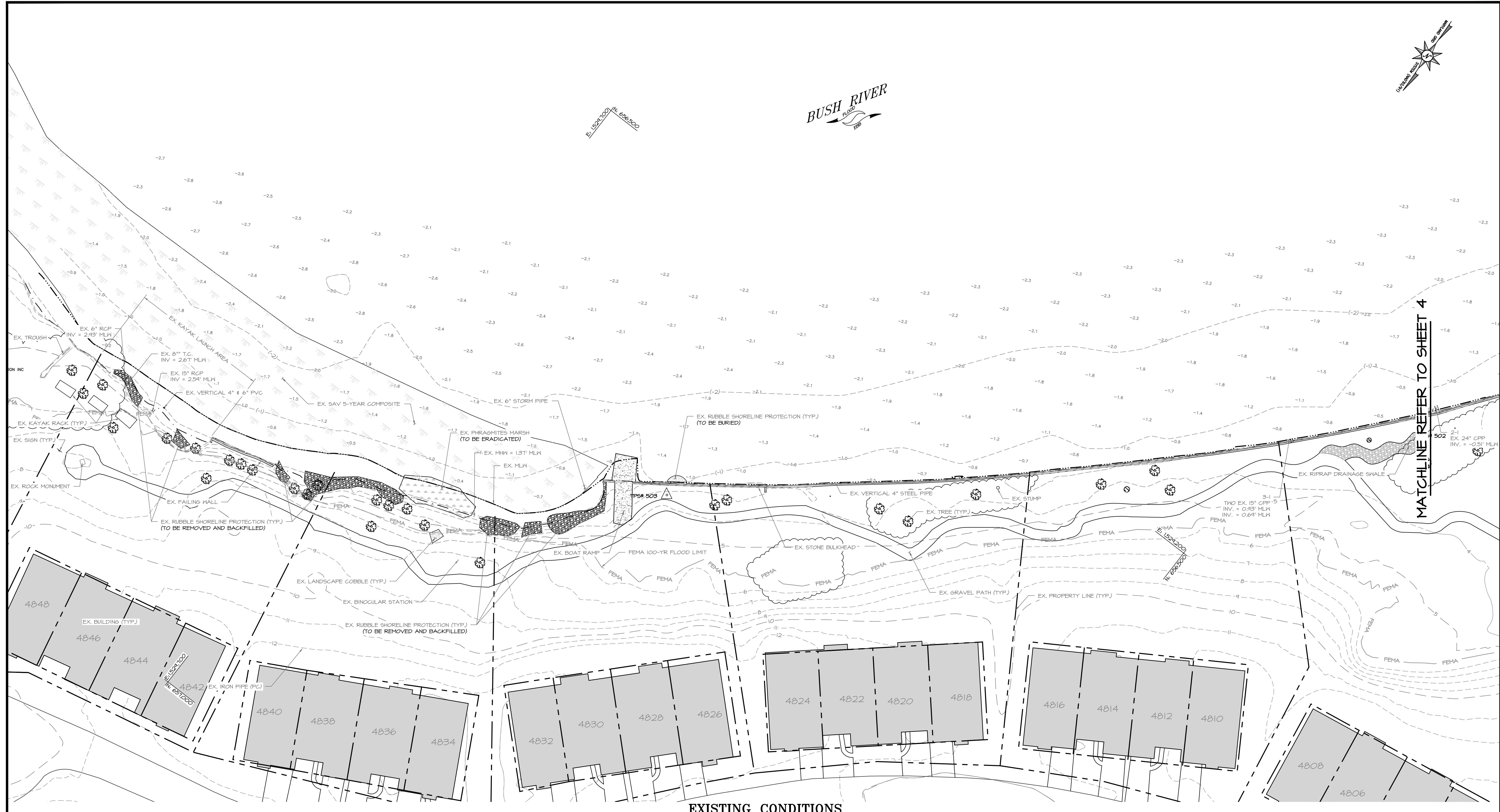
S/C PLAN # XXXXX	REVISIONS
GP # XXXXX-XXXX	

HARFORD COUNTY, MARYLAND	WATER'S EDGE COMMUNITY SHORELINE RESTORATION
KEY SHEET	
DRAWN BY : JRH	SCALE : 1" = 60'
DESIGNED BY : JRH	DATE : 12/23/25
REVIEWED BY : JRH	
	SHEET NO. 3 OF 11



S/C PLAN # XXXXX	REVISIONS
GP # XXXXX-XXXX	

HARFORD COUNTY, MARYLAND	
WATER'S EDGE COMMUNITY SHORELINE RESTORATION	
EXISTING CONDITIONS	
DRAWN BY : JRH	SCALE : 1" = 30'
DESIGNED BY : JRH	
REVIEWED BY : JRH	DATE : 12/23/25
	SHEET NO. 4 OF 11



EXISTING CONDITIONS

SCALE: 1" = 30'

60% DESIGN SCHEMATIC

HARFORD COUNTY, MARYLAND

**WATER'S EDGE COMMUNITY SHORELINE
RESTORATION**
EXISTING CONDITIONS

S/C PLAN # XXXXX	REVISIONS
GP # XXXXX-XXXX	
BILLING NO. XXXXXX	
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DRAWN BY : JRH	SCALE : 1" = 30'
DESIGNED BY : JRH	
REVIEWED BY : JRH	DATE : 12/23/25
	SHEET NO. 5 OF 11



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BAYLAND JOB NO. 4_4702

NOTES

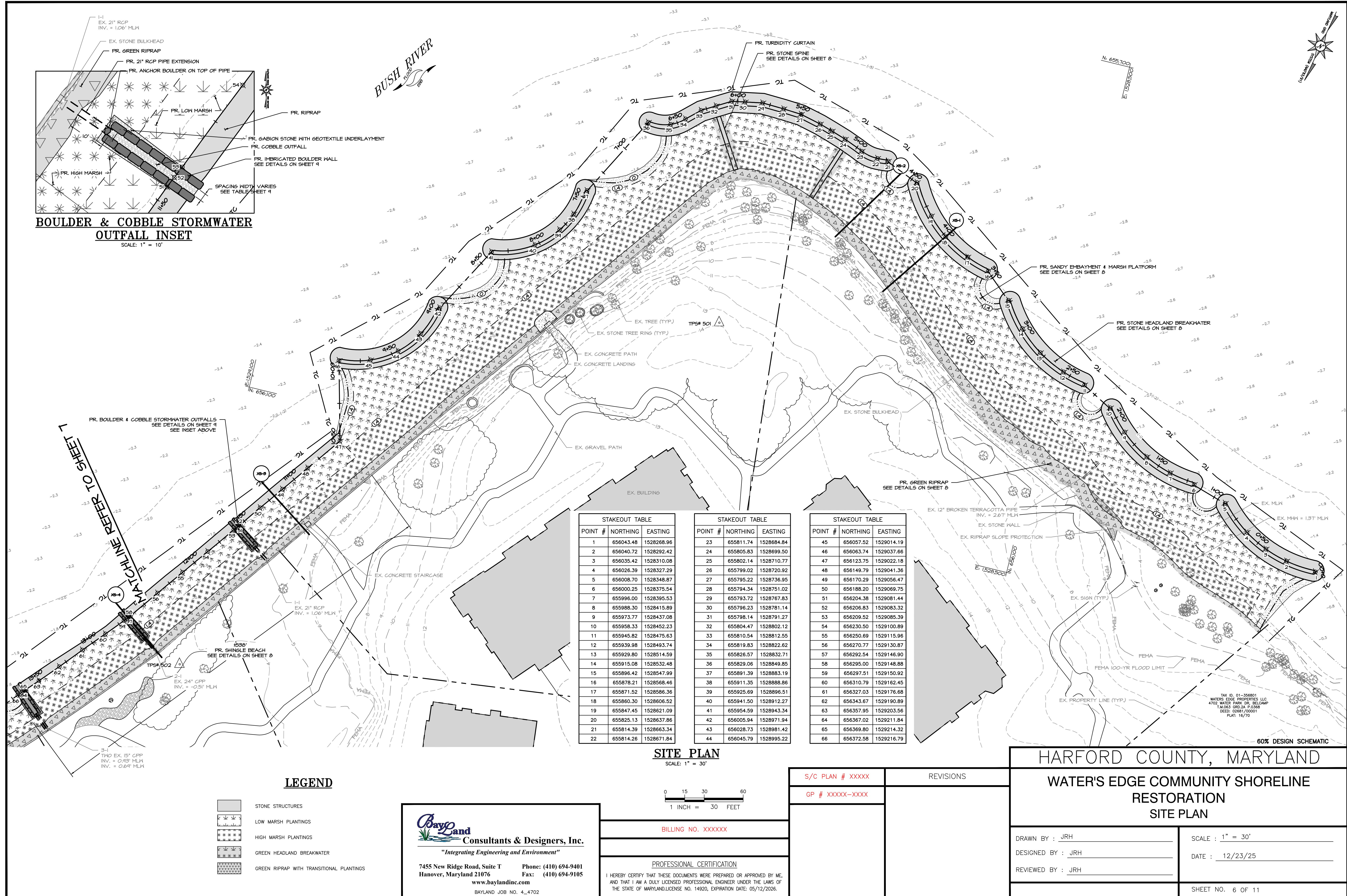
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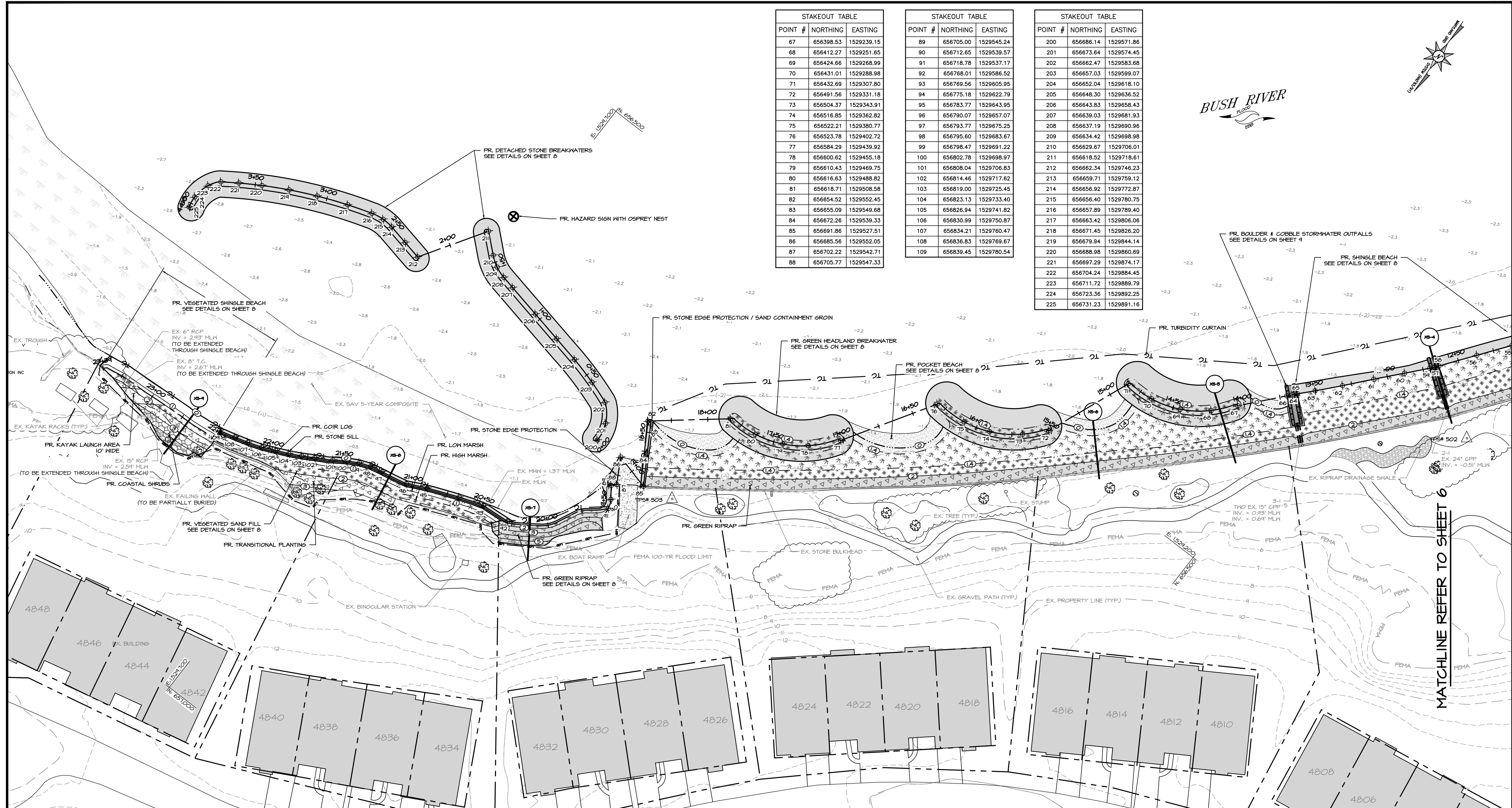
0 15 30 60
1 INCH = 30 FEET

BILLING NO. XXXXXX

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LEGEND

-  STONE STRUCTURES
-  LOW MARSH PLANTINGS
-  HIGH MARSH PLANTINGS
-  GREEN HEADLAND BREAKWATER
-  GREEN RIPRAP WITH TRANSITIONAL PLANTINGS
-  TRANSITIONAL PLANTINGS
-  COIR LOG
-  COASTAL SHRUBS

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BAYLAND JOB NO. 4_4702

11. *What is the primary purpose of the following statement?*

0 15 30 60

1 INCH = 30 FEET

BILLING NO. XXXXXX

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AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF
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S/C PLAN # XXXXX	REVISIONS
GP # XXXXX-XXXX	

HARFORD COUNTY, MARYLAND

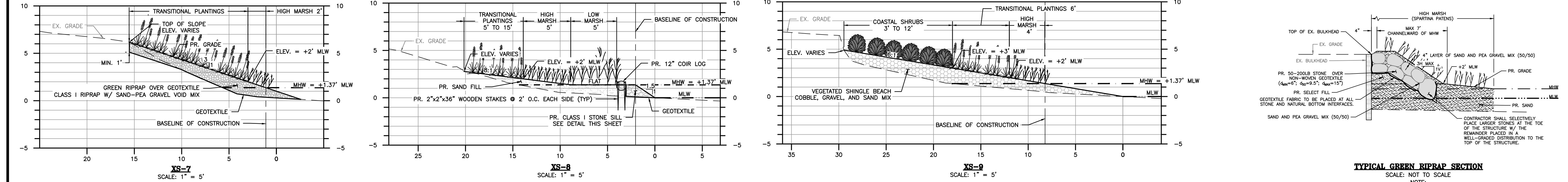
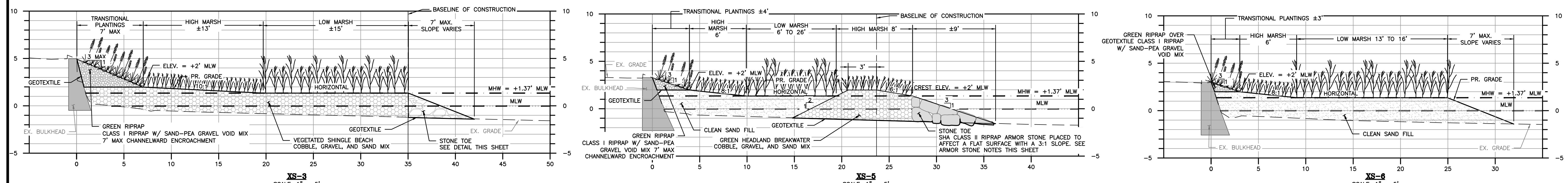
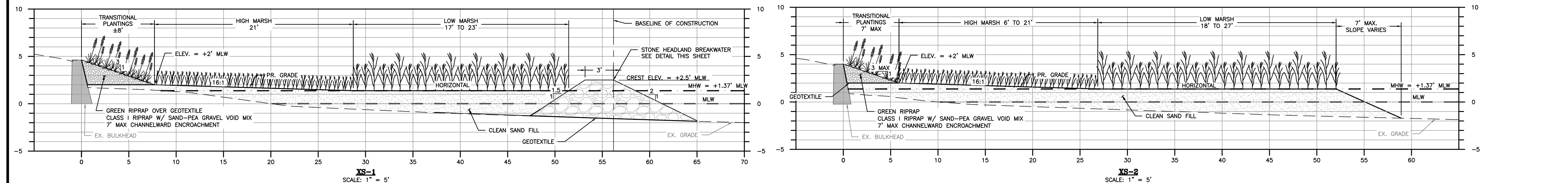
WATER'S EDGE COMMUNITY SHORELINE RESTORATION SITE PLAN

DRAWN BY : JRH SCALE : 1" = 30'
DESIGNED BY : JRH DATE : 12/23/25
REVIEWED BY : JRH

SCALE : 1" = 30'

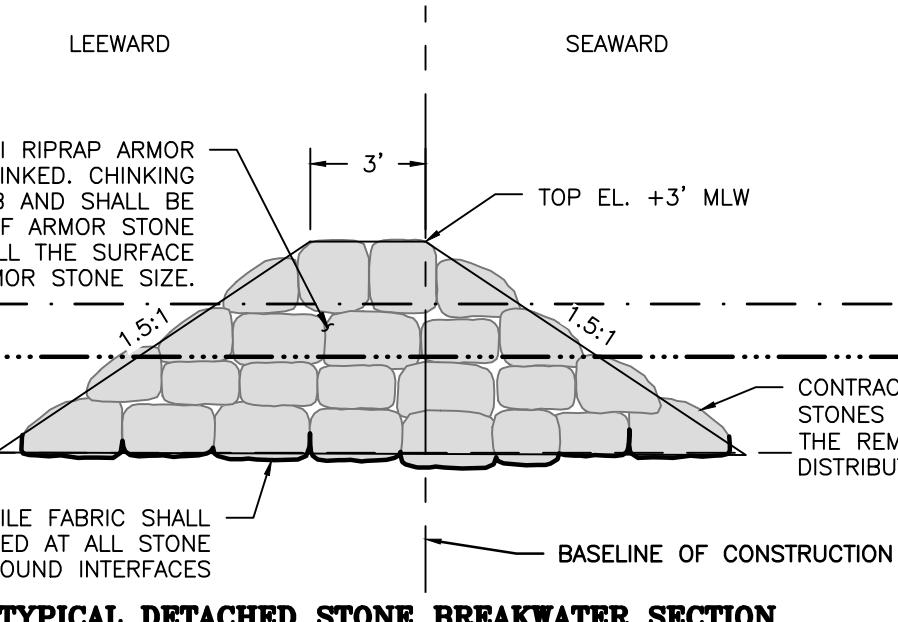
DATE : 12/23/23

SHEET NO. 7 OF 11



TYPICAL GREEN RIPRAP SECTION

NOTE:
CONTRACTOR SHALL CONSTRUCT THE SLOPE PROTECTION IN VERTICAL LIFTS WITH MAXIMUM THICKNESS OF 9
S. SAND AND PEA GRAVEL MIX ⁽⁵⁰⁾ SHALL BE PLACED IN EACH LIFT TO MINIMIZE VOID SPACE. THE VOID SPACE
MUST BE MINIMIZED TO THE SATISFACTION OF THE COUNTY.



TYPICAL DETACHED STONE BREAKWATER SECTION

GREEN HEADLAND BREAKWATER & SHINGLE BEACH

SAND/GRAVEL/COBBLE MIX ASSEMBLY NOTE

ARMOR STONE NOTES:

PROPOSED ARMOR STONE TO BE PLACED AND ROUGHLY CHINKED.
CLASS II RIPRAP: CHINKING STONE SHALL BE 50-150 LB
CLASS I RIPRAP: CHINKING STONE SHALL BE 6-27 LB
PLACEMENT OF CHINKING STONE SHALL BE CARRIED OUT AFTER PLACEMENT OF ARMOR STONE
TO FILL SURFACE VOIDS.

LARGEST ARMOR STONES TO BE PLACED AT TOE OF STRUCTURE WITH THE REMAINDER PLACED
IN A WELL-GRADED DISTRIBUTION TO THE TOP OF THE STRUCTURE.

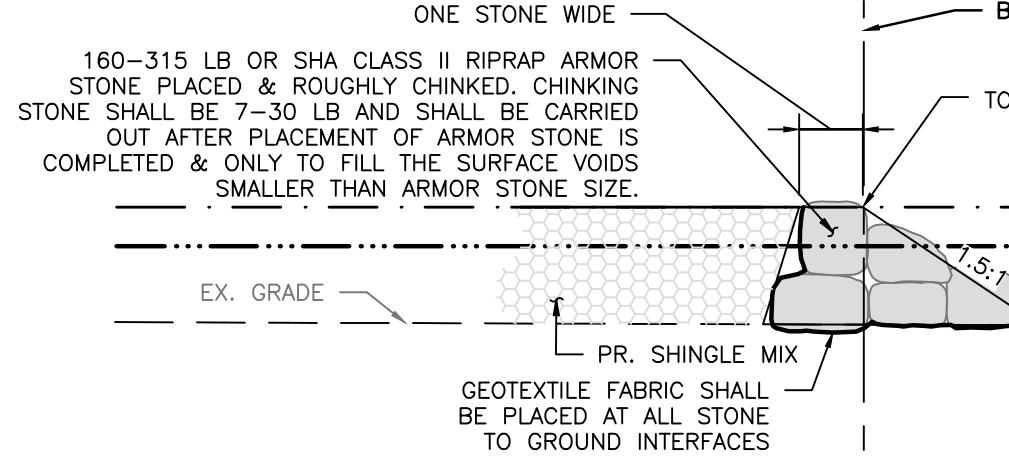
REMOVE RUBBLE AND PLACE GEOTEXTILE FABRIC ON PREPARED SUBGRADE, ANY EXISTING
NATURAL STONE CAN BE REUSED IF IT FITS STONE SPECIFICATIONS.

GEOTEXTILE FABRIC SHALL BE PLACED AT ALL STONE TO GROUND INTERFACES. ALL STONE
MATERIALS SHALL BE UNDERLAIN BY WINFAB 2199 GEOTEXTILE FABRIC, OR APPROVED
EQUIVALENT. GEOTEXTILE FABRIC IS TO EXTEND NO MORE THAN ONE FOOT BEYOND THE STONE
OF

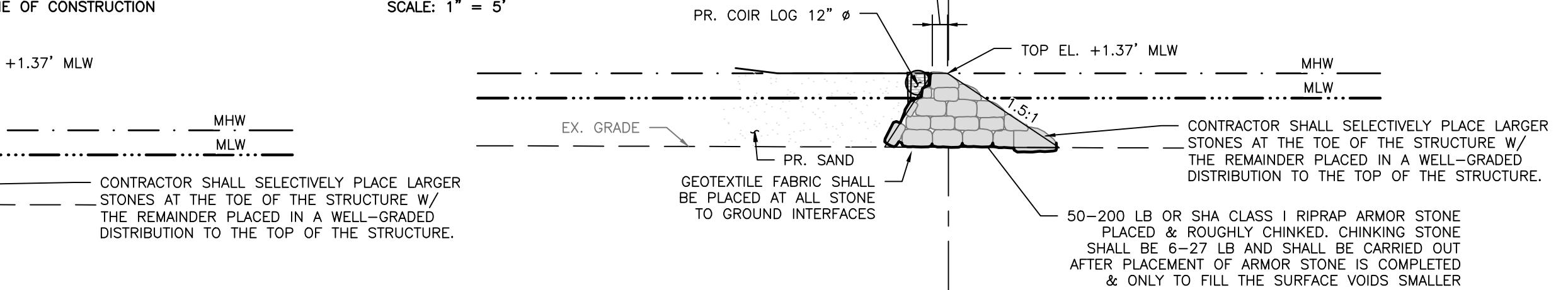


LIVING SHORELINE CROSS-SECTIONS & DETAILS

SCALE: 1" = 5'

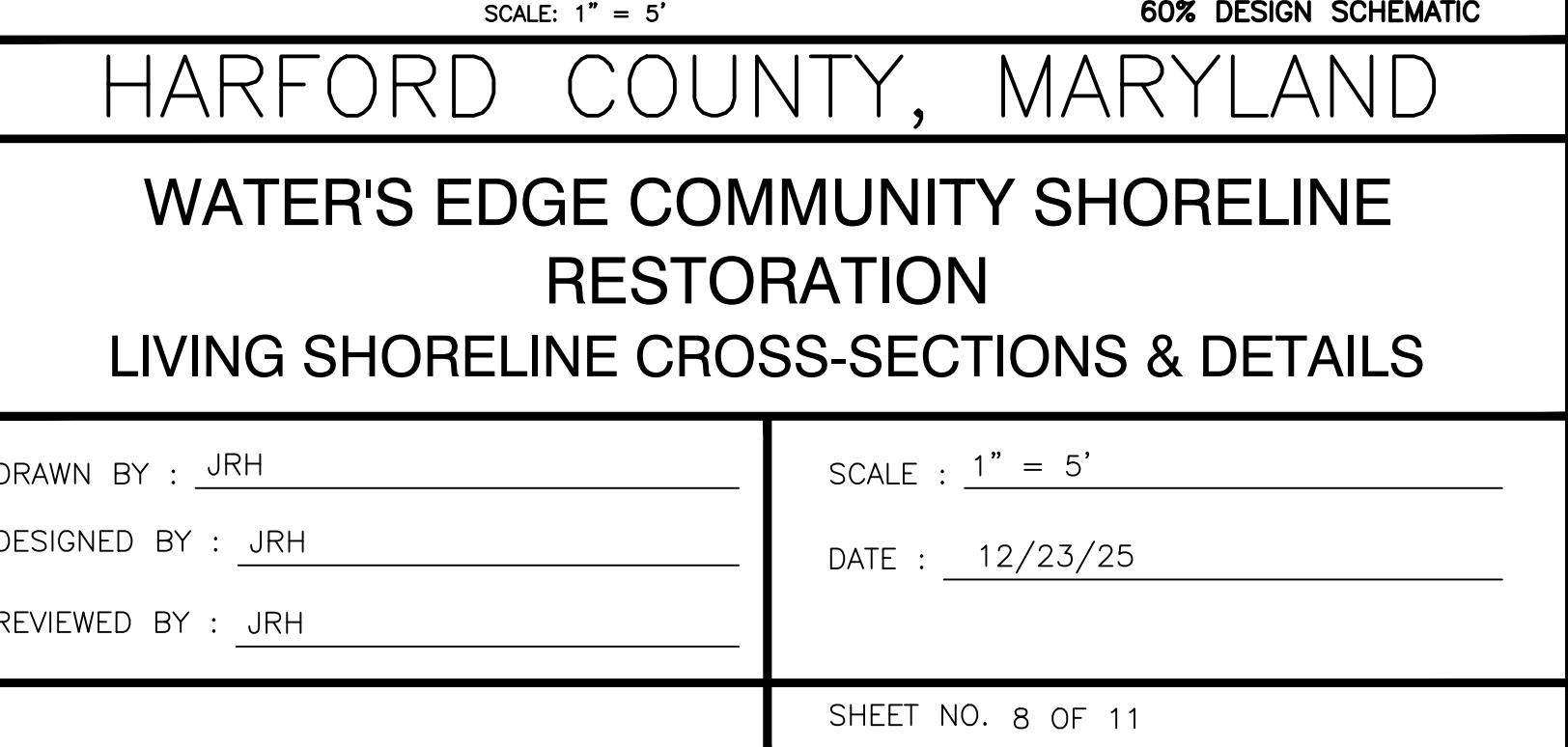


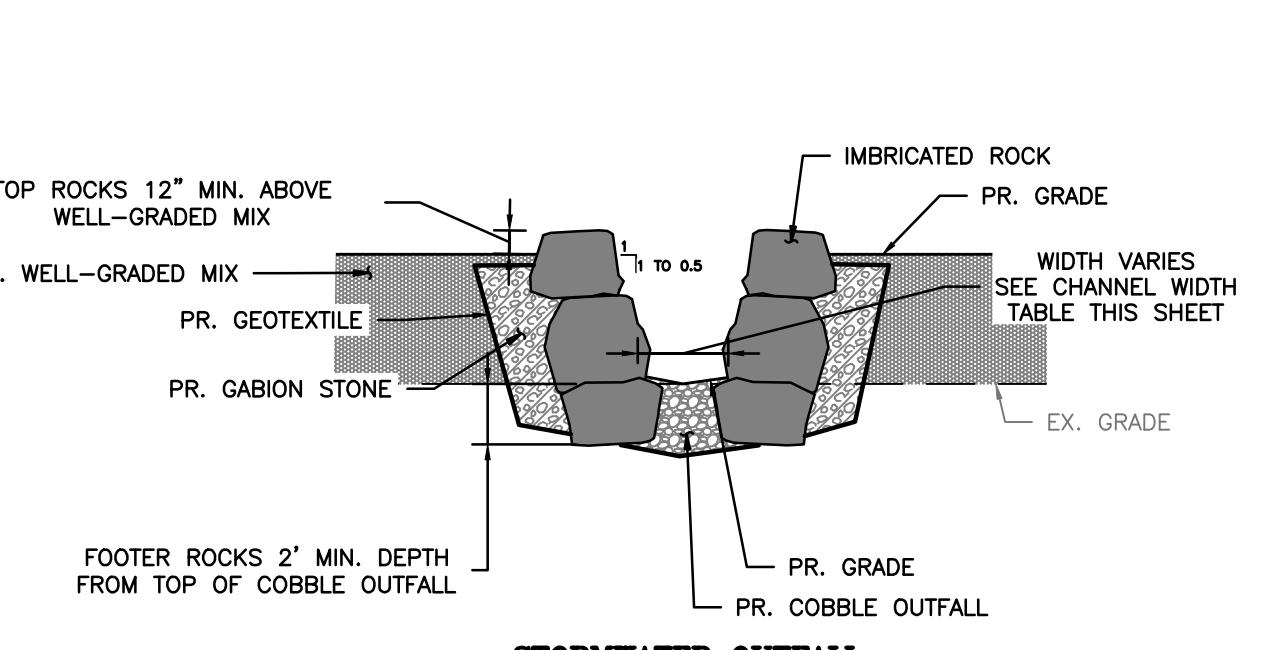
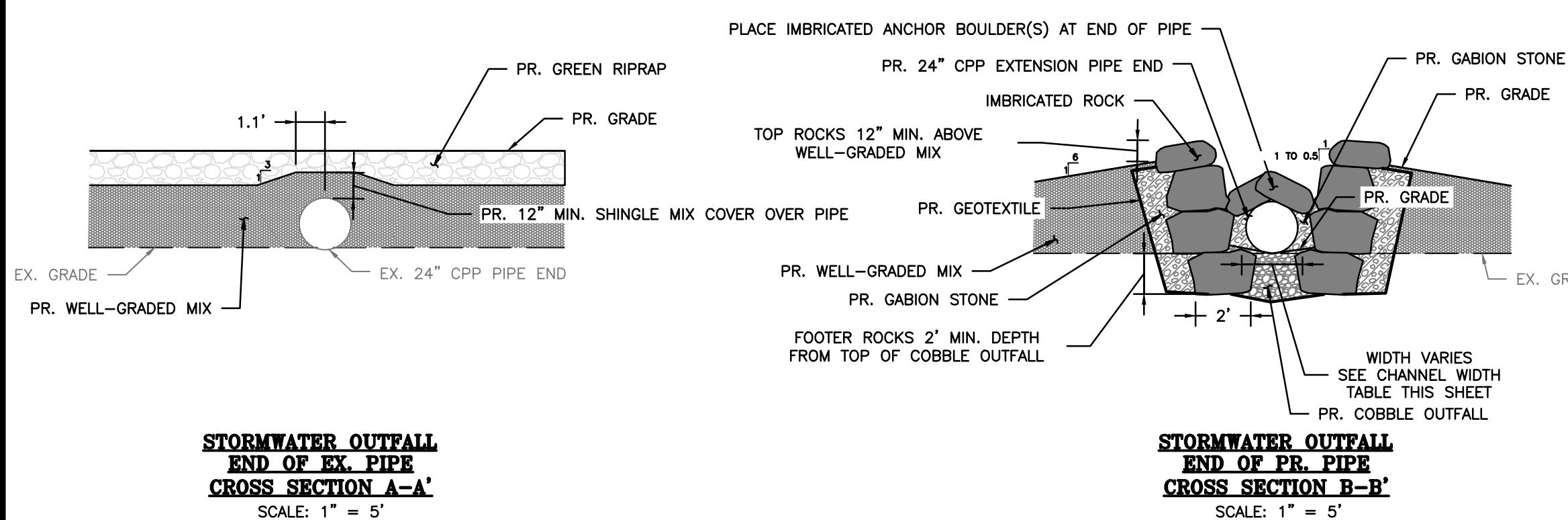
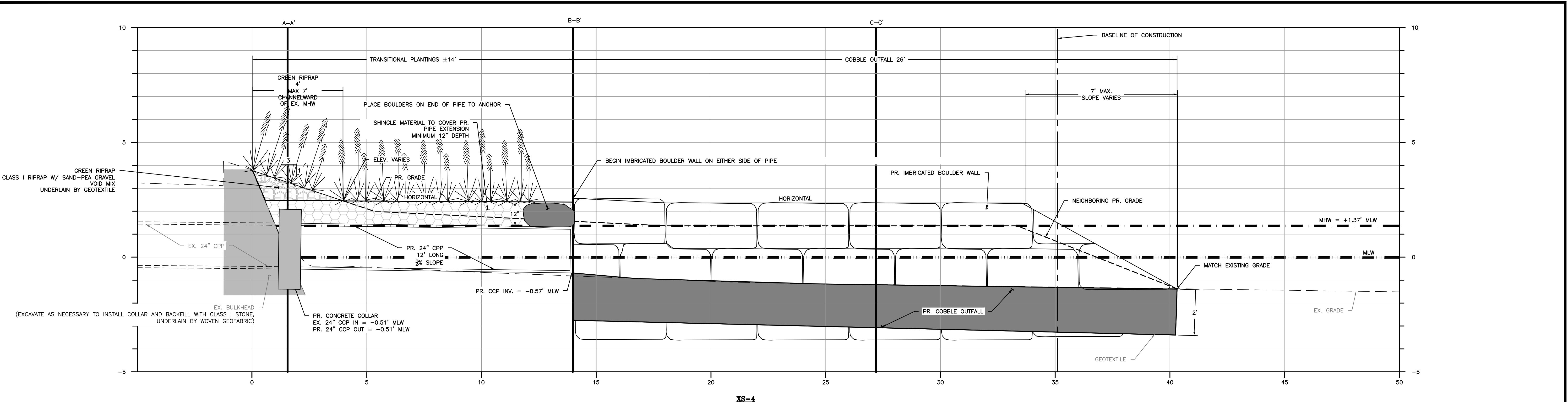
STA. 10+50 TO 13+75
TYPICAL STONE TOE SECTION



STA. 20+25 TO 22+60
TYPICAL STONE SILL SECTION

PLAN # XXXXX	REVISIONS
XXXXX-XXXX	





ROCK SIZE TABLE

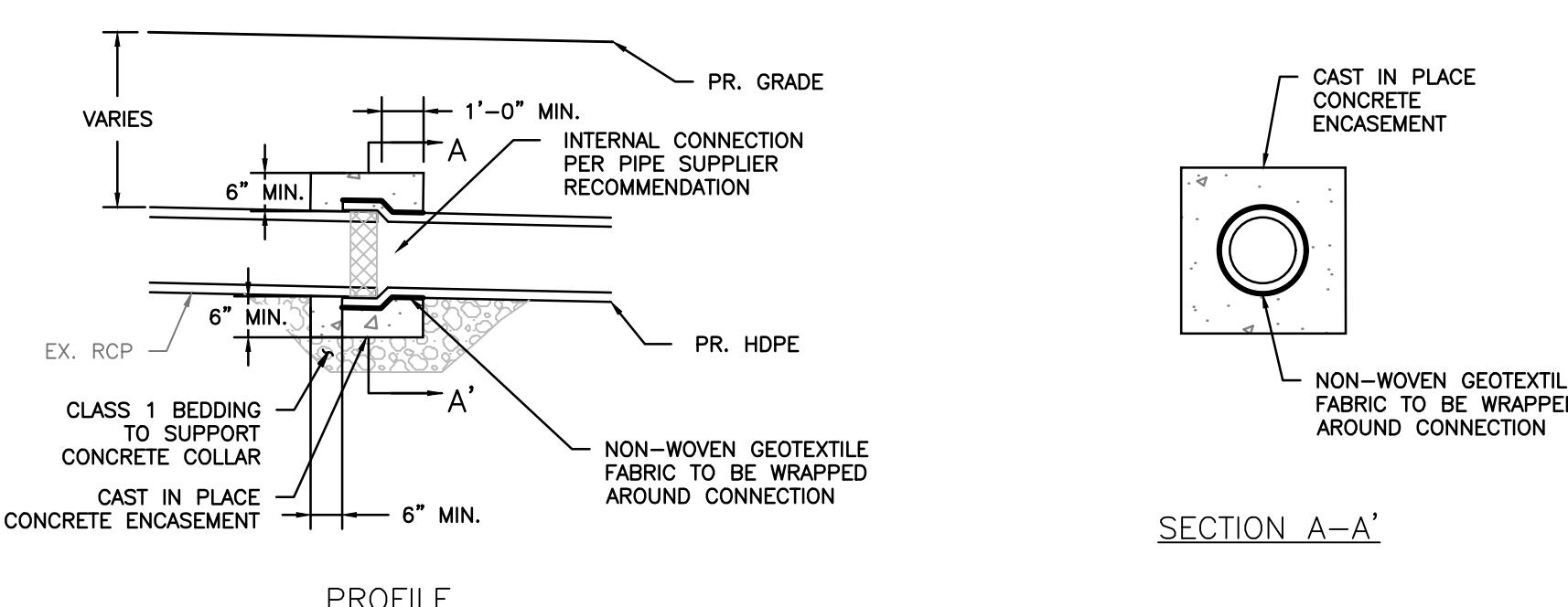
ROCK TYPE	SIZE	% BY WEIGHT
IMBRICATED ROCK	GREATER THAN 2' X 3' X 4'	20
IMBRICATED ROCK	1' X 2' X 3' TO 2' X 3' X 4'	80

CHANNEL WIDTH TABLE

OUTLET	EX. PIPE SIZE AND TYPE	MIN. CHANNEL WIDTH
1-1	21" RCP	27"
2-1	24" CCP	30"
3-1	DOUBLE 15" CCP	36"

IMBRICATED BOULDER WALL NOTES

1. ALL MATERIALS SHALL BE UNDERLAIN BY MIRAFI FW404 GEOTEXTILE FABRIC OR EQUAL.
2. WHEN BACKFILLING, ALL MATERIAL SHALL BE COMPACTED FIRMLY IN ALL VOIDS TO SECURE STONE. ALL SOIL SHALL BE COMPACTED TO MD-378 STANDARDS.
3. ALL ROCKS SHALL BE PLACED WITH 2 PARALLEL FACES ORIENTED UP AND DOWN WITH THE TOP FACE TILTED 15°±5° INTO THE UPSTREAM DIRECTION.
4. IMBRICATED ROCK WALL SHALL BE CONSTRUCTED SUCH THAT ALL ROCKS SECURELY INTERLOCK AND SHALL NOT ROCK OR ROTATE IN PLACE. ALL ROCKS EXCEPT BOTTOM FOOTER ROCKS SHALL BE SUPPORTED BY A FOOTER ROCK.
5. IMBRICATED ROCK SHALL BE OBLONG AND FLAT IN APPEARANCE WITH TWO PARALLEL FACES, AND SHALL BE STACKABLE.
6. ALL ROCK SHALL BE GRANITE ROCK THAT IS TAN, DARK BROWN, OR DARK GRAY IN COLOR. ROCKS NOT MEETING SPECIFICATIONS SHALL BE REMOVED AND REPLACED AT NO COST TO THE OWNER.



TYPICAL CONCRETE COLLAR DETAIL

SCALE: NOT TO SCALE

STORMWATER OUTFALL CROSS-SECTIONS & DETAILS

SCALE: AS SHOWN

BILLING NO. XXXXXX

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. 14920, EXPIRATION DATE: 05/12/2026.

S/C PLAN # XXXXX	REVISIONS
GP # XXXXX-XXXX	

HARFORD COUNTY, MARYLAND

WATER'S EDGE COMMUNITY SHORELINE RESTORATION

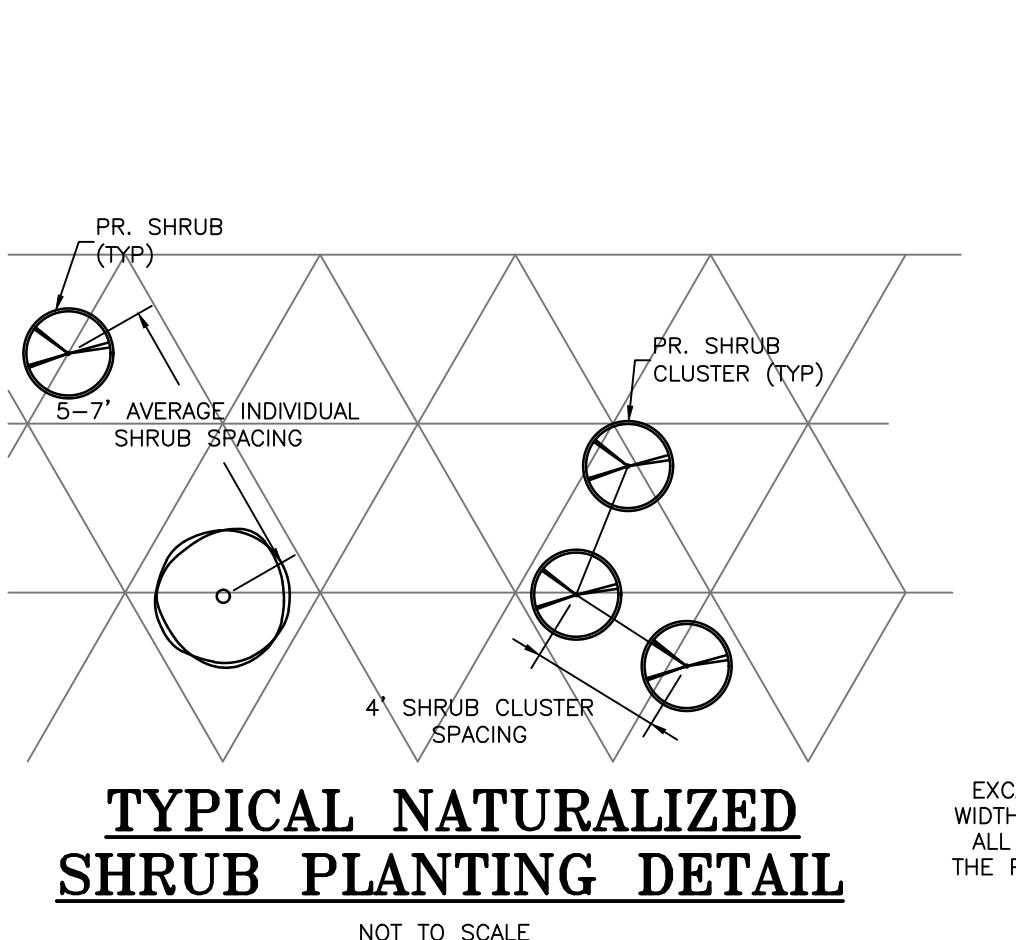
STORMWATER OUTFALL CROSS-SECTIONS & DETAILS

DRAWN BY : JRH	SCALE : AS SHOWN
DESIGNED BY : JRH	
REVIEWED BY : JRH	

SHEET NO. 9 OF 11

PLANTING SCHEDULE

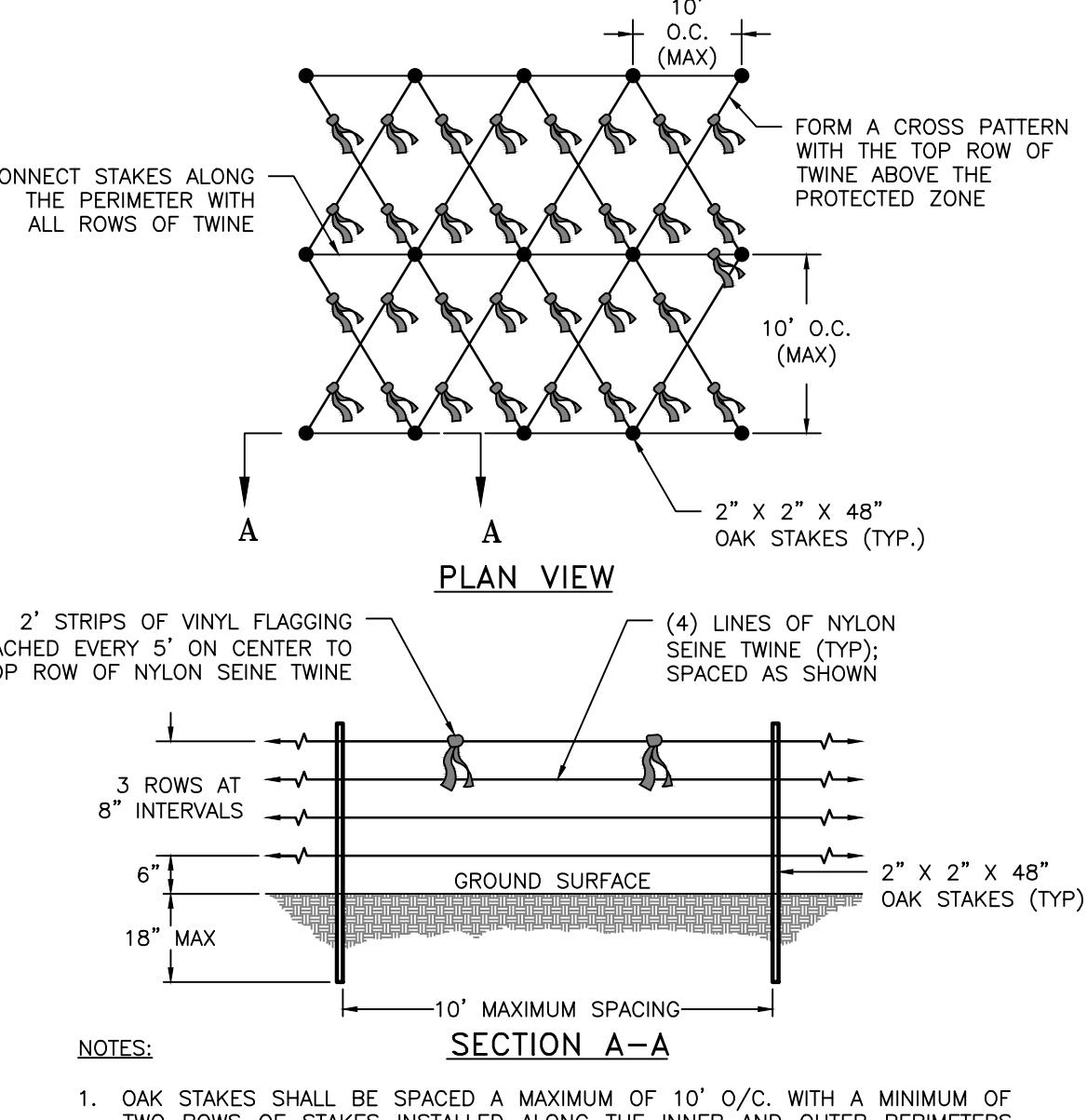
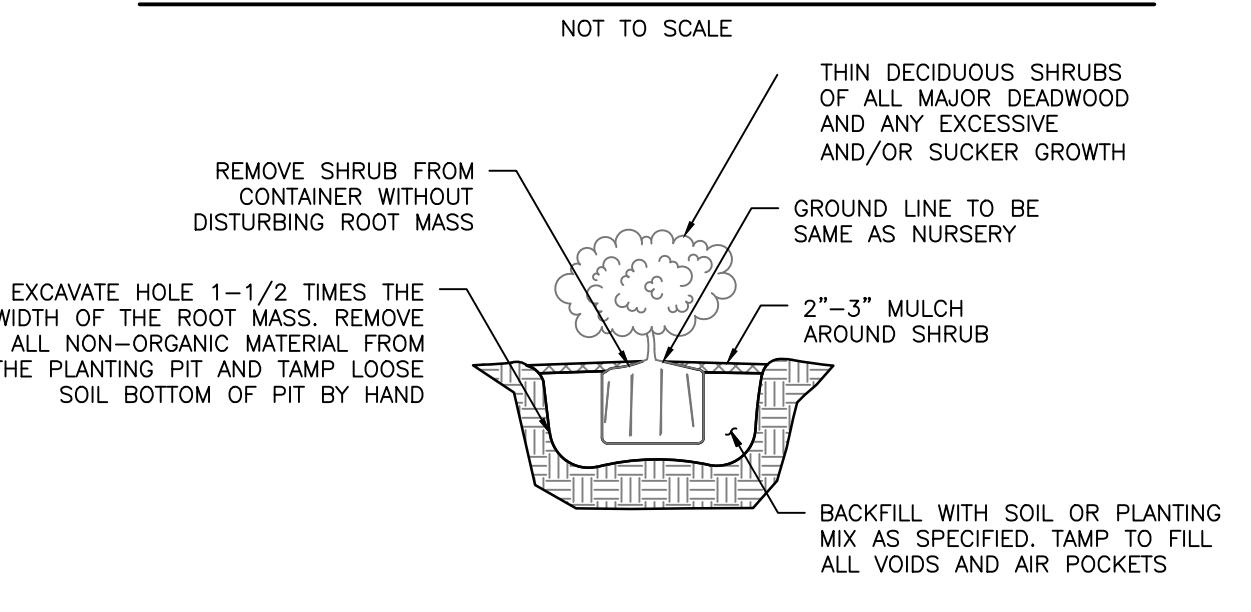
PLANTING ZONE	SYMBOL	TOTAL AREA (SF)	COMMON NAME	SCIENTIFIC NAME	INDICATOR STATUS	TYPE	SIZE	DISTRIBUTION	AVG SPACING (FT)	QUANTITY	DESCRIPTION
LOW MARSH	▲▲▲▲▲▲	35,006	SMOOTH CORDGRASS	SPARTINA ALTERNIFLORA	OBL	HERBACEOUS	DP50	RANDOM	1	35,006	BETWEEN PROPOSED MLW AND PROPOSED MW.
HIGH MARSH	✳✳✳✳✳✳	29,116	SALT MEADOW CORDGRASS	SPARTINA PATENS	FACW	HERBACEOUS	DP50	RANDOM	1	29,116	ABOVE PROPOSED MW TO 2 FT ABOVE MLW.
TRANSITIONAL & GREEN RIPRAP	▽▽▽▽▽▽	12,996	SEASIDE GOLDENROD	SOLIDAGO SEMPERVIRENS	FACW	HERBACEOUS	DP50	RANDOM	1	4,332	GREEN RIPRAP; ABOVE 2 FT MW; SHINGLE BEACH; BETWEEN 2 TO 3 FT ABOVE MLW.
	▽▽▽▽▽▽		COMMON EVENING PRIMROSE	ONETHERA BIENNIS	FACU	HERBACEOUS	DP50	RANDOM	1	4,332	
	▽▽▽▽▽▽		SWITCHGRASS	PANICUM VIRGATUM	FAC	HERBACEOUS	DP50	RANDOM	1	4,332	
COASTAL SHRUBS	●●●●●●	453	INKBERRY	ILEX GLABRA	FACW	SMALL SHRUB	#1 CONT. OR 9" DEEP BAND POT, 1-2 FT	RANDOM	5	5	
	●●●●●●		MARSH ELDER	IVA FRUTESCENS	FACW	SMALL SHRUB	#1 CONT. OR 9" DEEP BAND POT, 1-2 FT	RANDOM	5	5	
	●●●●●●		NORTHERN BAYBERRY	MORELLA PENNSYLVANICA	FAC	SMALL SHRUB	#1 CONT. OR 9" DEEP BAND POT, 1-2 FT	RANDOM	5	5	
	●●●●●●		GROUNDSEL BUSH	BACCHARIS HALIMIFOLIA	FAC	SMALL SHRUB	#1 CONT. OR 9" DEEP BAND POT, 1-2 FT	RANDOM	5	5	



SHRUB PLANTING - CONTAINER GROWN

SCALE: NOT TO SCALE

NOT TO SCALE



SEQUENCE OF IMPLEMENTATION

1. CONTRACTOR SHALL ARRANGE PRE-PLANTING MEETINGS WITH COUNTY PLANNING & ZONING DEPARTMENT STAFF AT LEAST 5 DAYS IN ADVANCE OF DISTURBANCES OF ANY LAND ON SITE.
2. REMOVE/ELIMINATE TURF GRASS AND TILL UNFORESTED AREAS TO BE PLANTED TO A DEPTH OF 12 INCHES.
3. USE TREE SHELTER TUBES WITH MESH TOPS FOR SEEDLING PLANTING TO REDUCE ANIMAL DAMAGE.
4. MULCH AROUND LANDSCAPING STOCK TO REDUCE COMPETITION FROM INVASIVE SPECIES.
5. MONITOR THE PLANTINGS OFTEN TO REDUCE PLANT STRESS SUCH AS WATER DEFICIENCY, NUTRIENT DEFICIENCY, INVASIVE SPECIES COMPETITION, PEST DAMAGE, AND DISEASE.
6. THE CONTRACTOR SHALL OBSERVE: MINIMAL SITE PREPARATION/DISTURBANCE, PROTECTION OF PLANTS AFTER DELIVERY UNTIL THEY ARE PLANTED, PROPER DIGGING AND HANDLING OF PLANT MATERIALS, PROPER EXCAVATION OF PLANTING AREAS, PLANTING OPERATIONS, STABILIZATION OF THE PLANTING AREAS WITH MULCH AFTER PLANTING, STAKING AND PRUNING, AND INSTALLATION OF BUFFER PROTECTION SIGNAGE.

BUFFER MANAGEMENT & PROTECTION STANDARDS

1. REMOVAL OF VEGETATION WITHIN THE 100-FOOT BUFFER AND EXPANDED BUFFER IS PROHIBITED, CUTTING AND CLEARING OF NATURAL VEGETATION WITHIN THE BUFFER AND EXPANDED BUFFER SHALL BE AS SHOWN IN THE BUFFER MANAGEMENT PLAN AS SUBMITTED AND ON AS SUBSEQUENTLY AMENDED, SUBJECT TO APPROVAL BY THE COUNTY PLANNING AND ZONING OFFICE. ADDITIONAL INFORMATION CAN BE OBTAINED BY CONTACTING THE PLANNING AND ZONING OFFICE AT 220 SOUTH MAIN STREET, 2ND FLOOR, BEL AIR, MD, 21014.
2. THE BUFFER ON THIS PARCEL SHALL BE PLANTED IN ACCORDANCE WITH THIS PLAN. ALL EXISTING AND PLANTED VEGETATION WITHIN THE BUFFER SHALL BE MAINTAINED AND SURVIVAL OF PLANTED AND NATURALLY OCCURRING REGENERATED AREAS OF THE BUFFER SHALL BE AS DESCRIBED IN THIS PLAN.
3. NEW LAWN AREAS SHALL NOT BE CREATED WITHIN THE BUFFER OR EXPANDED BUFFER UNLESS SPECIFICALLY ADDRESSED IN THIS BUFFER MANAGEMENT PLAN.
4. THE CONTRACTOR SHALL OBSERVE MINIMAL SITE PREPARATION/DISTURBANCE, PROTECTION OF PLANTS AFTER DELIVERY UNTIL THEY ARE PLANTED, PROPER DIGGING AND HANDLING OF PLANT MATERIALS, PROPER EXCAVATION OF PLANTING AREAS, PLANTING OPERATIONS, STABILIZATION OF THE PLANTING AREAS WITH MULCH AFTER PLANTING, STAKING, PRUNING, AND INSTALLATION OF BUFFER PROTECTION SIGNAGE.

LANDSCAPE NOTES

1. ALL PLANT SPECIES SHALL BE NATIVE TO THE CHESAPEAKE AND ATLANTIC COASTAL BAYS REGION BASED ON THE U.S. FISH AND WILDLIFE SERVICE PUBLICATION, NATIVE PLANTS FOR WILDLIFE HABITAT AND CONSERVATION LANDSCAPING.
2. SPECIES CLASSIFICATION (CANOPY TREE, UNDERSTORY TREE, ETC.) IS IN ACCORDANCE WITH MATURE HEIGHTS AS SET FORTH IN THE U.S. FISH AND WILDLIFE SERVICE PUBLICATION, NATIVE PLANTS FOR WILDLIFE HABITAT AND CONSERVATION LANDSCAPING.
3. SPECIES HAVE BEEN SELECTED BASED ON AN ANALYSIS OF SURROUNDING NATIVE FOREST AND DEVELOPED WOODLAND COVER.
4. UNLESS SPECIFIC PLANTING LOCATIONS ARE SHOWN, ALL WOODY PLANTINGS SHALL BE INSTALLED IN A NATURALIZED LAYOUT TO SIMULATE NATURAL PATTERNS OF DISTRIBUTION AND GROWTH.
5. THE QUANTITY OF ANY SINGLE SPECIES DOES NOT EXCEED 20 PERCENT OF THE OVERALL PLANTING.

MONITORING & SURVIVAL REQUIREMENTS

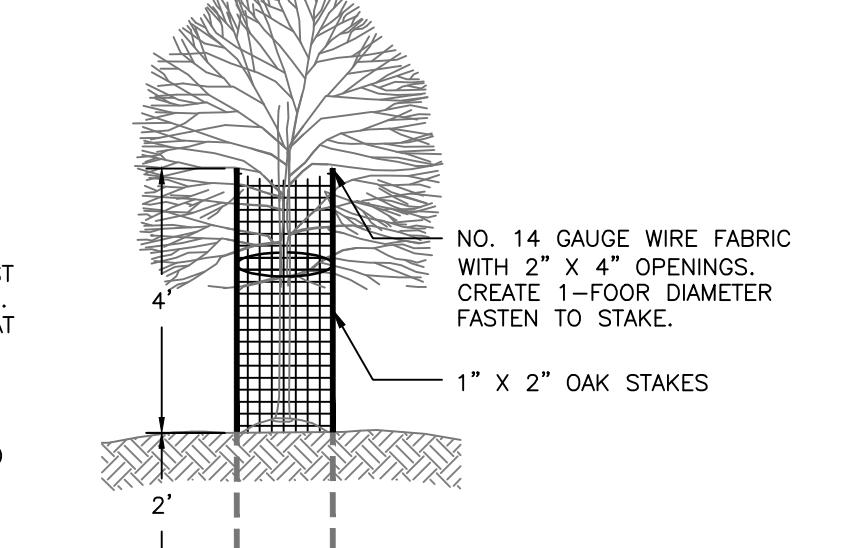
1. PLANTINGS SHALL BE MONITORED TWICE A YEAR FOR A PERIOD OF TWO YEARS AFTER PLANT INSTALLATION.
2. MONITORING SHALL BE PERFORMED ONCE DURING APRIL/MAY AND ONCE AUGUST/SEPTEMBER DURING EACH MONITORING YEAR.
3. MONITORING SHALL INCLUDE AN ASSESSMENT OF PLANT SURVIVAL, GENERAL CONDITION OF PLANTED VEGETATION, INVASIVE SPECIES PRESENCE, EVIDENCE OF PESTS OR PREDATION, AND RECOMMENDATIONS TO IMPROVE PLANT CONDITION.
4. AT THE END OF THE 2-YEAR MONITORING PERIOD, PLANT SURVIVAL SHALL BE 100% IN ACCORDANCE WITH ANNE ARUNEL COUNTY CODE AND COMAR 27.01.09.01-20. ANY SURVIVAL DEFICIENCY SHALL BE REQUIRED TO BE REPLACED TO MEET THE MINIMUM REQUIREMENT.
5. THE REQUIREMENT FOR REPLACEMENT PLANTINGS MAY EXTEND THE MONITORING PERIOD BEYOND 2-YEARS.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL MONITOR PLANTINGS OFTEN TO REDUCE STRESS SUCH AS WATER AND/OR NUTRIENT DEFICIENCY, INVASIVE SPECIES, PEST DAMAGE, AND DISEASE.
2. WATER ONLY AS NECESSARY BUT AT LEAST ONCE EVERY 5 DAYS WITHOUT RAINFALL FROM MAY THROUGH SEPTEMBER FOR THE FIRST GROWING SEASON AFTER PLANTING.
3. USE OF LOW NITROGEN AND SLOW RELEASE FERTILIZER MAY BE UTILIZED. APPLICATION SHALL BE COMPLETED IN EARLY SPRING OR LATE FALL.
4. INSPECTION FOR SURVIVAL SHALL BE PERFORMED IN ACCORDANCE WITH MONITORING AND SURVIVAL REQUIREMENTS.
5. DEER PROTECTION SHALL BE REMOVED AT THE CLOSE OF THE REQUIRED MONITORING PERIOD.

GENERAL PLANTING NOTES

1. ALL PLANT SPECIES SHALL BE NATIVE TO THE CHESAPEAKE AND ATLANTIC COASTAL BAYS REGION BASED ON THE U.S. FISH AND WILDLIFE SERVICE PUBLICATION, NATIVE PLANTS FOR WILDLIFE HABITAT AND CONSERVATION LANDSCAPING.
2. SPECIES CLASSIFICATION (CANOPY TREE, UNDERSTORY TREE, ETC.) IS IN ACCORDANCE WITH MATURE HEIGHTS AS SET FORTH IN THE U.S. FISH AND WILDLIFE SERVICE PUBLICATION, NATIVE PLANTS FOR WILDLIFE HABITAT AND CONSERVATION LANDSCAPING.
3. ALL PLANT MATERIALS SHALL BE NURSERY GROWN AND SHALL CONFORM TO AMERICAN ASSOCIATION OF NURSERYMEN, INC. STANDARDS.
4. CONTRACTOR IS RESPONSIBLE TO VERIFY ALL UTILITY LOCATIONS PRIOR TO PLANTING MATERIAL. IF CONFLICTS ARISE, BAYLAND, INC. MUST BE NOTIFIED PRIOR TO ANY GROUND BREAKING.
5. MARSH PLANTING WILL BE ACCOMPLISHED BETWEEN APRIL 1 AND JUNE 30 (SPRING PLANTING SEASON) OR AUGUST 15 AND OCTOBER 15 (FALL PLANTING SEASON).
6. 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 PROVIDING THERE IS NO FROST IN THE GROUND AND FROST FREE TOPSOIL PLANTING MIXTURES ARE USED.
7. NO CONTAINER-GROWN MATERIAL SHALL BE PLANTED IF NOT ACCLIMATED TO THE CURRENT WEATHER CONDITIONS. CONTRACTOR IS RESPONSIBLE FOR GENERAL MAINTENANCE INCLUDING WATERING.
8. ALL PLANTING MATERIAL AND PLANTING METHODS SHALL CONFORM TO CONSTRUCTION SPECIFICATIONS.
9. DISTURBED AREAS WITHIN THE LIMITS OF DISTURBANCE SHALL BE STABILIZED PER THE DETAILS AND SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT.
10. IF A MINIMUM COVERAGE OF 85% IS NOT ACHIEVED IN THE MARSH PLANTING AREA AFTER THE SECOND GROWING SEASON, A REINFORCEMENT PLANTING WILL BE REQUIRED.



TREE/SHRUB PLANTING DEER PROTECTION

NOT TO SCALE

PHRAGMITES ERADICATION

1. THE CONTRACTOR SHALL POSSESS OR OBTAIN A PESTICIDE PERMIT FROM MDE BY CONTACTING THE INDUSTRIAL DISCHARGE PERMIT DIVISION AT 410-537-3323 PRIOR TO THE APPLICATION OF ANY HERBICIDE TO ERADICATE PHRAGMITES.
2. THE CONTRACTOR SHALL MONITOR AND CONTROL FUTURE POPULATIONS FOR A PERIOD OF ONE YEAR AFTER ERADICATION IS COMPLETE.
3. THE CONTRACTOR SHALL REMOVE EXISTING PHRAGMITES WITHIN THE LIMITS SHOWN ON THE PLANS USING METHODS APPROVED BY MDE.
4. THE CONTRACTOR SHALL REMOVE ALL EXPOSED PHRAGMITES ROOTS, WASTE MATERIAL AND DEBRIS LARGER THAN ONE INCH IN DIAMETER. ALL REMOVED MATERIALS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN AN APPROVED DISPOSAL SITE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ANY REEMERGING PHRAGMITES FOR UP TO ONE YEAR AFTER ERADICATION IS COMPLETE.
6. THE CONTRACTOR SHALL TAKE CARE TO AVOID ALL OTHER PLANT MATERIAL FROM CONTACT WITH ANY HERBICIDES USED FOR THE ERADICATION OF PHRAGMITES.

60% DESIGN SCHEMATIC

HARFORD COUNTY, MARYLAND	
WATERS EDGE COMMUNITY SHORELINE RESTORATION PLANTING PLAN & DETAILS	
S/C PLAN # XXXXX	REVISIONS
GP # XXXXX-XXXX	
BILLING NO. XXXXXX	
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. 14920, EXPIRATION DATE: 05/12/2026.	
DRAWN BY : JRH	
DESIGNED BY : JRH	
REVIEWED BY : JRH	
SCALE : AS SHOWN	
DATE : 12/23/25	
SHEET NO. 10 OF 11	

HARFORD COUNTY SEDIMENT CONTROL

NOTES

- The contractor/owner is responsible for obtaining all necessary permits. Further, no construction activity shall take place until all required permits have been obtained.
- The limits of disturbance shall be clearly delineated in the field prior to grading of the site to ensure compliance with approved plans. All Forest Retention areas will be delineated with Blaze Orange Fences as well as any SWM Infiltration practice prior to any clearing. Work beyond the limits of disturbance and in any area inside the Forest Retention and SWM Infiltration area is considered to be a violation of this plan.
- All sediment control practices must be installed prior to any construction activity. Upon completion of the installation of perimeter sediment control practices the site must be inspected by the Department of Public Works (DPW). No additional construction activity will be authorized without the approval from DPW.
- All points of ingress and egress shall be protected to prevent tracking of mud into public ways. During construction, every means will be taken to control soil erosion and siltation. If necessary a wash rack may need to be established.
- Earth dikes, sediment traps, etc. will be located as shown on these drawings. Field changes and minor adjustments are permissible as long as the installation functions and conforms to specifications. The site inspector prior to installation must approve all such changes. Major changes to the approved plan will require re-approval by the Harford Soil Conservation District.
- Following initial soil disturbance or re-disturbance permanent or temporary stabilization shall be completed within:
 - Three calendar days on slopes greater than 3:1, all waterways and to the surface of all perimeter controls.
 - Seven calendar days as to all other disturbed or graded areas of the project site.
- Dust Control must be managed as part of all Sediment Control plans. Failure to do so is a violation of this plan.
- Sediment basins must be built to design specifications shown on the plan. If the basin is to be used as a future SWM facility, the basin will be built in accordance with the latest MD-378 standards and specifications. Specified materials must be used. No changes or modifications will be made without written authorization of the Harford Soil Conservation District.
- Temporary fencing shall be placed around all sediment basins, traps, and ponds during construction and site grading.
- At the end of each working day all sediment control practices will be inspected and left operational. A weekly log will be kept in accordance with NOI/NPDES regulations. A copy of the approved sediment control plans shall be available at the site at all times.
- Ensure positive drainage to all road inlets during all phases of road construction to ensure positive flow to traps and/or basins.
- Cut and/or fill shall be done in conformance with 2011 Erosion and Sediment Control Standards and Specifications for land grading.
- Surface flows over cut and fill slopes shall be controlled by either redirecting flows from traversing the slopes or by installing mechanical devices to safely convey water down slopes without causing erosion.
- Off-site waste or borrow areas shall have an approved erosion and sediment control plan prior to the import or export of material to/from the project site.
- All material originating from the development of the property and deposited on the public right-of-way shall be immediately removed.
- Storm drain inlets and outlets shall be protected per 2011 Erosion and Sediment Control standards and specifications.
- Topsoil liming, fertilizing, seeding, mulching, sod, etc. are all essential parts of the sediment control plan and must be completed along with all other practices.
- Traps to be removed shall be dewatered as per the 2011 Erosion and Sediment Control standards and specifications.
- Prior to removal of traps or conversion of sediment basins to SWM facilities, the storm drains shall be flushed.
- Sediment control practices will be maintained until all disturbed areas for which the practices were installed have been stabilized. Sediment control practices may be removed only with the authorization of the DPW inspector. All disturbed areas resulting from the removal of sediment control devices shall be stabilized immediately. Removal prior to inspector's approval constitutes a violation.

STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

DEFINITION: A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.

PURPOSE: TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

CONDITIONS WHERE PRACTICE APPLIES: STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

CRITERIA:

- THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.
- THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.
- RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
- ACCESS THE STOCKPILE AREA FROM THE SIDE GRADE.
- THE SIDE SLOPES OF THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
- WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
- STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.
- IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING.

MAINTENANCE: THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATION ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, SEEDING FOR PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3:1 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING. ONCE VEGETATION IS ESTABLISHED, THE SITE SHALL HAVE 95% GROUNDCOVER TO BE CONSIDERED ADEQUATELY STABILIZED.

EXCAVATION NOTES

- AT A MINIMUM ANY SATURATED SEDIMENT SHALL BE PARTIALLY DEWATERED ON-SITE BEFORE TRANSPORT TO THE DISPOSAL AREA.
- THE DISPOSAL SITE SHALL HAVE AN ACTIVE GRADING PERMIT AND AN ACTIVE AND APPROVED EROSION CONTROL PERMIT WHICH IS TO BE GIVEN TO THE EROSION CONTROL INSPECTOR AT THE PRE-CONSTRUCTION MEETING.
- WET MATERIAL SHALL BE TRANSPORTED IN LINED OR WATER TIGHT TRUCKS, ADEQUATELY COVERED/TARPED OVER THE TOP. SUFFICIENT FREEBOARD MUST BE MAINTAINED TO PREVENT SPILLING OVER THE SIDES.
- CONTRACTOR SHALL KEEP STREET FREE OF ANY MATERIAL. IF NECESSARY, CONTRACTOR MAY BE REQUIRED TO PERFORM ROUTINE STREET SWEEPING AND/OR STREET CLEANING.

NOTES:

- TURBIDITY CURTAIN TO BE INSTALLED IN 400' INTERVALS PRIOR TO AND MAINTAINED DURING SAND PLACEMENT AND ANY OTHER SEDIMENT CAUSING ACTIVITY, PHASED ACCORDINGLY.
- NO EQUIPMENT OR MATERIAL STORAGE IS ALLOWED OUTSIDE OF THE LIMIT OF DISTURBANCE (LOD).

TOP SOIL SPECIFICATIONS

B-4-2 = STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS DEFINITION

THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES

WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA

A. SOIL PREPARATION

1. 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 RIPPER MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENESS, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES AND 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.

2. 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:

i. SOIL PH BETWEEN 6.0 AND 8.0.

ii. SOIL CLAY CONTENT LESS THAN 10 PARTS PER MILLION (PPM).

iii. SOIL CONTAINS LESS THAN 40 PERCENT CLAY, BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE AN EXCEPTION IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.

iv. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

b. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED ON-SITE. SOILS DO NOT MEET THE ABOVE CONDITIONS.

c. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE SURFACE. RAKE LAWN AREAS TO SMOOTH, REMOVE LARGE OBJECTS LIKE STONES, AND BRANCHES. LEAVE THE SURFACE SMOOTH. REMOVE LOOSE SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO REMOVE THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIMBLE. SEEDBED LOOSING 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.

3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:

a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.

b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.

c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.

d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.

5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:

a. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDER, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1/2 INCHES AS SPECIFIED.

b. TOPSOIL MUST BE FREE OF METALS, PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.

c. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

6. TOPSOIL APPLICATION

a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.

b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 2 INCHES. EARTH SCAFFOLDING IS TO BE DETERMINED BY THE MANAGER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

c. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETERMINANT TO PROPER GRADING AND SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.

2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.

3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.

4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

6. ALL STABILIZATION IN THE NON TIDAL WETLAND AND NON TIDAL WETLAND BUFFER SHALL CONSIST OF THE SPECIFIED ANNUAL PREGRASSING OR MULTIFLORAL MILLETTIA (TIAKA), BACCHARIS (SP.), LATS (UNIDENTIFIED SP.) AND/OR RYDBERG CERESE.

7. 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.

8. AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.

9. TO PROTECT AQUATIC SPECIES, IN STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM. USE 1 INCHES.

10. STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.

11. CULVERTS SHALL BE CONSTRUCTED AND ANY RIP RAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

HARFORD COUNTY SOIL CONSERVATION DISTRICT PERMANENT VEGETATIVE STABILIZATION NOTES

ALL DISTURBED AREAS, WHICH ARE NOT TO BE PAVED, SHALL BE PERMANENTLY STABILIZED AS FOLLOWS:

A) SEEDBED PREPARATION:

Loosen a minimum of three inches along upper soil by raking, discing, or other acceptable means after spreading four inches of topsoil.

B) SOIL AMENDMENTS:

Incorporate 225 lbs. per acre of 10-20-20 fertilizer and two tons per acre of lime by discing other acceptable means.

C) SEEDING:

FOR PERIODS OF MARCH 1 TO MAY 15 AND AUGUST 15 TO OCTOBER 15: Seed with 60 lbs. per acre of Tall Fescue, 40 lbs. per acre of Kentucky Bluegrass, and 20 lbs. per acre of Perennial Ryegrass.

FOR PERIOD OF MAY 16 TO AUGUST 14:

Seed with 100 lbs. per acre of Tall Fescue and 3 lbs. per acre of Weeping Lovegrass or 5 lbs. per acre of Pearl or Foxtail Millet.

FOR PERIOD OF OCTOBER 16 TO FEBRUARY 28:

Option 1: Protect the site by applying two (2) tons per acre of well anchored straw mulch and seed as soon as possible in the spring.

Option 2: Use sod, provide the ground is suitable and thawed; comply with the 2011 MARYLAND STANDARD AND SPECIFICATION 1 addressing "SOD" (pages B.23 & B.24).

D) MULCHING SPECIFICATIONS:

Mulch shall be applied to all seeded areas immediately after seeding.

APPLY TWO (2) TONS PER ACRE OF STRAW OVER ALL SEDED AREAS.

If a mulch anchoring tool is to be used, the rate shall be increased to 2.5 tons per acre.**