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Orleans | Sandwich | Nantucket
coastalengineeringcompany.com

TRANSMITTAL

To: Harwich Waterways Committee
c/o John Rendon, Harbormaster
715 Main Street
Harwich, MA

Date: 2/8/2023

Project No. C16324.03

Via: 1st Class Mail Pick up Delivery Fed Ex

Phone:

Fax:

Subject: Waterways Plan Review
Proposed Pier, Ramp & Float
Donald Annino
14 Mill Point Road
Harwich, MA
Map 1-J1 Parcel 94-0

No. of pages to follow:

Plans Copy of Letter Specifications Other

We are sending the following items:

Copies	Date	No.	Description
3	REV 02/07/2023	4 Sheets	Coastal Engineering Co., Inc. Plan Showing Proposed Dredging and Pier, Ramp, and Float

These are transmitted as checked below:

for approval for your use as requested for review & comment

Remarks: Enclosed please find copies of the revised plans, for the above referenced project.

If you have any questions, please contact our office.

cc: Harwich Conservation Commission by email
Donald Annino
Rubin and Rudman LLP
Donald K. Munroe Coastal Engineering Co., Inc.

By: Carla Davis

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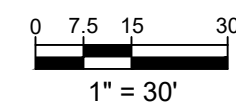
NOTE: If enclosures are not as noted, please contact us at (508) 255-6511



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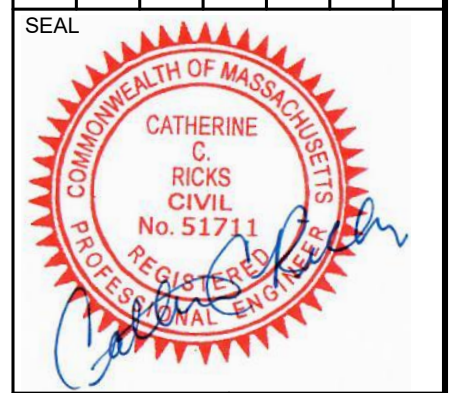


LOCUS PLAN



200 Cranberry Hwy., Orleans, MA 02653
508-255-6311 F 508-255-6700 F

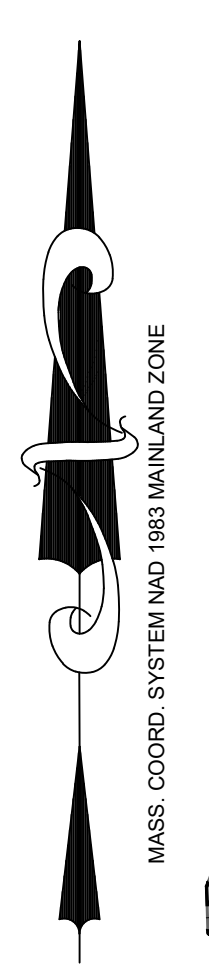
NO.	DATE	REVISION	BY
3	02-07-2023	REVISED OYSTER CASTLES TO OYSTER BAGS	MJT
2	11-09-2022	REVISED MITIGATION AREAS AND OYSTER CASTLES	MJT
1	04-27-2022	INCLUDE MITIGATION AREAS, ADD ALTERNATE DREDGE AREA, AND REVISE PIER	CAA



PROJECT	DONALD ANNINO
14 MILL POINT RD	HARWICH, MA
SHEET TITLE	PLAN SHOWING PROPOSED DREDGING AND PIER, RAMP, AND FLOAT
SCALE	AS NOTED
DRAWING FILE	C16324-03-C-C3D_2023-01-24.dwg
DATE	01-07-22
DRAWN BY	CAA
CHECKED BY	TDT/CCR
C-100	
1 OF 4 SHEETS	
PROJECT NO.	C16324.03

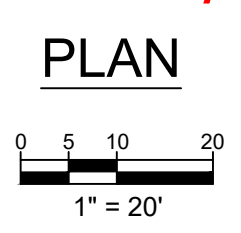
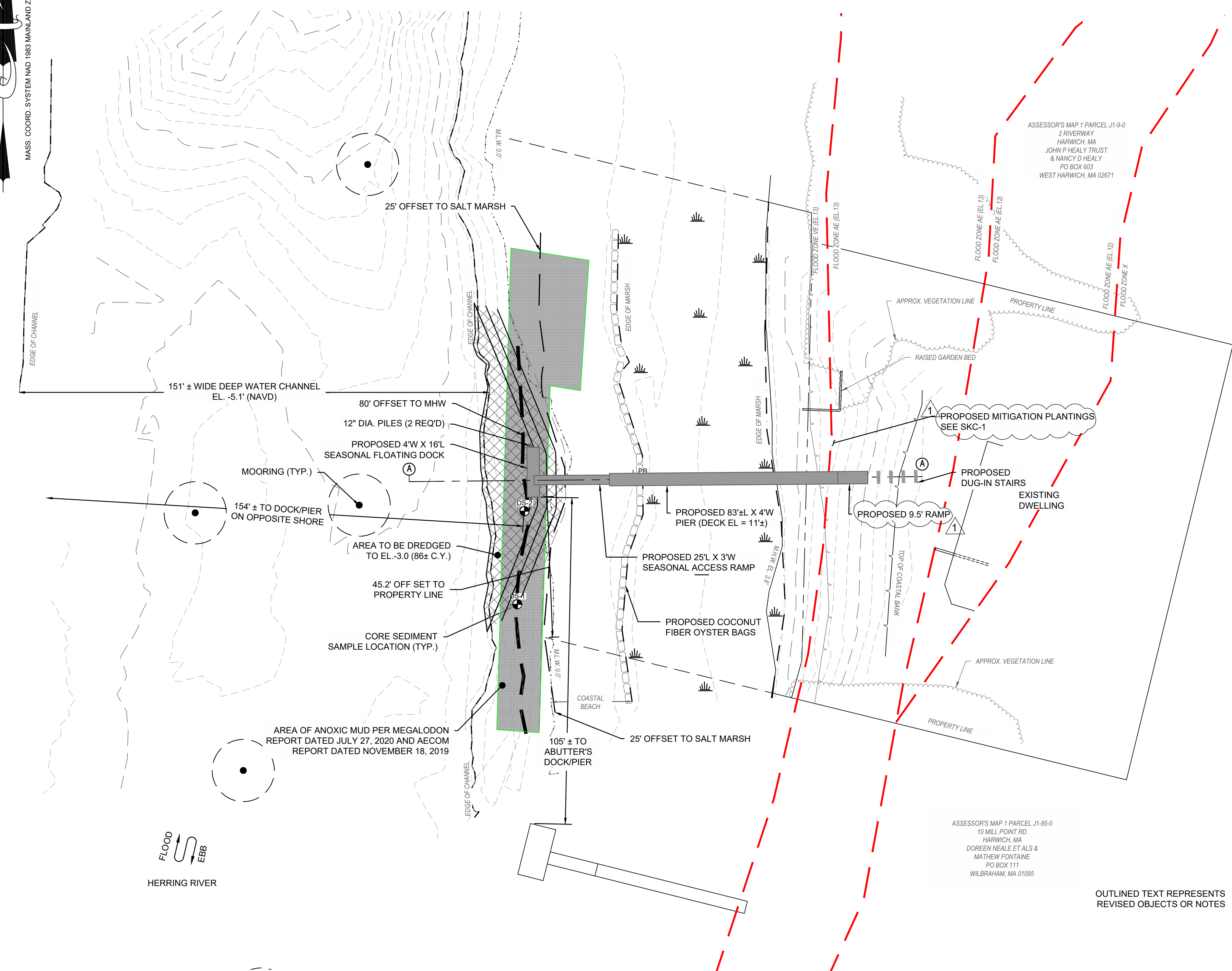
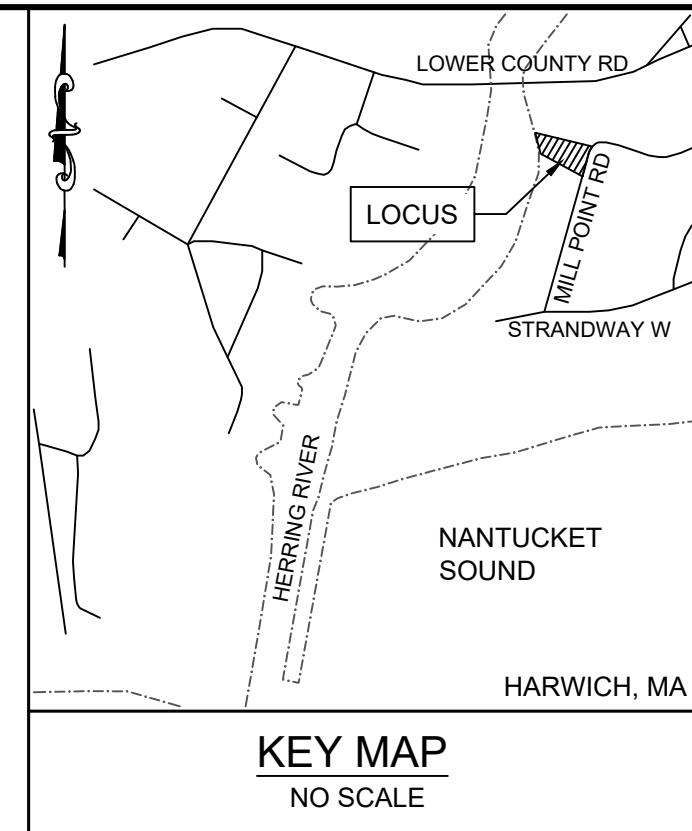
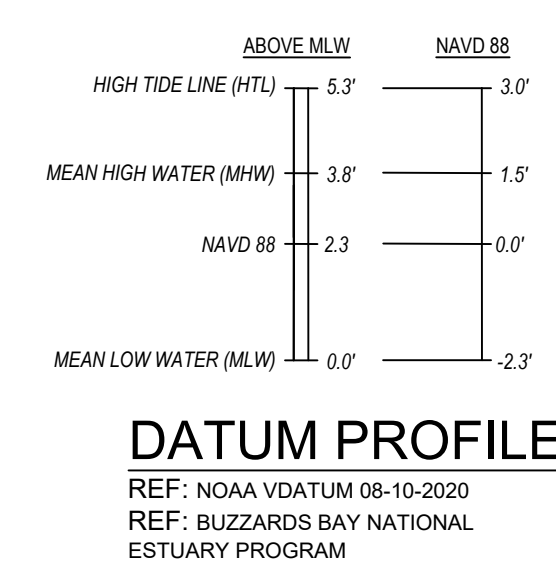
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LEGEND

■	BOUND
- - -	CONTOUR
X 15.4	SPOT GRADE
~	SALT MARSH
~	EDGE OF VEGETATION
—	COASTAL BANK
△	PLAN REVISION INDICATION



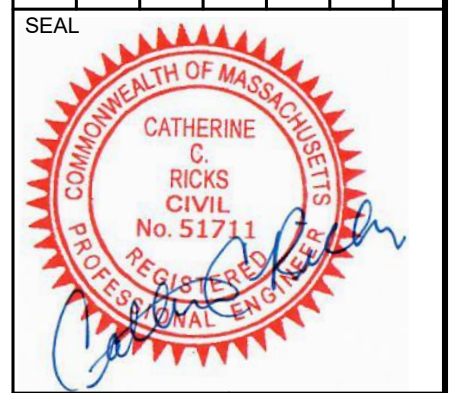
GENERAL NOTES

1. THE PROPERTY IS LOCATED IN THE TOWN OF HARWICH, MA ALONG THE NANTUCKET SOUND AND IS REFERENCED BY:
 - ASSESSORS MAP 1, PARCEL J1-94-0**
2. **FLOOD ZONE:** THE PROPERTY AND PROPOSED WORK IS LOCATED IN FLOOD ZONES AS INDICATED ON THE DRAWINGS. ALL FLOOD ELEVATIONS ARE REFERENCED TO NAVD 1988 (MSL) FLOOD ZONE VE (EL. 13), ZONE AE (EL. 12), ZONE X SHOWN ON THIS DRAWING ARE A DIRECT REPRESENTATION OF THE GRAPHIC FLOOD ZONE BOUNDARIES SHOWN ON FEMA FIRM PANEL.
 - FIRM PANEL #25001C0611J, EFFECTIVE JULY 16, 2014**
3. THE HYDROGRAPHIC SURVEY DATA AS ON THIS PLAN WAS COLLECTED ON DECEMBER 03, 2021, BY COASTAL ENGINEERING COMPANY AND ONLY REPRESENTS THE SEA FLOOR DEPTH AS IT EXISTED DURING THE TIME OF THE SURVEY.
4. THE TOPOGRAPHIC SURVEY AND HYDROGRAPHIC SURVEYS PREPARED BY COASTAL ENGINEERING COMPANY REPRESENTED ARE IN REFERENCED TO MLW AS CALCULATED USING THE CONVERSION FACTOR TO NAVD 1988 AS INDICATED ON THE DRAWINGS.
5. ACCESS FOR THE PROPOSED WORK FOR MATERIALS AND EQUIPMENT SHALL BE FROM A WORK BARGE AND FROM THE UPLAND PORTION OF THE SUBJECT PROPERTY. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMISSIONS REQUIRED FOR USE OF ANY AND ALL ACCESS.
6. THE CONTRACTOR IS RESPONSIBLE FOR CONDUCTING THE WORK IN A SAFE AND RESPONSIBLE MANNER AND SHALL MINIMIZE THE DISTURBANCE TO ANY ADJACENT RESOURCE AREAS. THE CONTRACTORS WORK BARGE SHALL NOT REST ON THE SEAFLOOR AND SHALL NOT BE LOCATED OVER MARSH DURING ANY TIME OF THE CONSTRUCTION.
7. THE CONTRACTOR SHALL SUPPLY ALL MATERIAL, EQUIPMENT AND LABOR NECESSARY FOR CONSTRUCTION OF THE PROPOSED SITE IMPROVEMENTS AS DESCRIBED AND SHOWN ON THE PLAN AND DETAILS.
8. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH THE PLANS, SPECIFICATIONS AND THE ORDER OF CONDITIONS ISSUED BY THE HARWICH CONSERVATION COMMISSION.
9. SPECIAL PROVISIONS FOR COASTAL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS FOUND IN THE "COASTAL CONSTRUCTION MANUAL" AS PUBLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA-550)
10. ALL SEASONAL RAMPS AND FLOATS ARE TO BE STORED OFF-SITE OR IN UPLAND AREA OUTSIDE OF THE RESOURCE AREA SETBACKS DURING WINTER SEASON.
11. ALL DISTURBED AREAS ARE TO BE REVEGETATED TO MATCH PRE-CONSTRUCTION CONDITIONS.
12. THE MASS DEP PERMIT NUMBER SHALL BE PERMANENTLY AND CONSPICUOUSLY PLACED ON THE TIMBER PIER SO AS TO BE VISIBLE FROM SEAWARD
13. PROPOSED BORING FOR PILE DESIGN **DS-2**
14. COLLECTED SEDIMENT CORE DREDGE SAMPLES DS-1 & DS-2. **DS-2** REFER TO C-300 BORE HOLE LOGS FOR CORE SEDIMENT SAMPLE INFORMATION.

TIMBER PIER NOTES

1. TIMBER PILES AND FRAMING LUMBER SHALL CONFORM TO THE LATEST EDITION OF THE AFPA "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION", AND UNLESS OTHERWISE INDICATED SHALL BE SOUTHERN YELLOW PINE GRADE #2.
2. ALL TIMBER PILES AND FRAMING LUMBER SHALL BE PRESSURE TREATED IN ACCORDANCE WITH AWPAC C3 AS FOLLOWS:
 - A. TIMBER PILES: UNTREATED GREENHEART
 - B. LUMBER 3" WIDE AND GREATER: 0.6 CCA
 - C. ALL OTHER LUMBER: 0.6 ACQ OR 0.23 MCA
3. ALL HARDWARE AND FASTENERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
4. BEFORE ANY TIMBER PILES ARE DRIVEN, A CERTIFICATION SHALL BE SUBMITTED, CERTIFYING THAT THE PILES WERE FREE FROM DECAY, WERE PROPERLY PEELLED AND CONFORM TO THE REQUIREMENTS SPECIFIED HEREIN.
5. EACH PILE SHALL BE DRIVEN IN ONE PIECE WITHOUT SPLICING WITH A VIBRATORY HAMMER TO A MINIMUM EMBEDMENT DEPTH AS INDICATED ON THE DRAWINGS. PILES MAY BE REQUIRED BY THE ENGINEER TO BE PROOFED WITH AN IMPACT HAMMER IF MINIMUM EMBEDMENT IS NOT ACHIEVED.
6. UNIFORMLY TRIM THE TOP OF PILES TO THE ELEVATION INDICATED ON THE DRAWINGS AND CAP OFF TOP OF PILE WITH A SUITABLE FIBERGLASS OR PRE-FORMED PVC CAP.
7. FLOAT(S) SHALL BE FABRICATED BY EZ-DOCK OR AS INDICATED ON THE DRAWINGS AND APPROVED BY THE ENGINEER. FLOATS SHALL HAVE A MAXIMUM DRAFT OF 12 INCHES.
8. THE DECKING PLANK SPACING SHALL BE $\frac{1}{2}$ " MINIMUM.

NO.	DATE	REVISION	BY
3	02-07-2023	REVISED OYSTER CASTLES TO OYSTER BAGS	MJT
2	11-09-2022	REVISED MITIGATION AREAS AND OYSTER CASTLES	MJT
1	03-30-2022	INCLUDE MITIGATION AREAS, ADD ALTERNATE DREDGE AREA, AND REVISE PIER	CAA



DONALD ANNINO
HARWICH, MA

PROJECT: 14 MILL POINT RD
SHEET TITLE: PLAN SHOWING PROPOSED DREDGING AND PIER, RAMP, AND FLOAT

SCALE: AS NOTED

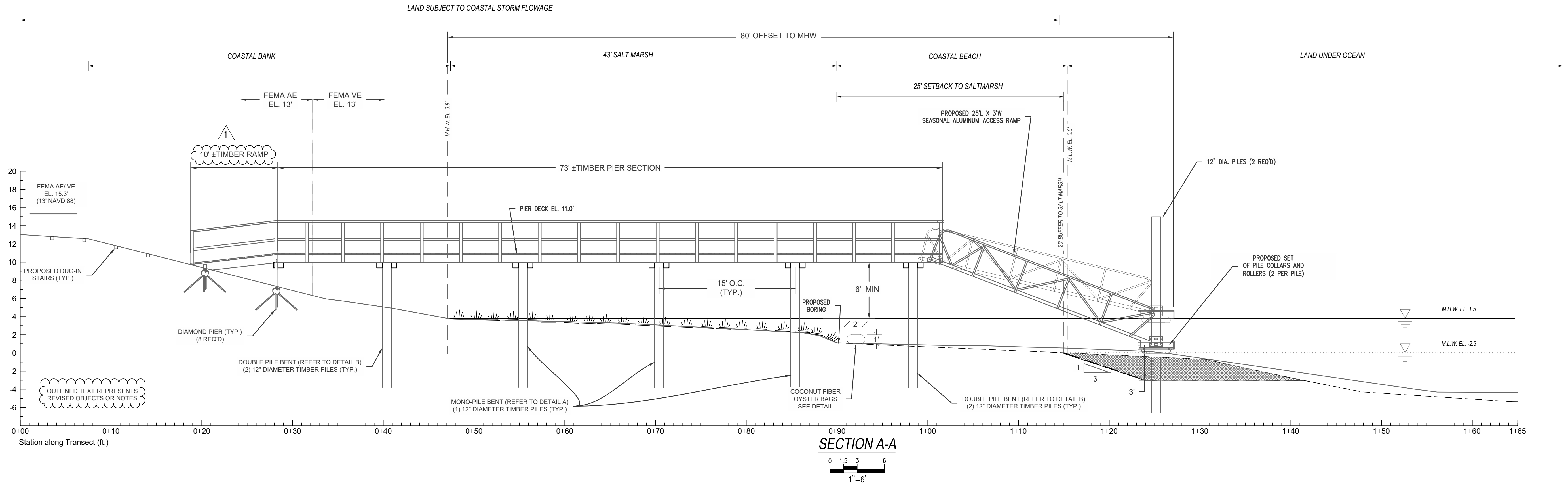
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DATE: 01-07-22
DRAWN BY: CAA
CHECKED BY: TDT/CCR

C-102
2 OF 4 SHEETS
PROJECT NO. C16324.03

PERMIT SUBMISSION NOT FOR CONSTRUCTION

THIS DRAWING IS PREPARED FOR PERMITTING PURPOSES ONLY AND SHALL NOT BE USED FOR CONSTRUCTION. CONTRACTOR SHALL OBTAIN FINAL CONSTRUCTION DETAILS FROM THE ENGINEER PRIOR TO PREPARATION OF CONSTRUCTION BID AND BEFORE BEGINNING ANY WORK.

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SEDIMENT CORE SAMPLES
(NOT TO SCALE)

SEDIMENT CORE DREDGE SAMPLE: DS-1 EL. = -0.9' MLW

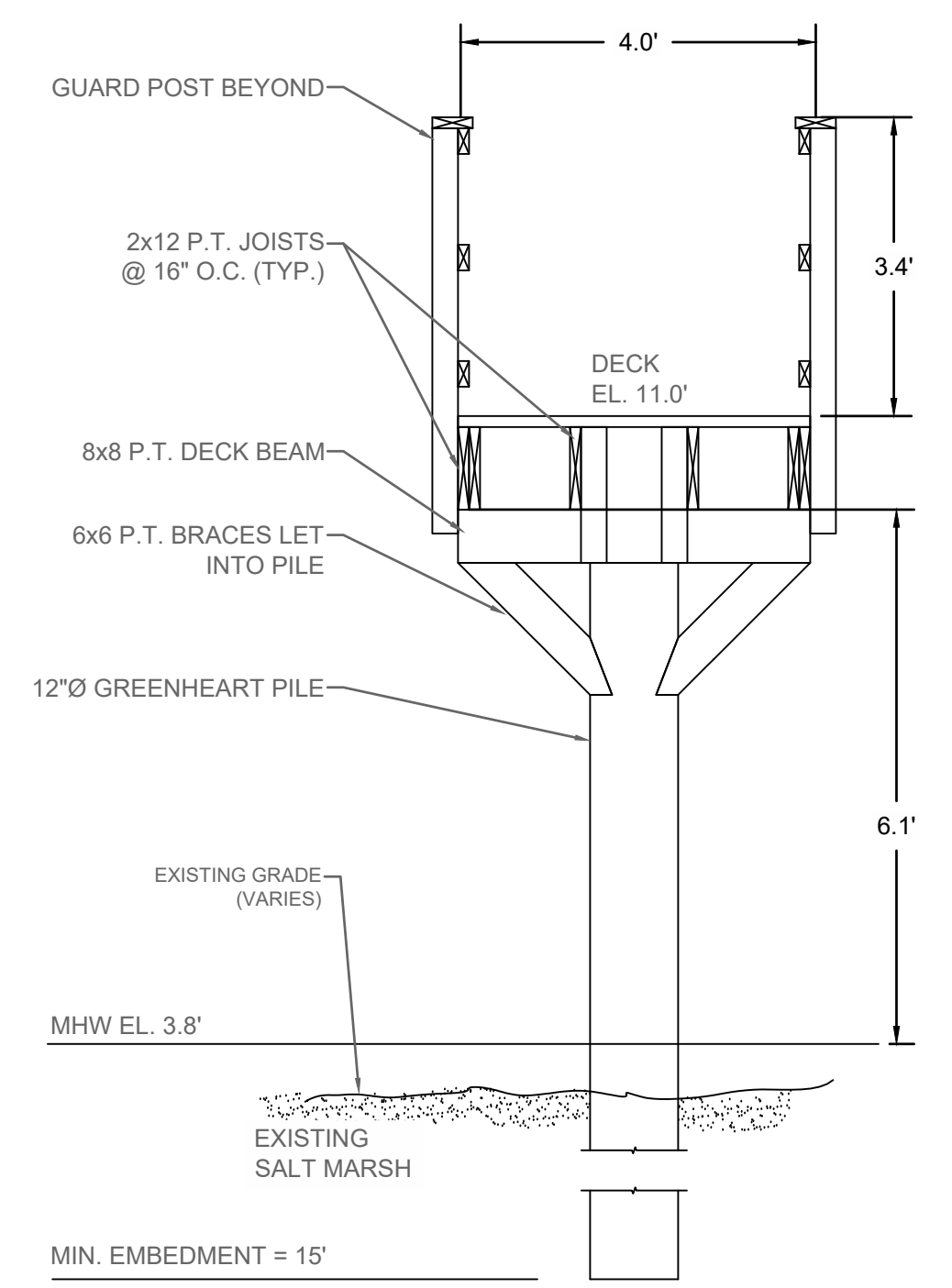
SAMPLE DEPTH BELOW SEA FLOOR (FEET)	EL. (MLW)	SOIL TYPE	SOIL STRATA
0	-0.9'	SOFT MUD	A (MUD)
1	-2.9'	SILTY MUD	
2	-3.8'	SANDY SILT	B (SAND)
3	-4.3'	SILTY MUDDY SAND	
4	-5.1'	SILTY SAND W/ PEAT	
5	-5.9'	SILTY SAND	
6	-6.5'	SILTY SAND	

SEDIMENT CORE DREDGE SAMPLE: DS-2 EL. = -0.3' MLW

SAMPLE DEPTH BELOW SEA FLOOR (FEET)	EL. (MLW)	SOIL TYPE	SOIL STRATA
0	-0.3'	SOFT MUD	A (MUD)
1	-1.1'	SILTY MUD	
2	-3.7'	SILTY MUD W/ PEAT	B (SAND)
3	-4.5'	SANDY MUD W/ PEAT	
4	-5.1'	CLEAN, STIFF, SAND	
5	-6.2'	SAND W/ SHELL & PEAT	
6	-6.6'	SAND W/ SHELL & PEAT	

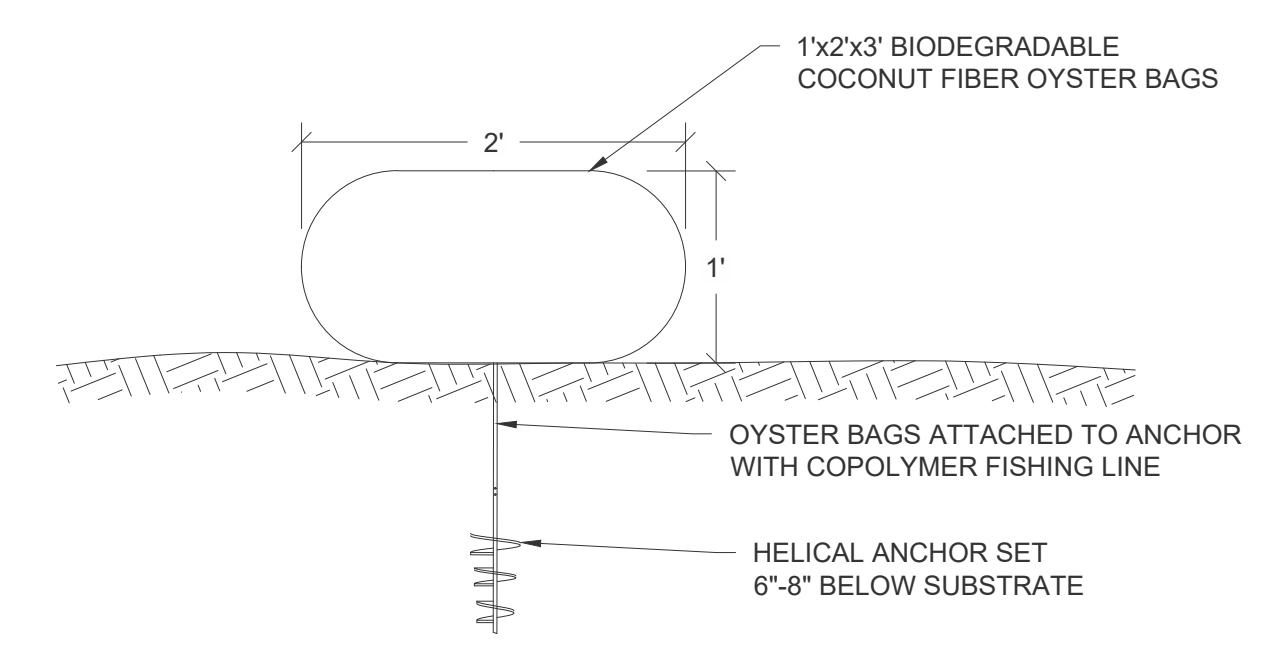
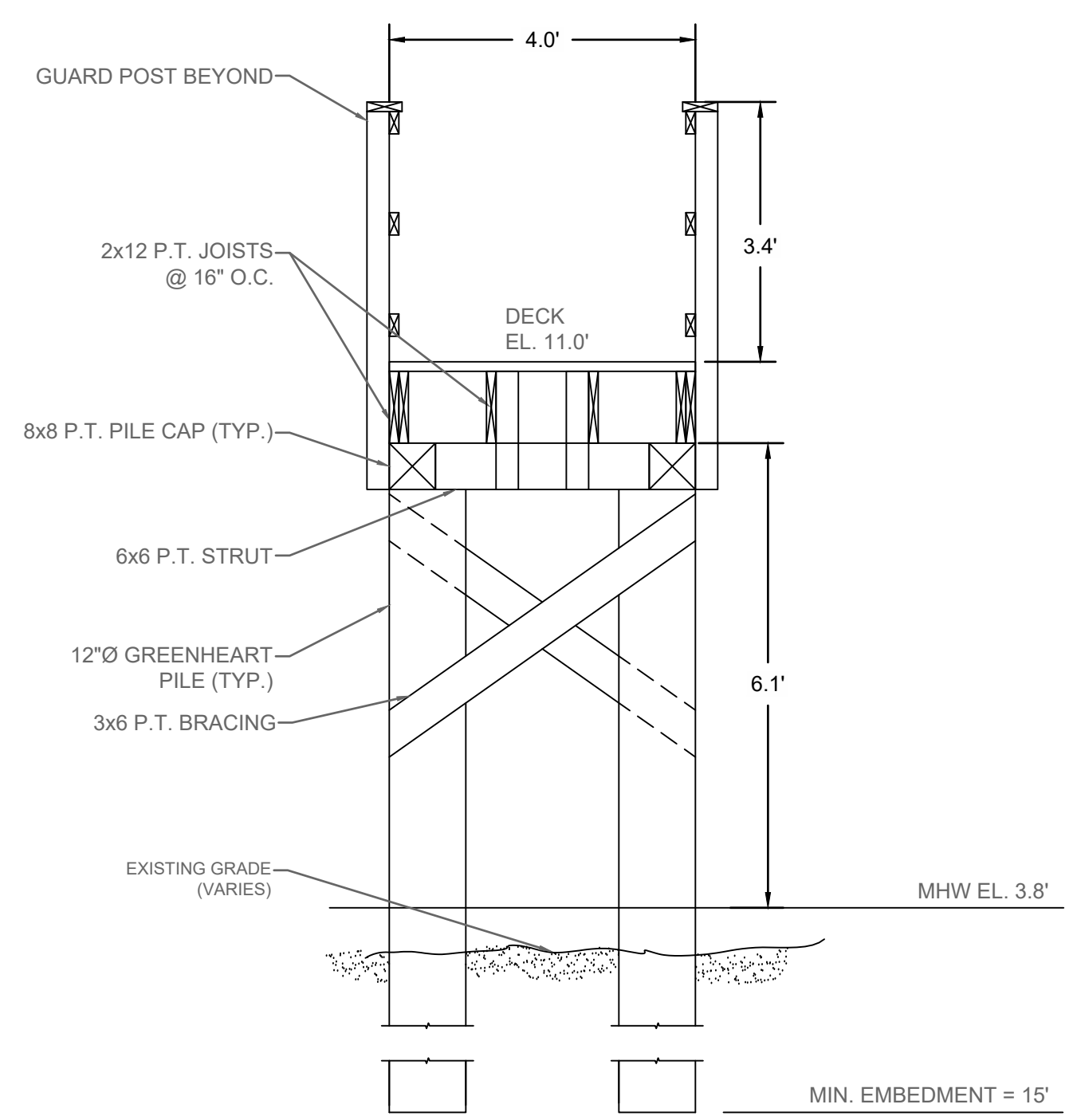
TYPICAL BENT DETAIL (A) - MONO PILE

MONO PILE BENTS TO BE IMPLEMENTED WHERE THE PROPOSED PIER TRAVERSES OVER EXISTING SALT MARSH



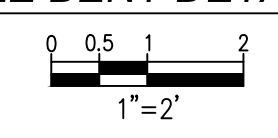
TYPICAL BENT DETAIL (B) - DOUBLE PILE

DOUBLE PILE BENTS TO BE IMPLEMENTED WHERE THE PROPOSED PIER DOES NOT TRAVERSE OVER EXISTING SALT MARSH



OYSTER BAG DETAILS

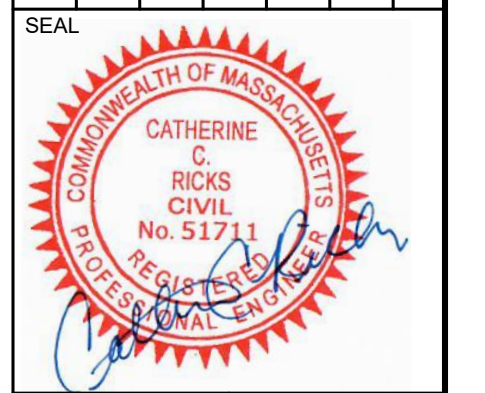
PILE BENT DETAILS



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NO.	DATE	BY	REVISION
3	02-07-2023	MJT	REVISED OYSTER CASTLES TO OYSTER BAGS
2	11-09-2022	MJT	REVISED MITIGATION AREAS AND OYSTER CASTLES
1	03-30-2022	CAA	REVISE PIER (PROPOSED RAMP INSTEAD OF ELEVATED PLATFORM & STAIRS)



PROJECT: DONALD ANNINO
14 MILL POINT RD
HARWICH, MA

SHEET TITLE: PLAN SHOWING PROPOSED DREDGING AND PIER, RAMP, AND FLOAT

SCALE: AS NOTED

DRAWING FILE: C16324_03-C300_2023-01-24.dwg

DATE: 01-07-22

DRAWN BY: CAA

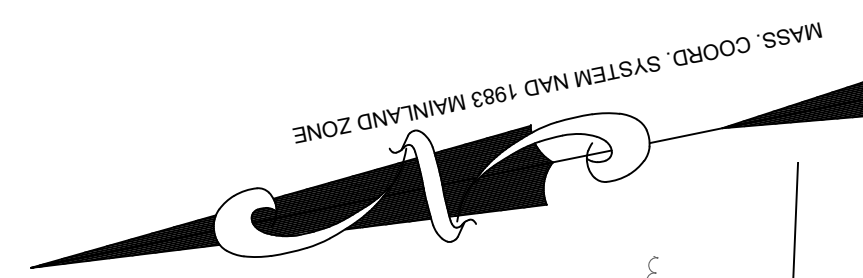
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C-300

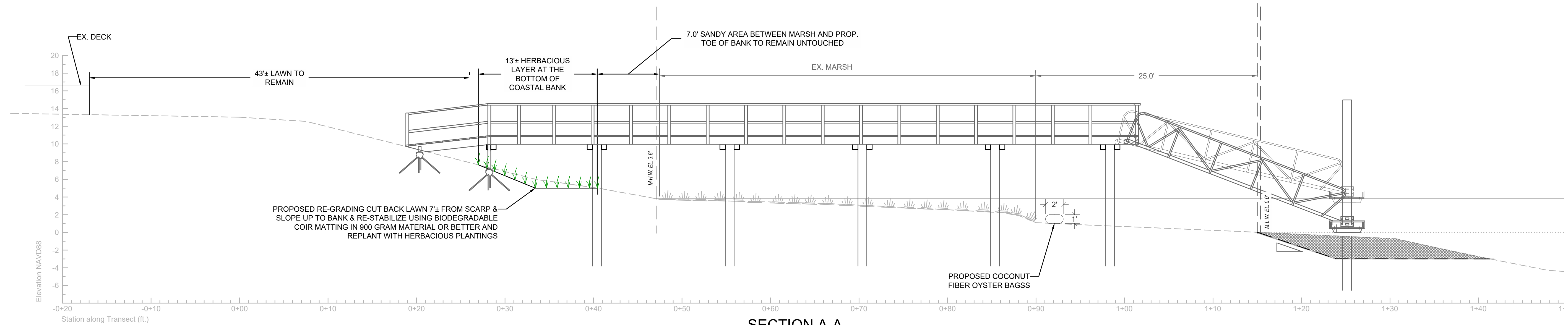
3 OF 4 SHEETS

PROJECT NO. C16324.03

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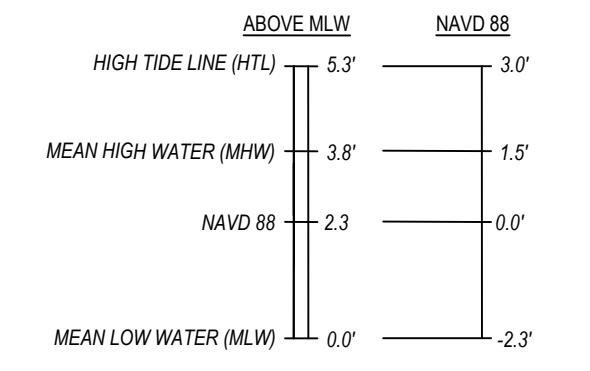
PLAN
0 2.5 5 10
1" = 10'



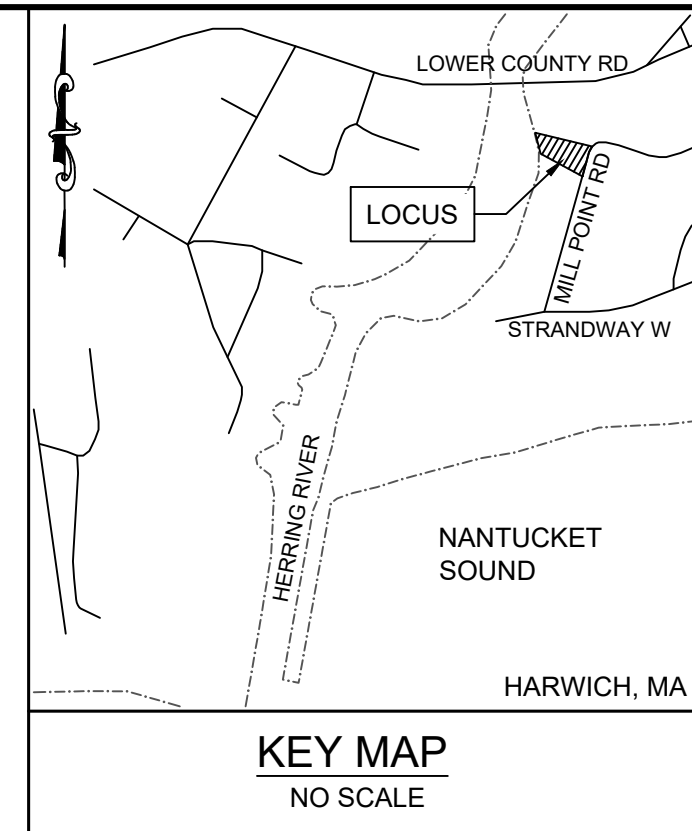
SECTION A-A
0 1.5 3 6
1" = 8'

LEGEND

- BOUND
- - - - - CONTOUR
- X 15.4 SPOT GRADE
- ~ SALT MARSH
- ~ EDGE OF VEGETATION
- COASTAL BANK
- △ PLAN REVISION INDICATION



DATUM PROFILE
REF: NOAA VDATUM 08-10-2020
REF: BUZZARDS BAY NATIONAL ESTUARY PROGRAM



WETLAND IMPACTS

1. SALT MARSH IMPACT AREA: 2.37 S.F. (3-12" DIAMETER MONOPILES)
2. COASTAL BANK IMPACT AREA: 20.7 S.F. (12" DIAMETER DOUBLE-PILE & 2 STONE LANDSCAPE STEPS)
3. COASTAL BEACH IMPACT AREA: 1.58 S.F. (12" DIAMETER DOUBLE-PILE BENT)
4. LAND UNDER THE OCEAN IMPACT AREA: 1.58 S.F. (2-12" DIAMETER PILES)

TOTAL IMPACT AREA TO MITIGATE: 26.23 S.F.
(MARSH + BANK, SHADING AREA)

MITIGATION REQUIRED (4:1): 104.9 S.F.

COASTAL BANK MITIGATION NOTES

1. COASTAL BANK TO BE RE-GRADED, LAWN TO BE REMOVED, AND AREA TO BE REPLANTED WITH NATIVE COASTAL BANK PLANTINGS ON SIDES OF PROPERTY.
2. PLANTINGS SPECIES AND SPECIFICATIONS TO BE DETERMINED BY VEGETATION SPECIALIST SUCH AS CAPE ORGANICS.
3. COASTAL BANK MITIGATION AREA = 2315 S.F.

COASTAL BEACH AND LAND UNDER THE OCEAN (LUTO) MITIGATION NOTES

1. OYSTER BAGS TO BE PLACED IN THE INTERTIDAL ZONE TO ENHANCE THE OVERALL HEALTH AND DIVERSITY OF THE ENVIRONMENT AND PROVIDE NEW HABITAT FOR SHELLFISH. FORTY-FIVE (45) 3'X2'X1' OYSTER BAGS WILL BE DEPLOYED IN THE INTERTIDAL ZONE AND CREATE 270 SQFT OF HABITABLE SPACE
2. COASTAL BEACH AND LUTO MITIGATION AREA = 270± S.F. (1.5:1)

TOTAL MITIGATION PROPOSED = 2,585± S.F.

MITIGATION RATIO = 24.6:1

PROPOSED PLANT MATERIAL

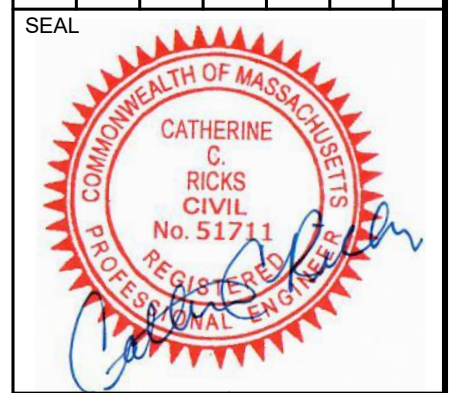
(REFER TO THE MITIGATION FOR PROPOSED DOCK & PIER CONSTRUCTION NARRATIVE RAFTED BY CAPE COD ORGANICS FOR MORE INFORMATION).

1. COASTAL BANK AREA (3080 S.F.±)		
1.1.	(SEED)	NATIVE COASTAL/ SANDPLAIN GRASSLAND
1.2.	(110)	GREY HORSEMINT MONARDA PUNCTATA
1.3.	(110)	LANCE LEAFED TICKSEED COREOPSIS LANCEOLATA
1.4.	(1000) BR	BEACHGRASS AMOPHILLA BREVIGULATA
1.5.	(10)	4" SWEETFERN COMPTONIA PEREGRINA
1.6.	(5)	1-3 GAL BAYBERRY VIBURNUM NUDUM
1.7.	(4)	1-3 GAL POSSUMHAW VIBURNUM VIBURNUM NUDUM
1.8.	(3)	1-3 GAL BEACHPLUM PRUNUS MARITIMA
1.9.	(5)	1-3 GAL SWEET PEPPERBUSH DWARF CLETHRA ALINIFOLIA

INVASIVE SPECIES NOTES:

1. AREA WHERE INVASIVE SPECIES EXIST TO THE NORTH TO BE TREATED IN THE FUTURE AS NEEDED.

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1	04-27-2022	INCLUDE MITIGATION AREAS, ADD ALTERNATE DREDGE AREA, AND REVISE PIER	CAA



PROJECT: DONALD ANNINO HARWICH, MA
 SHEET TITLE: SKETCH PLAN SHOWING PROPOSED COASTAL BANK & MARSH MITIGATION
 SCALE: AS NOTED
 DATE: 10-24-2022
 DRAWN BY: CAA
 CHECKED BY: TDT/CCR
SKC-1
 4 OF 4 SHEETS
 PROJECT NO. C16324.03

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