

TABLE 1: TIDAL AND STORM SURGE BENCHMARKS IN FEET

BENCHMARK	ELEVATION (MLLW)
FEMA BASE FLOOD ELEVATION (BFE)	+13.9
FEMA 1% RECURRENCE (100YR) SWL	+9.8
FEMA 2% RECURRENCE (50YR) SWL	+8.9
FEMA 10% RECURRENCE (10YR) SWL	+6.9
MEAN HIGHER HIGH WATER (MHHW)	+3.2
MEAN HIGH WATER (MHW)	+3.0
NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88)	+1.8
NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD29)	+0.9
MEAN LOW WATER (MLW)	+0.2
MEAN LOWER LOW WATER (MLLW)	0.0

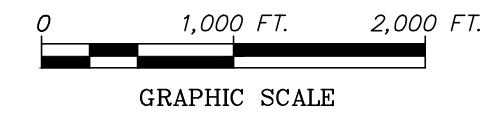
REFERENCES:

1. NAVIGATION CHART PRESENTED HEREIN WAS OBTAINED FROM NOAA CHART #13217 FOR BLOCK ISLAND SOUND ISSUED JANUARY 3, 2023. SOUNDINGS INCLUDED ON THE CHART REFER TO MEAN LOWER LOW WATER (MLLW) DATUM.
2. STORM SURGE STILLWATER LEVEL (SWL) ELEVATIONS WERE OBTAINED FROM TRANSECT #70 FROM THE FLOOD INSURANCE STUDY (FIS) FOR WASHINGTON COUNTY, RHODE ISLAND [STUDY #44009CV001C] PREPARED BY FEMA DATED 4/3/2020. SWL ELEVATIONS WERE CONVERTED FROM NAVD88 TO MLLW DATUM AND DO NOT INCLUDE WAVE ACTION.
3. BASE FLOOD ELEVATION, INCLUDING STORM SURGE AND ASSOCIATED WAVE ACTION, WAS OBTAINED FROM THE FLOOD INSURANCE RATE MAP (FIRM) #44009C0366J FOR WASHINGTON COUNTY, RHODE ISLAND PREPARED BY FEMA DATED 10/16/2013. THE ELEVATION OF THE BASE FLOOD ELEVATION WAS CONVERTED FROM NAVD88 TO MLLW DATUM.
4. TIDAL ELEVATIONS WERE OBTAINED FROM NOAA VDATUM ONLINE TOOL USING LAT/LONG COORDINATES IN THE VICINITY OF THE PROJECT AREA.


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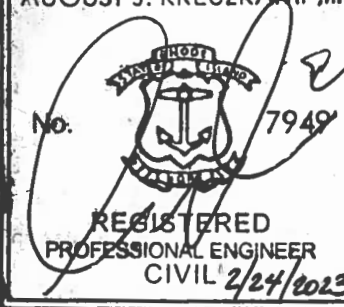


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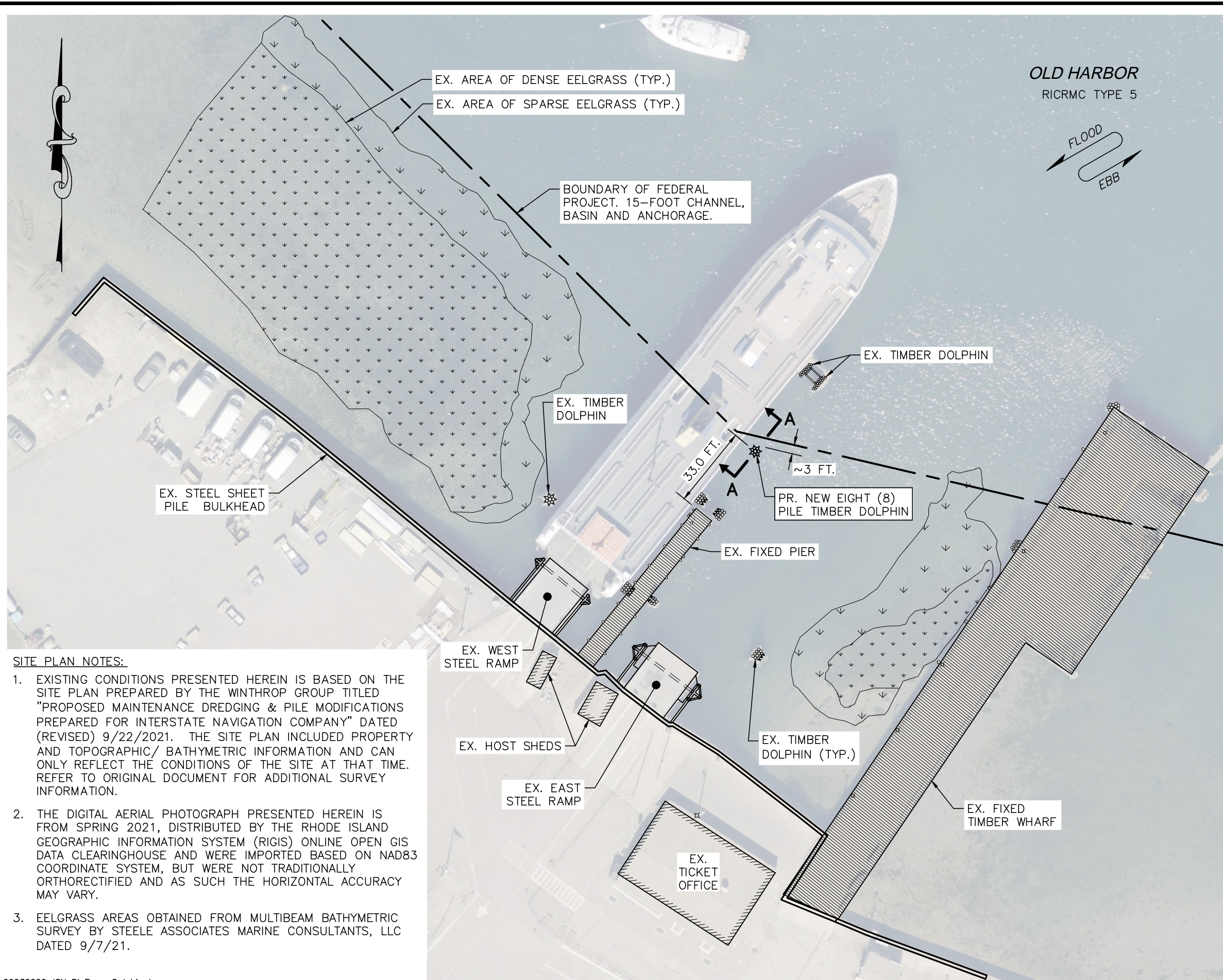
Drawing Title:
VICINITY CHART
OLD HARBOR
SOUNDINGS: MLLW DATUM

AUGUST J. KREUZKAMP, III



**REGISTERED
PROFESSIONAL ENGINEER
CIVIL 2/24/2023**

Date: 02/20/2023
 Scale: 1" = 1,000 FT.
 Designed By:
 Drawn by: AJK & SCC
 Checked by:
 Project Number:
2022-22
 Sheet **1** of **4**
 Drawing Number:
C-1



SITE PLAN NOTES:

- EXISTING CONDITIONS PRESENTED HEREIN IS BASED ON THE SITE PLAN PREPARED BY THE WINTHROP GROUP TITLED "PROPOSED MAINTENANCE DREDGING & PILE MODIFICATIONS PREPARED FOR INTERSTATE NAVIGATION COMPANY" DATED (REVISED) 9/22/2021. THE SITE PLAN INCLUDED PROPERTY AND TOPOGRAPHIC/ BATHYMETRIC INFORMATION AND CAN ONLY REFLECT THE CONDITIONS OF THE SITE AT THAT TIME. REFER TO ORIGINAL DOCUMENT FOR ADDITIONAL SURVEY INFORMATION.
- THE DIGITAL AERIAL PHOTOGRAPH PRESENTED HEREIN IS FROM SPRING 2021, DISTRIBUTED BY THE RHODE ISLAND GEOGRAPHIC INFORMATION SYSTEM (RIGIS) ONLINE OPEN GIS DATA CLEARINGHOUSE AND WERE IMPORTED BASED ON NAD83 COORDINATE SYSTEM, BUT WERE NOT TRADITIONALLY ORTHORECTIFIED AND AS SUCH THE HORIZONTAL ACCURACY MAY VARY.
- EELGRASS AREAS OBTAINED FROM MULTIBEAM BATHYMETRIC SURVEY BY STEELE ASSOCIATES MARINE CONSULTANTS, LLC DATED 9/7/21.

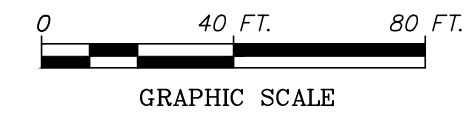


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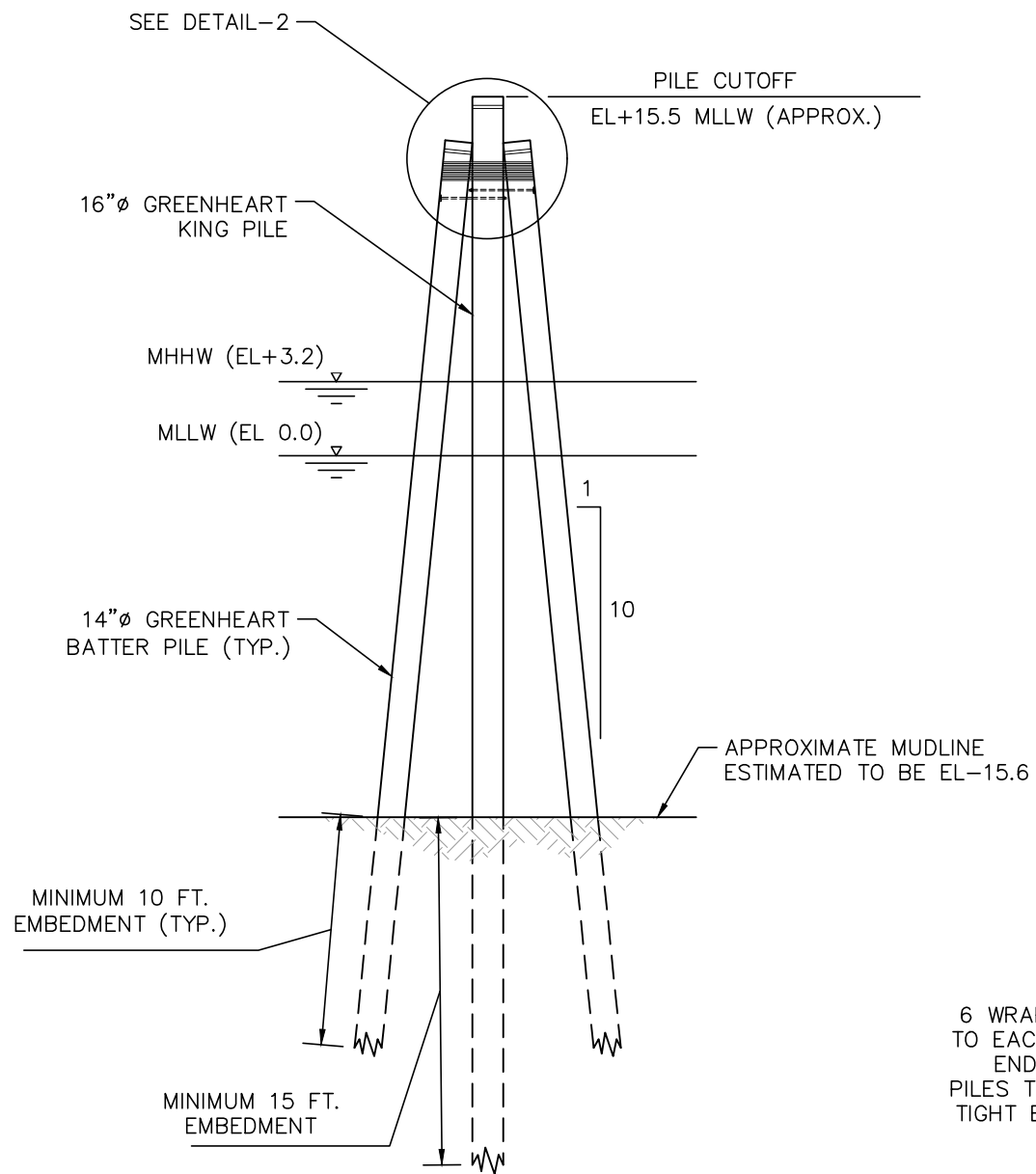
SITE PLAN
EXISTING CONDITIONS
PROPOSED DOLPHIN LOCATION

AUGUST J. KREUZKAMP, III

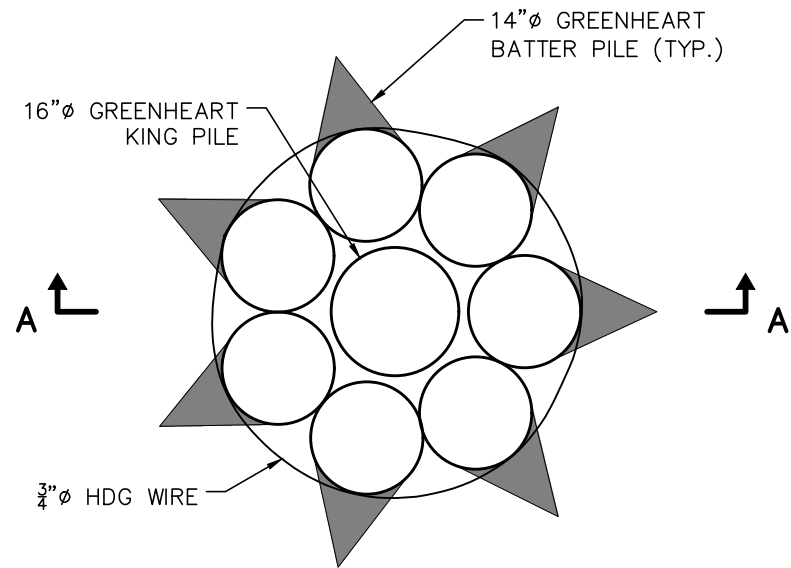
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Date:	02/20/2023
Scale:	1" = 40 FT.
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Sheet	2 of 4
Drawing Number:	EX-1

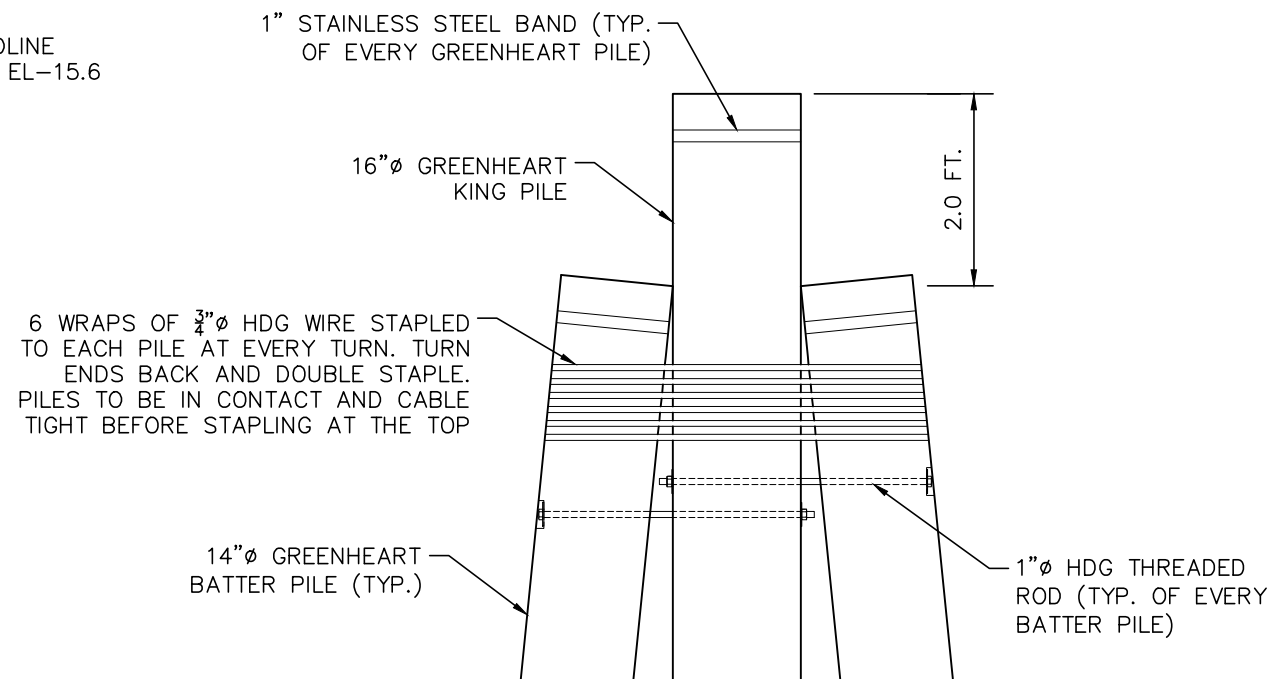
NOTE: CONTRACTOR SHALL REFER TO THE EXISTING DOLPHINS TO CONFIRM/MATCH PILE CUTOFF ELEVATION.



SECTION A-A
PROPOSED DOLPHIN CROSS SECTION
SCALE: 1" = 10 FT.



DETAIL-1
PROPOSED DOLPHIN PLAN VIEW
SCALE: 1" = 2 FT.



DETAIL-2
PROPOSED DOLPHIN CROSS SECTION
SCALE: 1" = 2 FT.



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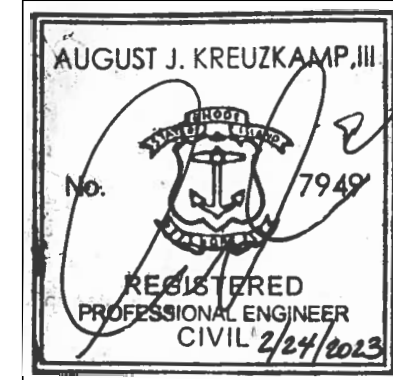
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Drawing Title:

PROPOSED DOLPHIN
 FRAMING DETAILS



Date: 02/20/2023
 Scale: AS NOTED
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 Drawn by: AJK & SCC
 Checked by:
 Project Number:
 2022-22
 Sheet 3 of 4
 Drawing Number:
 PR-1

GENERAL NOTES:

1. DRAWINGS AND SPECIFICATIONS, AS INSTRUMENTS OF PROFESSIONAL SERVICE, SHALL REMAIN THE PROPERTY OF HARBOR ENGINEERING, LLC. DOCUMENTS ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR OTHER PROJECTS OR PURPOSES OR BY ANY OTHER PARTIES THAN THOSE AUTHORIZED BY CONTRACT WITHOUT THE SPECIFIC WRITTEN AUTHORIZATION OF HARBOR ENGINEERING, LLC. THE USE OF THIS DOCUMENT IS CONTINGENT UPON PAYMENT TO HARBOR ENGINEERING, LLC. FOR SERVICES RENDERED. NON-PAYMENT SHALL GIVE HARBOR ENGINEERING, LLC. THE AUTHORITY TO BAR DOCUMENT USE BY ANY AND ALL PARTIES.
2. ALL WORK SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS AS SHOWN IN THESE PLANS AND SPECIFICATIONS.
3. THE CONTRACTOR IS REQUIRED TO VISIT THE SITE PRIOR TO SUBMITTING A BID FOR THE PROJECT.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BRINGING ALL ELEMENTS OF THE PROJECT IN CONFORMANCE WITH THESE PLANS AND SPECIFICATIONS. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THAT THE CONDITIONS SHOWN HEREIN ARE AS THEY APPEAR ON-SITE AND NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES IN DIMENSIONS AND/ OR SITE CONDITIONS. THE CONTRACTOR SHALL NOT BEGIN ORDERING MATERIALS, FABRICATION OR INSTALLATION FOR ANY SUCH AFFECTED AREA UNTIL THE DISCREPANCY HAS BEEN RESOLVED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. IF ANY MODIFICATIONS ARE REQUIRED IN ANY ELEMENT, THE CONTRACTOR SHALL SUBMIT PROPOSED CHANGES IN WRITING TO THE ENGINEER FOR REVIEW.
6. ALL WORK SHALL COMPLY WITH FEDERAL, STATE, AND LOCAL LAWS AND STATUTES AND THE REQUIREMENTS AND CONDITIONS OF ALL REGULATORY PERMITS ISSUED FOR THE WORK. CONTRACTOR SHALL BE FAMILIAR WITH THE RI COASTAL RESOURCES MANAGEMENT PROGRAM (RICRMP) AND MAINTAIN COPIES OF FEDERAL, STATE AND LOCAL REGULATORY PERMITS ON SITE THROUGHOUT CONSTRUCTION. REGULATORY PERMITS INCLUDE:
7. ALL SAFETY REGULATIONS ARE TO BE STRICTLY FOLLOWED. METHODS OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. ALL WORK SHALL CONFORM TO THE LATEST EDITION OF THE OSHA CODE, THE RHODE ISLAND STATE BUILDING CODE, AND THE REFERENCED STANDARDS INCLUDED THEREIN THAT ARE APPLICABLE TO THIS PROJECT.
8. THESE DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE PROJECT REGULATORY PERMITS AND ALL CONDITIONS OF THOSE PERMITS. THE CONTRACTOR IS ADVISED THAT THE REGULATORY PERMITS FOR THIS PROJECT MAY CONTAIN ADDITIONAL REQUIREMENTS THAT, AFTER ANY ADDENDUM, SUPERSEDE THE DRAWING NOTES. THE CONTRACTOR IS FURTHER ADVISED THAT IN THE CASE OF ANY DISCREPANCIES WITHIN THE CONTRACT DOCUMENTS FOUND BEFORE CONSTRUCTION, THE FINAL DECISION AS TO WHAT INFORMATION TAKES PRECEDENCE WILL BE MADE BY THE ENGINEER OF RECORD ON THE BASIS OF THAT INTENT.
9. ALL COMPONENTS SHALL BE INSTALLED PER EACH MANUFACTURER'S SPECIFICATIONS AND/OR STANDARD INDUSTRY PRACTICE AS APPLICABLE.
10. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PRESERVE THE SURVEY BENCHMARKS ESTABLISHED ON SITE. ANY ADDITIONAL SURVEY WORK REQUIRED WILL BE AT THE EXPENSE OF THE CONTRACTOR.
11. THE CONTRACTOR SHALL MAINTAIN AT ALL TIMES A SET OF RECORD DRAWINGS AND SPECIFICATIONS DURING THE PROGRESSION OF THE PROJECT. RECORD DRAWINGS SHALL BE UPDATED ON A DAILY BASIS AND SHALL BE SUBMITTED TO THE ENGINEER AT THE COMPLETION OF CONSTRUCTION.

12. THE CONTRACTOR SHALL SAFEGUARD AND PROTECT ALL EXCAVATIONS.
13. DAMAGE TO ANY PROPERTY, PRIVATE OR OF PUBLIC TRUST, OCCURRING DURING THE CONSTRUCTION BY THE CONTRACTOR, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER AT THE EXPENSE OF THE CONTRACTOR.

PILE DRIVING:

1. THE CONTRACTOR SHALL USE EQUIPMENT ADEQUATE IN SIZE, CAPACITY, AND NUMBERS, AND MAINTAINED TO THE REQUIREMENTS OF ALL FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS TO ACCOMPLISH THE WORK.
2. THE CONTRACTOR SHALL KEEP AN ACCURATE SET OF PILE INSTALLATION/DRIVING LOGS. ALL PILES BEING INSTALLED SHALL BE CLEARLY MARKED IN 1 FOOT INCREMENTS PRIOR TO INSTALLATION TO SUPPORT MONITORING/RECORDING EFFORTS. ALL LOGS SHALL BE CERTIFIED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO PAYMENT.
 - 2.1. PILE LOGS SHALL INCLUDE: PILE LETTER, DEPTH TO MUDLINE (INCLUDING DATE & TIME RECORDED) AND TOTAL EMBEDMENT.

DOLPHIN CONSTRUCTION:

1. THE CONTRACTOR SHALL SUBMIT CERTIFICATES SUBSTANTIATING CONFORMANCE WITH MATERIAL SPECIFICATIONS PRIOR TO INSTALLATION.
2. ALL TIMBER FRAMING SHALL BE GREENHEART INCLUDING THE KING PILE AND BATTER PILES.
3. ALL THREADED FASTENERS AND ANCHORS SHALL BE HOT DIPPED GALVANIZED STEEL FOR EXTERIOR, HIGH HUMIDITY (4 MILS FOR MARINE ENVIRONMENT) TO ASTM A123 AND TREATED WOOD LOCATIONS.
4. UNLESS NOTED OTHERWISE ALL BOLTS AND THREADED RODS TO BE 1" IN DIAMETER OR GREATER AND SHALL CONFORM TO A307 GRADE A W/ HEAVY HEX NUTS AND HOT DIPPED GALVANIZED (HDG) OGEE OR DOCK STEEL WASHERS. BOLT HOLES SHALL BE A MAXIMUM OF 1/8" LARGER THAN THE BOLT DIAMETER SPECIFIED.
5. PILES ARE WRAPPED TO ACT AS A UNIT WITH 3/4" HDG WIRE STAPLED TO EACH PILE AT EVERY TURN. TURN ENDS BACK AND DOUBLE STAPLE. PILES TO BE IN CONTACT AND CABLE TIGHT BEFORE STAPLING AT THE TOP.
6. PILES ARE WRAPPED WITH A 1" STAINLESS STEEL BAND AT THE TOP TO PREVENT BROOMING.
7. ALL TIMBER FRAMING USED IN THE PROJECT SHALL BE STRAIGHT IN BOTH LONGITUDINAL PLANES WITH NO OR MINIMAL TWIST. TIMBER SHALL BE INSPECTED FOR CROWN PRIOR TO INSTALLATION BY THE CONTRACTOR AND INSTALLED CROWN UP WHERE A SLIGHT CROWN EXISTS. JOINTS SHALL BE SAW CUT AND ACCURATELY AND TIGHTLY FITTED. THE ENGINEER RESERVES THE RIGHT TO REJECT TIMBER MEMBERS AND FINISH CONSTRUCTION OF TIMBER ASSEMBLIES WHERE IN THE OPINION OF THE ENGINEER THE DESIGN INTENT OF THE STRUCTURE WOULD BE COMPROMISED DUE TO THE FAULTY TIMBER, JOINTING, AND OR CONSTRUCTION PRACTICES.
8. COUNTERSINK AREAS WHERE HARDWARE INTERFERES WITH CONSTRUCTION OR VESSEL BERTHING AREAS..



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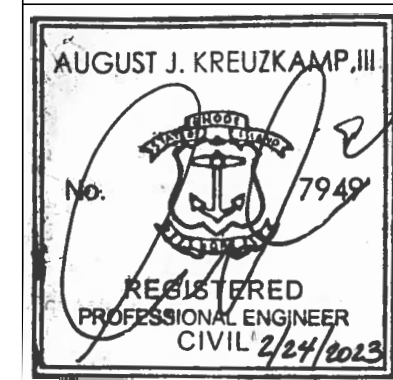
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PROJECT NOTES
GENERAL & CONSTRUCTION



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Sheet	4 of 4
Drawing Number:	N-1