



# Maryland

## Department of the Environment

**Wes Moore**, Governor  
**Aruna Miller**, Lt. Governor

**Serena McIlwain**, Secretary  
**Suzanne E. Dorsey**, Deputy Secretary  
**Adam Ortiz**, Deputy Secretary

January 7, 2026

Grace Creek Farm LLC and Rhone & Lisa Resch  
c/o Karley Routh  
Ecotone Inc.  
129 Industry Ln  
Forest Hill, MD 21050

Via email: [krouth@ecotoneinc.com](mailto:krouth@ecotoneinc.com)

Re: Agency Interest Number: 180119  
Tracking Number: 202361731  
Tidal Authorization Number: 25-WQC-0012

Dear Grace Creek Farm LLC and Rhone & Lisa Resch,

Your project did not qualify for approval under the Maryland State Programmatic General Permit (MDSPGP); therefore a separate review and issuance of the federal permit will be required by the U.S. Army Corps of Engineers. The federal permit is not attached.

Additionally, your project required a Wetlands License to be approved and issued by the Maryland Board of Public Works (BPW). The Wetlands License will be sent to you by BPW's Wetlands Administrator.

A project that does not qualify for approval under the MDSPGP requires an individual Water Quality Certification (WQC) to be issued by the Maryland Department of the Environment, which is attached. Please take a moment to read and review your WQC to ensure that you understand the limits of the authorized work and all of the general and special conditions.

You should not begin any work until you have obtained all necessary State, local, and federal authorizations. Please contact Michaela Harrington at [michaela.harrington@maryland.gov](mailto:michaela.harrington@maryland.gov) or 410-537-4182 with any questions.

Sincerely,

Jonathan Stewart, Chief  
Tidal Wetlands Division



STATE OF MARYLAND  
DEPARTMENT OF THE ENVIRONMENT  
WATER AND SCIENCE ADMINISTRATION  
WATER QUALITY CERTIFICATION



25-WQC-0012

EFFECTIVE DATE: **January 7, 2026**  
CERTIFICATION HOLDER: **Grace Creek Farm LLC & Rhone & Lisa Resch**  
ADDRESS: **415 Prince St, Alexandria, VA 22314**  
**23432 Berry Rd, Bozman, MD 21612**  
PROJECT LOCATION: **23472 & 23432 Berry Road**  
**Bozman, MD 22314**

**UNDER AUTHORITY OF SECTION 401 OF THE FEDERAL WATER POLLUTION CONTROL ACT AND ITS AMENDMENTS AND IN ACCORDANCE WITH § 9-313 THROUGH § 9-323, INCLUSIVE, OF THE ENVIRONMENT ARTICLE, ANNOTATED CODE OF MARYLAND, THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, WATER AND SCIENCE ADMINISTRATION HAS DETERMINED THAT THE REGULATED ACTIVITIES DESCRIBED IN THE REQUEST FOR CERTIFICATION FOR THE PROPOSED Grace Creek Phase I AND AS DESCRIBED IN THE ATTACHED PLAN SHEETS DATED November 26, 2024 AND ANY SUBSEQUENT MODIFICATIONS APPROVED BY THE DEPARTMENT WILL NOT VIOLATE MARYLAND'S WATER QUALITY STANDARDS, IF CONDUCTED IN ACCORDANCE WITH THE CONDITIONS OF THIS CERTIFICATION.**

THIS CERTIFICATION DOES NOT RELIEVE THE APPLICANT OF RESPONSIBILITY FOR OBTAINING ANY OTHER APPROVALS, LICENSES, OR PERMITS IN ACCORDANCE WITH FEDERAL, STATE, OR LOCAL REQUIREMENTS AND DOES NOT AUTHORIZE COMMENCEMENT OF THE PROPOSED PROJECT. A COPY OF THIS REQUIRED CERTIFICATION HAS BEEN SENT TO THE CORPS OF ENGINEERS. THE CERTIFICATION HOLDER SHALL COMPLY WITH THE CONDITIONS LISTED BELOW.

*The Maryland Department of the Environment satisfied the statutory and regulatory public notice requirements by placing the WQC on Public Notice from May 15, 2025 to June 15, 2025 on Maryland Department of the Environment's Public Notice webpage and advertising in the Star Democrat on May 21, 2025.*

## **PROJECT DESCRIPTION**

Construct a 269-linear foot low profile stone, sand containment sill; and fill and grade with 1,270 cubic yards of sand along 1,191 feet of eroding shoreline and plant with marsh vegetation extending a maximum of 31 feet channelward of mean high water line. Additionally, the applicant has applied to install 245 reef balls along 735 feet of eroding shoreline a maximum of 35 feet channelward of the mean high water line, shown on pages 11-13 on the proposed plan sheets.

## **GENERAL CONDITIONS**

1. All water quality-related performance standards and conditions required by the Department in any state issued authorization for activities in tidal wetlands, nontidal wetlands, their 100-year floodplains, nontidal wetlands buffers, or nontidal wetland expanded buffers to ensure that any discharges will not result in a failure to comply with water quality standards in COMAR 26.08.02 or any other water quality requirements of state law or regulation shall be met.
2. This Certification does not obviate the need to obtain required authorizations or approvals from other State, federal or local agencies as required by law.
3. All additional authorizations or approvals, including self-certifying General Permits issued by the Department, shall be obtained and all conditions shall be completed in compliance with such authorizations.
4. The proposed project shall be constructed in accordance with the approved final plan by the Department, or, if Department approval is not required, the plan approved by the U.S. Army Corps of Engineers, and its approved revisions.
5. All fill and construction materials not used in the project shall be removed and disposed of in a manner which will prevent their entry into waters of this State.
6. This Certification does not authorize any injury to private property, any invasion of rights, or any infringement of federal, state, or local laws or regulations.
7. The Certification Holder shall allow authorized representatives of the Department access to the site of authorized activities during normal business hours to conduct inspections and evaluations of the operations and records necessary to assure compliance with this Certification.
8. No stockpiles of any material shall be placed in Waters of the U.S. or state or private tidal wetlands.
9. Temporary construction trailers or structures, staging areas and stockpiles shall not be located within tidal wetlands, nontidal wetlands, nontidal wetlands buffers, or the 100-year floodplain unless specifically included on the Approved Plan.
10. This Certification is valid for the project identified herein and the associated U.S. Army Corps of Engineers authorization **NAB-2025-60607** (Grace Creek Farm Phase 1), until such time that it expires or is not administratively extended.

## **SPECIAL CONDITIONS**

1. The Certificate Holder shall comply with all Critical Area requirements and obtain all necessary authorizations from local jurisdiction. This Certificate does not constitute authorization for disturbance in the 100-foot Critical Area Buffer. "Disturbance" in the Buffer means clearing, grading, construction activities, or removal of any size of tree or vegetation. Any anticipated Buffer disturbance requires prior written approval, before commencement of land disturbing activity, from local jurisdiction in the form of a Buffer Management Plan.

2. If the authorized work is not performed by the property owner or is not otherwise exempt from the licensing requirement, all work performed under this Tidal Wetlands Permit shall be conducted by a marine contractor licensed by the Marine Contractors Licensing Board (MCLB) in accordance with Title 17 of the Environment Article of Annotated Code of Maryland and COMAR 26.30. The licensed marine contractor shall be authorized for the appropriate license category to perform or solicit to perform the activities within this authorization, if applicable. A list of licensed marine contractors and their license category may be obtained by contacting the MCLB at 410-537- 3249, by e-mail at [MDE.MCLB@maryland.gov](mailto:MDE.MCLB@maryland.gov), or by accessing the Maryland Department of the Environment, Environmental Boards webpage at <https://mde.maryland.gov/programs/water/WetlandsandWaterways/Pages/LicensedMarineContractors.aspx>.
3. The issuance of this Certificate is not a validation or authorization by the Department for any of the existing structures depicted on the plan sheets on the subject property that is not part of the authorized work description, nor does it relieve the Certificate Holder of the obligation to resolve any existing noncompliant structures and activities within tidal wetlands.
4. The Certificate Holder shall construct the marsh establishment area in accordance with the following conditions:
  - a. The Certificate Holder shall use clean substrate fill material, no more than 10% of which shall pass through a standard number 100 sieve.
  - b. The marsh establishment area shall be planted within one year following completion of the filling operation.
  - c. The marsh establishment project shall be maintained as a wetland, with non-nuisance species' aerial coverage of at least 85% for three consecutive years. If 85% coverage is not attained, the reasons for failure shall be determined, corrective measures shall be taken, and the area shall be replanted.
  - d. If the fill is graded hydraulically, the licensee shall use a turbidity curtain around the perimeter of the instream work.
  - e. If the existing bank is to be cleared or graded:
    - i) The Certificate Holder shall perform all work under and in accordance with an approved Soil Erosion and Sediment Control Plan from the applicable sediment and erosion control agency; and
    - ii) The Certificate Holder shall perform all work under and in accordance with the Critical Area requirements of the local jurisdiction in the form of an approved Buffer Management Plan.
5. The Certificate Holder shall accept the terms of the attached marsh maintenance plan by signing and returning the standard plan to the Water and Science Administration, Tidal Wetlands Division prior to commencement of any work authorized under this Certificate. If the Certificate Holder wishes to propose an alternative marsh maintenance plan, the alternative plan must be submitted to and approved by the Tidal Wetlands Division, Water and Science Administration, prior to commencement of any work authorized under this Certificate. Any alternative plan must provide assurances of success that are at least equivalent to those of the standard plan, in terms of the extent of native marsh plant coverage, elimination of invasive species and timeframe for plant establishment.



6. The Certificate Holder shall submit photographs on an annual basis for the first five growing seasons to the Tidal Wetlands Division, Water and Science Administration in order to document the success of the project in terms of the extent of native marsh plant coverage. Photographs shall be taken from at least two directions, as necessary to fully depict the living shoreline.
7. The Certificate Holder shall not perform any in water work from April 15th through October 15th of any year due to submerged aquatic vegetation restrictions.
8. The Certificate Holder shall not perform bank grading between December 16th through March 1st and June 1st through September 30th of any year due to the presence of oysters.

## **CITATIONS AND STATEMENTS OF NECESSITY**

1. Statement of Necessity for General Conditions 1, 2, 3, & 4, and Special Conditions 1, & 3: These conditions are necessary to ensure that water quality standards are met, and designated uses are maintained.

Citations: Federal and state laws which authorize this condition include but are not limited to: 33 U.S.C. § 1341(a), (b), & (d); 33 U.S.C. § 1251(b); 33 U.S.C. § 1370; Md. Ann. Code, Env. Article, Title 1, Subtitles 3 and 4; Md. Ann. Code, Env. Article, Title 5, Subtitles 5 and 9; Md. Ann. Code, Env. Article, Title 9, Subtitle 3; Md. Ann. Code, Env. Article, Title 16; COMAR 26.08; COMAR 26.08.02.10G(3); COMAR 26.23.02.06; COMAR 26.17.01; COMAR 26.23; COMAR 26.24

2. Statement of Necessity for General Conditions 5, 8, & 9 and Special Conditions 4, 5, & 6: Fill or construction material within or adjacent to regulated resources may cause discharges resulting in turbidity in excess of water quality standards and interfere with designated uses of growth and propagation of fish, other aquatic life, wildlife; and other designated uses; and fail to meet general water quality criteria that waters not be polluted by substances in amounts sufficient to be unsightly or create a nuisance.

Citation: 26.08.02.03B(1)-B(2); COMAR 26.23; COMAR 26.24; COMAR 26.17.04

3. Statement of Necessity for General Condition 6: This condition is necessary to clarify the scope of this certification to ensure compliance with water quality regulations, without limiting restrictions through other requirements.

Citation: Federal and state laws which authorize this condition include but are not limited to: 33 U.S.C. § 1341(a), (b), & (d); 33 U.S.C. § 1251(b); 33 U.S.C. § 1370; Md. Ann. Code, Env. Article, Title 1, Subtitles 3 and 4; Md. Ann. Code, Env. Article, Title 5, Subtitles 5 and 9; Md. Ann. Code, Env. Article, Title 9, Subtitle 3; Md. Ann. Code, Env. Article, Title 16; COMAR 26.08, COMAR 26.08.02.10E; COMAR 26.23.02.06; COMAR 26.17.04; COMAR 26.23; COMAR 26.24

4. Statement of Necessity for General Condition 7: Conditions of certification involve precise actions to comply with water quality standards. Site inspection may be necessary to ensure that limits, methods, and other requirements are met to ensure that water quality standards are met and designated uses are maintained. These conditions are necessary to ensure that the activity was conducted, and project completed according to terms of the authorization/certification, while allowing for review of in-field modifications which may have resulted in discharges to ensure that water quality standards were met. Designated uses include support of estuarine and marine aquatic life and shellfish harvesting and for growth and propagation of fish, other aquatic life, and wildlife.

Citation: Federal and state laws that authorize this condition include but are not limited to: 33 U.S.C. § 1341(a), (b), & (d); 33 U.S.C. § 1251(b); 33 U.S.C. § 1370; Md. Ann. Code, Env. Article, Title 1, Subtitles 3 and 4; Md. Ann. Code, Env. Article, Title 5, Subtitles 5 and 9; Md. Ann. Code, Env. Article, Title 9, Subtitle 3; Md. Ann. Code, Env. Article, Title 16; COMAR 26.08; COMAR 26.08.02.03B(1)(b); COMAR 26.08.02.03B(2); COMAR 26.23.02.06; COMAR 26.23; COMAR 26.24; COMAR 26.17.04

5. Statement of Necessity for General Condition 10: This condition is necessary to qualify the period of applicability of the terms and conditions of this Certification to be protective of Maryland water quality standards.

Citations: Federal and state laws which authorize this condition include but are not limited to: 33 U.S.C. § 1341(a), (b), & (d); 33 U.S.C. § 1251(b); 33 U.S.C. § 1370; 40 C.F.R. 121, 15 C.F.R. 930, Md. Ann. Code, Env. Article, Title 1, Subtitles 3 and 4; Md. Ann. Code, Env. Article, Title 5, Subtitles 5 and 9; Md. Ann. Code, Env. Article, Title 9, Subtitle 3; Md. Ann. Code, Env. Article, Title 16; COMAR 26.08; COMAR 26.17.04; COMAR 26.23; COMAR 26.24

6. Statement of Necessity for Special Condition 2: Expertise for conducting certain activities is required to ensure that there is no violation of water quality standards nor interference with designated uses. This condition is necessary to ensure that discharges will be conducted in a manner which does not violate water quality criteria nor interfere with designated uses.

Citation: COMAR 26.08.02.02B(2)- B(4); COMAR 26.08 02.03B(2)(d) – (e ); COMAR 26.08.02.03B(1)(b); 26.08.02.03B(2); COMAR 23.02.04.04

7. Statement of Necessity for Special Conditions 4, 5, & 6: Tidal wetlands provide essential habitat, water quality, food, and movement corridors for wildlife, and support of estuarine and marine aquatic life and shellfish harvesting. Successful establishment is necessary to prevent discharges which interfere with designated uses, including growth and propagation of fish, other aquatic life, and wildlife through loss of stream channel habitat and wetlands. Required establishment, re-establishment, or enhancement and loss limits will maintain the designated use.

Citations: COMAR 26.08.02.02B(3); COMAR 26.08.02.03B(3) and B(4); COMAR 26.24.

8. Statement of Necessity for Special Condition 7 & 8: A time of year restriction is necessary to maintain the designated use for support of estuarine and marine aquatic life and shellfish harvesting.

Citation: Federal and state laws which authorize this condition include but are not limited to:  
COMAR: 26.08.02.02B(1)(d); 26.08.02.02B(3); COMAR 26.08.02.02-16.

**CERTIFICATION APPROVED**

*Tammy K. Roberson for*

Tammy K. Roberson for (Jan 12, 2026 10:34:42 EST)

Heather L. Nelson, Program Manager  
Wetlands and Waterways Protection Program

Tracking Number: 202361731  
Agency Interest Number: 180119

Effective Date: January 7, 2026

Enclosure: Plan Sheets dated November 26, 2024

cc: WSA Inspection & Compliance Program  
Army Corps of Engineers



INDEX OF SHEETS

NO.	SHEET NAME	DESCRIPTION
1	TITLE SHEET	TI-01
2	SHEET INDEX	IN-01
3-9	EXISTING CONDITIONS PLANS	EX-01 TO EX-07
10-13	STABILIZATION PLANS	S-01 TO S-04
14-16	DETAILS	DE-01 TO DE-03
17-19	CROSS SECTIONS	XS-01 TO XS-03
20	EROSION AND SEDIMENT CONTROL GENERAL NOTES / SOC	EN-01
21-27	EROSION AND SEDIMENT CONTROL PLAN	ES-01 TO ES-07
28	EROSION AND SEDIMENT CONTROL DETAILS	ED-01
29-35	BUFFER MANAGEMENT / LANDSCAPE PLAN	LS-01 TO LS-07
36	BUFFER MANAGEMENT / LANDSCAPE NOTES	LN-01
37	BUFFER MANAGEMENT / LANDSCAPE TABLES / DETAILS	LT-01

REVIEWED FOR THE TALBOT SOIL CONSERVATION AND MEETS TECHNICAL REQUIREMENTS

APPROVED:

TALBOT SOIL CONSERVATION DISTRICT  
DATE

NOTE: THE TALBOT SOIL CONSERVATION DISTRICT RESERVES THE RIGHT TO ADD, DELETE, MODIFY, OR OTHERWISE ALTER THE EROSION CONTROL PROVISIONS OF THIS PLAN IN THE EVENT ADDITIONAL PROTECTION BECOMES NECESSARY.

DEVELOPERS CERTIFICATION

I, HEREBY CERTIFY THAT ALL THE DEVELOPMENT AND/OR CONSTRUCTION SHALL BE DONE ACCORDING TO THIS PLAN OF EROSION AND SEDIMENT CONTROL.

SIGNATURE  
DATE

- IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR OR SUBCONTRACTOR TO NOTIFY THE ENGINEER OF ANY DEVIATION FROM THIS PLAN. ANY CHANGE MADE IN THIS PLAN WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER WILL PLACE RESPONSIBILITY FOR SAID CHANGE ON THE CONTRACTOR OR SUBCONTRACTOR.
- ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT THE DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT BEFORE BEGINNING THE PROJECT.

ENGINEER'S CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED BY ME, OR UNDER MY SUPERVISION, AND MEETS THE MINIMUM STANDARDS OF THE HANFORD COUNTY DEPARTMENT OF PUBLIC WORKS AND/OR UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, AND/OR THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, WATER MANAGEMENT ADMINISTRATION.

ENGINEER'S SIGNATURE  
DATE

PRINTED NAME  
MD PE REGISTRATION NO.

FIELD VERIFICATION

I HEREBY CERTIFY THAT I COMPLETED A FIELD VERIFICATION TO THE INFORMATION SHOWN ON THE PLANS [DATE] AND THAT THE INFORMATION SHOWN ON THE PLANS IS IN AGREEMENT WITH THE ACTUAL FIELD CONDITIONS.

ENGINEER'S SIGNATURE

PRINTED NAME  
MD PE REGISTRATION NO.  
DATE

PROPERTY OWNER INFORMATION

GRACE CREEK FARM LLC  
23472 BERRY RD  
BOZMAN MD 21612-0000  
DEED BOOK: 02807 PAGE: 00227  
MAP: 39 GRID: 0004 PARCEL: 0050

SITE DATA

DEED BOOK: 02807 PAGE: 00227  
MAP: 39 GRID: 0004 PARCEL: 0050  
ELECTION DISTRICT: 2  
ACCOUNT #: 0084759  
EXISTING LANDUSE: AGRICULTURAL  
SITE ACREAGE: ±167.47 AC.  
8 DIGIT HUC: 02060005  
MD 8 DIGIT BASIN: 02130403  
(LOWER CHOPTANK WATERSHED)

SITE ANALYSIS

LIMIT OF DISTURBANCE: 25513 SY /5.3 AC  
NEW IMPERVIOUS AREA: NONE  
TOTAL AREA TO BE STABILIZED: 5.3 AC  
APPROXIMATE CUT: 212 CY  
APPROXIMATE FILL: 1,517 CY  
APPROXIMATE NET: 1,305 CY(FILL)

DESIGN PROFESSIONAL

ECOTONE, LLC  
4 North Park Dr., Ste 210  
Cockeysville, MD 21030  
410-420-2600  
Engineering@ecotoneinc.com



PROJECT SUMMARY

TOTAL LENGTH OF SHORELINE RESTORED: 2,700 LF

FACILITY	TSS REDUCTION	TN REDUCTION	TP REDUCTION
GRACE CREEK SHORELINE	380 TONS/YR	490 LBS/YR	286 LBS/YR

\*NUTRIENT REDUCTIONS CALCULATED USING FIELDSOCS BASED ON THE DEFAULT RATES FOR LINEAR FOOTAGE OF SHORELINE RESTORED

AS-BUILT CERTIFICATION

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

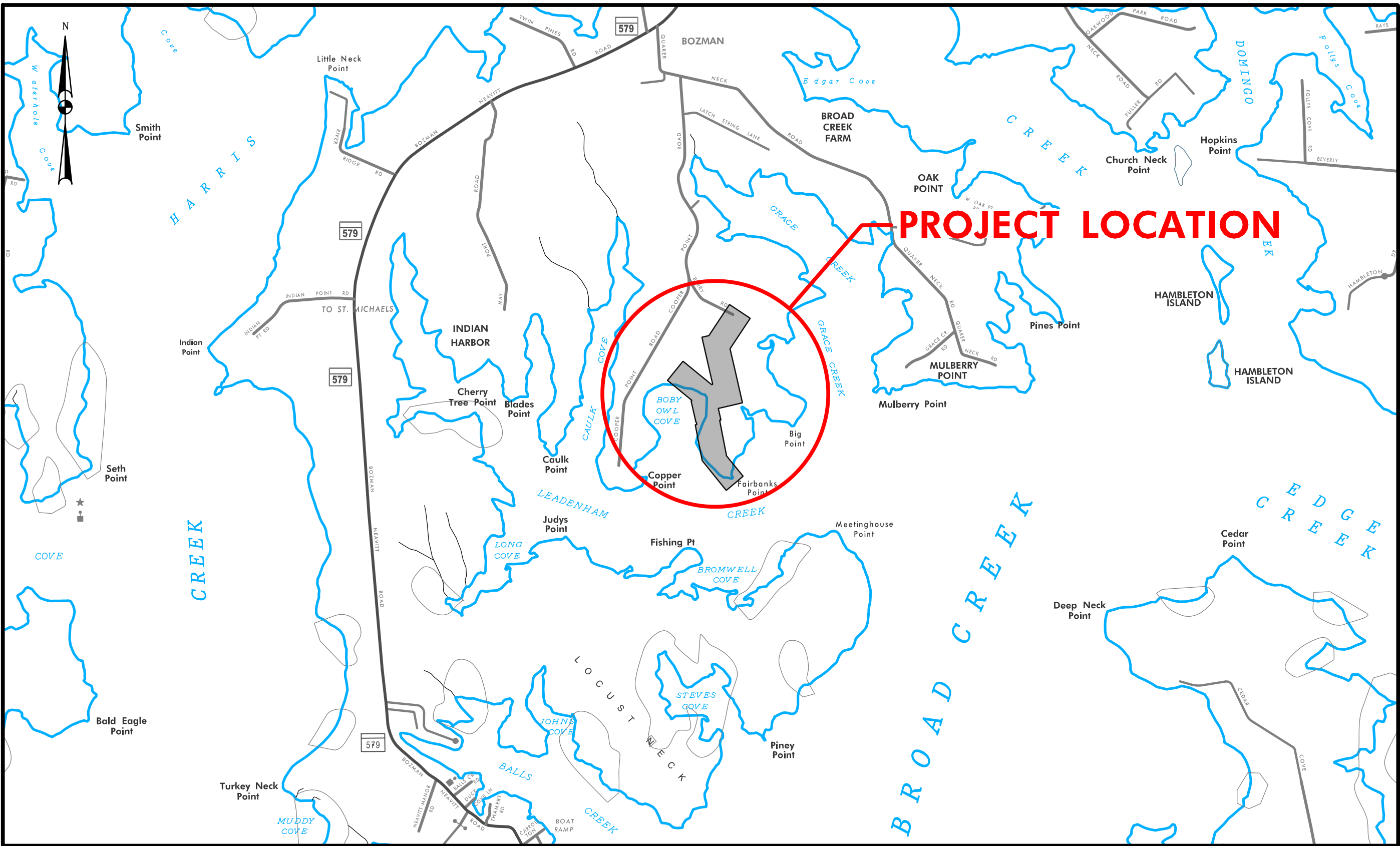
ENGINEER'S SIGNATURE  
DATE

PRINTED NAME  
MD PE REGISTRATION NO.

PROJECT LOCATION

LOCATION MAP

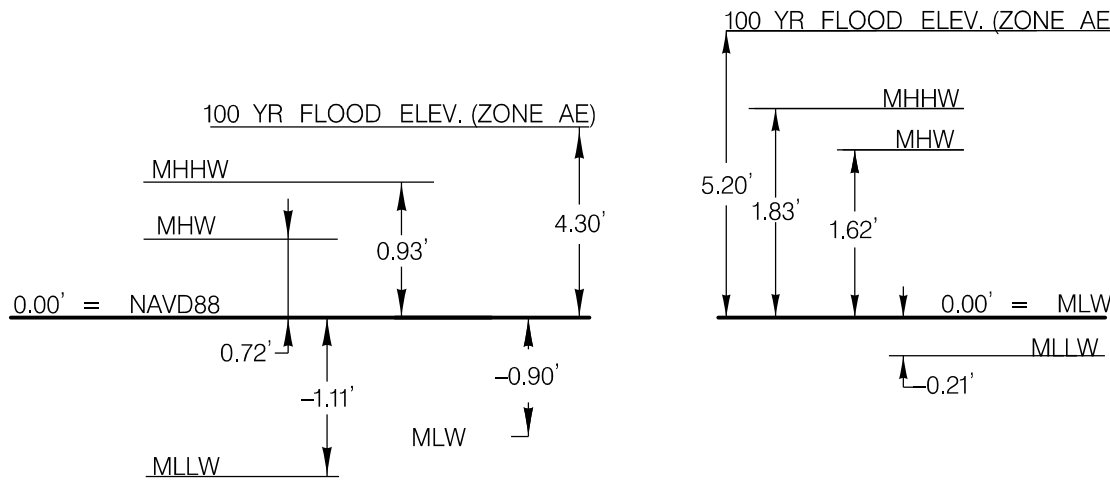
SCALE: 1" = 2000'



GENERAL NOTES

- THIS PLAN HAS BEEN PREPARED TO PROVIDE APPROXIMATELY 2,700 LF OF TIDAL SHORELINE RESTORATION ON TWO PROPERTIES AS SHOWN ON THE INDEX SHEET OF THIS SET. THE PROPERTIES ARE LOCATED ON 23432 BERRY ROAD AND THE GRACE CREEK FARM PROPERTY IN TALBOT COUNTY, MARYLAND.
- UTILITIES: UTILITY LOCATIONS SHOWN ON THE PLANS ARE BASED ON LIMITED INFORMATION AVAILABLE. HOWEVER, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ACCURACY OF THIS INFORMATION. THE COST OF REPAIR OR REPLACEMENT OF ANY SUCH FACILITIES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE BORNE BY THE CONTRACTOR.
- CONTACT "MISS UTILITY" PHONE 1-800-257-7777 48 HOURS PRIOR TO THE START OF WORK. THERE SHOULD BE NO EXCAVATION UNTIL THE LOCATIONS OF UNDERGROUND UTILITIES HAVE BEEN DETERMINED.
- SOIL CONSERVATION: THE CONTRACTOR SHALL NOT DISTURB THE EXISTING VEGETATION OUTSIDE THE LIMITS OF DISTURBANCE. STOCKPILING AND STAGING WILL BE ALLOWED ON SITE IF THE CONTRACTOR NEEDS TO SECURE AN OFF-SITE SPOILS AREA. THEY WILL NEED TO OBTAIN THE NECESSARY PERMITS. SOIL STABILIZATION WILL CONFORM TO 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- ALL MACHINERY, EQUIPMENT, AND SUPPLIES FOR THE PROJECT SHALL BE STORED IN AN UPLAND LOCATION, PREFERABLY THE STAGING AREA SHOWN IN THESE PLANS, SO AS NOT TO DISTURB ANY ENVIRONMENTALLY SENSITIVE AREAS OR AGRICULTURAL USES ON THE SITE.

23-WL-1110  
202361731  
180119  
11/26/2024  
MTH



DATUM COVERSIONS  
NOT TO SCALE

- NOTE:
- DATUM COMPARISON BASED ON NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) DATUM FROM SITE LOCATION (LONG) -76°16'03.8", (LAT) 38°44'56.5" ALL ELEVATIONS LISTED IN THE PLAN SET ARE NAVD88.
  - THE EXISTING TOPOGRAPHY HAS BEEN RAISED BY 0.90 FT. TO SET THE MLLW ELEVATION TO 0 FT WITH A RESULTING MHW ELEVATION OF 1.62 FT.



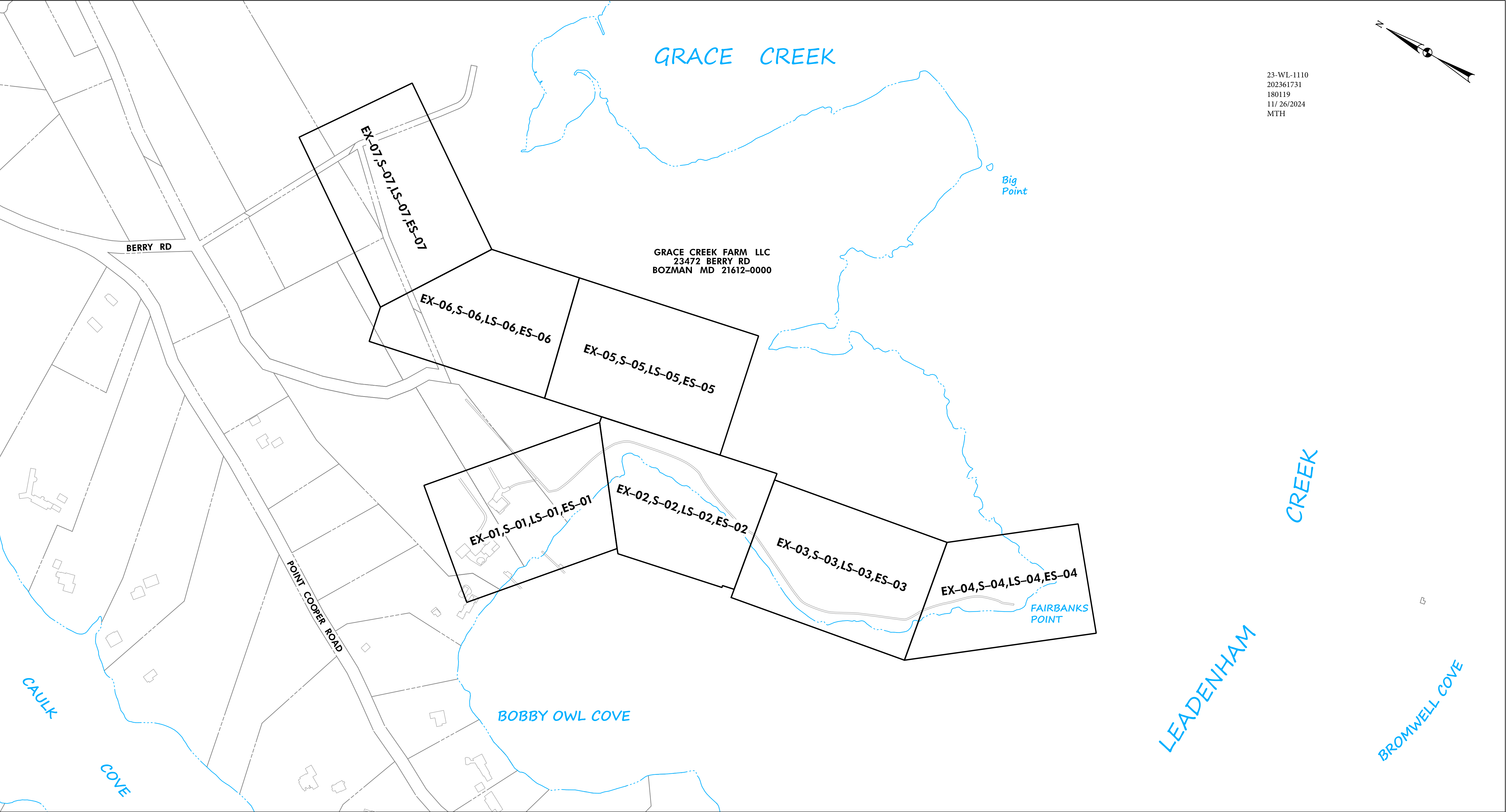
EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE  
TITLE SHEET

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB	SCALE : 1" = 2000'
DESIGNED BY : CN	DATE : NOVEMBER 2024
REVIEWED BY : MD	
DRAWING NO. GN-01 OF GN-01	SHEET NO. 01 OF 37





23-WL-1110  
202361731  
180119  
11/ 26/2024  
MTH

GRACE CREEK FARM LLC  
23472 BERRY RD  
BOZMAN MD 21612-0000

EX-07,S-07,LS-07,ES-07

EX-06,S-06,LS-06,ES-06

EX-05,S-05,LS-05,ES-05

EX-01,S-01,LS-01,ES-01

EX-02,S-02,LS-02,ES-02

EX-03,S-03,LS-03,ES-03

EX-04,S-04,LS-04,ES-04

BERRY RD

POINT COOPER ROAD

Big Point

FAIRBANKS POINT

CAULK COVE

BOBBY OWL COVE

CREEK

LEADENHAM

BROMWELL COVE

**COORDINATE NOTE**  
PLANS ARE IN NAD 83 MARYLAND STATE PLANE FIPS 1900 COORDINATE SYSTEM.

**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.

REVISIONS

EASTERN SHORE LAND CONSERVANCY

**GRACE CREEK FARM LIVING SHORELINE SHEET INDEX**

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB

DESIGNED BY : CN

REVIEWED BY : MD

DRAWING NO.

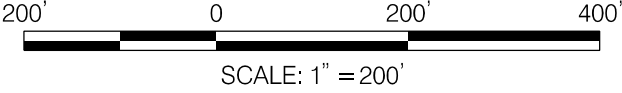
SCALE : 1" = 200'

DATE : NOVEMBER 2024

SHEET NO.

IN-01 OF IN-01

02 OF 37







EXISTING FEATURES LEGEND

- PROPERTY BOUNDARY
- 500 --- EX. MAJOR CONTOURS
- 498 --- EX. MINOR CONTOURS
- - - MHW - - - EX. MEAN HIGH WATER ELEV. = 1.62 (MLW) 0.72 (NAVD88)
- - - MLW - - - EX. MEAN LOW WATER ELEV. = 0.00 (MLW) -0.90 (NAVD88)
- - - HTL - - - EX. HIGH TIDE LINE ELEV. = 2.94 (MLW) 2.04 (NAVD88)
- - - MHHW - - - EX. MEAN HIGHER HIGH ELEV. = 1.83 (MLW) 0.93 (NAVD88)
- EX. ROADS
- x x x x x EX. METAL FENCE
- o o o o o EX. WOOD FENCE
- ~ EX. TREELINE
- FEMA EX. 100 YR FLOODPLAIN
- EX. WETLAND
- EX. RIPRAP
- B --- EX. WETLAND BUFFER (25 FT)
- === STORM DRAIN
- SPECIMEN (30' OR GREATER) OR EX. TREE
- RCA ECAB RCA EX. CRITICAL AREA DESIGNATION
- SAV --- SAV (2018-2022 COMPOSITE)

STABILIZATION LEGEND

- LOD --- LIMIT OF DISTURBANCE
- LOA --- LIMIT OF ACTIVITY

SAV Mapping Year	Density
2023*	Moderate
2022	Sparse
2021	Moderate
2020	Sparse
2019	Dense
2018	Dense
*2023 Mapping not available for download	

23-WL-1110  
202361731  
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11/26/2024  
MTH

EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE  
EXISTING CONDITIONS PLAN

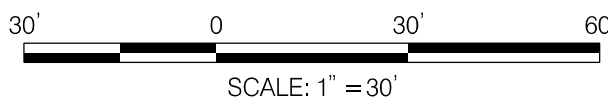
23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB	SCALE : 1" = 30'
DESIGNED BY : CN	DATE : NOVEMBER 2023
REVIEWED BY : MD	
DRAWING NO. EX-01 OF EX-07	SHEET NO. 03 OF 37

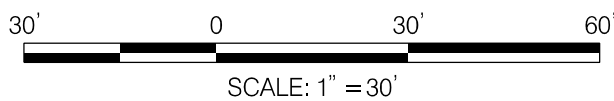
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**COORDINATE NOTE**  
PLANS ARE IN NAD 83 MARYLAND STATE PLANE FIPS 1900 COORDINATE SYSTEM.

**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.

REVISIONS

EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE  
EXISTING CONDITIONS PLAN

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB

DESIGNED BY : CN

REVIEWED BY : MD

DRAWING NO. EX-02 OF EX-07

SCALE : 1" = 30'

DATE : NOVEMBER 2023

SHEET NO. 04 OF 37

EXISTING FEATURES LEGEND

- PROPERTY BOUNDARY
- EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- EX. MEAN HIGH WATER ELEV. = 1.62 (MLW) 0.72 (NAVD88)
- EX. MEAN LOW WATER ELEV. = 0.00 (MLW) -0.90 (NAVD88)
- EX. HIGH TIDE LINE ELEV. = 2.94 (MLW) 2.04 (NAVD88)
- EX. MEAN HIGHER HIGH ELEV. = 1.83 (MLW) 0.93 (NAVD88)
- EX. ROADS
- EX. METAL FENCE
- EX. WOOD FENCE
- EX. TREELINE
- FEMA EX. 100 YR FLOODPLAIN
- EX. WETLAND
- EX. RIPRAP
- EX. WETLAND BUFFER (25 FT)
- STORM DRAIN

SPECIMEN (30' OR GREATER) EX. TREE

RCA ECAB RCA EX. CRITICAL AREA DESIGNATION

SAV SAV (2018-2022 COMPOSITE)

STABILIZATION LEGEND

- LOD LIMIT OF DISTURBANCE
- LOA LIMIT OF ACTIVITY

SAV Mapping Year	Density
2023*	Moderate
2022	Sparse
2021	Moderate
2020	Sparse
2019	Dense
2018	Dense
*2023 Mapping not available for download	

23-WL-1110  
202361731  
180119  
11/ 26/2024  
MTH

MATCHLINE - SEE SHEET SR-05

MATCHLINE - SEE SHEET EX-03

MATCHLINE - SEE SHEET EX-01

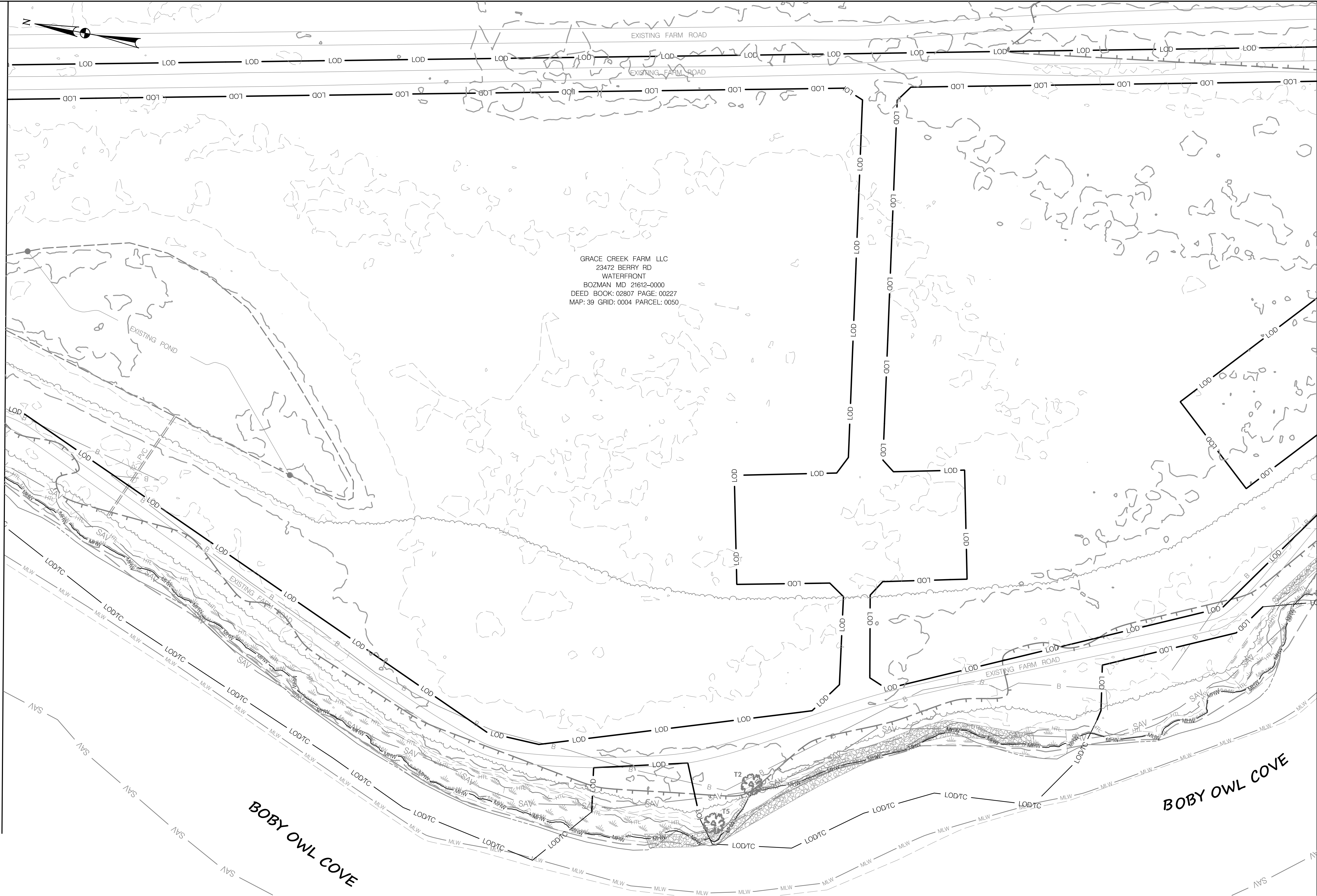
BOBY OWL COVE

GRACE CREEK FARM LLC  
23472 BERRY RD  
WATERFRONT  
BOZMAN MD 21612-0000  
DEED BOOK: 02807 PAGE: 00227  
MAP: 39 GRID: 0004 PARCEL: 0050





MATCHLINE - SEE SHEET EX-02



MATCHLINE - SEE SHEET EX-04

EXISTING FEATURES LEGEND

- PROPERTY BOUNDARY
- EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- EX. MEAN HIGH WATER ELEV. = 1.62 (MLW) 0.72 (NAVD88)
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- EX. WETLAND BUFFER (25 FT)
- STORM DRAIN

- SPECIMEN (30' OR GREATER)
- EX. TREE

- RCA ECAB RCA EX. CRITICAL AREA DESIGNATION
- SAV SAV (2018-2022 COMPOSITE)

STABILIZATION LEGEND

- LOD LIMIT OF DISTURBANCE
- LOA LIMIT OF ACTIVITY

SAV Mapping Year	Density
2023*	Moderate
2022	Sparse
2021	Moderate
2020	Sparse
2019	Dense
2018	Dense
*2023 Mapping not available for download	

23-WI-1110  
202361731  
180119  
11/26/2024  
MTH

EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE  
EXISTING CONDITIONS PLAN

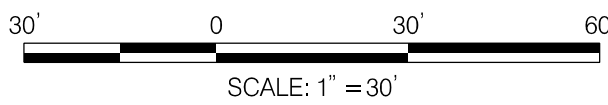
23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB	SCALE : 1" = 30'
DESIGNED BY : CN	DATE : NOVEMBER 2023
REVIEWED BY : MD	
DRAWING NO. EX-03 OF EX-07	SHEET NO. 05 OF 37

COORDINATE NOTE  
PLANS ARE IN NAD 83 MARYLAND STATE PLANE FIPS 1900 COORDINATE SYSTEM.

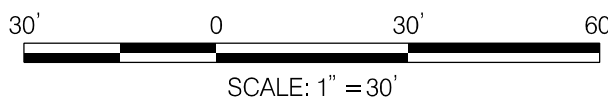
PROFESSIONAL CERTIFICATION

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REVISIONS





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REVISIONS

EASTERN SHORE LAND CONSERVANCY

**GRACE CREEK FARM LIVING SHORELINE  
EXISTING CONDITIONS PLAN**

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB

DESIGNED BY : CN

REVIEWED BY : MD

DRAWING NO. EX-04 OF EX-07

SCALE : 1" = 30'

DATE : NOVEMBER 2023

SHEET NO. 06 OF 37

**EXISTING FEATURES LEGEND**

- PROPERTY BOUNDARY
- 500 EX. MAJOR CONTOURS
- 498 EX. MINOR CONTOURS
- MHW EX. MEAN HIGH WATER ELEV. = 1.62 (MLW) 0.72 (NAVD88)
- MLW EX. MEAN LOW WATER ELEV. = 0.00 (MLW) -0.90 (NAVD88)
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- MHHW EX. MEAN HIGHER HIGH ELEV. = 1.83 (MLW) 0.93 (NAVD88)
- EX. ROADS
- EX. METAL FENCE
- EX. WOOD FENCE
- EX. TREELINE
- FEMA EX. 100 YR FLOODPLAIN
- EX. WETLAND
- EX. RIPRAP
- EX. WETLAND BUFFER (25 FT)
- STORM DRAIN

SPECIMEN (30' OR GREATER) EX. TREE

RCA ECAB RCA EX. CRITICAL AREA DESIGNATION

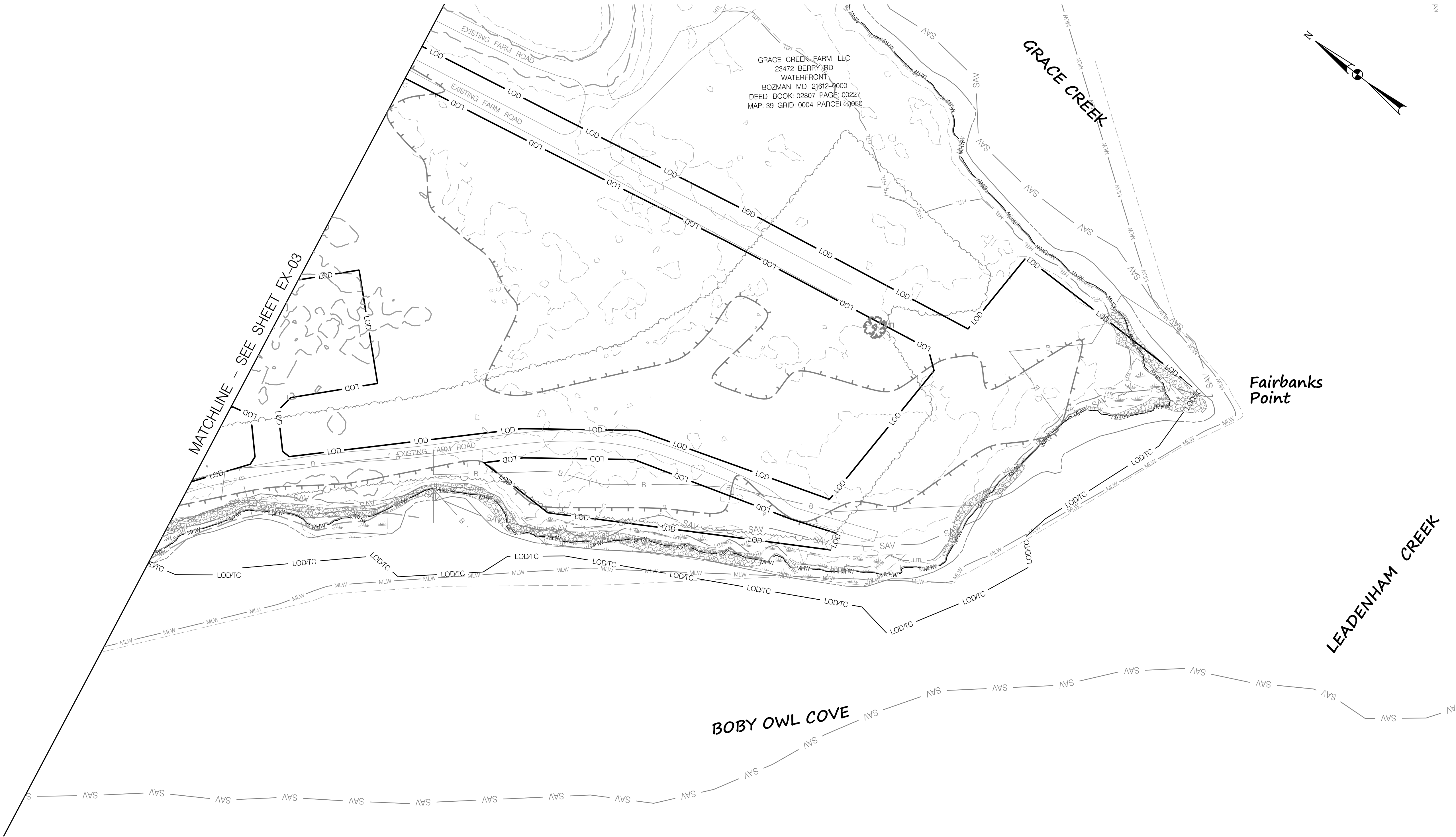
SAV SAV (2018-2022 COMPOSITE)

**STABILIZATION LEGEND**

- LOD LIMIT OF DISTURBANCE
- LOA LIMIT OF ACTIVITY

SAV Mapping Year	Density
2023*	Moderate
2022	Sparse
2021	Moderate
2020	Sparse
2019	Dense
2018	Dense
*2023 Mapping not available for download	

23-WI-1110  
202361731  
180119  
11/ 26/2024  
MTH



GRACE CREEK FARM LLC  
23472 BERRY RD  
WATERFRONT  
BOZMAN MD 21612-9000  
DEED BOOK: 02807 PAGE: 00227  
MAP: 39 GRID: 0004 PARCEL: 0050

Fairbanks  
Point

BOBY OWL COVE

LEADENHAM CREEK

GRACE CREEK



MATCHLINE - SEE SHEET EX-06

GRACE CREEK FARM LLC  
23472 BERRY RD  
WATERFRONT  
BOZMAN MD 21612-0000  
DEED BOOK: 02807 PAGE: 00227  
MAP: 39 GRID: 0004 PARCEL: 0050

EXISTING FEATURES LEGEND

- PROPERTY BOUNDARY
- EX. MAJOR CONTOURS
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- EX. WETLAND
- EX. RIPRAP
- EX. WETLAND BUFFER (25 FT)
- STORM DRAIN

- SPECIMEN (30" OR GREATER)
- EX. TREE

- EX. CRITICAL AREA DESIGNATION

- SAV (2018-2022 COMPOSITE)

STABILIZATION LEGEND

- LOD LIMIT OF DISTURBANCE
- LOA LIMIT OF ACTIVITY

SAV Mapping Year	Density
2023*	Moderate
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*2023 Mapping not available for download	

23-WL-1110  
202361731  
180119  
11/ 26/2024  
MTH

MATCHLINE - SEE SHEET EX-02

EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE  
EXISTING CONDITIONS PLAN

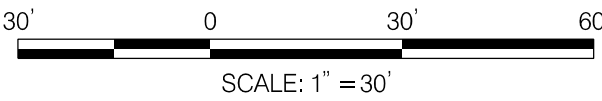
23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB	SCALE : 1" = 30'
DESIGNED BY : CN	DATE : NOVEMBER 2023
REVIEWED BY : MD	
DRAWING NO. EX-05 OF EX-07	SHEET NO. 07 OF 37

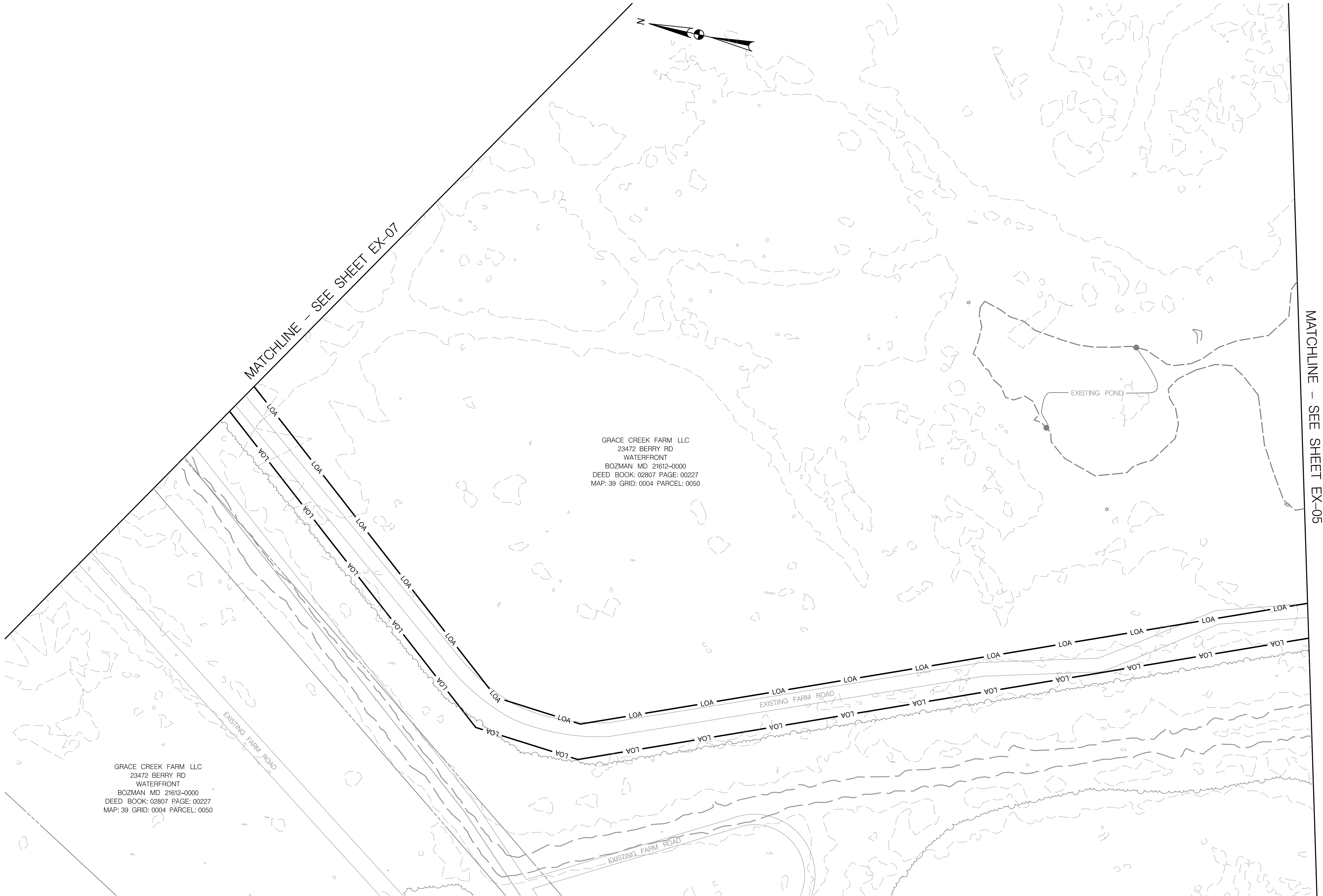
COORDINATE NOTE  
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- EX. RIPRAP
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- RCA ECAB RCA EX. CRITICAL AREA DESIGNATION
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STABILIZATION LEGEND

- LOD LIMIT OF DISTURBANCE
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SAV Mapping Year	Density
2023*	Moderate
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2020	Sparse
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202361731  
180119  
11/26/2024  
MTH

EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE  
EXISTING CONDITIONS PLAN

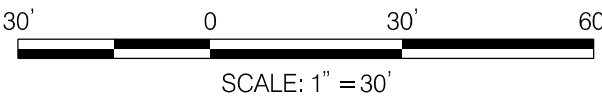
23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB  
DESIGNED BY : CN  
REVIEWED BY : MD  
DRAWING NO. EX-06 OF EX-07

SCALE : 1" = 30'  
DATE : NOVEMBER 2023  
SHEET NO. 08 OF 37

COORDINATE NOTE  
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- EX. TREELINE
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- EX. WETLAND
- EX. RIPRAP
- B EX. WETLAND BUFFER (25 FT)
- STORM DRAIN

- SPECIMEN (30" OR GREATER)
- EX. TREE

- RCA ECAB RCA EX. CRITICAL AREA DESIGNATION

- SAV SAV (2018-2022 COMPOSITE)

STABILIZATION LEGEND

- LOD LIMIT OF DISTURBANCE
- LOA LIMIT OF ACTIVITY

SAV Mapping Year	Density
2023*	Moderate
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2021	Moderate
2020	Sparse
2019	Dense
2018	Dense
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23-WL-1110  
202361731  
180119  
11/ 26/2024  
MTH

MATCHLINE - SEE SHEET EX-06

EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE  
EXISTING CONDITIONS PLAN

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB

DESIGNED BY : CN

REVIEWED BY : MD

DRAWING NO. EX-07 OF EX-07

SCALE : 1" = 30'

DATE : NOVEMBER 2023

SHEET NO. 09 OF 37

COORDINATE NOTE  
PLANS ARE IN NAD 83 MARYLAND STATE PLANE FIPS 1900 COORDINATE SYSTEM.

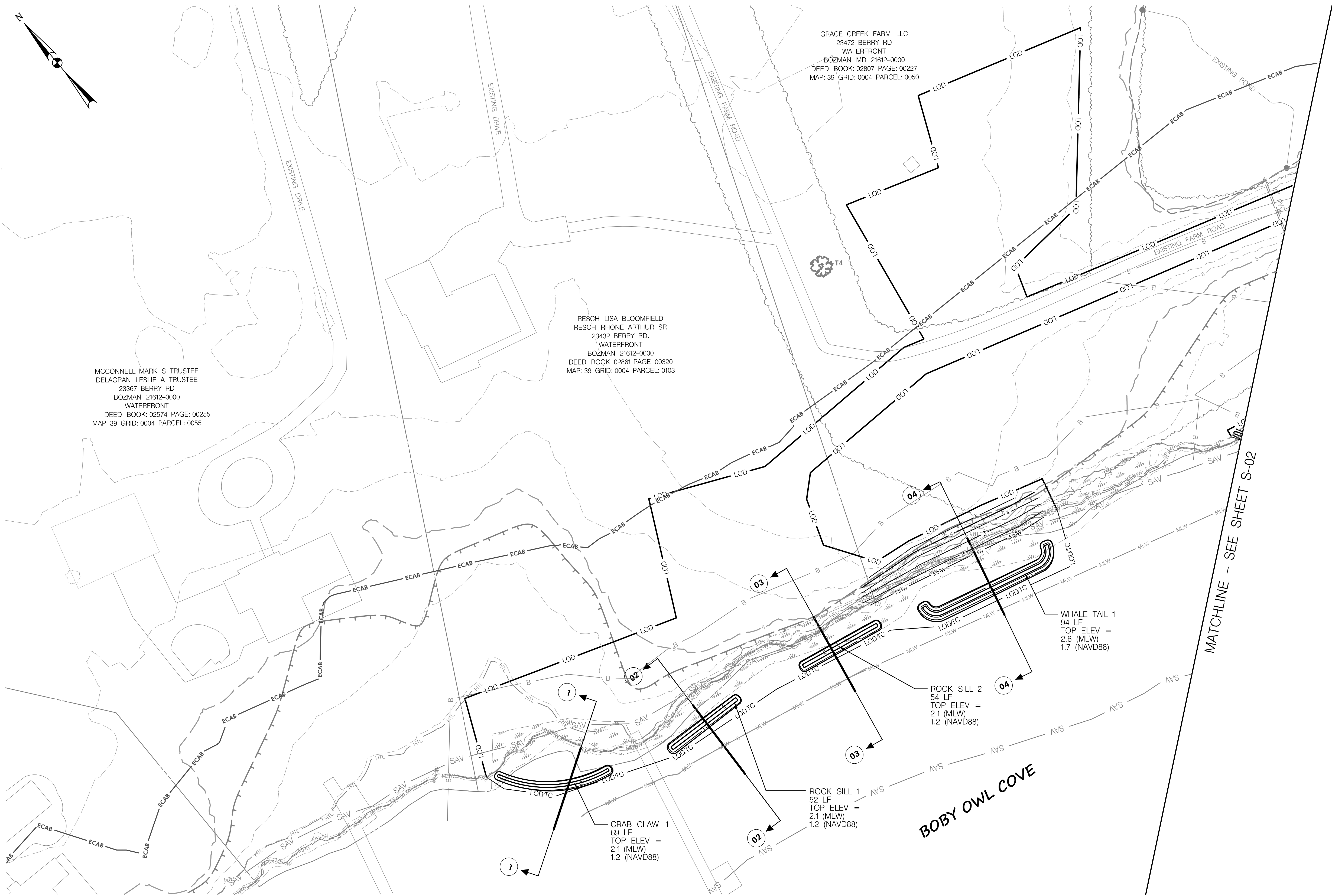
PROFESSIONAL CERTIFICATION

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30' 0 30' 60'  
SCALE: 1" = 30'







- STABILIZATION LEGEND**
- LOD LIMIT OF DISTURBANCE
  - LOD/TC LIMIT OF DISTURBANCE / TURBIDITY CURTAIN
  - LOA LIMIT OF ACCESS
  - 480 PROPOSED MAJOR CONTOURS
  - 479 PROPOSED MINOR CONTOURS
  - MHW PROPOSED MEAN HIGH WATER
  - RIPRAP
  - PROPOSED STRUCTURE
  - REEF BALL
- EXISTING FEATURES LEGEND**
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  - EX. WETLAND
  - EX. RIPRAP
  - EX. WETLAND BUFFER (25 FT)
  - STORM DRAIN
  - SPECIMEN (30' OR GREATER)
  - EX. CRIP TREE AREA DESIGNATION
  - SAV SAV (2018-2022 COMPOSITE)

EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE STABILIZATION PLAN

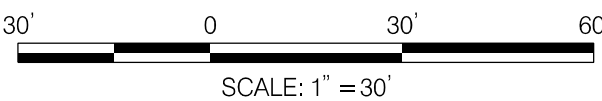
23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB	SCALE : 1" = 30'
DESIGNED BY : CN	DATE : NOVEMBER 2024
REVIEWED BY : MD	
DRAWING NO. S-01 OF S-04	SHEET NO. 10 OF 37

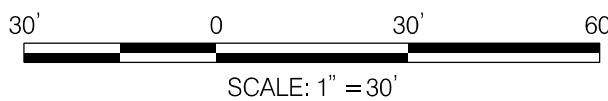
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REVISIONS

EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE STABILIZATION PLAN

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB  
DESIGNED BY : CN  
REVIEWED BY : MD  
DRAWING NO. S-02 OF S-04

SCALE : 1" = 30'  
DATE : NOVEMBER 2024

SHEET NO. 11 OF 37

STABILIZATION LEGEND

- LOD LIMIT OF DISTURBANCE
- LOD/TC LIMIT OF DISTURBANCE / TURBIDITY CURTAIN
- LOA LIMIT OF ACCESS
- 480 PROPOSED MAJOR CONTOURS
- 479 PROPOSED MINOR CONTOURS
- MHW PROPOSED MEAN HIGH WATER
- RIPRAP
- PROPOSED STRUCTURE
- REEF BALL

EXISTING FEATURES LEGEND

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- EX. WETLAND
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- EX. CRITICAL AREA DESIGNATION
- SAV (2018-2022 COMPOSITE)

23-WL-1110  
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11/26/2024  
MTH

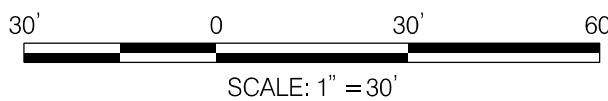




EASTERN SHORE LAND CONSERVANCY	
<p><b>GRACE CREEK FARM LIVING SHORELINE STABILIZATION PLAN</b></p> <p><b>23472 BERRY RD, BOZMAN MD , TALBOT COUNTY</b></p>	
DRAWN BY : <u>JB</u>  DESIGNED BY : <u>CN</u>  REVIEWED BY : <u>MD</u>	SCALE : <u>1" = 30'</u>  DATE : <u>NOVEMBER 2024</u>
DRAWING NO. S-03 OF S-04	SHEET NO. 12 OF 37

23-WL-1110  
202361731  
180119  
11/ 26/2024  
MTH





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**REVISIONS**

**EASTERN SHORE LAND CONSERVANCY**

**GRACE CREEK FARM LIVING SHORELINE STABILIZATION PLAN**

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB

DESIGNED BY : CN

REVIEWED BY : MD

DRAWING NO.

S-04 OF S-04

SCALE : 1" = 30'

DATE : NOVEMBER 2024

SHEET NO.

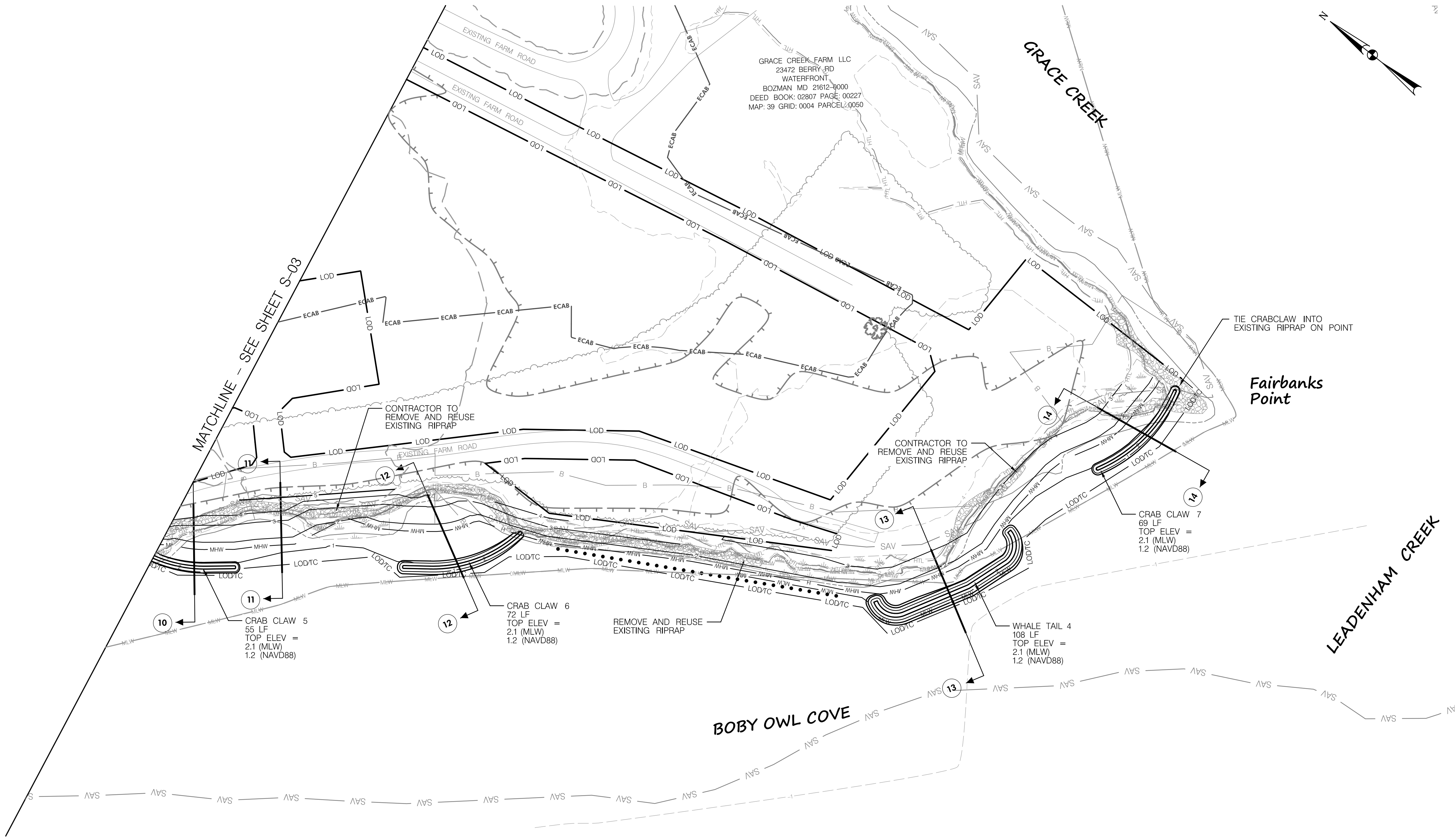
13 OF 37

**STABILIZATION LEGEND**

- LOD LIMIT OF DISTURBANCE
- LOD/TC LIMIT OF DISTURBANCE / TURBIDITY CURTAIN
- LOA LIMIT OF ACCESS
- 480 PROPOSED MAJOR CONTOURS
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- PROPOSED STRUCTURE
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- FEMA EX. 100 YR FLOODPLAIN
- EX. WETLAND
- EX. RIPRAP
- B EX. WETLAND BUFFER (25 FT)
- STORM DRAIN
- EX. CRITICAL AREA DESIGNATION
- SAV SAV (2018-2022 COMPOSITE)



MATCHLINE - SEE SHEET S-03

CONTRACTOR TO REMOVE AND REUSE EXISTING RIPRAP

CONTRACTOR TO REMOVE AND REUSE EXISTING RIPRAP

Fairbanks Point

LEADENHAM CREEK

BOBY OWL COVE

CRAB CLAW 5  
55 LF  
TOP ELEV =  
2.1 (MLW)  
1.2 (NAVD88)

CRAB CLAW 6  
72 LF  
TOP ELEV =  
2.1 (MLW)  
1.2 (NAVD88)

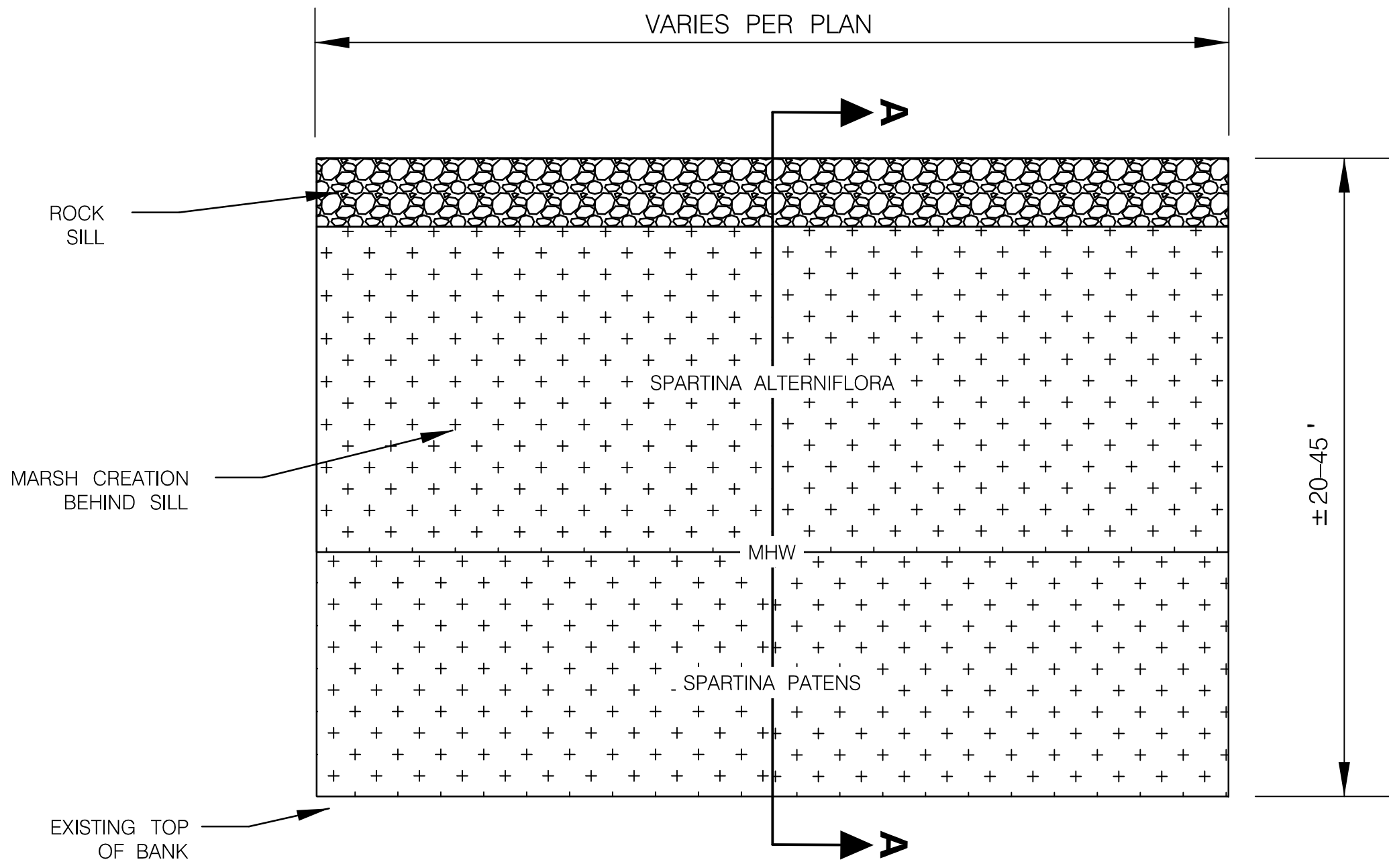
REMOVE AND REUSE  
EXISTING RIPRAP

WHALE TAIL 4  
108 LF  
TOP ELEV =  
2.1 (MLW)  
1.2 (NAVD88)

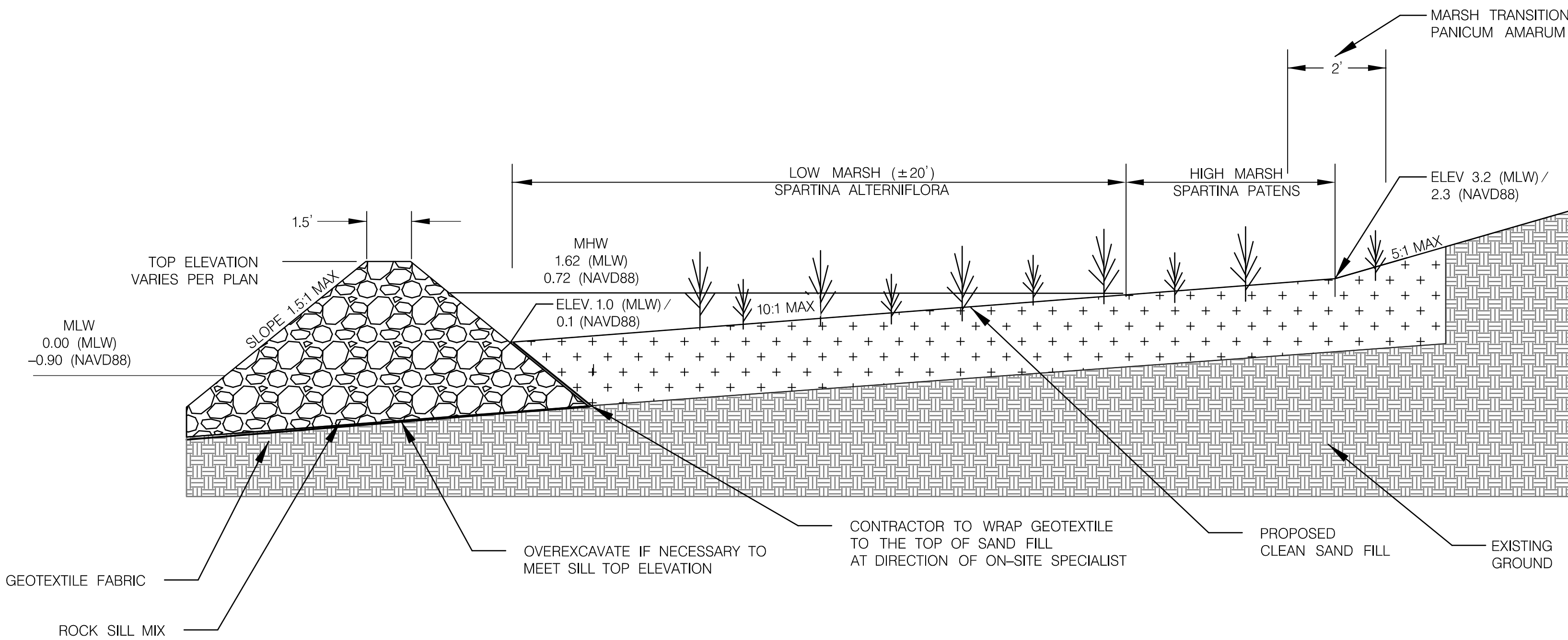
CRAB CLAW 7  
69 LF  
TOP ELEV =  
2.1 (MLW)  
1.2 (NAVD88)

TIE CRABCLAW INTO  
EXISTING RIPRAP ON POINT

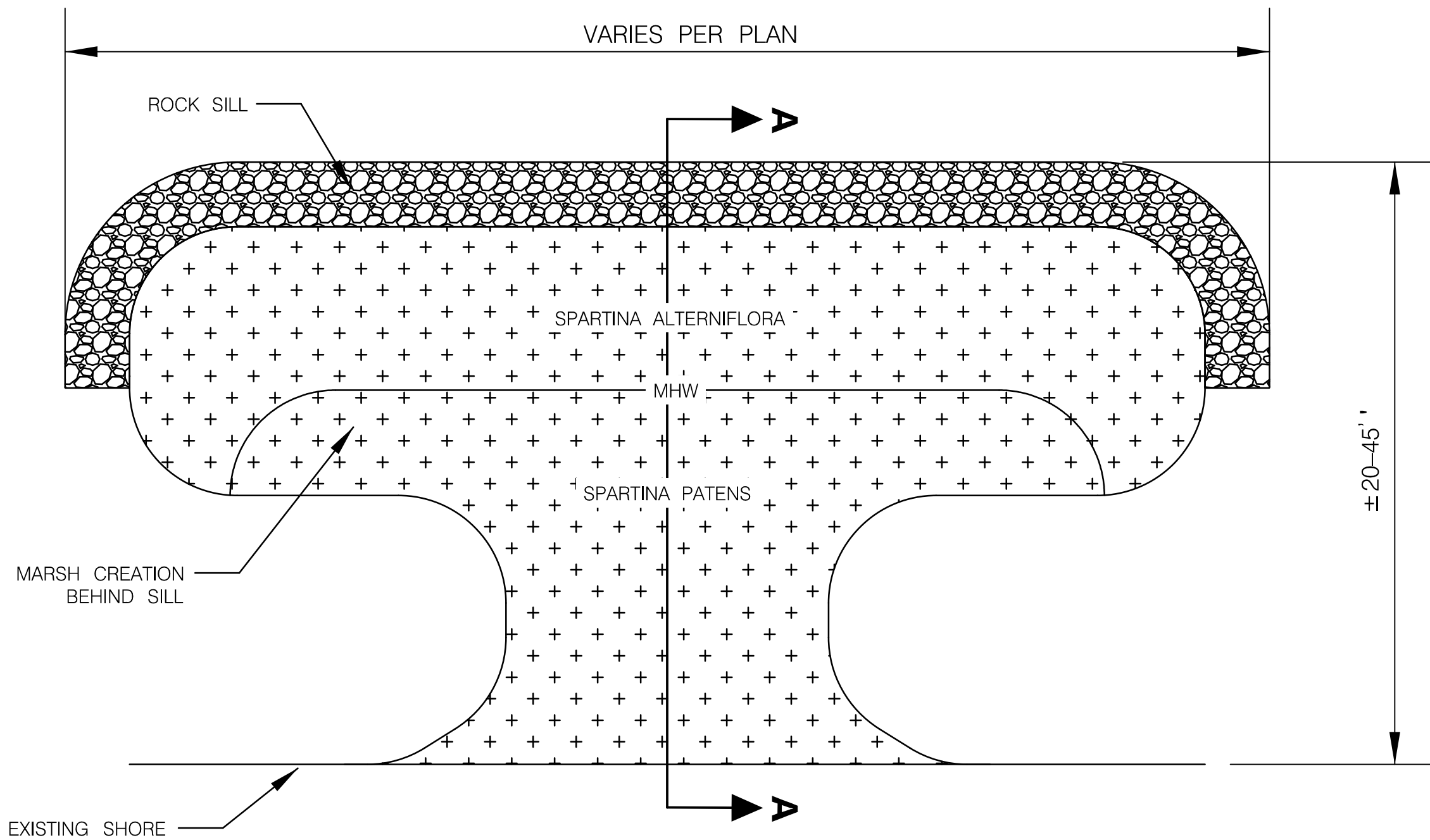




PLAN VIEW

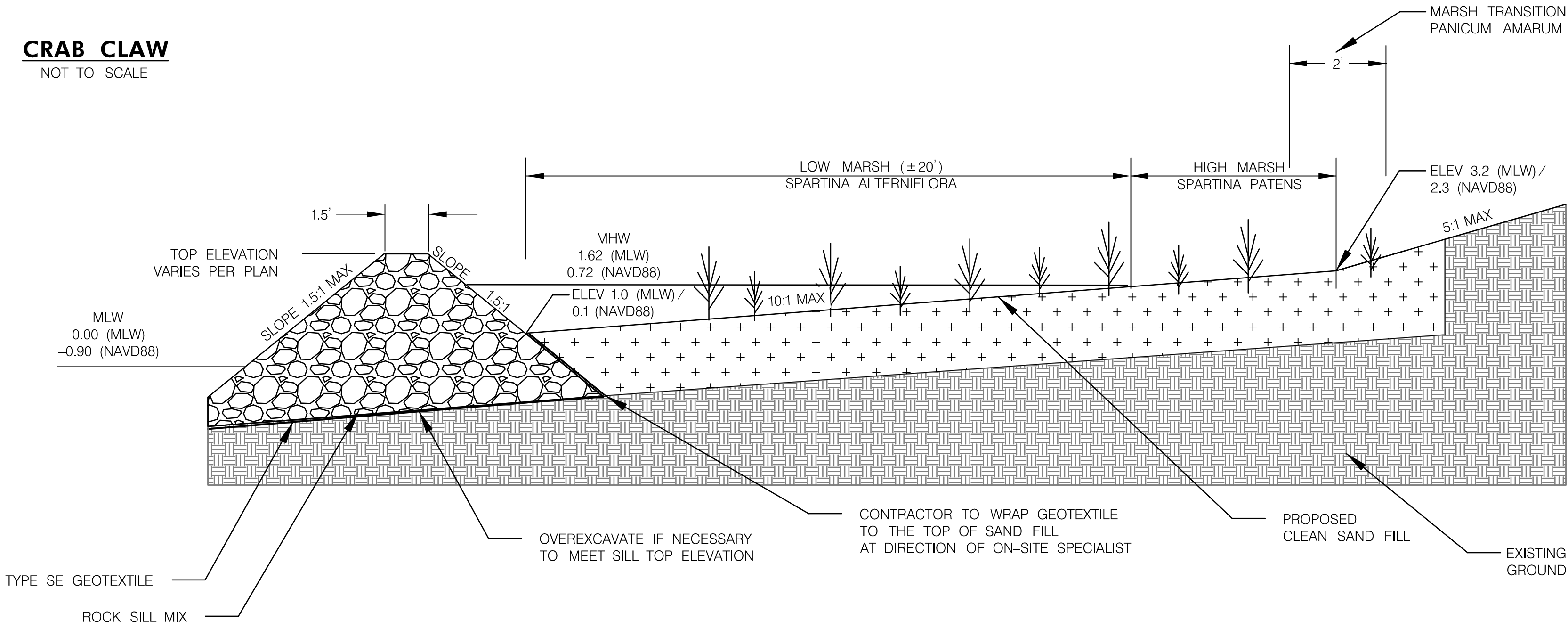


SECTION VIEW A-A



PLAN VIEW

**CRAB CLAW**  
NOT TO SCALE



SECTION VIEW A-A

Rock Sill Mix		
MD SHA Riprap Class	% of Mix	D50 (in)
Class 0	25%	5.5
Class 1	35%	9.5
Class 2	40%	16

Rock Structure Table						
Structure	Length (ft)	Base Width (ft)	Top Width (ft)	Top Elevation (MLW) (ft)	Top Elevation (NAVD88) (ft)	Height (ft)
Crab Claw 1	69	6	1.5	2.1	1.2	1.4
Rock Sill 1	52	6.5	1.5	2.1	1.2	1.5
Rock Sill 2	54	6.5	1.5	2.1	1.2	1.5
Whale Tail 1	94	8	1.5	2.6	1.7	2.0
Crab Claw 2	83	5.5	1.5	2.1	1.2	1.3
Whale Tail 2	94	6	1.5	2.1	1.2	1.5
Whale Tail 3	94	6	1.5	2.1	1.2	1.5
Crab Claw 3	65	6	1.5	2.1	1.2	1.5
Crab Claw 4	55	6	1.5	2.1	1.2	1.6
Crab Claw 5	55	5.5	1.5	2.1	1.2	1.4
Crab Claw 6	72	7	1.5	2.1	1.2	2.0
Whale Tail 4	108	10	1.5	2.1	1.2	3.0
Crab Claw 7	69	6	1.5	2.1	1.2	1.5

**WHALETAIL SILL**  
NOT TO SCALE

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REVISIONS

EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE STABILIZATION DETAILS

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

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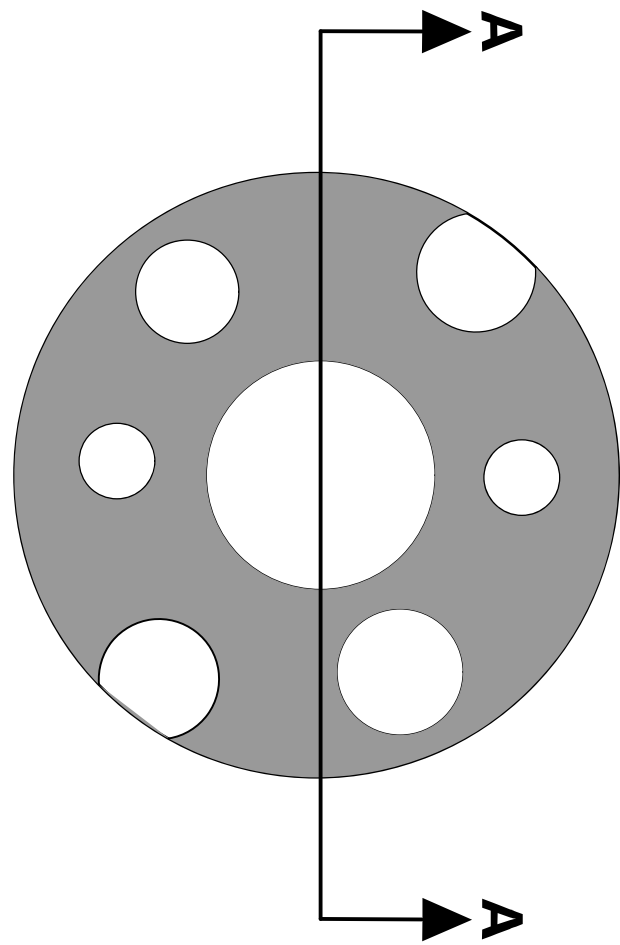
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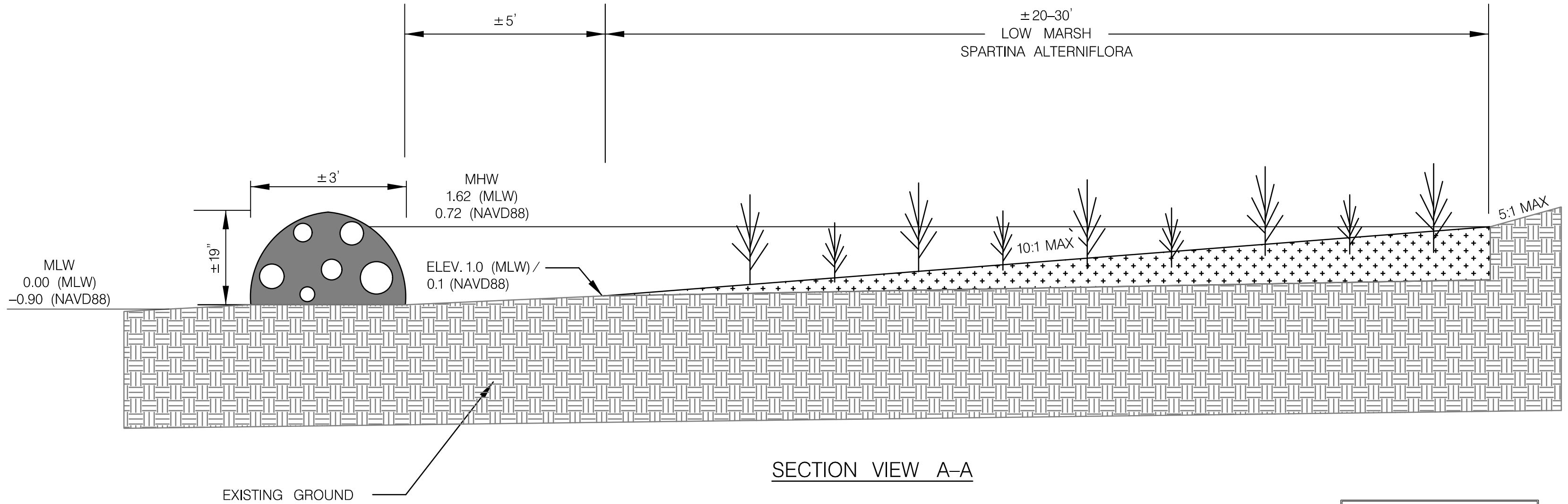
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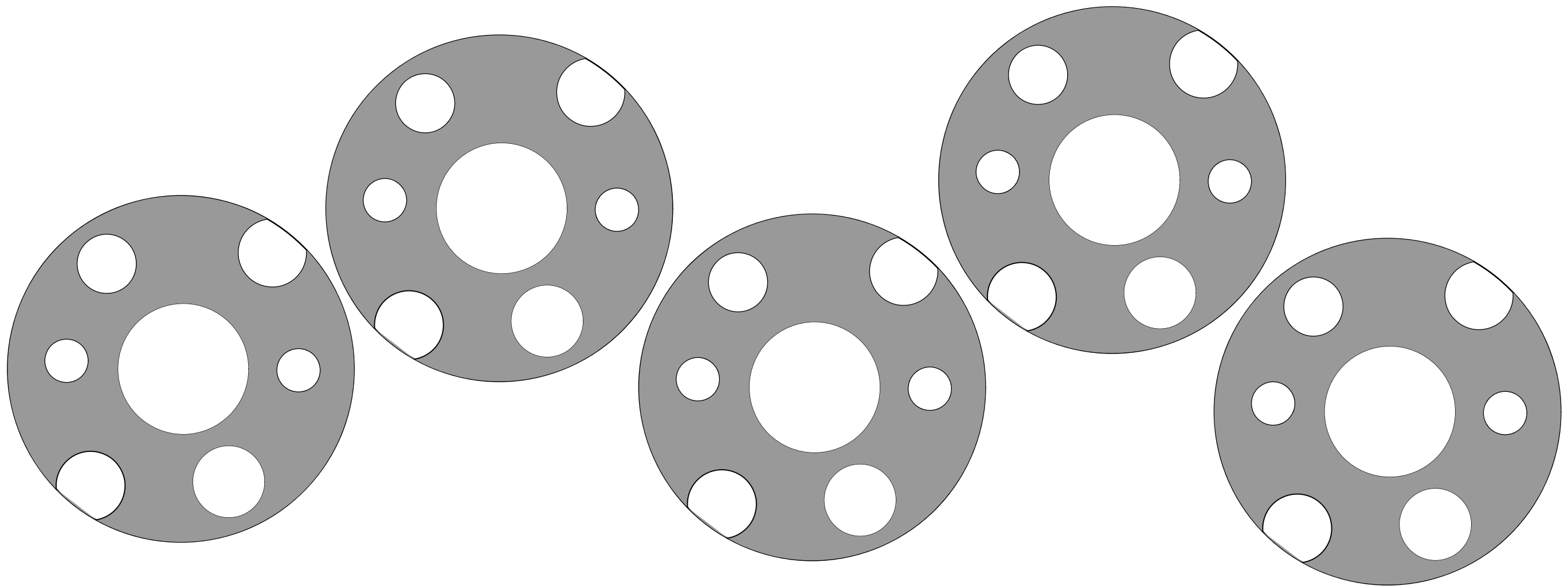


PLAN VIEW



Oyster Reef Balls	
Base Diameter (in)	29
Height (in)	19
Length (LF, 3' O.C)	735
Total (EA)	245

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TYPICAL REEF BALL CONFIGURATION

**REEF BALL**  
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**GRACE CREEK FARM LIVING SHORELINE  
STABILIZATION DETAILS**

**23472 BERRY RD, BOZMAN MD , TALBOT COUNTY**

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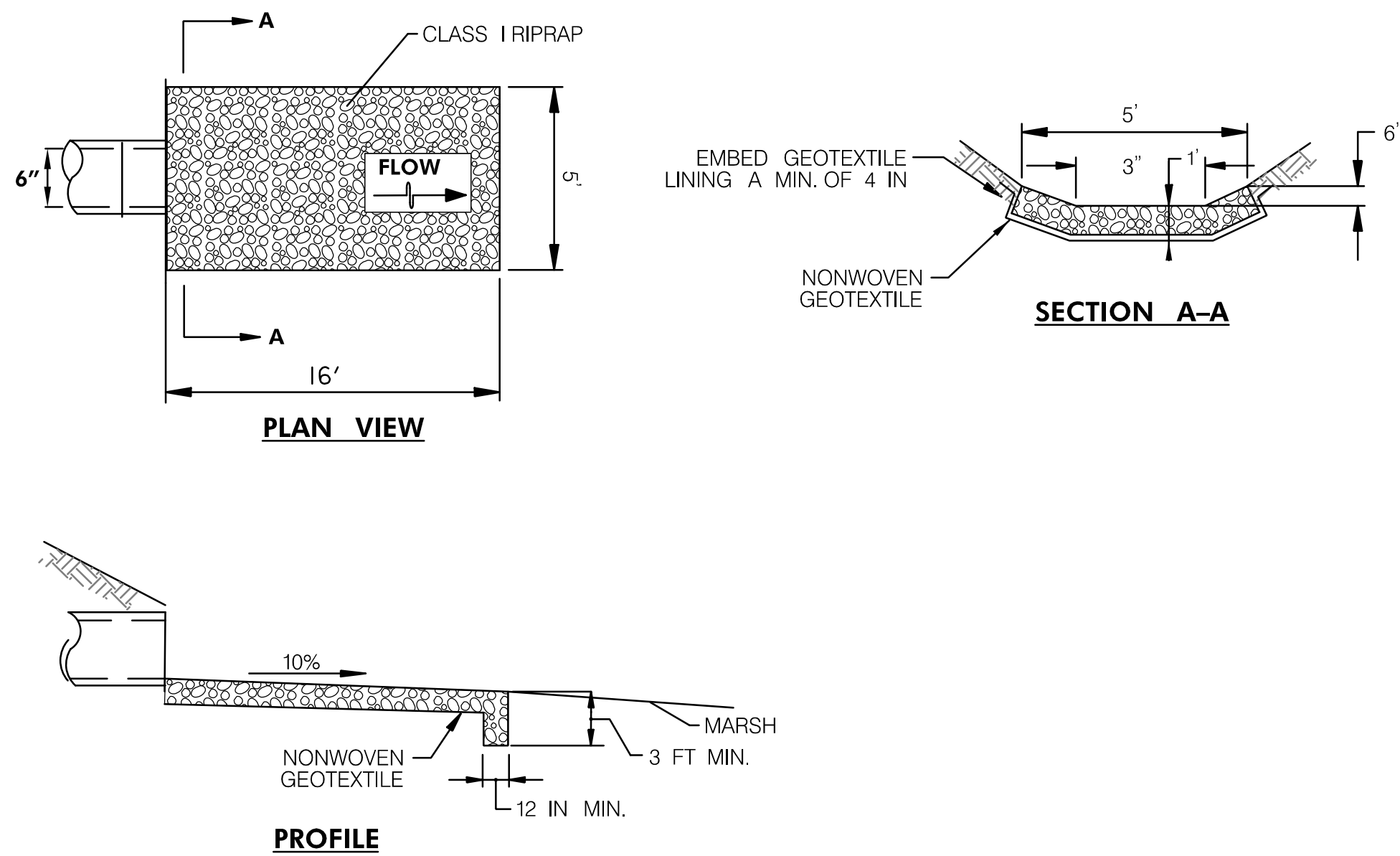
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DRAWING NO. DE-02 OF DE-03 SHEET NO. 15 OF 37







CONSTRUCTION SPECIFICATIONS

1. RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
2. USE NONWOVEN GEOTEXTILE AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
3. PREPARE THE SUBGRADE FOR GEOTEXTILE AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF THE RIPRAP.
5. CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE STONE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. WHERE NO ENDWALL IS USED EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.

CLASS I RIPRAP OUTLET PROTECTION SWALE  
NOT TO SCALE

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GRACE CREEK FARM LIVING SHORELINE  
STABILIZATION DETAILS

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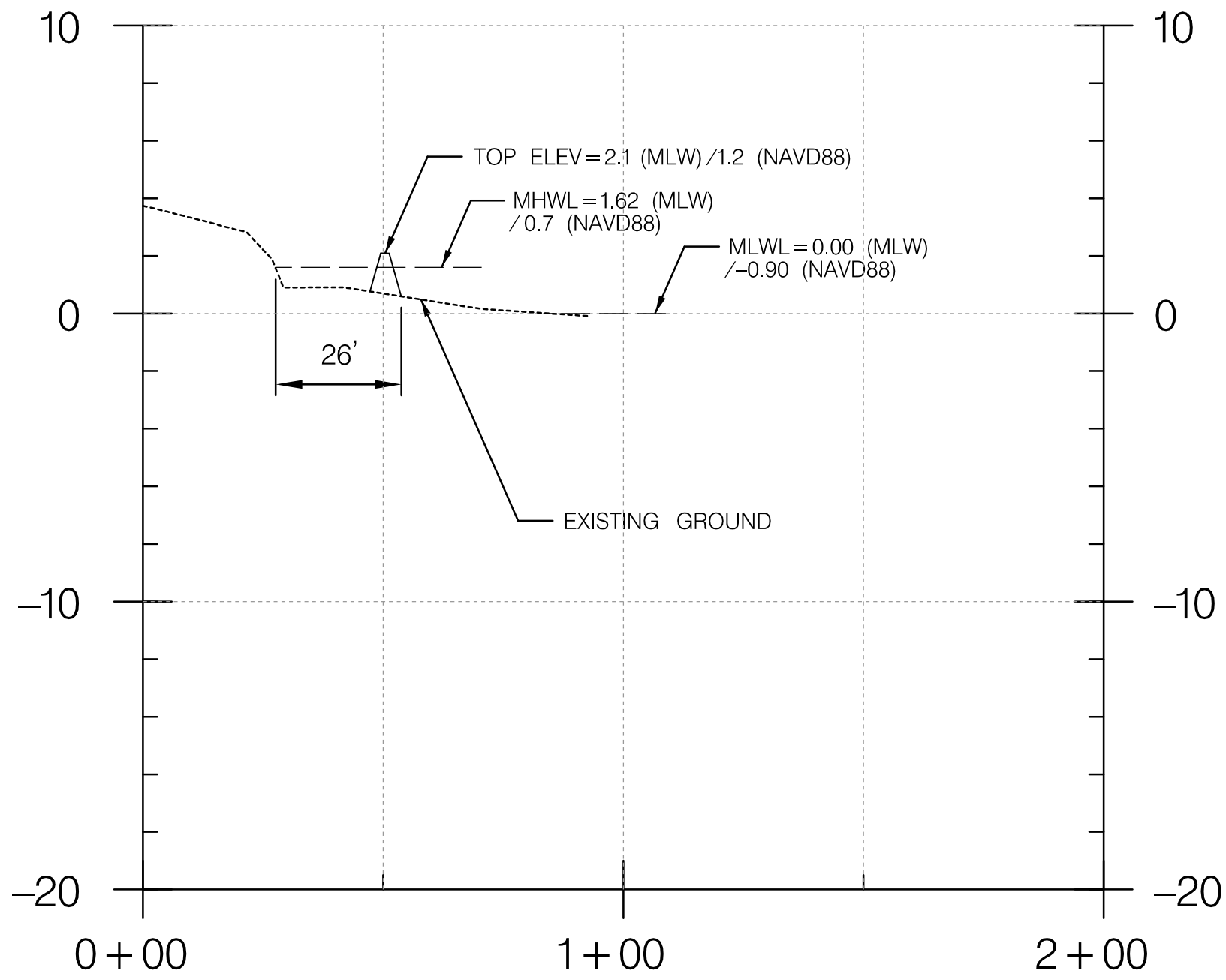
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DESIGNED BY : CN DATE : NOVEMBER 2024

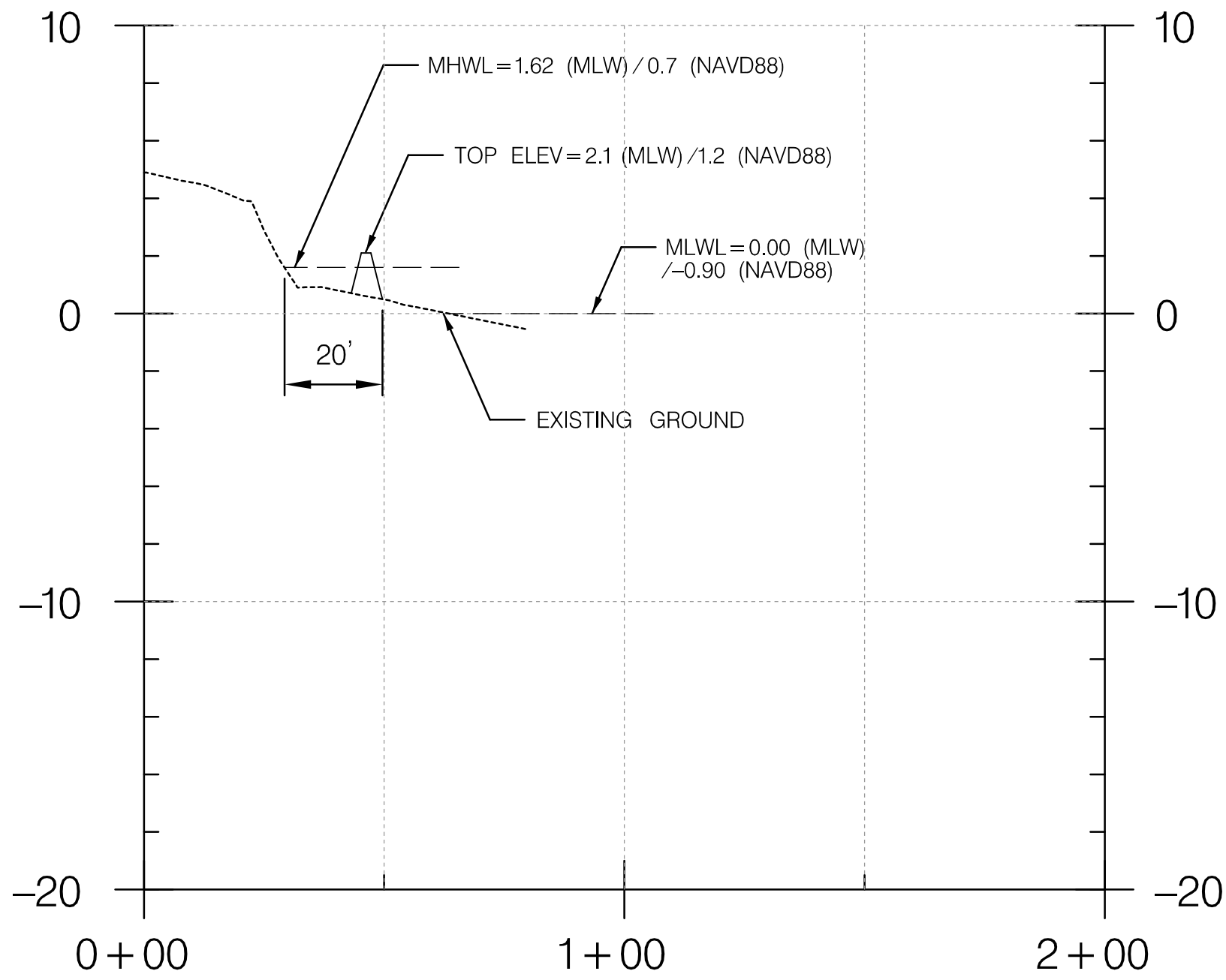
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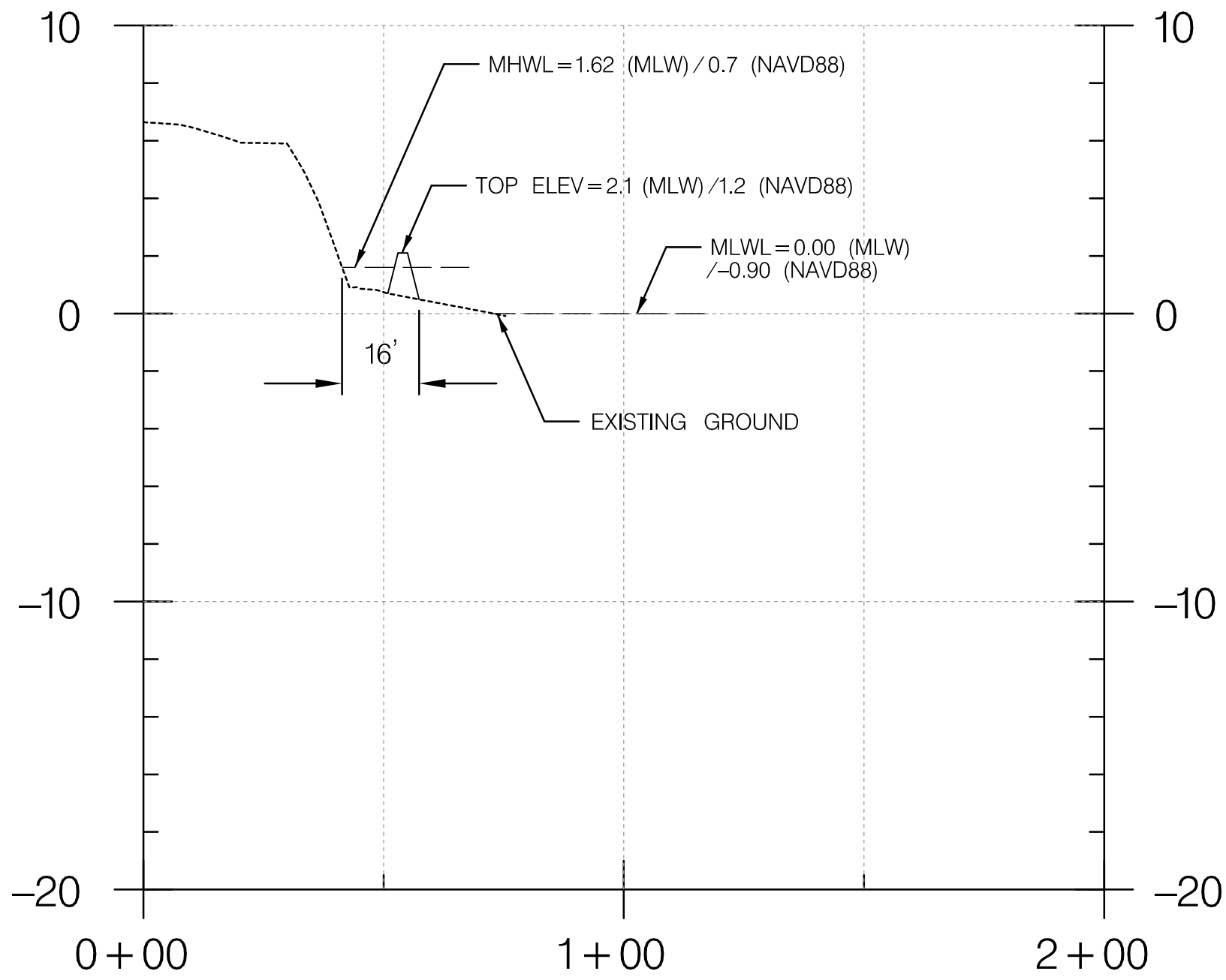




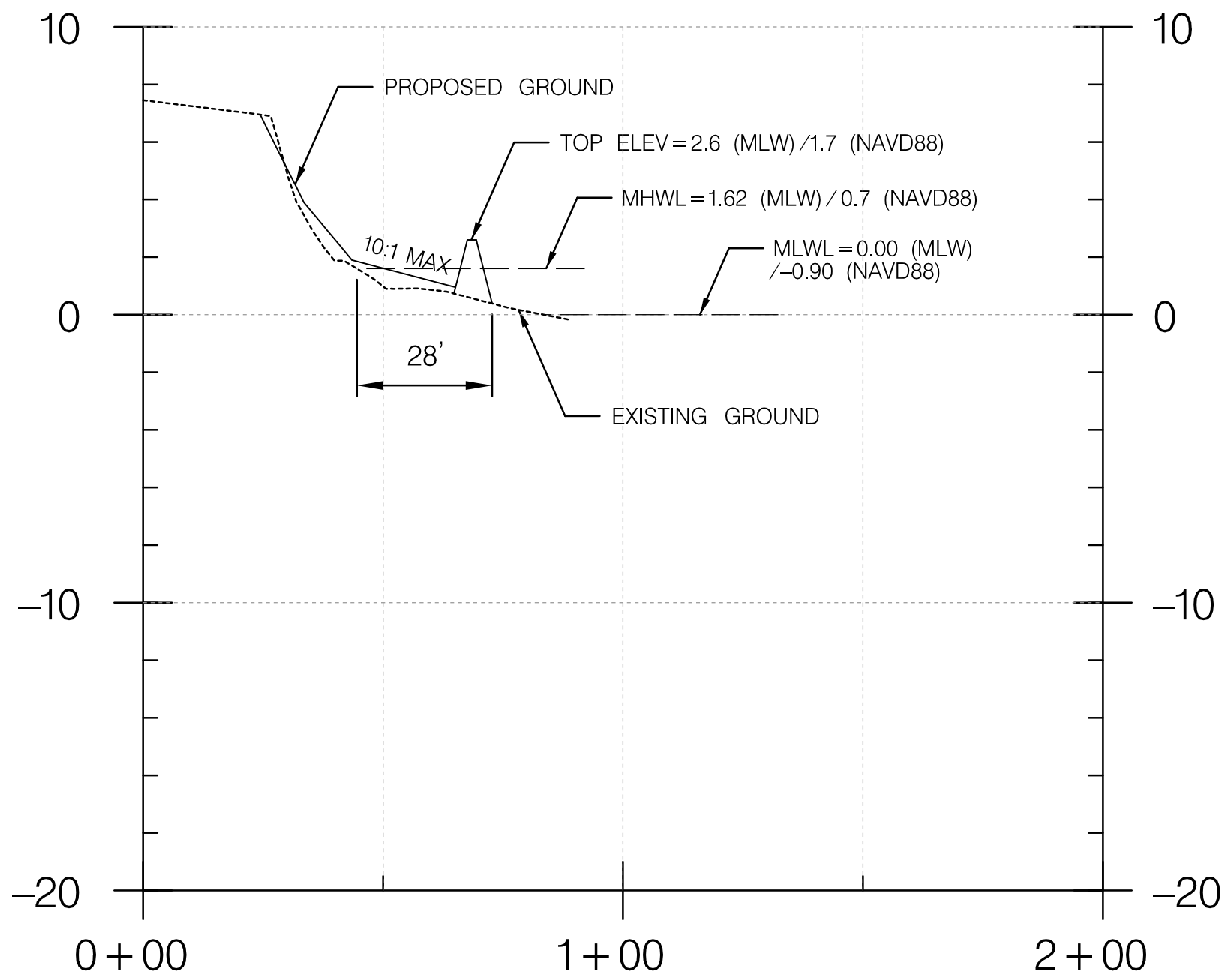
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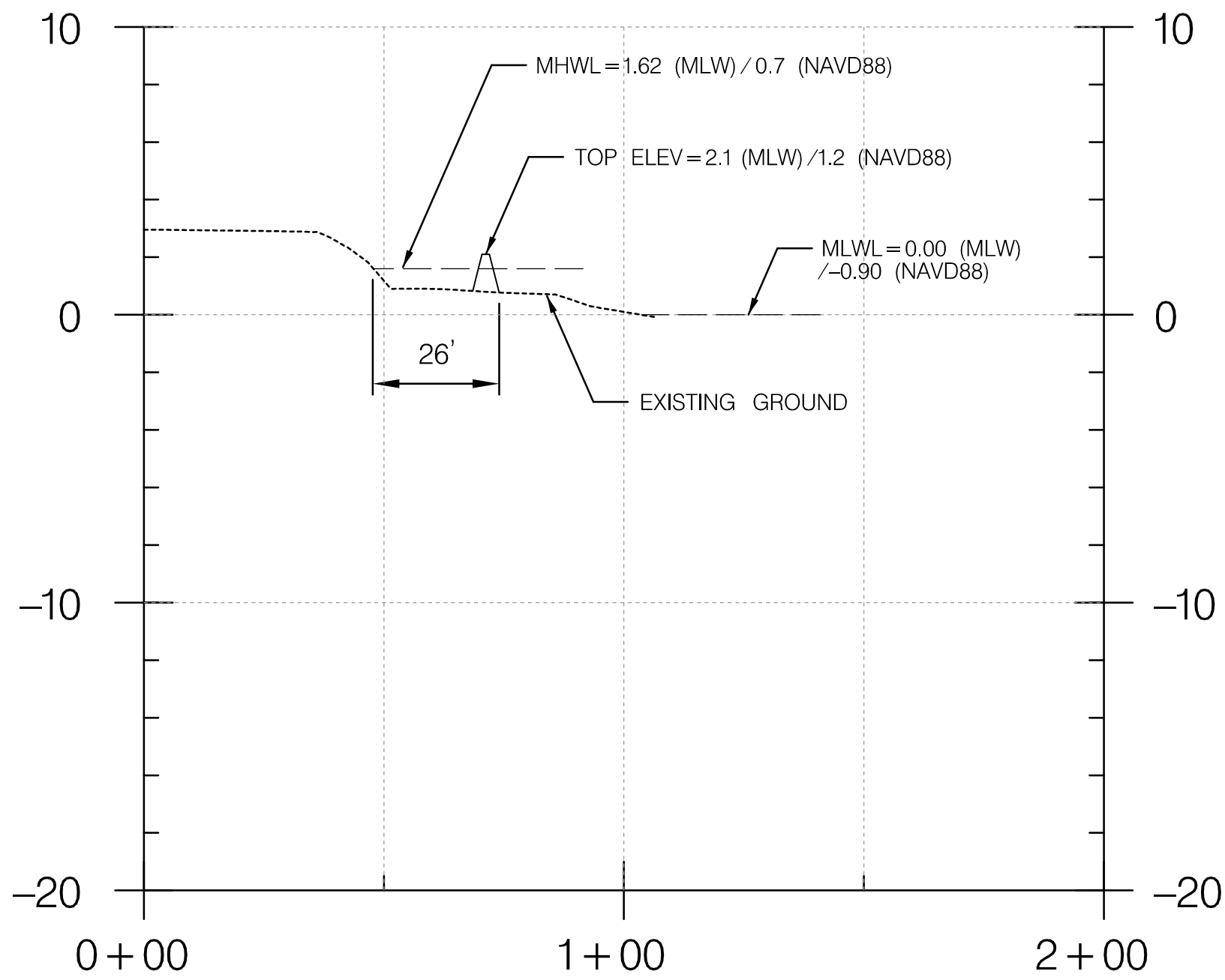
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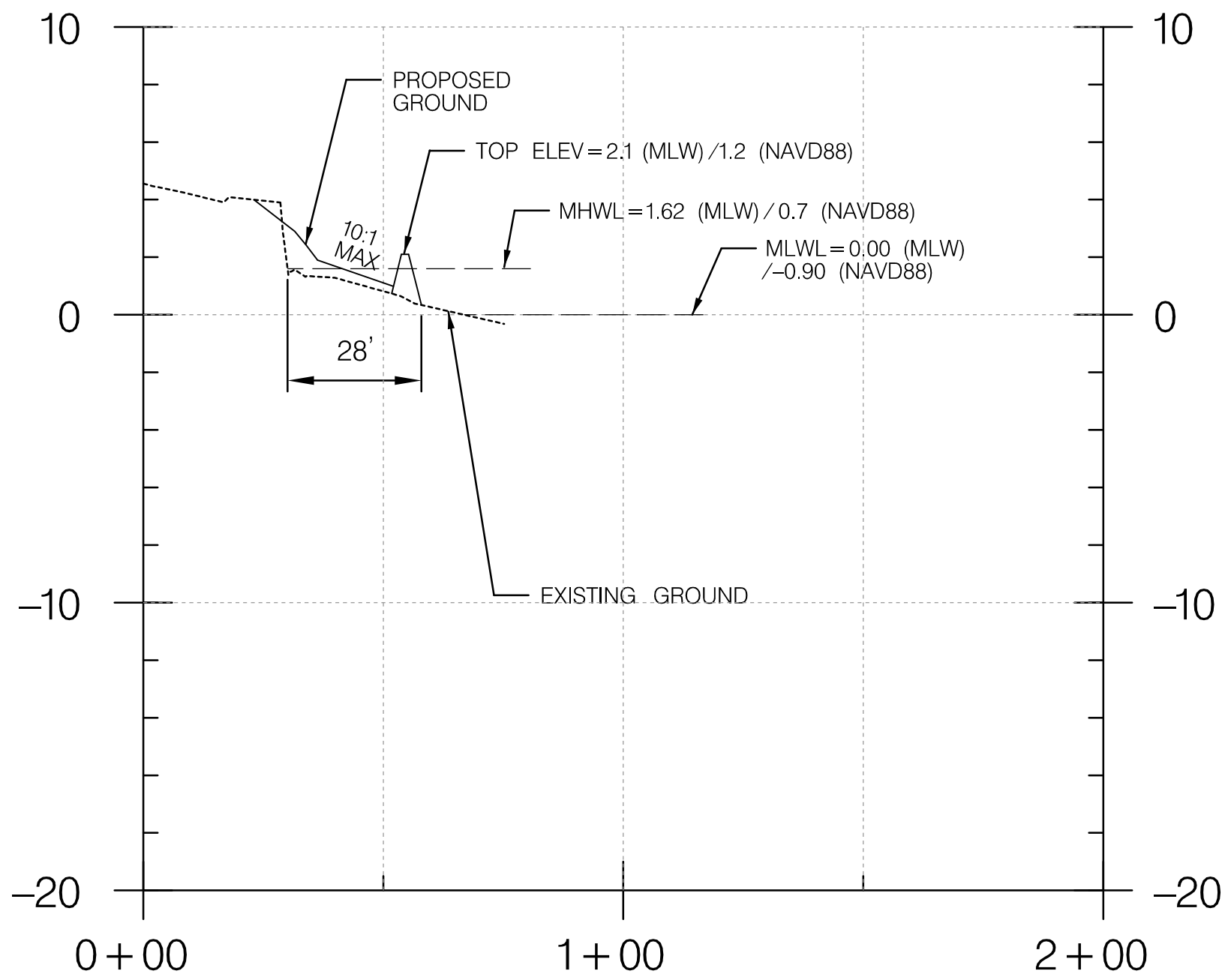
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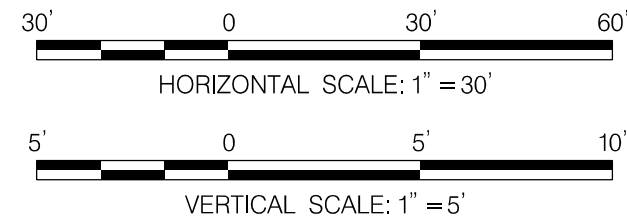
CROSS SECTION - 04



CROSS SECTION - 05



CROSS SECTION - 06



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REVISIONS

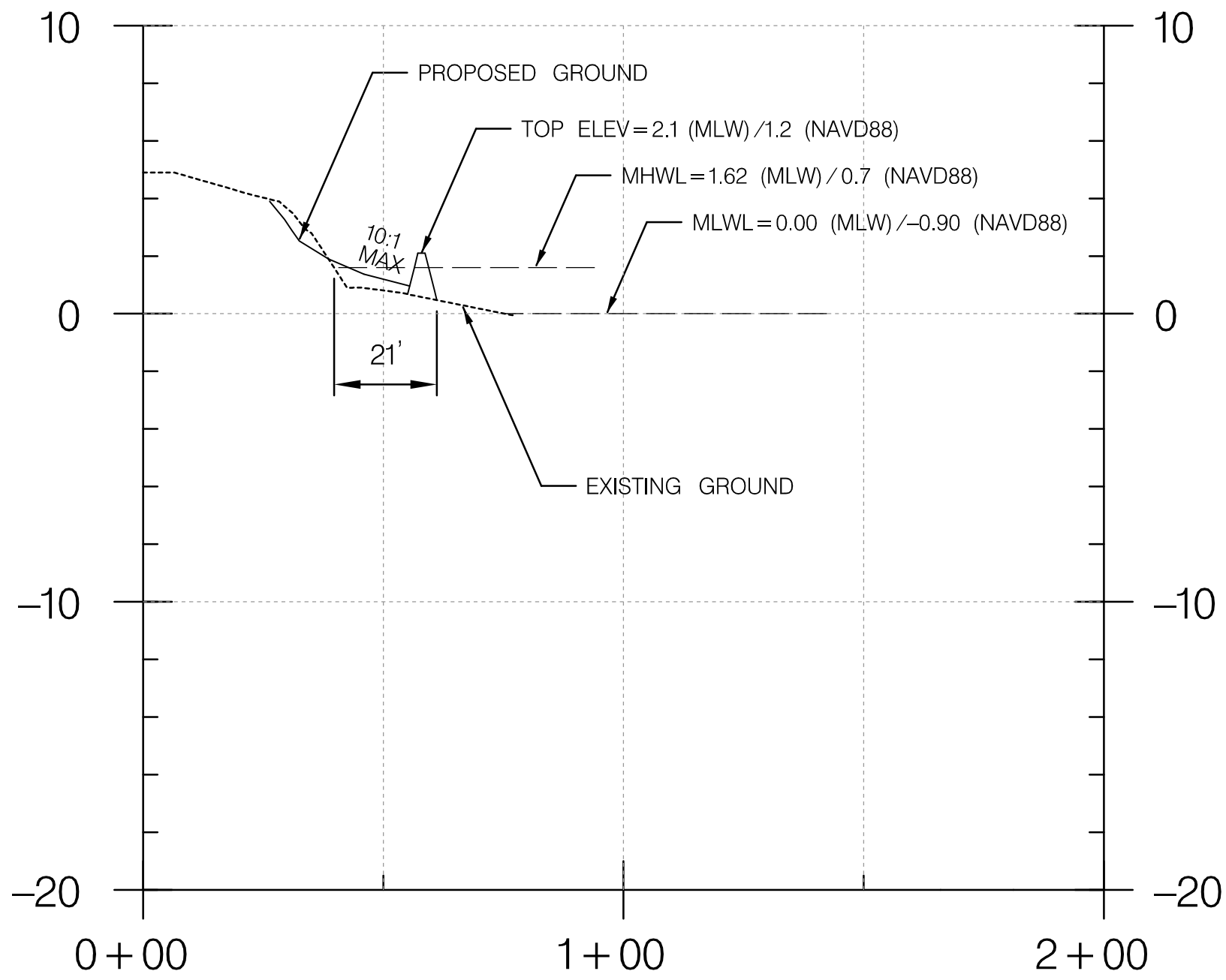
EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE  
CROSS SECTIONS

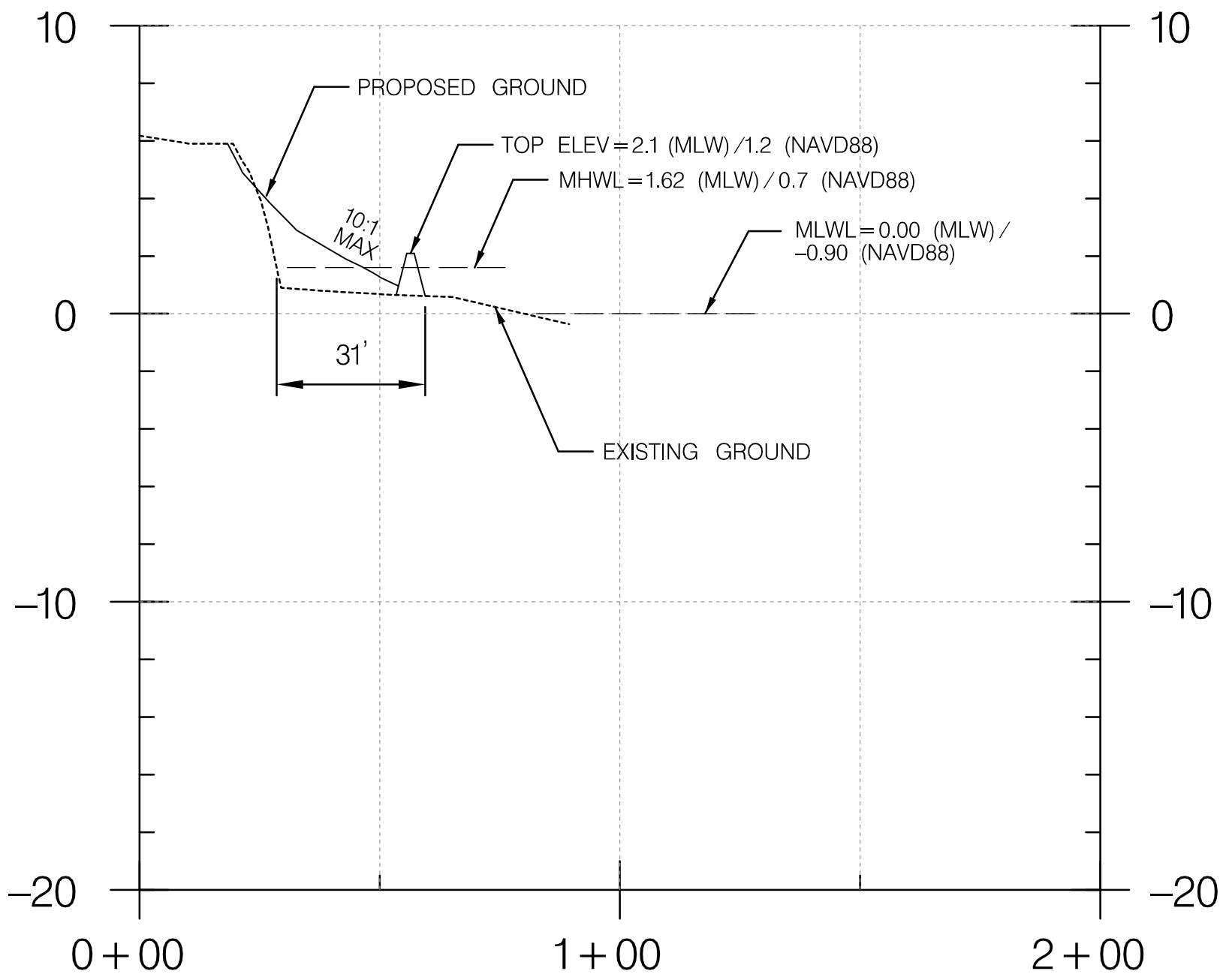
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DESIGNED BY : CN	VERTICAL SCALE: 1" = 5'
REVIEWED BY : MD	DATE : NOVEMBER 2024
DRAWING NO. XS-01 OF XS-03	SHEET NO. 17 OF 37

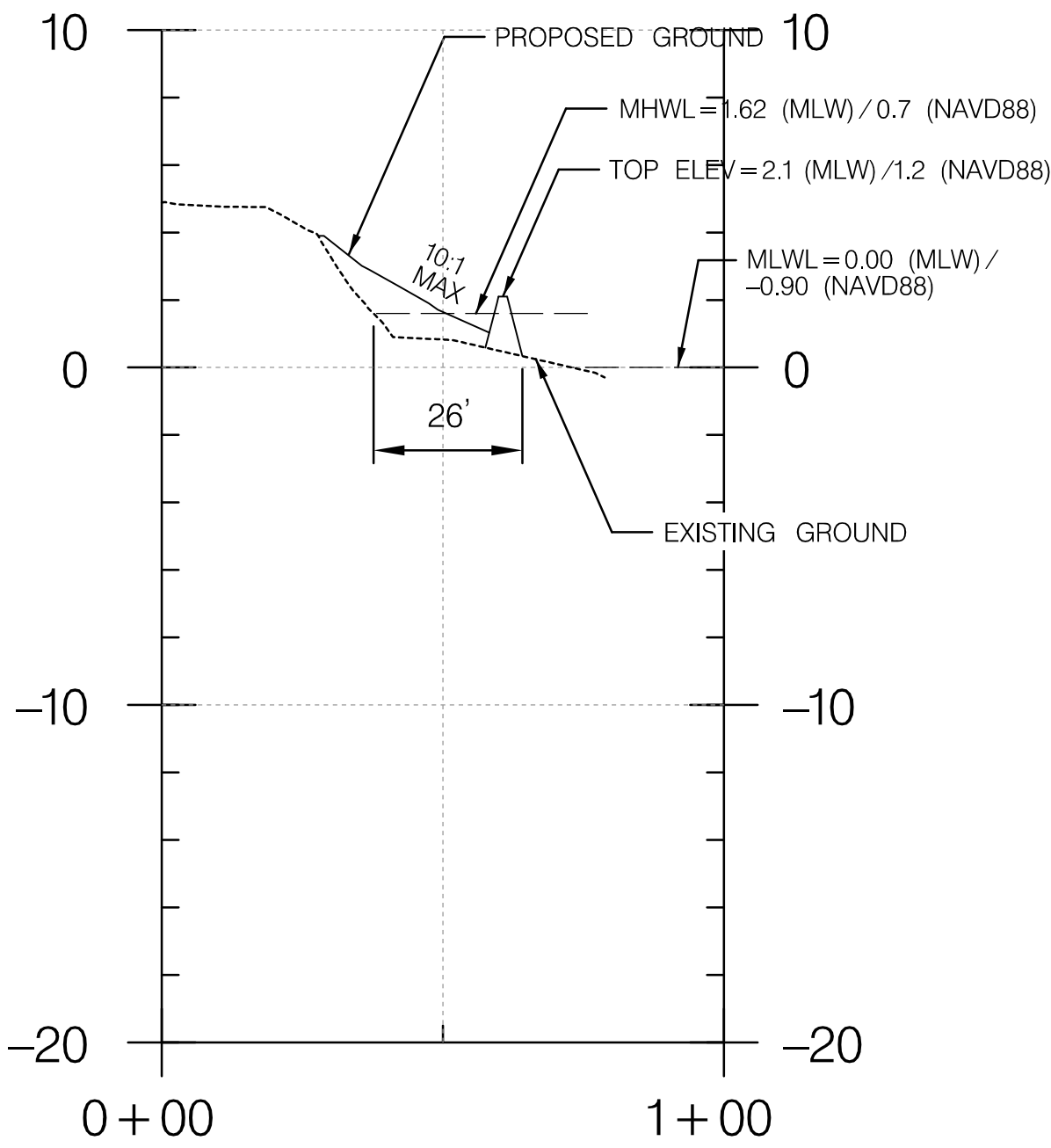




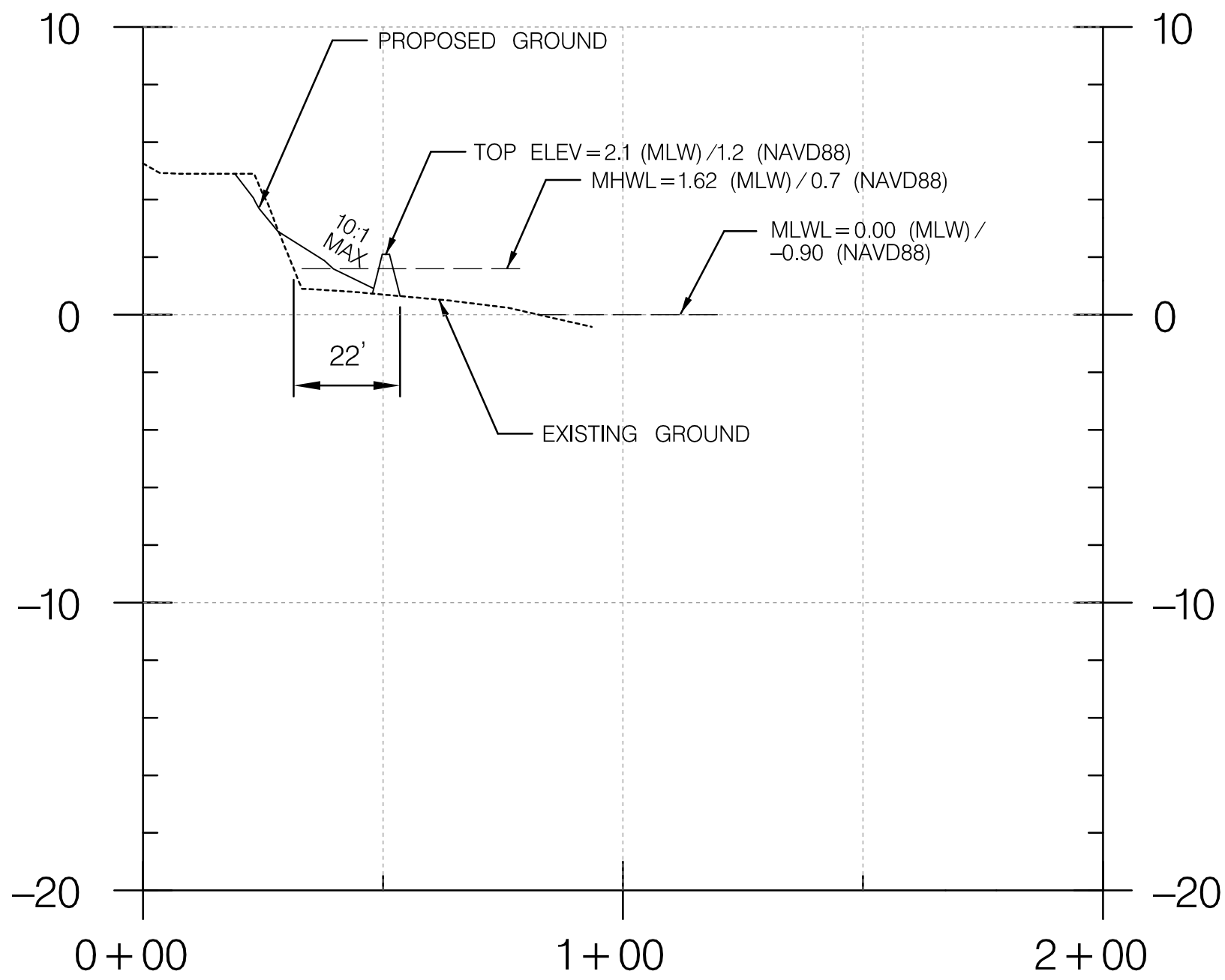
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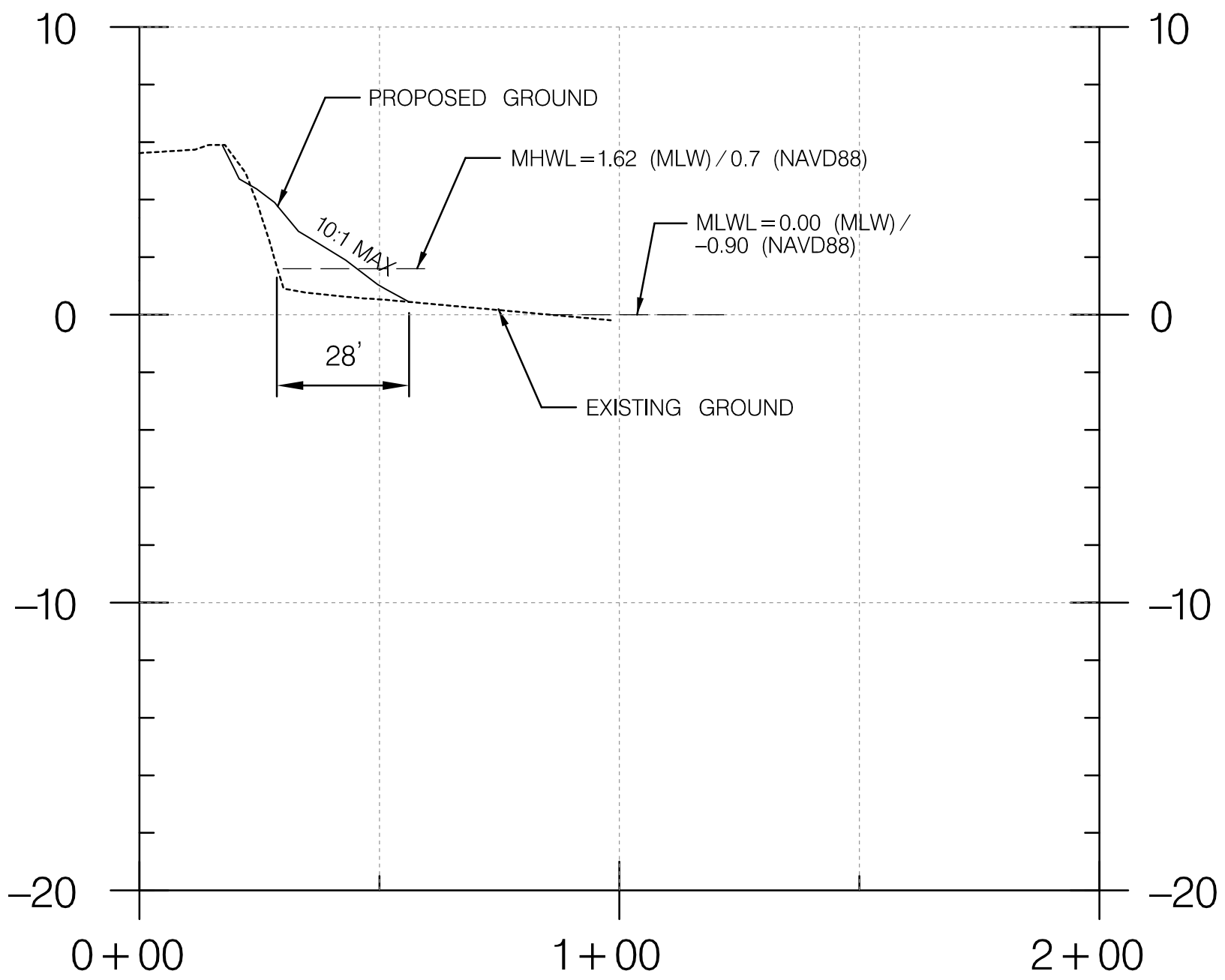
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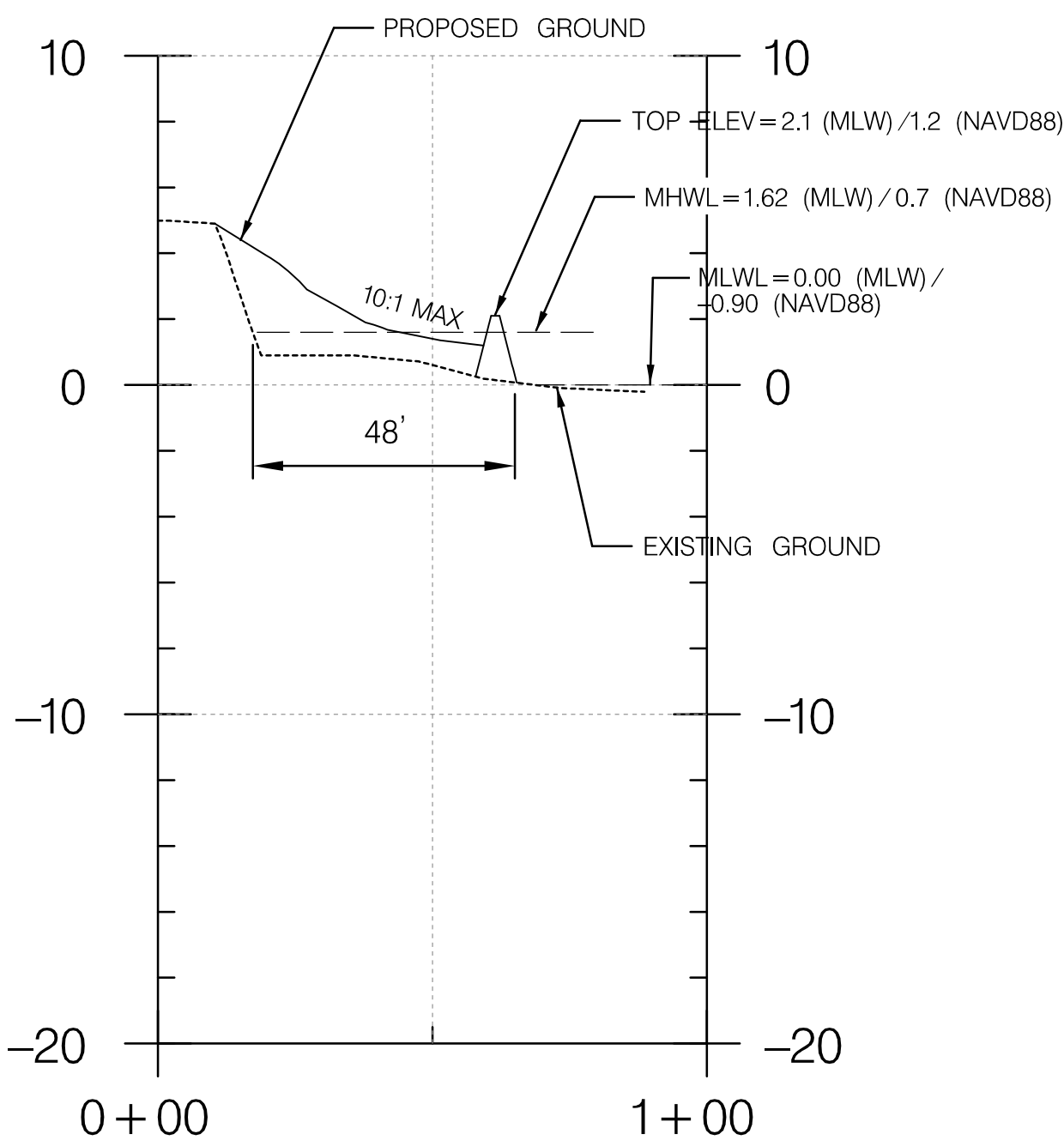
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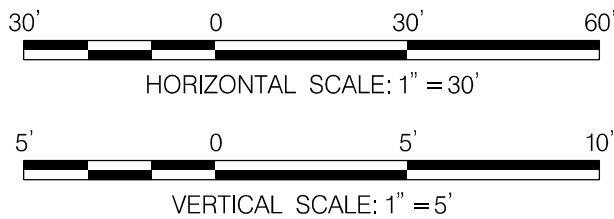


CROSS SECTION - 11



CROSS SECTION - 12

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REVISIONS

EASTERN SHORE LAND CONSERVANCY

**GRACE CREEK FARM LIVING SHORELINE  
CROSS SECTIONS**

**23472 BERRY RD, BOZMAN MD , TALBOT COUNTY**

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DESIGNED BY : CN

REVIEWED BY : MD

DRAWING NO. XS-02 OF XS-03

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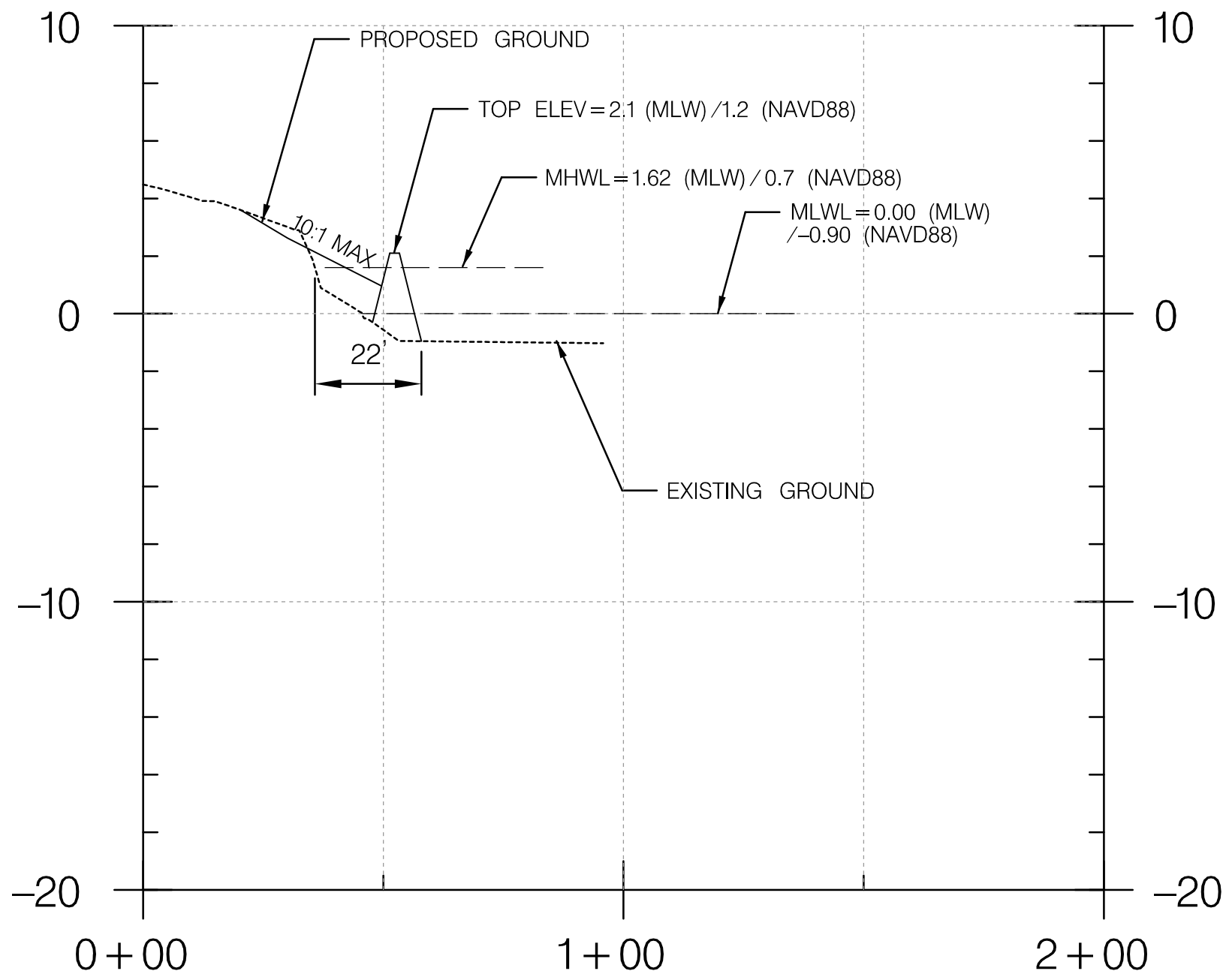
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DATE : NOVEMBER 2024

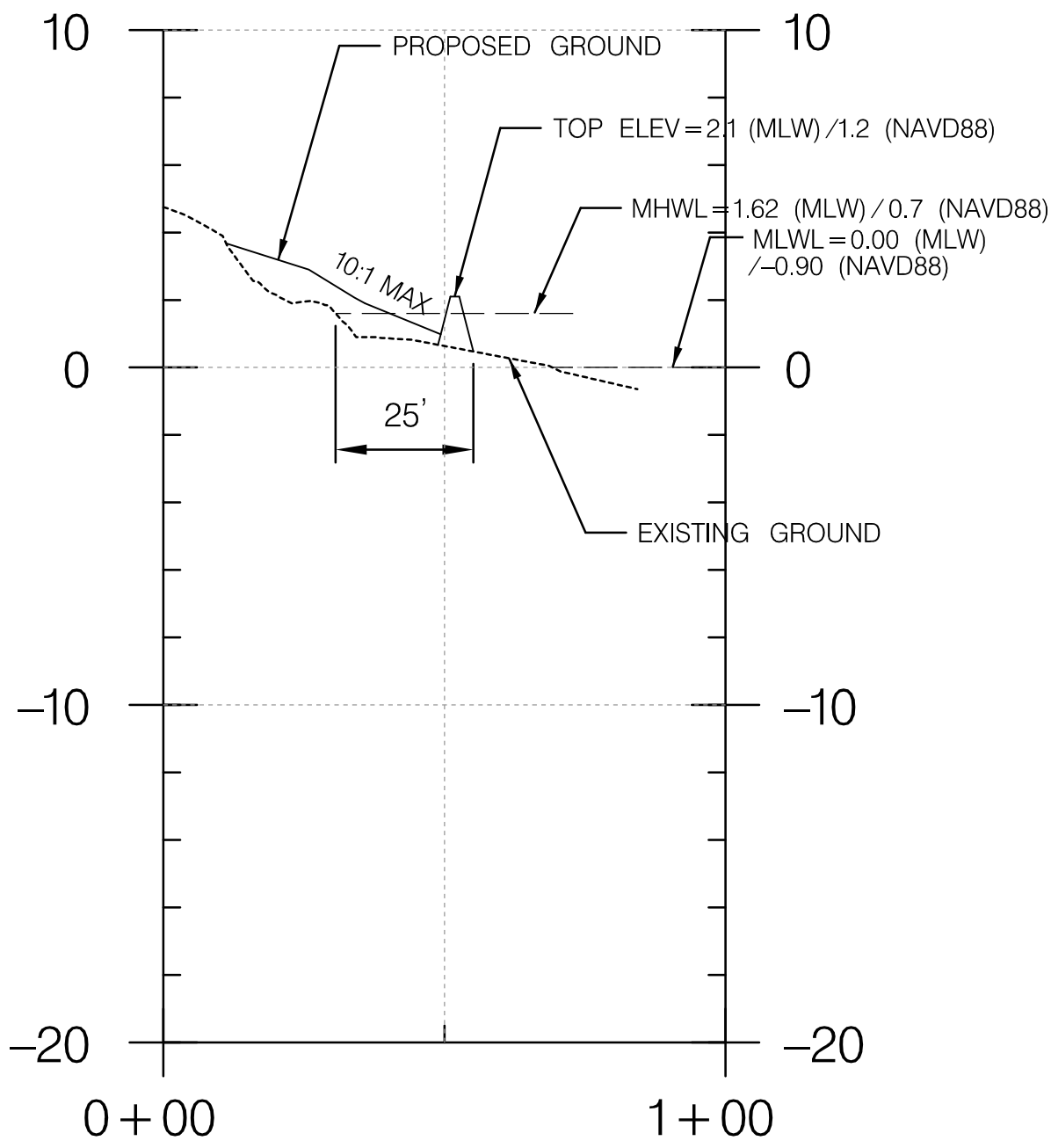
SHEET NO. 18 OF 37

DATE: 11/26/2024

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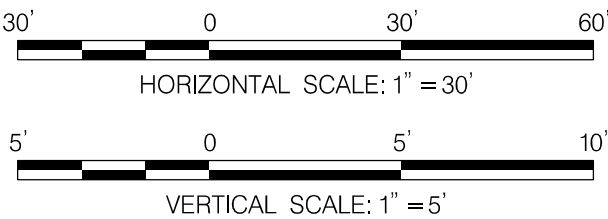


CROSS SECTION - 13



CROSS SECTION - 14

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GRACE CREEK FARM LIVING SHORELINE  
CROSS SECTIONS

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REVIEWED BY : MD	DATE : NOVEMBER 2024
DRAWING NO. XS-03 OF XS-03	SHEET NO. 19 OF 37



SHORELINE SEQUENCE OF CONSTRUCTION

- Schedule treatment of phragmites before construction mobilization begins.
- Contact the Maryland Department of Environment (MDE) at (410) 901-4020 two weeks prior to start of construction to schedule a pre-construction meeting to review plans and become familiar with all permits.
- Miss Utility must be contacted at least 72 hours prior to beginning work.
- All necessary approvals and permits must be obtained prior to the start of construction.
- To protect SAV, in-stream work shall not be conducted during the period April 15 through October 15, inclusive, during any year.  
To protect oyster populations including NOB 11-9, no bank grading shall be conducted during the periods from December 16 through March 1 and June 1 through September 30, inclusive, during any year.
- Clear and grub only for and install temporary sediment control measures.
- Install stabilized construction entrances and all sediment control devices.
- Notify the Talbot County sediment control inspector upon completion of said installation.
- With the approval of the Talbot County inspector, clear and grub for shoreline work.
- Haul in stone/fill material as required and place at stockpile areas as shown on the plan.
- Begin shoreline work. Perform excavation and site grading as required and shown on plan. Only disturb as much area as can be stabilized at the end of each work day. The turbidity curtain shall be installed around the work area prior to any disturbances and removed at the end of each work day. Remove any accumulated sediment at the end of each working day and prior to removal of turbidity curtain.
- Place filter cloth then class 3 stone base (filter cloth should wrap to the top of the sand fill elevation on the landward side of the structure), then place class 1 and 2 (pre mix prior to placing), and then top with class 0.
- Maintain all sediment control measures throughout construction.
- Once shoreline restoration is complete, fine grade, topsoil, seed, and mulch per the plan.
- Stabilize any remaining work areas. Once the site is fully stabilized, and through coordination and approval of the MDE inspector, remove sediment control measures.
- Install plant material during appropriate planting dates.

TEMPORARY STOCKPILE NOTE

If necessary, a temporary stockpile shall be provided within the limits of disturbance. The stockpile shall be located such that any runoff will drain to an existing sediment control device (i.e., filter sock). The stockpile may not protrude upon nor alter drainage divides to the sediment control device at any time.

MAINTENANCE NOTE

Contractor shall inspect and maintain all sediment control measures and devices after every storm event. Maintenance shall include, but not be limited to the removal of all accumulated sediment. Geotextile fabric shall be replaced as needed to ensure proper function.

DURING CONSTRUCTION STABILIZATION NOTE

Following the initial disturbance permanent or temporary stabilization shall be completed within 3 calendar days on all perimeter controls and slopes greater than 3 to 1 and 7 days on all other disturbed areas on the site.

GENERAL NOTES

- This plan has been prepared to provide approximately 2,700 linear feet of shoreline restoration at 23432 Berry Rd and 32472 Berry Rd in Talbot County, Maryland.
- Field survey were obtained from Ecotone, Inc. in May 2023 and depict field run 1-ft topo merged with 2-ft County GIS topo.
- Ecotone, LLC., The Contractor, shall notify the landowner's representative at least two (2) weeks prior to start of grading operations within the project areas.
- The Contractor is responsible for the location of all underground utilities prior to the start of construction. Any damages to utilities as a result of grading or other activities will be the sole responsibility of the Contractor and shall be repaired at the Contractors expense.
- Access to the restoration area shall be from Berry Rd as indicated hereon.
- The Contractor will be responsible for any damage to private property, including but not limited to fences and private roads resulting from the execution of this contract. Repairs for any such damage will be made at the Contractors expense to the satisfaction of the private property owner.
- All machinery, equipment and supplies for the project shall be stored in an upland location, preferably the staging area shown on this plan, so as not to disturb any environmentally sensitive areas or agricultural uses on the site.

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

- No excess fill, construction material, or debris shall be stockpiled or stored in nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- 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.
- Place heavy equipment on mats or suitably operate the equipment to prevent damage to nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- Repair and maintain any serviceable structure or fill so there is no permanent loss of nontidal wetlands, nontidal wetland buffers, or waterways, or permanent modification of the 100-year floodplain in excess of that lost under the originally authorized structure or fill.
- Rectify any nontidal wetlands, wetland buffers, waterways, or 100-year floodplain temporarily impacted by any construction.
- All stabilization in the nontidal wetland and nontidal wetland 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 revegetation of natural wetland species. Other non-persistent vegetation may be acceptable, but must be approved by the Nontidal Wetlands and Waterways Division. Kentucky 31 fescue shall not be utilized in wetland or buffer areas. The area should be seeded and mulched to reduce erosion after construction activities have been completed.
- After installation has been completed, make post-construction grades and elevations the same as the original grades and elevations in temporarily impacted areas.  
To protect aquatic species, in-stream work is prohibited as determined by the classification of the stream: NA - Tidal Waters
- Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.
- Culverts shall be constructed and any riprap placed so as not to obstruct the movement of aquatic species, unless the purpose of the activity is to impound water.
- A dewatering pump will be utilized in conjunction with a dirt bag to remove standing water in the project area during construction. The dirt bag will be placed on a vegetated area a sufficient distance from subject reach so that any sediment leaving the dirt bag has time/distance to settle out before reaching the waterway.

SHORELINE PHASE OF CONSTRUCTION

- CONTACT THE MARYLAND DEPARTMENT OF ENVIRONMENT (MDE) AT (410) 901-4020 TWO WEEKS PRIOR TO START OF CONSTRUCTION TO SCHEDULE A PRE-CONSTRUCTION MEETING TO REVIEW PLANS AND BECOME FAMILIAR WITH ALL PERMITS.
- CLEAR ONLY FOR AND INSTALL TEMPORARY SEDIMENT CONTROL MEASURES.
- PERFORM EXCAVATION AND SITE GRADING AS REQUIRED AND SHOWN ON PLAN.
- HAUL IN STONE/FILL MATERIAL AS REQUIRED AND PLACE AT STOCKPILE AREAS AS SHOWN ON THE PLAN.
- PLACE FILTER CLOTH AND STONE PER DETAIL ON THE PLAN.
- MAINTAIN ALL SEDIMENT CONTROL MEASURES THROUGHOUT CONSTRUCTION.
- FINE GRADE, TOPSOIL, SEED, AND MULCH PER SPECIFICATIONS.
- ONCE THE SITE IS FULLY STABILIZED, AND THROUGH COORDINATION AND APPROVAL OF THE MDE INSPECTOR, REMOVE SEDIMENT CONTROL MEASURES.

EROSION AND SEDIMENT CONTROL STANDARDS & SPECIFICATIONS FOR VEGETATIVE STABILIZATION

- Contractor shall install soil erosion and sediment control devices prior to any grading. Following initial disturbance or re-disturbance, permanent or temporary stabilization shall be completed within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes greater than three (3) horizontal to one (1) vertical (3:1) and seven (7) days as to all other disturbed or graded areas on the project site not under active grading.
- All temporary erosion and sediment control devices are to be provided as indicated on this plan, with location adjustments to be made in the field as necessary, and to be maintained at the end of each working day until project completion. The minimum area practical shall be disturbed for the minimal amount of time possible.
- Clearing and grubbing shall include all trees, brush, debris, root mat and organic materials to be removed.
- Temporary seeding shall be accomplished between February 15th through April 30th, and August 15th through November 30th. During other times, temporary mulching shall be provided.
- Temporary seeding shall conform to the following applications: 436 lbs. per acre of 10-20-20; 4,000 lbs. per acre of ground limestone, to be incorporated into the soil by disking or other suitable means. Annual ryegrass shall be applied at a rate of 50 lbs. per acre using suitable equipment. Mulching shall be accomplished immediately after seeding.

Seed Mixture (For Hardiness Zone 7a) (From Table B.1)				Fertilizer Rate (10-20-20)	Lime Rate
Species	Appl. Rate (lbs. /ac.)	Seeding Dates	Seeding Depths		
ANNUAL RYEGRASS	50#	2/15 - 4/30 8/15 - 11/30	1/2"	436 lbs. / ac. 10 lbs. / 1000 sf	2 tons / ac. 90 lbs. / 1000 sf
BARLEY	96#	2/15 - 4/30; 8/15 - 11/30	1"		
OATS	72#	2/15 - 4/30; 8/15 - 11/30	1"		
WHEAT	120#	2/15 - 4/30; 8/15 - 11/30	1"		
CEREAL RYE	112#	2/15 - 4/30; 8/15 - 12/15	1"		
FOXTAIL MILLET	30#	5/1 - 8/14	1/2"		
PEARL MILLET	20#	5/1 - 8/14	1/2"		

- Mulching shall be un-chopped, un-rotted, small grain straw applied at a rate of 2-2½ tons per acre. Anchor mulch with a mulch anchoring tool on the Contour. Wood cellulose fiber may be used for anchoring straw at a rate of 750 lbs. per acre mixed with water at a maximum of 50 lbs. of wood cellulose fiber per 100 gals. of water, or with a synthetic liquid binder according to manufacturer recommendations. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1,500 lbs. per acre. Mix wood cellulose fiber with water to attain a mixture with a maximum of 50 lbs. of wood cellulose fiber per 100 gals. of water.
- Permanent seeding shall be accomplished between February 15th through April 30th, or August 15th through October 31st. Permanent seeding at other than specified times will be allowed only upon written approval. Permanent seeding shall conform to the following applications: Permanent seeding for sites having disturbed over five (5) acres shall use fertilizer rates recommended by a soil testing agency and the recommendations provided in the Permanent Seeding Summary Table. Permanent seeding for conditions other than listed above shall be performed at the rates and dates as provided in the Permanent Seeding Summary Table below. Fertilizer and lime amendments shall be incorporated into the top 3"-5" of the soil by disking or other suitable means. Mulching shall be accomplished as discussed in Item #6 of these specifications.

Seed Mixture (For Hardiness Zone 7a) (From Table B.3)					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Appl. Rate (lbs. /ac.)	Seeding Dates	Seeding Depths	N	P2O5	K2O	
7	CREeping RED FESCUE KENTUCKY BLUEGRASS	60# 15#	2/15-4/30 8/15-10/31	3/4"-1/2"	45 lb. / ac. 1 lb. / 1000 sf	90 lb. / ac. 2 lbs. / 1000 sf	90 lb. / ac. 2 lbs. / 1000 sf	2 tons / ac. 90 lbs. / 1000 sf
8	TALL FESCUE	100#	2/15-4/30 8/15-10/31	3/4"-1/2"				
9	TALL FESCUE KENTUCKY BLUEGRASS PERENNIAL RYEGRASS	60# 40# 20#	2/15-4/30 8/15-10/31	3/4"-1/2"				

- Any spoil or borrow will be placed at a site approved by the Talbot Soil Conservation District.
- All areas remaining or intended to remain disturbed for longer than seven (7) days shall be stabilized in accordance with the USDA, Natural Resources Conservation Service Standards and Specifications for Soil Erosion and Sediment Control in developing areas for critical area stabilization.
- It will be the responsibility of the Contractor or Subcontractor to notify the Engineer of any deviation from this plan. Any change made in this plan without written authorization from the Engineer will place responsibility of said change on the Contractor or Subcontractor.

The following items have been addressed to meet the requirements of the GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY (NPDES NUMBER MD010, STATE DISCHARGE PERMIT NUMBER 09GP).

- Utilization of environmental site design
- Maintenance of limits of disturbance to protect natural areas
- Control of construction equipment and vehicles
- Evaluation and appropriate limitation of site clearing
- Evaluation and designation of site area for phasing or sequencing
- Identification of soils at high risk for erosion and advanced stabilization techniques to be used
- Identification of steep slopes and designation of limitations on clearing them
- Evaluation and designation of stabilization requirements and time limits and protection measures for discharges to the Chesapeake Bay, impaired waters or waters with an established Total Maximum Daily Load (TMDL).

EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE  
EROSION AND SEDIMENT CONTROL GENERAL NOTES /SOC

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB SCALE : NA

DESIGNED BY : CN DATE : NOVEMBER 2024

REVIEWED BY : MD

DRAWING NO. EN-01 OF EN-01 SHEET NO. 20 OF 37

COORDINATE NOTE  
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COORDINATE SYSTEM.

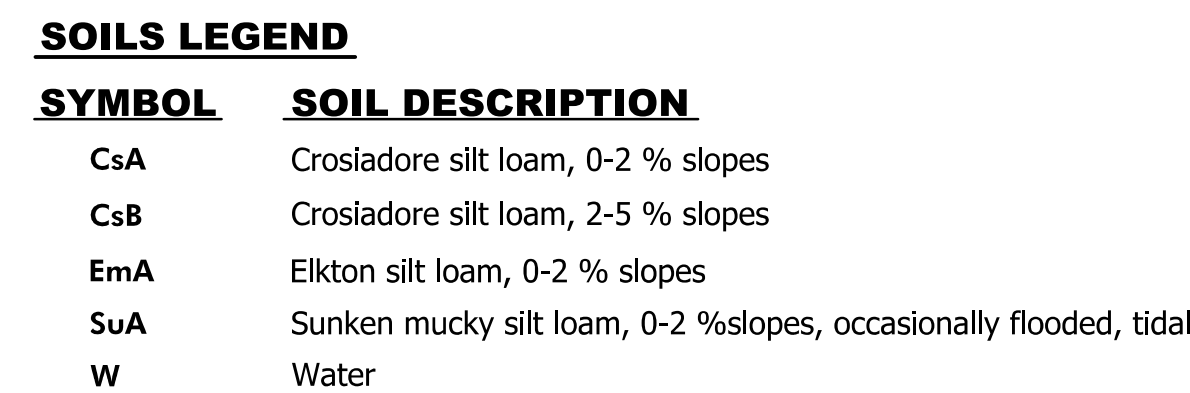
PROFESSIONAL CERTIFICATION

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.

23-WL-1110  
202361731  
180119  
11/ 26/2024  
MTH

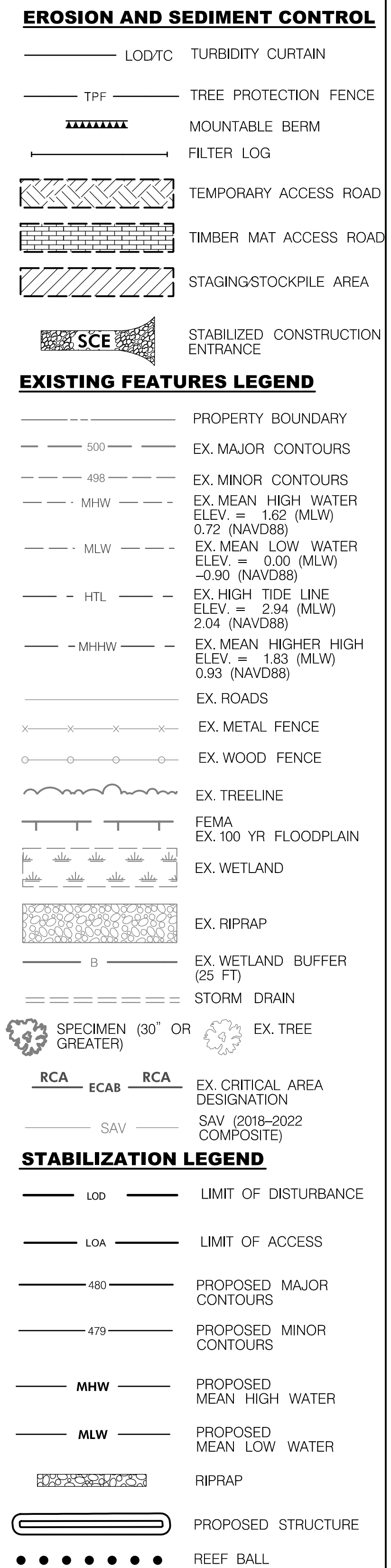






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THE STATE OF MARYLAND.



DRAWING NO.	ES-01 OF ES-07	SHEET NO.	21 OF 37
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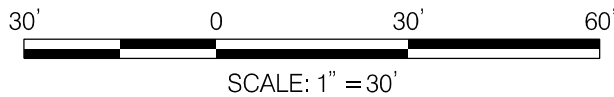


SOILS LEGEND

SYMBOL	SOIL DESCRIPTION
CsA	Crosladore silt loam, 0-2 % slopes
CsB	Crosladore silt loam, 2-5 % slopes
SuA	Sunken mucky silt loam, 0-2 % slopes, occasionally flooded, tidal
W	Water

**COORDINATE NOTE**  
PLANS ARE IN NAD 83 MARYLAND STATE PLANE FIPS 1900 COORDINATE SYSTEM.

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REVISIONS

EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE  
EROSION AND SEDIMENT CONTROL PLAN

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB
DESIGNED BY : CN
REVIEWED BY : MD
DRAWING NO. ES-02 OF ES-07

SCALE : 1" = 30'
DATE : NOVEMBER 2024
SHEET NO. 22 OF 37

EROSION AND SEDIMENT CONTROL

- LOD/TC TURBIDITY CURTAIN
- TPF TREE PROTECTION FENCE
- MOUNTABLE BERM
- FILTER LOG
- TEMPORARY ACCESS ROAD
- TIMBER MAT ACCESS ROAD
- STAGING/STOCKPILE AREA
- SCE STABILIZED CONSTRUCTION ENTRANCE

EXISTING FEATURES LEGEND

- PROPERTY BOUNDARY
- EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- EX. MEAN HIGH WATER ELEV. = 1.62 (MLW) 0.72 (NAVD88)
- EX. MEAN LOW WATER ELEV. = 0.00 (MLW) -0.90 (NAVD88)
- EX. HIGH TIDE LINE ELEV. = 2.94 (MLW) 2.04 (NAVD88)
- EX. MEAN HIGHER HIGH ELEV. = 1.83 (MLW) 0.93 (NAVD88)
- EX. ROADS
- EX. METAL FENCE
- EX. WOOD FENCE
- EX. TREELINE
- FEMA EX. 100 YR FLOODPLAIN
- EX. WETLAND
- EX. RIPRAP
- EX. WETLAND BUFFER (25 FT)
- STORM DRAIN
- SPECIMEN (30" OR GREATER) EX. TREE
- EX. CRITICAL AREA DESIGNATION
- SAV (2018-2022 COMPOSITE)

STABILIZATION LEGEND

- LOD LIMIT OF DISTURBANCE
- LOA LIMIT OF ACCESS
- 480 PROPOSED MAJOR CONTOURS
- 479 PROPOSED MINOR CONTOURS
- MHW PROPOSED MEAN HIGH WATER
- MLW PROPOSED MEAN LOW WATER
- RIPRAP
- PROPOSED STRUCTURE
- REEF BALL

23-WI-1110  
202361731  
180119  
11/26/2024  
MTH



MATCHLINE - SEE SHEET ES-02

MATCHLINE - SEE SHEET ES-04

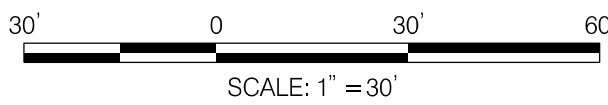
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EROSION AND SEDIMENT CONTROL

- LOD/TC TURBIDITY CURTAIN
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- REEF BALL

23-WL-1110  
202361731  
180119  
11/26/2024  
MTH

EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE  
EROSION AND SEDIMENT CONTROL PLAN

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB

DESIGNED BY : CN

REVIEWED BY : MD

DRAWING NO. ES-03 OF ES-07

SCALE : 1" = 30'

DATE : NOVEMBER 2024

SHEET NO. 23 OF 37



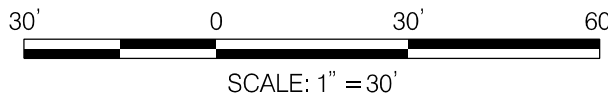
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SuA	Sunken mucky silt loam, 0-2 % slopes, occasionally flooded, tidal
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23-WL-1110  
202361731  
180119  
11/ 26/2024  
MTH

EROSION AND SEDIMENT CONTROL

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- SAV (2018-2022 COMPOSITE)

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- PROPOSED STRUCTURE
- REEF BALL

EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE  
EROSION AND SEDIMENT CONTROL PLAN

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

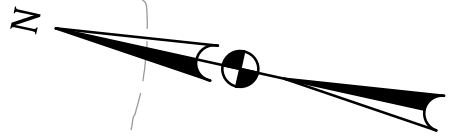
DRAWN BY : JB  
DESIGNED BY : CN  
REVIEWED BY : MD  
DRAWING NO. ES-04 OF ES-07

SCALE : 1" = 30'  
DATE : NOVEMBER 2024  
SHEET NO. 24 OF 37





MATCHLINE - SEE SHEET ES-06



GRACE CREEK FARM LLC  
23472 BERRY RD  
WATERFRONT  
BOZMAN MD 21612-0000  
DEED BOOK: 02807 PAGE: 00227  
MAP: 39 GRID: 0004 PARCEL: 0050

EXISTING POND

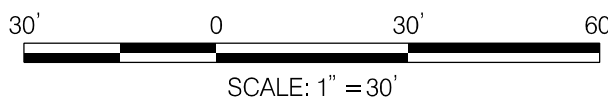
EXISTING POND

23-WL-1110  
202361731  
180119  
11/ 26/2024  
MTH

MATCHLINE - SEE SHEET ES-02

SOILS LEGEND

SYMBOL	SOIL DESCRIPTION
CsB	Crosladore silt loam, 0-2 % slopes
EmA	Crosladore silt loam, 2-5 % slopes
SuA	Elkton silt loam, 0-2 % slopes
W	Sunken mucky silt loam, 0-2 %slopes, occasionally flooded, tidal
	Water



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REVISIONS

EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE  
EROSION AND SEDIMENT CONTROL PLAN

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB

DESIGNED BY : CN

REVIEWED BY : MD

DRAWING NO.

ES-05 OF ES-07

SCALE : 1" = 30'

DATE : NOVEMBER 2024

SHEET NO.

25 OF 37

EROSION AND SEDIMENT CONTROL

- LOD/TC TURBIDITY CURTAIN
- TPF TREE PROTECTION FENCE
- MOUNTABLE BERM
- FILTER LOG
- TEMPORARY ACCESS ROAD
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- SCE STABILIZED CONSTRUCTION ENTRANCE

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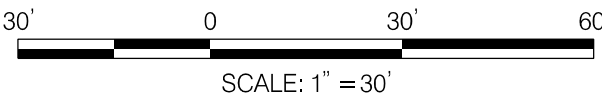
**SOILS LEGEND**

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**EROSION AND SEDIMENT CONTROL**

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**EASTERN SHORE LAND CONSERVANCY**

**GRACE CREEK FARM LIVING SHORELINE  
EROSION AND SEDIMENT CONTROL PLAN**

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB
DESIGNED BY : CN
REVIEWED BY : MD
DRAWING NO. ES-06 OF ES-07

SCALE : 1" = 30'
DATE : NOVEMBER 2024
SHEET NO. 26 OF 37

DATE: 11/26/2024

FILE PATH: X:\Projects\2023 Projects\23-05-096 Grace Creek Living Shoreline\CAD\Plan\Shoreline\Erosion and Sediment Control\ES-0007\_GraceCreek.dgn

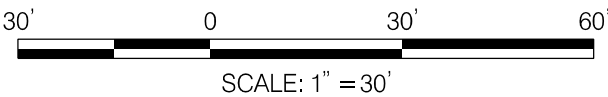
SOILS LEGEND

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**COORDINATE NOTE**  
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REVISIONS

EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE  
EROSION AND SEDIMENT CONTROL PLAN

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB  
DESIGNED BY : CN  
REVIEWED BY : MD  
DRAWING NO. ES-07 OF ES-07

SCALE : 1" = 30'  
DATE : NOVEMBER 2024  
SHEET NO. 27 OF 37

EROSION AND SEDIMENT CONTROL

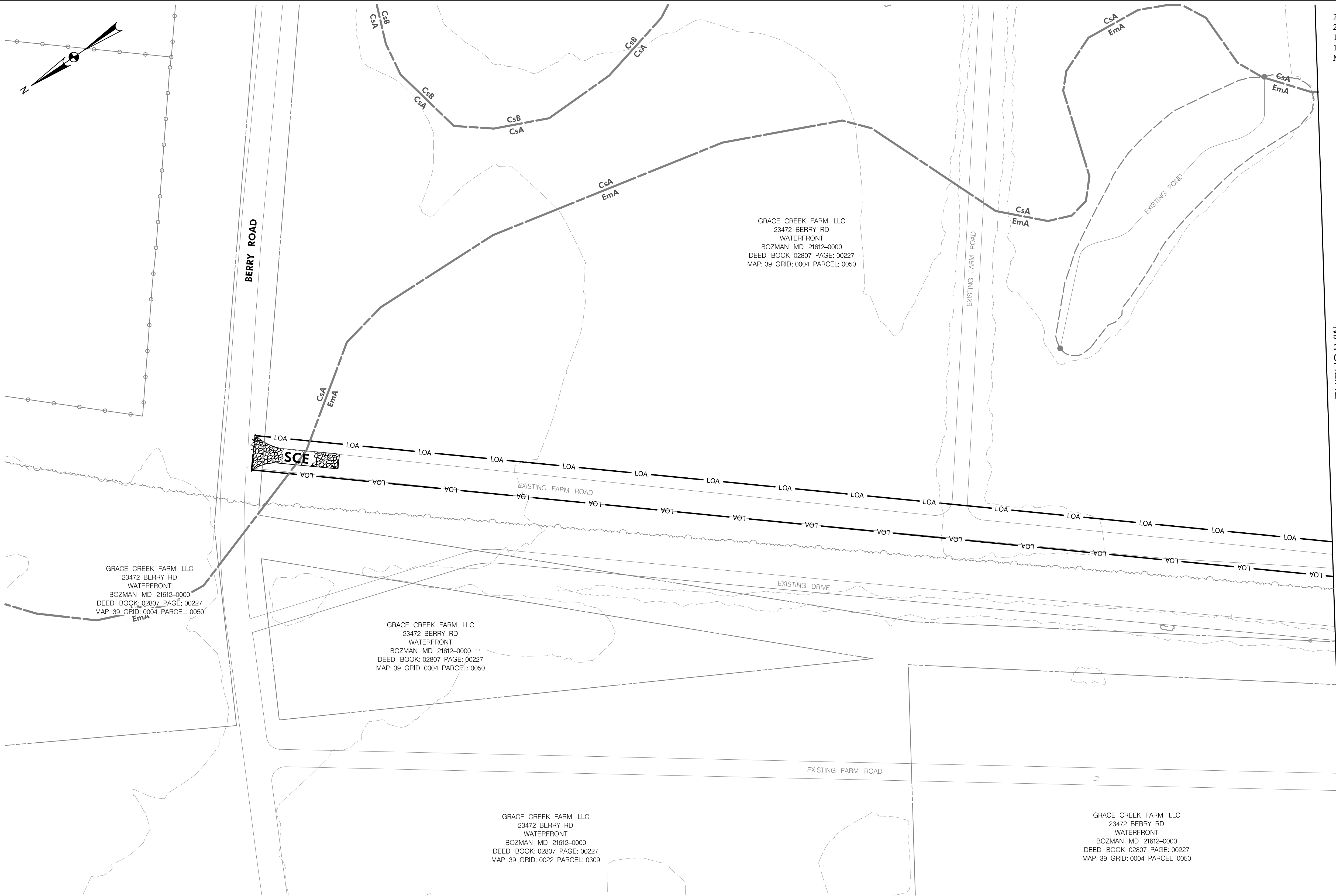
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EXISTING FEATURES LEGEND

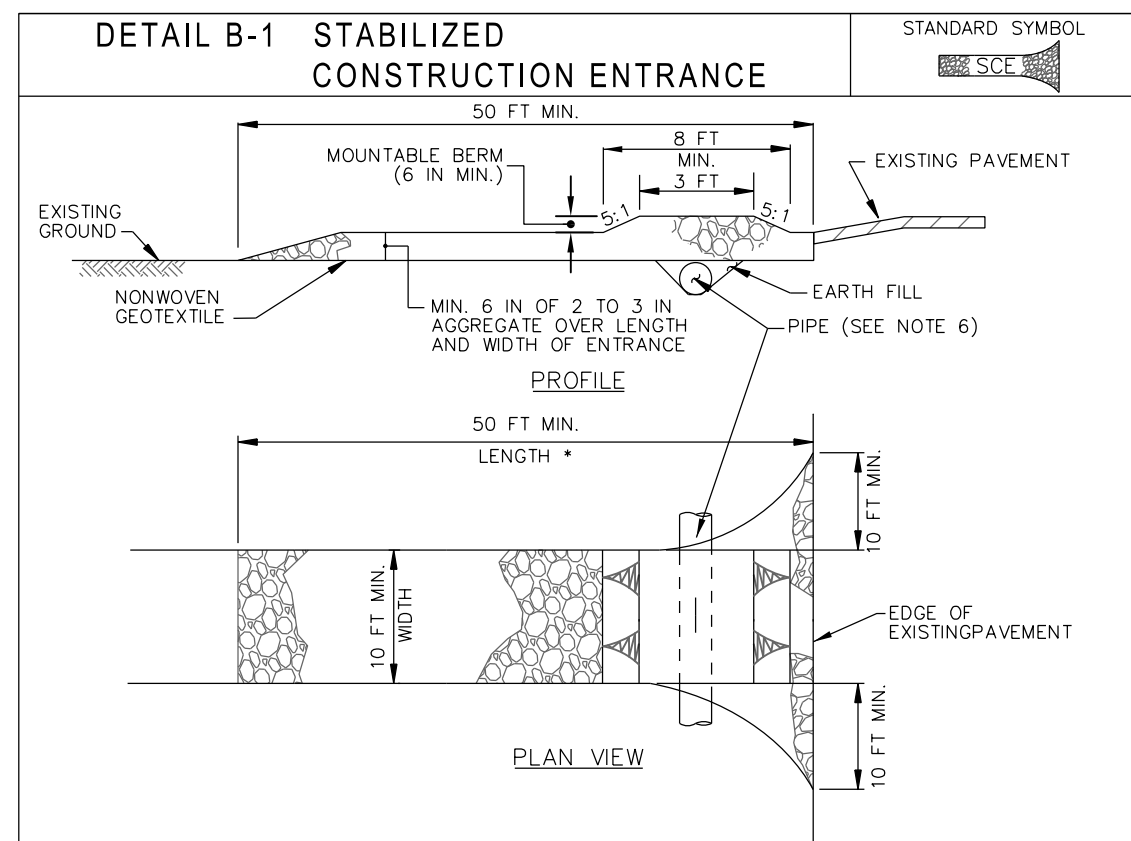
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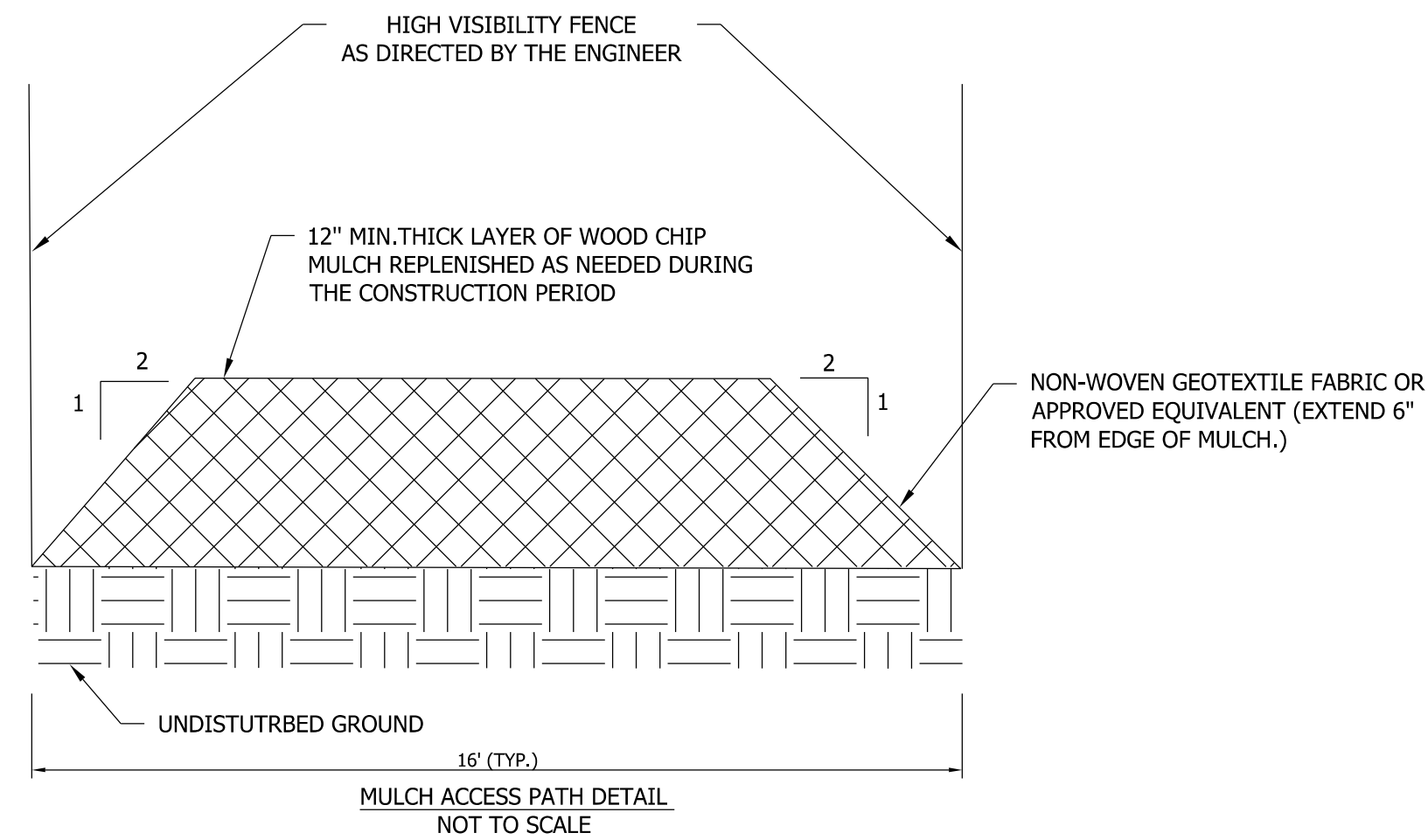




## CONSTRUCTION SPECIFICATIONS

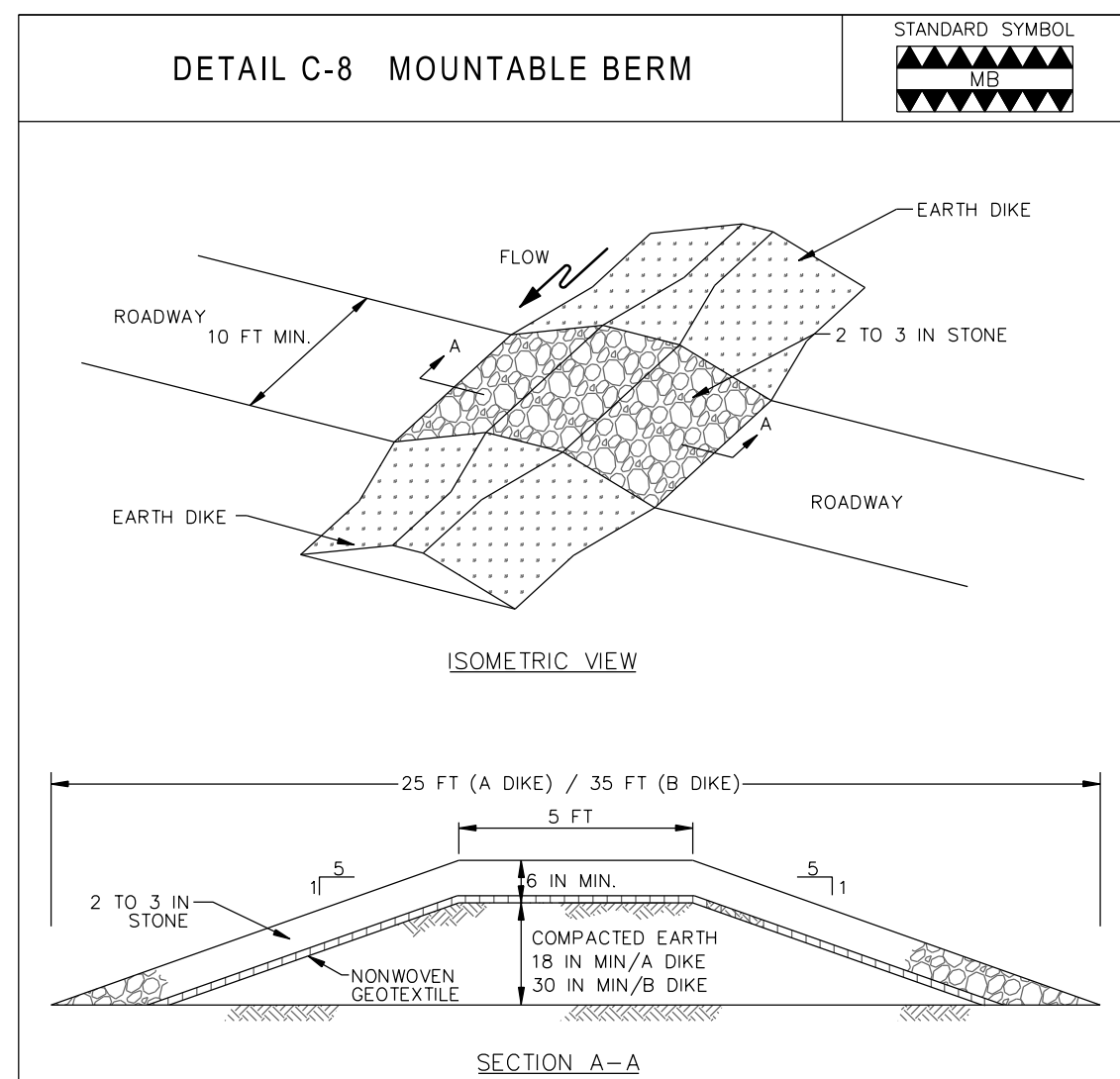
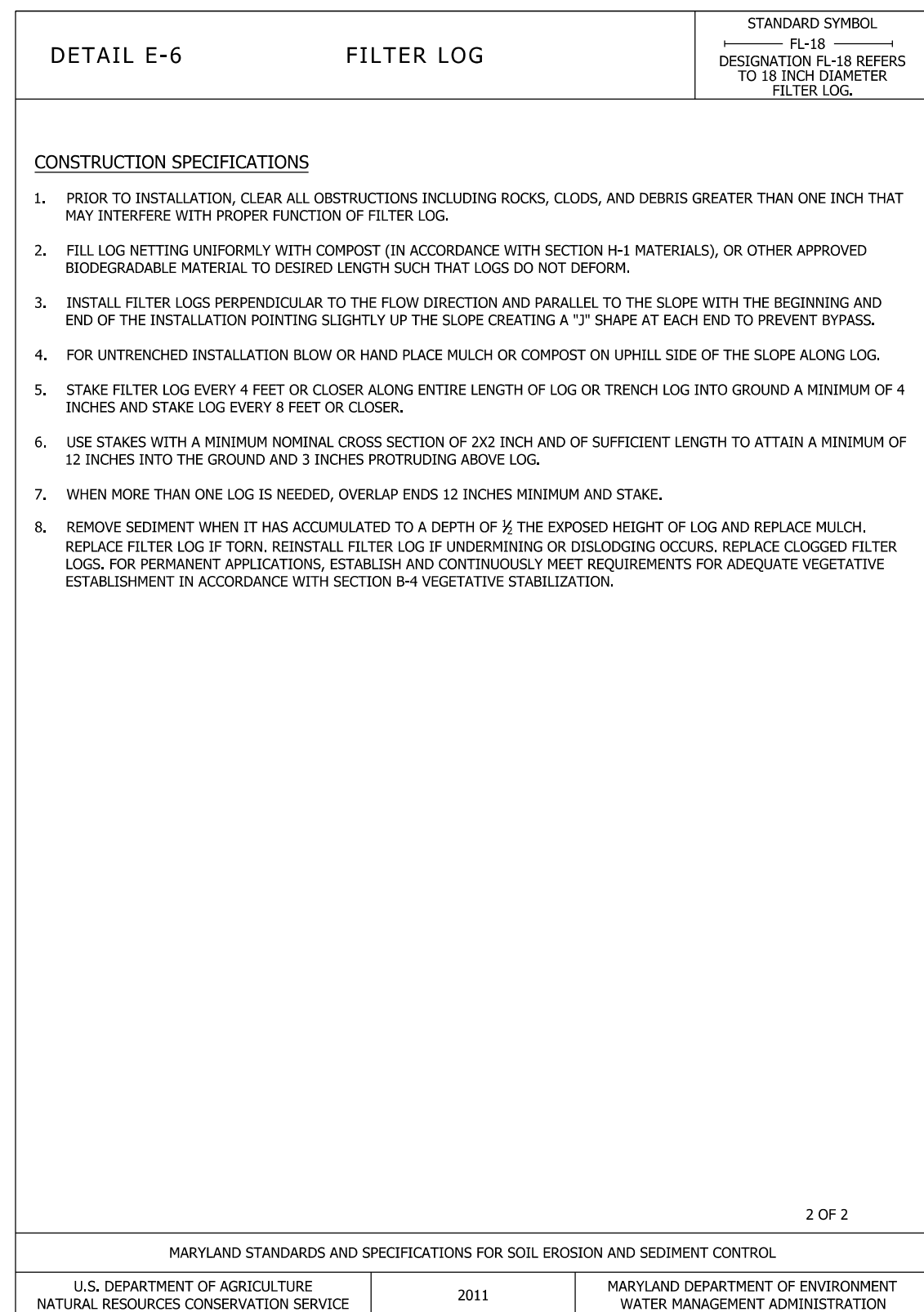
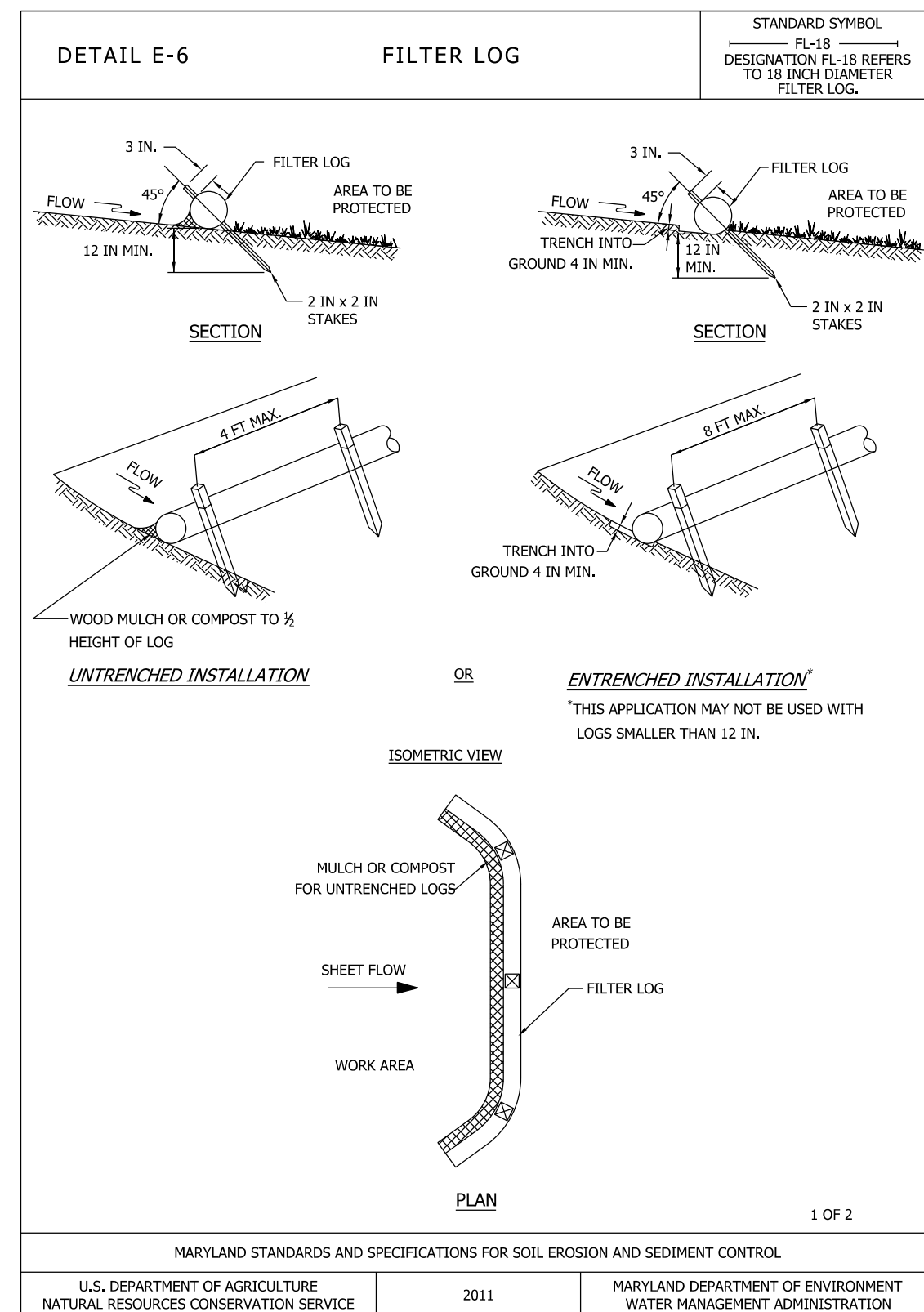
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (\*30 FEET FOR SINGLE LOT/SEAL LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE TO 10 FEET MINIMUM AT THE ENTRANCE AND EXIT.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, WITH 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. THE SHEDS 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.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. 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.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT AND STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ON ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEEPING. WASHING AND/OR REMOVAL OF SEDIMENT AND STONE ONTO ADJACENT ROADWAY IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	201 1	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



**MULCH ACCESS PATH DETAIL NOTES:**

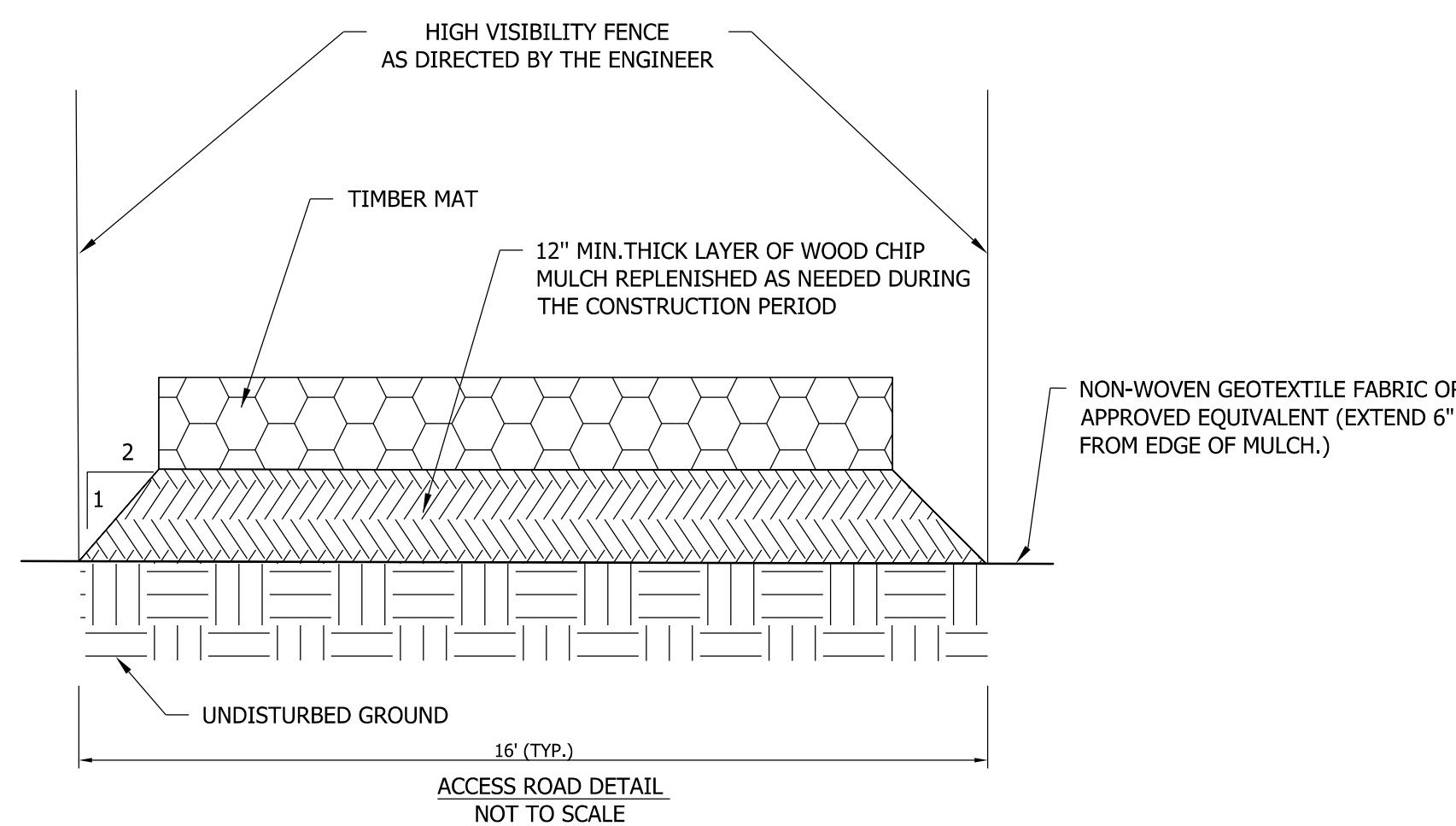
1. ACCESS ROUTES TO BE VERIFIED BY ENGINEER AT PRE-CONSTRUCTION MEETING. MINOR ADJUSTMENTS TO THE ALIGNMENT THAT MINIMIZES TREE DISTURBANCE ARE ENCOURAGED AND REQUIRE REVIEW AND APPROVAL BY ENGINEER AND THE SEDIMENT CONTROL INSPECTOR.
2. AS FIELD CONDITIONS WARRANT, ADDITIONAL WOOD CHIP MULCH (EXCEEDING THE MINIMUM 12") MAY BE REQUIRED AT THE DISCRETION OF THE SEDIMENT CONTROL INSPECTOR TO AVOID RUTTING OF THE SOIL SURFACE.
3. SWAMP MATS ARE REQUIRED WHEN CROSSING WETLANDS.
4. CONTRACTOR SHALL MAINTAIN MULCH MAT THROUGHOUT CONSTRUCTION PERIOD. UPON COMPLETION OF THE PROJECT, MULCH CAN REMAIN IN PLACE, BEING SPREAD THROUGHOUT THE SITE AT A MAXIMUM DEPTH OF 2". THE CONTRACTOR MUST ENSURE THAT THIS PROCESS IS DONE THROUGHOUT THE GRADING PROCESS, IN A MANNER WHICH ENSURES PROPOSED GRADES ARE MET AND MAINTAINED, WITHOUT DISTURBANCE TO FINAL SEEDING AND PLANTING OF THE SITE.
5. SCARIFICATION OF COMPACTED MULCH TO OCCUR UPON REMOVAL OF ACCESS PATH, AT DIRECTION OF THE ENGINEER. IF SOILS ARE EXPOSED AND RUTTED BELOW MULCH MATTING, CONTRACTOR TO ADDRESS ACCORDINGLY TO RESTORE NATURAL CONDITIONS. STABILIZE ALL EXPOSED SOIL WITH APPROPRIATE PERMANENT SEED MIX, AS DEFINED IN THE LANDSCAPE PLANS. SOIL STABILIZATION MATTING MAY BE REQUIRED AT THE DISCRETION OF THE SEDIMENT CONTROL INSPECTOR TO STABILIZE SLOPED AREAS.
6. THE ACCESS PATH IS DESIGNED TO PREVENT COMPACTION OF EXISTING SOILS USING LOW PRESSURE EQUIPMENT WHICH EXERTS NO MORE THAN 12 PSF. IF THE CONTRACTOR INTENDS TO USE ANY EQUIPMENT WITH HIGHER LOADS, ADDITIONAL PROTECTION MEASURES MUST BE PROVIDED, AT NO ADDITIONAL COST TO THE COUNTY, AND THOSE MEASURES MUST BE APPROVED BY THE ENGINEER PRIOR TO IMPLEMENTATION.



## CONSTRUCTION SPECIFICATIONS

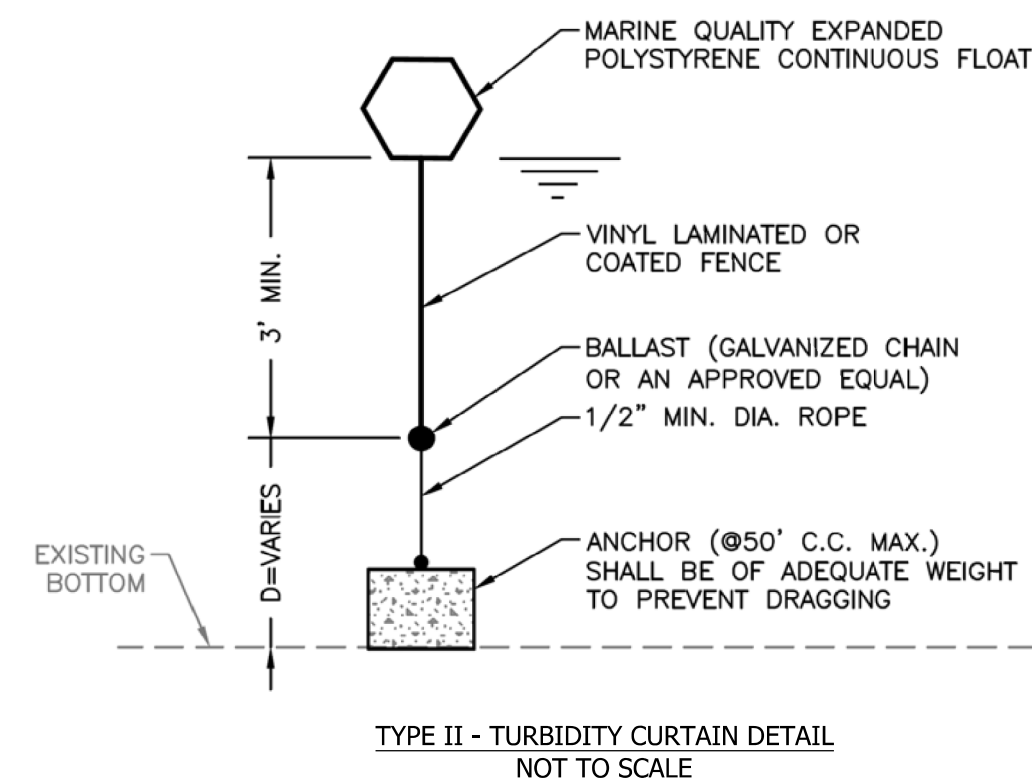
1. USE MINIMUM WIDTH OF 10 FEET TO ALLOW FOR VEHICULAR PASSAGE.
2. PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE EARTH MOUND PRIOR TO PLACING STONE.
3. PLACE 2 TO 3 INCH STONE OR EQUIVALENT RECYCLED CONCRETE AT LEAST 6 INCHES DEEP OVER THE GEOTEXTILE AND WIDTH OF THE MOVABLE BERM.
4. MAINTAIN LINE, GRADE, AND CROSS SECTION: ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN SPECIFIED DIMENSIONS: REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE.

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



**TIMBER MAT ACCESS PATH DETAIL NOTES:**

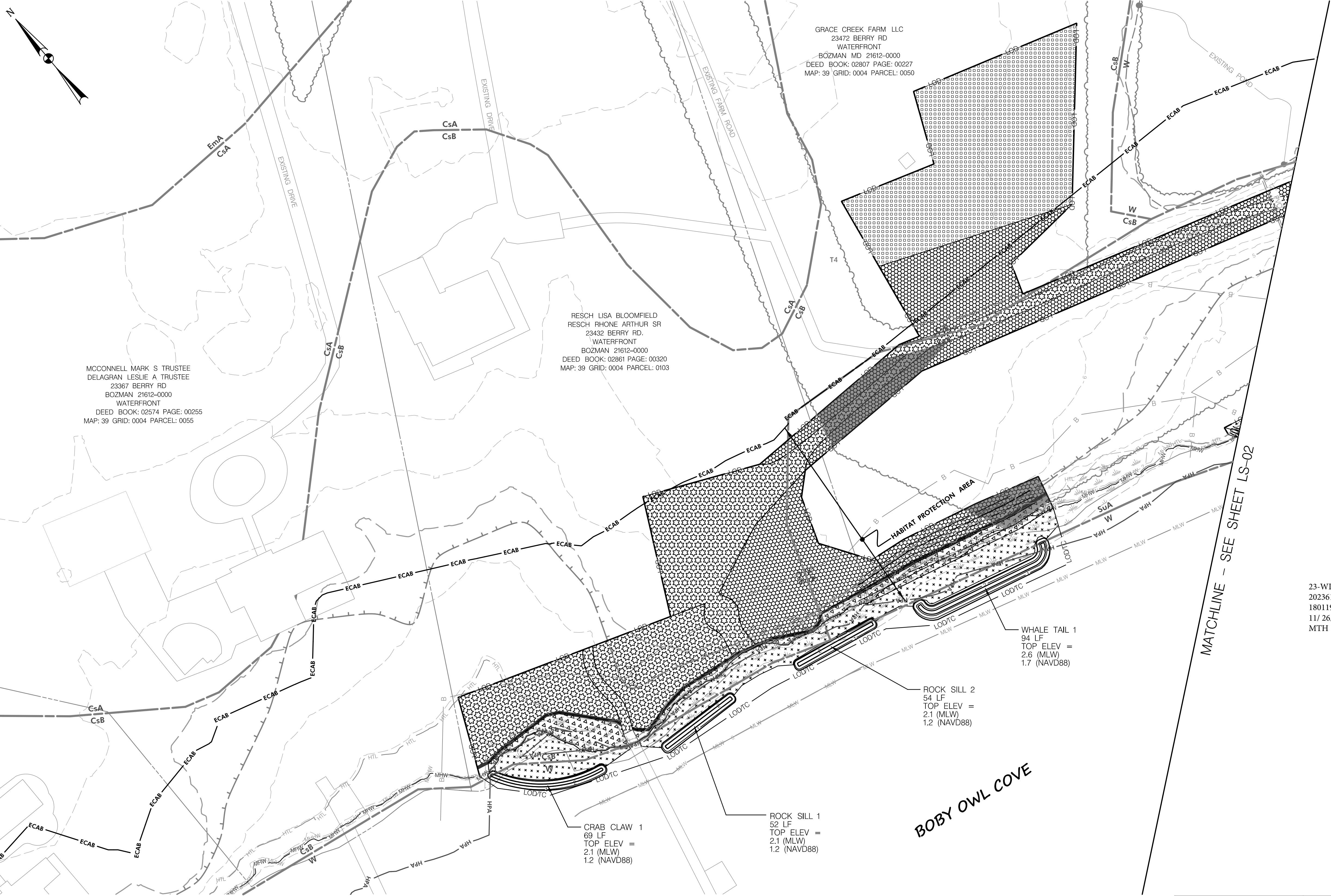
1. TIMBER MAT ACCESS PATH IS REQUIRED WHEN CROSSING WETLANDS AND WETLAND BUFFERS.
2. MATS SHALL BE PLACED END TO END TO FORM A CONTINUOUS SPAN FOR THE ENTIRE LENGTH OF THE AREA TO BE PROTECTED.
3. MATS SHALL BE INSPECTED FREQUENTLY AND MAINTAINED OR REPLACED AS NECESSARY TO ENSURE THEIR PROPER FUNCTION.
4. INDIVIDUAL MATS SHALL BE SECURELY CONSTRUCTED WITH INDIVIDUAL COMPONENT LAYERS BOLTED, CABLED OR OTHERWISE SECURELY FASTENED.
5. TIMBER MATS SHALL EITHER BE NEW OR POWER WASHED PRIOR TO ARRIVING ON SITE IF PREVIOUSLY USED.



**NOTE:** TURBIDITY CURTAIN TO PROTECT ACTIVE SHORELINE  
WORK AREA - LIMITED TO 400' AT ANY ONE TIME.

23-WL-1110  
202361731  
180119  
11/ 26/2024  
MTH





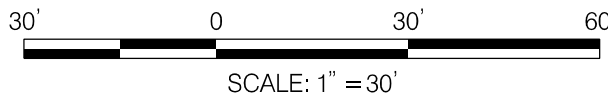
SOILS LEGEND

SYMBOL	SOIL DESCRIPTION
CsA	Crosladore silt loam, 0-2 % slopes
CsB	Crosladore silt loam, 2-5 % slopes
EmA	Elkton silt loam, 0-2 % slopes
SuA	Sunken mucky silt loam, 0-2 %slopes, occasionally flooded, tidal
W	Water

**COORDINATE NOTE**  
PLANS ARE IN NAD 83 MARYLAND STATE PLANE FIPS 1900 COORDINATE SYSTEM.

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.



EXISTING FEATURES LEGEND

---	PROPERTY BOUNDARY
---	EX. MAJOR CONTOURS
---	EX. MINOR CONTOURS
---	EX. MEAN HIGH WATER ELEV. = 1.62 (MLW) 0.72 (NAVD88)
---	EX. MEAN LOW WATER ELEV. = 0.00 (MLW) -0.90 (NAVD88)
---	EX. HIGH TIDE LINE ELEV. = 2.94 (MLW) 2.04 (NAVD88)
---	EX. MEAN HIGHER HIGH ELEV. = 1.83 (MLW) 0.93 (NAVD88)
---	EX. ROADS
---	EX. METAL FENCE
---	EX. WOOD FENCE
---	EX. TREELINE
---	FEMA
---	EX. 100 YR FLOODPLAIN
---	EX. WETLAND
---	EX. RIPRAP
---	EX. WETLAND BUFFER (25 FT)
---	STORM DRAIN
---	SPECIMEN (30" OR GREATER)
---	EX. TREE
---	EX. CRITICAL AREA DESIGNATION
---	SAV (2018-2022 COMPOSITE)
---	TREE CANOPY IMPACT

PLANTING ZONES

HIGH MARSH	.06 AC.	
LOW MARSH	.11 AC.	
MARSH TRANSITION	.02 AC.	
REFORESTATION PLANTING	.30 AC.	
TURFGRASS ESTABLISHMENT SEEDING	.29 AC.	
UPLAND MEADOW SEEDING	.24 AC.	

STABILIZATION LEGEND

---	LOD	LIMIT OF DISTURBANCE
---	LOA	LIMIT OF ACCESS
---	480	PROPOSED MAJOR CONTOURS
---	479	PROPOSED MINOR CONTOURS
---	MHW	PROPOSED MEAN HIGH WATER
---		RIPRAP
---		PROPOSED STRUCTURE
---		REEF BALL

EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE BUFFER MANAGEMENT / LANDSCAPE PLAN

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB	SCALE : 1" = 30'
DESIGNED BY : SF	DATE : NOVEMBER 2024
REVIEWED BY : KR	
DRAWING NO. LS-01 OF LS-07	SHEET NO. 29 OF 37





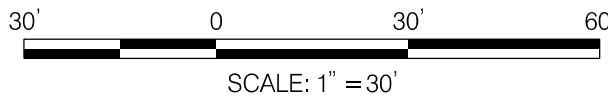
SOILS LEGEND

SYMBOL	SOIL DESCRIPTION
CsA	Crosladore silt loam, 0-2 % slopes
CsB	Crosladore silt loam, 2-5 % slopes
SuA	Sunken mucky silt loam, 0-2 % slopes, occasionally flooded, tidal
W	Water

**COORDINATE NOTE**  
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PROFESSIONAL CERTIFICATION

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MATCHLINE – SEE SHEET BM-05

MATCHLINE – SEE SHEET LS-01

MATCHLINE – SEE SHEET LS-03

EXISTING FEATURES LEGEND

	PROPERTY BOUNDARY
	EX. MAJOR CONTOURS
	EX. MINOR CONTOURS
	EX. MEAN HIGH WATER ELEV. = 1.62 (MLW) 0.72 (NAVD88)
	EX. MEAN LOW WATER ELEV. = 0.00 (MLW) -0.90 (NAVD88)
	EX. HIGH TIDE LINE ELEV. = 2.94 (MLW) 2.04 (NAVD88)
	EX. MEAN HIGHER HIGH ELEV. = 1.83 (MLW) 0.93 (NAVD88)
	EX. ROADS
	EX. METAL FENCE
	EX. WOOD FENCE
	EX. TREELINE
	FEMA EX. 100 YR FLOODPLAIN
	EX. WETLAND
	EX. RIPRAP
	EX. WETLAND BUFFER (25 FT)
	STORM DRAIN
	SPECIMEN (30" OR GREATER)
	EX. TREE
	EX. CRITICAL AREA DESIGNATION
	SAV (2018–2022 COMPOSITE)
	TREE CANOPY IMPACT

PLANTING ZONES

	.09 AC.	
HIGH MARSH	.17 AC.	
LOW MARSH	.02 AC.	
MARSH TRANSITION	.43 AC.	
REFORESTATION PLANTING	.11 AC.	
TURFGRASS ESTABLISHMENT SEEDING	.00 AC.	
UPLAND MEADOW SEEDING		

STABILIZATION LEGEND

	LOD	LIMIT OF DISTURBANCE
	LOA	LIMIT OF ACCESS
	480	PROPOSED MAJOR CONTOURS
	479	PROPOSED MINOR CONTOURS
	MHW	PROPOSED MEAN HIGH WATER
		RIPRAP
		PROPOSED STRUCTURE
		REEF BALL

EASTERN SHORE LAND CONSERVANCY

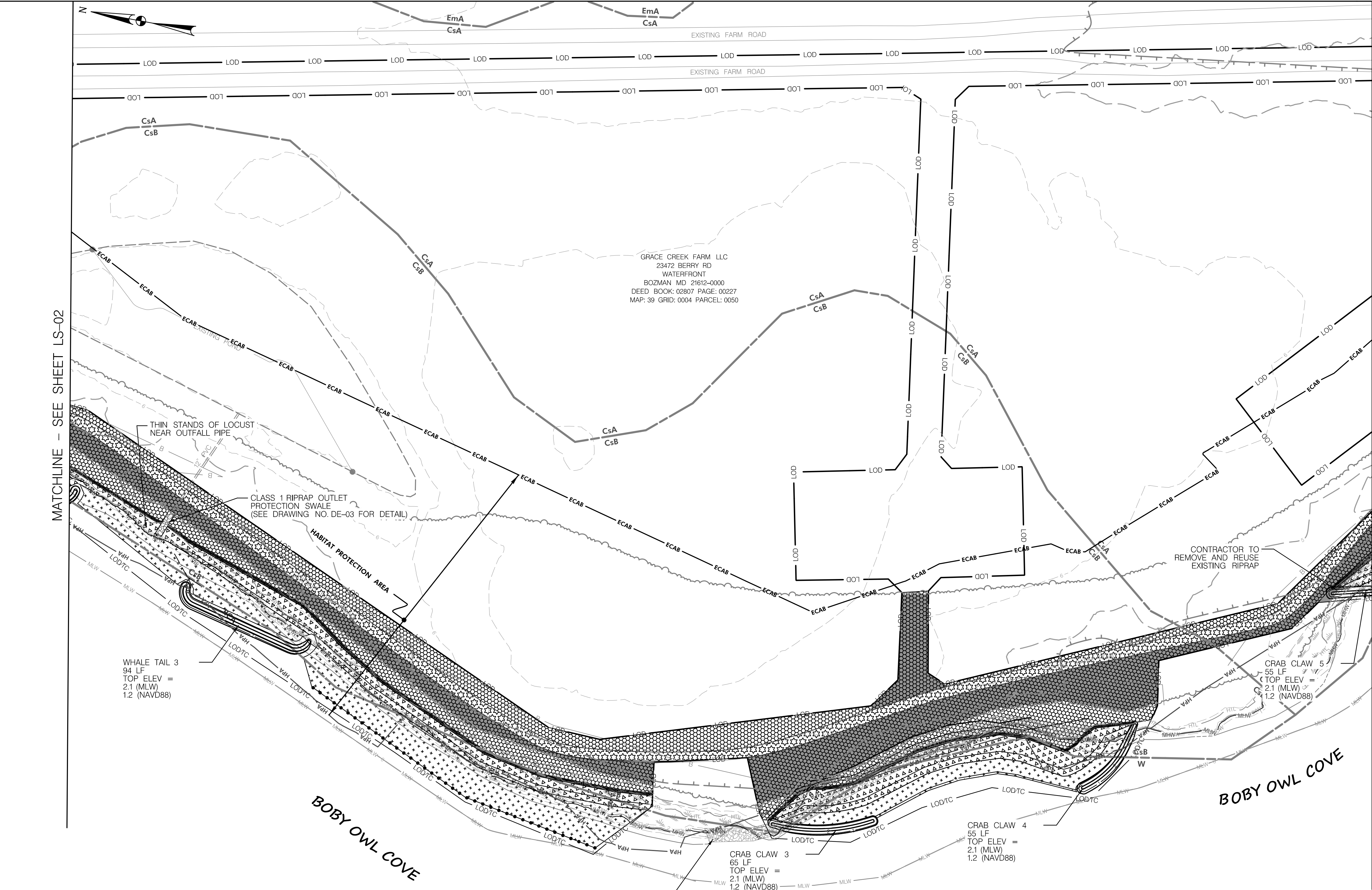
GRACE CREEK FARM LIVING SHORELINE BUFFER MANAGEMENT / LANDSCAPE PLAN

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB
DESIGNED BY : SF
REVIEWED BY : KR
DRAWING NO. LS-02 OF LS-07

SCALE : 1" = 30'
DATE : NOVEMBER 2024
SHEET NO. 30 OF 37





MATCHLINE - SEE SHEET LS-02

MATCHLINE - SEE SHEET LS-04

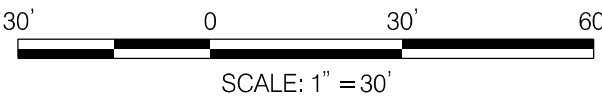
SOILS LEGEND

SYMBOL	SOIL DESCRIPTION
CsA	Crosladore silt loam, 0-2 % slopes
CsB	Crosladore silt loam, 2-5 % slopes
EmA	Elkton silt loam, 0-2 % slopes
W	Water

**COORDINATE NOTE**  
PLANS ARE IN NAD 83 MARYLAND STATE PLANE FIPS 1900 COORDINATE SYSTEM.

PROFESSIONAL CERTIFICATION

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EXISTING FEATURES LEGEND

---	PROPERTY BOUNDARY
---	EX. MAJOR CONTOURS
---	EX. MINOR CONTOURS
---	EX. MEAN HIGH WATER ELEV. = 1.62 (MLW) 0.72 (NAVD88)
---	EX. MEAN LOW WATER ELEV. = 0.00 (MLW) -0.90 (NAVD88)
---	EX. HIGH TIDE LINE ELEV. = 2.94 (MLW) 2.04 (NAVD88)
---	EX. MEAN HIGHER HIGH ELEV. = 1.83 (MLW) 0.93 (NAVD88)
---	EX. ROADS
---	EX. METAL FENCE
---	EX. WOOD FENCE
---	EX. TREELINE
---	FEMA
---	EX. 100 YR FLOODPLAIN
---	EX. WETLAND
---	EX. RIPRAP
---	EX. WETLAND BUFFER (25 FT)
---	STORM DRAIN
---	SPECIMEN (30" OR GREATER)
---	EX. TREE
---	EX. CRITICAL AREA DESIGNATION
---	SAV (2018-2022 COMPOSITE)
---	TREE CANOPY IMPACT

PLANTING ZONES

HIGH MARSH	.15 AC.	
LOW MARSH	.18 AC.	
MARSH TRANSITION	.03 AC.	
REFORESTATION PLANTING	.49 AC.	
TURFGRASS ESTABLISHMENT SEEDING	.12 AC.	
UPLAND MEADOW SEEDING	.00 AC.	

STABILIZATION LEGEND

---	LIMIT OF DISTURBANCE
---	LIMIT OF ACCESS
---	PROPOSED MAJOR CONTOURS
---	PROPOSED MINOR CONTOURS
---	PROPOSED MEAN HIGH WATER
---	RIPRAP
---	PROPOSED STRUCTURE
---	REEF BALL

EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE BUFFER MANAGEMENT / LANDSCAPE PLAN

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB	SCALE : 1" = 30'
DESIGNED BY : SF	DATE : NOVEMBER 2024
REVIEWED BY : KR	
DRAWING NO. LS-03 OF LS-07	SHEET NO. 31 OF 37



EXISTING FEATURES LEGEND

- PROPERTY BOUNDARY
- 500 --- EX. MAJOR CONTOURS
- 498 --- EX. MINOR CONTOURS
- MHW --- EX. MEAN HIGH WATER ELEV. = 1.62 (MLW) 0.72 (NAVD88)
- MLW --- EX. MEAN LOW WATER ELEV. = 0.00 (MLW) -0.90 (NAVD88)
- HTL --- EX. HIGH TIDE LINE ELEV. = 2.94 (MLW) 2.04 (NAVD88)
- MHHW --- EX. MEAN HIGHER HIGH ELEV. = 1.83 (MLW) 0.93 (NAVD88)
- EX. ROADS
- × × × × EX. METAL FENCE
- ○ ○ ○ EX. WOOD FENCE
- ~ ~ ~ ~ EX. TREELINE
- FEMA --- EX. 100 YR FLOODPLAIN
- ~ ~ ~ ~ EX. WETLAND
- ~ ~ ~ ~ EX. RIPRAP
- B --- EX. WETLAND BUFFER (25 FT)
- STORM DRAIN
- ~ ~ ~ ~ SPECIMEN (30" OR GREATER)
- ~ ~ ~ ~ EX. TREE
- RCA --- EX. CRITICAL AREA DESIGNATION
- SAV --- SAV (2018-2022 COMPOSITE)
- TREE CANOPY IMPACT

PLANTING ZONES

- .18 AC.
- HIGH MARSH .10 AC.
- LOW MARSH .03 AC.
- MARSH TRANSITION .46 AC.
- REFORESTATION PLANTING .09 AC.
- TURFGRASS ESTABLISHMENT SEEDING .00 AC.
- UPLAND MEADOW SEEDING

STABILIZATION LEGEND

- LOD --- LIMIT OF DISTURBANCE
- LOA --- LIMIT OF ACCESS
- 480 --- PROPOSED MAJOR CONTOURS
- 479 --- PROPOSED MINOR CONTOURS
- MHW --- PROPOSED MEAN HIGH WATER
- RIPRAP
- PROPOSED STRUCTURE
- • • • • REEF BALL

SOILS LEGEND

SYMBOL	SOIL DESCRIPTION
CsA	Crociadore silt loam, 0-2 % slopes
SuA	Sunken mucky silt loam, 0-2 % slopes, occasionally flooded, tidal
W	Water

COORDINATE NOTE  
PLANS ARE IN NAD 83 MARYLAND STATE PLANE FIPS 1900 COORDINATE SYSTEM.

PROFESSIONAL CERTIFICATION

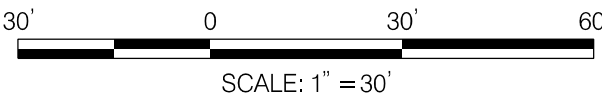
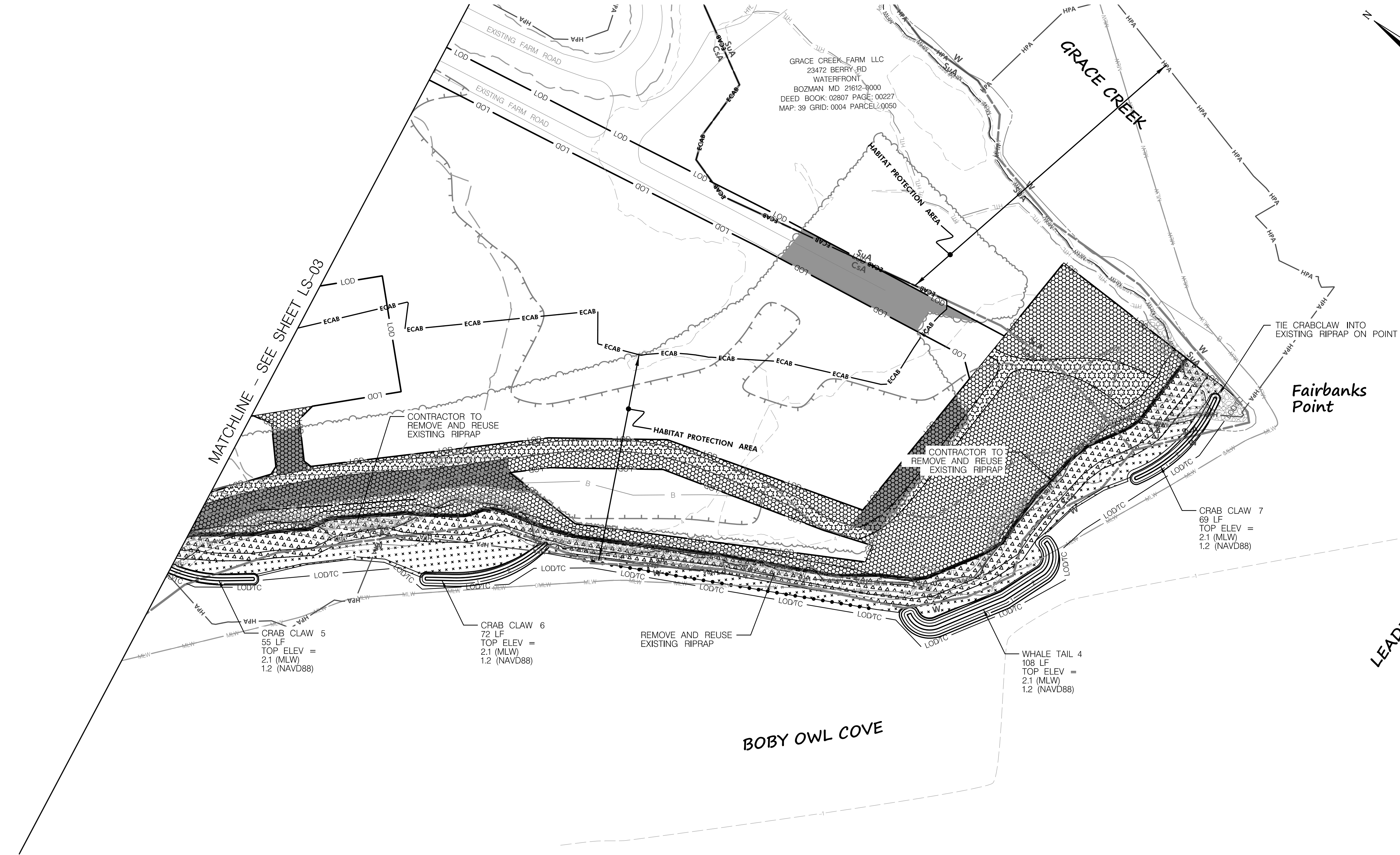
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EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE  
BUFFER MANAGEMENT / LANDSCAPE PLAN

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB	SCALE : 1" = 30'
DESIGNED BY : SF	DATE : NOVEMBER 2024
REVIEWED BY : KR	
DRAWING NO. LS-04 OF LS-07	SHEET NO. 32 OF 37





MATCHLINE - SEE SHEET LS-06

GRACE CREEK FARM LLC  
23472 BERRY RD  
WATERFRONT  
BOZMAN MD 21612-0000  
DEED BOOK: 02807 PAGE: 00227  
MAP: 39 GRID: 0004 PARCEL: 0050

- EXISTING FEATURES LEGEND**
  - PROPERTY BOUNDARY
  - EX. MAJOR CONTOURS
  - EX. MINOR CONTOURS
  - EX. MEAN HIGH WATER ELEV. = 1.62 (MLW) 0.72 (NAVD88)
  - EX. MEAN LOW WATER ELEV. = 0.00 (MLW) -0.90 (NAVD88)
  - EX. HIGH TIDE LINE ELEV. = 2.94 (MLW) 2.04 (NAVD88)
  - EX. MEAN HIGHER HIGH ELEV. = 1.83 (MLW) 0.93 (NAVD88)
  - EX. ROADS
  - EX. METAL FENCE
  - EX. WOOD FENCE
  - EX. TREELINE
  - FEMA
  - EX. 100 YR FLOODPLAIN
  - EX. WETLAND
  - EX. RIPRAP
  - EX. WETLAND BUFFER (25 FT)
  - STORM DRAIN
  - SPECIMEN (30" OR GREATER)
  - EX. TREE
  - EX. CRITICAL AREA DESIGNATION
  - SAV (2018-2022 COMPOSITE)
  - TREE CANOPY IMPACT

- PLANTING ZONES**
  - HIGH MARSH
  - LOW MARSH
  - MARSH TRANSITION
  - REFORESTATION PLANTING
  - TURFGRASS ESTABLISHMENT SEEDING
  - UPLAND MEADOW SEEDING

- STABILIZATION LEGEND**
  - LOD LIMIT OF DISTURBANCE
  - LOA LIMIT OF ACCESS
  - 480 PROPOSED MAJOR CONTOURS
  - 479 PROPOSED MINOR CONTOURS
  - MHW PROPOSED MEAN HIGH WATER
  - RIPRAP
  - PROPOSED STRUCTURE
  - REEF BALL

SOILS LEGEND

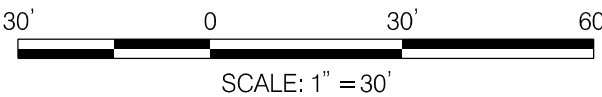
SYMBOL	SOIL DESCRIPTION
CsA	Crosladore silt loam, 0-2 % slopes
CsB	Crosladore silt loam, 2-5 % slopes
EmA	Elkton silt loam, 0-2 % slopes
SuA	Sunken mucky silt loam, 0-2 %slopes, occasionally flooded, tidal
W	Water

NOTE: SHEET IS SHOWN FOR ACCESS ONLY - NO IMPACTS TO VEGETATION AND NO PLANTING PROPOSED

COORDINATE NOTE  
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PROFESSIONAL CERTIFICATION

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MATCHLINE - SEE SHEET LS-02

EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE BUFFER MANAGEMENT / LANDSCAPE PLAN

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB	SCALE : 1" = 30'
DESIGNED BY : SF	DATE : NOVEMBER 2024
REVIEWED BY : KR	
DRAWING NO. LS-05 OF LS-07	SHEET NO. 33 OF 37







23-WL-1110  
202361731  
180119  
11/ 26/2024  
MTH

EXISTING FEATURES LEGEND

- PROPERTY BOUNDARY
- EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- EX. MEAN HIGH WATER ELEV. = 1.62 (MLW) 0.72 (NAVD88)
- EX. MEAN LOW WATER ELEV. = 0.00 (MLW) -0.90 (NAVD88)
- EX. HIGH TIDE LINE ELEV. = 2.94 (MLW) 2.04 (NAVD88)
- EX. MEAN HIGHER HIGH ELEV. = 1.83 (MLW) 0.93 (NAVD88)
- EX. ROADS
- EX. METAL FENCE
- EX. WOOD FENCE
- EX. TREELINE
- FEMA EX. 100 YR FLOODPLAIN
- EX. WETLAND
- EX. RIPRAP
- EX. WETLAND BUFFER (25 FT)
- STORM DRAIN
- SPECIMEN (30" OR GREATER)
- EX. TREE
- EX. CRITICAL AREA DESIGNATION
- SAV (2018-2022 COMPOSITE)
- TREE CANOPY IMPACT

PLANTING ZONES

- HIGH MARSH
- LOW MARSH
- MARSH TRANSITION
- REFORESTATION PLANTING
- TURFGRASS ESTABLISHMENT SEEDING
- UPLAND MEADOW SEEDING

STABILIZATION LEGEND

- LDD LIMIT OF DISTURBANCE
- LOA LIMIT OF ACCESS
- PROPOSED MAJOR CONTOURS
- PROPOSED MINOR CONTOURS
- PROPOSED MEAN HIGH WATER
- RIPRAP
- PROPOSED STRUCTURE
- REEF BALL

SOILS LEGEND

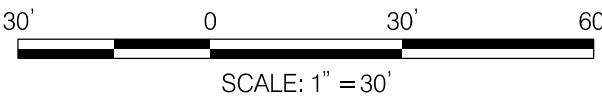
SYMBOL	SOIL DESCRIPTION
CsA	Crosladore silt loam, 0-2 % slopes
CsB	Crosladore silt loam, 2-5 % slopes
EmA	Elkton silt loam, 0-2 % slopes

NOTE: SHEET IS SHOWN FOR ACCESS ONLY - NO IMPACTS TO VEGETATION AND NO PLANTING PROPOSED

COORDINATE NOTE  
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PROFESSIONAL CERTIFICATION

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EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE BUFFER MANAGEMENT / LANDSCAPE PLAN

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB  
DESIGNED BY : SF  
REVIEWED BY : KR  
DRAWING NO. LS-06 OF LS-07

SCALE : 1" = 30'  
DATE : NOVEMBER 2024  
SHEET NO. 34 OF 37









GOALS AND OBJECTIVES

The goals and objectives of this Buffer Management Plan (BMP) are to comply with the Shoreline Development Buffer (Buffer) requirements for the Grace Creek Living Shoreline Project as established by the COMAR Title 27 Critical Area Commission for the Chesapeake and Atlantic Coastal Bays and Talbot County Department Planning and Zoning. The Grace Creek Property is located partially within the Resource Conservation District (RCA) of the Chesapeake Bay Critical Area (CBA) and the limit of disturbance (LOD) for the proposed project is located partially within the Buffer, which has been expanded per COMAR 27.01.09.01E(7).

Impacts to the Buffer are necessary and unavoidable due to the nature of the project, which shall result in a net increase in aquatic function and service. Temporarily disturbed areas shall be restored to pre-construction conditions while permanent impacts to the Buffer and tree canopy removal shall be mitigated on site.

The Buffer impacts total 26,609 square feet (SF)/0.61 acres (AC) of permanent impacts and 54,096 SF/1.24 AC of tree canopy for a combined total of 80,705 SF/1.85 AC of impact. This necessitates 1:1 replacement for a total mitigation requirement of 1.85 AC. Buffer Establishment requirements do not apply as the project is neither a new subdivision or a new lot; conversion from one land use to another land use on a lot or a parcel; or development on a lot or a parcel created before January 1, 2010.

PROPERTY OWNER INFORMATION

GEORGE WILSON  
GRACE CREEK FARM LLC  
23472 BERRY RD  
BOZMAN MD 21612-0000  
DEED BOOK: 02807 PAGE: 00227  
MAP: 39 GRID: 0004 PARCEL: 0050

SITE DATA

DEED BOOK: 02807 PAGE: 00227  
MAP: 39 GRID: 0004 PARCEL: 0050  
ELECTION DISTRICT: 2  
ACCOUNT #: 0084759  
EXISTING LANDUSE: AGRICULTURAL  
SITE ACREAGE: ±167.47 AC.  
8 DIGIT HUC: 02060005  
MD 8 DIGIT BASIN: 02130403  
(LOWER CHOPTANK WATERSHED)

PROPERTY OWNER INFORMATION

RESCH LISA BLOOMFIELD  
RESCH RHONE ARTHUR SR  
23432 BERRY RD.  
BOZMAN 21612-0000  
DEED BOOK: 02861 PAGE: 00320  
MAP: 39 GRID: 0004 PARCEL: 0103

SITE DATA

DEED BOOK: 02861 PAGE: 00320  
MAP: 39 GRID: 0004 PARCEL: 0103  
ELECTION DISTRICT: 2  
ACCOUNT #: 070618  
EXISTING LANDUSE: RESIDENTIAL  
SITE ACREAGE: ±167 AC.  
8 DIGIT HUC: 02060005  
MD 8 DIGIT BASIN: 02130403  
(LOWER CHOPTANK WATERSHED)

LONG TERM PROTECTION PLANSURETY NOTES

1. The contractor shall post a surety such as a cash bond or irrevocable letter of credit to Talbot County in order to ensure that the plantings are completed. The cost of the security will be determined prior to issuance of a grading permit.  
2. At the end of the 2-year monitoring period for planted landscape stock, all the plants are required to survive per COMAR 27.01.09.01(2)(i). Any landscape stock plant or plants that did not survive shall be replaced.

INSPECTION AGREEMENT

I, George Wilson, the owner of Grace Creek, LLC, located at 23472 Berry Road, do hereby grant permission to the approving authority to inspect the plantings following the installation and on the anniversary of the initial inspection at the address provided below. The property may be accessed from 23472 Berry Road and the owner should be contacted two (2) weeks in advance.

Street Address 23472 Berry Rd, Bozman MD 21612 Talbot County  
Tax Map 39  
Parcel # 50  
Section NA  
Lot #  
Dwng  
Date 10/27/23

INSPECTION AGREEMENT

I, Lisa Resch and Rhone Resch, the owners of 23432 Berry Road, do hereby grant permission to the approving authority to inspect the plantings following the installation and on the anniversary of the initial inspection at the address provided below. The property may be accessed from 23432 Berry Road and the owner should be contacted two (2) weeks in advance.

Street Address 23432 Berry Rd, Bozman MD 21612 Talbot County  
Tax Map 39  
Parcel # 103  
Section NA  
Lot # NA

DocuSigned by:  
Lisa Resch  
11/30/2023  
Date

INVASIVE SPECIES CONTROL

Control of invasive species found in the project/mitigation area must be accomplished. Initial control of the Phragmites should be accomplished by cutting back the stems of existing plants and treating regrowth with herbicide approved for use in and around wetlands. Areas should be planted with the specified material in the marsh planting list to reduce open soil conditions that are susceptible to invasive species colonization. The woody species detailed in the Invasive species inventory should be removed and treated with the "cut and paint" method with an herbicide approved for use in riparian areas. This treatment may be applied year-round unless the ground is frozen. Treatment of the remaining herbaceous species detailed in the Invasive species inventory should be treated with a foliar spray herbicide that is approved for use in riparian areas. This treatment may be applied to vegetation in spring to early fall, when the vegetation has leaved out.

INVASIVE SPECIES INVENTORY		
Stratum	Scientific Name	Common Name
Woody Species	<i>Pyrus calleryana</i>	Bradford Pear
	<i>Elaeagnus umbellata</i>	Autumn Olive
	<i>Hedera helix</i>	English Ivy
	<i>Lonicera japonica</i>	Japanese Honeysuckle
Herbaceous Species	<i>Vinca Minor</i>	Common Periwinkle
	<i>Lespedeza cuneata</i>	Chinese Bushclover
	<i>Phragmites australis</i>	Phragmites

PLANTING SPECIFICATIONS

GENERAL

1. The Contractor shall notify Ecotone, LLC, and the landowner's representative at least two (2) weeks prior to start of planting within the project area so that planting zones may be marked in the field and the landowner can make any necessary preparations related to the agricultural activities on the areas surrounding the project site.  
2. The Contractor is responsible for the location of all underground utilities prior to the start of construction. Any damages to utilities as a result of planting or other activities will be the sole responsibility of the Contractor and shall be repaired at the Contractors expense.

STANDARDS

1. Planting material will conform to the current issue of the "American Standards for Nursery Stock", published by the American Association of Nurserymen.  
2. The root system of container-grown plant material shall be white, well-developed, and well-distributed throughout the growing media, with the roots extending to the inside face of the container, and the container size must conform to the size specified. Plants not meeting these criteria will be rejected.  
3. Foliage of non-dormant plants shall appear healthy, with no leaf spots, damage, discoloration, or wilting, and no evidence of insects on the plant. Plants not meeting these criteria will be rejected.

STORAGE AND DELIVERY

1. Seed shall be delivered in containers having labels reporting the origin, purity, and germination percentage of the seed and the date of germination testing of the seed.  
2. All container-grown plants shall be clearly and correctly labeled to allow confirmation of species and quantities. At least 25% of each species in every shipment shall have legible labels securely attached prior to delivery to the site.  
3. All plants delivered to the project site must have thoroughly moist soil/root masses. Dry or light-weight plants shall be rejected.  
4. All rejected material shall be immediately removed from the project site.  
5. All plants delivered to the project site shall be stored in a cool, shaded location, and watered regularly so that roots are kept moist until time of planting.

PLANTING PROCEDURES

1. Planting shall be performed in accordance with the current edition of the Landscape Contractors Association "Landscape Specification Guidelines" and as specified below.  
2. Plants shall be randomly installed within the planting area, using the plant spacing specified in the plant schedule as a guide.  
3. Planting shall occur between March 1 to May 15 or September 15 to December 31, whichever is closer to the completion of construction.  
4. Install material in accordance with the "Tree and Shrub Planting Detail".  
5. Water each plant thoroughly after backfilling until the backfilled soil is saturated.  
6. All woody material must be planted erect. Plants leaning greater than 10 degrees from perpendicular must be straightened or replanted by the Contractor.

MAINTENANCE PLAN

Inspections for survival shall be performed annually and plants replaced as needed in the next appropriate planting season. The goal is that at the end of the second year, the survival requirements can be met. If the county determines that survival is not adequate, the monitoring period may be extended, and additional inspections may be required at the discretion.

BUFFER MANAGEMENT AND PROTECTION STANDARDS

1. The Buffer shall be flagged in the field during construction.  
2. Removal of natural vegetation within the 100-foot buffer and expanded buffer is prohibited. Cutting and clearing of natural vegetation within the buffer and expanded buffer shall be as shown on this buffer management plan as submitted and/or as subsequently amended, subject to approval by the county planning and zoning office. Additional information can be obtained by contacting the planning and zoning office.  
3. Disturbance of the Buffer as detailed on this plan has been approved by Talbot County Planning and Zoning. All existing and planted vegetation within the buffer shall be maintained and survival of planted shall be as described in this plan.  
4. New lawn areas shall not be created within the buffer and expanded buffer unless specifically addressed in this buffer management plan.

MITIGATION CALCULATION

MITIGATION CALCULATION	
Permanent Buffer Disturbance:	17,747 SF/0.41 AC
Canopy Clearing Mitigation:	22,840 SF/0.52 AC
Total (1:1 Mitigation):	40,587 SF/0.93 AC

BUFFER EXPANSION CALCULATIONS

The study area contains soils that are classified as highly erodible and/or hydric, as detailed below. For highly erodible soils or hydric soils that are contiguous with the Buffer with a slope of 5% or greater, the Buffer has been expanded to the lesser of the landward edge or 300 feet. As such, the Buffer was expanded to include the landward edge of SuA adjacent to the pond and the landward edge of SuA at Fairbanks Point.

SOIL LIST			
Soil Type	Description	Hydric Rating	K-Factor
CsA	Crosiadore silt loam, to 2 percent slopes	Predominantly non-hydric	0.49
CsB	Crosiadore silt loam, 2 to 5 percent slopes	Predominantly non-hydric	0.49
EmA	Elkton silt loam, 0 to 2 percent slopes	Predominantly Hydric	-
Ho	Honga peat, very frequently flooded, tidal	Hydric	-
SuA	Sunken mucky silt loam, 0 to 2 percent slopes, occasionally flooded, tidal	Predominantly Hydric	-
W	Water	-	-

B-4-2 STANDARDS AND SPECIFICATIONS

FOR

SOIL PREPARATION, TOP SOILING, AND SOIL AMENDMENTS

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 1" 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 tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.

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

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.

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

A. Seeding

1. Specifications

a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.

b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.

c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.

d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

2. Application

a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.

i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.

ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.

b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.

i. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.

ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.

c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).

i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P2O5 (phosphorous), 200 pounds per acre; K2O (potassium), 200 pounds per acre.

ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.

iii. Mix seed and fertilizer on site and seed immediately and without interruption.

iv. When hydroseeding do not incorporate seed into the soil.

B. Mulching

1. Mulch Materials (in order of preference)

a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.

b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.

i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.

ii. WCFM, including dye, must contain no germination or growth inhibiting factors.

iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.

iv. WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic.

v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.

2. Application

a. Apply mulch to all seeded areas immediately after seeding.

b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.

c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

3. Anchoring

a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:

i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.

ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petrosel, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.

iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE  
BUFFER MANAGEMENT /LANDSCAPE NOTES

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB	SCALE : NA
DESIGNED BY : CN	DATE : NOVEMBER 2024
REVIEWED BY : MD	
DRAWING NO. LN-01 OF LN-01	SHEET NO. 36 OF 37





PROFESSIONAL CERTIFICATION

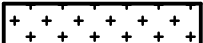


I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.




PLANTING TABLES

REFORESTATION PLANTING: LANDSCAPE STOCK (1.68 AC)									
	CANOPY TREES	Quantity	Scientific Name	Common Name	Size	Condition	Spacing	Stems/Acre	Indicator
		102	<i>Acer rubrum</i>	Red Maple	3/4-inch caliper	Container	10x10'	435	FAC
		102	<i>Pinus taeda</i>	Loblolly Pine		Container	10x10'	435	FAC
		102	<i>Liquidambar styraciflua</i>	Sweet Gum		Container	10x10'	435	FAC
		102	<i>Quercus alba</i>	White Oak		Container	10x10'	435	FACU
		102	<i>Quercus palustris</i>	Pin Oak		Container	10x10'	435	FACW
	Total	513							
	LARGE SHRUBS	73	<i>Lindera benzoin</i>	Spicebush	3 feet high	Container	10x10'	435	FACU
		73	<i>Viburnum dentatum</i>	Arrowwood Viburnum		Container	10x10'	435	FACU
		73	<i>Viburnum prunifolium</i>	Blackhaw Viburnum		Container	10x10'	435	FACU
	Total	219							

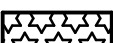
Landscape Stock may satisfy 50% or more of the mitigation requirements for areas of one acre or more Per COMAR 27.01.09.01-02(I). 100% of landscape stock is required to survive at the end of the two-year monitoring period per COMAR 27.01.09.01-02(L).


Marsh Planting (1.13 AC)							
		Scientific Name	Common Name	Size	Spacing	Quantity	Area (AC)
	Low Marsh	<i>Sporobulus alterniflorus</i>	Smooth Cordgrass	Plug	2' OC	6,134	0.56
	High Marsh	<i>Spartina patens</i>	Saltmarsh Hay	Plug	2' OC	5,152	0.47
	High Marsh Transition	<i>Panicum amarum</i>	Coastal Panicgrass	Plug	2' OC	1,005	0.09

SEEDING TABLES

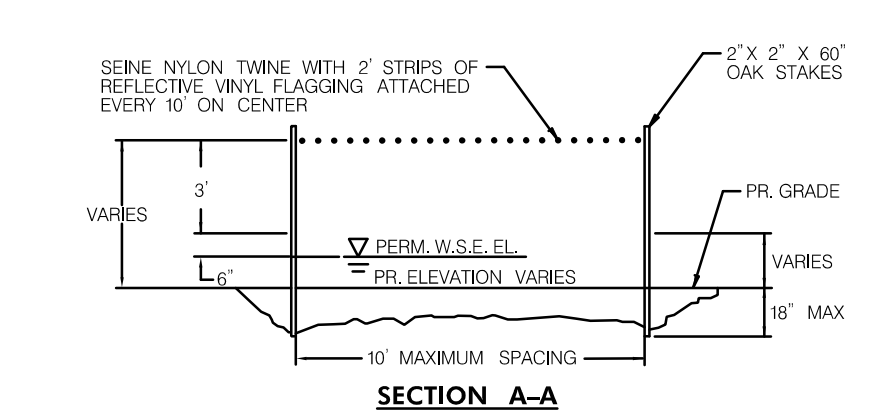
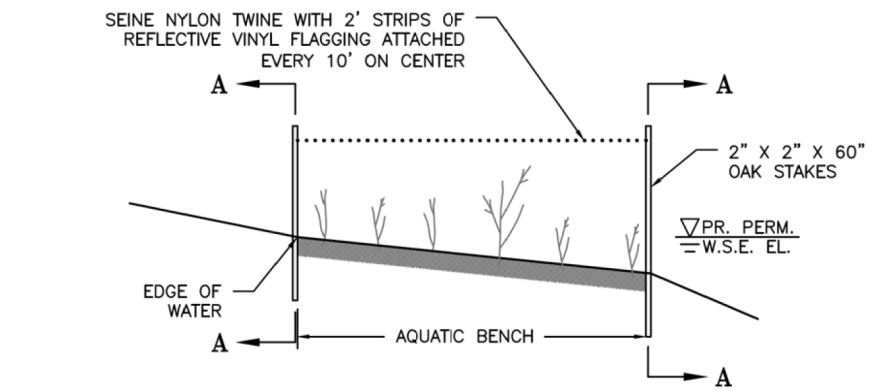
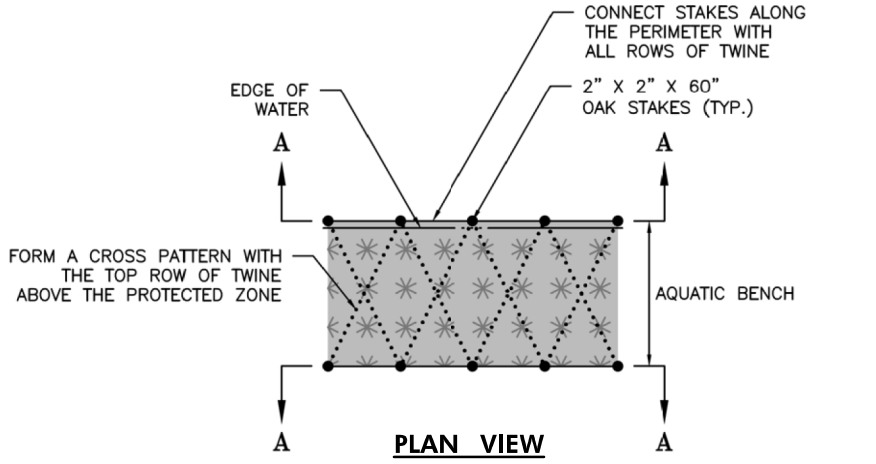
Reforestation Seeding: Maryland Coastal Plain Riparian Seed Mix (Ernst Mix ERNMX-732) (1.68 AC / 33.6 LBS)						
	%	Species	Application Rate (lb.ac)	Seeding Depths	Fertilizer Rate (10-10-20)	Lime Rate
	39.7	Indiangrass ( <i>Sorghastrum nutans</i> )	20 (with a cover crop*)	0.25-0.5"	K - 45 lbs/ac	2 tons per acre
	20	Virginia Wildrye ( <i>Elymus virginicus</i> )				
	18	Switchgrass ( <i>Panicum virgatum</i> )				
	10	Redtop Panicgrass ( <i>Panicum rigidulum</i> )				
	3	Partridge Pea ( <i>Chamaecrista fasciculata</i> )				
	3	Blackeyed Susan ( <i>Rudbeckia hirta</i> )				
	2	Oxeye Sunflower ( <i>Helopsis helianthoides</i> )				
	1	Swamp Milkweed ( <i>Asclepias incarnata</i> )				
	0.9	New York Ironweed ( <i>Vernonia noveboracensis</i> )			K2O - 90 lbs/ac	
	0.8	Boneset ( <i>Eupatorium perfoliatum</i> )				
	0.8	Common Sneezeweed ( <i>Helenium autumnale</i> )				
	0.8	Wrinkleleaf Goldenrod ( <i>Solidago rugosa</i> )				

\* For a cover crop on well drained sites, use one of the following: grain oats (30 lbs/acre; 1 Jan to 30 Apr), brown top millet (10 lbs/acre; 1 May to 31 Aug), or grain rye (30lbs/acre; 1 Sep to 31 Dec). For sites that are moist use grain rye (30 lbs/acre; 1 Sep to 30 Apr).

Turfgrass Establishment Seeding (ERNMX-136) (0.62 AC / 6.2 LBS)						
	%	Species	Application Rate (lb.ac)	Seeding Depths	Fertilizer Rate (10-10-20)	Lime Rate
	34	Tall Fescue, 'Teton' ( <i>Festuca arundinacea</i> , 'Teton')	10	0.25-0.5"	K - 45 lbs/ac	2 tons per acre
	33	Tall Fescue, 'FoxHound' ( <i>Festuca arundinacea</i> , 'FoxHound')			P205 - 90 lbs/ac	
	33	Tall Fescue, 'Turismo' ( <i>Festuca arundinacea</i> , 'Turismo')			K2O - 90 lbs/ac	

Upland Meadow Seed (ERNMX-172) (0.24 AC / 3.6 LBS)							
	%	Species	Application Rate (lb.ac)	Seeding Depths	Fertilizer Rate (10-10-20)	Lime Rate	
	48	Little Bluestem ( <i>Schizachyrium scoparium</i> )	15	0.25-0.5"	K - 45 lbs/ac	2 tons per acre	
	28.6	Virginia Wildrye ( <i>Elymus virginicus</i> )					
	4.3	Blackeyed Susan ( <i>Rudbeckia hirta</i> )					
	2.9	Butterfly Milkweed ( <i>Asclepias tuberosa</i> )			P205 - 90 lbs/ac		
	2.1	Partridge Pea ( <i>Chamaecrista fasciculata</i> )					
	2.1	Purple Lovegrass ( <i>Eragrostis spectabilis</i> )					
	2.1	Slender Lespedeza ( <i>Lespedeza virginica</i> )					
	2.1	Wild Senna ( <i>Senna hebecarpa</i> )					
	1.8	Tall White Beardtongue ( <i>Penstemon digitalis</i> )					
	1.1	New England Aster ( <i>Aster novae-angliae</i> )					
	1.1	Heath Aster ( <i>Aster pilosus</i> )					
	0.7	Sensitive Pea ( <i>Chamaecrista nictitans</i> )					
	0.6	Wild Bergamot ( <i>Monarda fistulosa</i> )					
	0.6	Narrowleaf Mountainmint ( <i>Pycnanthemum tenuifolium</i> )			K2O - 90 lbs/ac		
	0.5	White Goldenrod ( <i>Solidago bicolor</i> )					
	0.5	Gray Goldenrod ( <i>Solidago nemoralis</i> )					
	0.4	Appalachian Beardtongue ( <i>Penstemon laevigatus</i> )					
	0.3	Hoary Mountainmint ( <i>Pycnanthemum incanum</i> )					
	0.2	Hairy Beardtongue ( <i>Penstemon hirsutus</i> )					

PLANTING DETAILS

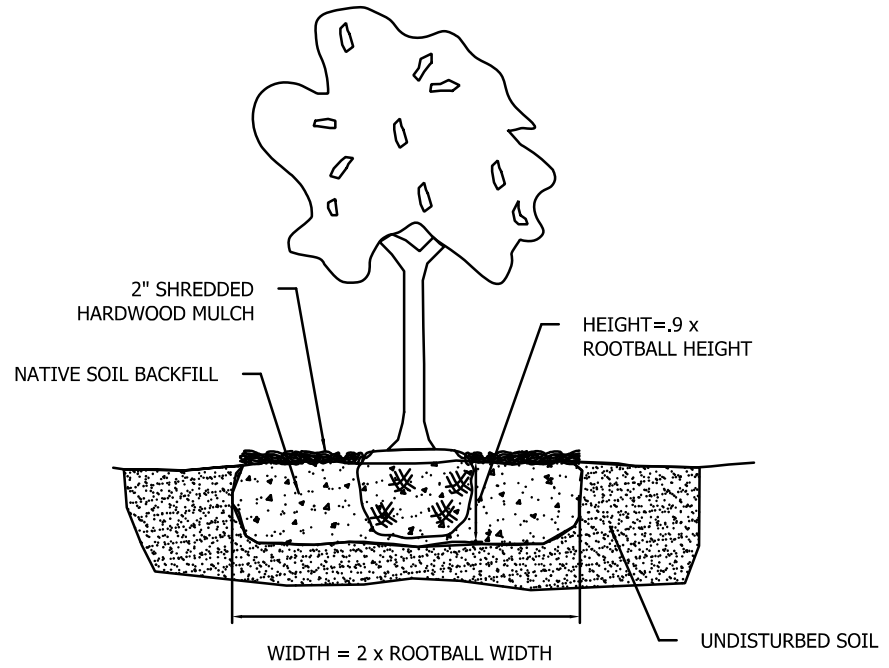


NOTES:

1. OAK STAKES SHALL BE SPACED A MAXIMUM OF .25' O/C, WITH A MINIMUM OF TWO ROWS OF STAKES INSTALLED ALONG THE INNER AND OUTER PERIMETERS OF THE AQUATIC BENCH.
2. THE FIRST ROW OF SEINE NYLON TWINE SHALL BE PLACED A MINIMUM OF 6" OFF THE WATER SURFACE, WITH EACH SUBSEQUENT ROW 6" IN SEPARATION ALONG THE INNER AND OUTER PERIMETER AND SHALL BE STRUNG FROM EACH STAKE TO EVERY ADJACENT STAKE WITHIN THE SAME ROW.
3. THE SEINE NYLON TWINE SHALL BE STRUNG FROM EVERY STAKE TO THE CLOSEST TWO STAKES IN ADJACENT ROWS TO FORM CRISS-CROSS PATTERN ALONG THE TOPMOST ROW.
4. THE SEINE NYLON TWINE SHALL BE SECURELY FASTENED TO THE STAKE AT THE APPROPRIATE ELEVATION ON THE POST.
5. 2' STRIPS OF FLUORESCENT COLORED REFLECTIVE VINYL FLAGGING SHALL SECURELY FASTENED TO THE SEINE NYLON TWINE AT A MAXIMUM .25' O/C BETWEEN THE OAK STAKES. THE FLAGGING SHALL BE TIED TO THE SEINE NYLON TWINE IN THE MIDDLE TO PRODUCE TWO STREAMERS EACH APPROXIMATELY 12" IN LENGTH.
6. THE GOOSE PROTECTION FENCING SHALL COMPLETELY ENCLOSE THE AQUATIC BENCH AND PREVENT GOOSE ACCESS TO THE WATER FROM LAND AND VISE VERSA.
7. THE FENCING MUST REMAIN IN PLACE UNTIL THE VEGETATION HAS HAD TIME TO BECOME ESTABLISHED. AFTER TWO GROWING SEASONS THE FENCING SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.
8. THE FENCING SHOULD BE PLACED OVER THE EXTENT OF THE MARSH PLANTING AREA.

GOOSE PROTECTION FENCING

NOT TO SCALE



TREE AND SHRUB PLANTING DETAIL:  
Container Grown and Balled and Burlapped Stock

NOT TO SCALE



EASTERN SHORE LAND CONSERVANCY

GRACE CREEK FARM LIVING SHORELINE  
BUFFER MANAGEMENT / LANDSCAPE TABLES / DETAILS

23472 BERRY RD, BOZMAN MD , TALBOT COUNTY

DRAWN BY : JB

SCALE : NA

DESIGNED BY : CN

DATE : NOVEMBER 2024

REVIEWED BY : MD

DRAWING NO.

LT-01 OF LT-01

SHEET NO.

37 OF 37