

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



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 THE ENVIRONMENT 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	DATE
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.

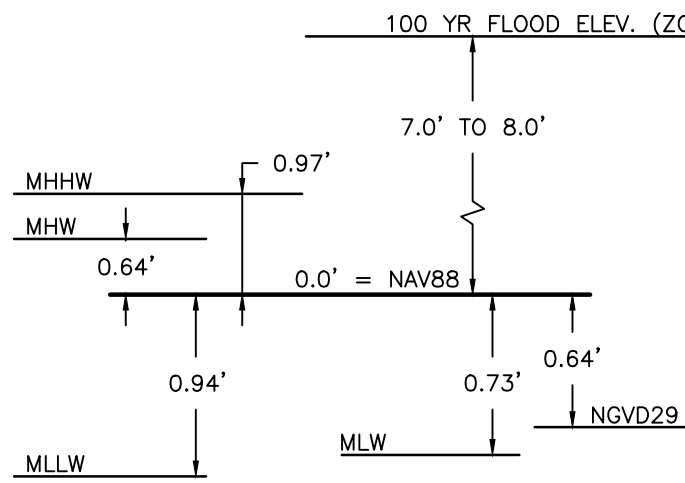
ENGINEER'S SIGNATURE	DATE
SEPEHR BAHARLOU	21194
PRINTED NAME	MD P.E. REGISTRATION NO.

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 CONTRACTORS 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.
- 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.
- 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 ON 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 SWEEP 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

- | | |
|---|---|
| 1. 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 |
| 2. OWNER/DEVELOPER INFORMATION: | |
| 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: | 63 |
| 6. PARCEL: | 368 |
| 7. HARFORD COUNTY GRADING PERMIT NO: | TBD |
| 8. DISTRICT: | 01 |
| 9. ZONING: | URBAN RESIDENTIAL DISTRICT R3 & R4 |
| 10. PROPERTY AREA: | 14.15 ACRES |
| 11. WATERSHED: | BUSH RIVER |
| 12. MDE TIDAL WETLANDS PERMIT NO: | ##-XX-#### |
| 13. SITE AREA LOCATED WITHIN CRITICAL AREA: | 0.14 ACRES |
| 14. U.S. ARMY CORPS OF ENGINEERS PERMIT NO: | |



DATUM CONVERSIONS

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".

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

SITE ANALYSIS

- | | |
|---------------------------|----------|
| 1. TOTAL SITE AREA: | 14.15 AC |
| 2. TOTAL DISTURBED AREA: | 0.14 AC |
| 3. AREA TO BE PAVED: | 0 AC |
| 4. AREA TO BE STABILIZED: | 0.14 AC |
| 5. ESTIMATED CUT: | 0 CY |
| 6. ESTIMATED FILL: | TBD CY |
| 7. TOPSOIL: | TBD 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.

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



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.
 - 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	

GENERAL NOTES

- SPECIFICATIONS: ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH MARYLAND STATE HIGHWAY ADMINISTRATIONS STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS LATEST EDITION AND ANY ADDENDA THERETO.
 - UTILITIES: UTILITY LOCATIONS SHOWN ON THE PLANS ARE BASED ON LIMITED INFORMATION AVAILABLE. HOWEVER, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ACCURACY OF THIS INFORMATION. THE COST OF REPAIR OR REPLACEMENT OF ANY SUCH FACILITIES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE BORNE BY HIM/HER.
 - STANDARD DETAILS: REFERENCE MADE TO STANDARDS ARE TAKEN FROM THE HARFORD COUNTY ROAD CODE "BOOK OF STANDARD DETAILS" AND FROM "THE MARYLAND STATE HIGHWAY ADMINISTRATION'S BOOK OF STANDARDS-HIGHWAY AND INCIDENTAL STRUCTURES". IT WILL BE THE CONTRACTOR'S RESPONSIBILITY THAT THE STANDARD DRAWINGS IN HIS/HER POSSESSION ARE THE LATEST REVISED STANDARDS UP TO AND INCLUDING THE DATE OF THE ADVERTISEMENT OF THIS CONTRACT.
 - RIGHT-OF-WAY LINES: RIGHT-OF-WAY LINES SHOWN ON THESE PLANS WERE BASED ON BEST AVAILABLE PLAT AND DEED RECORDS AND HARFORD COUNTY CADASTRAL GIS DATA. NO BOUNDARY SURVEY WAS COMPLETED, THEREFORE, THESE LINES DO NOT REPRESENT THE OFFICIAL PROPERTY ACQUISITION LINES. FOR OFFICIAL FEE RIGHT-OF-WAY AND EASEMENT INFORMATION, SEE THE APPROPRIATE RIGHT-OF-WAY PLATS.
 - SOIL CONSERVATION: THE CONTRACTOR SHALL NOT DISTURB THE EXISTING VEGETATION OUTSIDE THE LIMITS OF DISTURBANCE. SOIL STABILIZATION WILL CONFORM TO 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. THE CONTRACTOR WILL OBTAIN APPROVAL OF THE HARFORD COUNTY SOIL CONSERVATION DISTRICT FOR HIS/HER PLANS IN CONTROLLING SEDIMENT EROSION FOR THE BORROW AREA AND DISPOSING OF ANY WASTE EXCAVATION.
 - SURVEYS:
TOPOGRAPHIC AND HYDROGRAPHIC SURVEY PERFORMED BY BAYLAND CONSULTANTS & DESIGNERS, INC., ON DECEMBER 3, 2024 & OCTOBER 21, 2025.
HORIZONTAL AND VERTICAL CONTROL ESTABLISHED FROM REAL TIME KINEMATIC (RTK) GLOBAL POSITIONING SYSTEM (GPS) CONTROL POINTS. COORDINATES AND BEARINGS SHOWN HEREON ARE REFERRED TO THE MARYLAND COORDINATE SYSTEM (NAD83/1991). ELEVATIONS SHOWN HEREON REFER TO MEAN LOW WATER (MLW).
- | INT. | NORTHING | EASTING | ELEVATION | DESCRIPTION |
|--------|-----------|------------|-----------|-------------|
| TP5500 | 656160.28 | 1525691.36 | 12.51 | MAG/DISK |
| TP5501 | 655965.99 | 1528760.10 | 14.36 | YELLOW CAP |
| TP5502 | 656319.88 | 1529101.30 | 3.86 | YELLOW CAP |
| TP5503 | 656686.62 | 1529506.59 | 3.59 | YELLOW CAP |
- ONLY THOSE CONTROL POINTS SHOWN ON THESE PLANS ARE TO BE USED FOR THE CONSTRUCTION OF THIS PROJECT.
 - CONTOURS AND PLANIMETRICS SHOWN OUTSIDE OF LIMIT OF FIELD RUN SURVEY ARE BASED ON 2020 MARYLAND LIDAR ONE-FOOT INTERVAL TOPOGRAPHY AND 2023 AND 2024 HARFORD COUNTY GIS DATA.
 - PROPERTY LINES SHOWN ARE BASED ON HARFORD COUNTY CADASTRAL DATA.
 - THE PROJECT SITE IS WITHIN FEMA FLOODPLAIN LIMITS (ZONE AE). MAP#24025C0278E.
 - THE PROJECT SITE IS WITHIN INTENSELY DEVELOPED AREA (IDA) CHESAPEAKE BAY CRITICAL AREA.
 - THE PROJECT SITE IS WITHIN THE 100' CRITICAL AREA BUFFER.

60% DESIGN SCHEMATIC

HARFORD COUNTY, MARYLAND WATERS EDGE COMMUNITY SHORELINE RESTORATION COVER SHEET

DRAWN BY : JRH	SCALE : SCALE: AS SHOWN
DESIGNED BY : JRH	DATE : 12/23/25
REVIEWED BY : JRH	
SHEET NO. 1 OF 11	

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.I.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 B.	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 C. 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 BOULDER.	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 GABION CHANNEL THAT IS LOCATED ABOVE THE PROPOSED SHORELINE ONCE ALL SAND AND SHINGLE GABION 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

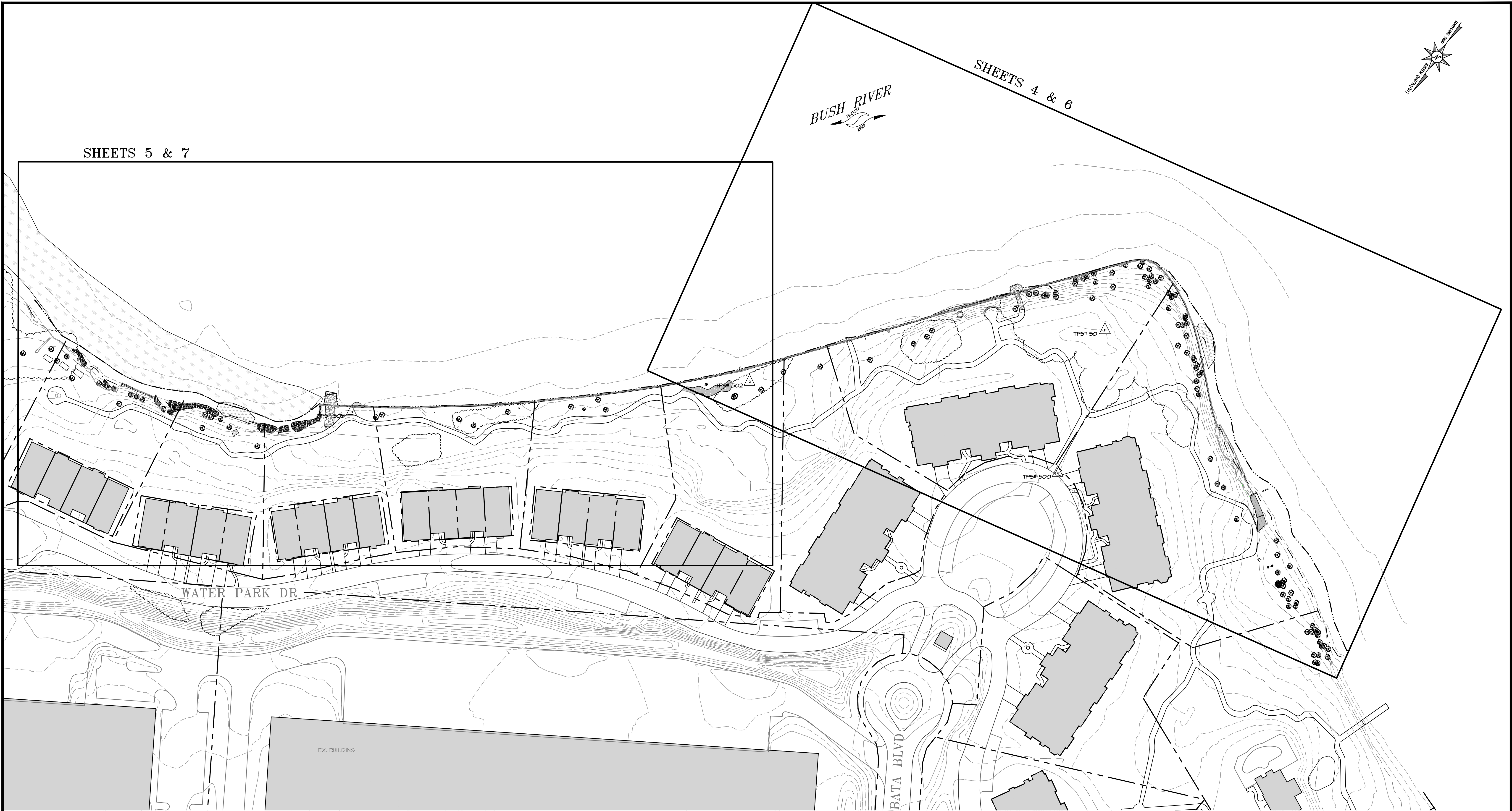
1. NO EQUIPMENT OR MATERIAL STORAGE IS ALLOWED OUTSIDE THE LIMITS OF DISTURBANCE (LOD).
2. CONTRACTOR MAY LIMB AND TRIM ANY OVERHANGING BRANCHES THAT MAY BE DAMAGED AS A RESULT OF TRUCK TRAFFIC. TREE REMOVAL SHALL BE AT THE DISCRETION OF HARTFORD COUNTY.
3. CONTRACTOR TO USE TEMPORARILY DELINEATED STOCKPILE 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 OF EACH WORK DAY.
4. CONTRACTOR TO CLEAR DEBRIS, OVERHANGING LIMBS, FALLEN TREES, AND TREES IN DANGER OF FALLING ALONG THE BEACH AT THE DISCRETION OF HARTFORD 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 PLANTING SPECIFICATIONS 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.

HARFORD COUNTY, MARYLAND

SHEET NO. 2 OF 11

BAYLAND JOB NO. 4_4702

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.



KEY SHEET
SCALE: 1" = 60'

- 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. MHW = +1.37' MLW PER NOAA'S VDUTUM.
 3. THE LATEST HARFORD COUNTY GIS, ROAD, LIDAR, AND BUILDING PLANIMETRICS DATA WERE USED TO CREATE THIS BASEMAP.

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. 4_4702

0 30 60 120
1 INCH = 60 FEET

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

GP # XXXXX-XXXX

REVISIONS

HARFORD COUNTY, MARYLAND
WATER'S EDGE COMMUNITY SHORELINE
RESTORATION
KEY SHEET

DRAWN BY : JRH
DESIGNED BY : JRH
REVIEWED BY : JRH

SCALE : 1" = 60'
DATE : 12/23/25

SHEET NO. 3 OF 11



EXISTING CONDITIONS
SCALE: 1" = 30'

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. MHW = +1.37' MLW PER NOAA'S VDUTUM.
3. THE LATEST HARFORD COUNTY GIS, ROAD, LIDAR, AND BUILDING PLANIMETRICS DATA WERE USED TO CREATE THIS BASEMAP.

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0 15 30 60
1 INCH = 30 FEET

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.

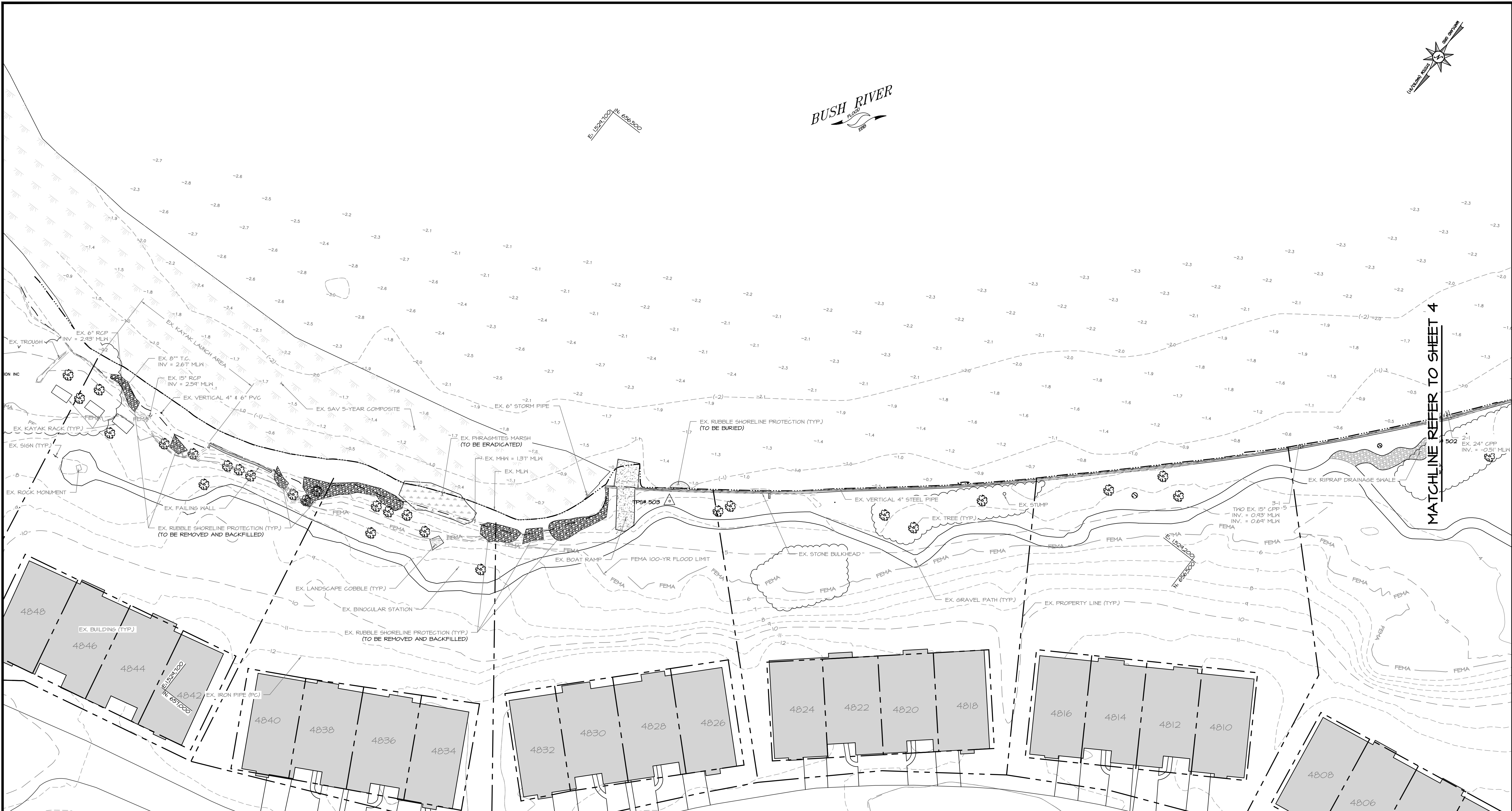
S/C PLAN # XXXXX	REVISIONS
GP # XXXXX-XXXX	

HARFORD COUNTY, MARYLAND

WATER'S EDGE COMMUNITY SHORELINE RESTORATION

EXISTING CONDITIONS

DRAWN BY : JRH	SCALE : 1" = 30'
DESIGNED BY : JRH	DATE : 12/23/25
REVIEWED BY : JRH	
SHEET NO. 4 OF 11	



EXISTING CONDITIONS
SCALE: 1" = 30'

- 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. MHW = +1.37' MLW PER NOAA'S VDUTUM.
 3. THE LATEST HARFORD COUNTY GIS, ROAD, LIDAR, AND BUILDING PLANIMETRICS DATA WERE USED TO CREATE THIS BASEMAP.

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www.baylandinc.com
BAYLAND JOB NO. 4_4702

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	

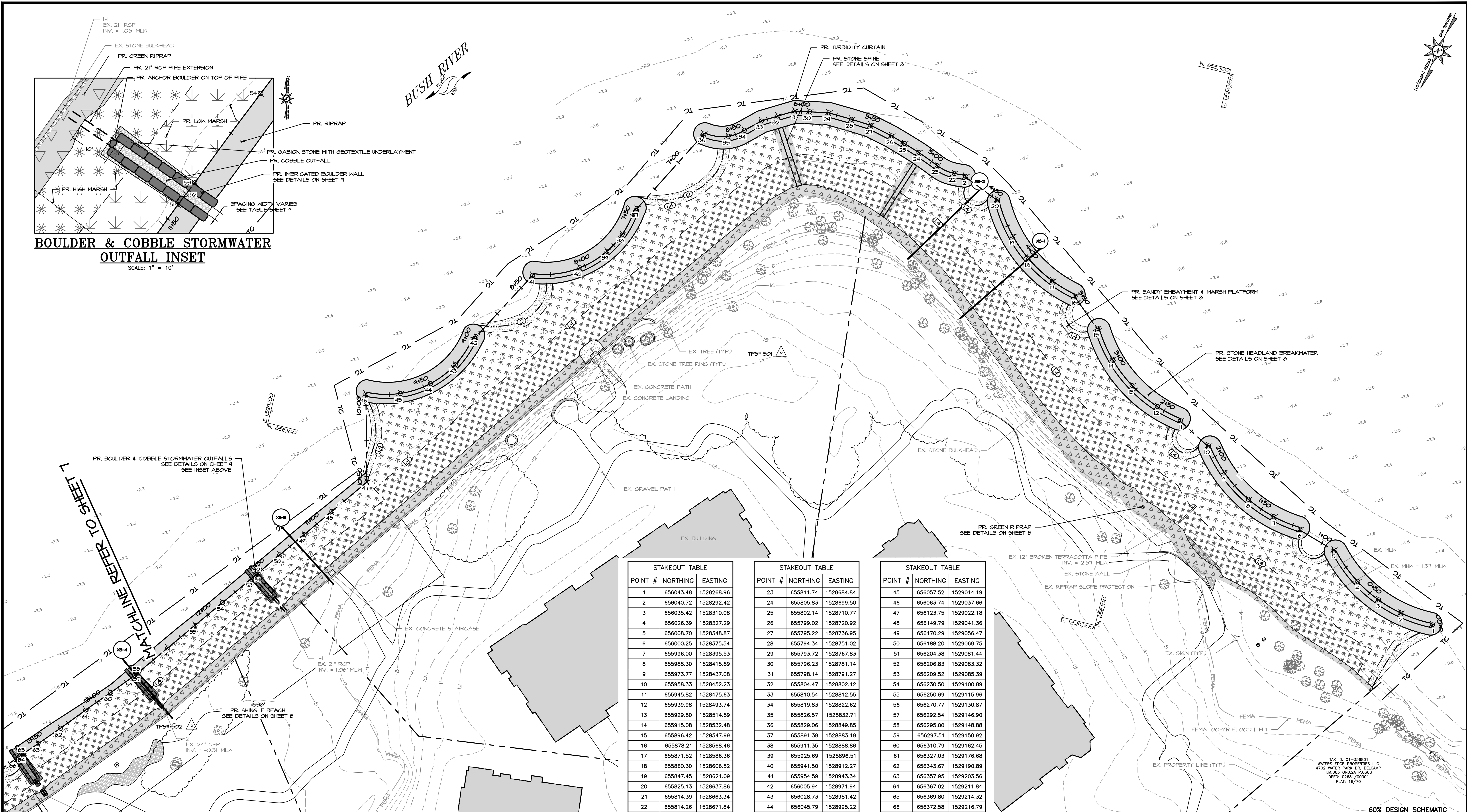
HARFORD COUNTY, MARYLAND

WATER'S EDGE COMMUNITY SHORELINE RESTORATION
EXISTING CONDITIONS

DRAWN BY : JRH
DESIGNED BY : JRH
REVIEWED BY : JRH

SCALE : 1" = 30'
DATE : 12/23/25

SHEET NO. 5 OF 11



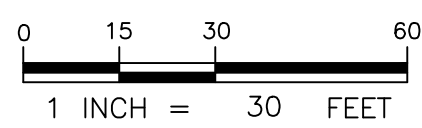
STAKEOUT TABLE		
POINT #	NORTHING	EASTING
1	656043.48	1528268.96
2	656040.72	1528292.42
3	656035.42	1528310.08
4	656026.39	1528327.29
5	656008.70	1528348.87
6	656000.25	1528375.54
7	655996.00	1528395.53
8	655988.30	1528415.89
9	655973.77	1528437.08
10	655958.33	1528452.23
11	655945.82	1528475.63
12	655939.98	1528493.74
13	655929.80	1528514.59
14	655915.08	1528532.48
15	655896.42	1528547.99
16	655878.21	1528568.46
17	655871.52	1528586.36
18	655860.30	1528606.52
19	655847.45	1528621.09
20	655825.13	1528637.86
21	655814.29	1528663.34
22	655814.26	1528671.84

STAKEOUT TABLE		
POINT #	NORTHING	EASTING
23	655811.74	1528684.84
24	655805.83	1528699.50
25	655802.14	1528710.77
26	655799.02	1528720.92
27	655795.22	1528736.95
28	655794.34	1528751.02
29	655793.72	1528767.83
30	655796.23	1528781.14
31	655798.14	1528791.27
32	655804.47	1528802.12
33	655810.54	1528812.55
34	655819.83	1528822.62
35	655826.57	1528832.71
36	655829.06	1528849.85
37	655891.39	1528883.19
38	655911.35	1528888.86
39	655925.69	1528896.51
40	655941.50	1528912.27
41	655954.59	1528943.34
42	656005.94	1528971.94
43	656028.73	1528981.42
44	656045.79	1528995.22

STAKEOUT TABLE		
POINT #	NORTHING	EASTING
45	656057.52	1529014.19
46	656063.74	1529037.66
47	656123.75	1529022.18
48	656149.79	1529041.36
49	656170.29	1529056.47
50	656188.20	1529069.75
51	656204.38	1529081.44
52	656206.83	1529083.32
53	656209.52	1529085.39
54	656230.50	1529100.89
55	656250.69	1529115.96
56	656270.77	1529130.87
57	656292.54	1529146.90
58	656295.00	1529148.88
59	656297.51	1529150.92
60	656310.79	1529162.45
61	656327.03	1529176.68
62	656343.67	1529190.89
63	656357.95	1529203.56
64	656367.02	1529211.84
65	656369.80	1529214.32
66	656372.58	1529216.79

SITE PLAN

SCALE: 1" = 30'



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.



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BAYLAND JOB NO. 4_4702

LEGEND

- STONE STRUCTURES
- LOW MARSH PLANTINGS
- HIGH MARSH PLANTINGS
- GREEN HEADLAND BREAKWATER
- GREEN RIPRAP WITH TRANSITIONAL PLANTINGS

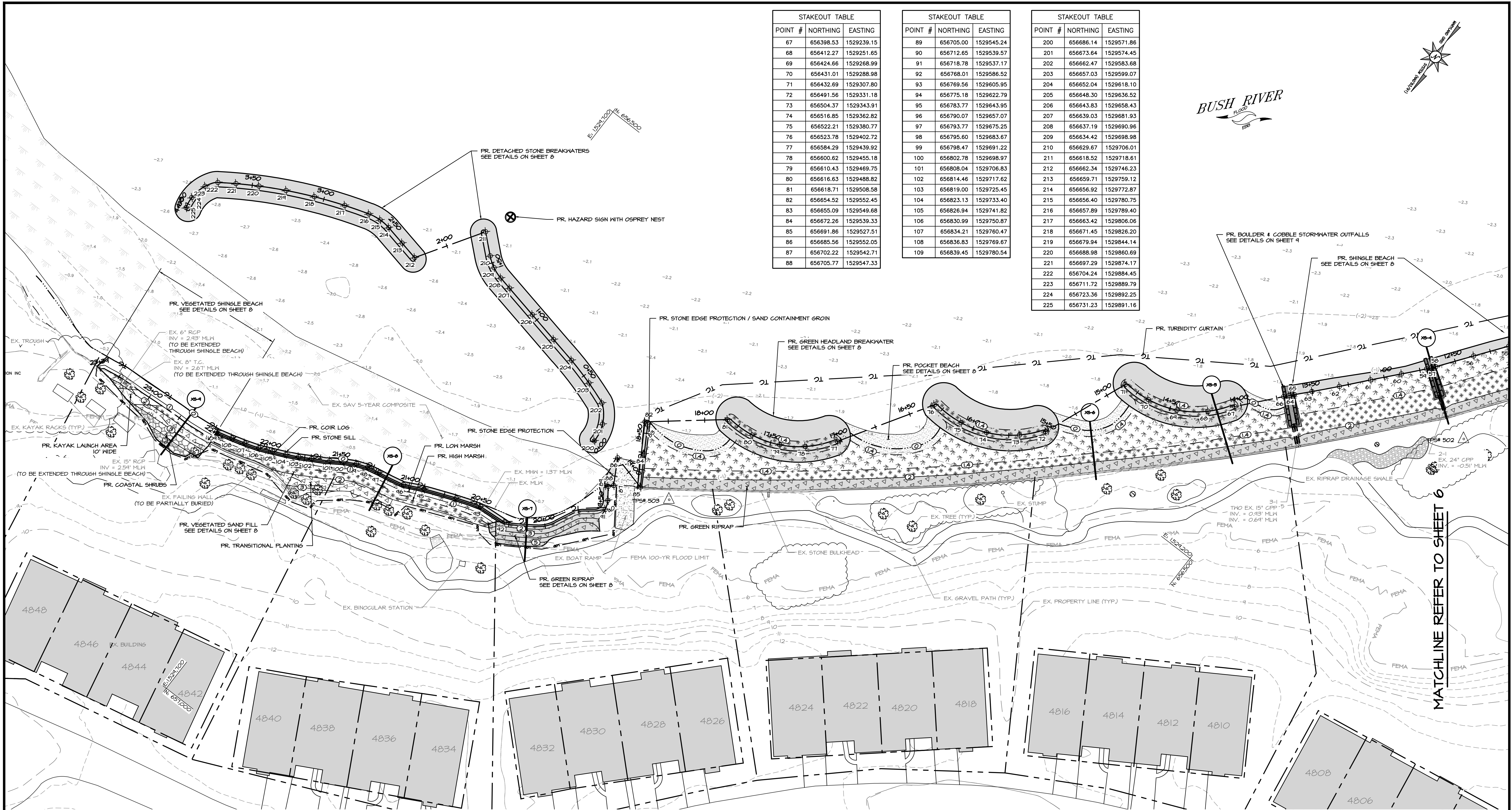
HARFORD COUNTY, MARYLAND

WATER'S EDGE COMMUNITY SHORELINE RESTORATION SITE PLAN

DRAWN BY : JRH
DESIGNED BY : JRH
REVIEWED BY : JRH

SCALE : 1" = 30'
DATE : 12/23/25

SHEET NO. 6 OF 11



STAKEOUT TABLE		
POINT #	NORTHING	EASTING
67	656398.53	1529239.15
68	656412.27	1529251.65
69	656424.66	1529268.99
70	656431.01	1529288.98
71	656432.69	1529307.80
72	656491.56	1529331.18
73	656504.37	1529343.91
74	656516.85	1529362.82
75	656522.21	1529380.77
76	656523.78	1529402.72
77	656584.29	1529439.92
78	656600.62	1529455.18
79	656610.43	1529469.75
80	656616.63	1529488.82
81	656618.71	1529508.58
82	656654.52	1529552.45
83	656655.09	1529549.68
84	656672.26	1529539.33
85	656691.86	1529527.51
86	656685.56	1529552.05
87	656702.22	1529542.71
88	656705.77	1529547.33

STAKEOUT TABLE		
POINT #	NORTHING	EASTING
89	656705.00	1529545.24
90	656712.65	1529539.57
91	656718.78	1529537.17
92	656768.01	1529586.52
93	656769.56	1529605.95
94	656775.18	1529622.79
95	656783.77	1529643.95
96	656790.07	1529657.07
97	656793.77	1529675.25
98	656795.60	1529683.67
99	656798.47	1529691.22
100	656802.78	1529698.97
101	656808.04	1529706.83
102	656814.46	1529717.62
103	656819.00	1529725.45
104	656823.13	1529733.40
105	656826.94	1529741.82
106	656830.99	1529750.87
107	656834.21	1529760.47
108	656836.83	1529769.67
109	656839.45	1529780.54

STAKEOUT TABLE		
POINT #	NORTHING	EASTING
200	656686.14	1529571.86
201	656673.64	1529574.45
202	656662.47	1529583.68
203	656657.03	1529599.07
204	656652.04	1529618.10
205	656648.30	1529636.52
206	656643.83	1529658.43
207	656639.03	1529681.93
208	656637.19	1529690.96
209	656634.42	1529698.98
210	656629.67	1529706.01
211	656618.52	1529718.61
212	656662.34	1529746.23
213	656659.71	1529759.12
214	656656.92	1529772.87
215	656656.40	1529780.75
216	656657.89	1529789.40
217	656663.42	1529806.06
218	656671.45	1529826.20
219	656679.94	1529844.14
220	656688.98	1529860.69
221	656697.29	1529874.17
222	656704.24	1529884.45
223	656711.72	1529898.79
224	656723.36	1529922.25
225	656731.23	1529991.16

LEGEND

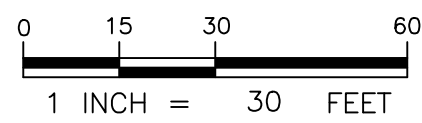
- STONE STRUCTURES
- LOW MARSH PLANTINGS
- HIGH MARSH PLANTINGS
- GREEN HEADLAND BREAKWATER
- GREEN RIPRAP WITH TRANSITIONAL PLANTINGS
- TRANSITIONAL PLANTINGS
- COIR LOG
- COASTAL SHRUBS

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SITE PLAN

SCALE: 1" = 30'



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S/C PLAN # XXXXX

GP # XXXXX-XXXX

REVISIONS

HARFORD COUNTY, MARYLAND
WATER'S EDGE COMMUNITY SHORELINE
RESTORATION
SITE PLAN

DRAWN BY : JRH

DESIGNED BY : JRH

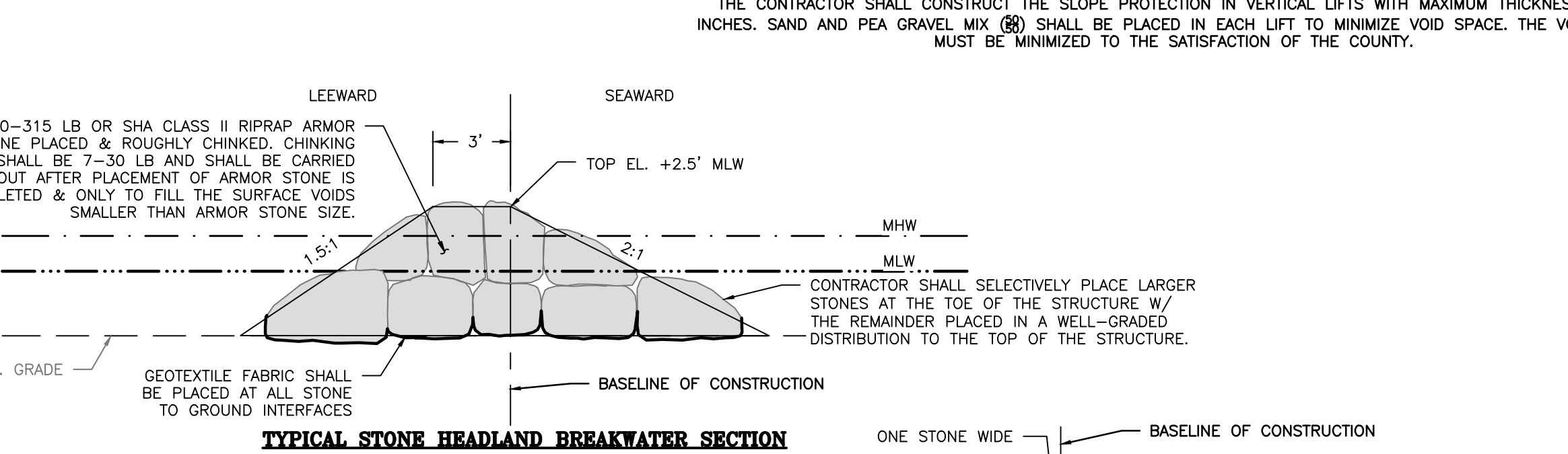
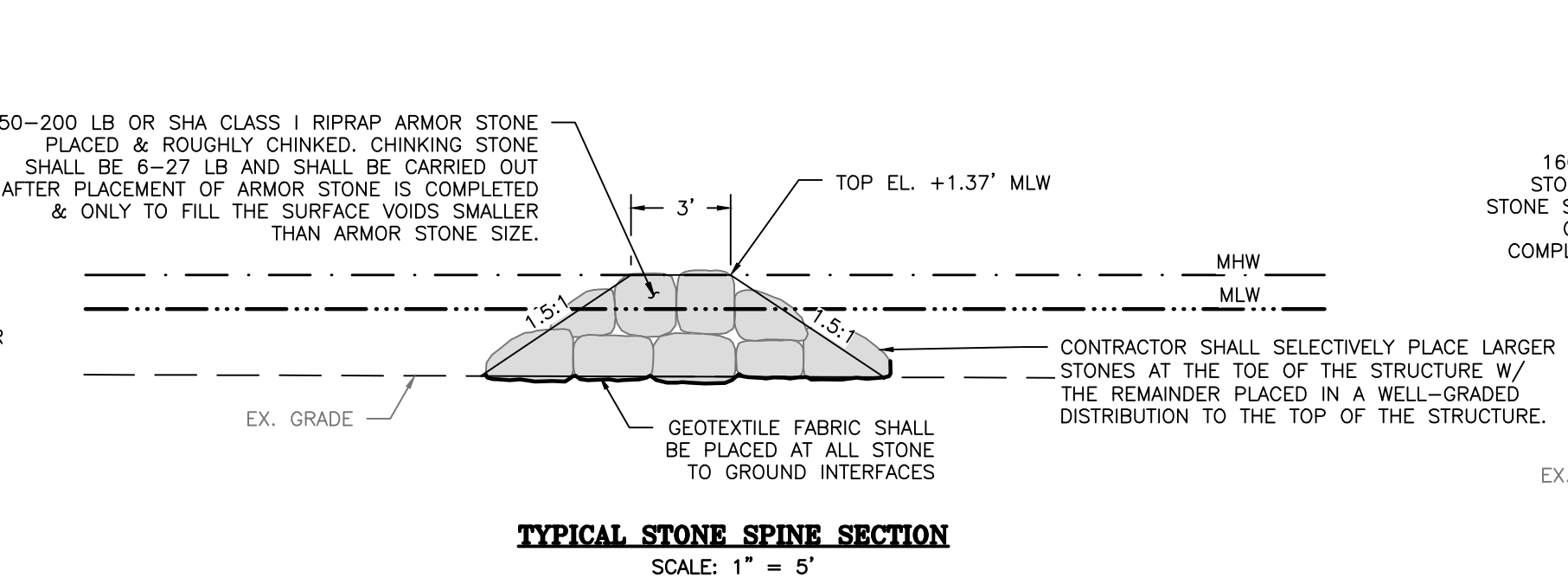
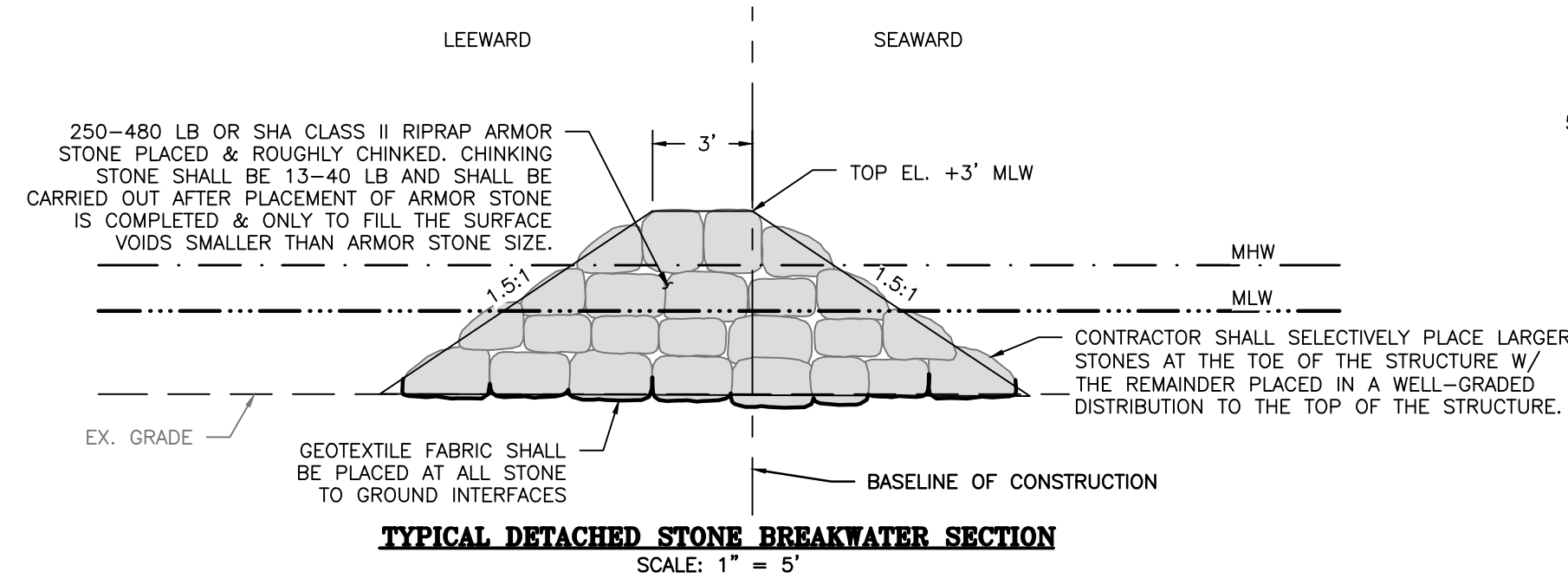
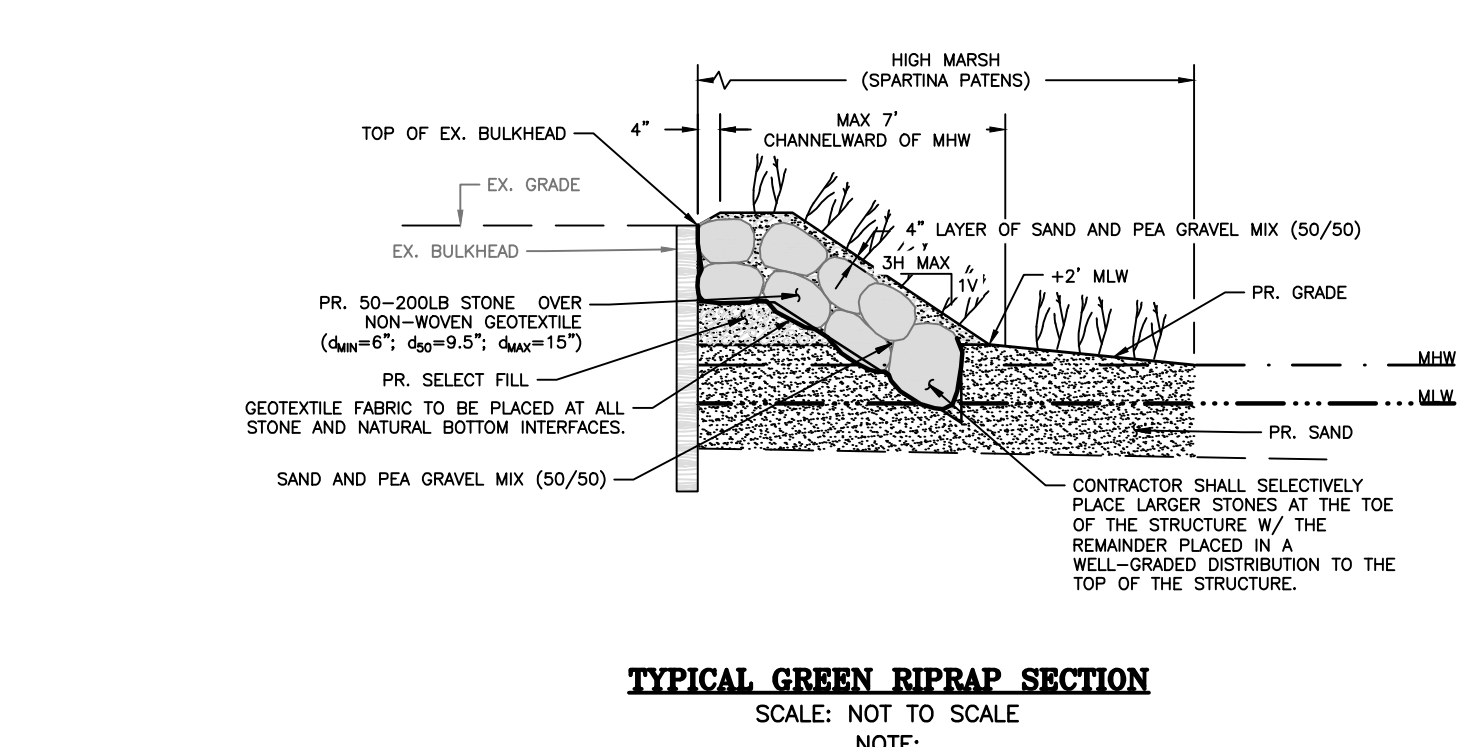
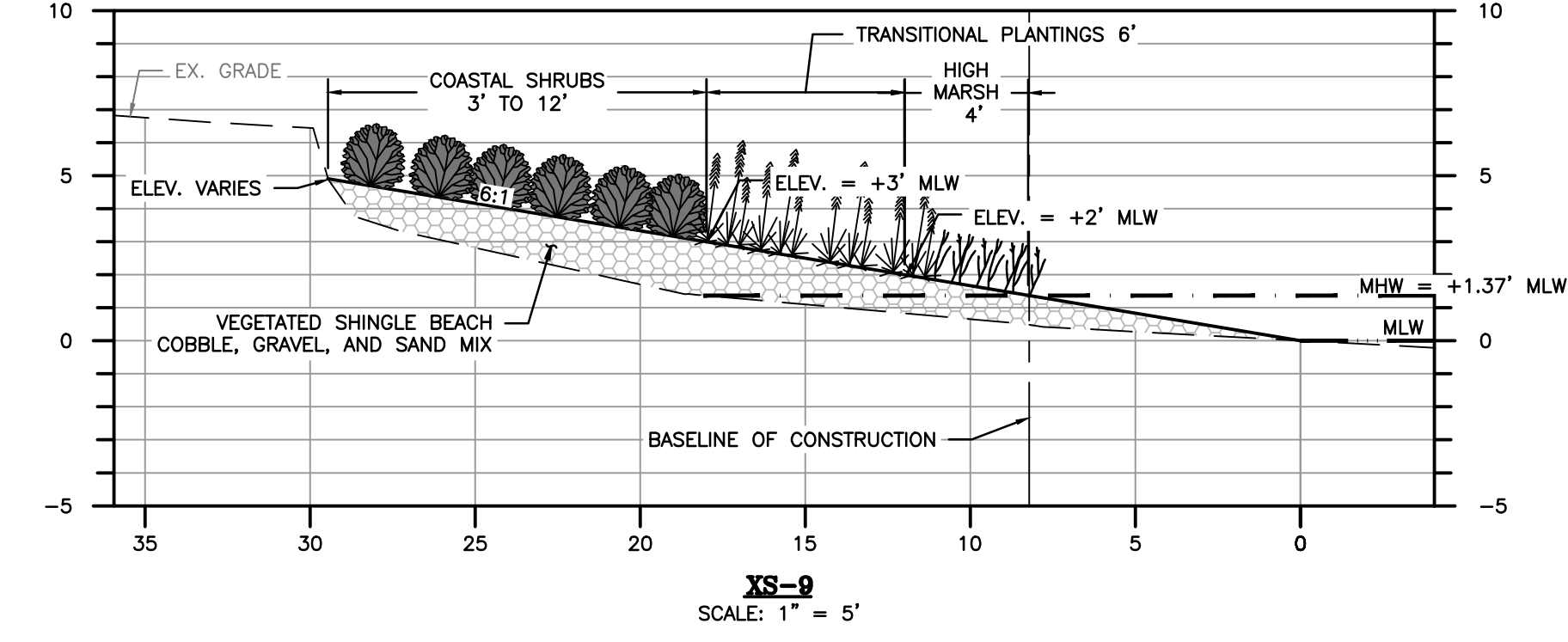
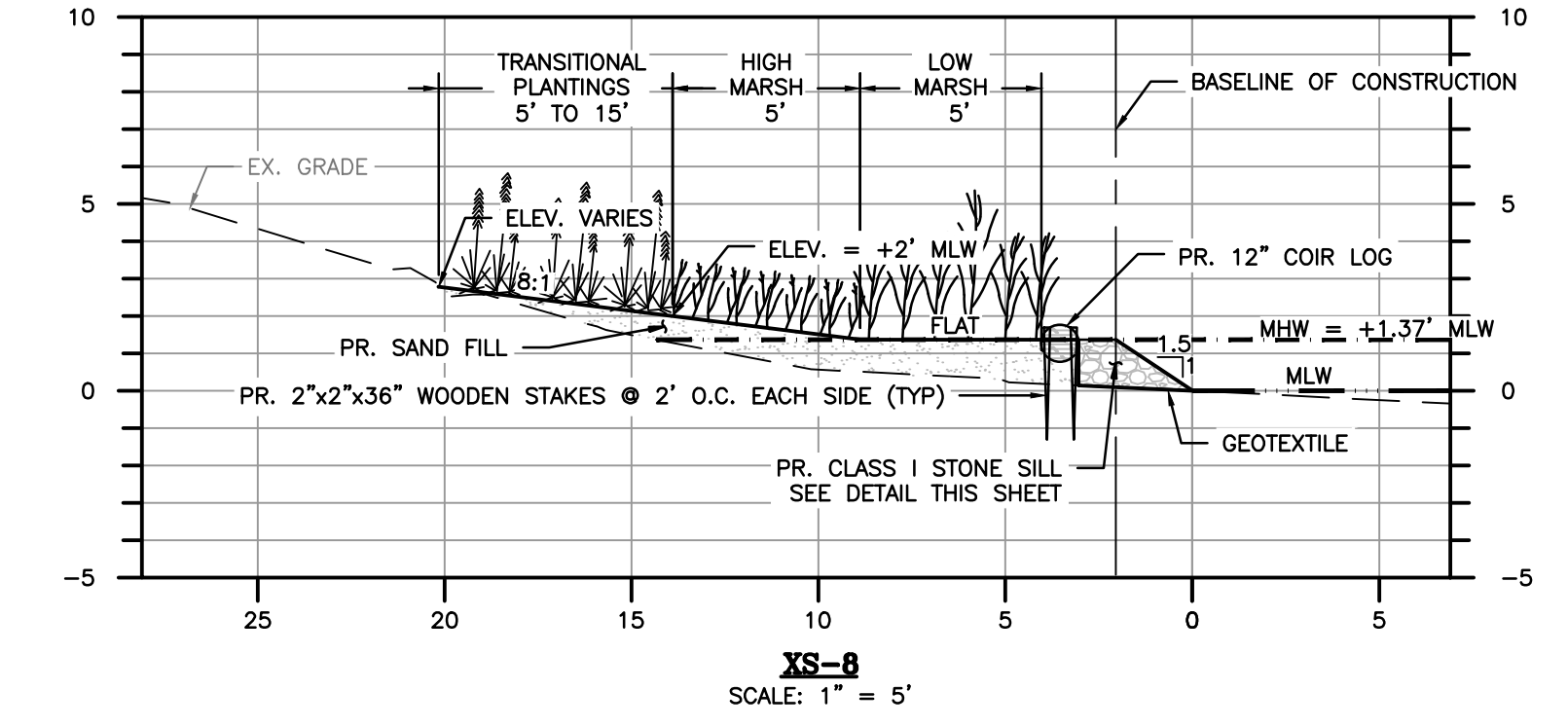
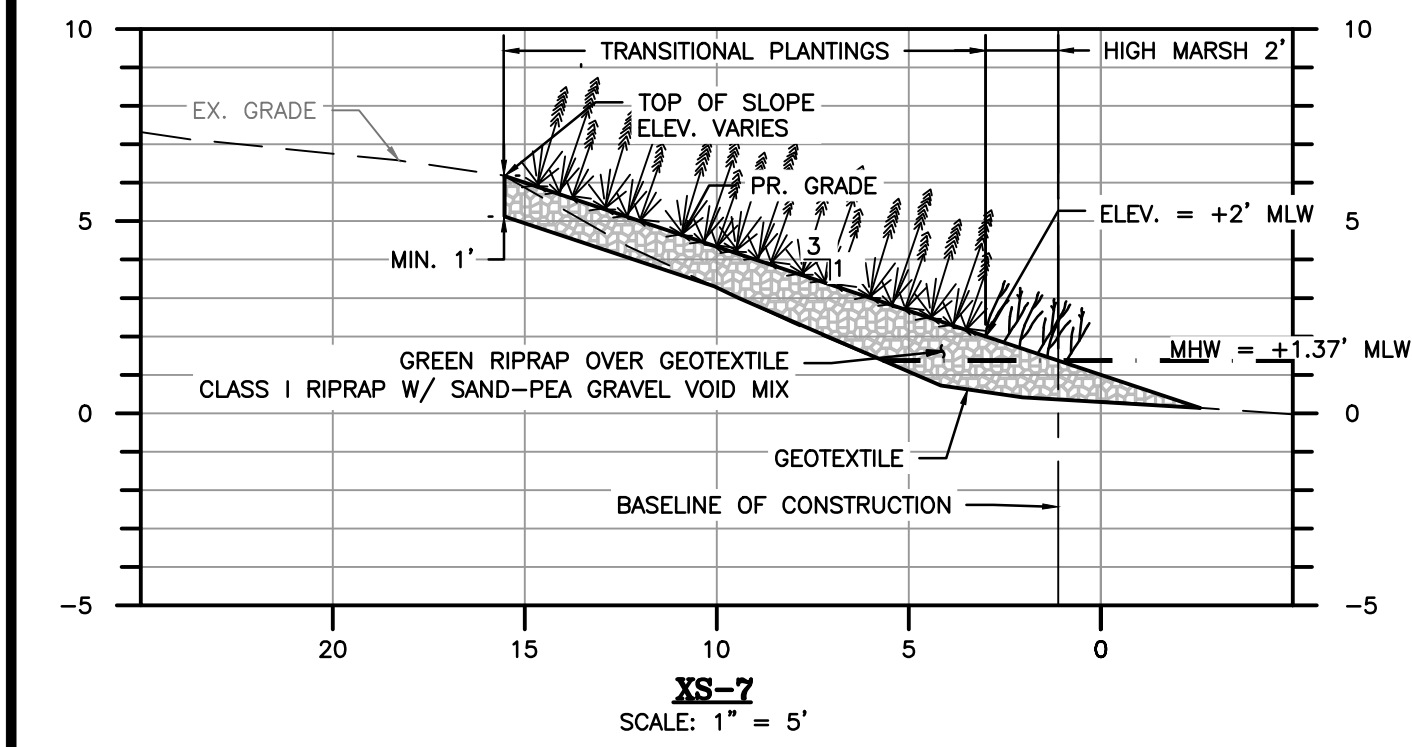
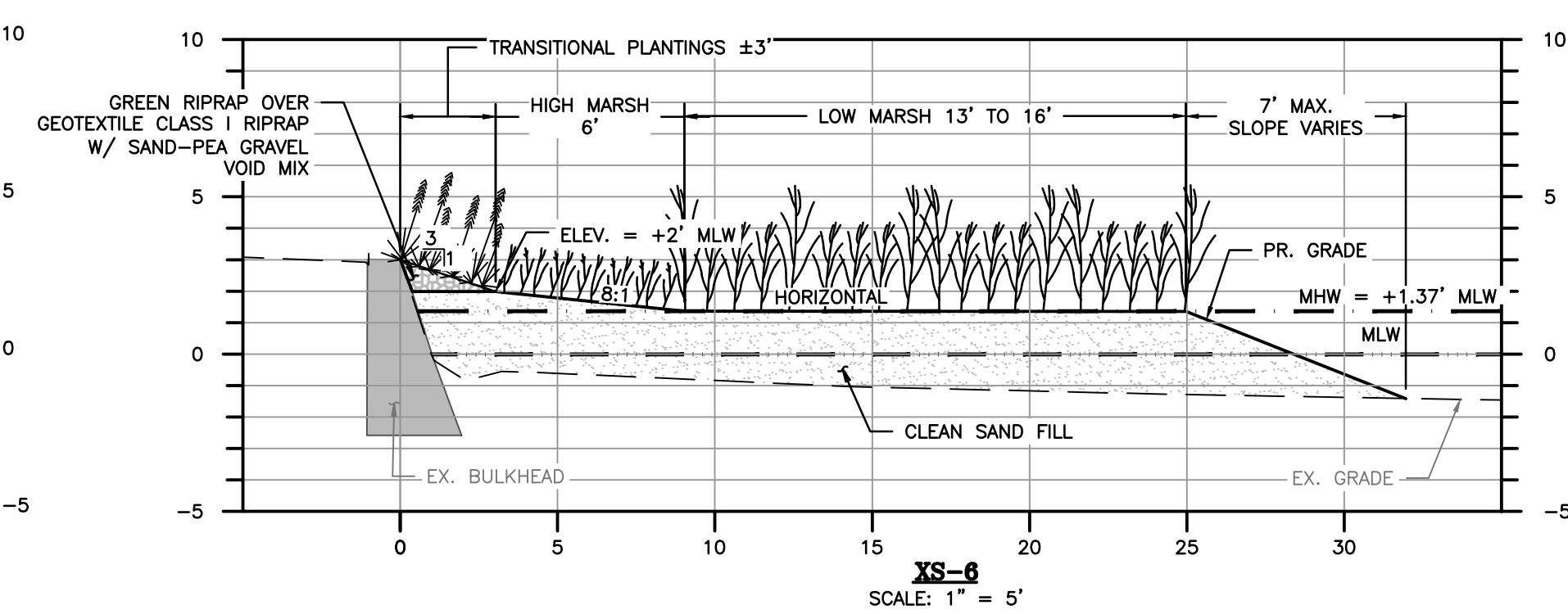
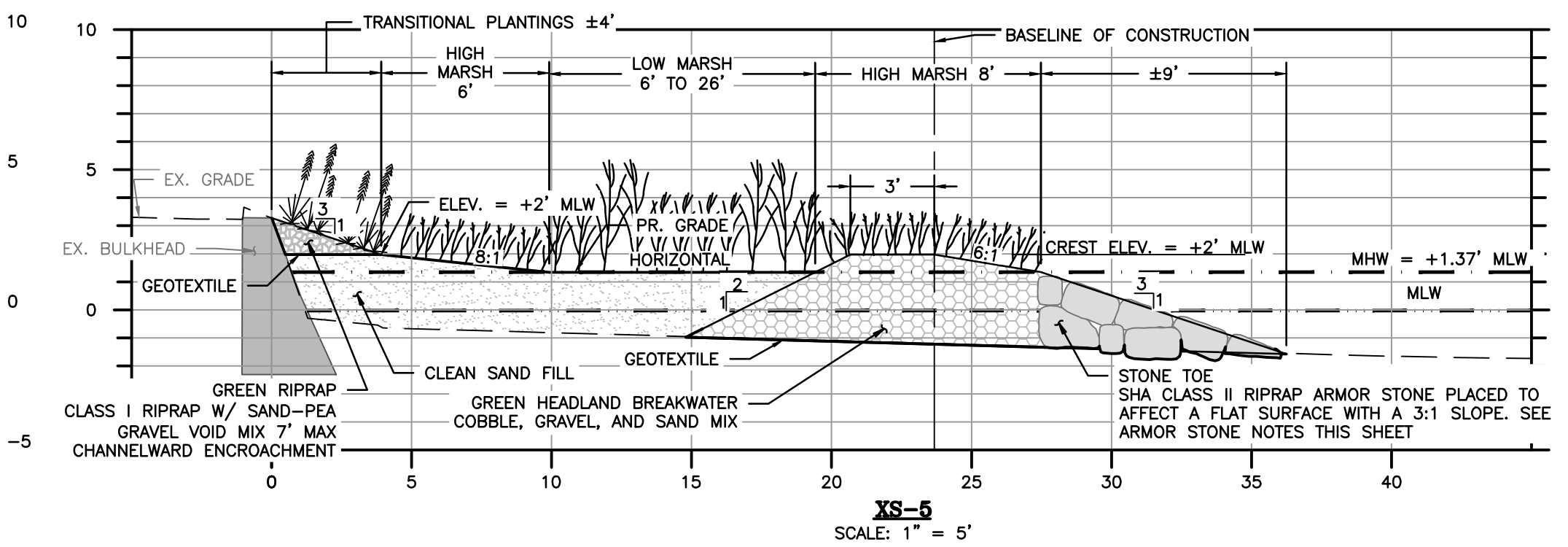
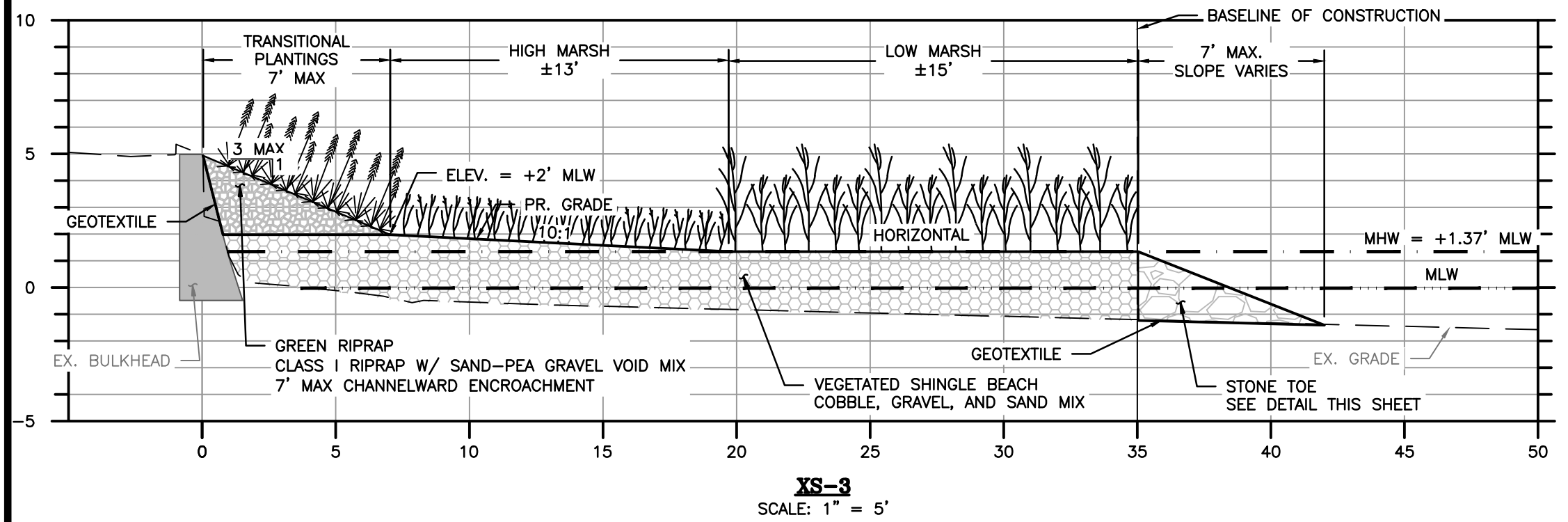
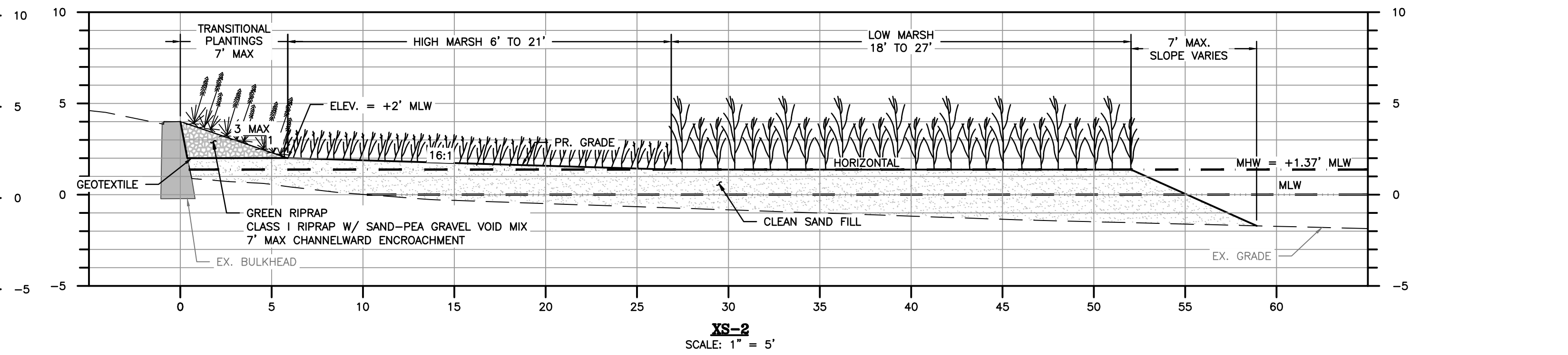
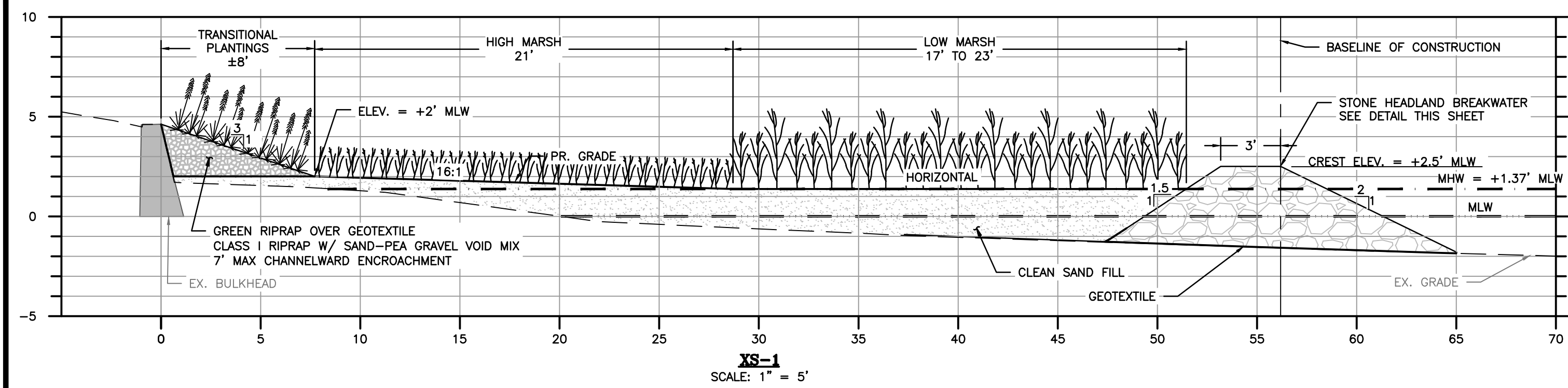
REVIEWED BY : JRH

SCALE : 1" = 30'

DATE : 12/23/25

SHEET NO. 7 OF 11

60% DESIGN SCHEMATIC

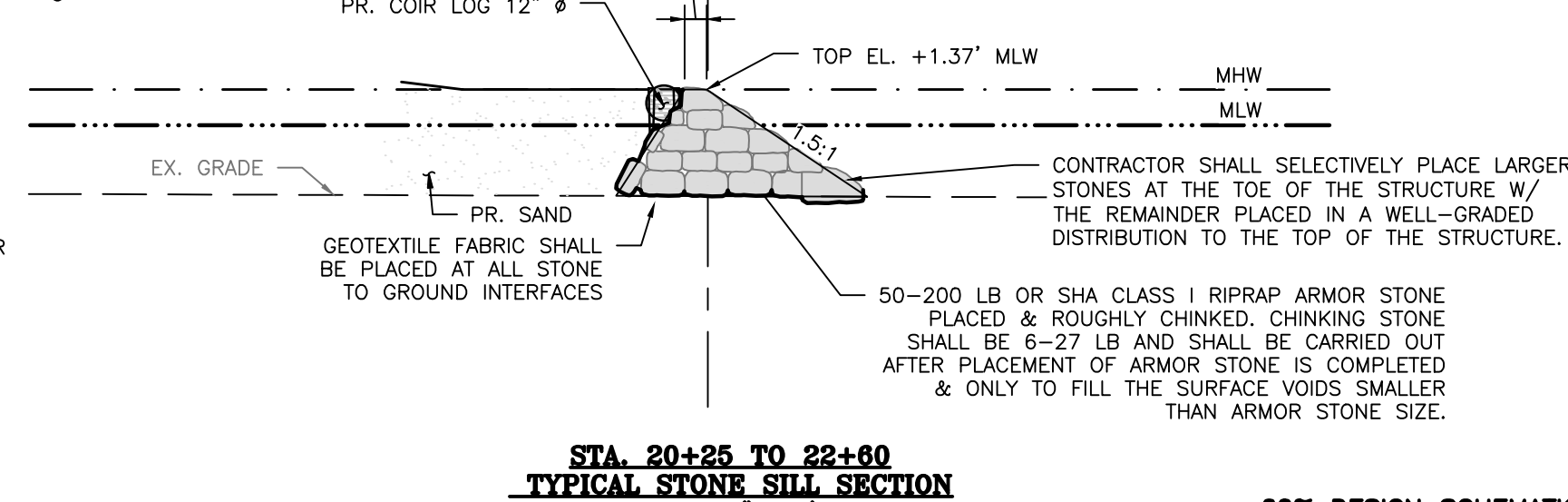
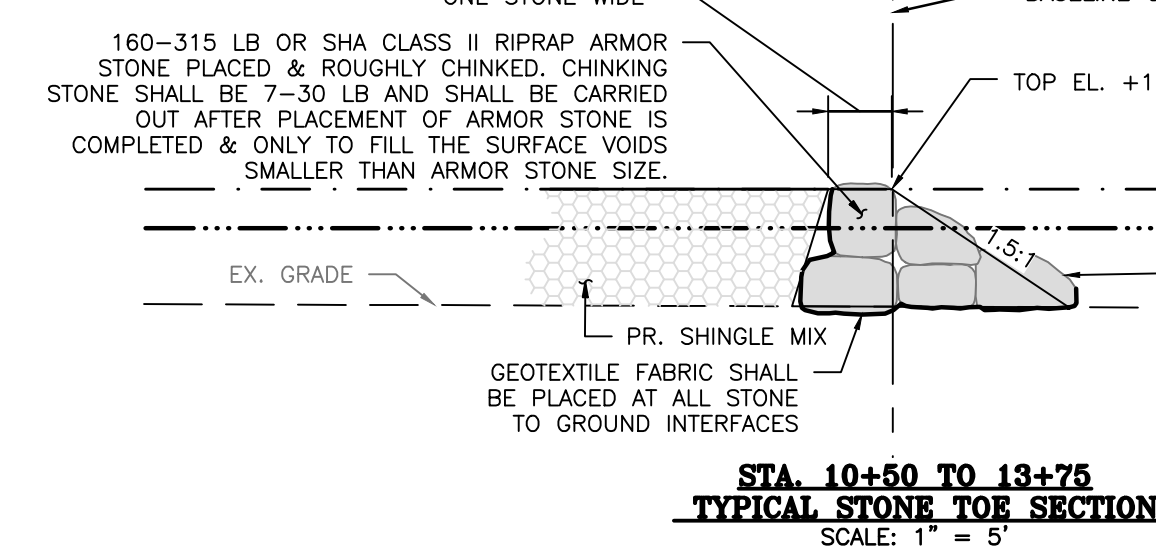


GREEN HEADLAND BREAKWATER & SHINGLE BEACH SAND/GRAVEL/COBBLE MIX ASSEMBLY NOTE

1. STAKE OUT THE EDGES OF THE BREAKWATER FOOTPRINTS AND INSTALL GEOTEXTILE.
2. PLACE LARGER RIPRAP STONE AROUND THE INSIDE EDGE OF THE STAKED OUT FOOTPRINTS. PUSH BOULDERS TO EMBED THEM BELOW EXISTING GRADE BY 1 FOOT. BUILD STONE TOE TO HAVE A 3:1 SLOPE FACING OUT, PERPENDICULAR TO THE FOOTPRINT EDGE. THE TOPS OF BOULDERS SHOULD LIE BELOW MHW.
3. PLACE THE SAND, GRAVEL AND COBBLE IN CLUSTERS WITHIN THE FOOTPRINT. EACH CLUSTER SHOULD COMPRISE OF 2 PILES OF SAND, 1 PILE OF GRAVEL, AND 2 PILES OF COBBLE.
4. SMOOTH THE PILES OUT & TRACK OVER THE FILL AS NEEDED TO MIX EVERYTHING TOGETHER. WASH IN SAND OCCASIONALLY AND REPLENISH AS NEEDED UNTIL VOID SPACES ARE FILLED.
5. ADD WOODCHIPS INTERMITTENTLY SO IT IS PRESENT THROUGHOUT THE FILL.

ARMOR STONE NOTES:

- A. PROPOSED ARMOR STONE TO BE PLACED AND ROUGHLY CHINKED.
 - A.1. CLASS II RIPRAP: CHINKING STONE SHALL BE 50-150 LB
 - A.2. CLASS I RIPRAP: CHINKING STONE SHALL BE 6-27 LB
 PLACE OF CHINKING STONE SHALL BE CARRIED OUT AFTER PLACEMENT OF ARMOR STONE TO FILL SURFACE VOIDS.
- B. 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.
- C. REMOVE RUBBLE AND PLACE GEOTEXTILE FABRIC ON PREPARED SUBGRADE, ANY EXISTING NATURAL STONE CAN BE REUSED IF IT FITS STONE SPECIFICATIONS.
- D. 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 TOE.



GREEN HEADLAND BREAKWATER & SHINGLE BEACH SAND/GRAVEL/COBBLE MIX

MATERIAL*	PERCENT OF TOTAL FILL	VOLUME CY (PLUS 20% CONTINGENCY)**
RIVER JACK OR SILICA COBBLES (4" TO 10", D ₅₀ = 6")	50%	856
SILICA BASED GRAVEL D ₅₀ = 1.3" (33 mm)	25%	404
CONCRETE SAND	50%	5,287
WOODCHIPS (MULCH)	20%	358

* CONFIRM THESE PRODUCTS ARE AVAILABLE AT PROVIDER. ALTERNATIVE PRODUCTS MUST BE APPROVED BY BAYLAND BEFORE USE. CONTRACTORS TO SUBMIT MATERIAL ANALYSIS FOR APPROVAL.
 ** PROJECT VOLUMES DO NOT FACTOR MATERIAL LOSS DUE TO SETTLEMENT.



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LIVING SHORELINE CROSS-SECTIONS & DETAILS

SCALE: 1" = 5'

BILLING NO. XXXXXX

PROFESSIONAL CERTIFICATION

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S/C PLAN # XXXXX

GP # XXXXX-XXXX

REVISIONS

HARFORD COUNTY, MARYLAND

WATER'S EDGE COMMUNITY SHORELINE RESTORATION LIVING SHORELINE CROSS-SECTIONS & DETAILS

DRAWN BY : JRH

DESIGNED BY : JRH

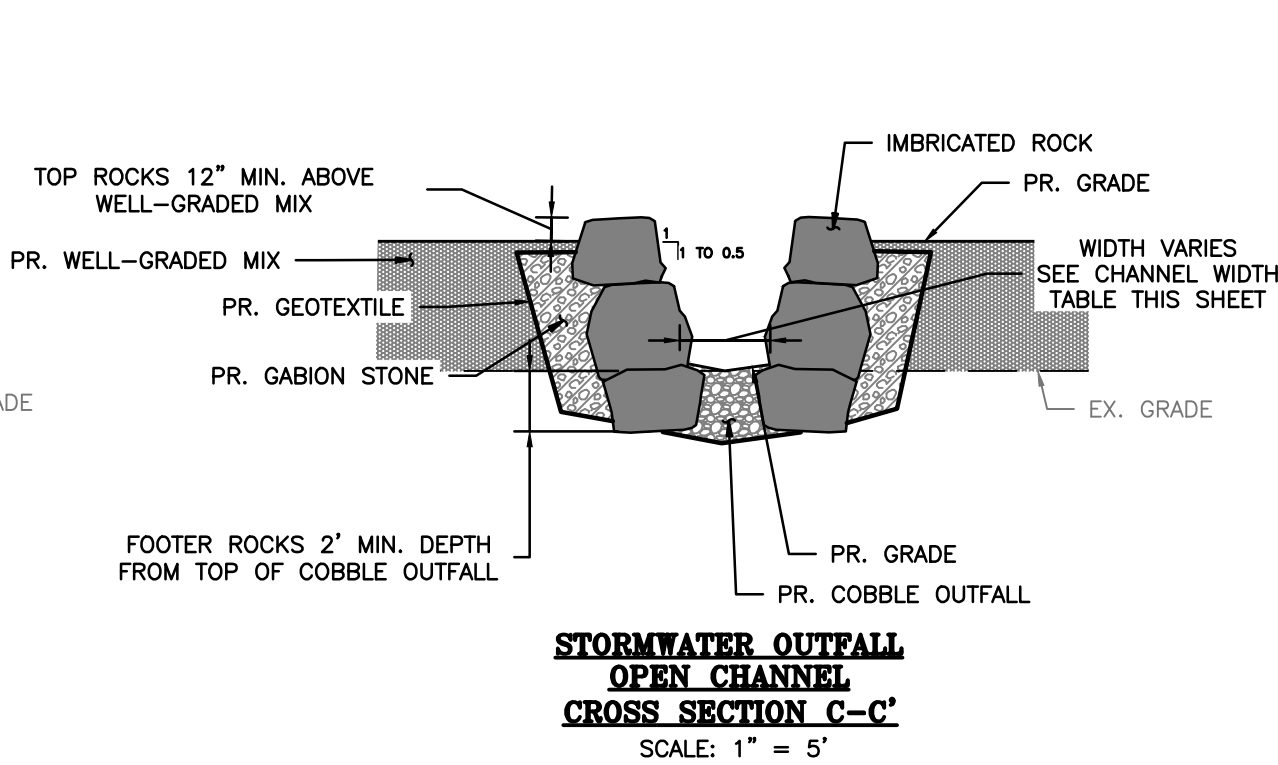
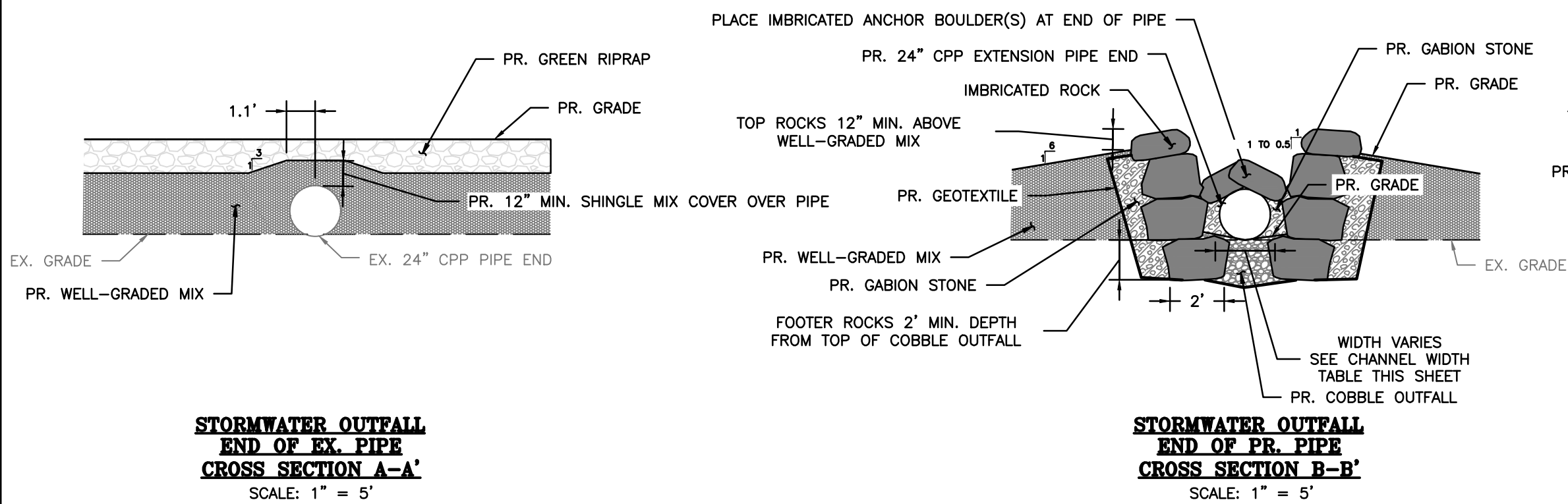
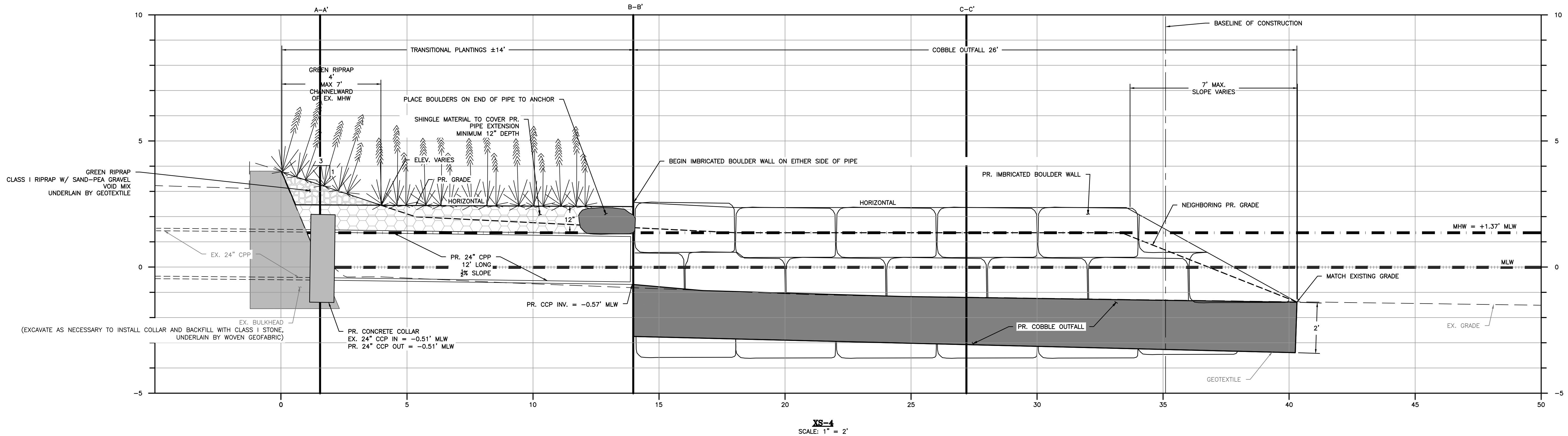
REVIEWED BY : JRH

SCALE : 1" = 5'

DATE : 12/23/25

SHEET NO. 8 OF 11

60% DESIGN SCHEMATIC



ROCK SIZE TABLE

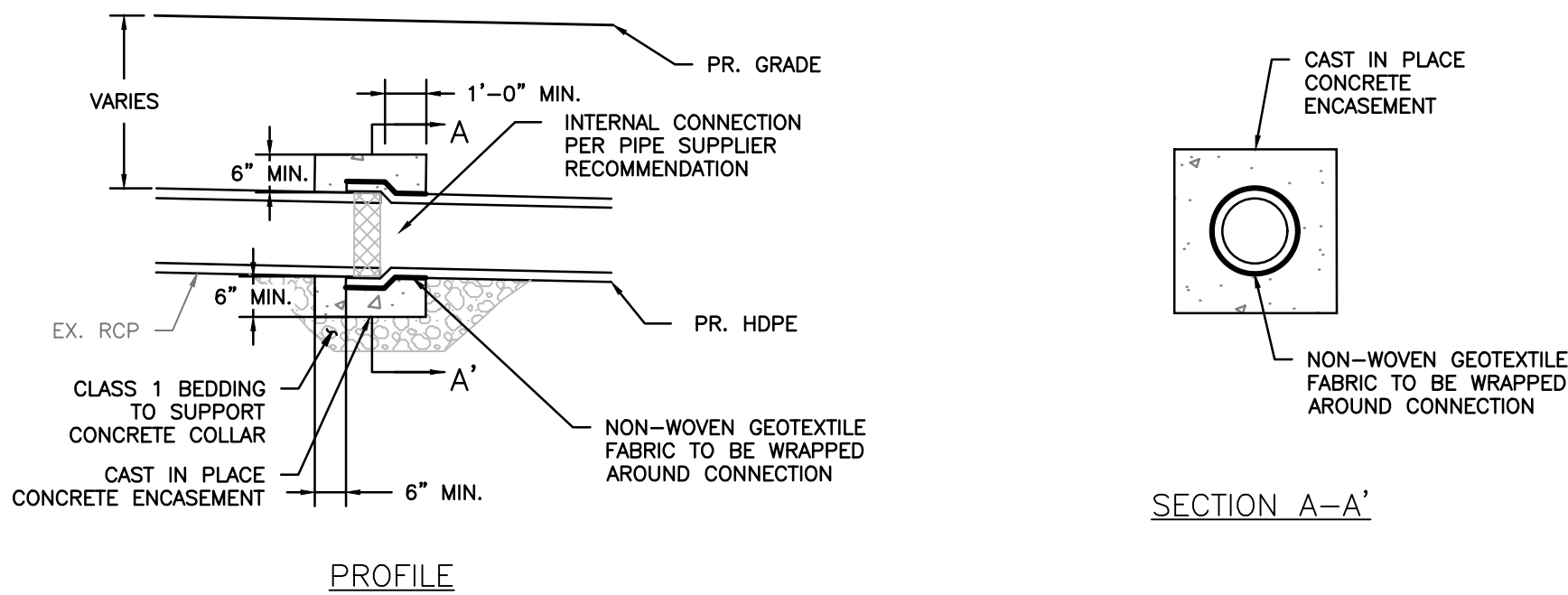
ROCK TYPE	SIZE	% BY WEIGHT
IMBRICATED ROCK	GREATER THAN 2' X 3' X 4'	20
	1' X 2' X 3' TO 2' X 3' X 4'	80

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

- ALL MATERIALS SHALL BE UNDERLAIN BY MIRAFI FW404 GEOTEXTILE FABRIC OR EQUAL.
- WHEN BACKFILLING, ALL MATERIAL SHALL BE COMPACTED FIRMLY IN ALL VOIDS TO SECURE STONE. ALL SOIL SHALL BE COMPACTED TO MD-378 STANDARDS.
- ALL ROCKS SHALL BE PLACED WITH 2 PARALLEL FACES ORIENTED UP AND DOWN WITH THE TOP FACE TILTED 15±5° INTO THE UPSTREAM DIRECTION.
- 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.
- IMBRICATED ROCK SHALL BE OBLONG AND FLAT IN APPEARANCE WITH TWO PARALLEL FACES, AND SHALL BE STACKABLE.
- 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

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

60% DESIGN SCHEMATIC

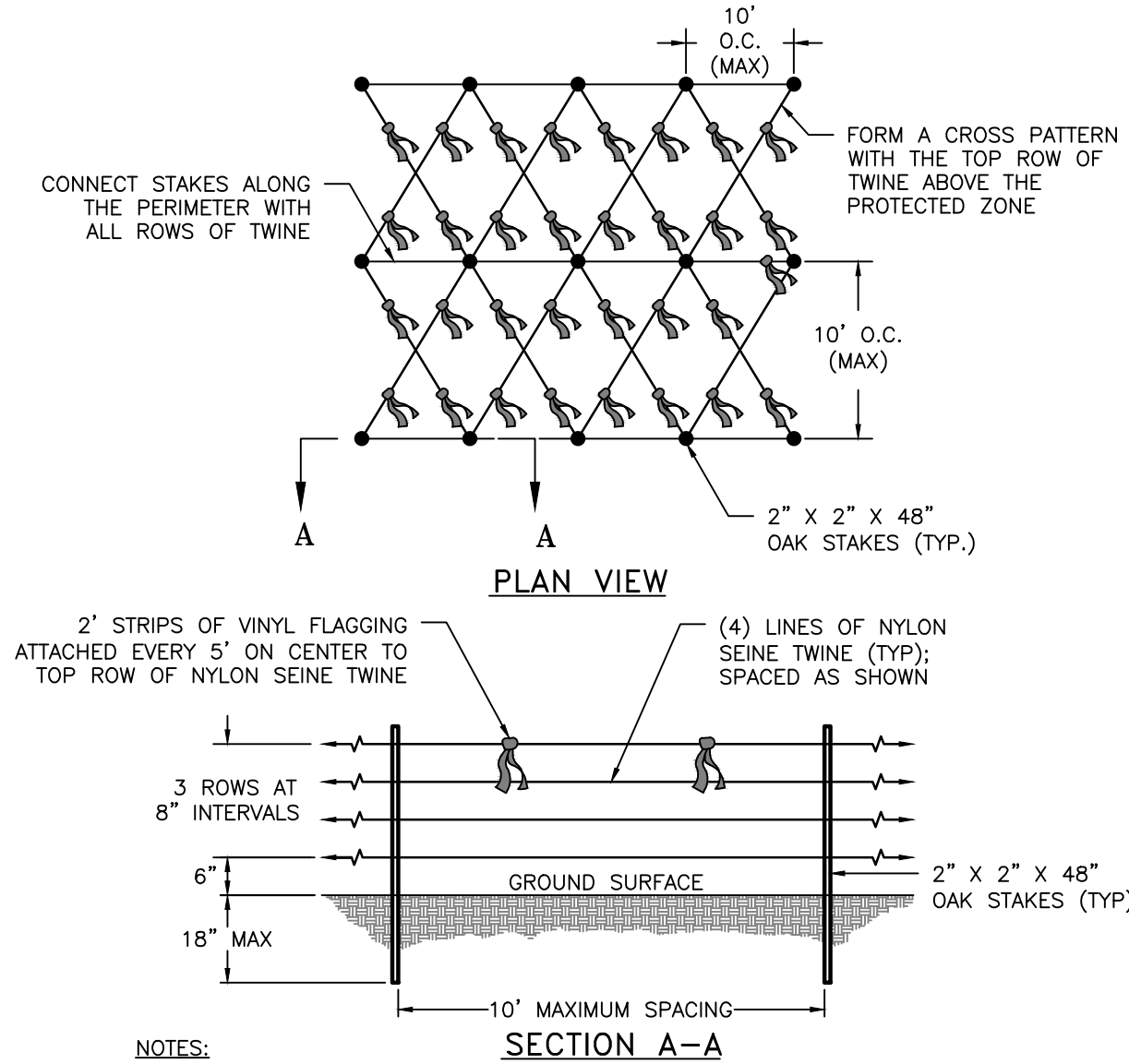
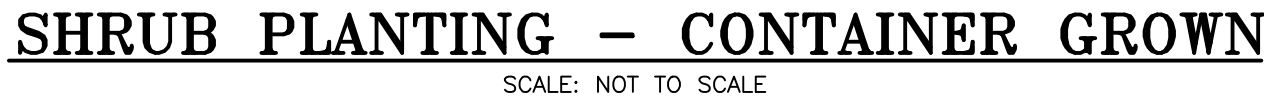
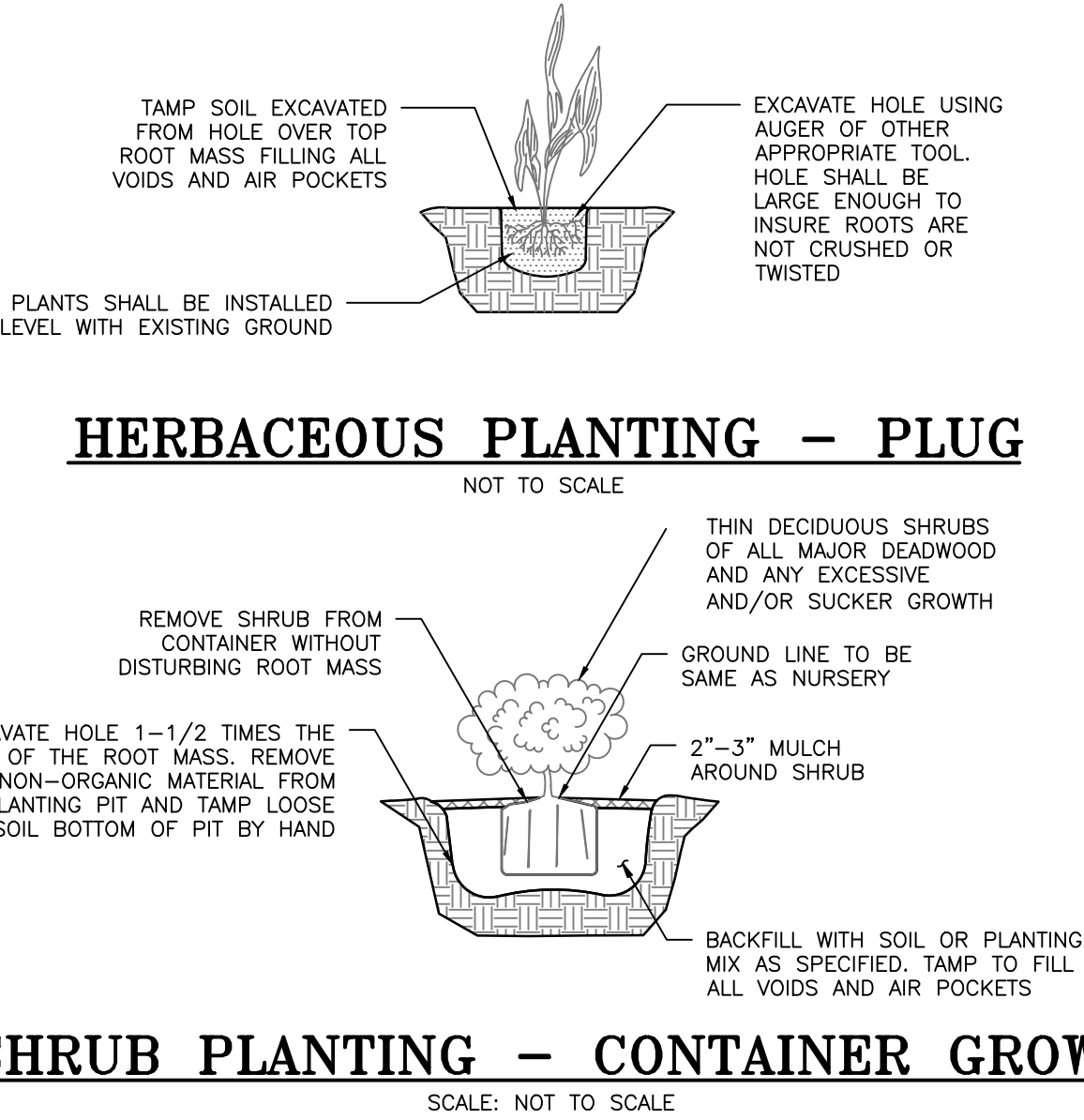
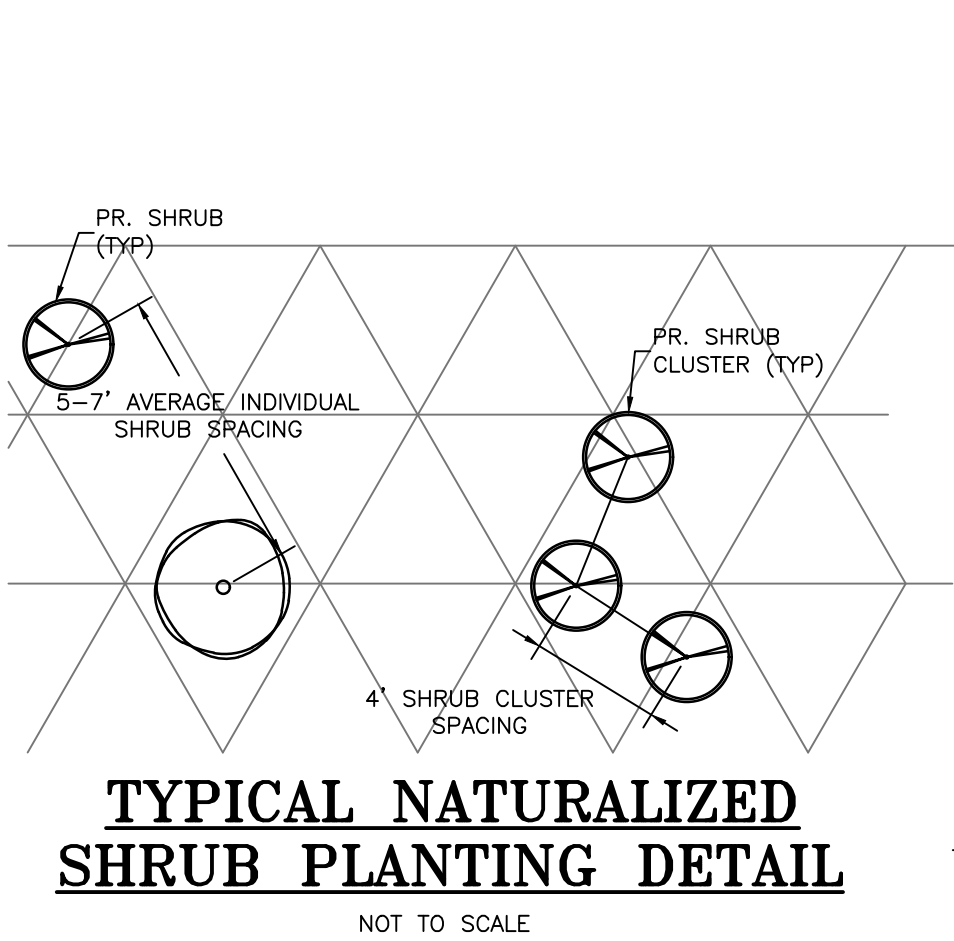
HARFORD COUNTY, MARYLAND

WATER'S EDGE COMMUNITY SHORELINE
RESTORATION

STORMWATER OUTFALL CROSS-SECTIONS & DETAILS

DRAWN BY : JRH	SCALE : AS SHOWN
DESIGNED BY : JRH	DATE : 12/23/25
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 MHW.
HIGH MARSH	* * * * *	29,116	SALT MEADOW CORDGRASS	SPARTINA PATENS	FACW	HERBACEOUS	DP50	RANDOM	1	29,116	ABOVE PROPOSED MHW 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 MLW, SHINGLE BEACH, BETWEEN 2 TO 3 FT ABOVE MLW
	▽ ▽ ▽ ▽ ▽ ▽ ▽ ▽		COMMON EVENING PRIMROSE	ONEOTHERA 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	ABOVE +3 FT MLW
	○ ○ ○ ○ ○ ○ ○ ○		MARSH ELDER	IVA FRUTESCENS	FACW	SMALL SHRUB	#1 CONT. OR 9" DEEP BAND POT, 1-2 FT	RANDOM	5	5	
	○ ○ ○ ○ ○ ○ ○ ○		NORTHERN BAYBERRY	MORELLA PENSYLVANICA	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	

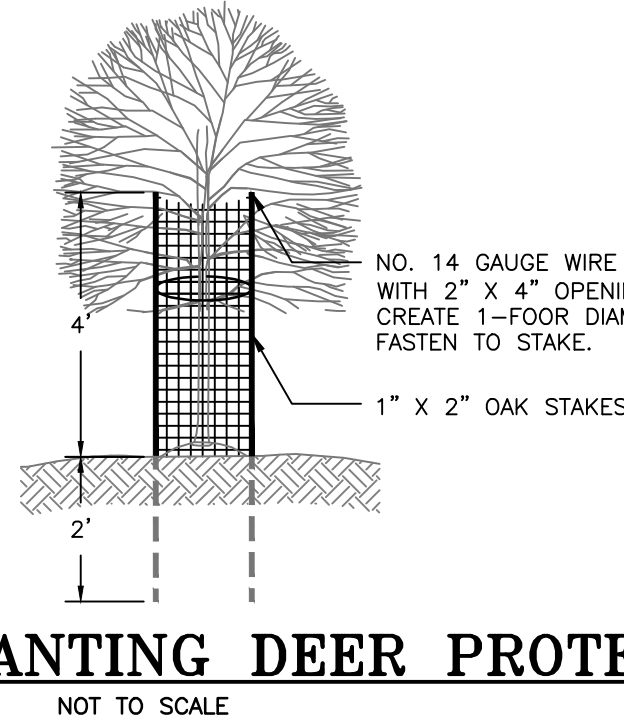


- NOTES:
- OAK STAKES SHALL BE SPACED A MAXIMUM OF 10' O/C. WITH A MINIMUM OF TWO ROWS OF STAKES INSTALLED ALONG THE INNER AND OUTER PERIMETERS OF THE PLANTING TERRACE.
 - THE SEINE NYLON TWINE SHALL BE STRUNG FROM EACH STAKE TO EVERY ADJACENT STAKE WITHIN THE SAME ROW AND ADJACENT ROWS TO FORM A CRISS-CROSS PATTERN.
 - THE FIRST ROW OF SEINE NYLON TWINE SHALL BE PLACED A MINIMUM OF 6" OFF THE GROUND SURFACE, WITH EACH SUBSEQUENT ROW 8" IN SEPARATION.
 - THE SEINE NYLON TWIN SHALL BE SECURELY FASTENED TO THE STAKE AT THE APPROPRIATE ELEVATION ON THE POST.
 - 2' STRIPS OF FLUORESCENT COLORED VINYL FLAGGING SHALL BE SECURELY FASTENED TO THE SEINE NYLON TWINE AT A MAXIMUM 5' O/C BETWEEN THE OAK STAKES. THE FLAGGING SHALL BE TIED TO THE SEINE NYLON TWINE IN THE MIDDLE TO PRODUCE TWO STREAMERS OF NYLON TWINE EACH APPROXIMATELY 12" IN LENGTH.
 - THE GOOSE EXCLUSION FENCING SHALL COMPLETELY ENCLOSE THE PLANTING TERRACE AND PREVENT GOOSE ACCESS TO THE WATER FROM LAND AND VISE VERSA.
 - THE FENCING MUST REMAIN IN PLACE UNTIL THE VEGETATION HAS HAD TIME TO BECOME ESTABLISHED. AFTER TWO GROWING SEASONS THE FENCING SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.

GOOSE EXCLUSION FENCE DETAIL

(TO BE INSTALLED ABOVE & AROUND SHORELINE PLANTINGS)

- NOTES:
- HEIGHT OF CAGE SHALL BE 4 FT. (MIN.)
 - CUT A 6 FT. SECTION OF WELDED WIRE FENCING WITH TREE IN CENTER.
 - CREATE ENCLOSURE BY FASTENING 11-INCH RELEASEABLE CABLE TIES (ONE AT TOP AND ONE 6 IN. MIN. ABOVE THE GROUND AT EACH POST) TO EACH POST.
 - DO NOT DAMAGE TREE DURING INSTALLATION.
 - SUBSTITUTIONS MUST BE APPROVED BY THE FOREST CONSERVATION INSPECTOR.
 - CAGES TO BE REMOVED AT THE DIRECTION OF THE FOREST CONSERVATION INSPECTOR.
 - THREE (3) GALLON SHRUBS CAN BE PLANTED IN GROUPS OF TWO PER ENCLOSURE.



TREE/SHRUB PLANTING DEER PROTECTION

PHRAGMITES ERADICATION

- 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.
- THE CONTRACTOR SHALL MONITOR AND CONTROL FUTURE POPULATIONS FOR A PERIOD OF ONE YEAR AFTER ERADICATION IS COMPLETE.
- THE CONTRACTOR SHALL REMOVE EXISTING PHRAGMITES WITHIN THE LIMITS SHOWN ON THE PLANS USING METHODS APPROVED BY MDE.
- THE CONTRACTOR SHALL REMOVED ALL EXPOSED PHRAGMITES ROOTS, WASTE MATERIAL AND DEBRIS LARGER THAN ONE INCH PRIOR TO REVEGETATION. ALL REMOVED MATERIALS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN AN APPROVED DISPOSAL SITE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ANY REEMERGING PHRAGMITES FOR UP TO ONE YEAR AFTER ERADICATION IS COMPLETE.
- THE CONTRACTOR SHALL TAKE CARE TO AVOID ALL OTHER PLANT MATERIAL FROM CONTACT WITH ANY HERBICIDES USED FOR THE ERADICATION OF PHRAGMITES.

SEQUENCE OF IMPLEMENTATION

- 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.
- REMOVE\ELIMINATE TURF GRASS AND TILL UNFORESTED AREAS TO BE PLANTED TO A DEPTH OF 12 INCHES.
- USE TREE SHELTER TUBES WITH MESH TOPS FOR SEEDLINGS PLANTING TO REDUCE ANIMAL DAMAGE.
- MULCH AROUND LANDSCAPING STOCK TO REDUCE COMPETITION FROM INVASIVE SPECIES.
- MONITOR THE PLANTINGS OFTEN TO REDUCE PLANT STRESS SUCH AS WATER DEFICIENCY, NUTRIENT DEFICIENCY, INVASIVE SPECIES COMPETITION, PEST DAMAGE, AND DISEASE.
- 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

- 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 ON THIS BUFFER MANAGEMENT PLAN AS SUBMITTED AND OR 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.
- 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.
- NEW LAWN AREAS SHALL NOT BE CREATED WITHIN THE BUFFER OR EXPANDED BUFFER UNLESS SPECIFICALLY ADDRESSED IN THIS BUFFER MANAGEMENT PLAN.
- 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, FRUNING, AND INSTALLATION OF BUFFER PROTECTION SIGNAGE.

LANDSCAPE NOTES

- 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.
- 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.
- SPECIES HAVE BEEN SELECTED BASED ON AN ANALYSIS OF SURROUNDING NATIVE FOREST AND DEVELOPED WOODLAND COVER.
- UNLESS SPECIFIC PLANTING LOCATIONS ARE SHOWN, ALL WOODY PLANTINGS SHALL BE INSTALLED IN A NATURALIZED LAYOUT TO SIMULATE NATURAL PATTERNS OF DISTRIBUTION AND GROWTH.
- THE QUANTITY OF ANY SINGLE SPECIES DOES NOT EXCEED 20 PERCENT OF THE OVERALL PLANTING.

MONITORING & SURVIVAL REQUIREMENTS

- PLANTINGS SHALL BE MONITORED TWICE A YEAR FOR A PERIOD OF TWO YEARS AFTER PLANT INSTALLATION.
- MONITORING SHALL BE PERFORMED ONCE DURING APRIL/MAY AND ONCE AUGUST/SEPTEMBER DURING EACH MONITORING YEAR.
- 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.
- AT THE END OF THE 2-YEAR MONITORING PERIOD, PLANT SURVIVAL SHALL BE 100% IN ACCORDANCE WITH ANNE ARUNDEL COUNTY CODE AND COMAR 27.01.09.01-20. ANY SURVIVAL DEFICIENCY SHALL BE REQUIRED TO BE REPLACED TO MEET THE MINIMUM REQUIREMENT.
- THE REQUIREMENT FOR REPLACEMENT PLANTINGS MAY EXTEND THE MONITORING PERIOD BEYOND 2-YEARS.

MAINTENANCE REQUIREMENTS

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

GENERAL PLANTING NOTES

- 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.
- 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.
- ALL PLANT MATERIALS SHALL BE NURSERY GROWN AND SHALL CONFORM TO AMERICAN ASSOCIATION OF NURSERYMEN, INC. STANDARDS.
- 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.
- MARSH PLANTING WILL BE ACCOMPLISHED BETWEEN APRIL 1 AND JUNE 30 (SPRING PLANTING SEASON) OR AUGUST 15 AND OCTOBER 15 (FALL PLANTING SEASON).
- 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.
- NO CONTAINER-GROWN MATERIAL SHALL BE PLANTED IF NOT ACCCLIMATED TO THE CURRENT WEATHER CONDITIONS. CONTRACTOR IS RESPONSIBLE FOR GENERAL MAINTENANCE INCLUDING WATERING.
- ALL PLANTING MATERIAL AND PLANTING METHODS SHALL CONFORM TO CONSTRUCTION SPECIFICATIONS.
- DISTURBED AREAS WITHIN THE LIMITS OF DISTURBANCE SHALL BE STABILIZED PER THE DETAILS AND SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT.
- 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.

60% DESIGN SCHEMATIC

HARFORD COUNTY, MARYLAND

WATERS EDGE COMMUNITY SHORELINE RESTORATION PLANTING PLAN & DETAILS

DRAWN BY : JRH
DESIGNED BY : JRH
REVIEWED BY : JRH

SCALE : _____ SCALE: AS SHOWN
DATE : 12/23/25

SHEET NO. 10 OF 11

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. 4_4702

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.

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 Fence 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 will 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 UPGRADE SIDE.
 - CLEAR WATER RUNOFF INTO 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 VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. 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 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

- 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 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, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKING 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 OF TOPSOILING 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 CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2 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.
 - TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
- TOPSOIL APPLICATION
 - EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
 - UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR 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.
- 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 PERFORMED 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.

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 or 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. 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, provided the ground is suitable and thawed; comply with the 2011 MARYLAND STANDARD AND SPECIFICATION1 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 seeded areas. If a mulch anchoring tool is to be used, the rate shall be increased to 2.5 tons per acre. **

Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind and water. The type of mulch anchoring used must comply with the 2011 MARYLAND STANDARD AND SPECIFICATIONS.

* IF OTHER SEED MIXES ARE TO BE SUBSTITUTED, THEY MUST COMPLY WITH THE 2011 MARYLAND STANDARD AND SPECIFICATIONS, B-4-5: "PERMANENT SEEDING", TABLE B-3 (PAGES B.26 TO B.31).

** IF A DIFFERENT TYPE OF MULCH IS TO BE USED, IT MUST COMPLY WITH THE 2011 MARYLAND STANDARD AND SPECIFICATION, B-4-3: "SEEDING AND MULCHING" (PAGES B.15 - B.17).

HARFORD COUNTY SOIL CONSERVATION DISTRICT TEMPORARY VEGETATIVE STABILIZATION NOTES

A) SEEDBED PREPARATION:

Loosen a minimum of three inches along upper soil by discing, raking or other acceptable

B) SOIL AMENDMENTS:

Incorporate 436 lbs. per acre of 10-20-20 fertilizer and two (2) tons per acre of lime by discing or other acceptable means.

C) SEEDING: *

FOR PERIODS OF MARCH 1 TO APRIL 30 AND AUGUST 15 TO NOVEMBER 15: Seed with 2.5 bu. per acre of Cereal Rye or 40 lbs. per acre of Annual Ryegrass.

FOR PERIOD OF MAY 1 TO AUGUST 14: Seed with 3 lbs. per acre of Weeping Lovegrass or 30 lbs. per acre of Pearl or Foxtail Millet.

FOR THE PERIOD OF NOVEMBER 16 TO FEBRUARY 28: Protect the site by applying two (2) tons per acre of well anchored straw mulch and seed as soon as possible in the spring.

D) MULCHING SPECIFICATIONS:

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

Apply two (2) tons per acre of straw over all seeded areas. If a mulch anchoring tool is to be used, the rate shall be increased to 2.5 tons per acre.**

Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind and water. The type of mulch anchoring used must comply with the 2011 MARYLAND STANDARD AND SPECIFICATIONS.

* IF OTHER SEED MIXES ARE TO BE SUBSTITUTED, THEY MUST COMPLY WITH THE 2011 MARYLAND STANDARD AND SPECIFICATIONS, B-4-4: "TEMPORARY SEEDING", TABLE B-1 (PAGE B.20).

** IF A DIFFERENT TYPE OF MULCH IS TO BE USED, IT MUST COMPLY WITH THE 2011 MARYLAND STANDARD AND SPECIFICATION, B-4-3: "SEEDING AND MULCHING" (PAGES B.15 - B.17).

BEST MANAGEMENT PRACTICES FOR WORKING IN NON TIDAL WETLANDS. WETLAND BUFFERS, WATERWAYS & 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 (UENOLA 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 WATER.
- 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.

