



Maryland
Department of
the Environment

Wes Moore, Governor
Aruna Miller, Lt. Governor

Serena McIlwain, Secretary
Suzanne E. Dorsey, Deputy Secretary

January 3, 2024

Joseph B Trossbach & Bruce Wilson
c/o David Knorr
Mariner Science & Exploration LLC
1404 S Main Chapel Way, Ste 104
Gambrills, MD 21054

Via email: dave@marinerscience.com

Re: Agency Interest Number: 175977
Tracking Number: 202261956
Tidal Authorization Number: 23-WQC-0033

Dear Joseph Trossbach:

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 at with any questions.

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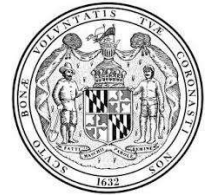
Sincerely,

Tammy Roberson

Tammy Roberson, Chief
Tidal Wetlands Division



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



23-WQC-0033

EFFECTIVE DATE: **January 3, 2024**
CERTIFICATION HOLDER: **Joseph B. Trossbach Jr. & Bruce Wilson**
ADDRESS: **Attn: Laura Todd 501 Sixth St
Annapolis, MD 21403**
PROJECT LOCATION: **17538 St Jeromes Neck Rd
Dameron, MD 20628**

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 Joseph B Trossbach & Bruce Wilson AND AS DESCRIBED IN THE ATTACHED PLAN SHEETS DATED December 1, 2023 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 Environment satisfied the statutory and regulatory public notice requirements by placing the WQC on Public Notice from October 1, 2023 to November 1, 2023 on Maryland Department of the Environment's Public Notice webpage and advertising in the Enterprise on October 4, 2023.

PROJECT DESCRIPTION

1) To fill, grade, and plant marsh vegetation by emplacing woody debris and 8,077 cubic yards of sand, 111,779 square feet of spartina patens, 34,549 square feet of spartina alterniflora and a series of six breakwaters that will consist of the following; a 170-foot long by 21-foot wide stone breakwater; a 206-foot long by 19-foot wide stone breakwater; a 265-foot long by 17-foot wide stone breakwater; a 250-foot long by 20-foot wide stone breakwater; a 205-foot long by 20-foot wide stone breakwater; a 338-foot long by 21-foot wide stone breakwater; 2) Create 16,425 square feet of oyster habitat by emplacing oyster shell adjacent the proposed breakwaters, all extending a maximum of 273 feet channelward of the mean high water line.

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. Authorized representatives of the Department shall be provided 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 NAB-2022-61956, until such time as that federal approval expires or is not administratively extended.

SPECIAL CONDITIONS

1. All Critical Area requirements shall be followed and all necessary authorizations from the Critical Area Commission ("Commission") shall be obtained. This Certification 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 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. All work performed under this Water Quality Certificate 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. Licensing by MCLB shall occur prior to the beginning of construction activities. A list of licensed marine contractors may be obtained by contacting the MCLB at 410-537-3249, by e-mail at MDE.MCLB@maryland.gov or by accessing the Maryland Department of the Environment, Environmental Boards webpage.
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 Certificate Holder 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 follow the requirements of the marsh maintenance plan as required by Wetlands License 22-WL-1241 and any subsequent modifications

CITATIONS AND STATEMENTS OF NECESSITY

1. Statement of Necessity for General Conditions 1, 2, 3, 4, and Special Conditions 1, 3, 4: 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: 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: 33U.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.

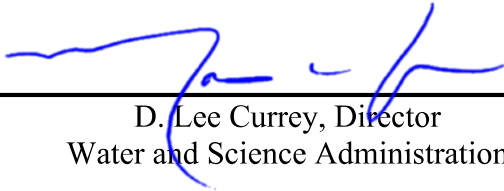
Citation: COMAR 26.08.02.02B(2)- B(4); COMAR 26.08 02.03B(2)(d) – (e); COMAR 26.08.02.03B(1)(b); 26.08.02.03B(2); COMAR 23.02.04.04

7. Statement of Necessity for Special Conditions 4, 5: Stabilization of the site with vegetation is required to ensure that waters continue to meet designated uses. Loss of substrate fill material may result in discharges which reduce water quality and interfere with designated uses, including the support of estuarine and marine aquatic life, and the protection of shellfish harvesting, shallow water submerged aquatic vegetation, and migratory fish spawning and nurseries in tidal wetlands. Loss limits will maintain the designated use.

Citation: 1) COMAR 26.08.02.02.B.(3) 2) COMAR 26.08.02.03-3.C.(2)d.(5); 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 9, Subtitle 3; Md. Ann. Code, Env. Article, Title 16; COMAR 26.08; COMAR 26.24

CERTIFICATION APPROVED



D. Lee Currey, Director
Water and Science Administration

1/6/2024

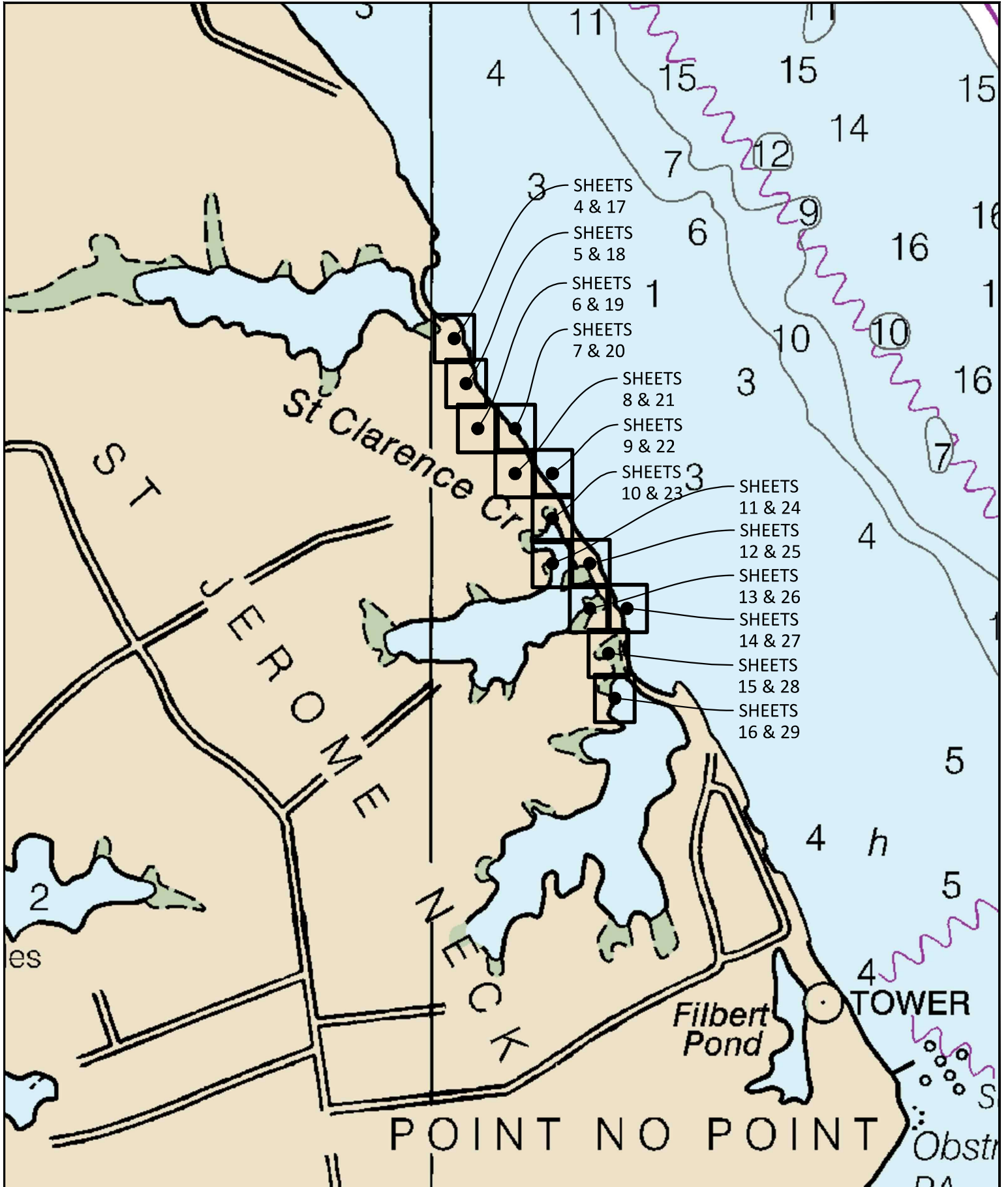
Date

Tracking Number: 202261956
Agency Interest Number: 175977

Effective Date: January 3, 2024

Enclosure: Plan Sheets dated December 1, 2023

cc: WSA Inspection & Compliance Program
Army Corps of Engineers



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ENGINEERING SERVICES
410 S. SECOND STREET
DENTON, MARYLAND 21629

VICINITY MAP





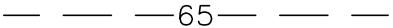
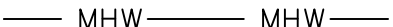

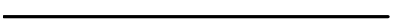
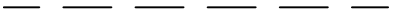


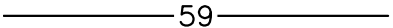

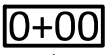

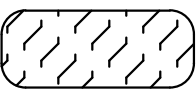
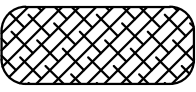
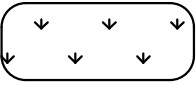

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**TROSSBACH FARM
LIVING SHORELINE**
PREPARED FOR
TROSSBACH FAMILY FARM
SHEET 1 OF 40
MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 1,000'
DESIGNED BY	SAM
DRAWN BY	SAM
CHECKED BY	FAM

202261956
23-WQC-0033

LEGEND

	PROPERTY BOUNDARY
	LIMIT OF DISTURBANCE
	LIMIT OF WORK
	EXISTING MINOR CONTOUR
	EXISTING MAJOR CONTOUR
	MEAN HIGH WATER LINE (MHW)
	MEAN LOW WATER LINE (MLW)
	EXISTING BUILDING
	EXISTING ROADWAY
	EXISTING TREE LINE
	CONSTRUCTION ACCESS ROAD
	PROPOSED MAJOR CONTOUR
	PROPOSED MAJOR CONTOUR
	BASELINE
	PROPOSED BREAKWATER
	PROPOSED LOW MARSH
	PROPOSED HIGH MARSH
	PROPOSED BUFFER PLANTINGS
	PROPOSED OYSTER REEF

OVERALL TREATMENT PRACTICE SCHEDULE

TYPE	QUANTITY
TOTAL PROPERTY AREA (N & S)	144.44 AC
LIMIT OF DISTURBANCE	7.20 AC
MEAN LOW WATER	0.0 FT (-0.7 FT NAVD88)
MEAN HIGH WATER	+1.2 FT MLW (0.5 FT NAVD88)
UPPER EXTENTS OF TIDAL JURISDICTION	+1.8 FT MLW (TIDE RANGE * 1.5)
PROPOSED IMPERVIOUS	0 SF
LIVING SHORELINE	3,800 LF
BREAKWATER FILL	31,424 SF / 3,860 CY
UNPLANTED SAND FILL	38,344 SF / 635 CY
TIDAL MARSH PLANTINGS IN SAND FILL	146,328 SF / 8,077 CY
BUFFER PLANTINGS IN SAND FILL	25,588 SF / 207 CY
OYSTER REEF HABITAT	2,738 LF / 16,425 SF

IMPACTS SUMMARY TABLE

ABOVE MHWL (ST MARY'S SCD)

LIMIT OF DISTURBANCE	2.22 AC
BREAKWATER FILL	175 SF / 5 CY
UNPLANTED SAND FILL	0 SF / 0 CY
TIDAL MARSH PLANTINGS IN SAND FILL	28,807 SF / 50 CY
BUFFER PLANTINGS IN SAND FILL	25,588 SF / 207 CY
OYSTER REEF HABITAT	0 LF / 0 SF

MHWL TO MLWL (MDE & USACE)

LIMIT OF DISTURBANCE	0.95 AC
BREAKWATER FILL	118 SF / 7 CY
UNPLANTED SAND FILL	0 SF / 0 CY
TIDAL MARSH PLANTINGS IN SAND FILL	41,534 SF / 1,280 CY
BUFFER PLANTINGS IN SAND FILL	0 SF / 0 CY
OYSTER REEF HABITAT	0 LF / 0 SF

BELOW MLWL (MDE & USACE)

LIMIT OF DISTURBANCE	4.03 AC
BREAKWATER FILL	31,131 SF / 3,848 CY
UNPLANTED SAND FILL	38,344 SF / 635 CY
TIDAL MARSH PLANTINGS IN SAND FILL	75,987 SF / 6,747 CY
BUFFER PLANTINGS IN SAND FILL	0 SF / 0 CY
OYSTER REEF HABITAT	2,738 LF / 16,425 SF



SITE DETAILS

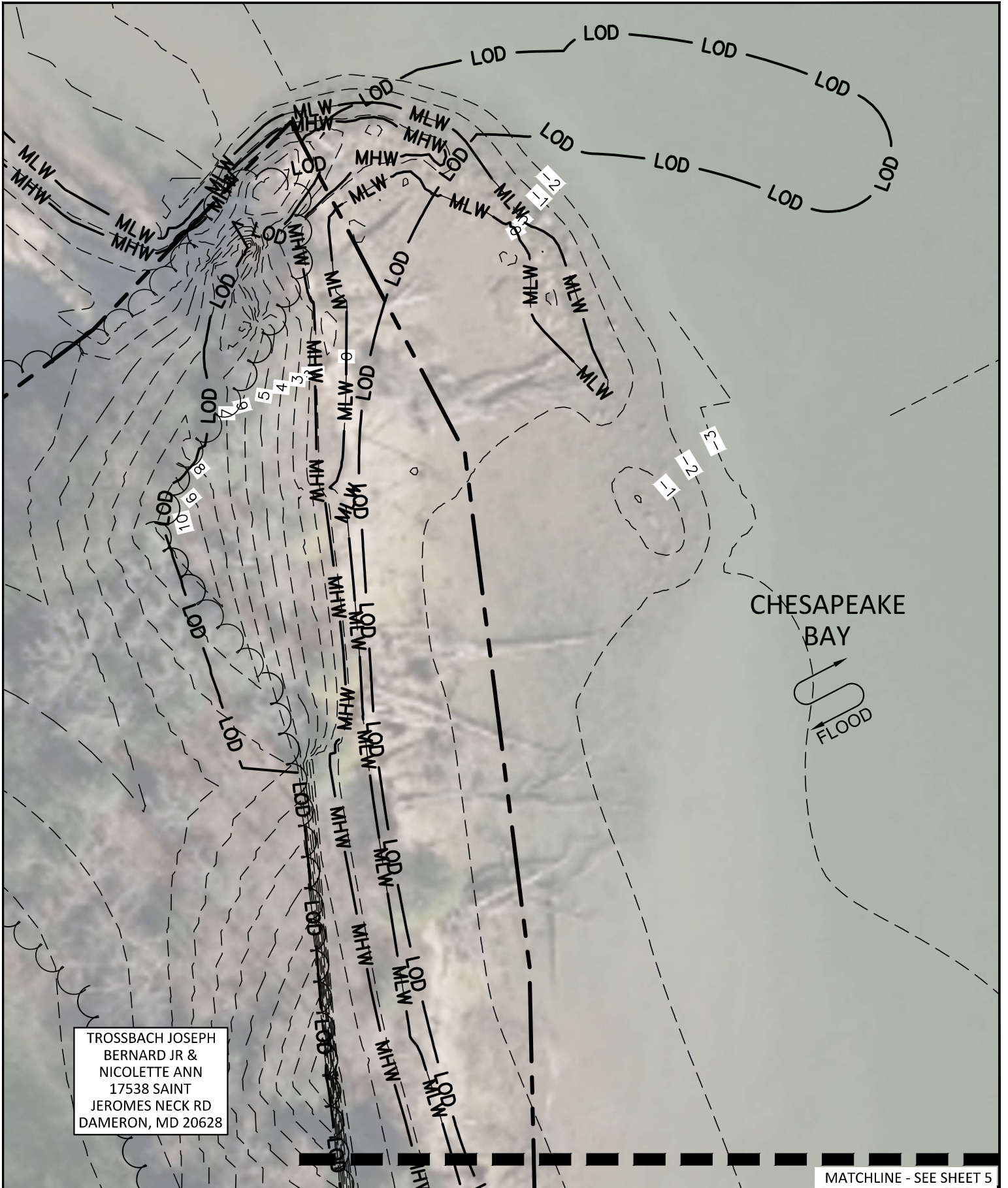
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TROSSBACH FARM LIVING SHORELINE

PREPARED FOR
TROSSBACH FAMILY FARM
SHEET 3 OF 40
MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	N/A
DESIGNED BY	SAM
DRAWN BY	SAM
CHECKED BY	FAM

202261956
23-WQC-0033



TROSSBACH JOSEPH
 BERNARD JR &
 NICOLETTE ANN
 17538 SAINT
 JEROMES NECK RD
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MATCHLINE - SEE SHEET 5



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EXISTING CONDITIONS

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**TROSSBACH FARM
 LIVING SHORELINE**
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 SHEET 4 OF 40
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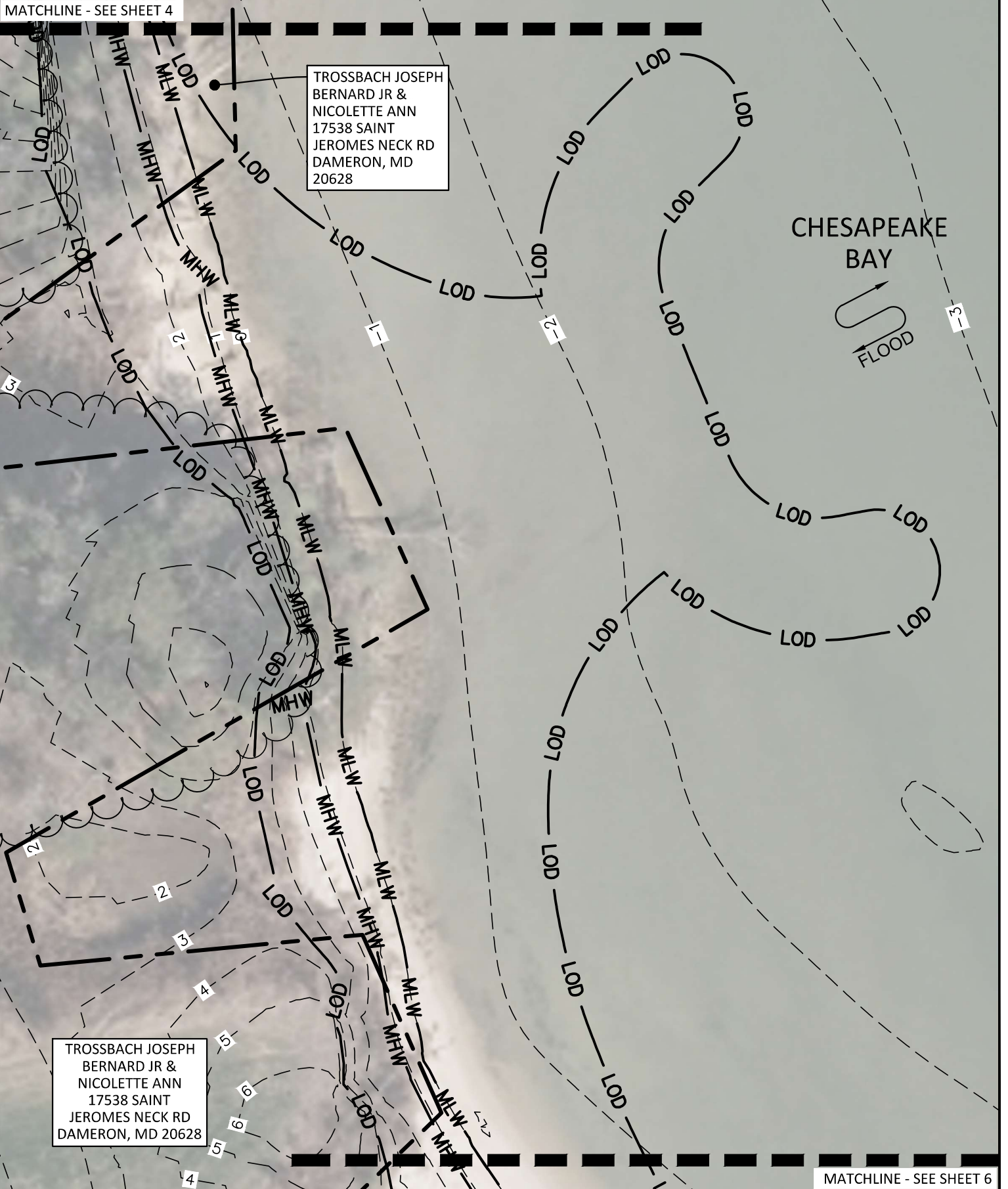
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SS PROJECT #	22003
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MATCHLINE - SEE SHEET 4

TROSSBACH JOSEPH
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DAMERON, MD
20628

CHESAPEAKE
BAY



MATCHLINE - SEE SHEET 6

TROSSBACH JOSEPH
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NICOLETTE ANN
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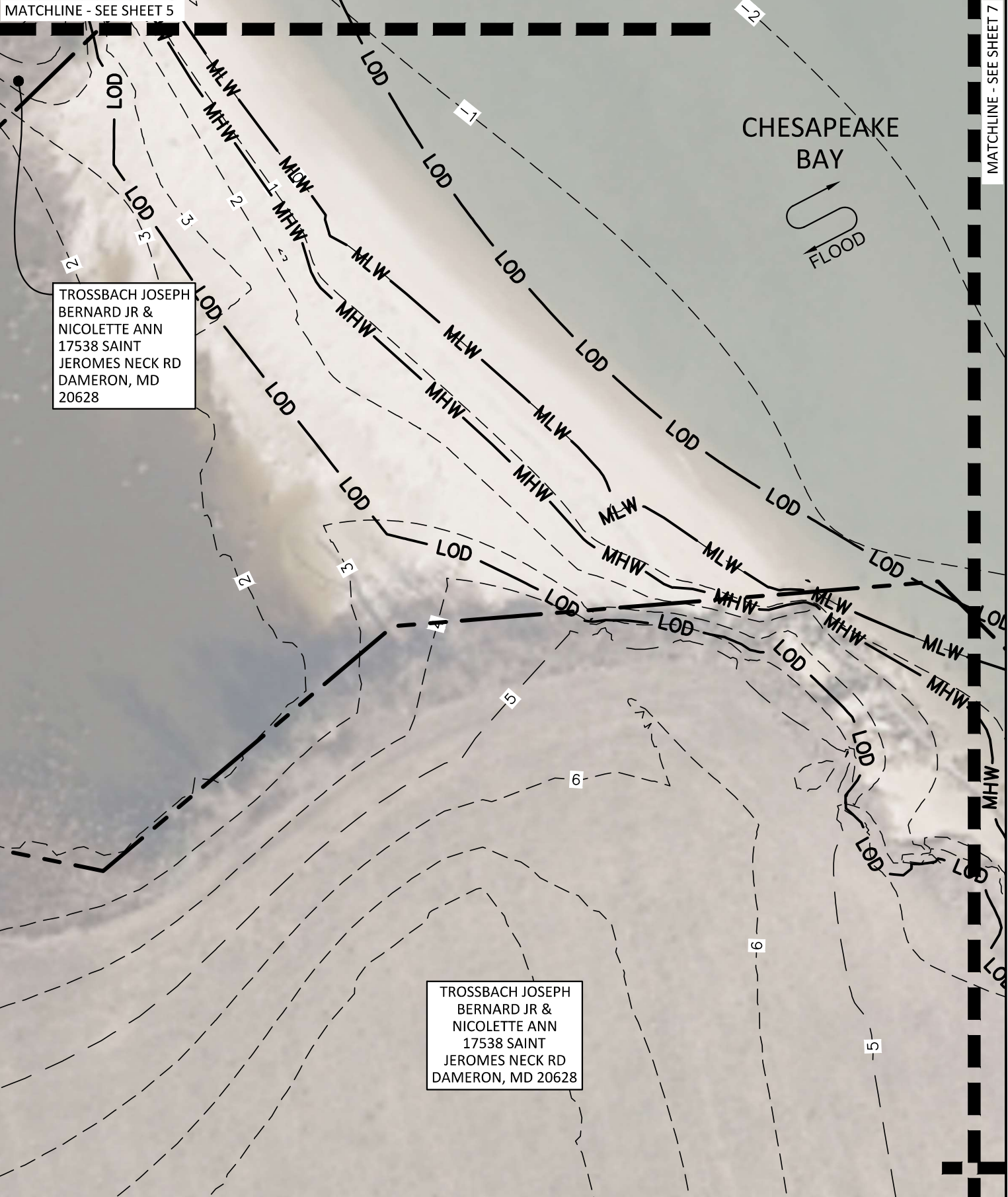
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TROSSBACH FARM LIVING SHORELINE

PREPARED FOR
TROSSBACH FAMILY FARM
SHEET 5 OF 40
MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
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SCALE	1" = 40'
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WQC-0033



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EXISTING CONDITIONS

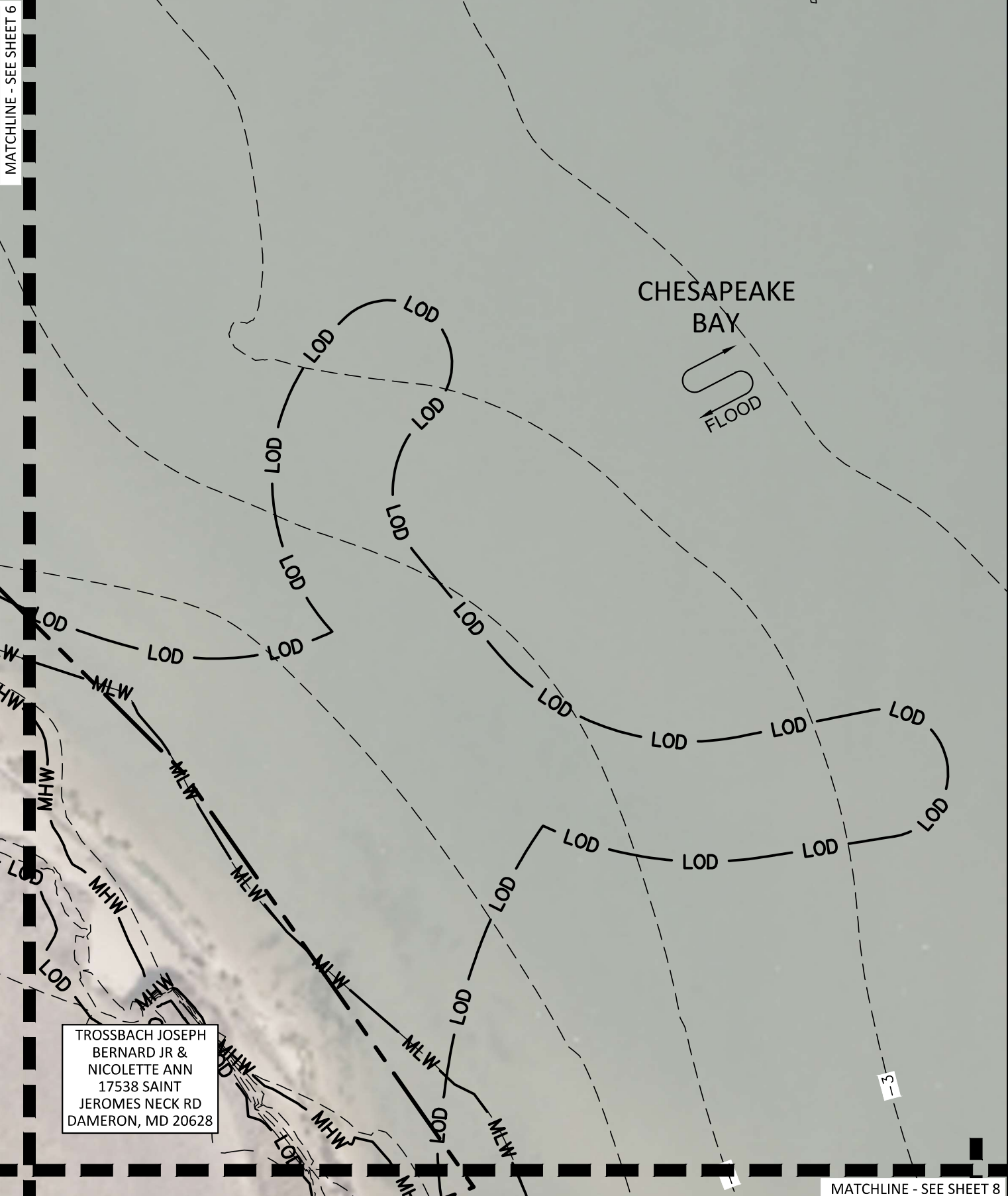
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MATCHLINE - SEE SHEET 6



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MATCHLINE - SEE SHEET 8



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 SHEET 7 OF 40
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MATCHLINE - SEE SHEET 7

MATCHLINE - SEE SHEET 9

TROSSBACH JOSEPH
BERNARD JR &
NICOLETTE ANN
17538 SAINT
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DAMERON, MD 20628

CHESAPEAKE
BAY

FLOOD

TROSSBACH JOSEPH
BERNARD JR &
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EXISTING CONDITIONS

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TROSSBACH FARM LIVING SHORELINE

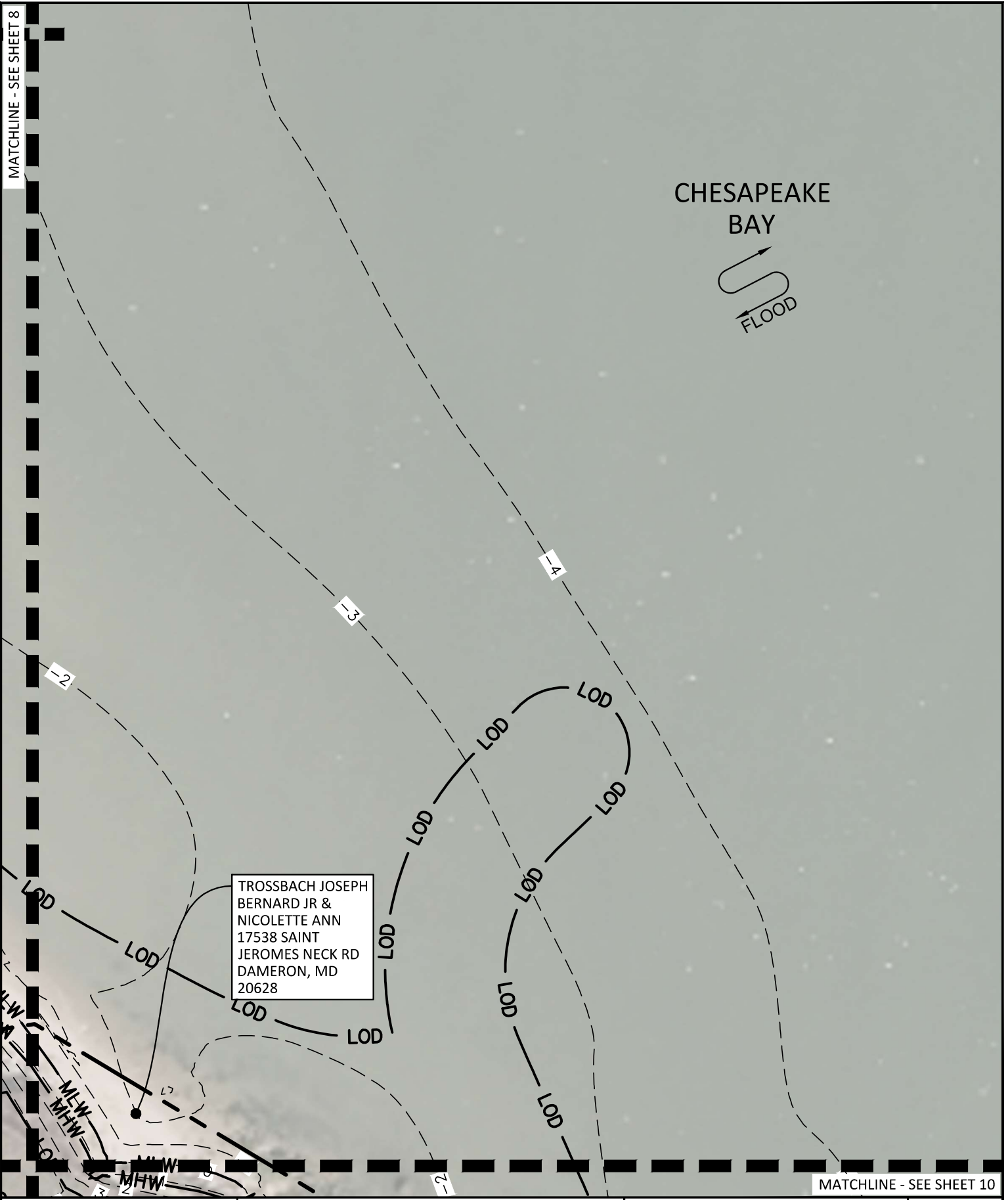
PREPARED FOR
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SHEET 8 OF 40
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MATCHLINE - SEE SHEET 8

CHESAPEAKE BAY



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JEROMES NECK RD
DAMERON, MD
20628

MATCHLINE - SEE SHEET 10



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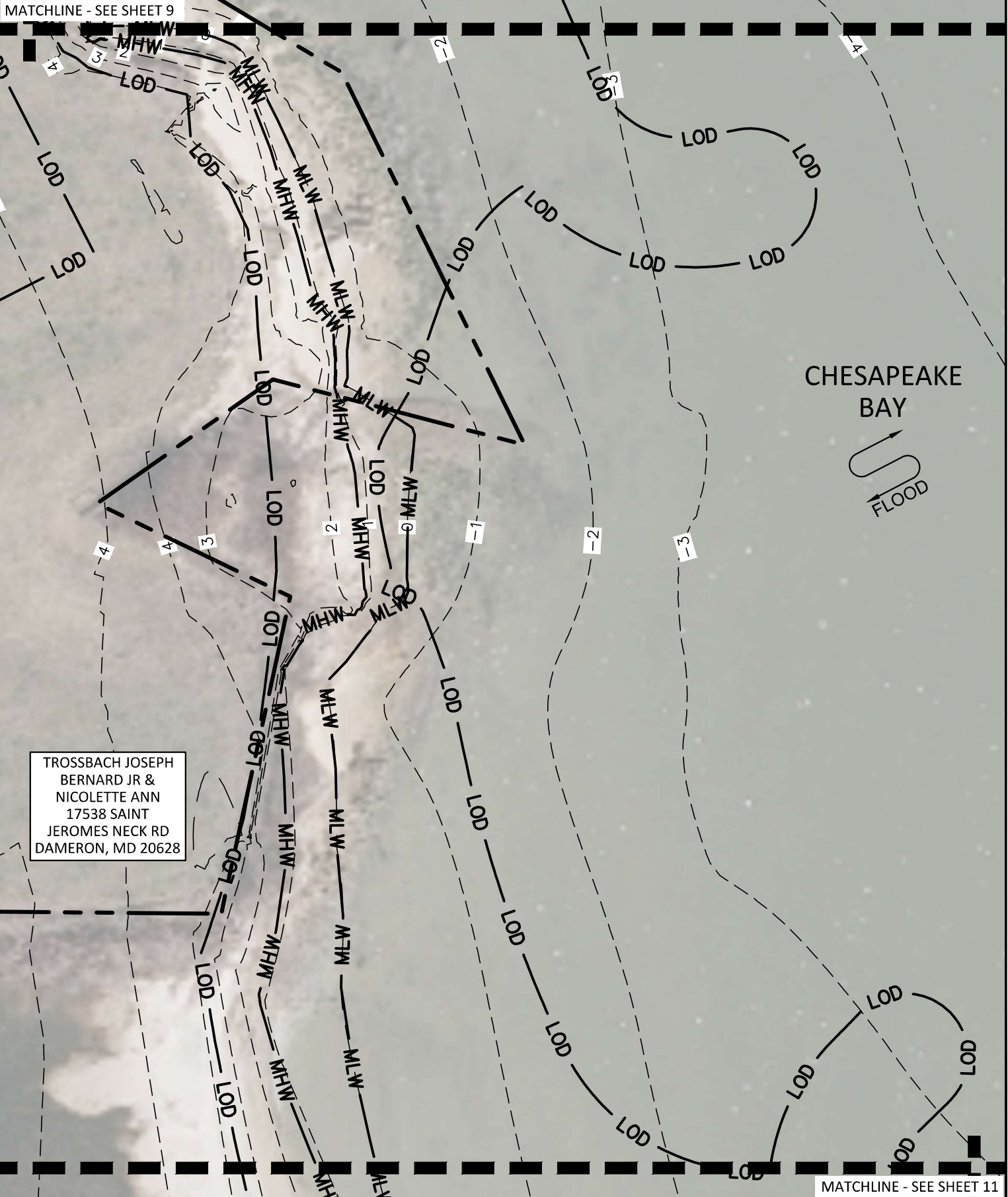
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TROSSBACH FARM LIVING SHORELINE

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TROSSBACH FARM LIVING SHORELINE

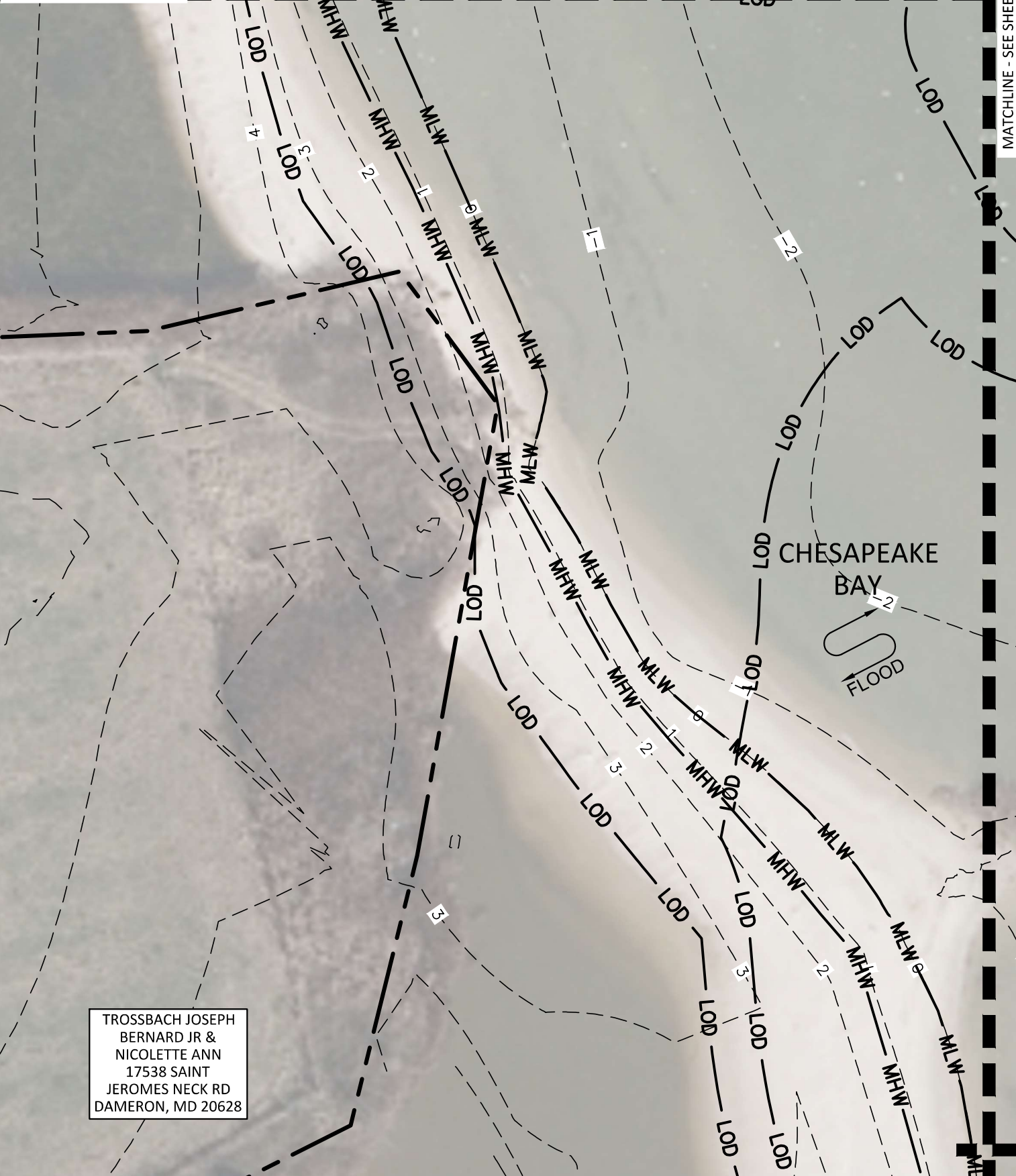
PREPARED FOR
 TROSSBACH FAMILY FARM
 SHEET 10 OF 40
 MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
DRAWN BY	SAM
CHECKED BY	FAM

202261956
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MATCHLINE - SEE SHEET 10

MATCHLINE - SEE SHEET 12



TROSSBACH JOSEPH
 BERNARD JR &
 NICOLETTE ANN
 17538 SAINT
 JEROMES NECK RD
 DAMERON, MD 20628

Sustainable science
 ENGINEERING SERVICES
 410 S. SECOND STREET
 DENTON, MARYLAND 21629

EXISTING CONDITIONS

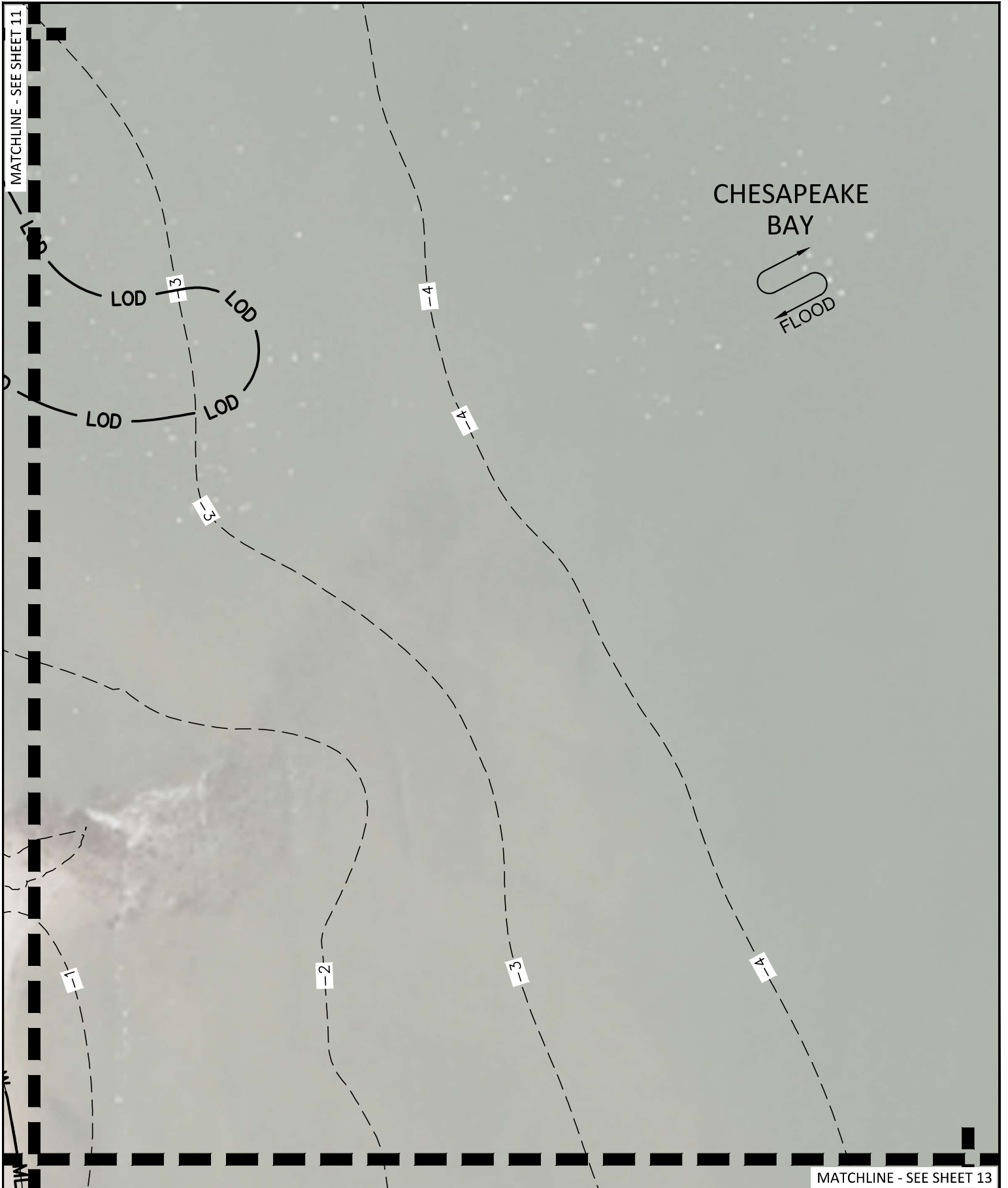
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TROSSBACH FARM LIVING SHORELINE

PREPARED FOR
 TROSSBACH FAMILY FARM
 SHEET 11 OF 40
 MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
DRAWN BY	SAM
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EXISTING CONDITIONS

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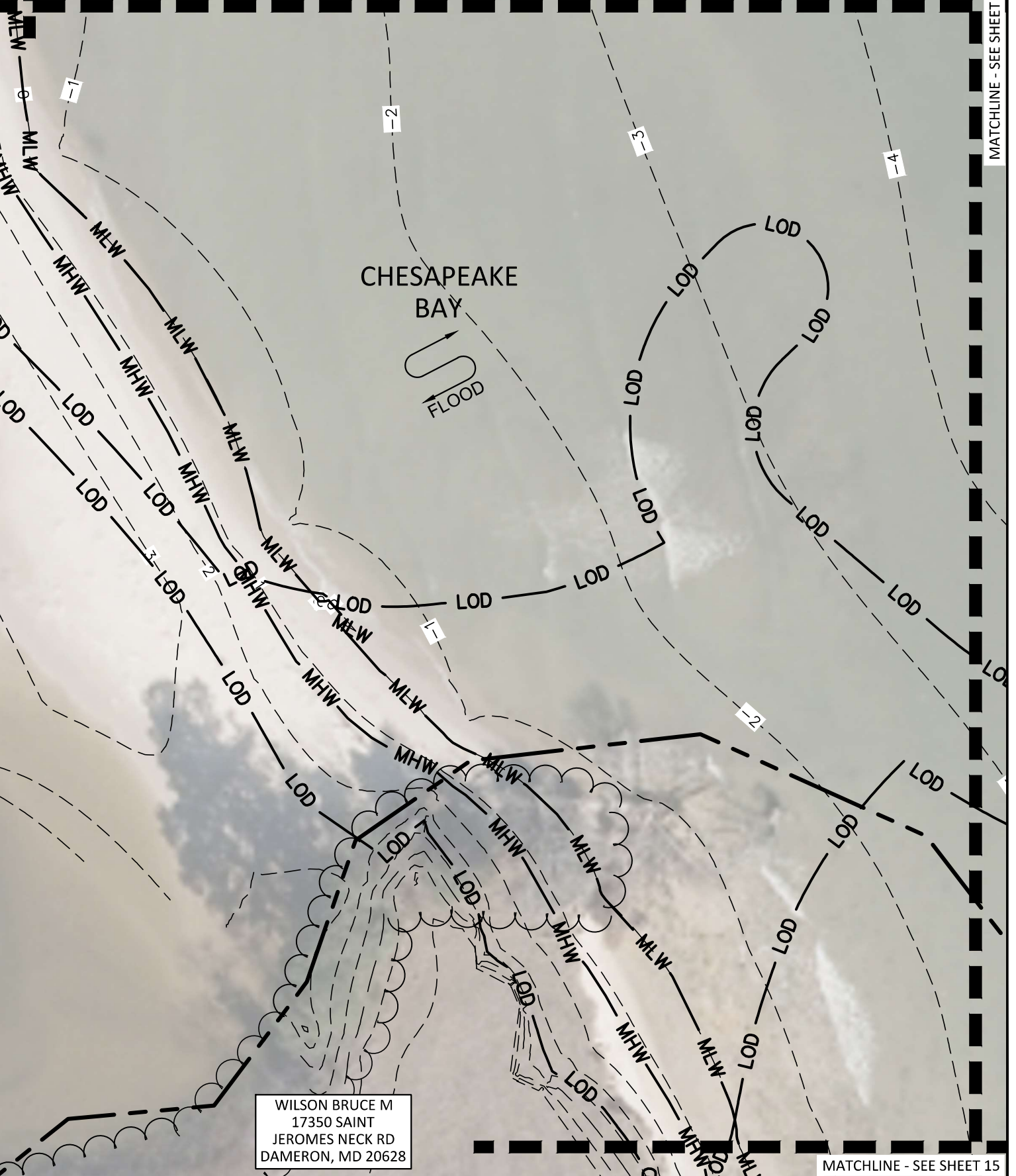
**TROSSBACH FARM
LIVING SHORELINE**
PREPARED FOR
TROSSBACH FAMILY FARM
SHEET 12 OF 40
MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
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MATCHLINE - SEE SHEET 12

MATCHLINE - SEE SHEET 14



WILSON BRUCE M
 17350 SAINT
 JEROMES NECK RD
 DAMERON, MD 20628

MATCHLINE - SEE SHEET 15



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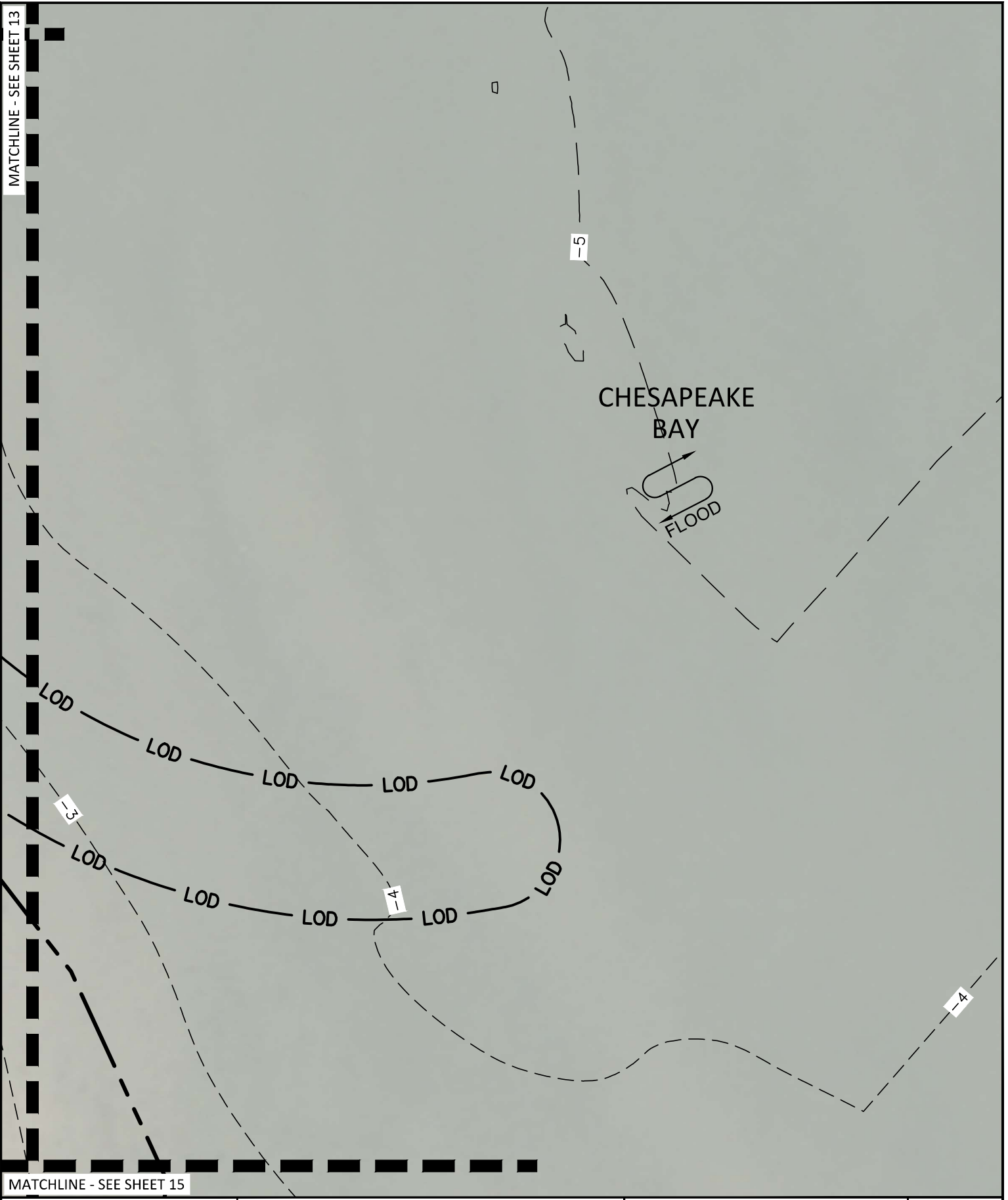
EXISTING CONDITIONS

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**TROSSBACH FARM
 LIVING SHORELINE**
 PREPARED FOR
 TROSSBACH FAMILY FARM
 SHEET 13 OF 40
 MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
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**TROSSBACH FARM
LIVING SHORELINE**

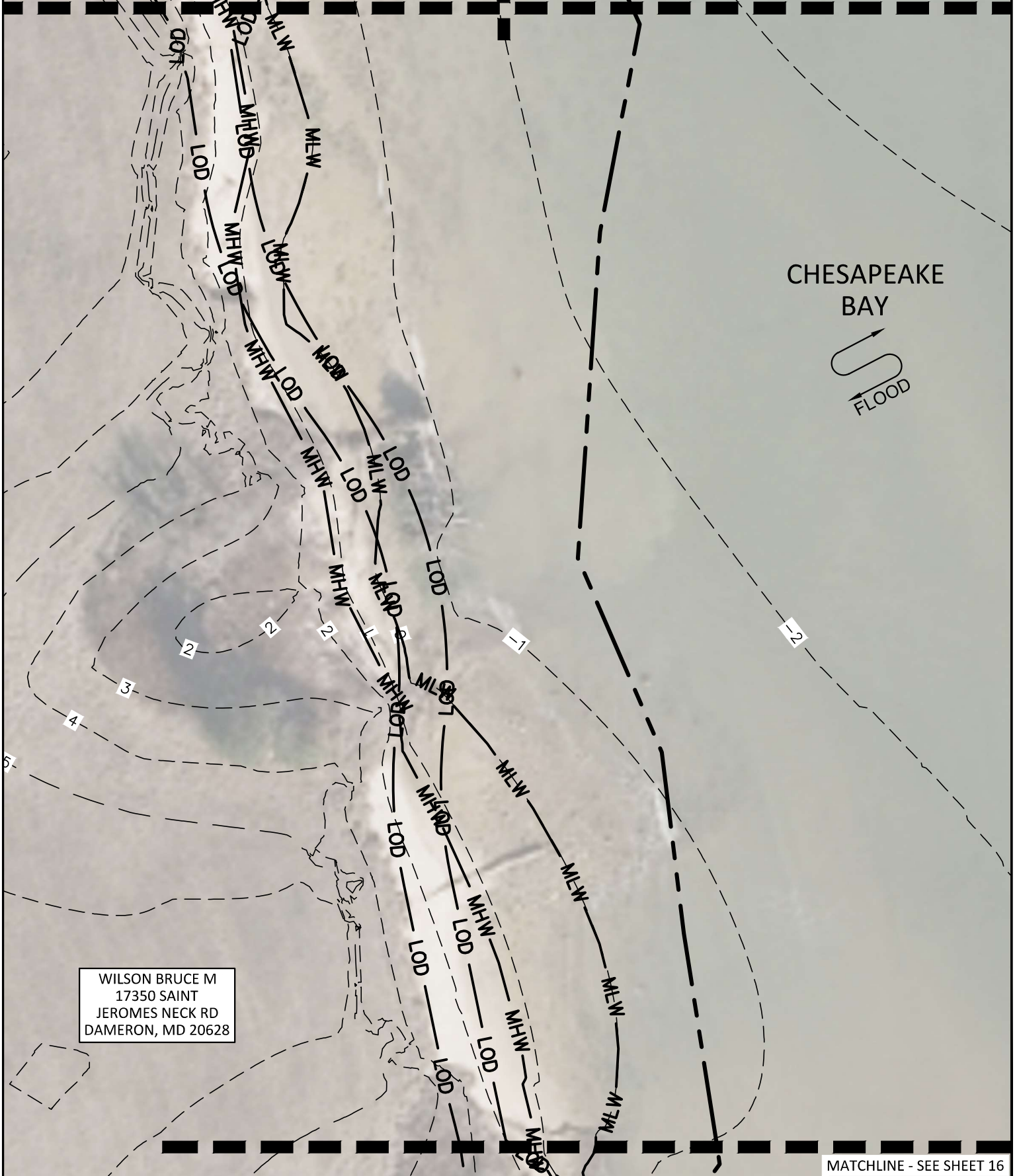
PREPARED FOR
TROSSBACH FAMILY FARM
SHEET 14 OF 40
MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
DRAWN BY	SAM
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MATCHLINE - SEE SHEET 13

MATCHLINE - SEE SHEET 14



WILSON BRUCE M
 17350 SAINT
 JEROMES NECK RD
 DAMERON, MD 20628

MATCHLINE - SEE SHEET 16



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EXISTING CONDITIONS

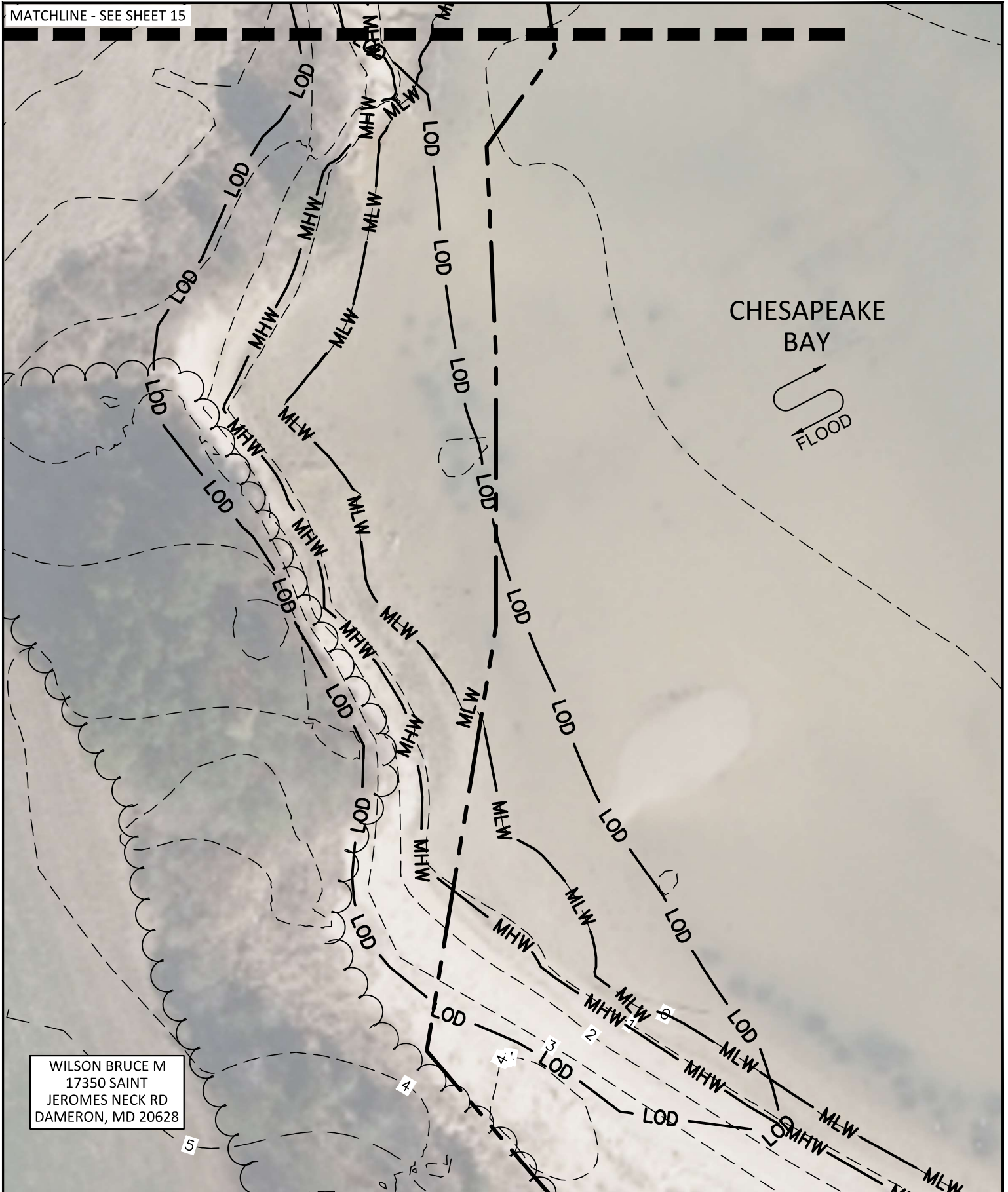
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**TROSSBACH FARM
LIVING SHORELINE**
 PREPARED FOR
 TROSSBACH FAMILY FARM
 SHEET 15 OF 40
 MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
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MATCHLINE - SEE SHEET 15



WILSON BRUCE M
 17350 SAINT
 JEROMES NECK RD
 DAMERON, MD 20628

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EXISTING CONDITIONS

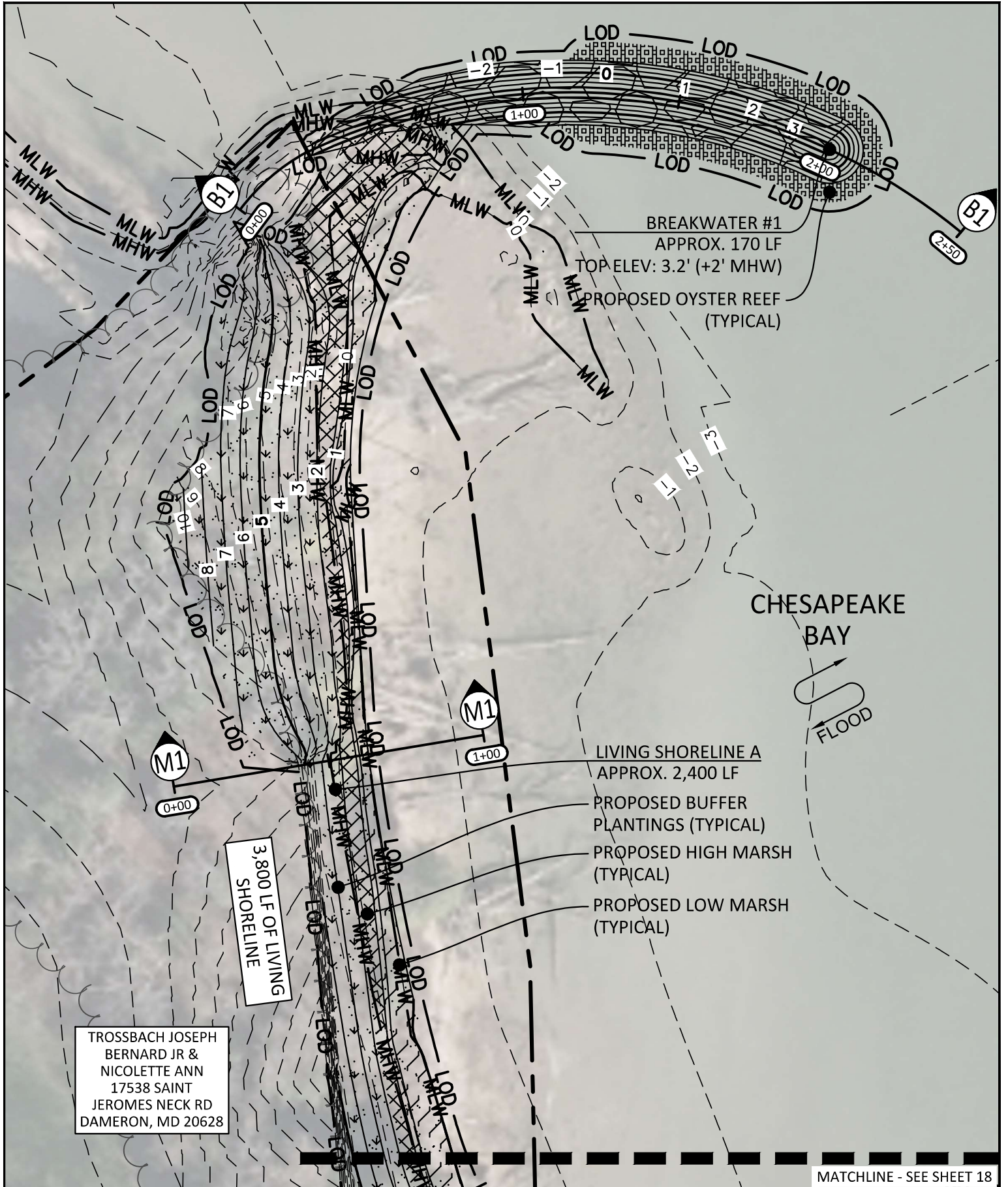
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TROSSBACH FARM LIVING SHORELINE

PREPARED FOR
 TROSSBACH FAMILY FARM
 SHEET 16 OF 40
 MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
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WQC-0033



TROSSBACH JOSEPH
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PROPOSED CONDITIONS

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**TROSSBACH FARM
 LIVING SHORELINE**
 PREPARED FOR
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 SHEET 17 OF 40
 MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
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MATCHLINE - SEE SHEET 17

CHESAPEAKE BAY

TROSSBACH JOSEPH
BERNARD JR &
NICOLETTE ANN
17538 SAINT
JEROMES NECK RD
DAMERON, MD
20628

PROPOSED
HABITAT LOGS
(TYPICAL)

BREAKWATER #2
APPROX. 206 LF
TOP ELEV: 3.2' (+2' MHW)

PROPOSED OYSTER REEF
(TYPICAL)

LIVING SHORELINE A
APPROX. 2,400 LF

PROPOSED BUFFER
PLANTINGS (TYPICAL)

PROPOSED HIGH MARSH
(TYPICAL)

PROPOSED LOW MARSH
(TYPICAL)

3,800 LF OF LIVING
SHORELINE

TROSSBACH JOSEPH
BERNARD JR &
NICOLETTE ANN
17538 SAINT
JEROMES NECK RD
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MATCHLINE - SEE SHEET 19



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PROPOSED CONDITIONS

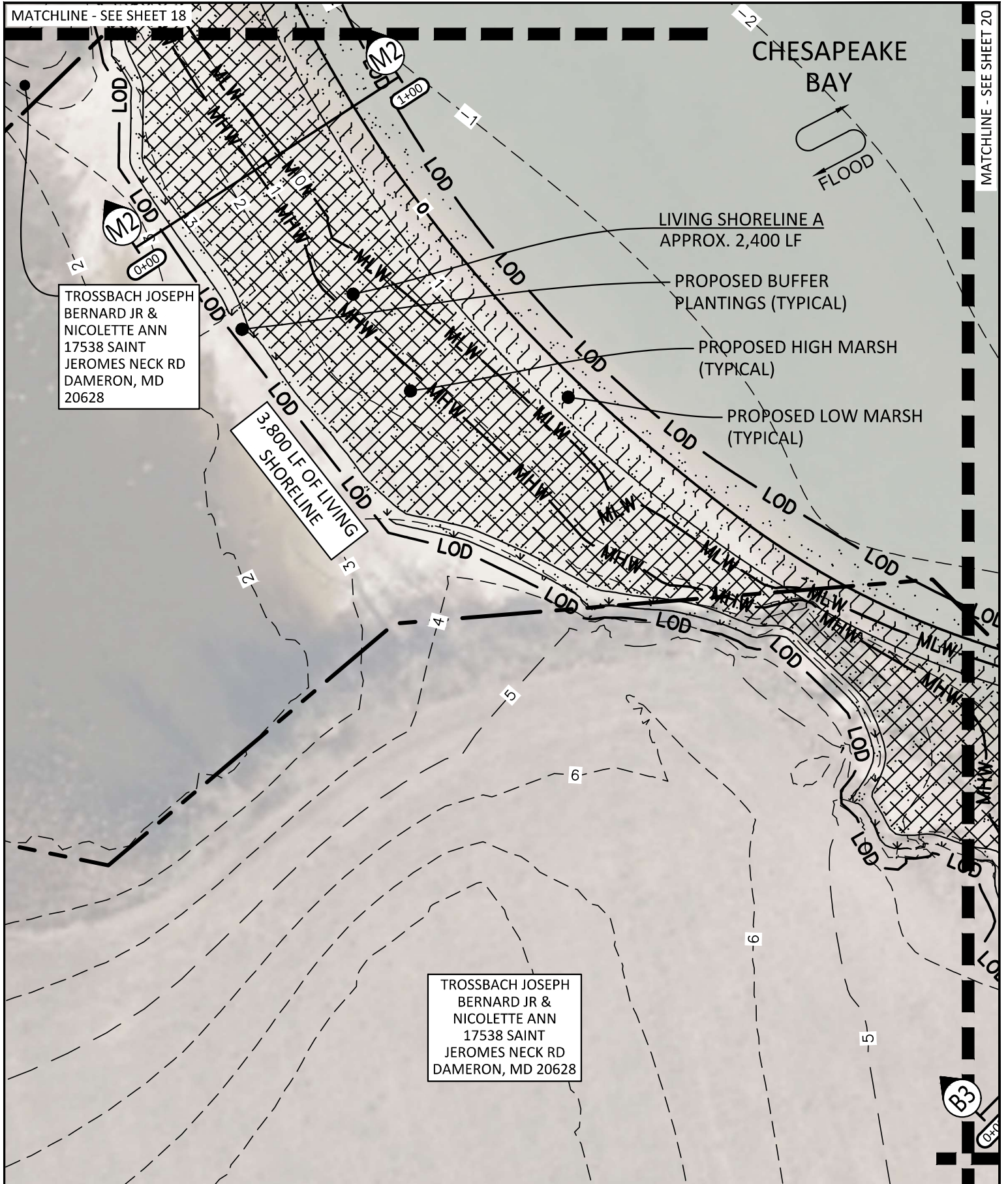
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TROSSBACH FARM LIVING SHORELINE

PREPARED FOR
TROSSBACH FAMILY FARM
SHEET 18 OF 40
MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
DRAWN BY	SAM
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PROPOSED CONDITIONS

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**TROSSBACH FARM
LIVING SHORELINE**

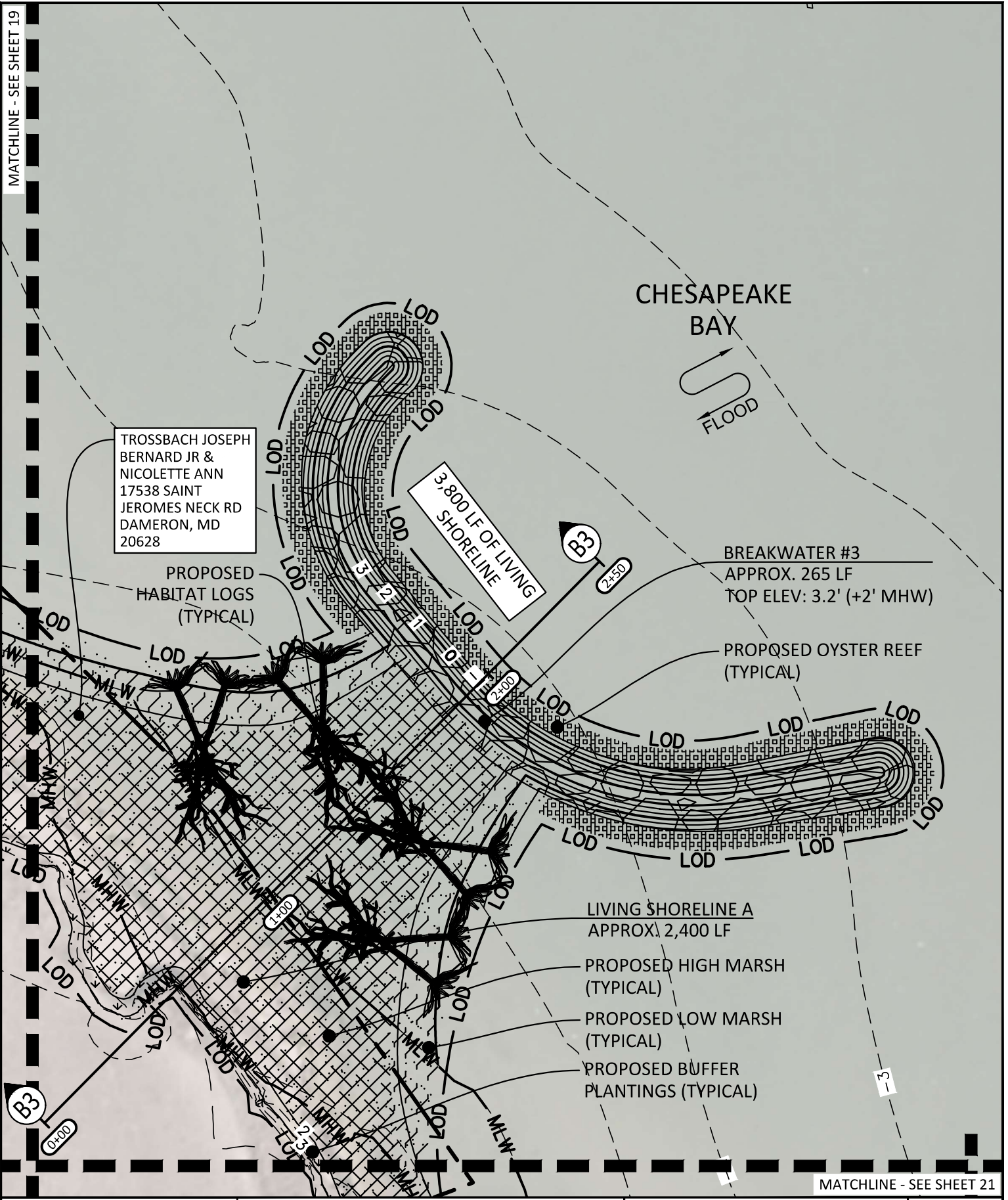
PREPARED FOR
TROSSBACH FAMILY FARM

SHEET 19 OF 40
MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
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MATCHLINE - SEE SHEET 19



TROSSBACH JOSEPH
 BERNARD JR &
 NICOLETTE ANN
 17538 SAINT
 JEROMES NECK RD
 DAMERON, MD
 20628

PROPOSED
 HABITAT LOGS
 (TYPICAL)

3,800 LF OF LIVING
 SHORELINE

CHESAPEAKE
 BAY



BREAKWATER #3
 APPROX. 265 LF
 TOP ELEV: 3.2' (+2' MHW)

PROPOSED OYSTER REEF
 (TYPICAL)

LIVING SHORELINE A
 APPROX. 2,400 LF

PROPOSED HIGH MARSH
 (TYPICAL)

PROPOSED LOW MARSH
 (TYPICAL)

PROPOSED BUFFER
 PLANTINGS (TYPICAL)

MATCHLINE - SEE SHEET 21

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PROPOSED CONDITIONS

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**TROSSBACH FARM
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 PREPARED FOR
 TROSSBACH FAMILY FARM
 SHEET 20 OF 40
 MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
DRAWN BY	SAM
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MATCHLINE - SEE SHEET 20

MATCHLINE - SEE SHEET 22

CHESAPEAKE BAY



TROSSBACH JOSEPH
BERNARD JR &
NICOLETTE ANN
17538 SAINT
JEROMES NECK RD
DAMERON, MD 20628

- LIVING SHORELINE A
APPROX. 2,400 LF
- PROPOSED BUFFER
PLANTINGS (TYPICAL)
- PROPOSED HIGH MARSH
(TYPICAL)
- PROPOSED LOW MARSH
(TYPICAL)

3,800 LF OF LIVING
SHORELINE

TROSSBACH JOSEPH
BERNARD JR &
NICOLETTE ANN
17538 SAINT
JEROMES NECK RD
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TROSSBACH FARM LIVING SHORELINE

PREPARED FOR
TROSSBACH FAMILY FARM
SHEET 21 OF 40
MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
DRAWN BY	SAM
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202261956
23-WQC-0033

MATCHLINE - SEE SHEET 21

CHESAPEAKE BAY



BREAKWATER #4
APPROX. 250 LF
TOP ELEV: 3.2' (+2' MHW)

PROPOSED OYSTER REEF
(TYPICAL)

LIVING SHORELINE A
APPROX. 2,400 LF

PROPOSED BUFFER
PLANTINGS (TYPICAL)

PROPOSED HIGH MARSH
(TYPICAL)

PROPOSED LOW MARSH
(TYPICAL)

TROSSBACH JOSEPH
BERNARD JR &
NICOLETTE ANN
17538 SAINT
JEROMES NECK RD
DAMERON, MD
20628

3,800 LF OF LIVING
SHORELINE

B4
2+50

2+00

MATCHLINE - SEE SHEET 23



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DENTON, MARYLAND 21629

PROPOSED CONDITIONS

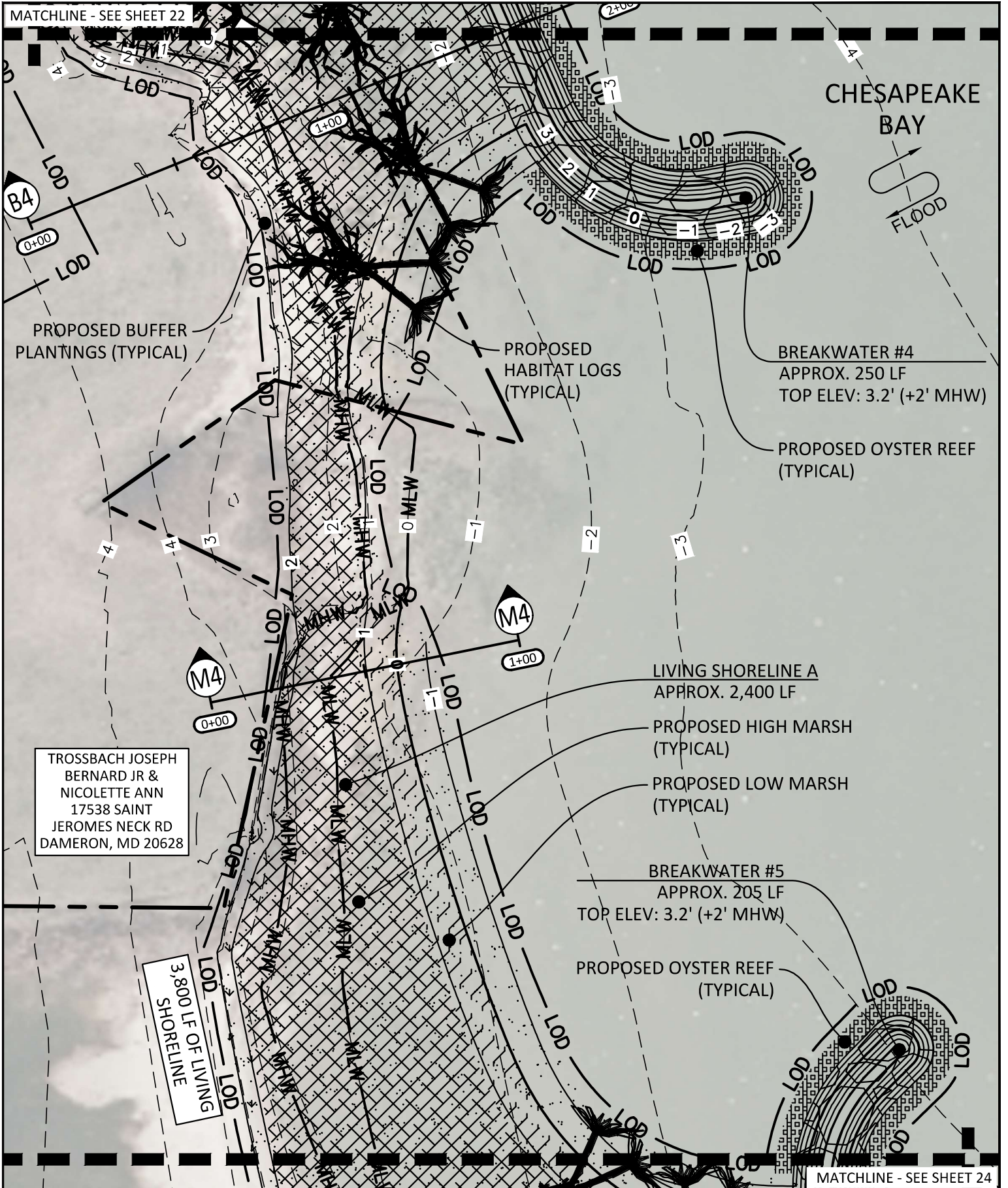
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TROSSBACH FARM LIVING SHORELINE

PREPARED FOR
TROSSBACH FAMILY FARM
SHEET 22 OF 40
MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
DRAWN BY	SAM
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TROSSBACH JOSEPH
BERNARD JR &
NICOLETTE ANN
17538 SAINT
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**TROSSBACH FARM
LIVING SHORELINE**
PREPARED FOR
TROSSBACH FAMILY FARM
SHEET 23 OF 40
MDE PERMIT TRACKING NO.: 202261956

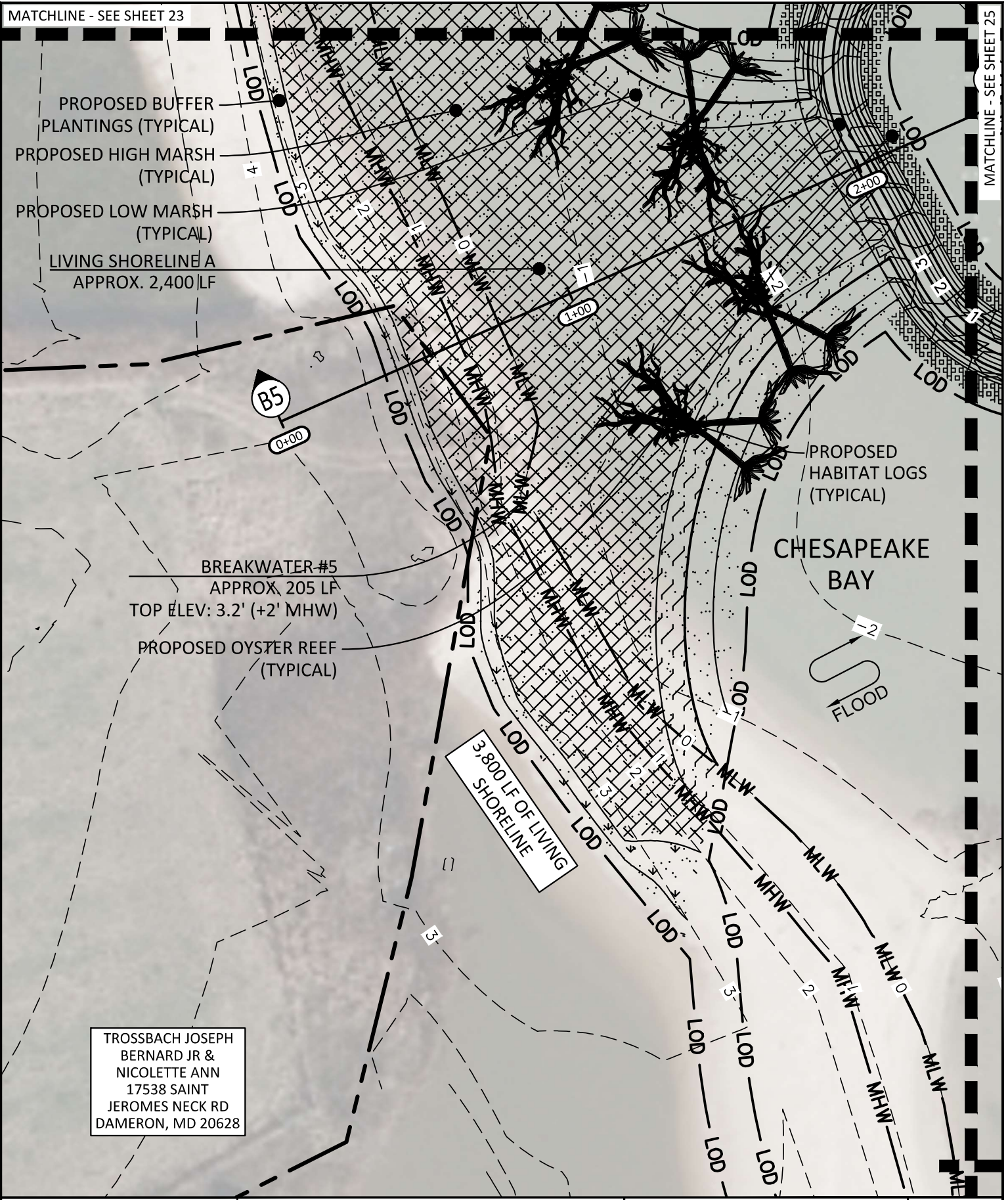
DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
DRAWN BY	SAM
CHECKED BY	FAM

202261956
23-WQC-0033

MATCHLINE - SEE SHEET 23

MATCHLINE - SEE SHEET 25

- PROPOSED BUFFER PLANTINGS (TYPICAL)
- PROPOSED HIGH MARSH (TYPICAL)
- PROPOSED LOW MARSH (TYPICAL)
- LIVING SHORELINE A APPROX. 2,400 LF



BREAKWATER #5
 APPROX. 205 LF
 TOP ELEV: 3.2' (+2' MHW)

PROPOSED OYSTER REEF
 (TYPICAL)

CHESAPEAKE BAY

3,800 LF OF LIVING SHORELINE

TROSSBACH JOSEPH
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PROPOSED CONDITIONS

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TROSSBACH FARM LIVING SHORELINE

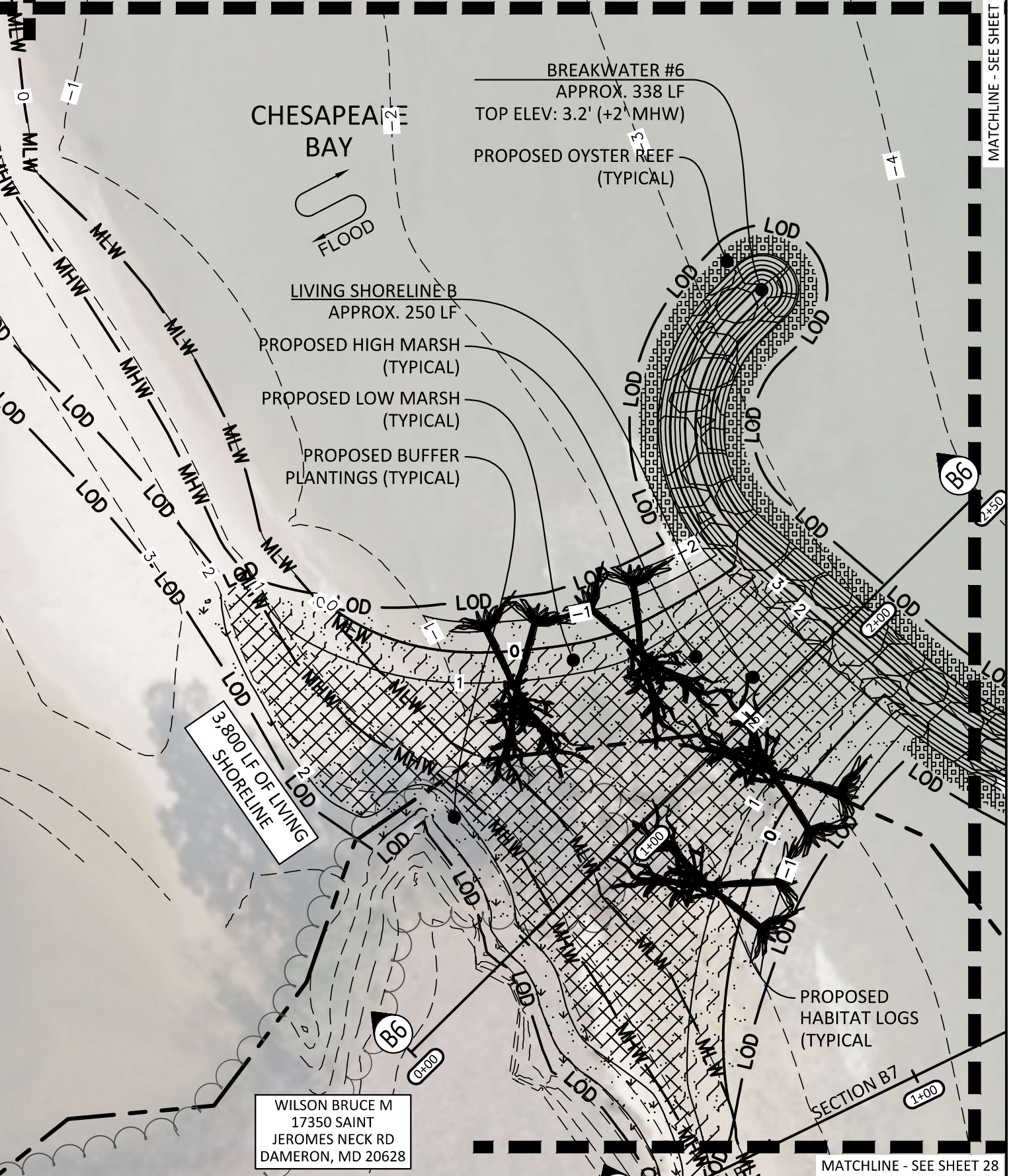
PREPARED FOR
 TROSSBACH FAMILY FARM
 SHEET 24 OF 40
 MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
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202261956
 23-WQC-0033

MATCHLINE - SEE SHEET 25

MATCHLINE - SEE SHEET 27



MATCHLINE - SEE SHEET 28



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DENTON, MARYLAND 21629

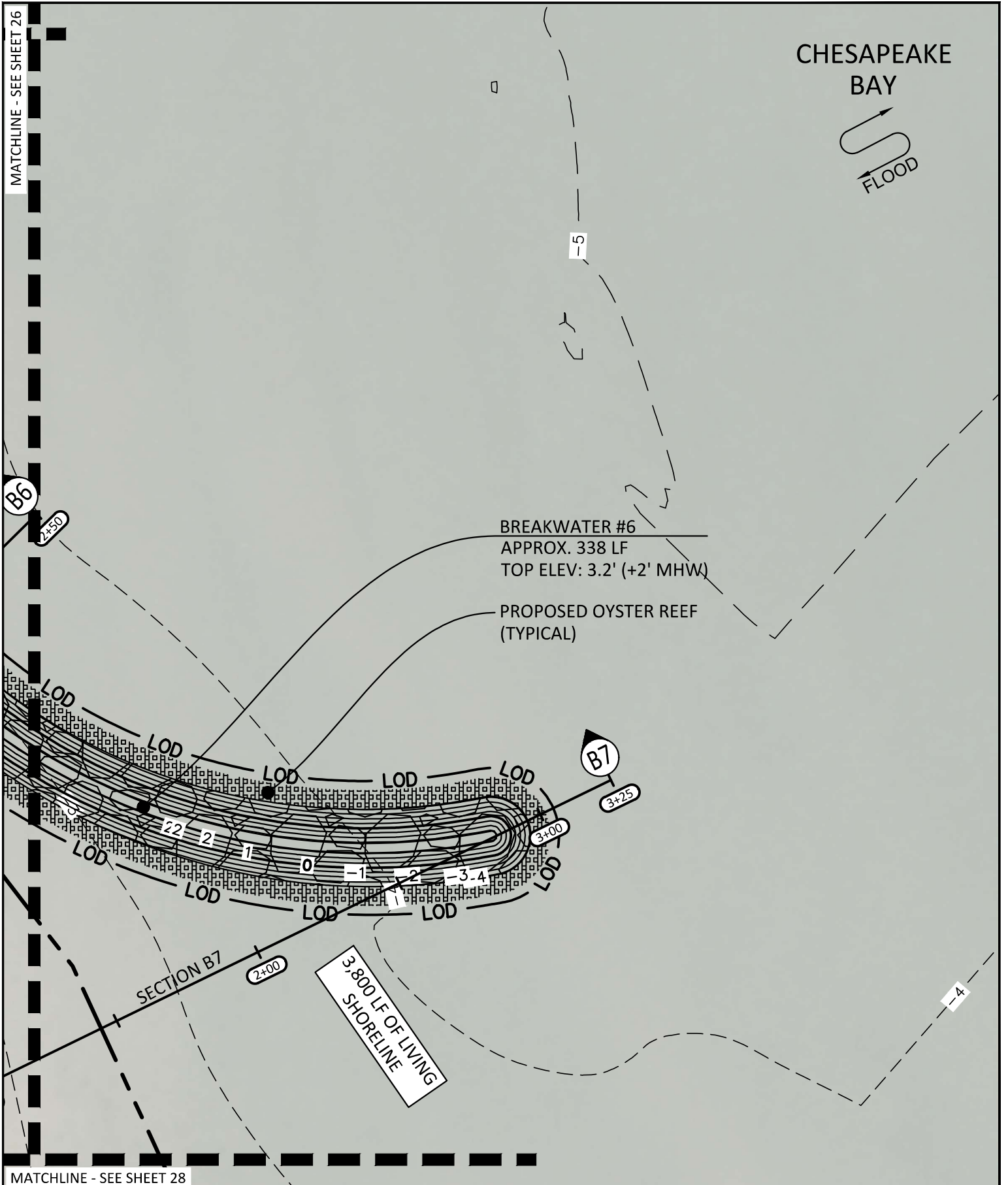
PROPOSED CONDITIONS

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TROSSBACH FARM LIVING SHORELINE
PREPARED FOR
TROSSBACH FAMILY FARM
SHEET 26 OF 40
MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
DRAWN BY	SAM
CHECKED BY	FAM

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DENTON, MARYLAND 21629

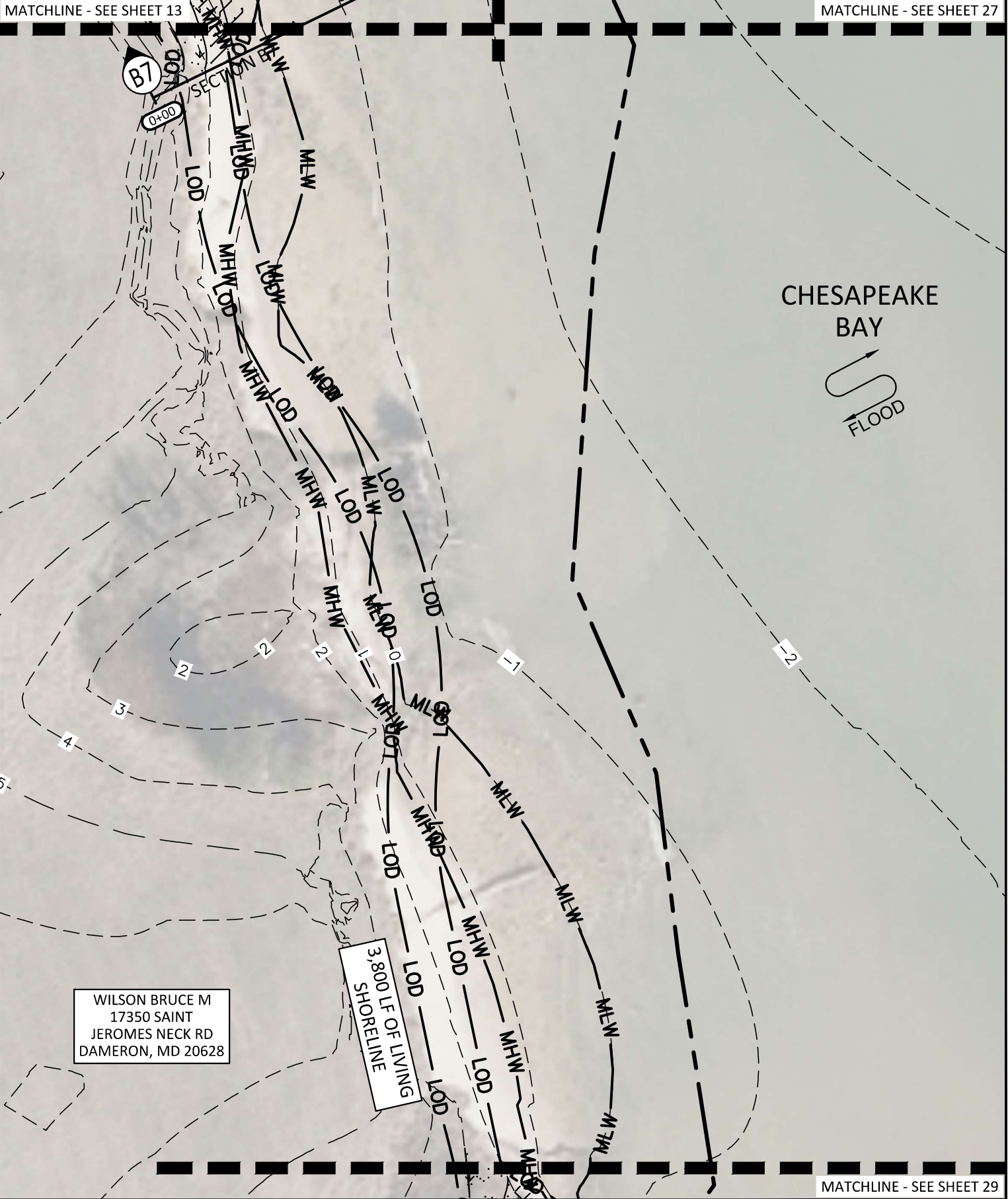
PROPOSED CONDITIONS

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TROSSBACH FARM LIVING SHORELINE
PREPARED FOR
TROSSBACH FAMILY FARM
SHEET 27 OF 40
MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
DRAWN BY	SAM
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WILSON BRUCE M
17350 SAINT
JEROMES NECK RD
DAMERON, MD 20628

3,800 LF OF LIVING
SHORELINE



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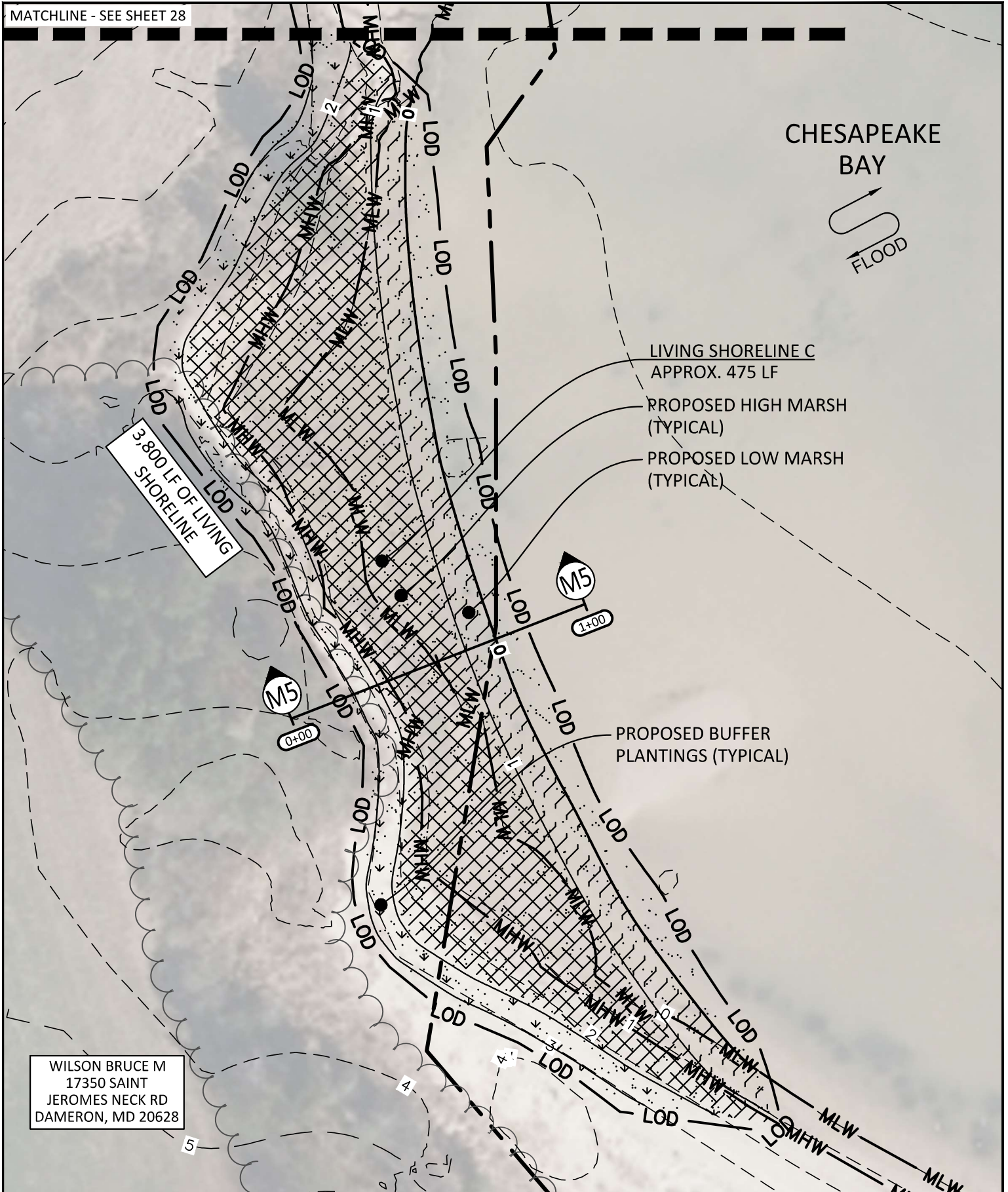
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**TROSSBACH FARM
LIVING SHORELINE**
PREPARED FOR
TROSSBACH FAMILY FARM
SHEET 28 OF 40
MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
DRAWN BY	SAM
CHECKED BY	FAM

202261956
23-WQC-0033

MATCHLINE - SEE SHEET 28



WILSON BRUCE M
 17350 SAINT
 JEROMES NECK RD
 DAMERON, MD 20628

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PROPOSED CONDITIONS

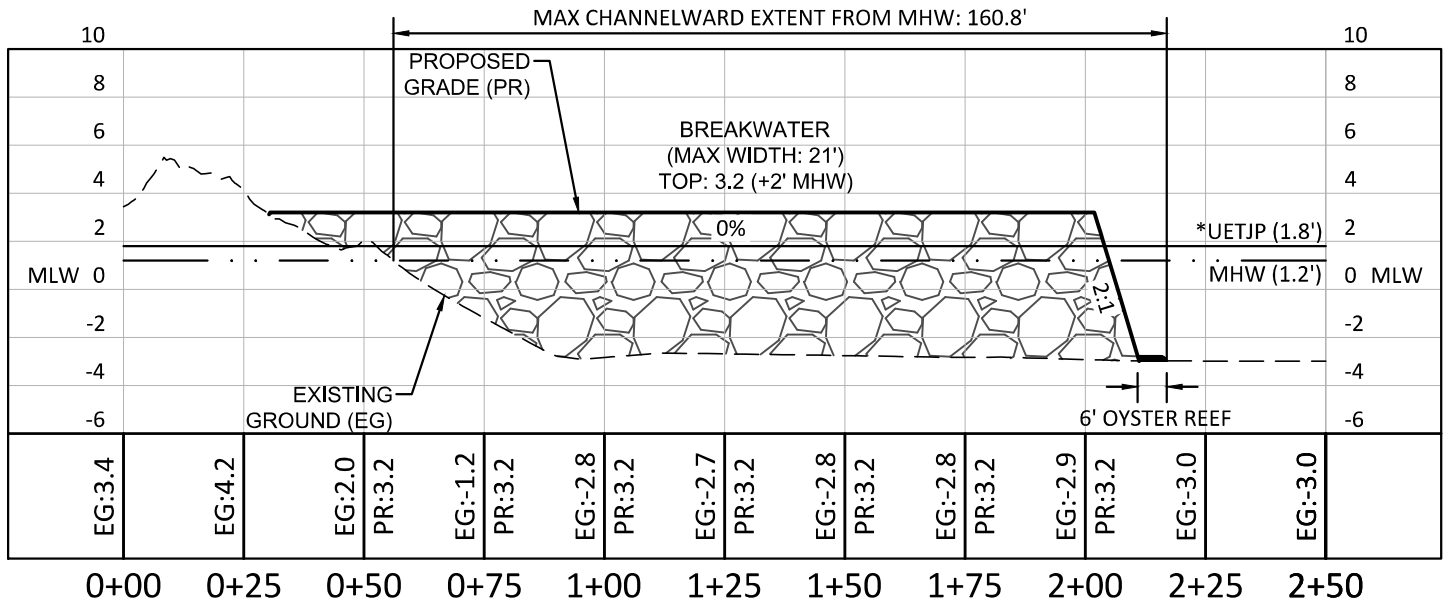
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TROSSBACH FARM LIVING SHORELINE

PREPARED FOR
 TROSSBACH FAMILY FARM
 SHEET 29 OF 40
 MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
DRAWN BY	SAM
CHECKED BY	FAM

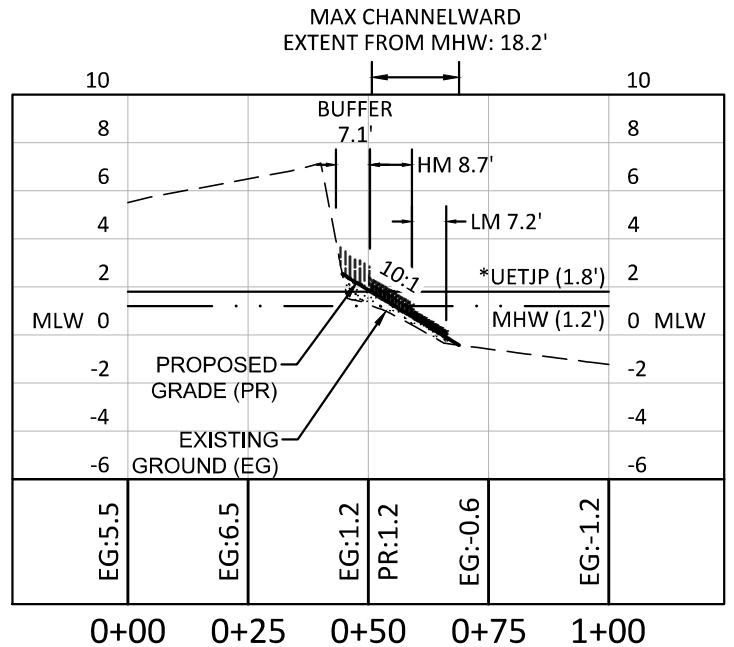
202261956
 23-WQC-0033



SECTION B1

SCALE: 1" = 40' H
1" = 8' V

*UPPER EXTENTS OF TIDAL JURISDICTION PLANTINGS ELEVATION (1.5 x TIDE RANGE FROM MLW)



SECTION M1

SCALE: 1" = 40' H
1" = 8' V

PLANTING SPECIES

BUFFER: SEE ZONE 1 TABLE, SHEET 39 FOR MIX %
HIGH MARSH (HM): SPARTINA PATENS
LOW MARSH (LM): SPARTINA ALTERNIFLORA



PROPOSED CROSS SECTIONS

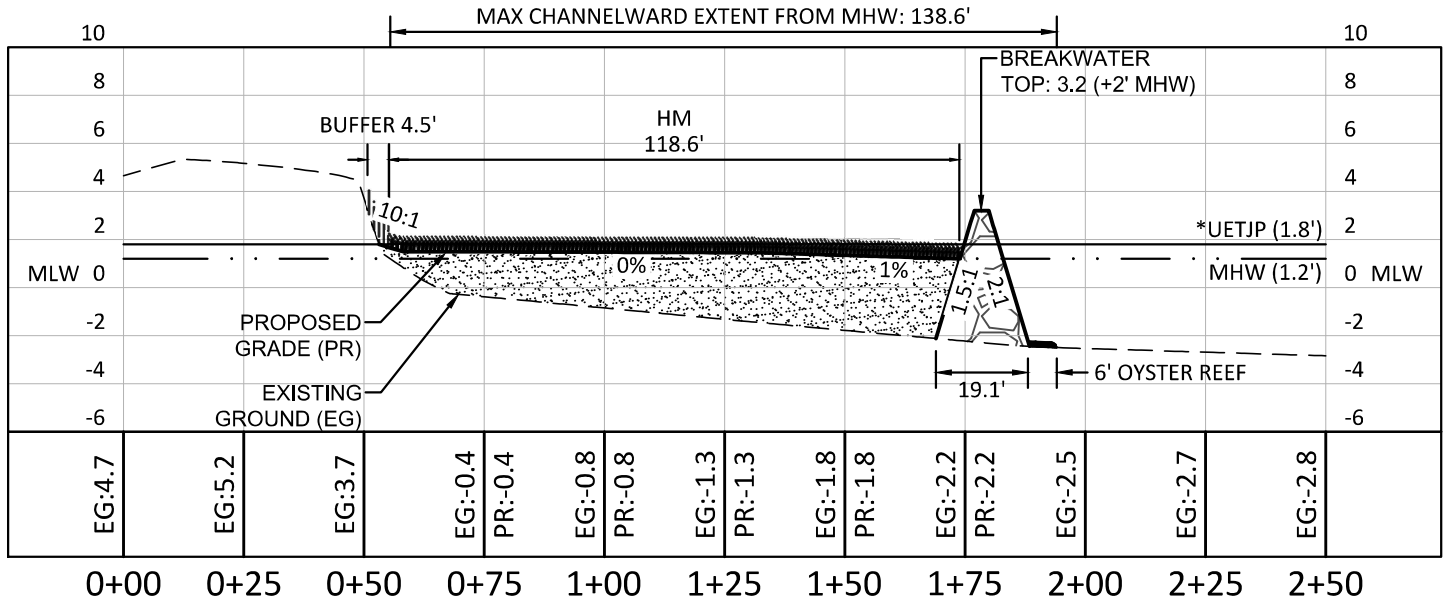
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TROSSBACH FARM LIVING SHORELINE

PREPARED FOR
TROSSBACH FAMILY FARM
SHEET 30 OF 40
MDE PERMIT TRACKING NO.: 202261956

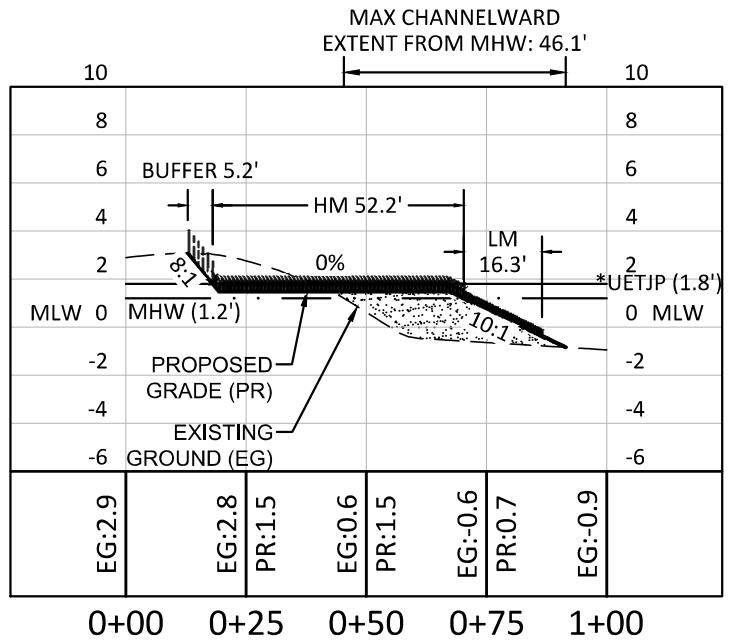
DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
DRAWN BY	SAM
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202261956
23-WQC-0033



SECTION B2

SCALE: 1" = 40' H
1" = 8' V



SECTION M2

SCALE: 1" = 40' H
1" = 8' V

*UPPER EXTENTS OF TIDAL JURISDICTION PLANTINGS ELEVATION (1.5 x TIDE RANGE FROM MLW)

PLANTING SPECIES

BUFFER: SEE ZONE 1 TABLE, SHEET 39 FOR MIX %
HIGH MARSH (HM): SPARTINA PATENS
LOW MARSH (LM): SPARTINA ALTERNIFLORA



PROPOSED CROSS SECTIONS

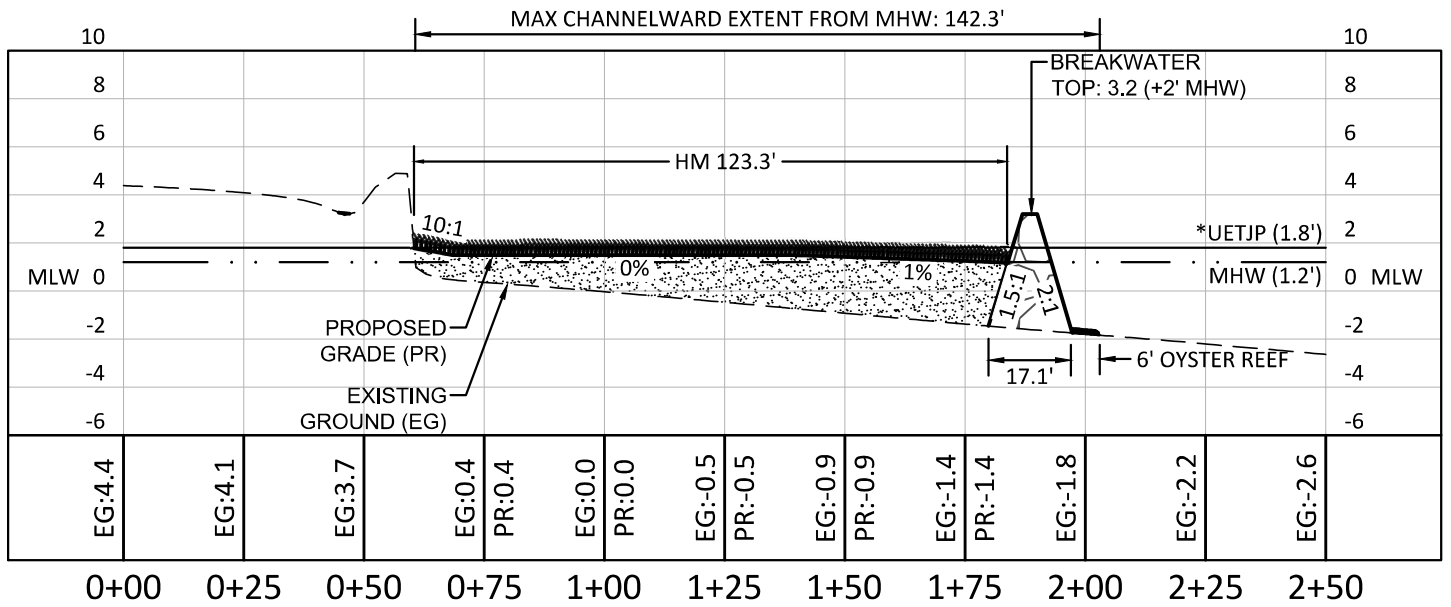
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TROSSBACH FARM LIVING SHORELINE

PREPARED FOR TROSSBACH FAMILY FARM
SHEET 31 OF 40
MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
DRAWN BY	SAM
CHECKED BY	FAM

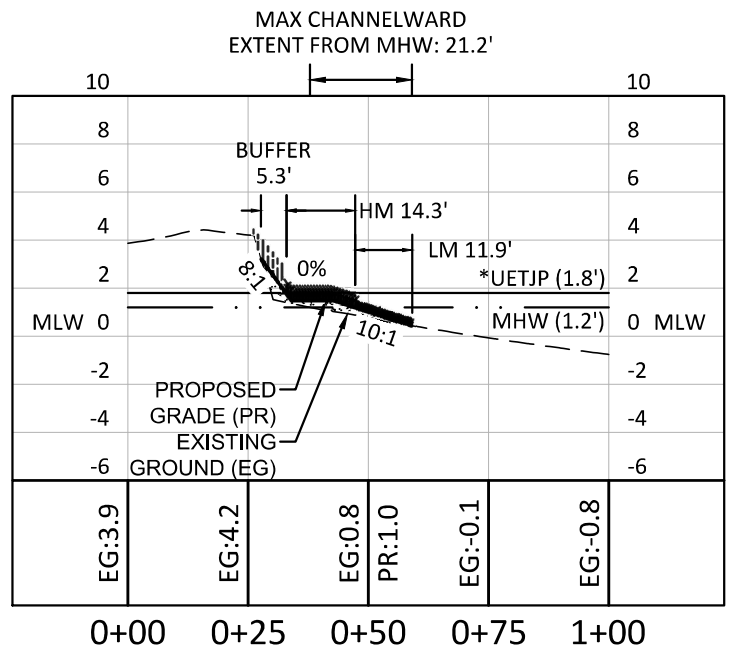
202261956
23-WQC-0033



SECTION B3

SCALE: 1" = 40' H
1" = 8' V

*UPPER EXTENTS OF TIDAL JURISDICTION PLANTINGS ELEVATION (1.5 x TIDE RANGE FROM MLW)



SECTION M3

SCALE: 1" = 40' H
1" = 8' V

PLANTING SPECIES

BUFFER: SEE ZONE 1 TABLE, SHEET 39 FOR MIX %
HIGH MARSH (HM): SPARTINA PATENS
LOW MARSH (LM): SPARTINA ALTERNIFLORA



PROPOSED CROSS SECTIONS

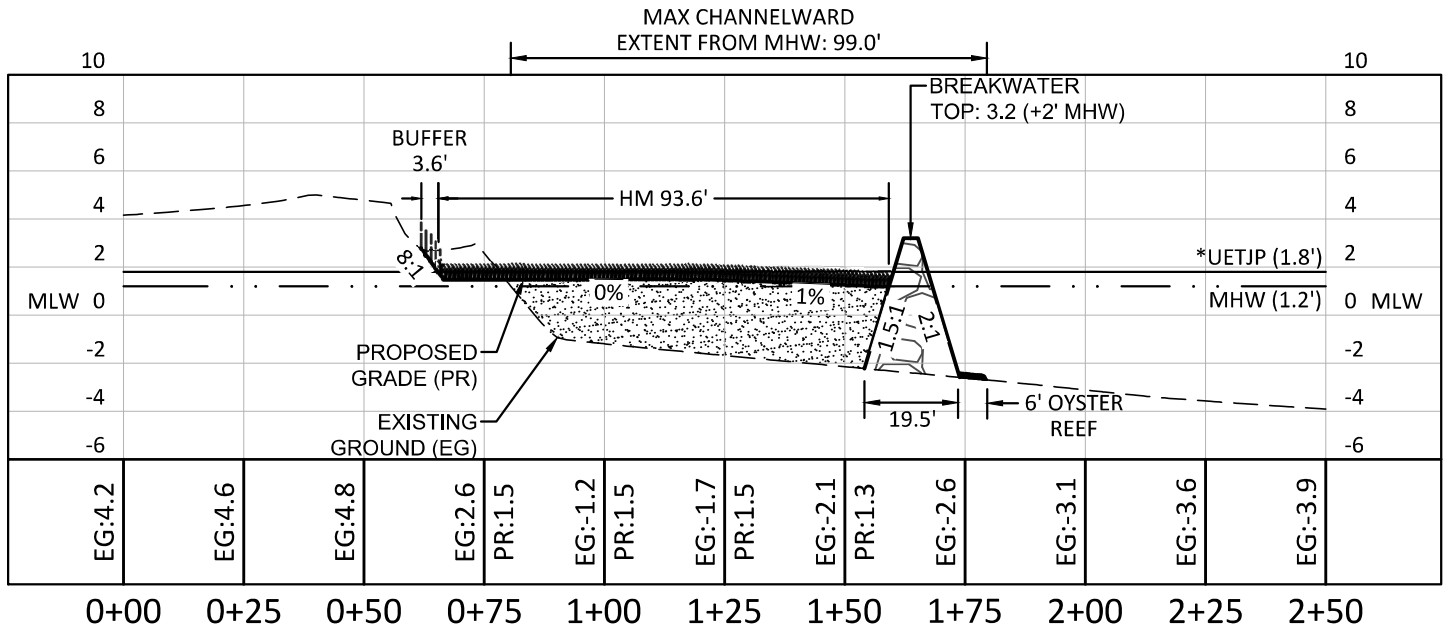
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TROSSBACH FARM LIVING SHORELINE

PREPARED FOR
TROSSBACH FAMILY FARM
SHEET 32 OF 40
MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
DRAWN BY	SAM
CHECKED BY	FAM

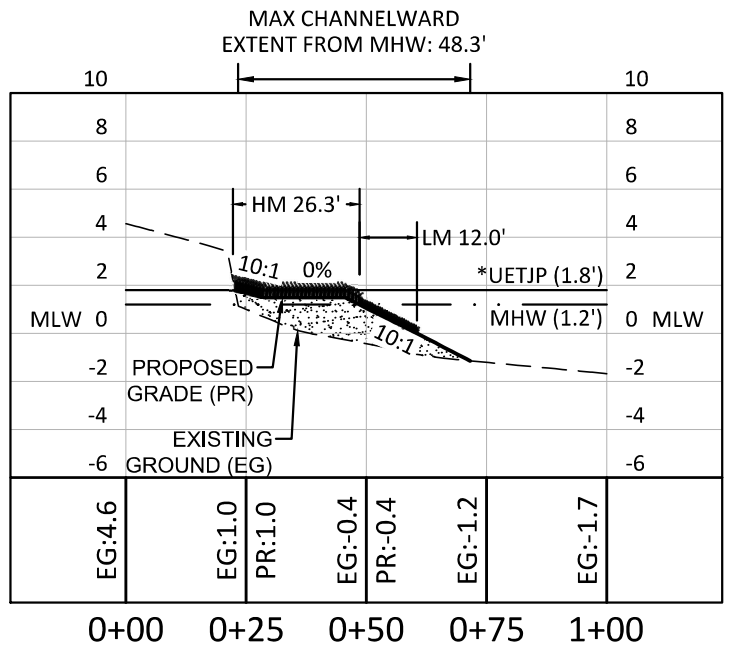
202261956
23-WQC-0033



SECTION B4

SCALE: 1" = 40' H
1" = 8' V

*UPPER EXTENTS OF TIDAL JURISDICTION PLANTINGS ELEVATION (1.5 x TIDE RANGE FROM MLW)



SECTION M4

SCALE: 1" = 40' H
1" = 8' V

PLANTING SPECIES

BUFFER: SEE ZONE 1 TABLE, SHEET 39 FOR MIX %
HIGH MARSH (HM): SPARTINA PATENS
LOW MARSH (LM): SPARTINA ALTERNIFLORA



PROPOSED CROSS SECTIONS

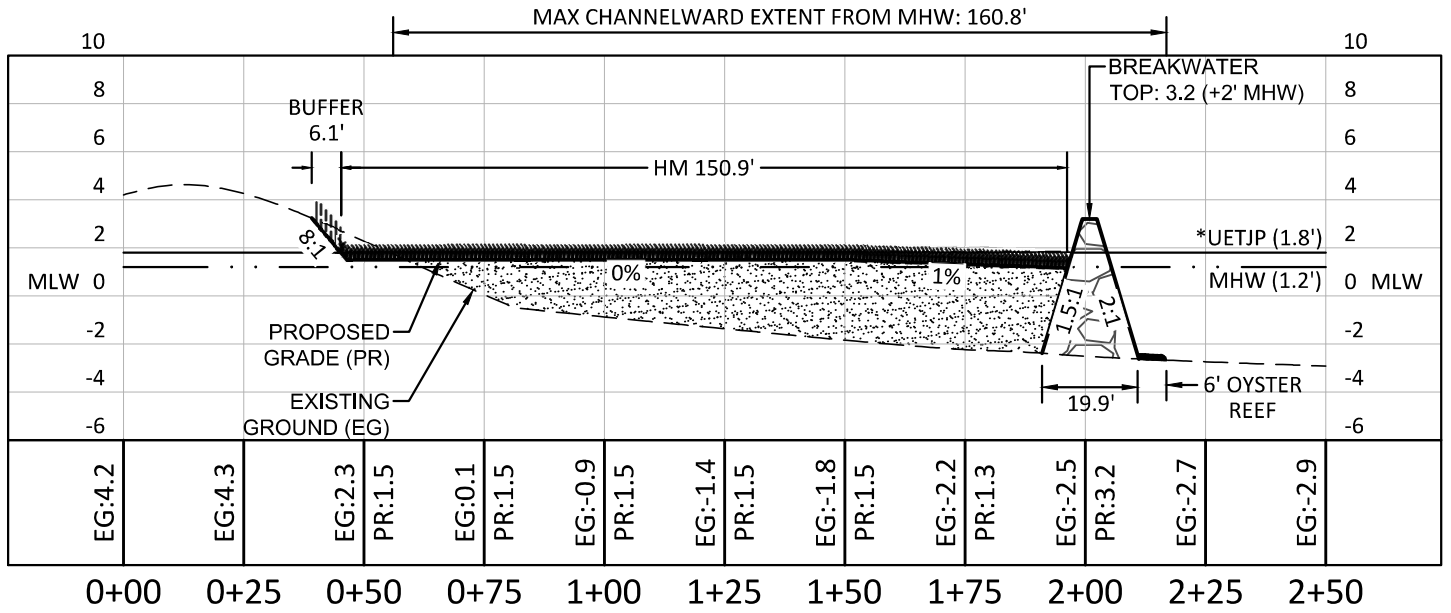
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TROSSBACH FARM LIVING SHORELINE

PREPARED FOR
TROSSBACH FAMILY FARM
SHEET 33 OF 40
MDE PERMIT TRACKING NO.: 202261956

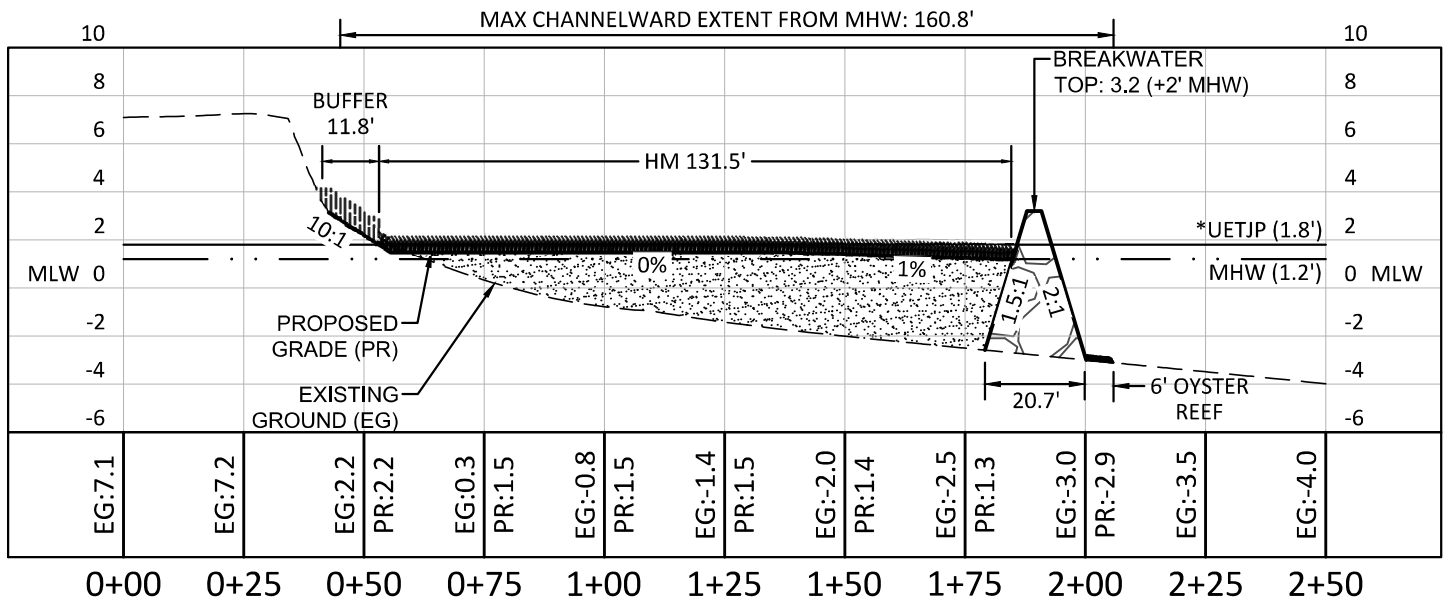
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SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
DRAWN BY	SAM
CHECKED BY	FAM

202261956
23-WQC-0033



SECTION B5

SCALE: 1" = 40' H
1" = 8' V



SECTION B6

SCALE: 1" = 40' H
1" = 8' V

*UPPER EXTENTS OF TIDAL JURISDICTION PLANTINGS ELEVATION (1.5 x TIDE RANGE FROM MLW)

PLANTING SPECIES

BUFFER: SEE ZONE 1 TABLE, SHEET 39 FOR MIX %
HIGH MARSH (HM): SPARTINA PATENS
LOW MARSH (LM): SPARTINA ALTERNIFLORA



PROPOSED CROSS SECTIONS

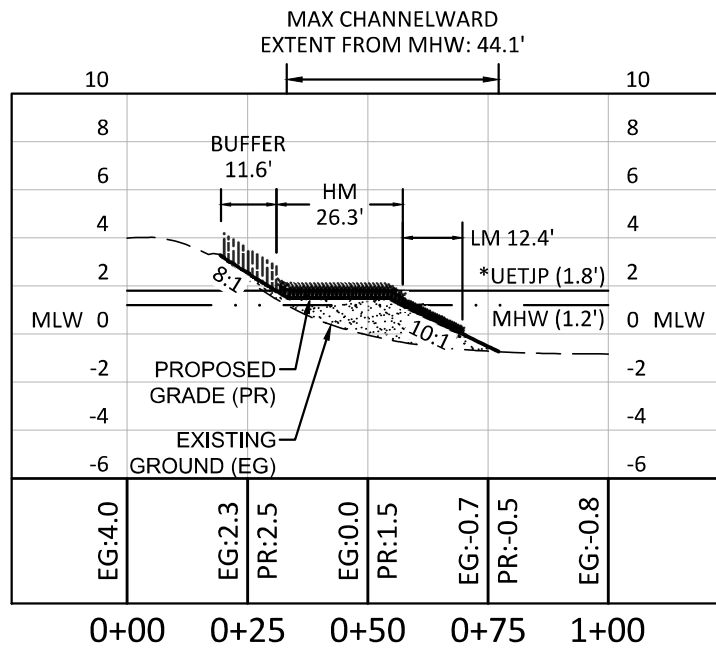
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TROSSBACH FARM LIVING SHORELINE

PREPARED FOR
TROSSBACH FAMILY FARM
SHEET 34 OF 40
MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
DRAWN BY	SAM
CHECKED BY	FAM

202261956
23-WQC-0033



SECTION M5

SCALE: 1" = 40' H
1" = 8' V

*UPPER EXTENTS OF
TIDAL JURISDICTION
PLANTINGS
ELEVATION
(1.5 x TIDE RANGE
FROM MLW)

PLANTING SPECIES

BUFFER: SEE ZONE 1 TABLE, SHEET 39 FOR MIX %
HIGH MARSH (HM): SPARTINA PATENS
LOW MARSH (LM): SPARTINA ALTERNIFLORA



PROPOSED CROSS SECTIONS

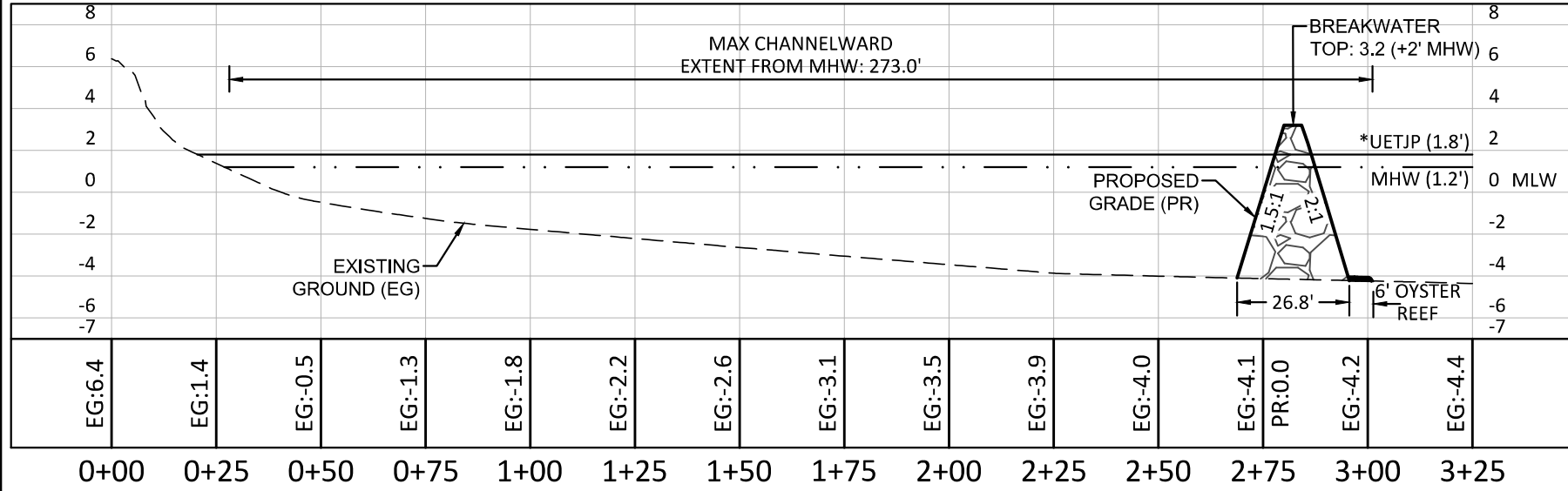
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TROSSBACH FARM LIVING SHORELINE

PREPARED FOR
TROSSBACH FAMILY FARM
SHEET 35 OF 40
MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
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EG:6.4	EG:1.4	EG:-0.5	EG:-1.3	EG:-1.8	EG:-2.2	EG:-2.6	EG:-3.1	EG:-3.5	EG:-3.9	EG:-4.0	EG:-4.1	PR:0.0	EG:-4.2	EG:-4.4
0+00	0+25	0+50	0+75	1+00	1+25	1+50	1+75	2+00	2+25	2+50	2+75	3+00	3+25	

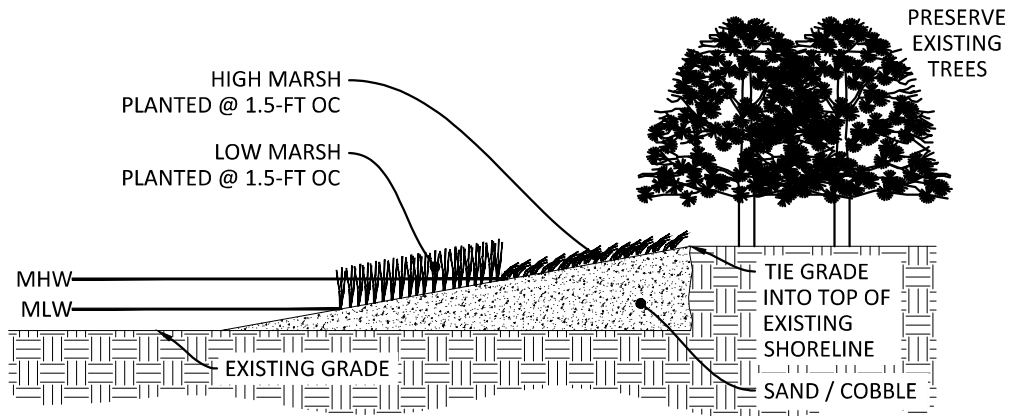
SECTION B7
 SCALE: 1" = 40' H
 1" = 8' V

DATE	12/1/2023
SS PROJECT #	22003
SCALE	1" = 40'
DESIGNED BY	SAM
DRAWN BY	SAM
CHECKED BY	FAM

TROSSBACH FARM
LIVING SHORELINE
 PREPARED FOR
 TROSSBACH FAMILY FARM
 SHEET 36 OF 40
 MDE PERMIT TRACKING NO.: 202261956

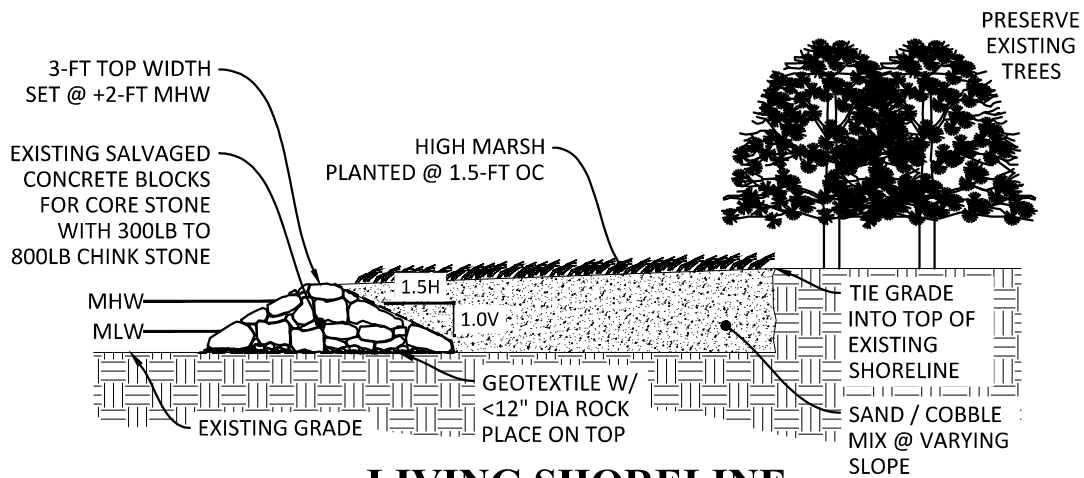
PROPOSED CROSS SECTIONS





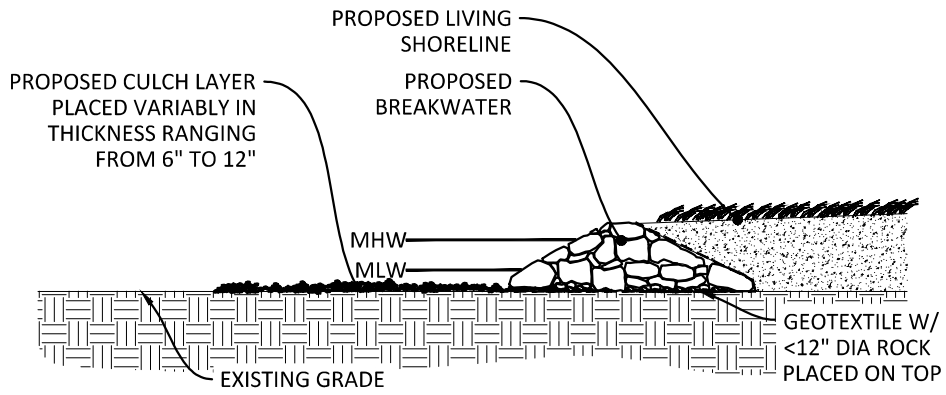
LIVING SHORELINE
PLANTING DETAIL

NOT TO SCALE



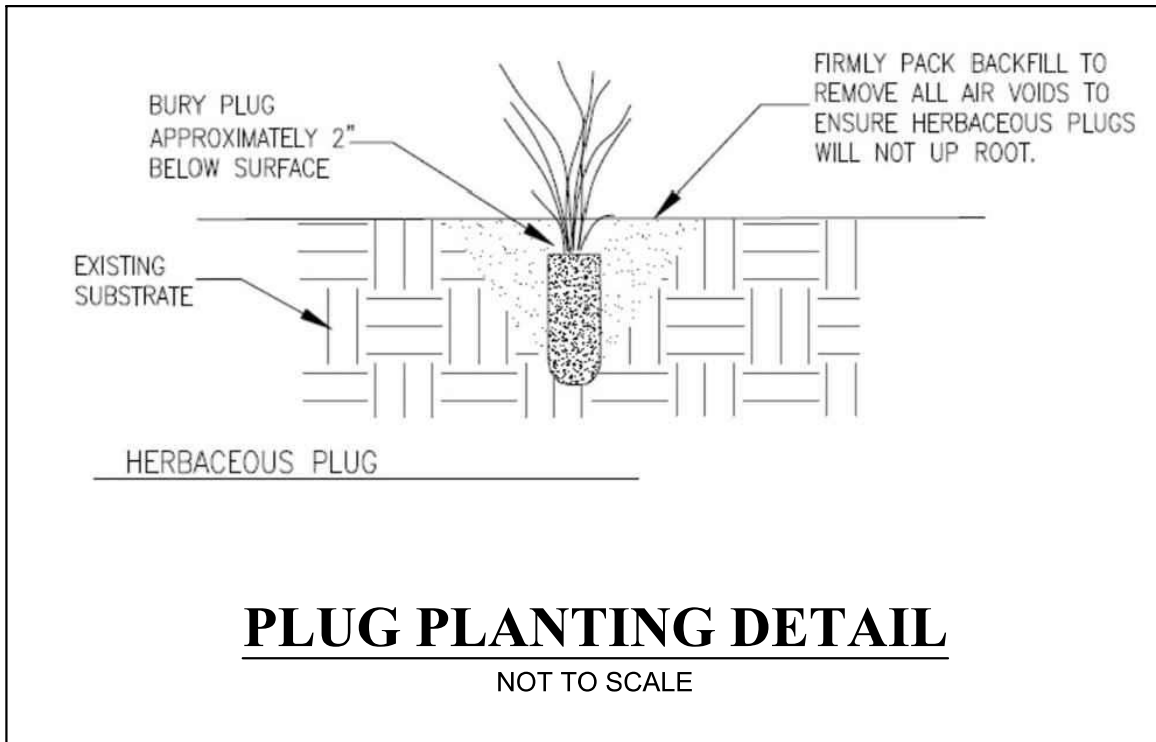
LIVING SHORELINE
NEARSHORE BREAKWATER DETAIL

NOT TO SCALE



REEF HABITAT DETAIL

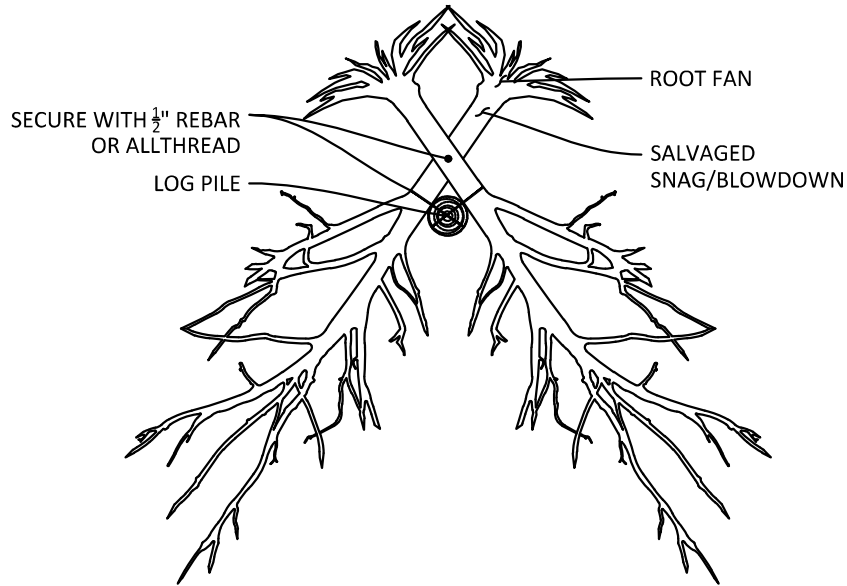
NOT TO SCALE



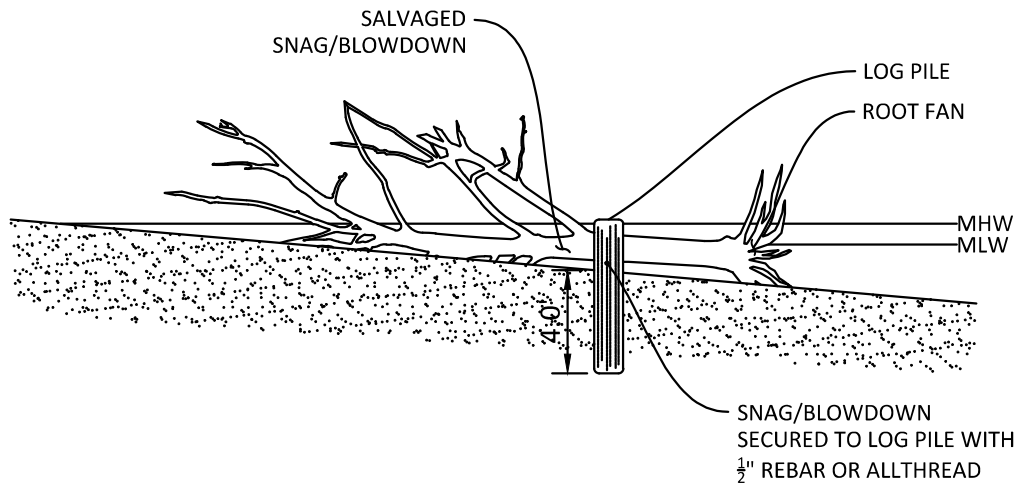
PLUG PLANTING DETAIL

NOT TO SCALE

SALVAGE EXISTING
SNAGS/BLOWDOWNS AND ARRANGE
AND SECURE USING LOG PILES



PLAN VIEW



SECTION VIEW

TYPICAL DUNE HABITAT LOG DETAIL

NOT TO SCALE

Zone 1 - Buffer Seed Mix/Permanent Stabilization Mix (26,442 sf)

% of Mix	Scientific Name	Common Name	Condition
40	<i>Andropogon gerardii</i>	Big bluestem	Seed
26.8	<i>Elymus virginicus</i>	Virginia wildrye	Seed
15	<i>Panicum virgatum</i>	Switchgrass	Seed
6	<i>Chamaecrista fasciculata</i>	Partridge pea	Seed
5	<i>Sorghastrum nutans</i>	Indiangrass	Seed
3	<i>Echinacea purpurea</i>	Purple coneflower	Seed
3	<i>Rudbeckia hirta</i>	Blackeyed Susan	Seed
1	<i>Heliopsis helianthoides</i>	Oxeye sunflower	Seed
0.1	<i>Asclepias syriaca</i>	Common milkweed	Seed
0.1	<i>Monarda fistulosa</i>	Wild bergamot	Seed

Mix available (ERNMX-173) from Ernst Seeds. To be applied at a rate of 15 lbs/acre with Annual ryegrass at a rate of 85lbs/acre for a total of 100 lbs/acre, 2.3 lbs/1000 s.f. Apply with 10-20-20 fertilizer at a rate of 10 lbs/1000 s.f. and lime at a rate of 90 lbs/1000 s.f.

**Zone 2 - Stabilization Mix for Non-Buffer Areas (141,716 sf)
(Also to be used for temporary stabilization)**

% of Mix	Scientific Name	Common Name	Condition
40	<i>Lolium multiflorum</i>	Annual ryegrass	Seed
30	<i>Lolium perenne</i>	Perennial ryegrass	Seed
30	<i>Festuca rubra</i>	Creeping red fescue	Seed

To be applied at a rate of 100 lbs/acre, 2.3 lbs/1000 s.f. Apply with 10-20-20 fertilizer at a rate of 10 lbs/1000 s.f. and lime at a rate of 90 lbs/1000 s.f.

Zone 3 - Low Marsh (34,549 sf)

Herbaceous Plugs

Qty	Scientific Name	Common Name	Condition	Spacing
15,355	<i>Spartina alterniflora</i>	Smooth cordgrass	Plug	18" O.C.

To be placed between low and high tide elevations.

Zone 4 - High Marsh (111,779 sf)

Herbaceous Plugs

Qty	Scientific Name	Common Name	Condition	Spacing
49,680	<i>Spartina patens</i>	Saltmeadow cordgrass	Plug	18" O.C.

To be placed above high tide elevation.



**PLANTING
SCHEDULE**

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**TROSSBACH FARM
LIVING SHORELINE**

PREPARED FOR
TROSSBACH FAMILY FARM
SHEET 40 OF 40
MDE PERMIT TRACKING NO.: 202261956

DATE	12/1/2023
SS PROJECT #	22003
SCALE	N/A
DESIGNED BY	SAM
DRAWN BY	SAM
CHECKED BY	FAM

202261956
23-WQC-0033