

PROPERTY OWNER /APPLICANT
 HILLSMERE SHORES IMPROVEMENT ASSOCIATION
 P.O. BOX 3485
 ANNAPOLIS, MD 21403
 EMAIL: marino@hillsmershores.org

PROPERTY ADDRESS:
 133C BAY VIEW DRIVE EAST
 ANNAPOLIS, MD 21401

PROPERTY SIZE: 1.0 ACRES

APPLICANT
 ARUNDEL RIVERS FEDERATION
 2822 SOLOMONS ISLAND RD., SUITE 202
 EDGEWATER, MD 21037
 PHONE #: 410-224-3802

DESIGN CONSULTANT
 ENVIRONMENTAL SYSTEMS ANALYSIS, INC.
 2141 PRIEST BRIDGE DR., SUITE 1
 CROFTON, MD 21114
 PHONE #: 410-267-0495

- GENERAL NOTES:
1. PROPERTY BOUNDARIES, TOPOGRAPHY OUTSIDE OF PROJECT AREA AND EXISTING STRUCTURES SHOWN ARE TAKEN FROM ANNE ARUNDEL COUNTY GIS, ACCESSED IN NOVEMBER, 2022
 2. SHORELINE FEATURES, TOPOGRAPHY AND BATHYMETRY WAS SURVEYED BY SUSTAINABLE SCIENCE, LLC IN NOVEMBER 2022.
 3. VERTICAL DATUM: MLW = 0.0' (NAVD88: MLW = -0.32' MWH = 0.65')
 4. HORIZONTAL DATUM: NAD83/2011
 5. THE PROPERTY LIES WITHIN THE LIMITED DEVELOPMENT AREA (LDA) OF THE ANNE ARUNDEL COUNTY CRITICAL AREA.
 6. PER FEMA FLOOD MAP 24003C0261F, FLOODZONE AE EXTENDS TO THE 6 FOOT ELEVATION.

SITE DATA:
 ZONING: MA1 - COMMUNITY MARINA
 MDE TRACKING NUMBER:
 TOTAL SITE AREA: 1.0 ACRES

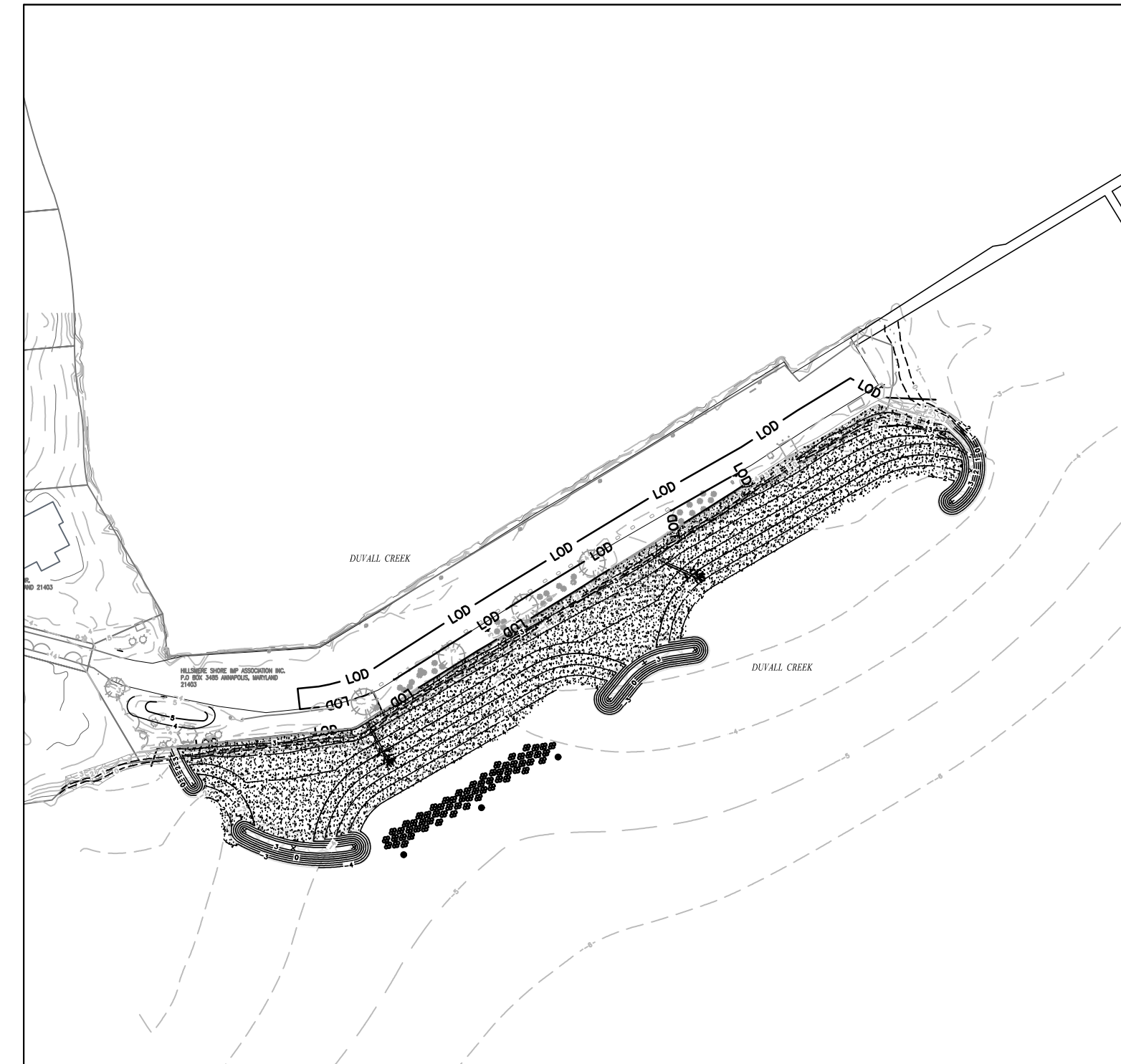
MEAN HIGH WATER LINE (MHWL): 0.97
 MEAN LOW WATER LINE (MLWL): 0.00
 DISTURBED AREA (LOD): 0.32 AC. (13,967 SF)
 AREA VEGETATIVELY STABILIZED: 0.16 AC. (6,895 SF)
 AREA PERMANENTLY STABILIZED: 0.32 AC.
 AREA OF OYSTER REEF BALLS: 0.03 AC. (1125 SF)
 PROPOSED CUT: 0 CY
 PROPOSED FILL: 3768 CY
 (SAND FILL = 3032 CY, ROCK FILL = 736 CY)
 EXCESS SPOIL TO BE REMOVED: 0 CY
 BORROW TO BE PLACED ON SITE: 3768 CY

NOTE: THIS PROJECT CONSISTS ENTIRELY OF SAND AND ROCK FILL. WHEN POSSIBLE, EXISTING ROCK WILL BE REUSED IN THE PROPOSED STONE STRUCTURES.

HILLSMERE SHORES COASTAL RESILIENCY PROJECT

ANNE ARUNDEL COUNTY, MARYLAND

FEBRUARY, 2024



AERIAL IMAGE

SCALE: 1"=100'



VICINITY MAP

SCALE: 1"=2000'

CONSULTANT'S CERTIFICATION

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

MD P.E. LICENSE # _____
 MD LAND SURVEYOR LICENSE # _____
 MD LANDSCAPE ARCHITECT # _____
 NAME _____
 FIRM NAME _____
 ADDRESS _____
 CITY _____ STATE _____ ZIP CODE _____

SIGNATURE OF DEVELOPER / OWNER _____ DATE _____

PRINT: NAME: _____
 TITLE: _____
 AFFILIATION: _____
 ADDRESS: _____
 TELEPHONE #: _____
 EMAIL: _____

MISS UTILITY



BEFORE YOU DIG CALL
 800-487-7777
 PROTECT YOURSELF, GIVE TWO
 WORKING DAYS NOTICE

THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THEREOF APPURTENANT.
 THE CONTRACTOR TO CALL MISS UTILITY TO HAVE ALL EXISTING UTILITIES MARKED 48 HOURS PRIOR TO ANY CONSTRUCTION.

INDEX OF SHEETS

- SHEET 1 COVER SHEET
- SHEET 2 EXISTING CONDITIONS
- SHEET 3 GRADING / EROSION & SEDIMENT CONTROL PLAN
- SHEET 4-5 EROSION & SEDIMENT CONTROL DETAILS
- SHEET 6-7 PLANTING / BUFFER MANAGEMENT PLAN

REVISIONS		
NO.	BY	DATE

Survey:

 Sustainable Science, LLC
 410 S. Second Street
 Denton, MD 21629
 phone: (410) 924-4316

Prepared for/Applicant:
 Hillsmere Shores Improvement Association (HSIA)
 P.O. BOX 2485
 Annapolis, MD 21043

Prepared by:

 Environmental Systems Analysis, Inc.
 Natural Resources Management
 Ecological Restoration
 2141 Priest Bridge Drive, Suite 1
 Crofton, Maryland 21114

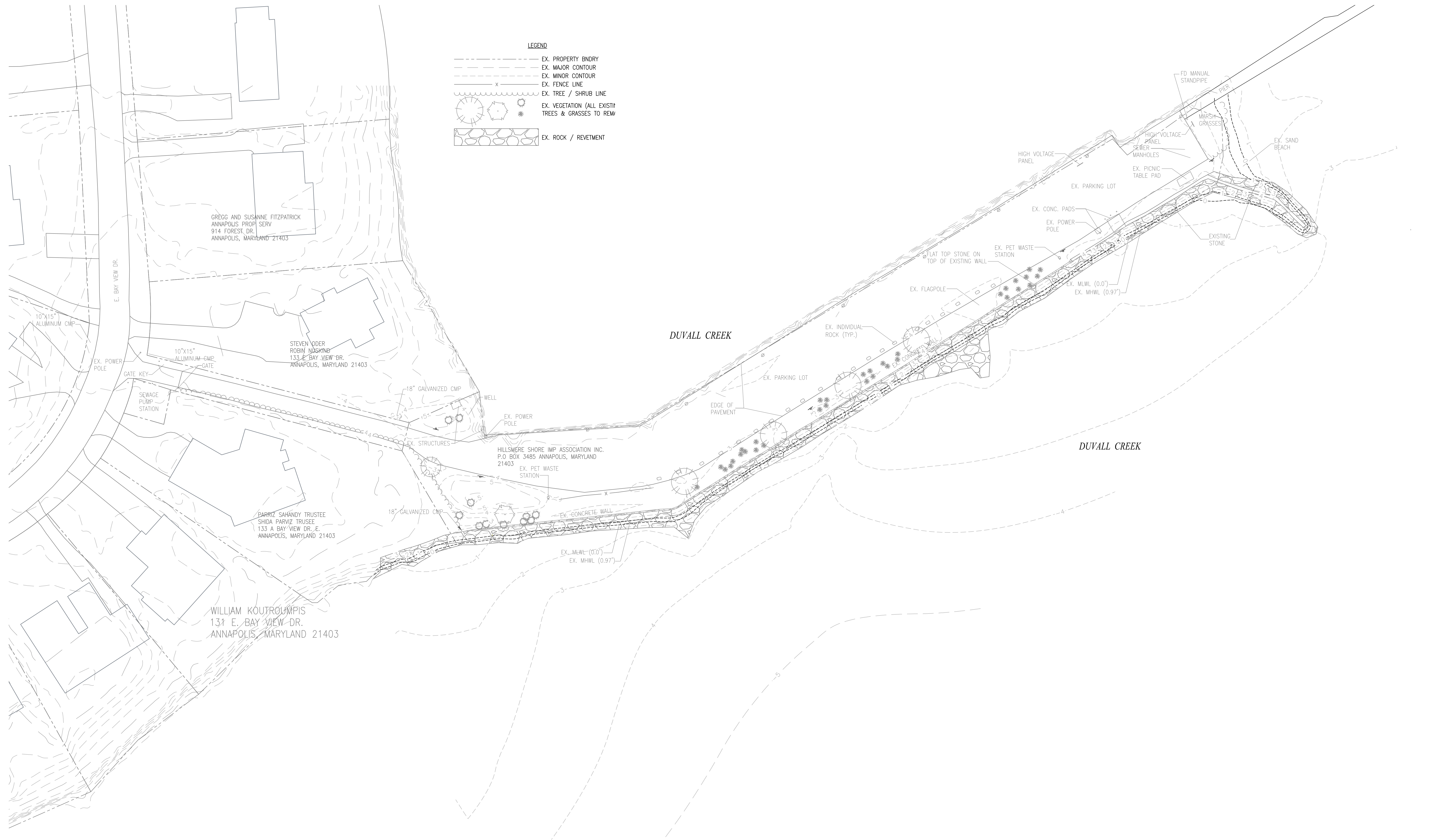
- SEQUENCE OF CONSTRUCTION:
1. NOTIFY THE DEPARTMENT OF INSPECTIONS AND PERMITS (410-222-7780) AT LEAST 48 HOURS BEFORE COMMENCING WORK. WORK MAY NOT COMMENCE UNTIL THE PERMITEE OR THE RESPONSIBLE PERSONNEL HAVE MET ON SITE WITH THE SEDIMENT AND EROSION CONTROL INSPECTOR TO REVIEW THE APPROVED PLANS. (1 DAY)
 2. NOTIFY MARYLAND DEPARTMENT OF THE ENVIRONMENT INSPECTION AND COMPLIANCE PROGRAM (410-537-3510) AT LEAST FIVE DAYS PRIOR TO THE START OF CONSTRUCTION. NOTIFY THE COUNTY CM/ AT LEAST 2 WEEKS PRIOR TO BEGINNING WORK.
 3. NOTIFY MISS UTILITY (1-800-257-7777) A MINIMUM OF 48 HOURS PRIOR TO THE START OF WORK. (1 DAY)
 4. CONDUCT A PRE-CONSTRUCTION MEETING. WORK MAY NOT COMMENCE UNTIL THE PERMITEE OR THE RESPONSIBLE PERSONNEL HAVE MET ON SITE WITH THE SEDIMENT AND EROSION CONTROL INSPECTOR TO REVIEW THE APPROVED PLANS. (1 DAY)
 5. THE LIMITS OF DISTURBANCE (LOD) MUST BE FIELD-MARKED USING STAKES AND FLAGGING PRIOR TO CLEARING OF TREES, INSTALLATION OF SEDIMENT CONTROL MEASURES, CONSTRUCTION OR OTHER LAND DISTURBING ACTIVITIES AS SHOWN ON THE GRADING PLAN. THE LIMITS OF DISTURBANCE AND EXISTING CONDITIONS MUST BE APPROVED BY THE SEDIMENT CONTROL INSPECTOR PRIOR TO COMMENCING WORK. CLEAR THE MINIMUM AREA NECESSARY TO INSTALL SEDIMENT CONTROL AND THE STAGING AREA.
 6. TEMPORARY AND PERMANENT STABILIZATIONS OF DISTURBED AREAS WILL BE REQUIRED THROUGHOUT CONSTRUCTION AS MANDATED BY EROSION AND SEDIMENT CONTROL REGULATIONS.
 7. INSTALL STABILIZED CONSTRUCTION ENTRANCE (SCE). (1 DAY)
 8. ESTABLISH THE STOCKPILE AREA ACCORDING TO THE ESC PLANS. THIS AREA IS TO BE FOR TEMPORARY USE ONLY. ALL EXCAVATED MATERIAL SHOULD BE DEPOSITED AND STABILIZED IN AN APPROVED AREA.
 9. ALL NECESSARY EROSION AND SEDIMENT CONTROL (ESC) AND TREE PROTECTION MEASURES MUST BE INSTALLED PRIOR TO THE COMMENCEMENT OF GRADING WORK. THESE CONTROLS AND DEVICES MUST BE MAINTAINED THROUGH THE CONSTRUCTION PROCESS AND UNTIL THE SITE IS STABILIZED. (5 DAYS)
 10. ONCE SEDIMENT CONTROLS HAVE BEEN INSTALLED, CONTACT THE SEDIMENT CONTROL INSPECTOR FOR APPROVAL OF THE SEDIMENT CONTROL INSTALLATION PRIOR TO COMMENCING WORK. INSPECTIONS AND PERMITS MAY ALSO REQUIRE THAT AN INSPECTION AND CERTIFICATION OF THE INSTALLATION OF SEDIMENT CONTROL BE PERFORMED BY A DESIGN PROFESSIONAL PRIOR TO CONSTRUCTION COMMENCING. (1 DAY)
 11. BEGIN REMOVING AND STOCKPILING EXISTING STONE FOR USE IN THE NEW PROPOSED STRUCTURES, ONLY REMOVING WHAT IS NEEDED FOR CONSTRUCTION AT THAT TIME.
 12. INSTALL STONE STRUCTURES A, B, C, AND D BASED ON THE LOCATIONS, ELEVATIONS, AND DESIGN SPECIFICATIONS SHOWN ON THE PLANS. (20 DAYS)
 - a. LAY GEOTEXTILE ON EXISTING GRADE TO COVER THE ENTIRE BOTTOM OF THE HEADLAND STRUCTURE AND ENOUGH TO WRAP AROUND THE SIDE OF THE STRUCTURE. HEADLAND STRUCTURE SHALL TIE INTO EXISTING GRADE.
 - b. PLACE LARGEST BOULDERS FOR THE STRUCTURE ON TOP OF THE GEOTEXTILE SUCH THAT EACH BOULDER IS IN CONTACT WITH ITS NEIGHBOR AND FORMS A RELATIVELY FLAT SURFACE. ARRANGE BOULDERS AS NECESSARY TO MINIMIZE VOID SPACE WITHIN THE FOOTER LAYER.
 - c. PLACE A LAYER OF SMALLER BOULDERS ATOP THE FOOTER BOULDERS SUCH THAT THEY ARE STABLE AND INTERLOCK WITH THEIR NEIGHBOR AND THE FOOTER LAYER. REUSE EXISTING LARGE WEATHERED STONE ALONG EXTERIOR OF THE STRUCTURE TO BLEND INTO THE LANDSCAPE BETTER. STONES SMALLER THAN 150 LBS SHALL BE USED IN THE INTERIOR OF THE STRUCTURE. ALL BOULDERS ARE TO BE INDIVIDUALLY PLACED TO CREATE A STABLE, UNIFORM STRUCTURE IN WHICH VOIDS ARE MINIMIZED.
 - d. WRAP WOVEN GEOTEXTILE AROUND LANDWARD SIDE OF THE HEADLAND STRUCTURE TO PROPOSED SAND/COBBLE ELEVATION. TRIM ANY EXPOSED GEOTEXTILE.
 - e. THE ALLOWABLE VERTICAL TOLERANCE ON ALL ELEVATIONS IS +/- 0.1 FEET.
 13. CONCURRENT WITH THE INSTALLATION OF THE STONE STRUCTURES, MIX AND PLACE COBBLE / SAND SO AS TO COVER THE EXPOSED WALL WHERE STONE WAS REMOVED AND AS NECESSARY TO CONSTRUCT THE STONE STRUCTURES. (10 DAYS)
 - a. STOCKPILE WASHED COBBLE AND WASHED COARSE SAND (CONCRETE SAND) IN ACCORDANCE WITH THE APPROVED PLAN SET.
 - b. USING TRACKED EXCAVATION EQUIPMENT, SEQUENTIALLY PLACE THREE (3) BUCKETS OF COARSE SAND AND ONE (1) BUCKET OF WASHED COBBLE INTO DUMP TRUCK UNTIL TRUCK IS FILLED.
 - c. DUMP LOAD INTO COBBLE / SAND ZONE THEN GRADE WITH DOZER TO ACHIEVE DESIGN GRADES AND INCLINATIONS.
 14. INSTALL REEF BALLS AND NAVIGATION BUOYS PER PLANS.
 15. GRADE BERM AS SHOWN AND INSTALL STABILIZATION MATTING. USE EXCESS FILL BEHIND SEAWALL AS NEEDED.
 16. INSTALL PLANTS PER PLANS, AT LEAST ONE MONTH (INCLUDING ONE STORM EVENT) AFTER COMPLETION OF THE SAND DUNES. INSTALL THE PROPOSED SHRUBS AS SPECIFIED ON THE PLANS. INSTALL GOOSE EXCLUSIONARY FENCING OVER PLANT ZONE. (7 DAYS)
 17. REMOVE TRASH AND ALL EXCESS CONSTRUCTION MATERIALS FROM THE PROJECT SITE. (3 DAYS)
 18. CONDUCT FINAL INSPECTION PRIOR TO DE-MOBILIZING FROM THE SITE. REPAIR AND ADDRESS ANY DEFICIENCIES IDENTIFIED DURING THE FINAL INSPECTION WITHIN 5 DAYS OF RECEIPT OF PUNCH LIST. (6 DAYS)
 19. UPON APPROVAL OF COUNTY INSPECTOR, REMOVE SEDIMENT AND EROSION CONTROLS. (1 DAY)

COVER SHEET

HILLSMERE SHORES COASTAL RESILIENCY PROJECT
 MAP 0057, GRID 0013, PARCEL 0159, SUBDIVISION 412

2ND ELECTION DISTRICT, ANNE ARUNDEL COUNTY, MD

SCALE:
 DATE: FEBRUARY, 2024
 ESA PROJECT NAME: 22587
 HILLSMERE MARINA LIVING
 SHORELINE
 SHEET: 1 of 8



LEGEND

	EX. PROPERTY BNDRY
	EX. MAJOR CONTOUR
	EX. MINOR CONTOUR
	EX. FENCE LINE
	EX. TREE / SHRUB LINE
	EX. VEGETATION (ALL EXISTING TREES & GRASSES TO REMAIN)
	EX. ROCK / REVETMENT

REVISIONS		
NO.	BY	DATE

Survey:

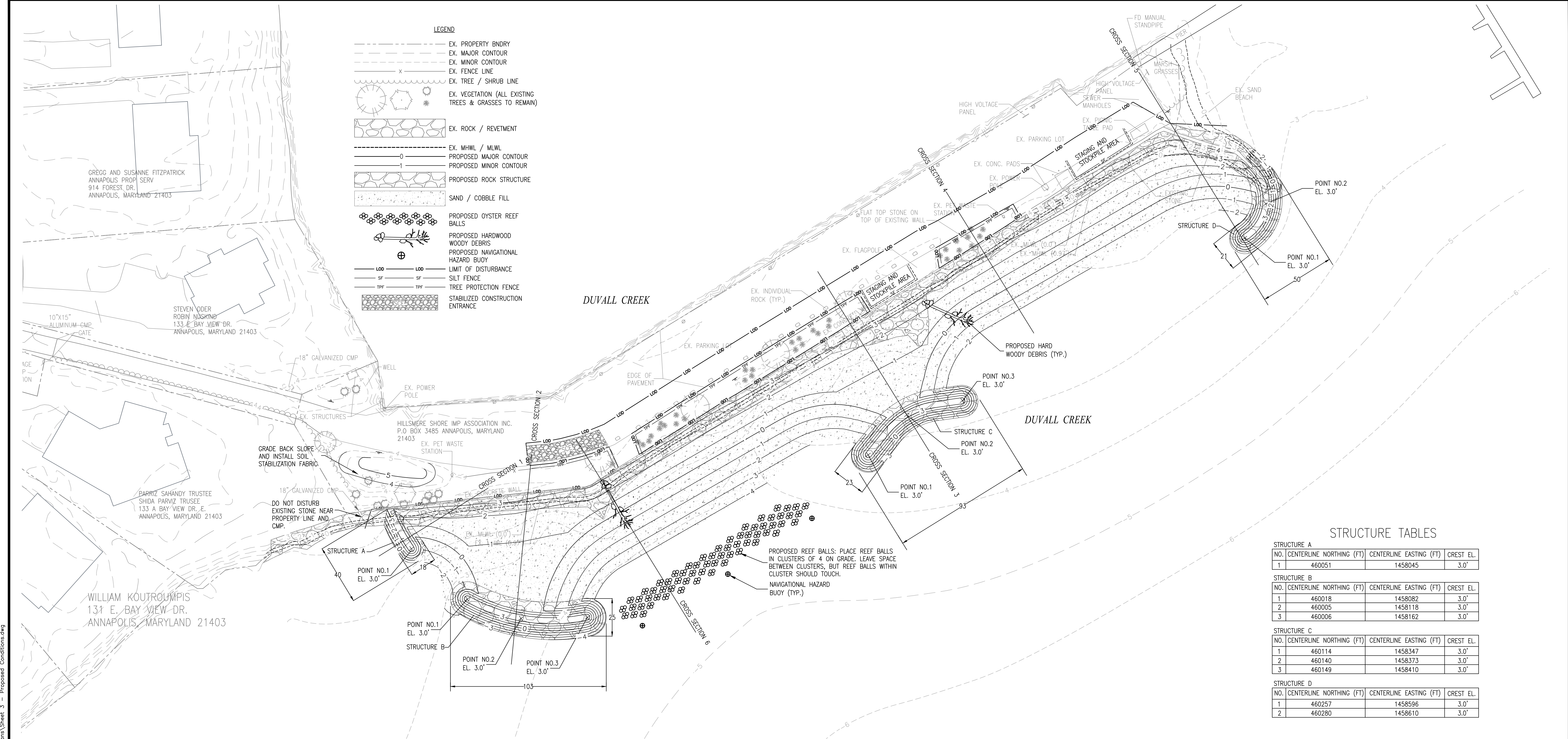
Sustainable Science, LLC
 410 S. Second Street
 Denton, MD 21629
 phone: (410) 924-4316

Prepared for/Applicant:
Hillsmere Shores Improvement Association (HSIA)
 P.O. BOX 2485
 Annapolis, MD 21043

Prepared by:

Environmental Systems Analysis, Inc.
 Natural Resources Management
 Ecological Restoration
 2141 Priest Bridge Drive, Suite 1
 Crofton, Maryland 21114

EXISTING CONDITIONS
HILLSMERE SHORES COASTAL RESILIENCY PROJECT
 MAP 0057, GRID 0013, PARCEL 0159, SUBDIVISION 412
 2ND ELECTION DISTRICT, ANNE ARUNDEL COUNTY, MD
 SCALE: 1"=30'
 DATE: FEBRUARY, 2024
 ESA PROJECT NAME: 22587 HILLSMERE MARINA LIVING SHORELINE
 SHEET: 2 of 8



LEGEND

- EX. PROPERTY BNDRY
- - - EX. MAJOR CONTOUR
- - - EX. MINOR CONTOUR
- - - EX. FENCE LINE
- - - EX. TREE / SHRUB LINE
- EX. VEGETATION (ALL EXISTING TREES & GRASSES TO REMAIN)
- ▨ EX. ROCK / REVETMENT
- - - EX. MHWL / MLWL
- - - PROPOSED MAJOR CONTOUR
- - - PROPOSED MINOR CONTOUR
- ▨ PROPOSED ROCK STRUCTURE
- ▨ SAND / COBBLE FILL
- PROPOSED OYSTER REEF BALLS
- PROPOSED HARDWOOD WOODY DEBRIS
- ⊕ PROPOSED NAVIGATIONAL HAZARD BUOY
- LIMIT OF DISTURBANCE
- SILT FENCE
- TREE PROTECTION FENCE
- ▨ STABILIZED CONSTRUCTION ENTRANCE

GREGG AND SUSANNE FITZPATRICK
ANNAPOLIS PROP SERV
914 FOREST DR.
ANNAPOLIS, MARYLAND 21403

STEVEN ODER
ROBIN NUSKIND
133 E BAY VIEW DR.
ANNAPOLIS, MARYLAND 21403

PARRIZ SAHANDY TRUSTEE
SHIDA PARRIZ TRUSTEE
133 A BAY VIEW DR. E.
ANNAPOLIS, MARYLAND 21403

WILLIAM KOUTROUMPIS
131 E BAY VIEW DR.
ANNAPOLIS, MARYLAND 21403

HILLSMERE SHORE IMP ASSOCIATION INC.
P.O. BOX 3485 ANNAPOLIS, MARYLAND
21403

POINT NO.2
EL. 3.0'

POINT NO.1
EL. 3.0'

POINT NO.3
EL. 3.0'

POINT NO.2
EL. 3.0'

POINT NO.1
EL. 3.0'

POINT NO.2
EL. 3.0'

POINT NO.3
EL. 3.0'

PROPOSED REEF BALLS: PLACE REEF BALLS
IN CLUSTERS OF 4 ON GRADE. LEAVE SPACE
BETWEEN CLUSTERS, BUT REEF BALLS WITHIN
CLUSTER SHOULD TOUCH.

NAVIGATIONAL HAZARD
BUOY (TYP.)

STRUCTURE TABLES

STRUCTURE A			
NO.	CENTERLINE NORTHING (FT)	CENTERLINE EASTING (FT)	CREST EL.
1	460051	1458045	3.0'

STRUCTURE B			
NO.	CENTERLINE NORTHING (FT)	CENTERLINE EASTING (FT)	CREST EL.
1	460018	1458082	3.0'
2	460005	1458118	3.0'
3	460006	1458162	3.0'

STRUCTURE C			
NO.	CENTERLINE NORTHING (FT)	CENTERLINE EASTING (FT)	CREST EL.
1	460114	1458347	3.0'
2	460140	1458373	3.0'
3	460149	1458410	3.0'

STRUCTURE D			
NO.	CENTERLINE NORTHING (FT)	CENTERLINE EASTING (FT)	CREST EL.
1	460257	1458596	3.0'
2	460280	1458610	3.0'

CONSTRUCTION NOTES:

- REMOVE TOP LAYER OF STONE FROM EXISTING STONE REVETMENT AND REUSE SUITABLE STONE IN PROPOSED STRUCTURES. ANY STONE REMOVED THAT IS UN-USABLE SHALL BE BURIED BENEATH PROPOSED SAND FILL. ROCK SHALL NOT BE VISIBLE ABOVE SAND FILL.

- NOTE:**
- STOCKPILE IS NOT TO EXCEED 10' AND 2:1 SIDE SLOPES
 - STOCKPILE IS TO BE COVERED WITH A PLASTIC TARP AND ANCHORED AT THE END OF EACH WORK DAY.

REVISIONS		
NO.	BY	DATE

Survey:

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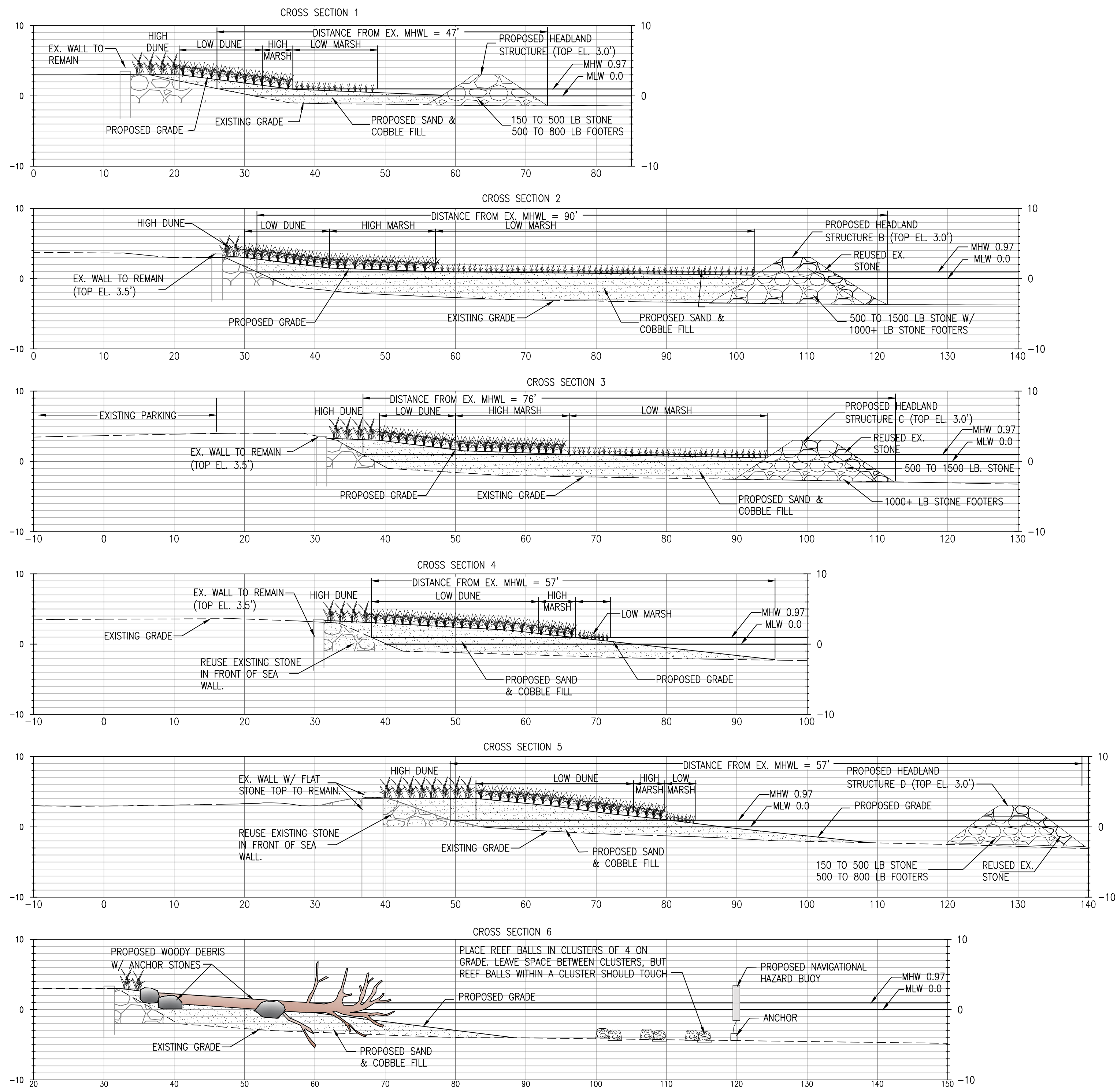
GRADING / EROSION & SEDIMENT CONTROL PLAN

HILLSMERE SHORES COASTAL RESILIENCY PROJECT
MAP 0057, GRID 0013, PARCEL 0159, SUBDIVISION 412

2ND ELECTION DISTRICT, ANNE ARUNDEL COUNTY, MD

SCALE: 1"=30'

DATE: FEBRUARY, 2024
ESA PROJECT NAME: 22587
HILLSMERE MARINA LIVING SHORELINE
SHEET: 3 of 8



CROSS SECTIONS
SCALE: 1"=10'

February 2024 FILE: T:\NEMPRO\2022\22587 Hillsmere Marina Shoreline\CAD\Plans\Grading Permit\Plans\Sheet 4 - Cross Sections.dwg

REVISIONS		
NO.	BY	DATE

Survey:



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CROSS SECTIONS
HILLSMERE SHORES COASTAL RESILIENCY PROJECT
MAP 0057, GRID 0013, PARCEL 0159, SUBDIVISION 412

2ND ELECTION DISTRICT, ANNE ARUNDEL COUNTY, MD

SCALE: 1"=10'

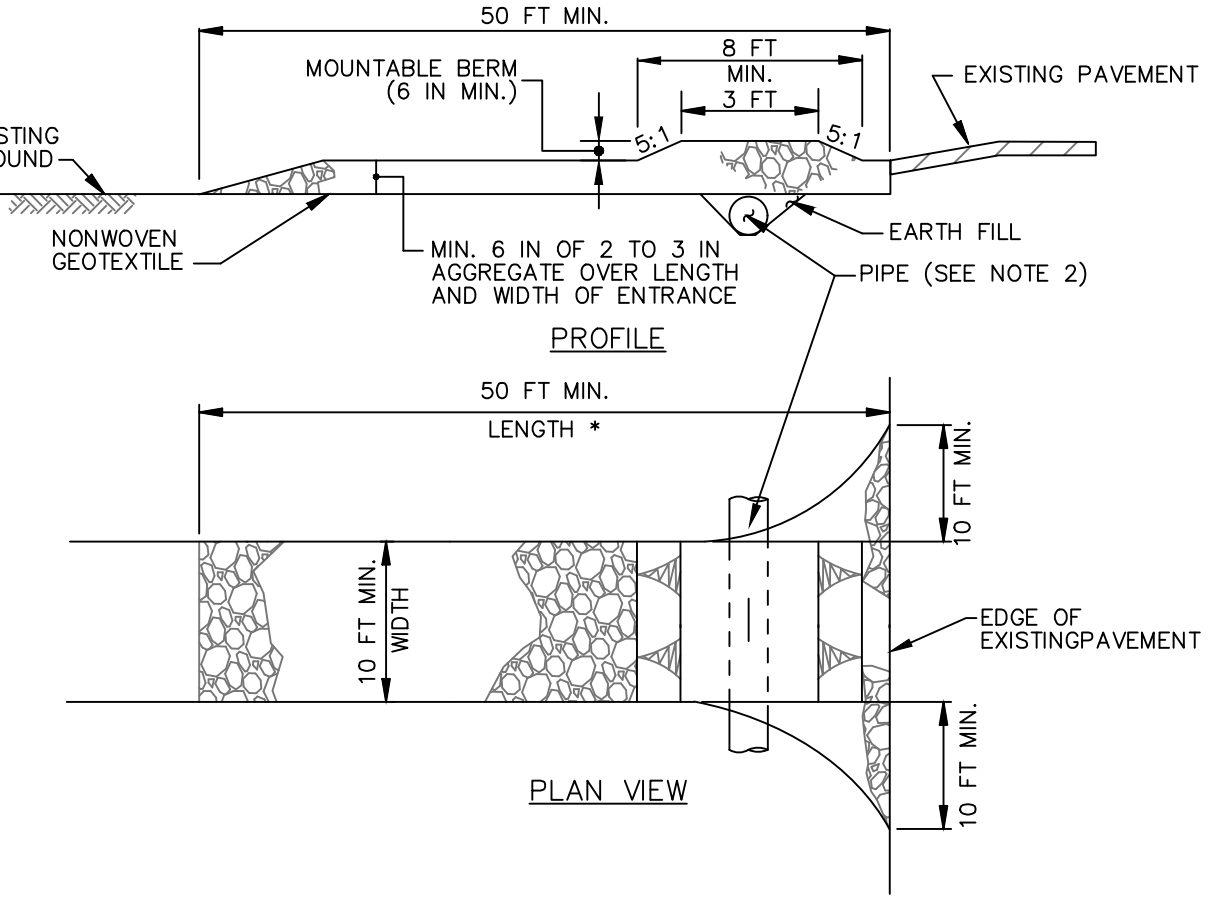
DATE: FEBRUARY, 2024

ESA PROJECT NAME: 22587 HILLSMERE MARINA LIVING SHORELINE

SHEET: 4 of 8

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

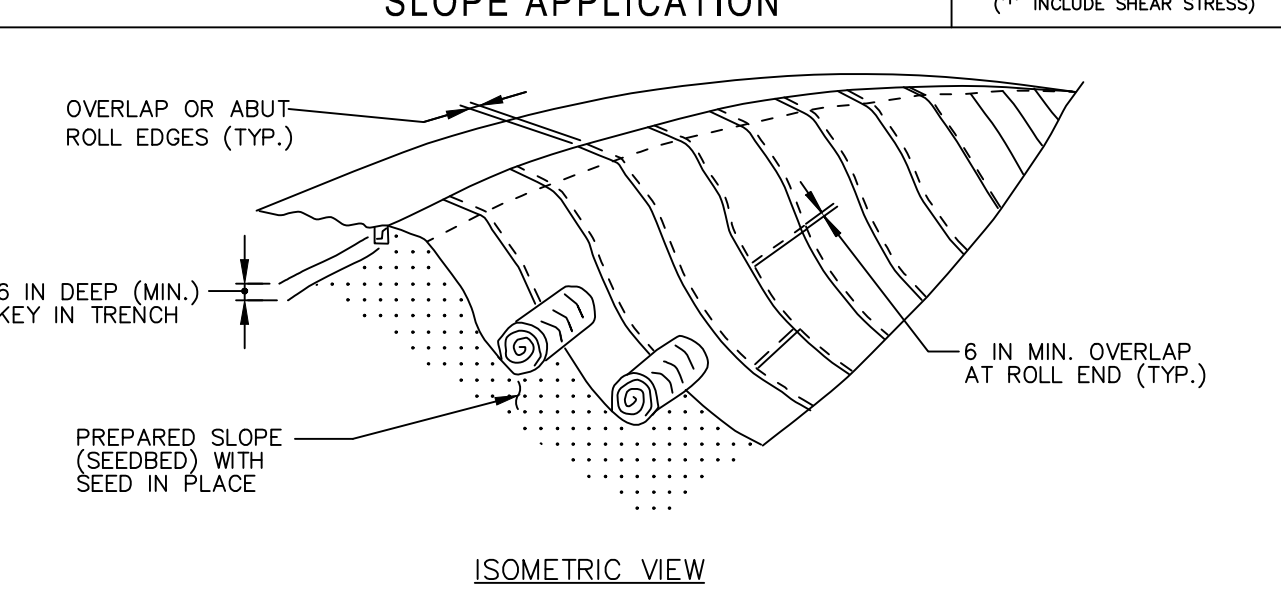
STANDARD SYMBOL
SCE



- CONSTRUCTION SPECIFICATIONS**
- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (430 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
 - PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE. MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
 - PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
 - PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
 - MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SLOPPED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

DETAIL B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION

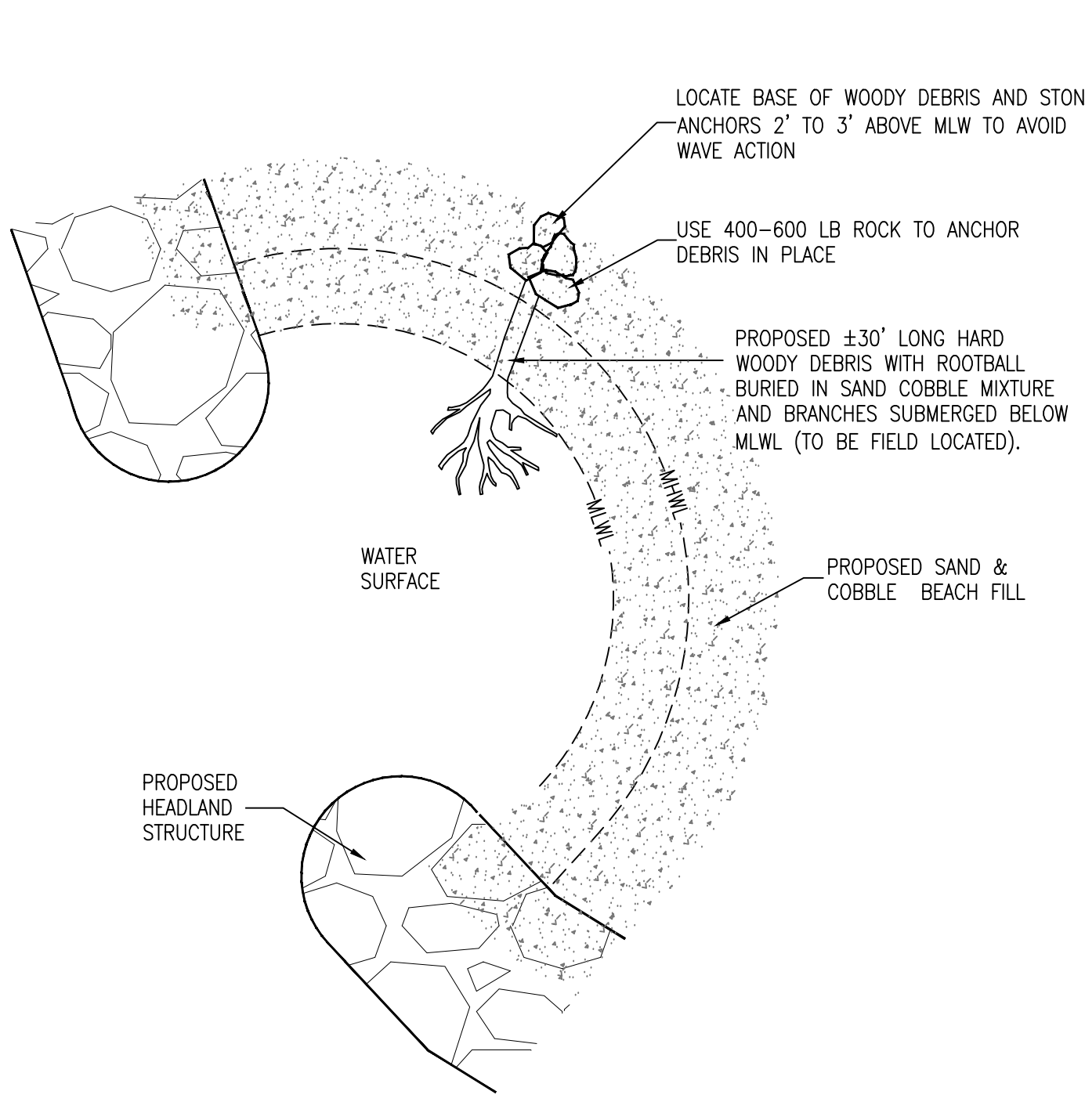
STANDARD SYMBOL
TSSMS - * lb/ft² (* INCLUDE SHEAR STRESS)



- CONSTRUCTION SPECIFICATIONS**
- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
 - USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
 - SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
 - PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
 - UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
 - OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
 - KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
 - STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
 - ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

WOODY DEBRIS DETAIL

Not to Scale



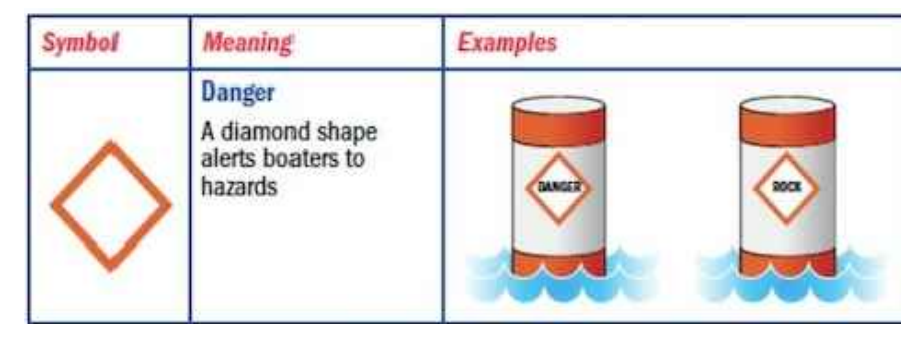
REEF BALL DETAIL

Not to Scale



NAVIGATIONAL HAZARD BUOY DETAIL

Not to Scale



MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

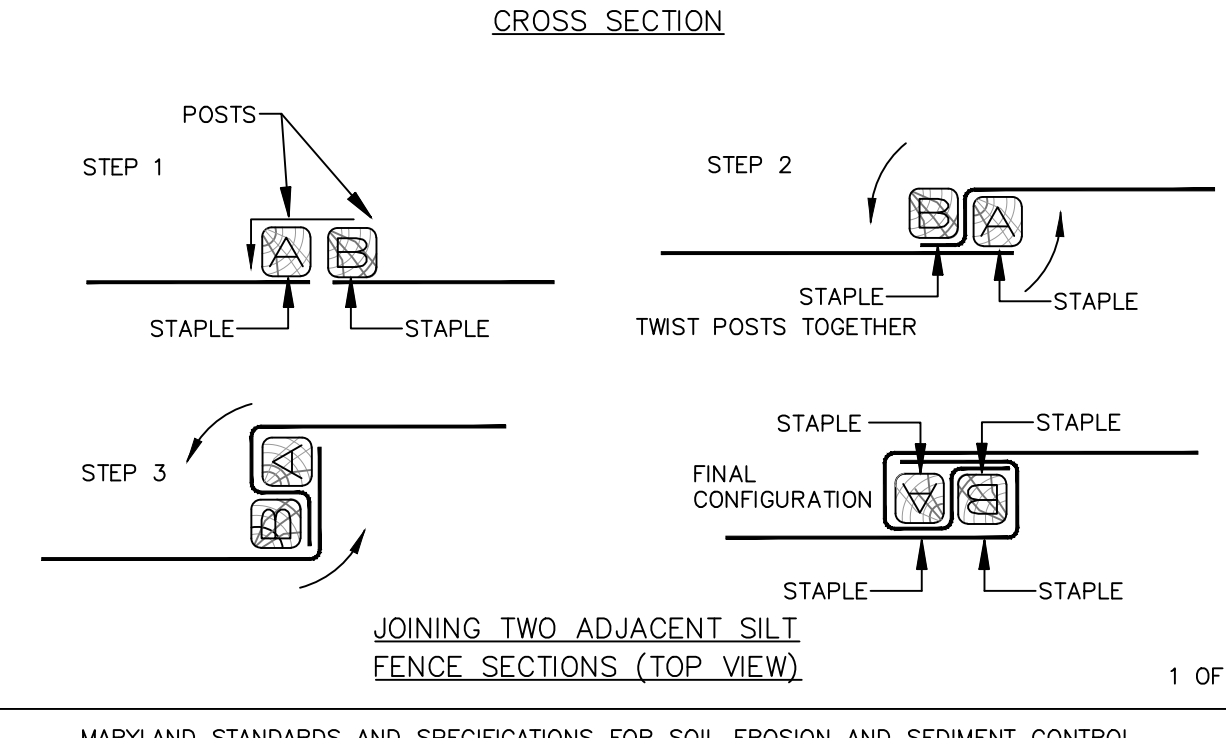
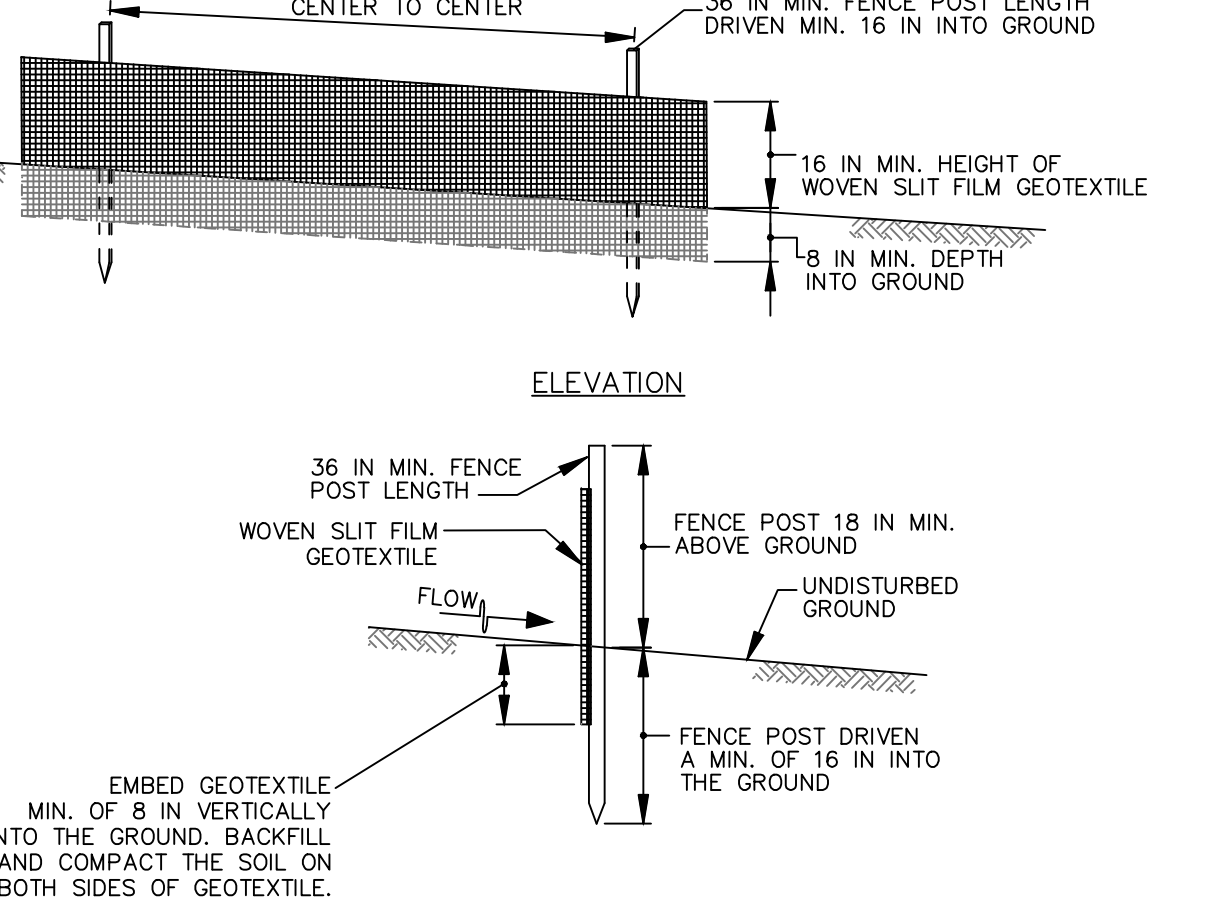
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL
SF



- CONSTRUCTION SPECIFICATIONS**
- USE WOOD POSTS 1½ X 1½ X ¼ INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD, AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
 - USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
 - USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
 - PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
 - EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
 - WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
 - EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
 - REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

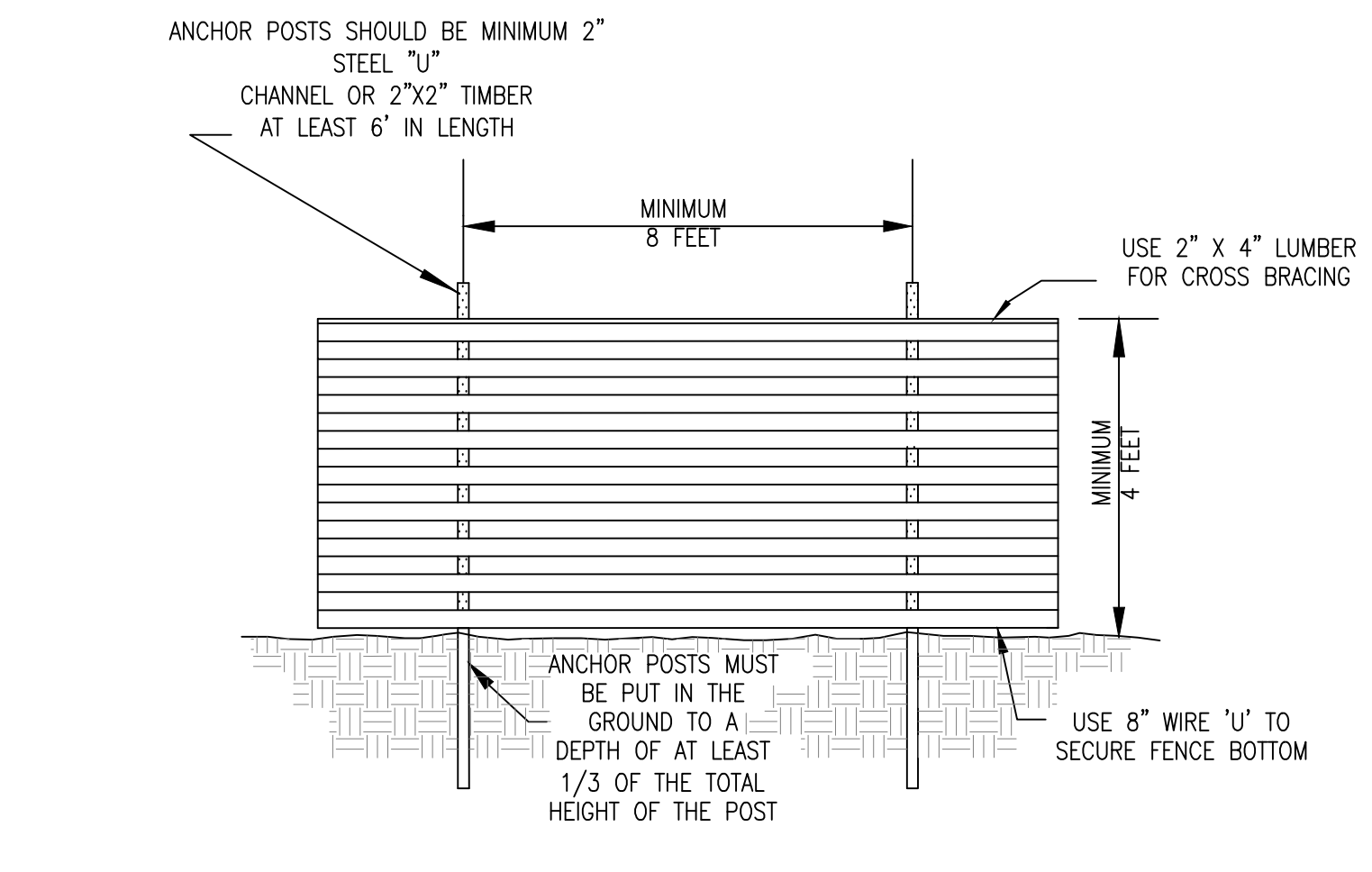
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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TYPICAL TREE PROTECTION FENCE DETAIL

BLAZE ORANGE FENCE PROFILE
Not to Scale



TYPICAL TREE PROTECTION FENCE DETAIL

INSTALLATION SEQUENCE

- FOREST PROTECTION DEVICE ONLY
- PROTECTION AREA(S) WILL BE SET AS PART OF THE REVIEW & DESIGN PROCESS.
- BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
- ROOT DAMAGE SHOULD BE AVOIDED.
- PROTECTIVE SIGNAGE MAY ALSO BE USED.
- DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

REVISIONS		
NO.	BY	DATE

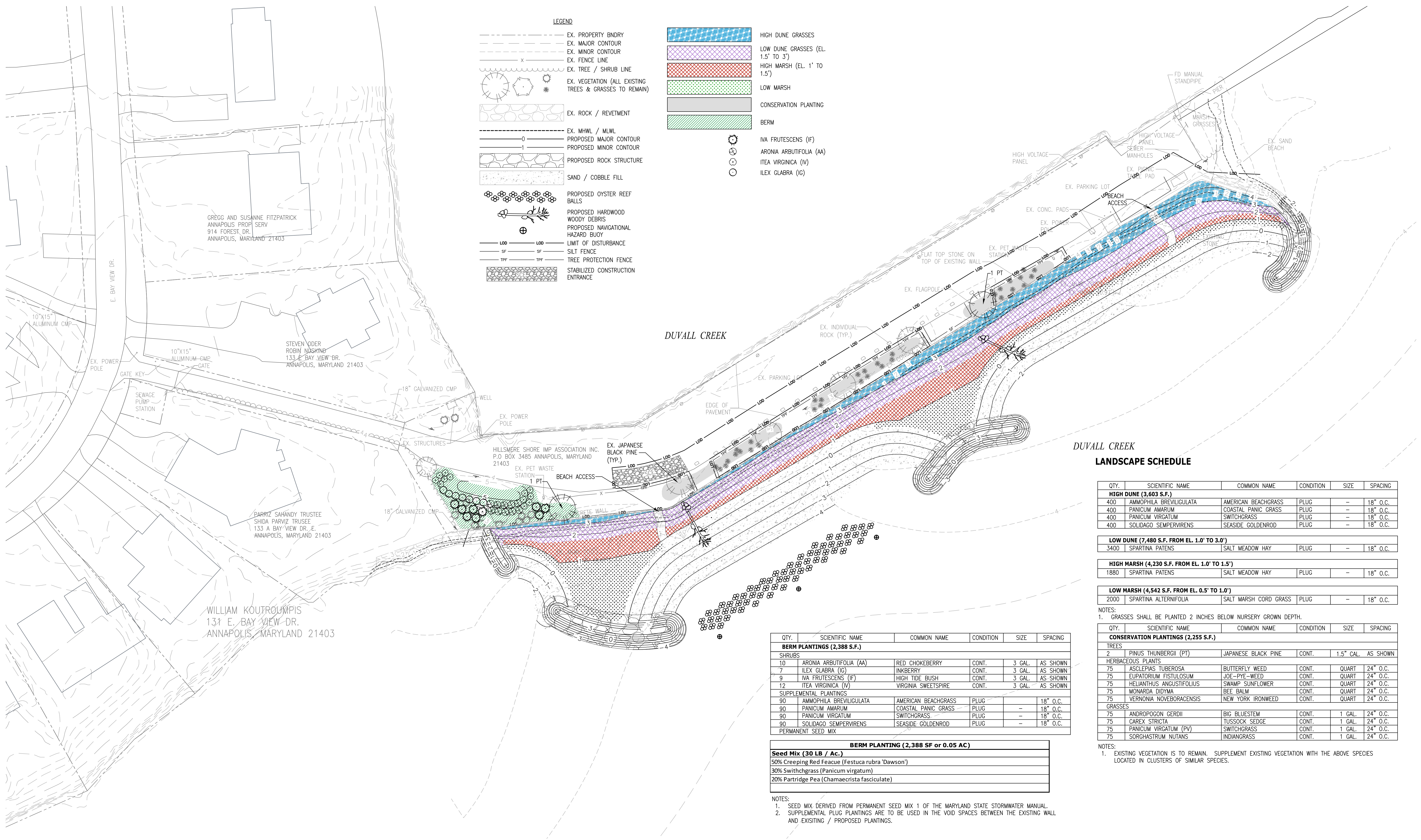
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Crofton, Maryland 21114

CONSTRUCTION DETAILS	
HILLSMERE SHORES COASTAL RESILIENCY PROJECT MAP 0057, GRID 0013, PARCEL 0159, SUBDIVISION 412	
2ND ELECTION DISTRICT, ANNE ARUNDEL COUNTY, MD	
SCALE:	DATE: FEBRUARY, 2024
ESA PROJECT NAME: 22587 HILLSMERE MARINA LIVING SHORELINE	
SHEET: 5 of 8	

February 2024
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DUVALL CREEK LANDSCAPE SCHEDULE

QTY.	SCIENTIFIC NAME	COMMON NAME	CONDITION	SIZE	SPACING
HIGH DUNE (3,603 S.F.)					
400	AMMOPHILA BREVILIGULATA	AMERICAN BEACHGRASS	PLUG	-	18" O.C.
400	PANICUM AMARUM	COASTAL PANIC GRASS	PLUG	-	18" O.C.
400	PANICUM VIRGATUM	SWITCHGRASS	PLUG	-	18" O.C.
400	SOLIDAGO SEMPERVIRENS	SEASIDE GOLDENROD	PLUG	-	18" O.C.
LOW DUNE (7,480 S.F. FROM EL. 1.0' TO 3.0')					
3400	SPARTINA PATENS	SALT MEADOW HAY	PLUG	-	18" O.C.
HIGH MARSH (4,230 S.F. FROM EL. 1.0' TO 1.5')					
1880	SPARTINA PATENS	SALT MEADOW HAY	PLUG	-	18" O.C.
LOW MARSH (4,542 S.F. FROM EL. 0.5' TO 1.0')					
2000	SPARTINA ALTERNIFOLIA	SALT MARSH CORD GRASS	PLUG	-	18" O.C.

NOTES:
 1. GRASSES SHALL BE PLANTED 2 INCHES BELOW NURSERY GROWN DEPTH.

QTY.	SCIENTIFIC NAME	COMMON NAME	CONDITION	SIZE	SPACING
CONSERVATION PLANTINGS (2,255 S.F.)					
TREES					
2	PINUS THUNBERGII (PT)	JAPANESE BLACK PINE	CONT.	1.5" CAL.	AS SHOWN
HERBACEOUS PLANTS					
75	ASCLEPIAS TUBEROSA	BUTTERFLY WEED	CONT.	QUART	24" O.C.
75	EUPATORIUM FISTULOSUM	JOE-PYE-WEED	CONT.	QUART	24" O.C.
75	HELIANTHUS ANGUSTIFOLIUS	SWAMP SUNFLOWER	CONT.	QUART	24" O.C.
75	MONARDA DIDYMA	BEE BALM	CONT.	QUART	24" O.C.
75	VERNONIA NOVEBORACENSIS	NEW YORK IRONWEED	CONT.	QUART	24" O.C.
GRASSES					
75	ANDROPOGON GERDII	BIG BLUESTEM	CONT.	1 GAL	24" O.C.
75	CAREX STRICTA	TUSSOCK SEDGE	CONT.	1 GAL	24" O.C.
75	PANICUM VIRGATUM (PV)	SWITCHGRASS	CONT.	1 GAL	24" O.C.
75	SORGHASTRUM NUTANS	INDIANGRASS	CONT.	1 GAL	24" O.C.

QTY.	SCIENTIFIC NAME	COMMON NAME	CONDITION	SIZE	SPACING
BERM PLANTINGS (2,388 S.F.)					
SHRUBS					
10	ARONIA ARBUTIFOLIA (AA)	RED CHOKEBERRY	CONT.	3 GAL.	AS SHOWN
7	ILEX GLABRA (IG)	INKBERRY	CONT.	3 GAL.	AS SHOWN
9	IVA FRUTESCENS (IF)	HIGH TIDE BUSH	CONT.	3 GAL.	AS SHOWN
12	ITEA VIRGINICA (IV)	VIRGINIA SWEETSPICE	CONT.	3 GAL.	AS SHOWN
SUPPLEMENTAL PLANTINGS					
90	AMMOPHILA BREVILIGULATA	AMERICAN BEACHGRASS	PLUG	-	18" O.C.
90	PANICUM AMARUM	COASTAL PANIC GRASS	PLUG	-	18" O.C.
90	PANICUM VIRGATUM	SWITCHGRASS	PLUG	-	18" O.C.
90	SOLIDAGO SEMPERVIRENS	SEASIDE GOLDENROD	PLUG	-	18" O.C.
PERMANENT SEED MIX					

BERM PLANTING (2,388 SF or 0.05 AC)	
Seed Mix (30 LB / Ac.)	
50% Creeping Red Fescue (Festuca rubra 'Dawson')	
30% Switchgrass (Panicum virgatum)	
20% Partridge Pea (Chamaecrista fasciculata)	

NOTES:
 1. SEED MIX DERIVED FROM PERMANENT SEED MIX 1 OF THE MARYLAND STATE STORMWATER MANUAL.
 2. SUPPLEMENTAL PLUG PLANTINGS ARE TO BE USED IN THE VOID SPACES BETWEEN THE EXISTING WALL AND EXISTING / PROPOSED PLANTINGS.

REVISIONS		
NO.	BY	DATE

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PLANTING PLAN
HILLSMERE SHORES COASTAL RESILIENCY PROJECT
 MAP 0057, GRID 0013, PARCEL 0159, SUBDIVISION 412

2ND ELECTION DISTRICT, ANNE ARUNDEL COUNTY, MD

SCALE: 1"=30'

DATE: FEBRUARY, 2024
 ESA PROJECT NAME: 22587
 HILLSMERE MARINA LIVING SHORELINE
 SHEET: 7 of 8

GENERAL PLANTING NOTES

1. THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE RESTORATION SPECIALIST OF THE SCHEDULED DATE FOR COMMENCEMENT OF PLANTING SO THAT ALL MATERIALS AND PLANTING METHODS MAY BE INSPECTED AND APPROVED BY THE RESTORATION SPECIALIST. NO PLANTS SHALL BE INSTALLED WITHOUT THE RESTORATION SPECIALIST ON SITE.
2. ALL PLANTS SHALL BE PLACED WITHIN THE LIMITS OF DISTURBANCE.
3. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND FOR UNDERSTANDING AND HONORING PROPERTY BOUNDARIES. ANY UTILITIES OR OTHER PROPERTY DAMAGED DURING PLANTING SHALL BE CORRECTED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
4. GIVEN THE LARGE QUANTITY OF PLUGS, CONTACT THE NURSERY WELL IN ADVANCE OF PLANTING TO ENSURE AVAILABILITY.

STANDARDS

1. ALL PLANT MATERIAL SHALL CONFORM TO THE CURRENT ISSUE OF THE AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN AND AS SPECIFIED BELOW.
2. ALL CONTAINER STOCK SHALL BE NURSERY-GROWN WITHIN A 200-MILE RADIUS OF THE SITE. PLANT MATERIALS, WITH THE EXCEPTION OF LIVE STAKES, THAT ARE COLLECTED FROM THE WILD WILL BE REJECTED.
3. PLANT MATERIAL SHALL BE OBTAINED FROM NURSERIES THAT HAVE BEEN INSPECTED AND CERTIFIED BY STATE PLANT INSPECTORS.
4. THE ROOT SYSTEM OF CONTAINER GROWN PLANTS SHALL BE WHITE, WELL DEVELOPED, AND WELL-DISTRIBUTED THROUGHOUT THE CONTAINER WITH THE ROOTS VISIBLY EXTENDING TO THE INSIDE FACE OF THE GROWING CONTAINER.
5. IF IN LEAF, THE PLANTS SHALL APPEAR HEALTHY WITH NO LEAF SPOTS, LEAF DAMAGE, LEAF DISCOLORATION, LEAF WILTING OR EVIDENCE OF INSECTS ON THE PLANT.
6. THERE SHALL BE NO CHANGE IN THE QUANTITY, SIZE OR SPECIES OF SCHEDULED PLANT MATERIAL WITHOUT THE PRIOR APPROVAL OF THE RESTORATION SPECIALIST.

STORAGE AND DELIVERY

1. SEED SHALL BE DELIVERED IN CONTAINERS (BOTTLES, JARS, PAPER/CLOTH BAGS/SACKS) HAVING LABELS THAT REPORT THE ORIGIN OF THE SEED, THE PURITY OF THE SEED AND THE GERMINATION PERCENTAGE, AND DATE OF GERMINATION TESTING OF THE SEED.
2. AFTER BEING DELIVERED TO THE JOB SITE, PLANTS SHALL BE STORED IN A COOL, SHADY LOCATION. PLANT ROOT MASSES SHALL BE KEPT MOIST WITH PERIODIC WATERING UNTIL THE TIME OF PLANTING.
3. SOIL ROOT MASSES SHALL BE THOROUGHLY MOIST UPON DELIVERY TO THE SITE. DRY OR LIGHT WEIGHT PLANTS SHALL BE REJECTED. IF THE SOIL/ROOT MASSES ARE SUBSTANTIALLY SMALLER THAN THE SPECIFIED CONTAINER SIZE AND LOOSE SOIL EXISTS ON THE BOTTOM OF THE CONTAINERS, THE PLANTS SHALL BE REJECTED.
4. ALL REJECTED MATERIAL SHALL BE IMMEDIATELY REMOVED FROM THE SITE.

MAINTENANCE AND GUARANTEE

1. PLANT MATERIAL SHALL BE MAINTAINED BY THE LANDSCAPE CONTRACTOR FOR ONE YEAR FROM THE DATE OF INITIAL INSPECTION AND ACCEPTANCE OF THE PLANTING BY THE RESTORATION SPECIALIST. MAINTENANCE SHALL INCLUDE ALL WATERING, FERTILIZATION AND ANIMAL REPELLENTS NECESSARY TO ENSURE THE SURVIVAL AND GROWTH OF THE PLANTS.
2. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE THAT 85% OF THE PLANTED SHRUBS, 75% OF THE HERBACEOUS STOCK SHALL BE ALIVE AND HEALTHY ONE YEAR AFTER THE INITIAL INSPECTION AND ACCEPTANCE BY THE RESTORATION SPECIALIST. AT THE END OF THIS PERIOD, THE RESTORATION SPECIALIST SHALL CONDUCT A FINAL INSPECTION WITH THE LANDSCAPE CONTRACTOR. ALL PLANT MATERIAL EXCEEDING THOSE THRESHOLDS SHALL BE REPLACED BY THE LANDSCAPE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. THIS GUARANTEE SHALL COVER ALL DAMAGES EXCEPT VANDALISM, FIRE, AND FLOOD, AND ANIMAL PREDATION.
3. PLANT MATERIAL WHICH IS 25% DEAD OR MORE SHALL BE CONSIDERED DEAD.
4. PLANT MATERIAL REPLACEMENTS SHALL BE OF THE SAME SIZE, TYPE AND VARIETY AS THE PLANTS SPECIFIED IN THE PLANTING SCHEDULE OR AS THE APPROVED SUBSTITUTES FOR THE ORIGINAL PLANTING.
5. PLANTS SHALL BE FURNISHED AND PLANTED AS SPECIFIED IN THESE PLANS.

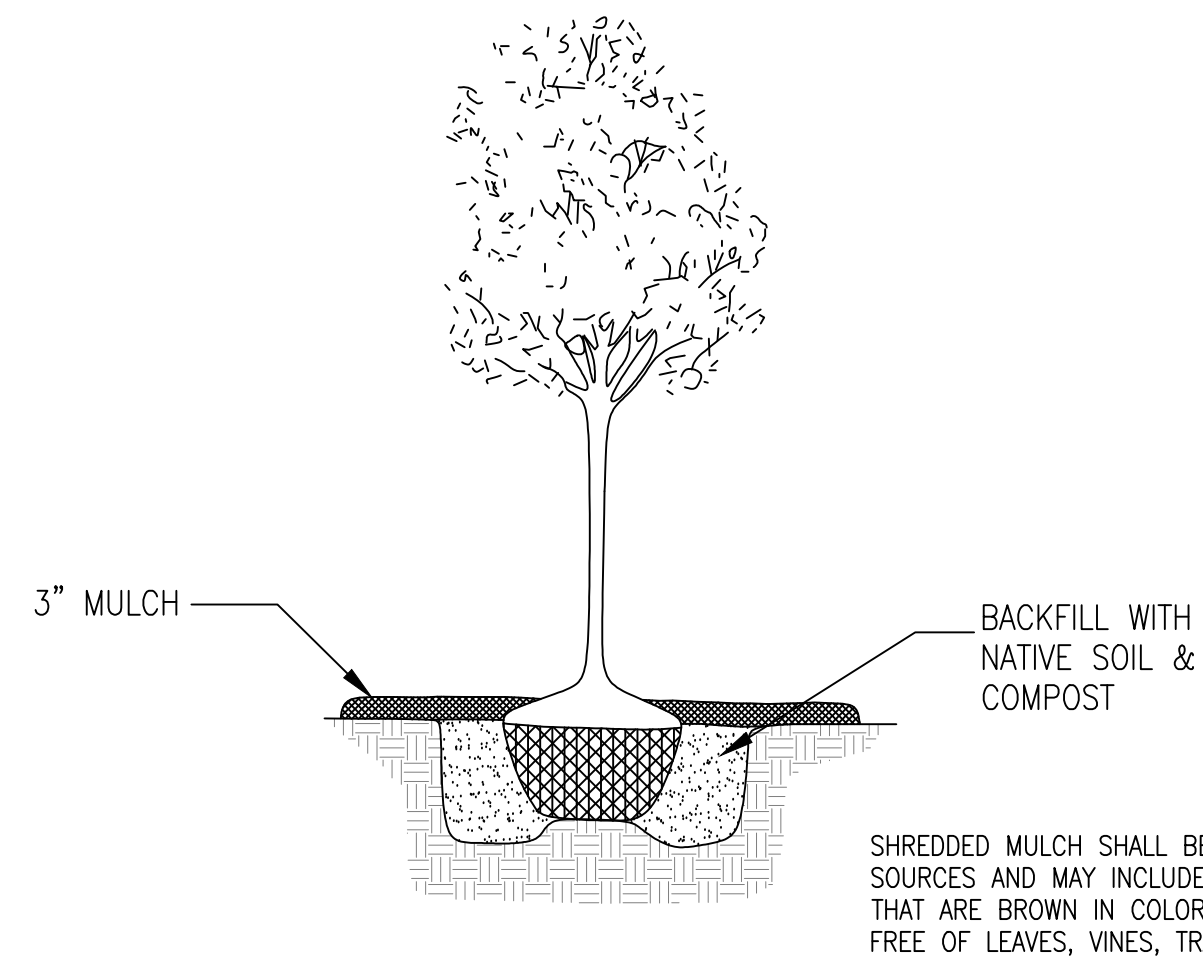
GENERAL PLANTING PROCEDURES

1. PLANTING SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF "THE LANDSCAPE CONTRACTORS ASSOCIATION'S LANDSCAPE SPECIFICATION GUIDELINES" AND AS SPECIFIED BELOW.
2. CONTAINER STOCK MAY BE INSTALLED FROM SEPTEMBER 1 TO DECEMBER 1 AND FROM MARCH 15 TO JUNE 15. PLANTING SHALL NOT BE PERFORMED OUTSIDE OF THESE DATES WITHOUT THE EXPRESSED PERMISSION OF THE RESTORATION SPECIALIST. IN ADDITION, PLANTING SHALL NOT OCCUR IN SUB-FREEZING TEMPERATURES, WHEN THE GROUND IS FROZEN, OR WHEN THE SOIL IS TOO DRY OR WET, OR OTHERWISE IN A CONDITION NOT GENERALLY ACCEPTED AS SATISFACTORY FOR PLANTING.
3. HERBACEOUS PLUGS SHALL BE PLANTED AT LEAST TWO WEEKS AFTER GRADING AND BETWEEN MAY 1 TO SEPTEMBER 30.

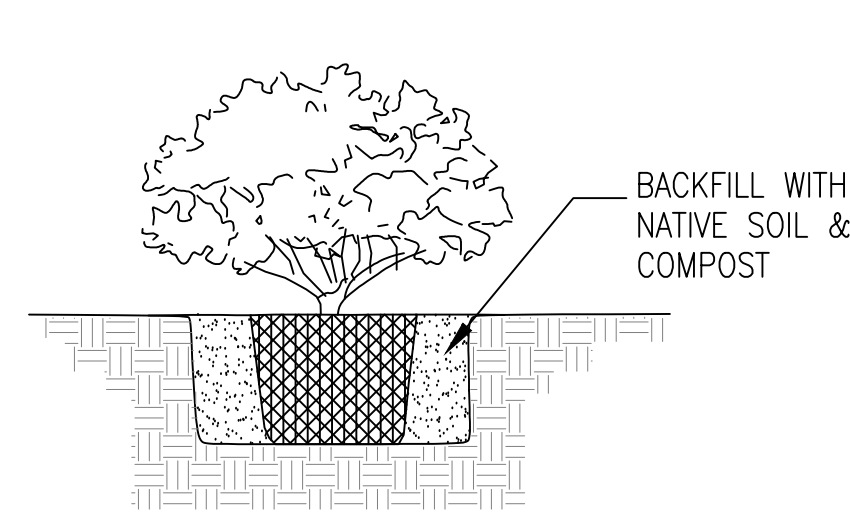
CONTAINER STOCK

1. FOR TREES AND SHRUBS, EXCAVATE A HOLE AT LEAST 12" WIDER THAN THE WIDTH OF THE ROOTBALL AND TO A DEPTH WHICH LEAVES APPROXIMATELY 1/4 OF THE ROOTBALL ABOVE THE EXISTING GRADE. FOR HERBACEOUS STOCK, EXCAVATE THE HOLE AT LEAST 1" WIDER THAN THE WIDTH OF THE ROOT MASS.
2. REMOVE THE PLANT EITHER BY CUTTING OR INVERTING THE CONTAINER.
3. TO ENCOURAGE THE OUTWARD GROWTH OF THE ROOTS FOR TREES AND SHRUBS, MAKE 4 TO 5, 1" DEEP CUTS THE LENGTH OF THE ROOT BALL WITH A SHARP KNIFE OR BLADE.
4. INSTALL PLANT IN THE CENTER OF THE HOLE AT FINISHED LANDSCAPE GRADE. ADD OSMOCOTE 18-6-12 SLOW RELEASE FERTILIZER TO THE HOLE PER PRODUCT SPECIFICATIONS AND INSTALL PLANT IN CENTER OF THE HOLE AT FINISHED LANDSCAPE GRADE.
5. BACKFILL PLANTING HOLE WITH TWO THIRDS EXISTING SOIL AND ONE THIRD COMPOST AND HYDROPHILIC GEL PER PRODUCT SPECIFICATIONS.
6. ANY SURPLUS SOIL WHICH REMAINS AFTER PLANTING SHALL BE USED TO CREATE A SMALL MOUND AROUND THE EDGE OF THE PLANTING HOLE TO HOLD WATER DURING WATERING OPERATIONS.
7. THOROUGHLY WATER EACH PLANT AFTER INSTALLATION. WATERING SHALL BE PERFORMED EVEN IF IT IS RAINING. A SECOND WATERING MAY BE NECESSARY TO INSURE SATURATION OF THE ROOTBALL AND ELIMINATION OF THE AIR POCKETS.
8. PRUNE ANY AND ALL TREE BRANCHES THAT ARE DEAD, DISEASED, DAMAGED, OR CONFLICTING.
9. REMOVE ALL TAGS, LABELS, STRINGS AND WIRE.

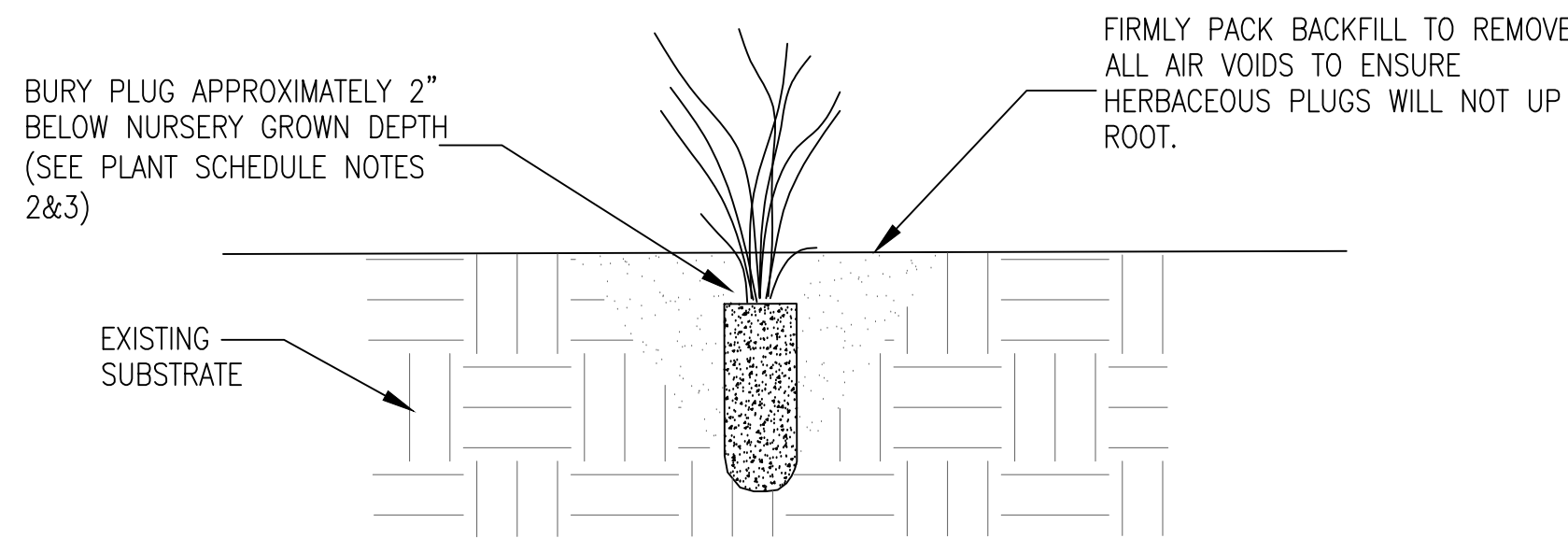
**TYPICAL DECIDUOUS PLANTING DETAIL
CONTAINER / B&B**



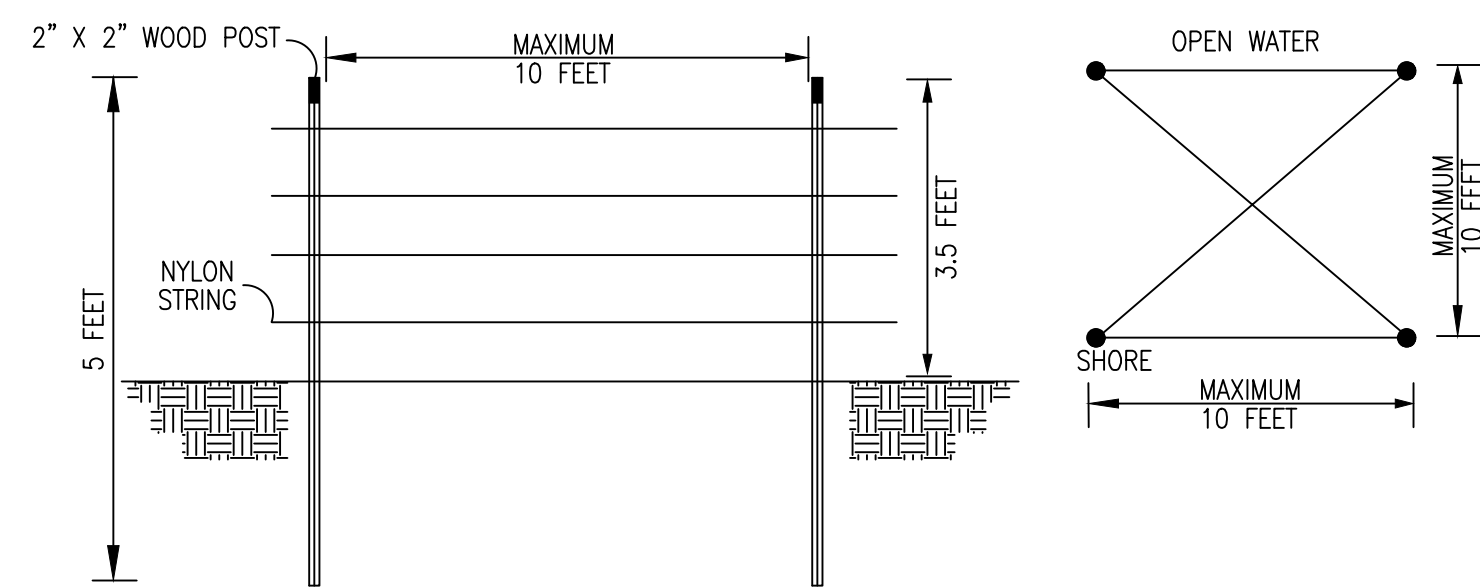
**TYPICAL SHRUB / HERBACEOUS PLANTING DETAIL
CONTAINER / B&B**



TYPICAL HERBACEOUS PLUG PLANTING DETAIL




**GOOSE EXCLUSIONARY FENCING
NOT TO SCALE**



1. INSTALL 5' WOOD POSTS 1.5- FEET IN EXISTING SOIL ON A 10' GRID.
2. NYLON STRING SHALL BE INSTALLED TAUT AND WRAPPED ONCE AROUND EACH POST.
3. ROPE SHALL BE INSTALLED A MAXIMUM OF 6 INCHES OFF THE GROUND.
4. ROPE SHALL BE EVENLY SPACED OVER THE 4 STRANDS.
5. THE TOP STRAND SHALL BE CROSSED OVER THE GRID AS SHOWN IN THE PLAN VIEW.

February 2024 FILE: T:\NEWPROJ\2022\22587 Hillsmere Marina Shoreline\CAD\Plans\Grading Permit\Plans\Sheet 7 - Planting Plan.dwg

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2ND ELECTION DISTRICT, ANNE ARUNDEL COUNTY, MD	
SCALE:	DATE: FEBRUARY, 2024
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	SHEET: 8 of 8