

ANNE ARUNDEL COUNTY, MARYLAND, DEPARTMENT OF PUBLIC WORKS

WATERSHED PROTECTION AND RESTORATION PROGRAM

CAPE ST CLAIRE SHORELINE ENHANCEMENT

CONSTRUCTION DOCUMENTS

GRADING PERMIT NO.

VICINITY MAP



SCALE 1" = 2000'

GENERAL NOTES

- ALL TOPOGRAPHIC SURVEY DATA SHOWN WAS OBTAINED FROM SUSTAINABLE SCIENCES, LLC. COORDINATES AND ELEVATIONS ARE REFERRED TO THE MARYLAND STATE PLANE COORDINATE SYSTEM AND NORTH ATLANTIC VERTICAL DATUM OF 1988 (NAD 83/2011 & NAVD88).
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS "STANDARD DETAILS AND SPECIFICATIONS" UNLESS OTHERWISE NOTED.
- THE EXISTING UTILITIES AND OBSTRUCTIONS SHOWN ARE FROM THE BEST AVAILABLE RECORDS AND SHALL BE VERIFIED BY THE CONTRACTOR TO HIS 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 HIS OWN EXPENSE.
- IT SHALL BE UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NATURALLY BE REQUIRED TO COMPLETE THE PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLETE SUCH WORK.

SITE ANALYSIS TABULATION

1. TOTAL AREA OF PROPERTY	2.4 AC (LIMITS OF DISTURBANCE)
2. DISTURBED AREA	0.4 AC ABOVE MHW
3. IN STREAM AREA NOT TO BE STABILIZED	N / A
4. AREA MECHANICALLY STABILIZED	N / A
5. AREA VEGETATIVELY STABILIZED	445 SF
6. TOTAL CUT	N / A
7. TOTAL FILL	N / A
8. TOTAL SPOIL	N / A
9. TOTAL IMPORTED FILL	1000 CY

* ESTIMATED INFORMATION NOT INTENDED FOR BIDDING

CONSULTANT'S CERTIFICATION

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

MD. P.E. LICENSE # 18919

MD. LAND SURVEYOR LICENSE#

MD. LANDSCAPE ARCHITECT #

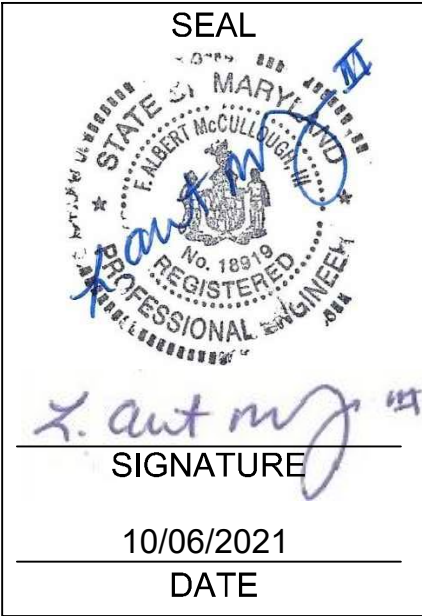
NAME
F. ALBERT MCCULLOUGH III

FIRM NAME
SUSTAINABLE SCIENCE, LLC
410 SOUTH SECOND ST.

STREET ADDRESS
DENTON, MD 21629

SITE INFORMATION TABULATION

- OWNER INFORMATION - CAPE ST. CLAIRE IMPROVEMENT ASSOCIATION
- ENGINEER INFORMATION - SUSTAINABLE SCIENCE, LLC. AND BIOHABITATS, INC.
- TAX MAP/PARCEL- SEE PLANS
- PLAT REFERENCE - SEE PLANS
- PROPERTY AREA - SEE PLANS
- DISTRICT - 03
- ZONING - R5, OS
- STREAM USE DESIGNATION - CLASS II
- SUBWATERSHED/WATERSHED - MD 8 DIGIT 02131001/MAGOTHY RIVER CRITICAL AREA - YES



STANDARD RESPONSIBILITY NOTES

I (WE) CERTIFY THAT:

- ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THIS SEDIMENT AND EROSION CONTROL PLAN, AND FURTHER, AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY THE ANNE ARUNDEL SOIL CONSERVATION AASCD 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: JIM FAVRET, BIOHABITATS, INC.

- IF APPLICABLE, THE APPROPRIATE ENCLOSURE WILL BE CONSTRUCTED AND MAINTAINED ON SEDIMENT BASIN(S) INCLUDED IN THIS PLAN. SUCH STRUCTURE(S) WILL BE IN COMPLIANCE WITH THE ANNE ARUNDEL COUNTY CODE.
- THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHT, AND/OR RIGHTS-OF-WAY THAT MAY BE REQUIRED FOR THE SEDIMENT AND EROSION CONTROL PRACTICES, STORM WATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORM WATER ONTO OR ACROSS ADJACENT OR DOWNSTREAM PROPERTIES INCLUDED IN THE PLAN.
 - FOR INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT AND/OR TEMPORARY STABILIZATION PER THE AASCD DETAILS AND SPECIFICATIONS FOR 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 EXTEND 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.
 - 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. THIS WILL REQUIRE FIRST PHASE INSPECTION. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THE INITIAL APPROVAL BY THE SEDIMENT AND EROSION CONTROL INSPECTOR IS GIVEN.
 - APPROVAL SHALL BE REQUESTED ON FINAL STABILIZATION OF ALL SITES BEFORE 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: BEAU BREEDEN
TITLE: B&P CHAIR, CAPE ST. CLAIRE IMPROVEMENT ASSOCIATION
AFFILIATION: CAPE ST. CLAIRE IMPROVEMENT ASSOCIATION
ADDRESS: 1223 RIVER BAY RD., ANNAPOLIS, MD 21409
TELEPHONE NUMBER: (410) 757-1223
EMAIL ADDRESS: OFFICE@CSCIA.ORG

ANNE ARUNDEL SOIL CONSERVATION DISTRICT
SEDIMENT AND EROSION CONTROL APPROVAL

QA/QC STATEMENT:

THESE PLANS HAVE BEEN REVIEWED
AND APPROVED BY ME FOR
SCHEMATIC DESIGN SUBMITTAL

F. Albert McCullough III

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 #: 18919

EXPIRATION DATE: 11/16/2022

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MISS UTILITY

CALL "MISS UTILITY" (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, SEWER, CABLE TV LINES, ETC.



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LICENSE #: 18919

EXPIRATION DATE: 11/16/2022

CAPE ST CLAIRE

COMMUNITY IMPROVEMENT ASSOCIATION

REVISED	APPROVED	DATE	APPROVED	DATE	SCALE:	AS SHOWN	CAPE ST CLAIRE SHORELINE ENHANCEMENT
					DRAWN BY	TB.RW.AM.SE	
	CHIEF ENGINEER		PROJECT MANAGER		CHECKED BY	FAM, JC	
	APPROVED	DATE	APPROVED	DATE	SHEET NO.	1 OF 18	
					PROJECT NO.	19033.01	
	ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT-OF-WAY		PROPOSAL NO.		TITLE SHEET

GENERAL NOTES

- EXISTING ELEVATIONS AND GRADES MAY HAVE CHANGED SINCE THE ORIGINAL SURVEY WAS COMPLETED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM EXISTING GRADES AND ADJUST QUANTITIES, EARTHWORK AND WORK EFFORTS AS NECESSARY AT NO ADDITIONAL COST TO THE PROJECT OWNER. THIS IS NOT TO BE CONSTRUED AS A BOUNDARY SURVEY.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS "STANDARD DETAILS AND SPECIFICATIONS" UNLESS OTHERWISE NOTED.
- THE EXISTING UTILITIES SHOWN WITHIN THE SURVEY LIMITS HAVE BEEN FIELD LOCATED. THE CONTRACTOR SHALL VERIFY ALL LOCATIONS TO HIS 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 HIS OWN EXPENSE.
- IT SHALL BE UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NATURALLY BE REQUIRED TO COMPLETE THE PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLETE SUCH WORK.
- THE CONTRACTOR SHALL CALL "MISS UTILITY" (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, SEWER, CABLE TV LINES, ETC.
- CONTRACTOR SHALL EXERCISE CARE WHEN DIGGING ADJACENT TO AND CROSSING THE UTILITIES. ANY DAMAGE TO THE UTILITIES IS THE CONTRACTORS RESPONSIBILITY.
- THE CONTRACTOR SHALL NOTIFY THE ANNE ARUNDEL COUNTY INSPECTIONS PERMITS CENTER (410-222-7780) TWO (2) DAYS PRIOR TO BEGINNING CONSTRUCTION.
- THE CONTRACTOR MUST STORE ALL EQUIPMENT WITHIN THE LOD AND ALL CONSTRUCTION ACTIVITIES AND ACCESS MUST REMAIN WITHIN THE LOD AS SHOWN ON THE PLANS.
- CONTRACTOR SHALL PERFORM FULL WIDTH REPAIR OR REPLACE ANY DAMAGED ROADS, CURBS, FENCES, DRIVEWAY, AND SIDEWALKS IN KIND.
- CONTRACTOR SHALL VERIFY SITE CONDITIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER/DESIGNATED SPECIALIST PRIOR TO BEGINNING CONSTRUCTION.
- CONTRACTOR SHALL PROTECT ALL ROADS, DRIVEWAYS AND SIDEWALKS FOR DAMAGE. ANY DAMAGE TO THEM SHALL BE REPAIRED AT HIS OWN EXPENSE.
- THE GRADING TOLERANCE IS +/- 0.2' VERTICAL AND +/- 0.5' HORIZONTAL. STRUCTURE ELEVATION/LOCATIONS AND GRADING MAY BE FIELD ADJUSTED AT THE DIRECTION OF THE PROJECT ENGINEER/DESIGNATED SPECIALIST.

ABBREVIATIONS

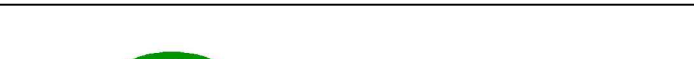
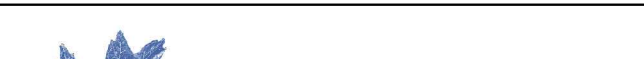
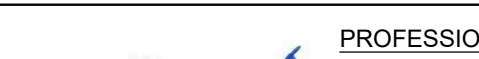
RCP	REINFORCED CONCRETE PIPE
CMP	CORRUGATED METAL PIPE
INV	PIPE INVERT
CLF	CHAIN LINK FENCE
FT	FEET
CONC	CONCRETE
HDWL	HEADWALL
ELEV	ELEVATION
INV	INVERT
PCCMP	POLYMER COATED CORRUGATED METAL PIPE
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
WUS	WATERS OF THE US
ES	END SECTION
WL	WETLAND
SAN	SANITARY
SS	SANITARY SEWER
STA	STATION
WSE	WATER SURFACE ELEVATION
TYP	TYPICAL
MIN	MINIMUM
APPROX	APPROXIMATE
W/	WITH
AC	ACRES
CY	CUBIC YARD
DBH	DIAMETER AT BREAST HEIGHT
CRZ	CRITICAL ROOT ZONE
LOD	LIMIT OF DISTURBANCE
BOF	BLAZE ORANGE FENCE

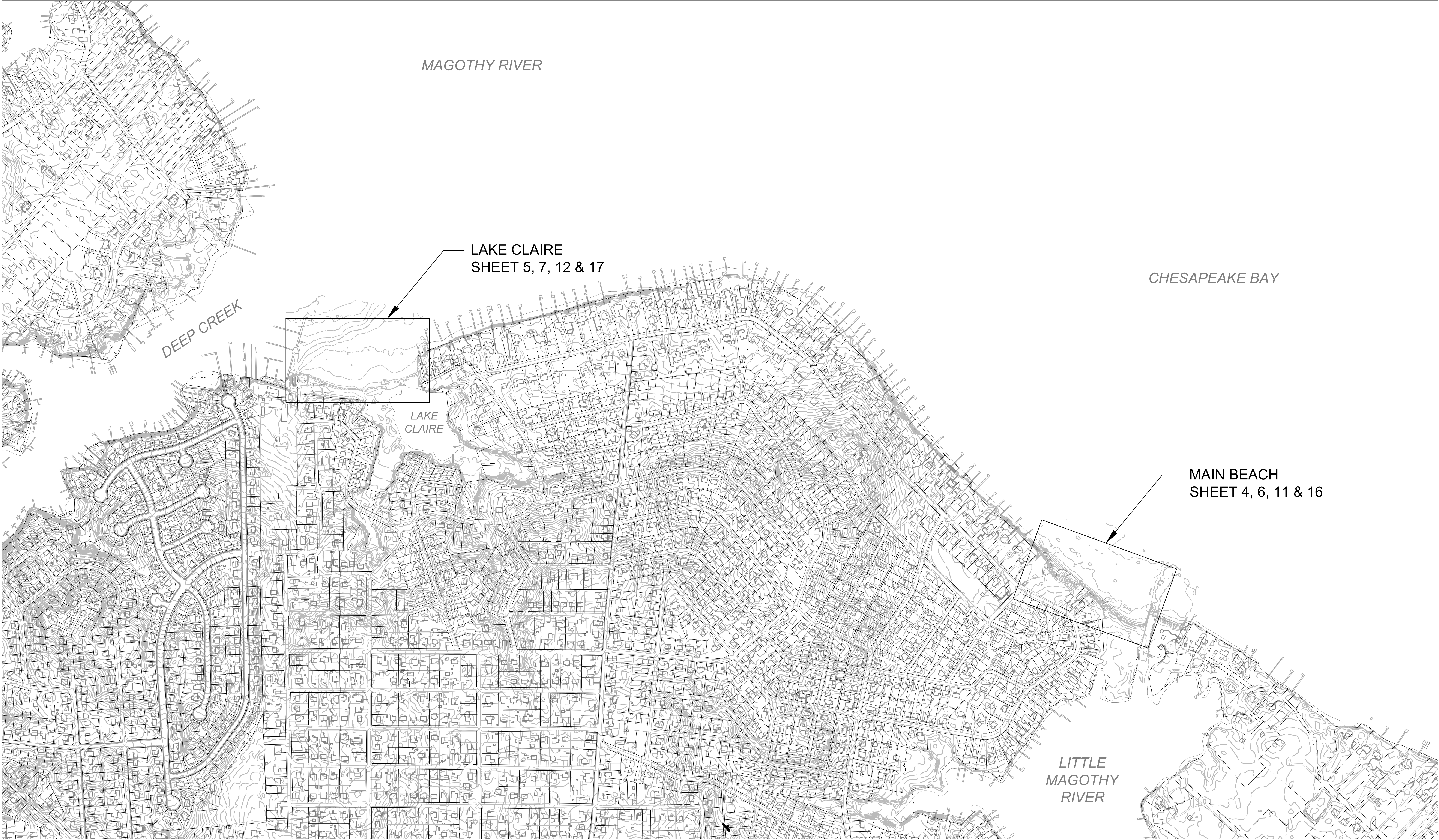
LEGEND

EXISTING		PROPOSED	
	LIMIT OF SURVEY		LOD LIMIT OF DISTURBANCE
	MAJOR CONTOUR		LOP LIMIT OF PLANTING
	MINOR CONTOUR		1 MINOR CONTOUR
	GIS CONTOUR		BOF BLAZE ORANGE FENCE
	MHW MEAN HIGH WATER (1.12')		FL FILTER LOG
	MLW MEAN LOW WATER (0.15')		BATTEN BOARD GROIN
	CA CRITICAL AREA BOUNDARY		36" OYSTER STRUCTURE
	W PgB SOIL BOUNDARY		24" OYSTER STRUCTURE
	>> FLOW PATH		INVERTED ROOT WAD
	PROPERTY LINE (GIS)		CROSS SECTION
	PROPERTY LINE (PLAT)		COBBLE BAR
	FENCE		STAGING/STOCKPILE AREA
	TREELINE (GPS)		STONE GROIN
	TRAVERSE POINT		
	BENCH (GPS)		
	POWER POLE		
	STEEP SLOPES 15% - 20%		
	STEEP SLOPES > 25%		
	BREAKWATER		
	OHE OVERHEAD UTILITY LINE		

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			COMMUNITY IMPROVEMENT ASSOCIATION									
			REVISED		APPROVED		DATE	APPROVED	DATE	SCALE:	N/A	CAPE ST CLAIRE SHORELINE ENHANCEMENT
										DRAWN BY	TB.RW.AM.SE	
					CHIEF ENGINEER			PROJECT MANAGER		CHECKED BY	FAM, JC	
					APPROVED		DATE	APPROVED	DATE	SHEET NO.	2 OF 18	
										GENERAL NOTES & LEGEND		
										PROJECT NO.	19033.01	
										PROPOSAL NO.		
										AB-01		



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LICENSE #: 18919
EXPIRATION DATE: 11/16/2022

CAPE ST CLAIRE
COMMUNITY IMPROVEMENT ASSOCIATION

REVISED	APPROVED	DATE	APPROVED	DATE
	CHIEF ENGINEER		PROJECT MANAGER	
	APPROVED	DATE	APPROVED	DATE
	ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT-OF-WAY	

SCALE: 1" = 300'

DRAWN BY TB.RW.AM.SE

CHECKED BY FAM, JC

SHEET NO. 3 OF 18

PROJECT NO. 17023.01

PROPOSAL NO.

CAPE ST CLAIRE SHORELINE ENHANCEMENT

SHEET LAYOUT & KEY MAP

SL-01



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Point	Easting	Northing	Elevation	Description
1990	1468398.8590'	504838.0870'	3.466'	LC-SC-PK-NAIL
2014	1473804.5590'	503173.6640'	2.405'	CB-SC-PK-NAIL

HORIZONTAL SCALE

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LICENSE #: 18919

EXPIRATION DATE: 11/16/2022

CAPE ST CLAIRE COMMUNITY IMPROVEMENT ASSOCIATION			
REVISED	APPROVED	DATE	APPROVED
	CHIEF ENGINEER		PROJECT MANAGER
	APPROVED	DATE	APPROVED
	ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT-OF-WAY

SCALE: 1" = 30'

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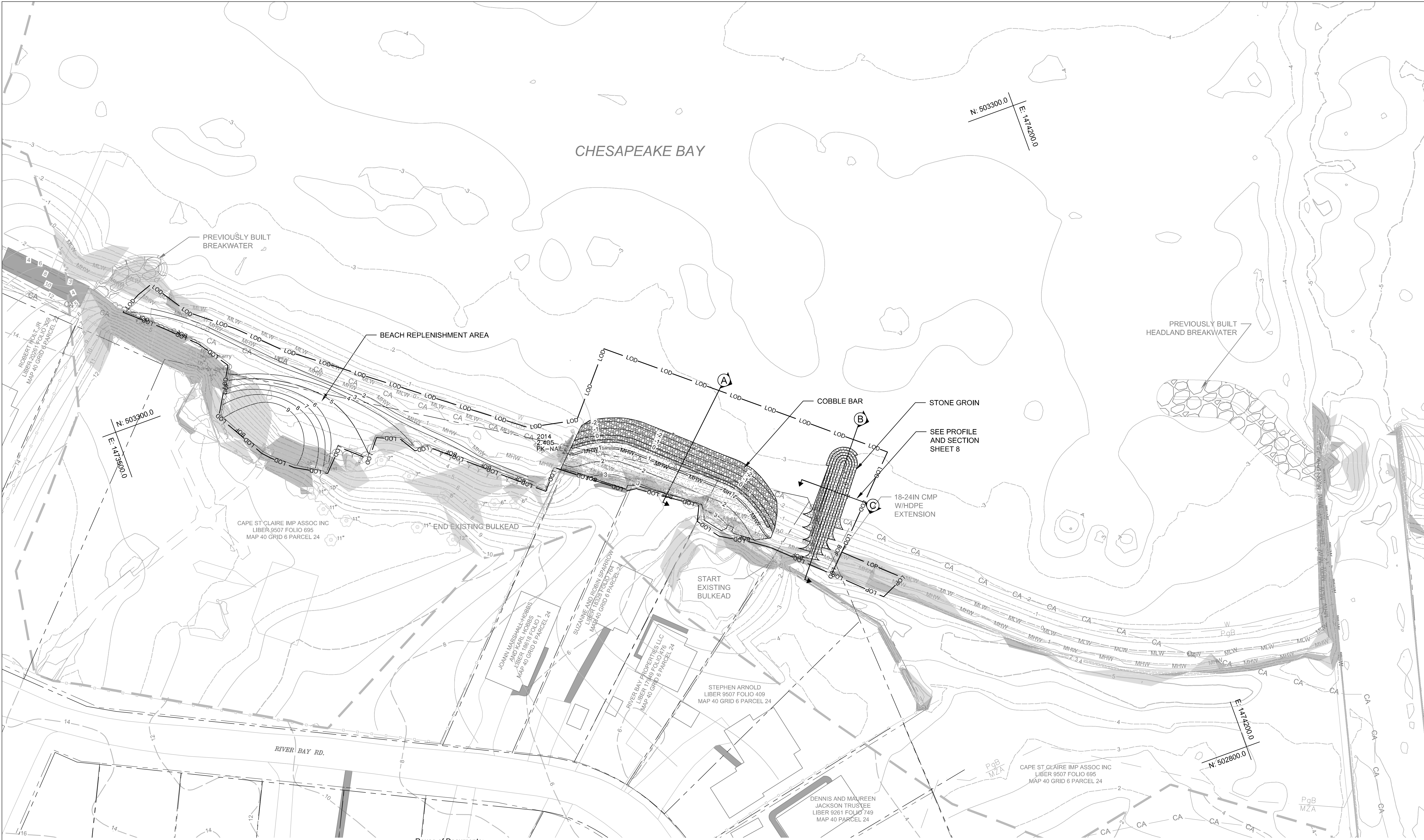
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SHEET NO.: 4 OF 18

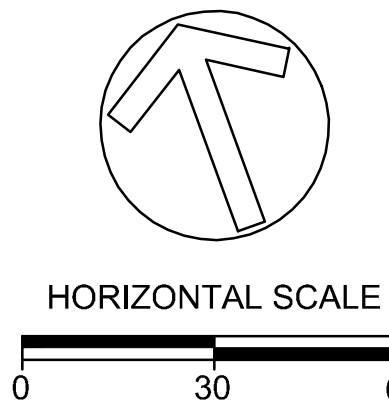
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PROPOSAL NO.:

CAPE ST CLAIRE SHORELINE ENHANCEMENT
EXISTING CONDITIONS - MAIN BEACH
EF-01



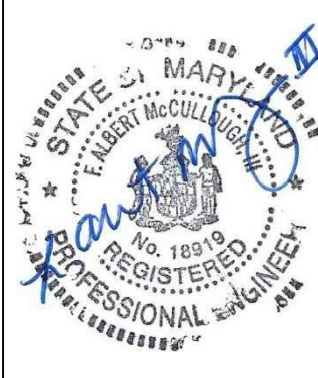
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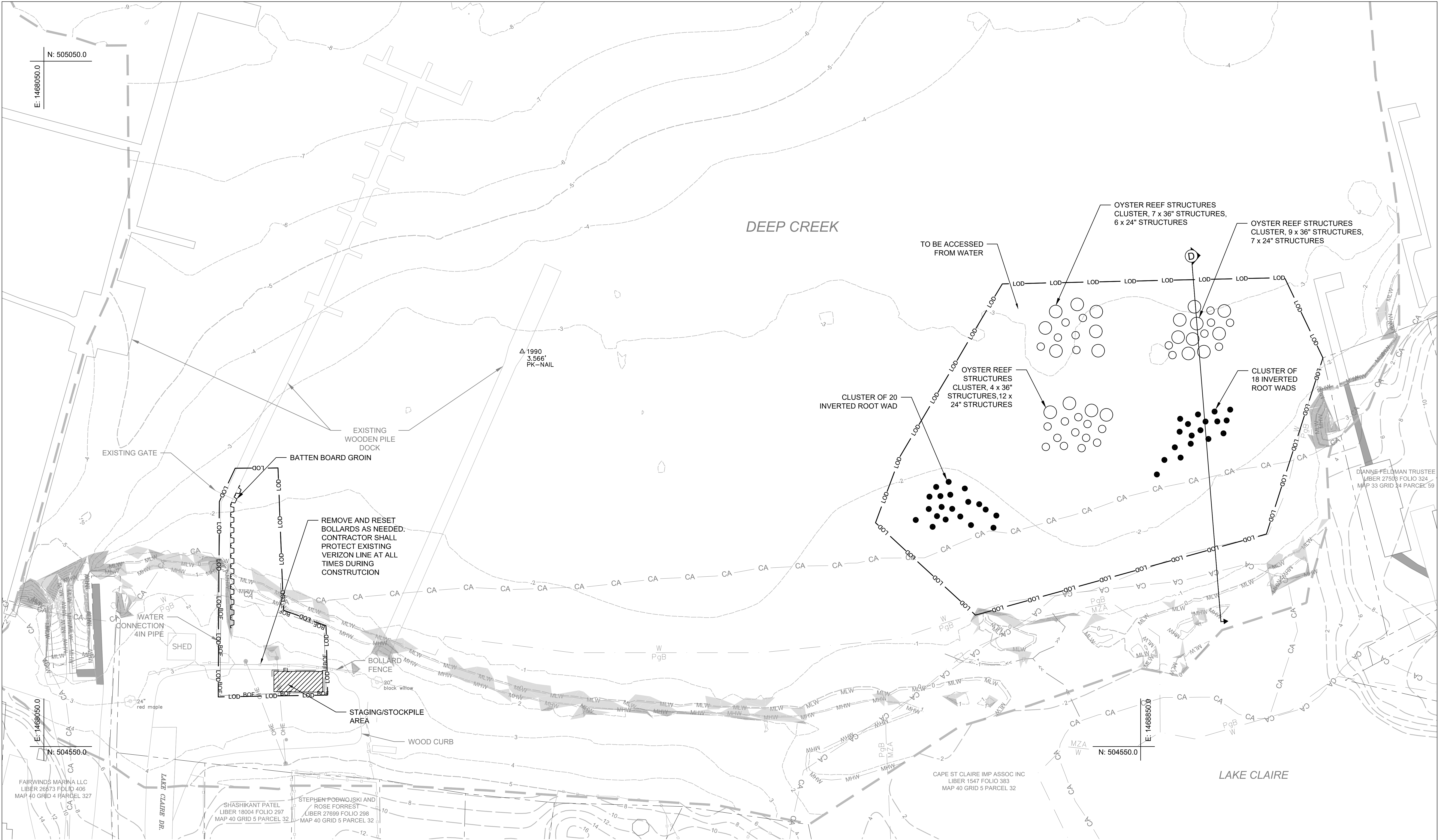
LICENSE #: 18919

EXPIRATION DATE: 11/16/2022

CAPE ST CLAIRE
COMMUNITY IMPROVEMENT ASSOCIATION

REVISED	APPROVED	DATE	APPROVED	DATE	SCALE:	1" = 30'
					DRAWN BY	TB.RW.AM.SE
	CHIEF ENGINEER		PROJECT MANAGER		CHECKED BY	FAM, JC
	APPROVED	DATE	APPROVED	DATE	SHEET NO.	6 OF 18
					PROJECT NO.	19033.01
	ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT-OF-WAY		PROPOSAL NO.	

CAPE ST CLAIRE SHORELINE
ENHANCEMENT
**PROPOSED CONDITIONS
- MAIN BEACH
C-01**



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REVISED	APPROVED	DATE	APPROVED
	CHIEF ENGINEER		PROJECT MANAGER
	APPROVED	DATE	APPROVED
	ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT-OF-WAY

SCALE: 1" = 30'

DRAWN BY: TB.RW.AM.SE

CHECKED BY: FAM, JC

SHEET NO.: 7 OF 18

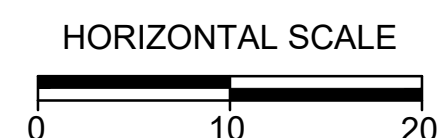
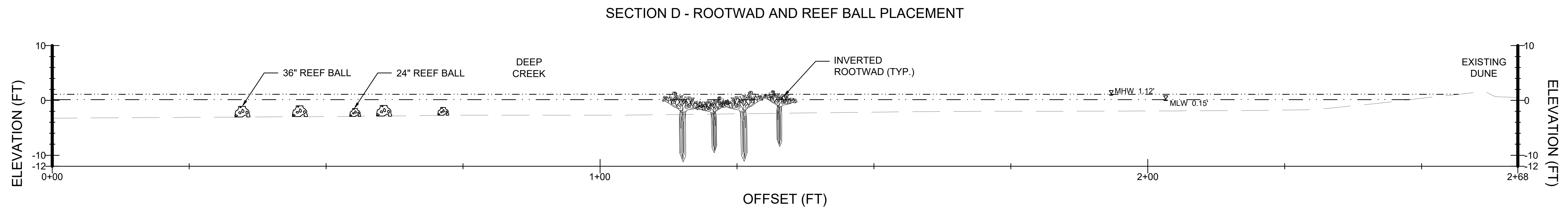
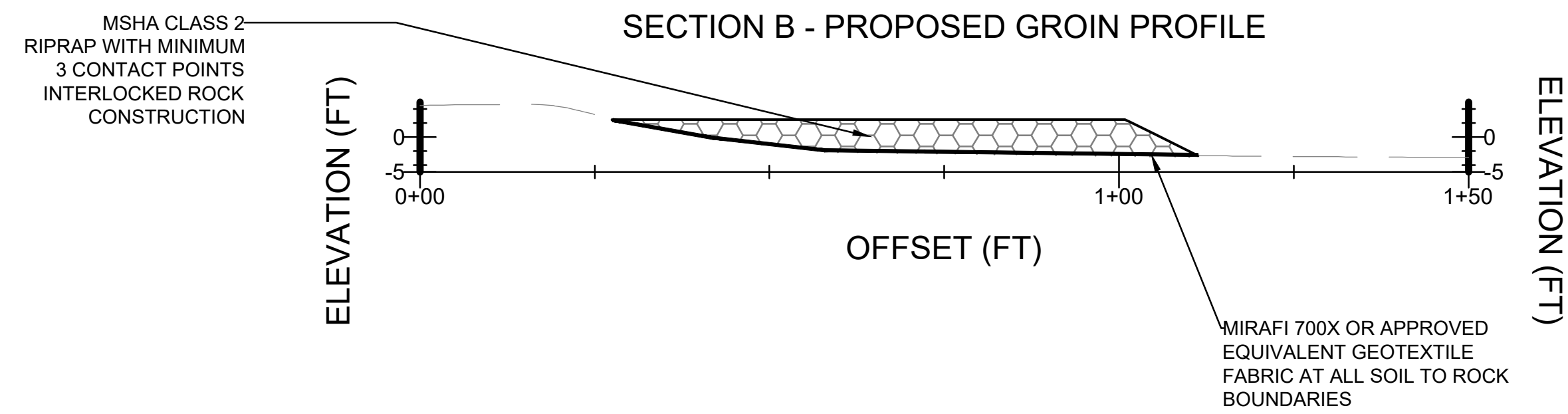
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PROPOSAL NO.:

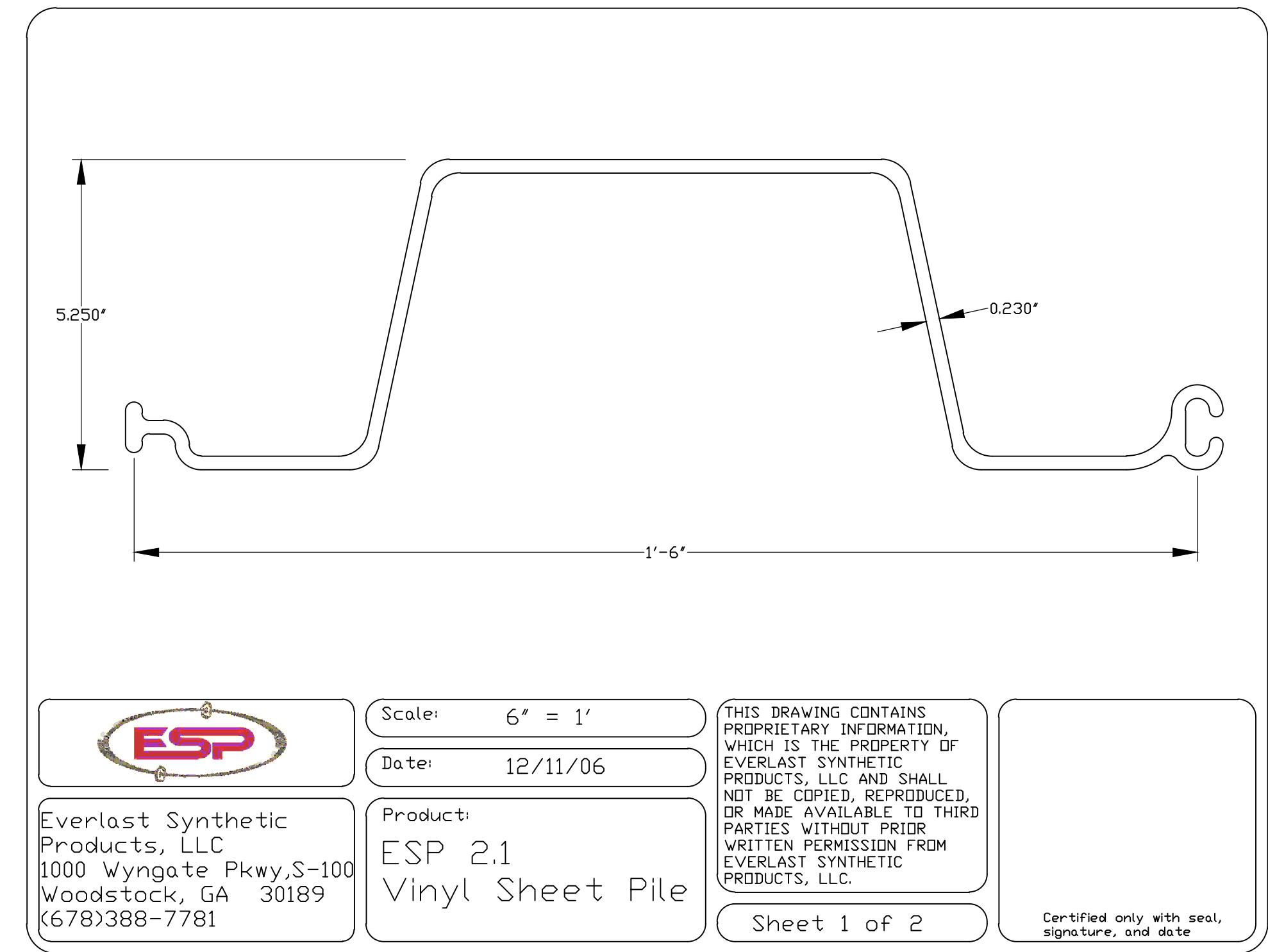
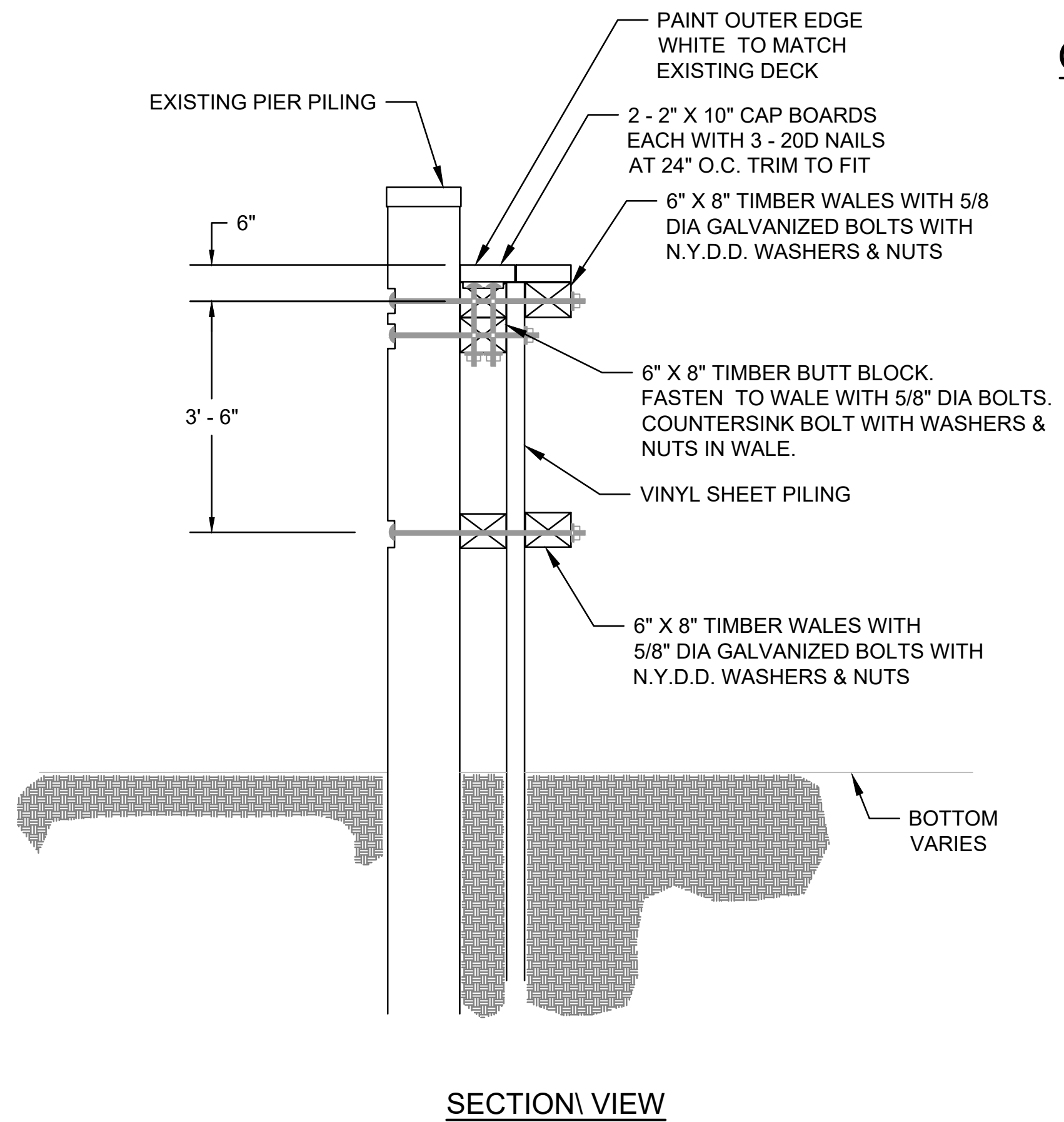
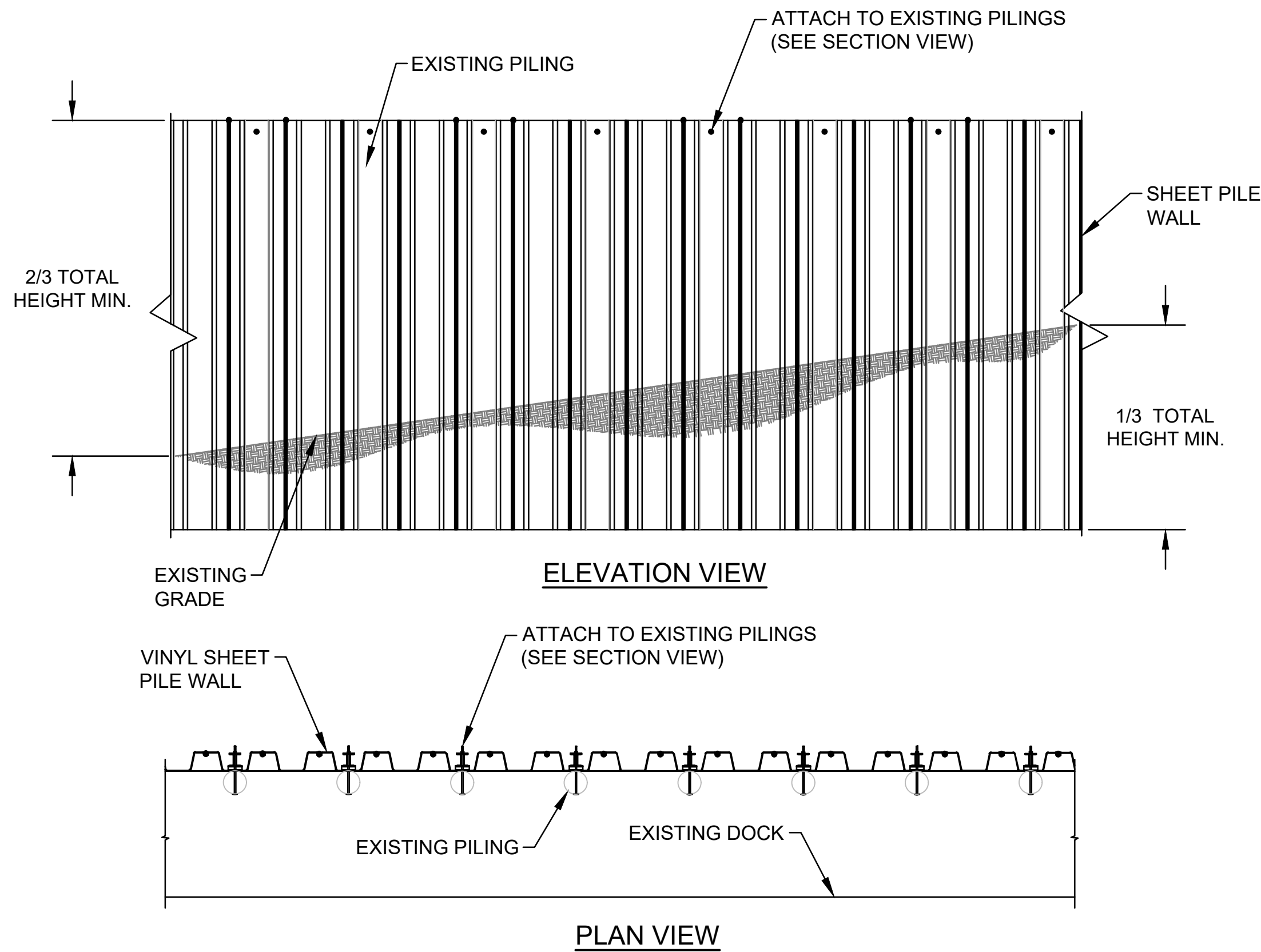
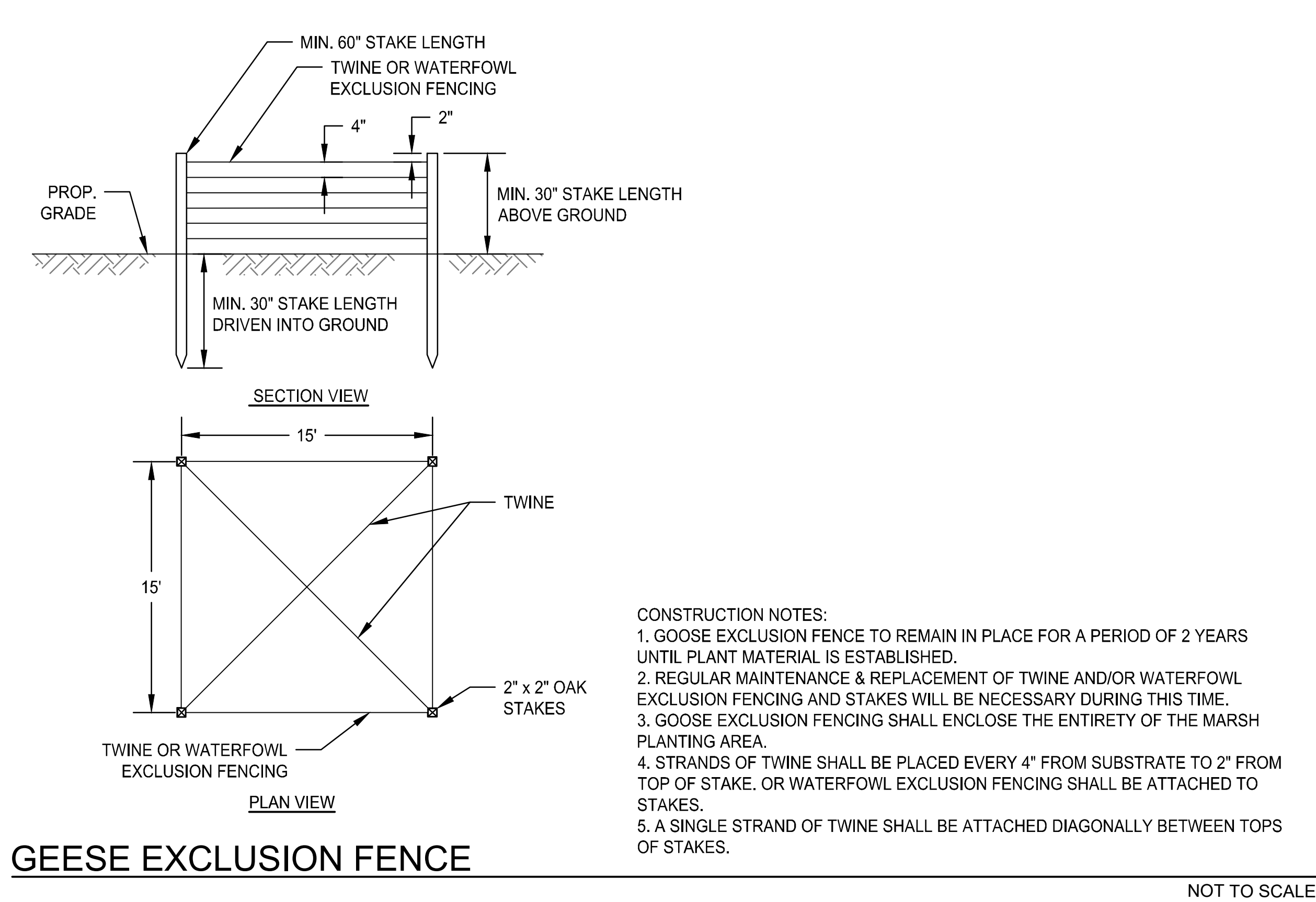
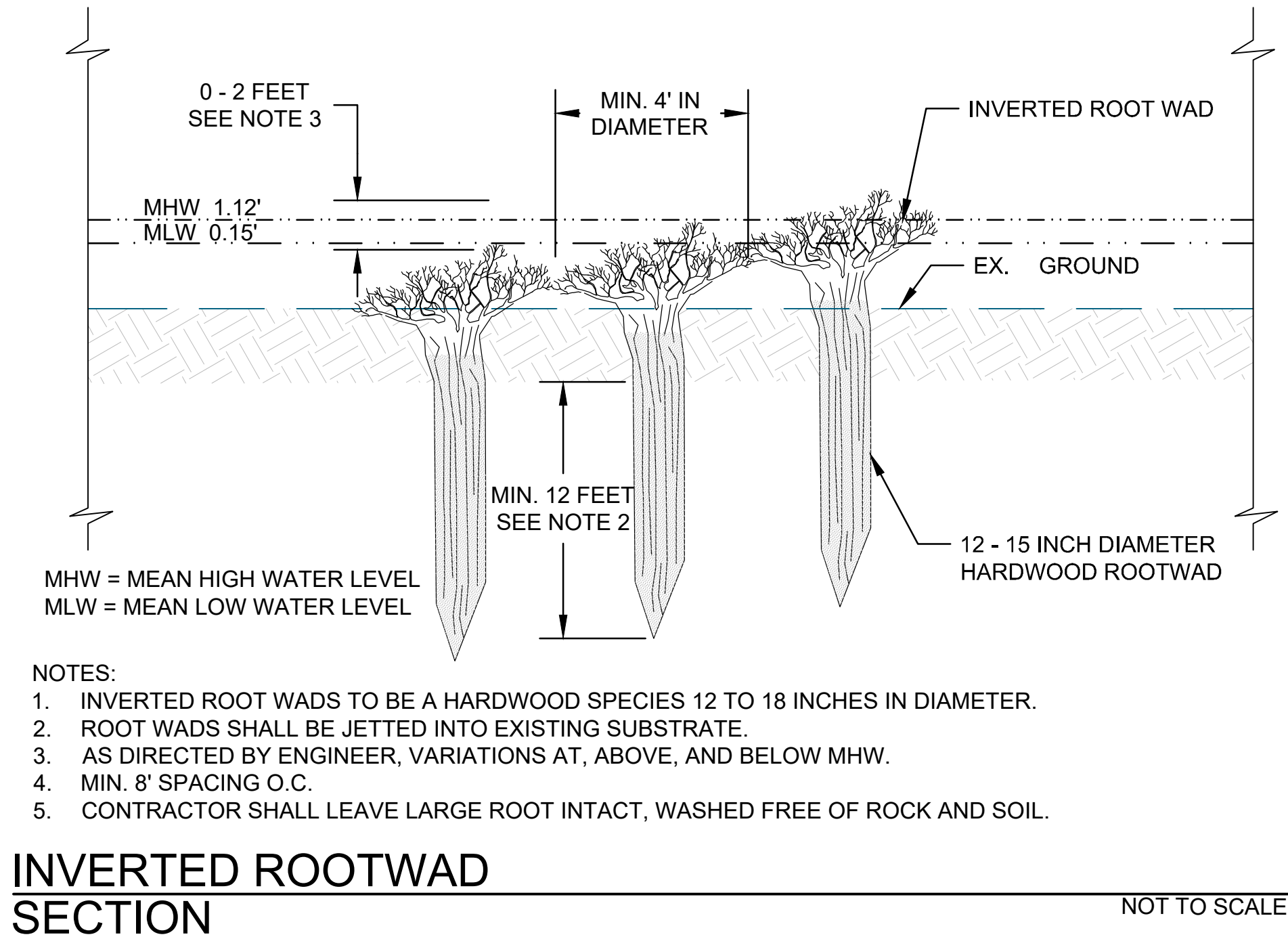
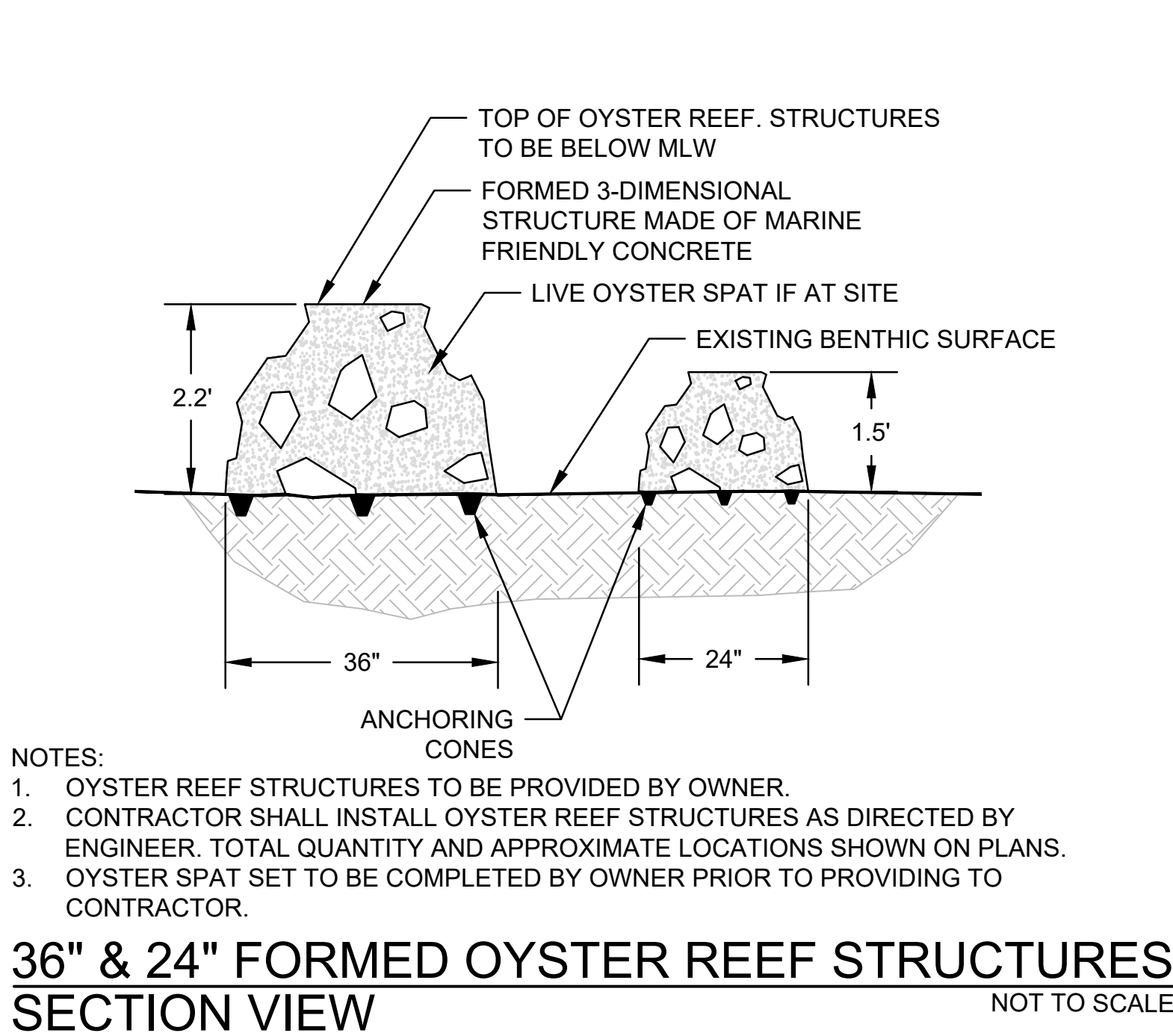
CAPE ST CLAIRE SHORELINE ENHANCEMENT

PROPOSED CONDITIONS - LAKE CLAIRE

C-02



CAPE ST CLAIRE									
COMMUNITY IMPROVEMENT ASSOCIATION									
REVISED		APPROVED	DATE	APPROVED	DATE	SCALE: 1" = 10'	CAPE ST CLAIRE SHORELINE ENHANCEMENT		
		CHIEF ENGINEER		PROJECT MANAGER		DRAWN BY TB.RW.AM.SE			
		APPROVED	DATE	APPROVED	DATE	CHECKED BY FAM, JC			
		ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT-OF-WAY		PROPOSAL NO.			
						SHEET NO. 8 OF 18	CROSS SECTIONS		
						PROJECT NO. 19033.01			
						PROPOSAL NO.	CS-01		



BATTEN BOARD GROIN

NOT TO SCALE

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					PROJECT NO. 19033.01	DETAILS																																			
					PROPOSAL NO.																																				

SEQUENCE OF CONSTRUCTION

NOTES:

1. THE CONTRACTOR (SHORELINE DESIGN) SHALL CONDUCT AN ON-SITE PRE-CONSTRUCTION MEETING WITH THE SEDIMENT CONTROL INSPECTOR WITH ANNE ARUNDEL COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS AND THE ENGINEER/DESIGNATED SPECIALIST TO REVIEW THE LIMITS OF DISTURBANCE, EROSION AND SEDIMENT CONTROL REQUIREMENTS, AND THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL NOTIFY THE ANNE ARUNDEL COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS (410-222-7780) AT LEAST 48 HOURS BEFORE COMMENCING WORK. WORK MAY NOT COMMENCE UNTIL THE PERMITTEE OR THE RESPONSIBLE PERSONNEL HAVE MET ON SITE WITH THE SEDIMENT AND EROSION CONTROL INSPECTOR TO REVIEW THE APPROVED PLANS.
3. CONTACT NICOLE VOELKER AT 410-962-1847 OR NICOLE.M.VOELKER@USACE.ARMY.MIL WITHIN TWO (2) WEEKS PRIOR TO COMMENCING THE AUTHORIZED WORK, AND UPON COMPLETION OF THE WORK.
4. THE CONTRACTOR SHALL NOTIFY MDE COMPLIANCE INSPECTOR AT 410-537-3510 AT LEAST 24 HOURS BEFORE COMMENCING WORK.
5. THE CONTRACTOR SHALL CALL MISS UTILITY AT 1-800-277-7777 A MINIMUM OF 48 HOURS BEFORE STARTING CONSTRUCTION. ALL EXISTING UTILITIES MUST BE MARKED IN THE FIELD PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES THAT MAY OCCUR AS A RESULT OF THE CONSTRUCTION. DAMAGED UTILITIES ARE TO BE IMMEDIATELY REPORTED TO BOTH THE UTILITY OWNER AND PROJECT ENGINEER/DESIGNATED SPECIALIST. ANY DAMAGE TO EXISTING STRUCTURES, INCLUDING SEWER PIPES/MANHOLES AND STORM DRAIN PIPES/STRUCTURES, SHALL BE REPAIRED TO THE UTILITY OWNER'S SATISFACTION BY THE CONTRACTOR AT HIS/HER OWN EXPENSE.
6. CONSTRUCTION ACTIVITIES, INCLUDING THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES, SHALL NOT BEGIN UNTIL ALL REQUIRED EASEMENTS AND RIGHT-OF-WAYS HAVE BEEN OBTAINED. CONSTRUCTION SHALL NOT BEGIN UNTIL ALL SEDIMENT AND EROSION CONTROL MEASURES HAVE BEEN INSTALLED AND APPROVED BY THE PROJECT ENGINEER/DESIGNATED SPECIALIST AND THE SEDIMENT CONTROL INSPECTOR.
7. THE CONTRACTOR SHALL CONTACT NEARBY ACTIVE OYSTER LEASEHOLDERS A MINIMUM OF 30 DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION. LEASEHOLDER CONTACT INFORMATION CAN BE OBTAINED FROM MARYLAND DNR, AQUACULTURE DIVISION, FISHERIES SERVICE (410-260-8252). CARE SHALL BE TAKEN DURING ALL PHASES OF CONSTRUCTION, INCLUDING ANCHORAGE OF SHALLOW WATER BARGE OR SIMILAR VESSELS, TO AVOID DISTURBANCE TO AND/OR SEDIMENTATION OF ADJACENT OYSTER LEASES.
8. THE ANNE ARUNDEL COUNTY DEPARTMENT OF INSPECTION AND PERMITS WILL BE NOTIFIED UPON THE START OF EACH PHASE OF CONSTRUCTION. UPON APPROVAL OF THE COUNTY INSPECTOR, THE CONTRACTOR MAY BEGIN CONSTRUCTION ACTIVITIES. CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE APPROVED SEQUENCE OF CONSTRUCTION AND PROPOSED CONDITIONS, PROJECT SPECIFICATIONS, AND EROSION AND SEDIMENT CONTROL STANDARD DETAILS AND NOTES.
9. THE LIMITS OF DISTURBANCE (LOD) SHOWN ON THE PLANS ENCOMPASSES ALL DISTURBANCE ACTIVITIES RELATED TO CONSTRUCTION ACCESS AND SHORELINE IMPROVEMENTS. PLANTING ACTIVITIES ARE DELIMITED BY THE LIMITS OF PLANTING (LOP); NO LAND DISTURBANCE IS PROPOSED WITHIN THE LOP. ACCESS FOR ALL PLANTING WORK SHALL ALSO OCCUR BY BARGE.
10. SITES 1 AND 2 MAY BE CONSTRUCTED CONCURRENTLY OR ONE AT A TIME; SITE 2 MAY BE CONSTRUCTED BEFORE SITE 1.
11. THROUGHOUT THE TIMEFRAME OF CONSTRUCTION OF THE SHORELINE IMPROVEMENTS, THE FOLLOWING APPLIES:

A. NO WORK IS ALLOWED FROM NOVEMBER 15TH TO MARCH 1ST OF ANY YEAR TO MINIMIZE IMPACT TO WATERFOWL.

B. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:

A. THREE CALENDAR DAYS FOR THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1);

B. SEVEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON PROJECT SITE

EROSION AND SEDIMENT CONTROL SETUP (7 DAYS):

1. THE CONTRACTOR SHALL STAKE OUT THE NECESSARY LOD. (2 DAYS)
2. THE CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION MEETING ONSITE WITH THE SEDIMENT CONTROL INSPECTOR WITH ANNE ARUNDEL COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS AND THE PROJECT ENGINEER/DESIGNATED SPECIALIST TO REVIEW THE CONSTRUCTION ACCESS, EROSION AND SEDIMENT CONTROL REQUIREMENTS, AND THE SEQUENCE OF CONSTRUCTION. (1 DAY)

3. THE CONTRACTOR SHALL INSTALL BLAZE ORANGE FENCING AND EROSION CONTROL MEASURES AS SHOWN ON THE EROSION & SEDIMENT CONTROL PLANS. (3 DAYS)
4. PRIOR TO COMMENCING WORK, THE SEDIMENT CONTROL INSPECTOR WILL BE NOTIFIED ONCE SEDIMENT CONTROL MEASURES ARE INSTALLED. UPON COMPLETION OF SEDIMENT CONTROL MEASURE INSTALLATION AND WITH APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, THE CONTRACTOR MAY BEGIN GRADING OPERATIONS (1 DAY).
5. UPON THE COMPLETION OF CONSTRUCTION AND WHEN THE SITE IS 95% STABILIZED EITHER VEGETATIVELY OR MECHANICALLY, REMOVE SEDIMENT CONTROL MEASURES WITH THE SEDIMENT CONTROL INSPECTOR'S APPROVAL.

SITE 1: COBBLE BAR, STONE GROIN, AND BEACH REPLENISHMENT (24 DAYS)

1. ACCESS FOR CONSTRUCTION OF THE COBBLE BAR, STONE GROIN, AND BEACH REPLENISHMENT AREAS SHALL BE ACHIEVED FROM THE WATER VIA BARGE OR EQUIVALENT EQUIPMENT. THE CONTRACTOR SHALL TAKE CARE TO AVOID ALL ACTIVE BOATING ROUTES DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY REQUIRED MARINE OR MOORING PERMITS.
2. THE CONTRACTOR SHALL CONDUCT WORK FROM THE BARGE. IF SHALLOW NEAR-SHORE DEPTHS INTERFERE WITH THE CONTRACTOR'S ABILITY TO REACH THE PROPOSED WORK AREAS, THE CONTRACTOR MAY MOVE MACHINERY OFF THE BARGE AND CONDUCT WORK FROM AREAS ADJACENT TO PROPOSED STRUCTURES.
3. THE CONTRACTOR SHALL STAKE OUT STRUCTURE LOCATIONS AS SHOWN ON THE PLANS. (1 DAY)
4. PLACE DREDGE SAND MATERIAL AT THE DESIGNATED BEACH REPLENISHMENT AREA IN CONFORMANCE WITH THE GRADES SHOWN ON THE PLANS. DREDGE SAND MATERIAL TO BE INCLUDED IN THE COBBLE BAR MAY BE TEMPORARILY PLACED ON THE BEACH REPLENISHMENT AREA AS NEEDED AS LONG AS FINAL GRADES ARE ACHIEVED. (7 DAYS)
5. CONSTRUCT COBBLE BAR AND STONE GROIN CONCURRENTLY IN ACCORDANCE WITH THE PLANS. FOR THE COBBLE BAR, INSTALL SAND/COBBLE MIX TO THE EXTENTS AND DEPTHS SHOWN ON THE PLANS AND FACE WITH COBBLE ARMOR. FOR THE STONE GROIN, PLACE GEOTEXTILE FABRIC AND PLACE STONE FILL TO THE EXTENTS SHOWN ON THE PLANS (16 DAYS).
6. SEE PLANTING NOTES BELOW AND PLANTING PLAN AND DETAILS FOR PLANTING INSTRUCTIONS.

SITE 2: OYSTER REEF/ROOT WAD STRUCTURES AND BATTEN BOARD GROIN (16 DAYS)

1. ACCESS FOR CONSTRUCTION OF THE OYSTER REEF AND ROOT WAD STRUCTURES SHALL BE ACHIEVED FROM THE WATER VIA BARGE OR EQUIVALENT EQUIPMENT. THE CONTRACTOR SHALL TAKE CARE TO AVOID ALL ACTIVE BOATING ROUTES DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY REQUIRED MARINE OR MOORING PERMITS. ACCESS FOR THE BATTEN BOARD GROIN AREA SHALL BE ACHIEVED FROM THE LAND AS SHOWN ON THE PLANS.
2. THE CONTRACTOR SHALL STAKE OUT OR OTHERWISE IDENTIFY STRUCTURE LOCATIONS AS SHOWN ON THE PLANS. (1 DAY)
3. INSTALL OYSTER REEF AND ROOT WAD STRUCTURES FROM THE BARGE AND BATTEN BOARD GROIN FROM THE LAND CONCURRENTLY IN ACCORDANCE WITH THE PLANS. THE CONTRACTOR SHALL TAKE CARE TO MINIMIZE IMPACTS TO TERRESTRIAL AREAS WITHIN THE LOD AT THE BATTEN BOARD GROIN INSTALLATION AREA. (15 DAYS)

PLANTING (3 DAYS):

1. UPON THE COMPLETION OF CONSTRUCTION ACTIVITIES, STABILIZE ANY REMAINING DISTURBED AREAS. WHEN SITE IS STABLE, PERFORM SITE PLANTINGS PER THE PLANTING PLAN, INCLUDING INSTALLATION OF HERBACEOUS MATERIAL PER THE PLANTING PLANS AND DETAILS. (3 DAYS)
2. PLANTING WORK SHALL OCCUR WITHIN THE EXTENTS OF THE PLANTING UNIT AREAS DISPLAYED ON THE PLANTING PLAN.
3. ACCESS FOR ALL PLANTING WORK SHALL ALSO OCCUR BY BARGE.
4. PLANTING OF TIDAL MARSH AREAS SHALL OCCUR IN THE SPRING (AFTER APRIL 15 AND PRIOR TO JUNE 1) AND AFTER COMPLETION OF THE COBBLE BAR CONSTRUCTION.

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

1. NO EXCESS FILL, CONSTRUCTION MATERIAL OR DEBRIS ARE TO BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
2. PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF THE NONTIDAL WETLAND, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
3. DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
4. PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO THE NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
5. REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLAND, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
6. RECTIFY ANY NONTIDAL WETLAND, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
7. ALL TEMPORARY SEED STABILIZATION IN THE NONTIDAL WETLAND AND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (lolium multiflorum), MILLET (setaria italica), BARLEY (hordeum sp.). OATS (uniola sp.) AND/OR RYE (secale cereale). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY RE-VEGETATION OF NATURAL WETLANDS 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 OF NONTIDAL WETLANDS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
9. TO PROTECT IMPORTANT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM AS FOLLOWS: CLASS 1 MARCH 1 - JUNE 15, INCLUSIVE, DURING ANY YEAR.
10. STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
11. CULVERT(S) 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 IMPROVE WATER.

SEDIMENT CONTROL GENERAL NOTES

1. NOTIFY THE ANNE ARUNDEL COUNTY DEPARTMENT OF INSPECTION AND PERMITS 2 DAYS PRIOR TO STARTING WORK ON THIS PROJECT.
2. ALL DISTURBED AREAS TO BE GRADED TO DRAIN TO A SEDIMENT DEVICE. NO DISTURBED AREAS TO BE ALLOWED TO DRAIN DIRECTLY OFF SITE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ASSURING THAT THE SEDIMENT CONTROL MEASURES ARE FUNCTIONAL ON A DAY-TO-DAY BASIS.
4. DISTURBED AREAS ALONG STORM DRAINS AND OUTFALLS SHALL BE STABILIZED IMMEDIATELY AFTER COMPLETION.
5. ALL SEDIMENT CONTROL FACILITIES ARE TO REMAIN IN PLACE UNTIL AREA ABOVE FACILITIES ARE STABILIZED AND PERMISSION FOR REMOVAL HAS BEEN OBTAINED FROM THE ANNE ARUNDEL COUNTY SEDIMENT CONTROL INSPECTOR.
6. EXCESS EXCAVATION WILL BE HAULED TO A SITE APPROVED BY THE I & P INSPECTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING APPROVAL BY THE A.A.CO. DEPT. OF INSPECTION AND PERMITS FOR ALL OFF-SITE BORROW PITS AND DISPOSAL AREAS.


SITE TABULATION*

1. TOTAL AREA OF PROPERTY	2.4 AC (LIMITS OF DISTURBANCE)
2. DISTURBED AREA	0.4 AC ABOVE MHW
3. IN STREAM AREA NOT TO BE STABILIZED	NOT APPLICABLE
4. AREA MECHANICALLY STABILIZED	NOT APPLICABLE
5. AREA VEGETATIVELY STABILIZED	445 SF
6. TOTAL CUT	NOT APPLICABLE
7. TOTAL FILL	NOT APPLICABLE
8. TOTAL SPOIL	NOT APPLICABLE
9. TOTAL IMPORTED FILL	1000 CY


* ESTIMATED INFORMATION
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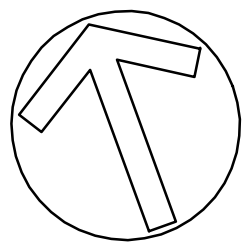
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LICENSE #: 18919
EXPIRATION DATE: 11/16/2022

CAPE ST CLAIRE COMMUNITY IMPROVEMENT ASSOCIATION					
REVISED		APPROVED	DATE	APPROVED	DATE
		CHIEF ENGINEER		PROJECT MANAGER	
		APPROVED	DATE	APPROVED	DATE
		ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT-OF-WAY	

SCALE: N/A	CAPE ST CLAIRE SHORELINE ENHANCEMENT
DRAWN BY TB.RW.AM.SE	
CHECKED BY FAM_JC	
SHEET NO. 10 OF 18	
PROJECT NO. 19033.01	SEQUENCE OF CONSTRUCTION
PROPOSAL NO.	
	SC-01



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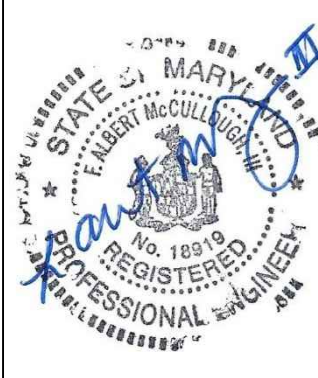
HORIZONTAL SCALE
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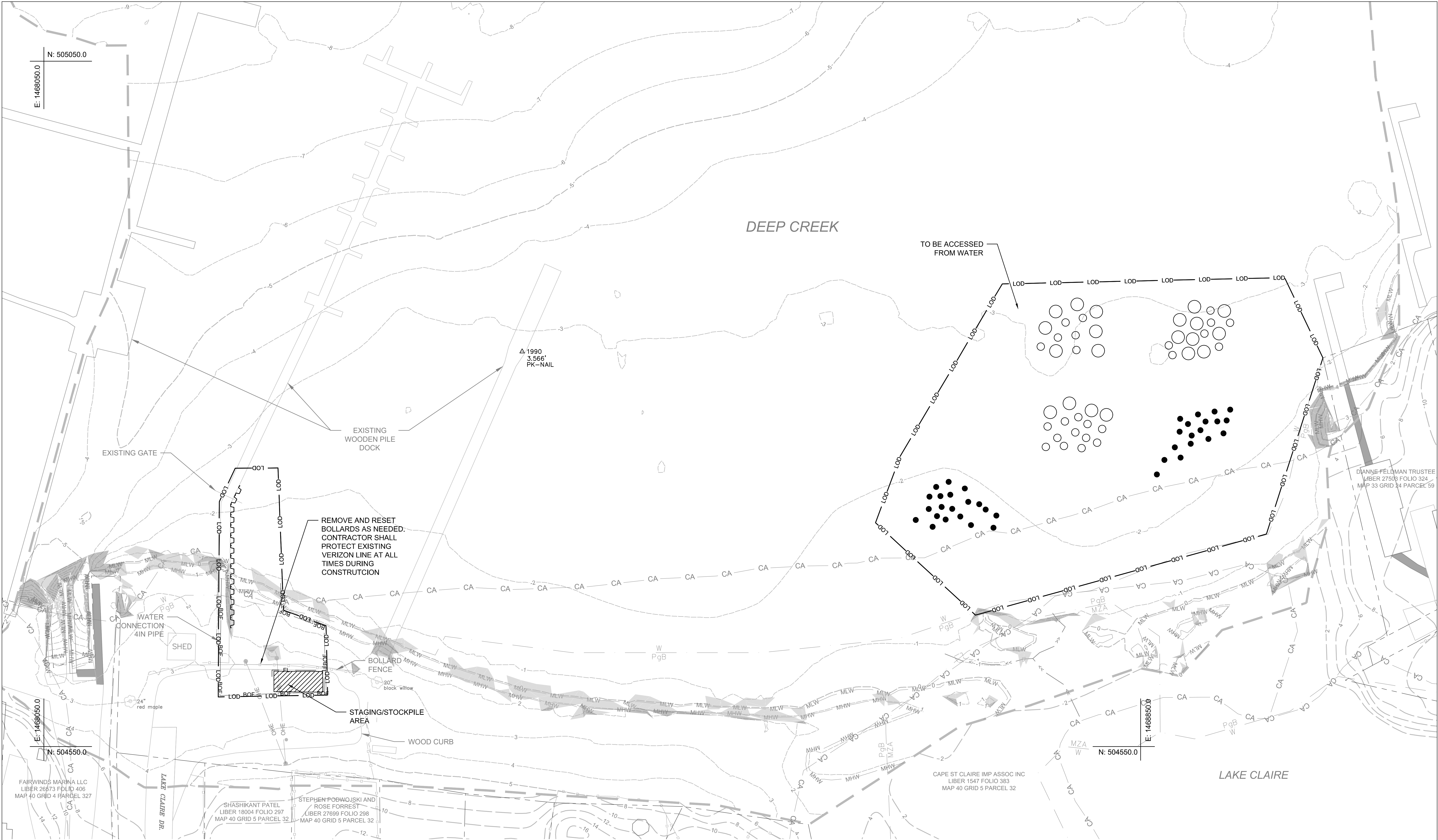
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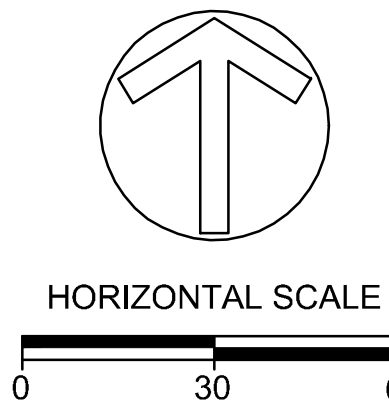
CAPE ST CLAIRE
COMMUNITY IMPROVEMENT ASSOCIATION

REVISED	APPROVED	DATE	APPROVED	DATE	SCALE:	1"=30'
					DRAWN BY	TB.RW.AM.SE
	CHIEF ENGINEER		PROJECT MANAGER		CHECKED BY	FAM, JC
	APPROVED	DATE	APPROVED	DATE	SHEET NO.	11 OF 18
					PROJECT NO.	19033.01
	ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT-OF-WAY		PROPOSAL NO.	

CAPE ST CLAIRE SHORELINE
ENHANCEMENT
EROSION AND SEDIMENT
CONTROL - MAIN BEACH
ES-01



- NOTE:
1. STOCKPILE AREA MAXIMUM HEIGHT NOT TO EXCEED 15 FT. AND MAXIMUM SLOPE NOT TO EXCEED 2:1.
 2. TEMPORARILY STABILIZE STOCKPILE AREA PER THE STABILIZATION SPECIFICATIONS OR COVER WITH PLASTIC TARP AND ANCHOR AT THE END OF EACH WORK DAY.



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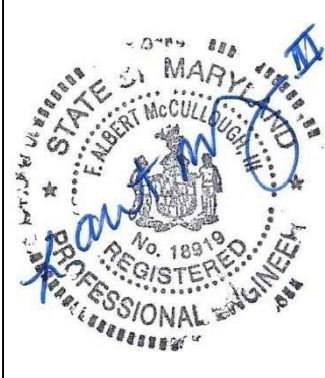
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LICENSE #: 18919

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CAPE ST CLAIRE
COMMUNITY IMPROVEMENT ASSOCIATION

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	CHIEF ENGINEER		PROJECT MANAGER	
	APPROVED	DATE	APPROVED	DATE
	ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT-OF-WAY	

SCALE: 1"=30'
DRAWN BY: TB.RW.AM.SE
CHECKED BY: FAM, JC
SHEET NO.: 12 OF 18
PROJECT NO.: 19033.01
PROPOSAL NO.:

CAPE ST CLAIRE SHORELINE
ENHANCEMENT
EROSION AND SEDIMENT
CONTROL - LAKE CLAIRE
ES-02

DETAILS AND SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:

I) THREE CALENDAR DAYS FOR THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1);

II) SEVEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE;

III) THE ABOVE REQUIREMENTS DO NOT APPLY TO THOSE AREAS WHICH ARE SHOWN ON THE PLANS AND ARE CURRENTLY BEING USED FOR MATERIAL STORAGE OR FOR THOSE AREAS ON WHICH ACTUAL CONSTRUCTION ACTIVITIES ARE CURRENTLY BEING PERFORMED OR TO INTERIOR AREAS OF A SURFACE MINE SITE WHERE THE STABILIZATION OF MATERIAL WOULD CONTAMINATE THE RECOVERABLE RESOURCE. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE THAT THE STABILIZED AREAS CONTINUOUSLY MEET THE APPROPRIATE REQUIREMENTS OF THE "1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL."

1. PERMANENT SEEDING:

A. SOIL TESTS: LIME AND FERTILIZER WILL BE APPLIED PER SOIL TESTS RESULTS FOR SITES GREATER THAN 5 ACRES. SOIL TESTS WILL BE DONE AT COMPLETION OF INITIAL ROUGH GRADING OR AS RECOMMENDED BY THE SEDIMENT CONTROL INSPECTOR. RATES AND ANALYSES WILL BE PROVIDED TO THE GRADING INSPECTOR AS WELL AS THE CONTRACTOR.

1. OCCURRENCE OF ACID SULFATE SOILS (GRAYISH BLACK COLOR) WILL REQUIRE COVERING WITH A MINIMUM OF 12 INCHES OF CLEAN SOIL WITH 6 INCHES MINIMUM CAPPING OF TOP SOIL. NO STOCKPIILING OF MATERIAL IS ALLOWED. IF NEEDED, SOIL TESTS SHOULD BE DONE BEFORE AND AFTER A 6-WEEK INCUBATION PERIOD TO ALLOW OXIDATION OF SULFATES.

THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:

A. SOIL PH SHALL BE BETWEEN 6.0 AND 7.0.

B. SOLUBLE SALTS SHALL BE LESS THAN 500 PARTS PER MILLION (PPM).

C. THE SOIL SHALL CONTAIN LESS THAN 40% CLAY BUT ENOUGH FINE GRAINED MATERIAL (> 30% SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IS IF LOVEGRASS OR SERECIA LESPEDEZA IS TO BE PLANTED, THEN A SANDY SOIL (< 30% SILT PLUS CLAY) WOULD BE ACCEPTABLE.

D. SOIL SHALL CONTAIN 1.5% MINIMUM ORGANIC MATTER BY WEIGHT.

E. SOIL MUST CONTAIN SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

F. IF THESE CONDITIONS CANNOT BE MET BY SOILS ON SITE, ADDING TOPSOIL IS REQUIRED IN ACCORDANCE WITH SECTION 21 STANDARD AND SPECIFICATION FOR TOPSOIL OR AMENDMENTS MADE AS RECOMMENDED BY A CERTIFIED AGRONOMIST.

B. SEEDBED PREPARATION: AREA TO BE SEEDED SHALL BE LOOSE AND FRIABLE TO A DEPTH OF AT LEAST 3 INCHES. THE TOP LAYER SHALL BE LOOSENED BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING OCCURS. FOR SITES LESS THAN 5 ACRES, APPLY 100 POUNDS DOLOMITIC LIMESTONE AND 21 POUNDS OF 10-10-10 FERTILIZER PER 1,000 SQUARE FEET. HARROW OR DISK LIME AND FERTILIZER INTO THE SOIL TO A DEPTH OF AT LEAST 3 INCHES ON SLOPES FLATTER THAN 3:1.

C. SEEDING: APPLY 5-6 POUNDS PER 1,000 SQUARE FEET OF TALL FESCUE BETWEEN FEBRUARY 1 AND APRIL 30 OR BETWEEN AUGUST 15 AND OCTOBER 31. APPLY SEED UNIFORMLY ON A MOIST FIRM SEEDBED WITH A CYCLONE SEEDER, CULTIPACKER SEEDER OR HYDROSEEDER (SLURRY INCLUDES SEEDS AND FERTILIZER, RECOMMENDED ON STEEP SLOPES ONLY). MAXIMUM SEED DEPTH SHOULD BE 1/4 INCH IN CLAYEY SOILS AND 1/2 INCH IN SANDY SOILS WHEN USING OTHER THAN THE HYDROSEEDER METHOD. IRRIGATE WHERE NECESSARY TO SUPPORT ADEQUATE GROWTH UNTIL VEGETATION IS FIRMLY ESTABLISHED. IF OTHER SEED MIXES ARE TO BE USED, SELECT FROM TABLE 25, ENTITLED "PERMANENT SEEDING FOR LOW MAINTENANCE AREAS" FROM THE CURRENT STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. MIXES SUITABLE FOR THIS ARE 1, 3 AND 5-7. MIXES 5-7 ARE SUITABLE IN NON-MOWABLE SITUATIONS.

D. MULCHING: MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING. DURING THE TIME PERIODS WHEN SEEDING IS NOT PERMITTED, MULCH SHALL BE APPLIED IMMEDIATELY AFTER GRADING. MULCH SHALL BE UNROTTED, UNCHOPPED, SMALL GRAIN STRAW APPLIED AT A RATE OF 2 TONS PER ACRE OR 90 POUNDS PER 1,000 SQUARE FEET (2 BALES). IF A MULCH-ANCHORING TOOL IS USED, APPLY 2.5 TONS PER ACRE. MULCH MATERIALS SHALL BE RELATIVELY FREE OF ALL KINDS OF WEEDS AND SHALL BE COMPLETELY FREE OF PROHIBITED NOXIOUS WEEDS. SPREAD MULCH UNIFORMLY, MECHANICALLY OR BY HAND, TO A DEPTH OF 1-2 INCHES.

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

1. USE A MULCH-ANCHORING TOOL WHICH IS DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE TO A MINIMUM DEPTH OF 2 INCHES. THIS IS THE MOST EFFECTIVE METHOD FOR SECURING MULCH, HOWEVER, IT IS LIMITED TO RELATIVELY FLAT AREAS WHERE EQUIPMENT CAN OPERATE SAFELY.
2. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. IF MIXED WITH WATER, USE 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
3. LIQUID BINDERS MAY BE USED. APPLY AT HIGHER RATES AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF SLOPES. THE REMAINDER OF THE AREA SHOULD APPEAR UNIFORM AFTER BINDER APPLICATION. BINDERS LISTED IN THE 1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL OR APPROVED EQUAL SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURERS.
4. LIGHTWEIGHT PLASTIC NETTING MAY BE USED TO SECURE MULCH. THE NETTING WILL BE STAPLED TO THE GROUND ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

1. TEMPORARY SEEDING:

LIME: 100 POUNDS OF DOLOMITIC LIMESTONE PER 1,000 SQUARE FEET.

FERTILIZER: 15 POUNDS OF 10-10-10 PER 1,000 SQUARE FEET.

SEED: PERENNIAL RYE - 0.92 POUNDS PER 1,000 SQUARE FEET (FEBRUARY 1 THROUGH APRIL 30 OR AUGUST 15 THROUGH NOVEMBER 1), MILLET - 0.92 POUNDS PER 1,000 SQUARE FEET (MAY 1 THROUGH AUGUST 15).

MULCH: SAME AS 1 D AND E ABOVE.

2. NO FILLS MAY BE PLACED ON FROZEN GROUND. ALL FILL TO BE PLACED IN APPROXIMATELY HORIZONTAL LAYERS, EACH LAYER HAVING A LOOSE THICKNESS OF NOT MORE THAN 8 INCHES. ALL FILL IN ROADWAYS AND PARKING AREAS IS TO BE CLASSIFIED TYPE 2 AS PER ANNE ARUNDEL COUNTY CODE - ARTICLE 21, SECTION 2-308, AND COMPACTED TO 90% DENSITY; COMPACTION TO BE DETERMINED BY ASTM D-1557-66T (MODIFIED PROCTOR). ANY FILL WITHIN THE BUILDING AREA IS TO BE COMPACTED TO A MINIMUM OF 95% DENSITY AS DETERMINED BY METHODS PREVIOUSLY MENTIONED. FILLS FOR POND EMBANKMENTS SHALL BE COMPACTED AS PER MD-378 CONSTRUCTION SPECIFICATIONS. ALL OTHER FILLS SHALL BE COMPACTED SUFFICIENTLY SO AS TO BE STABLE AND PREVENT EROSION AND SLIPPAGE.

3. PERMANENT SOD: INSTALLATION OF SOD SHOULD FOLLOW PERMANENT SEEDING DATES. SEEDBED PREPARATION FOR SOD SHALL BE AS NOTED IN SECTION (B) ABOVE. PERMANENT SOD IS TO BE TALL FESCUE, STATE APPROVED SOD; LIME AND FERTILIZER PER PERMANENT SEEDING SPECIFICATIONS AND LIGHTLY IRRIGATE SOIL PRIOR TO LAYING SOD. SOD IS TO BE LAID ON THE CONTOUR WITH ALL ENDS TIGHTLY ABUTTING. JOINTS ARE TO BE STAGGERED BETWEEN ROWS. WATER AND ROLL OR TAMP SOD TO INSURE POSITIVE ROOT CONTACT WITH THE SOIL. ALL SLOPES STEEPER THAN 3:1, AS SHOWN, ARE TO BE PERMANENTLY SODDED OR PROTECTED WITH AN APPROVED EROSION CONTROL NETTING. ADDITIONAL WATERING FOR ESTABLISHMENT MAY BE REQUIRED. SOD IS NOT TO BE INSTALLED ON FROZEN GROUND. SOD SHALL NOT BE TRANSPLANTED WHEN MOISTURE CONTENT (DRY OR WET) AND/OR EXTREME TEMPERATURE MAY ADVERSELY AFFECT ITS SURVIVAL. IN THE ABSENCE OF ADEQUATE RAINFALL, IRRIGATION SHOULD BE PERFORMED TO ENSURE ESTABLISHMENT OF SOD.

4. MINING OPERATIONS: SEDIMENT CONTROL PLANS FOR MINING OPERATIONS MUST INCLUDE THE FOLLOWING SEEDING DATES AND MIXTURES: FOR SEEDING DATES OF: FEBRUARY 1 THROUGH APRIL 30 AND AUGUST 15 THROUGH OCTOBER 31, USE SEED MIXTURE OF TALL FESCUE AT THE RATE OF 2 POUNDS PER 1,000 SQUARE FEET AND SERICEA LESPEDEZA AT THE MINIMUM RATE OF 0.5 POUNDS PER 1,000 SQUARE FEET.

5. TOPSOIL SHALL BE APPLIED AS PER THE STANDARD AND SPECIFICATIONS FOR TOPSOIL FROM THE CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

NOTE: USE OF THIS INFORMATION DOES NOT PRECLUDE MEETING ALL OF THE REQUIREMENTS OF THE CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

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
- A. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
- B. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
- C. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

2. PERMANENT STABILIZATION

A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:

- I. SOIL PH BETWEEN 6.0 AND 7.0.
- II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
- III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
- IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
- V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

- B. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
- C. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
- D. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
- E. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.

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

- 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 CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN DIAMETER.

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

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

6. TOPSOIL APPLICATION

- A. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
- B. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
- C. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

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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 #: 18919

EXPIRATION DATE: 11/16/2022

CAPE ST CLAIRE COMMUNITY IMPROVEMENT ASSOCIATION					
REVISED		APPROVED	DATE	APPROVED	DATE
		CHIEF ENGINEER	PROJECT MANAGER		SCALE: NTS
					DRAWN BY TB,RW,AM,SE
		APPROVED	DATE	APPROVED	DATE
		ASSISTANT CHIEF ENGINEER	CHIEF, RIGHT-OF-WAY		CHECKED BY FAM, JC
					SHEET NO. 13 OF 18
					PROJECT NO. 19033.01
					PROPOSAL NO.
					CAPE ST CLAIRE SHORELINE ENHANCEMENT
					EROSION AND SEDIMENT CONTROL NOTES
					ES-03

B-4.5 STANDARDS AND SPECIFICATIONS	
FOR	
PERMANENT STABILIZATION	
Definition	
To stabilize disturbed soils with permanent vegetation.	
Purpose	
To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.	
Conditions Where Practice Applies	
Exposed soils where ground cover is needed for 6 months or more.	
Criteria	
A. Seed Mixtures	
1. General Use	
a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.	
b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.	
c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.	
d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 ½ pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary .	
2. Turfgrass Mixtures	
a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.	
b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.	
i. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management, irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.	
ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where	
B.21	

B-4.4 STANDARDS AND SPECIFICATIONS	
FOR	
TEMPORARY STABILIZATION	
Definition	
To stabilize disturbed soils with vegetation for up to 6 months.	
Purpose	
To use fast growing vegetation that provides cover on disturbed soils.	
Conditions Where Practice Applies	
Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.	
Criteria	
1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.	
2. For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.	
3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3 A.1.b and maintain until the next seeding season.	

Temporary Seeding Summary					
Hardiness Zone (from Figure B.3): _____ Seed Mixture (from Table B.1): _____				Fertilizer Rate (10-20-20)	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	
					436 lb/ac (10 lb/1000 sf)
					2 tons/ac (90 lb/1000 sf)

B.18




rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.	
iii. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.	
iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes; Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1½ to 3 pounds per 1000 square feet.	
Notes: Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland"	
Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line	
c. Ideal Times of Seeding for Turf Grass Mixtures	
Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a)	
Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b)	
Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)	
d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1½ inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.	
e. If soil moisture is deficient, supply new seedlings with adequate water for plant growth (½ to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedlings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.	

B-4.8 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	
1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.	
2. 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.	
3. Runoff from the stockpile area must drain to a suitable sediment control practice.	
4. Access the stockpile area from the upgrade side.	
5. 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.	
6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.	
7. 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.	
8. 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 ratio. 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.

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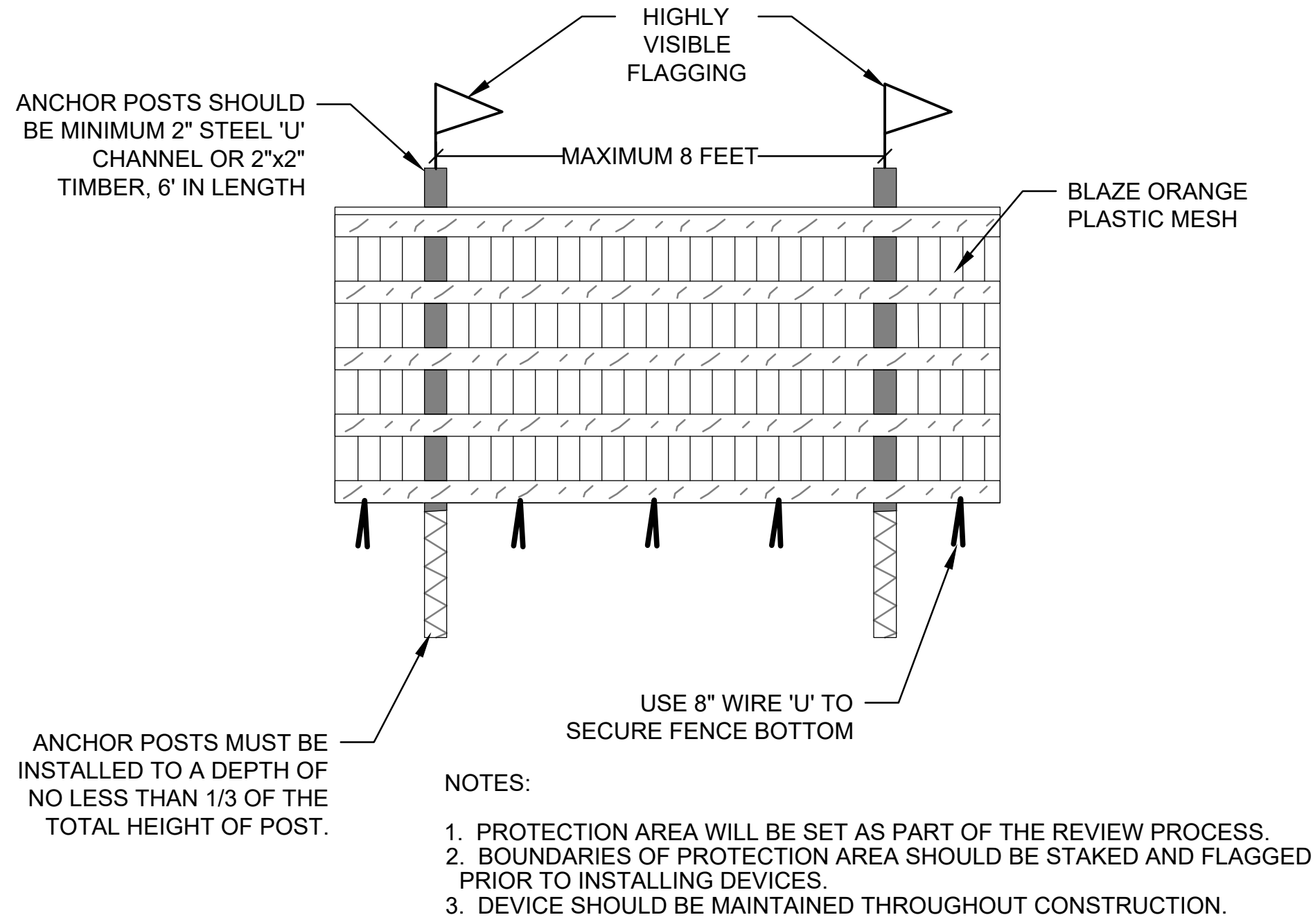
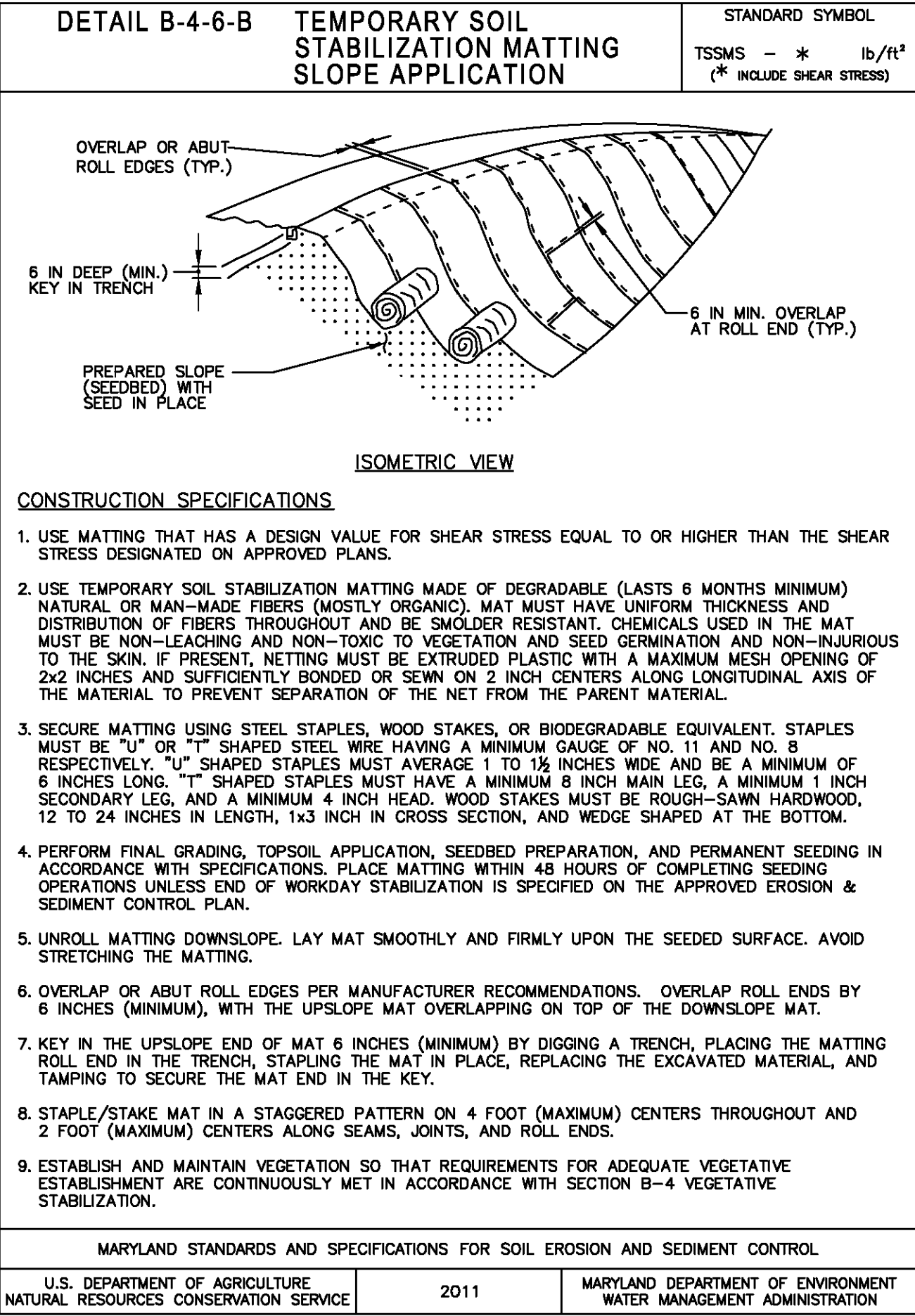
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					CHIEF ENGINEER				PROJECT MANAGER						CHECKED BY FAM_JC	
					APPROVED		DATE		APPROVED		DATE				SHEET NO. 14 OF 18	
															PROJECT NO. 19033.01	
															PROPOSAL NO.	
		ASSISTANT CHIEF ENGINEER				CHIEF, RIGHT-OF-WAY										

Permanent Seeding Summary					Fertilizer Rate (10-20-20)			Lime Rate
Hardiness Zone (from Figure B.3): _____ Seed Mixture (from Table B.3): _____					N	P ₂ O ₅	K ₂ O	
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths				
				¼- ½ in	45 pounds per acre (1.0 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	2 tons/ac (90 lb/ 1000 sf)
				¼- ½ in				
				¼- ½ in				
B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).								
1. General Specifications								
a. Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.								
b. Sod must be machine cut at a uniform soil thickness of ¼ inch, plus or minus ¼ inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable.								
c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.								
d. Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.								
e. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil scientist prior to its installation.								
2. Sod Installation								
a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.								
b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.								
c. Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.								
d. Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping and irrigating for any piece of sod within eight hours.								
B.23								

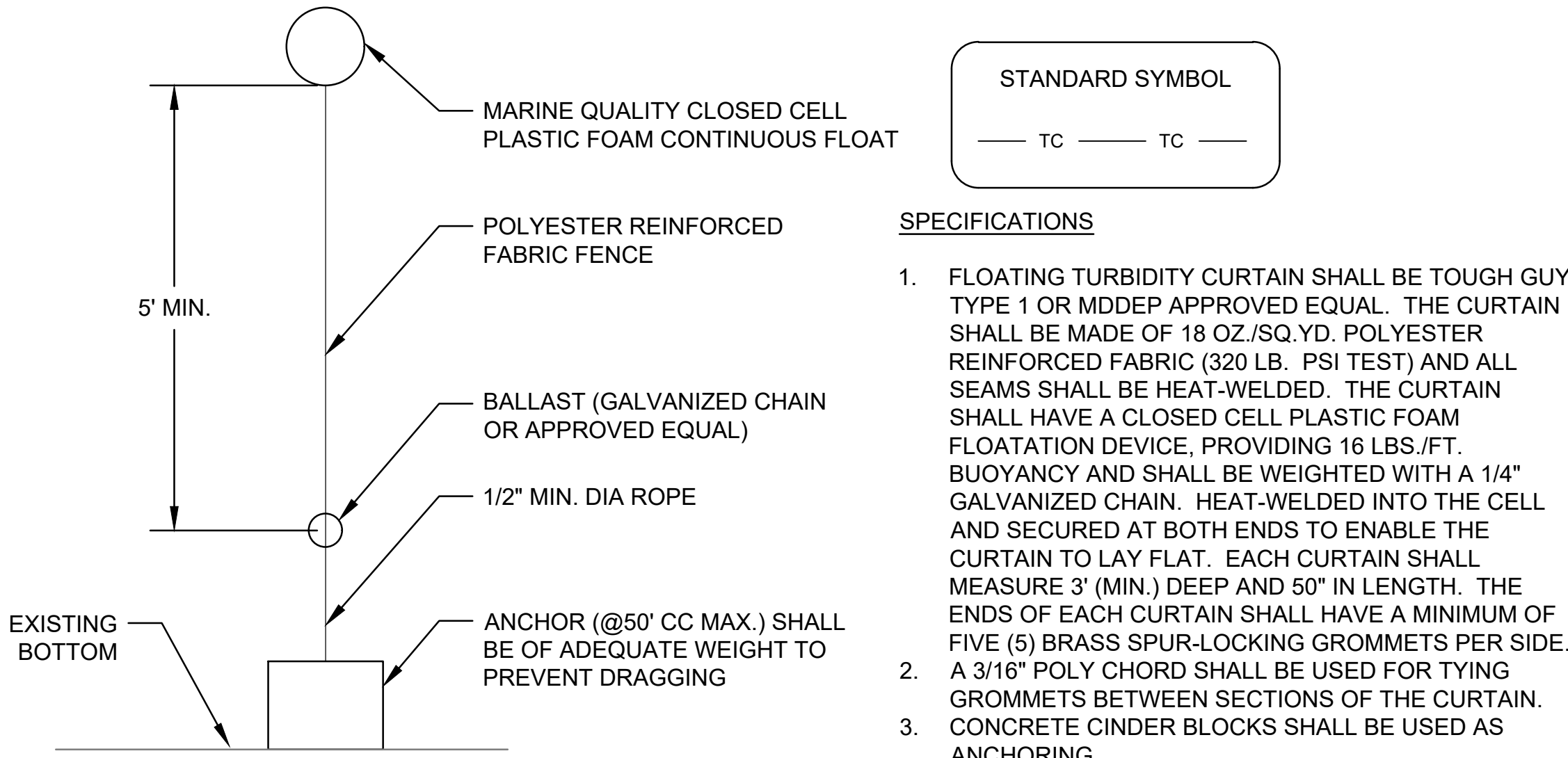
- Sod Maintenance
 - In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the heat of the day to prevent wilting.
 - After the first week, sod watering is required as necessary to maintain adequate moisture content.
 - Do not mow until the sod is firmly rooted. No more than ½ of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

B.24



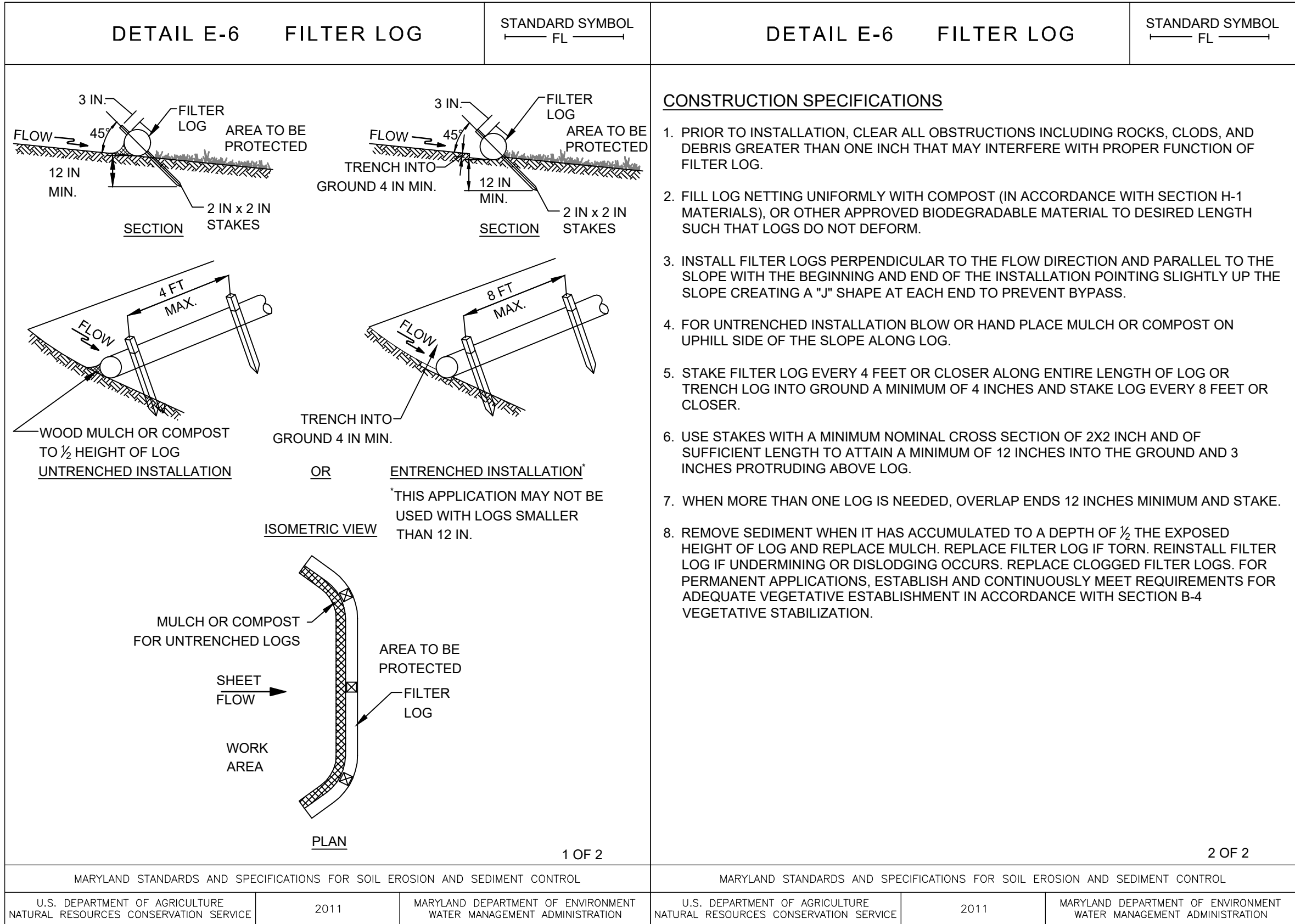
BLAZE ORANGE FENCE

NOT TO SCALE



TURBIDITY CURTAIN

NOT TO SCALE



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EXPIRATION DATE: 11/16/2022

CAPE ST CLAIRE
COMMUNITY IMPROVEMENT ASSOCIATION

REVISID

APPROVED

DATE

APPROVED

DATE

SCALE:

N/A

DRAWN BY

TB.RW.AM.SE

CHECKED BY

FAM_JC

SHEET NO.

15 OF 18

PROJECT NO.

19033.01

PROPOSAL NO.

CHIEF ENGINEER

PROJECT MANAGER

APPROVED

DATE

APPROVED

DATE

ASSISTANT CHIEF ENGINEER

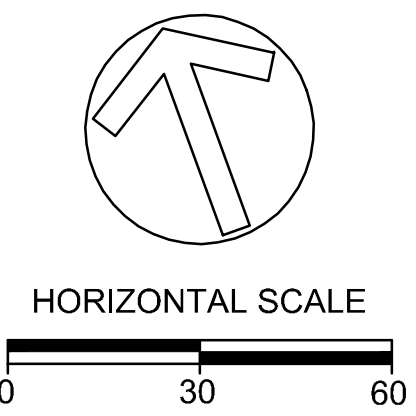
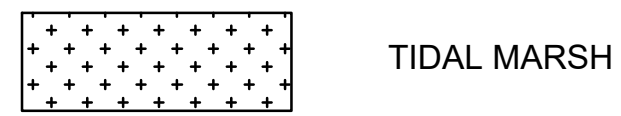
CHIEF, RIGHT-OF-WAY

CAPE ST CLAIRE SHORELINE ENHANCEMENT
EROSION AND SEDIMENT CONTROL DETAILS
ES-05



NOTE:
0.02 ACRES OF MARSH CREATED
FOR SITE SHOWN

PLANTING LEGEND



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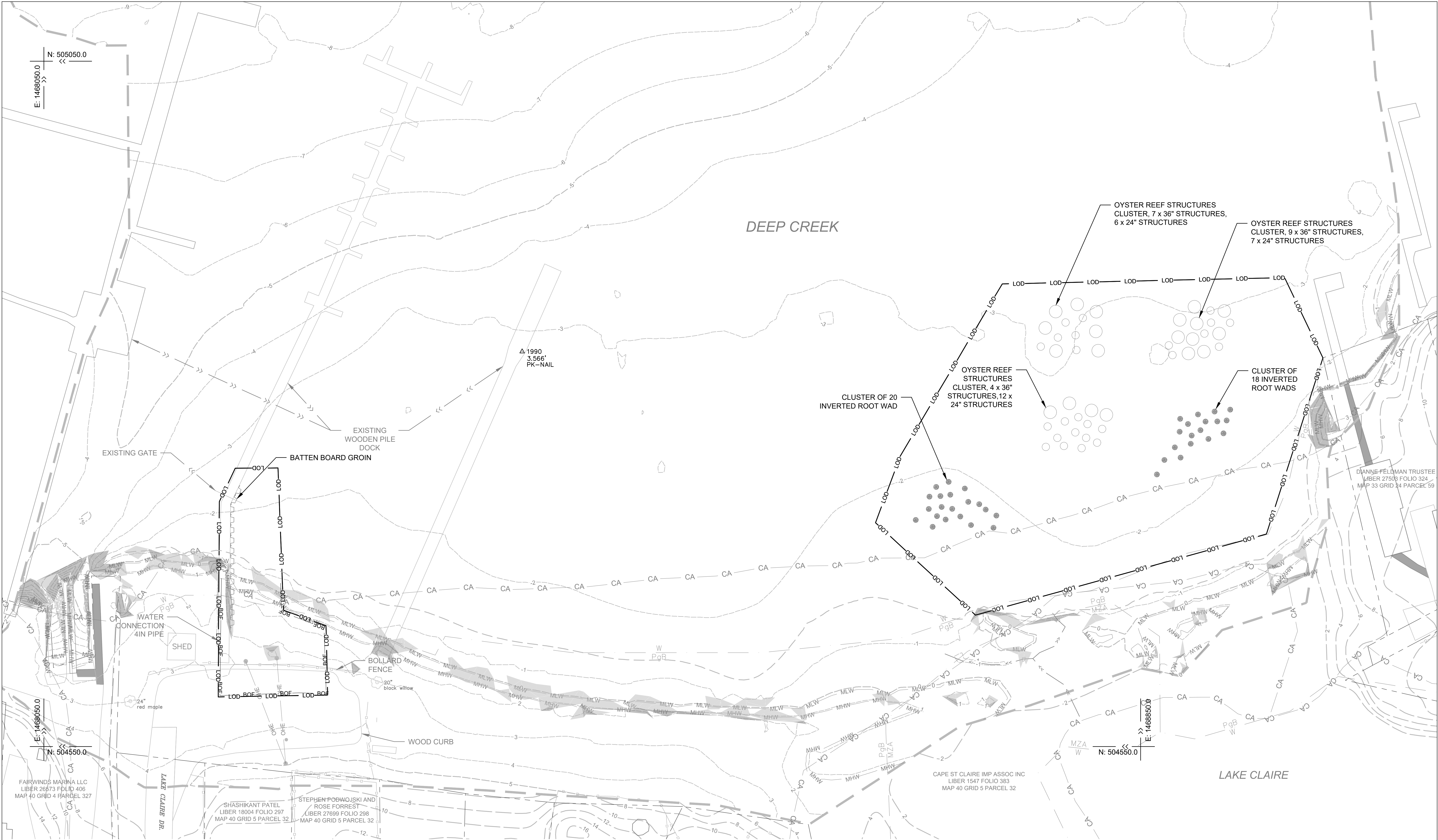
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REVIS					DATE				
REVISED					DATE				
APPROVED					DATE				
CHIEF ENGINEER					PROJECT MANAGER				
APPROVED					DATE				
ASSISTANT CHIEF ENGINEER					CHIEF, RIGHT-OF-WAY				
SCALE:					1" = 30'				
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PROJECT NO.					19033.01				
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NOTE:
0.01 ACRES OF MARSH CREATED
FOR SITE SHOWN

PLANTING LEGEND

TIDAL MARSH

HORIZONTAL SCALE
0 30 60

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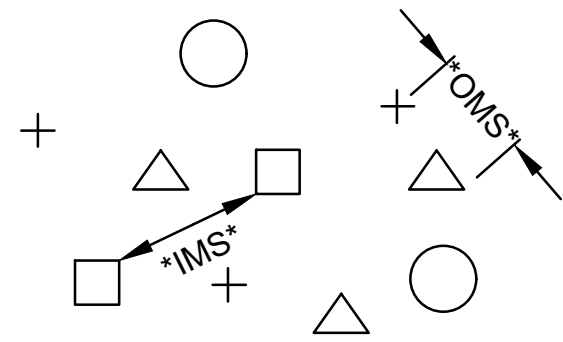
REVISED	APPROVED	DATE	APPROVED	DATE	SCALE:	1" = 30'
					DRAWN BY	TB.RW.AM.SE
	CHIEF ENGINEER		PROJECT MANAGER		CHECKED BY	FAM, JC
	APPROVED	DATE	APPROVED	DATE	SHEET NO.	17 OF 18
					PROJECT NO.	19033.01
	ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT-OF-WAY		PROPOSAL NO.	

CAPE ST CLAIRE SHORELINE
ENHANCEMENT

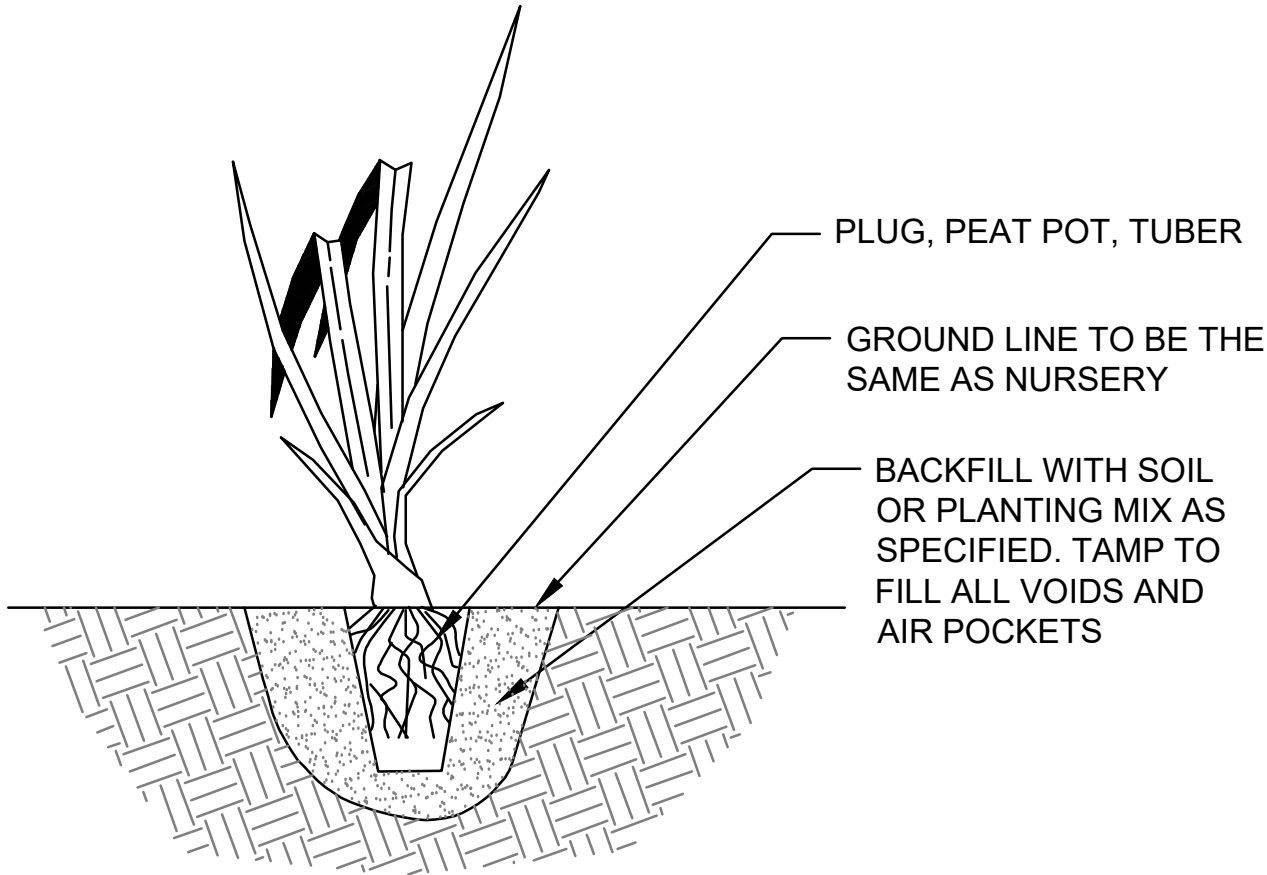
PLANTING PLAN - LAKE CLAIRE

LS-01

I:\Projects\17023.01 Cape St. Clair Shoreline\CAD\Modified Permit Application\Main Beach - AAC0\p01tsc.dwg



OMS- AN OVERALL MINIMUM SPACING DISTANCE *OMS* IS ASSIGNED TO THE PLANTING CONFIGURATION *SEE PLANT SCHEDULE*
IMS- AN INDIVIDUAL MINIMUM SPACING DISTANCES *IMS* IS ASSIGNED TO EACH INDIVIDUAL SPECIES *SEE PLANT SCHEDULE*



PLANTING SCHEDULE

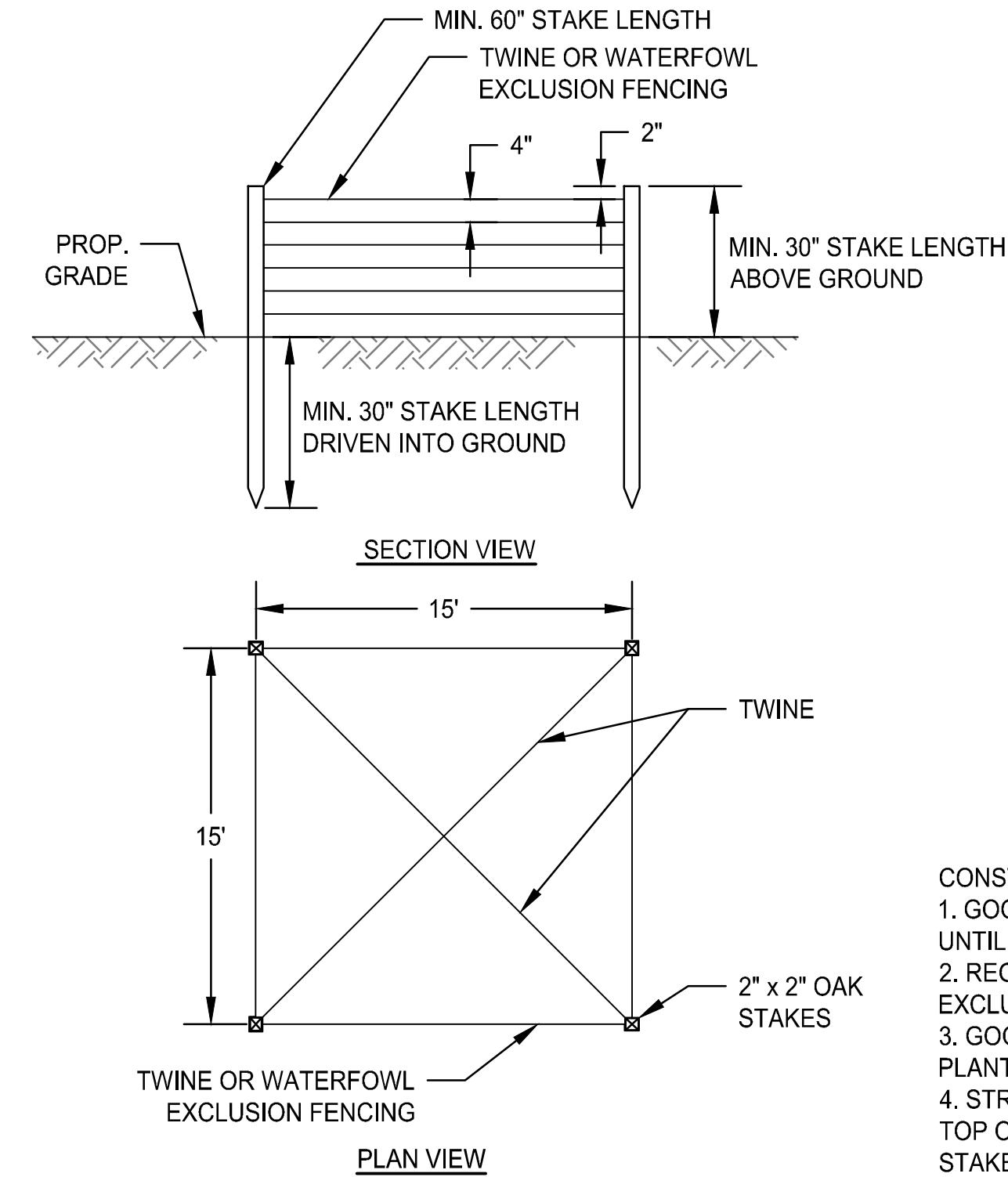
PLANT COMPOSITION SCHEDULE									
ZONE 1 - TIDAL MARSH									
Size (acres): 0.01									
Size (square feet): 445									
Overall Minimum Spacing (ft.)	Quantity per acre	Frequency (%)	Species Quantity	Vegetation Strata/ Species Name	Common Name	Unit	Spacing Type	Size	Individual Minimum Spacing (ft.)
1	43560			NATIVE PLUG					
		20	89	<i>Spartina patens</i>	saltmarsh hay	PLUG*	Clump	2"	N/A
		10	45	<i>Distichlis spicata</i>	saltgrass	PLUG*	Clump	2"	N/A
		15	67	<i>Panicum virgatum</i>	switchgrass	PLUG*	Clump	2"	N/A
		5	22	<i>Solidago sempervirens</i>	seaside goldenrod	PLUG*	Clump	2"	N/A
		40	178	<i>Spartina alterniflora</i>	smooth cordgrass	PLUG*	Clump	2"	N/A
		10	45	<i>Scirpus robustus</i>	saltmarsh bulrush	PLUG*	Clump	2"	N/A
		100	446	= total					

* MULTI-CULM AND GREATER THAN 12 INCHES TALL; cluster in rows and groupings of like species by position in and above tidal zone

PLANT SPACING - RANDOM

NOTE: EACH SYMBOL INDICATES A DIFFERENT SPECIES
NOT TO SCALE

PLAN VIEW



- CONSTRUCTION NOTES:
1. GOOSE EXCLUSION FENCE TO REMAIN IN PLACE FOR A PERIOD OF 2 YEARS UNTIL PLANT MATERIAL IS ESTABLISHED.
 2. REGULAR MAINTENANCE & REPLACEMENT OF TWINE AND/OR WATERFOWL EXCLUSION FENCING AND STAKES WILL BE NECESSARY DURING THIS TIME.
 3. GOOSE EXCLUSION FENCING SHALL ENCLOSE THE ENTIRETY OF THE MARSH PLANTING AREA.
 4. STRANDS OF TWINE SHALL BE PLACED EVERY 4" FROM SUBSTRATE TO 2" FROM TOP OF STAKE. OR WATERFOWL EXCLUSION FENCING SHALL BE ATTACHED TO STAKES.
 5. A SINGLE STRAND OF TWINE SHALL BE ATTACHED DIAGONALLY BETWEEN TOPS OF STAKES.

GEESE EXCLUSION FENCE

NOT TO SCALE

HERBACEOUS PLANTING - PLUGS

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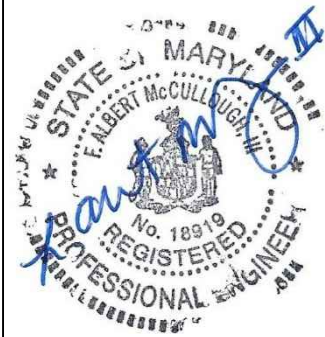


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					PROJECT NO. 19033.01
	ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT-OF-WAY		PROPOSAL NO.

PLANTING DETAILS

LS-03