



Harbor Engineering, LLC

26 Bosworth Street; Suite F
Barrington, RI 02806

Main: (401) 829-4870
Website: harboreng.com

November 6, 2023

Ross Singer
RI Coastal Resources Management Council
4808 Tower Hill Road
Wakefield, RI 02879

RE: RICRMC File #2020-07-031
2 & 4 Shell Road Shared Dock

Dear Mr. Singer,

I have reviewed your September 25th email with my clients. Your email included a letter of no objection from the Warren Harbor Commission for the above referenced project. In the letter, the Warren Harbor Commission supported the requested length variance for the proposed residential dock to extend 75-feet seaward of Mean Low Water (MLW) with the provision that the size of the float be reduced from 200 square feet to 150 square feet. Despite the fact the RI Coastal Resources Management Program allows residential floats larger than 150 sq.ft. (*1.3.1(D)7.h and 1.3.1(D)7.i permit floats as large as 200 sq.ft. and 300 sq.ft. respectively*), my clients have agreed to reduce the size of their proposed float accordingly.

In your email, you stress the need to reduce the length of the proposed project by an additional 25 feet to eliminate the length variance in order to gain staff (your) support. When the application was originally submitted in 2020, my clients were seeking permission for a 121-foot pier that extended 108 feet seaward of MLW. Back in January, 2021 you had stressed the need to reduce the length of the project by 33 feet such that the project not extend any further than 75 feet seaward of MLW. Given the bathymetry at the two float locations was not appreciably different (~1 inch), my clients agreed to your request. The plan set was modified and submitted to RICRMC on January 8, 2021. Now, almost 2 years later, you are requesting the project be further reduced in length.

Unfortunately the bathymetry underneath the float changes significantly if the project is shortened by an additional twenty-five (25) feet. Where the proposed float currently sits, the bottom ranges between EL-2.4 to -2.6 feet relative to MLW. The bathymetry 25 feet landward of the proposed float location ranges between EL-1.6 to -2.4 MLW. This 10-inch reduction in water depth is problematic since it will have an impact accessing the proposed float and using a vessel in the immediate vicinity of the proposed float. Although a touch-and-go facility is not used full-time, it is difficult to know when it will be used/needed, when those times will occur in the tide cycle and how significant the tide will be at those times.

This location is adjacent to a sizable water body that experiences waves through the summer that are caused by the regular/daily sea breeze that originates from the south. Vessels docking along side the proposed float should only be oriented with their bows pointing to the south (seaward direction) which puts their sterns (and outboard engines) at the landward end of the float. Outboard

engines should have a minimum of 2 feet of water (even with their engines partly tilted up) when operated to avoid waves that may cause the engine to bottom-out and/or scour the bottom with a propeller. Orienting boats in the other direction will make them vulnerable to waves crashing over the transom and engine well.

The proposed facility is the minimum necessary to meet my clients' needs. Every residential dock in the immediate vicinity either impinges on the Town's mooring field or its 50-foot setback. It seems reasonable to assume the reason for that consistency is that the water depths immediately closer to shore are shallow, the area is exposed to sizable waves and the cobble-covered bottom is unforgiving. All my clients are asking is that RICRMC extend the same courtesy as they have to other individual homeowners in the region and consider the fact that the proposed structure is being shared, which significantly reduces the amount of infrastructure being constructed in the coastal realm. Given the Warren Harbor Commission is agreeable to the proposed float position, there is no reason to further reduce the length of the project nor a reason as to why RICRMC should take exception to what is currently proposed.

The attached plan set (dated November 6, 2023) was updated with the following revisions:

- Float area reduced to 150 sq.ft. with new dimensions 8ft x 18.75ft
- Town of Warren mooring field boundary and 50-foot setback

We look forward to your timely review of the updated application plan set and the opportunity to present the application before the RI Coastal Resources Council.

Very Truly Yours,
Harbor Engineering, LLC



Gus Kreuzkamp, PE
Principal

Enclosures: Seven (7) sheet plan set – Revision Date: November 1, 2023

Copy: Meghan Rawson, Patrick LeBeau, Christine Grady & Paul Grady



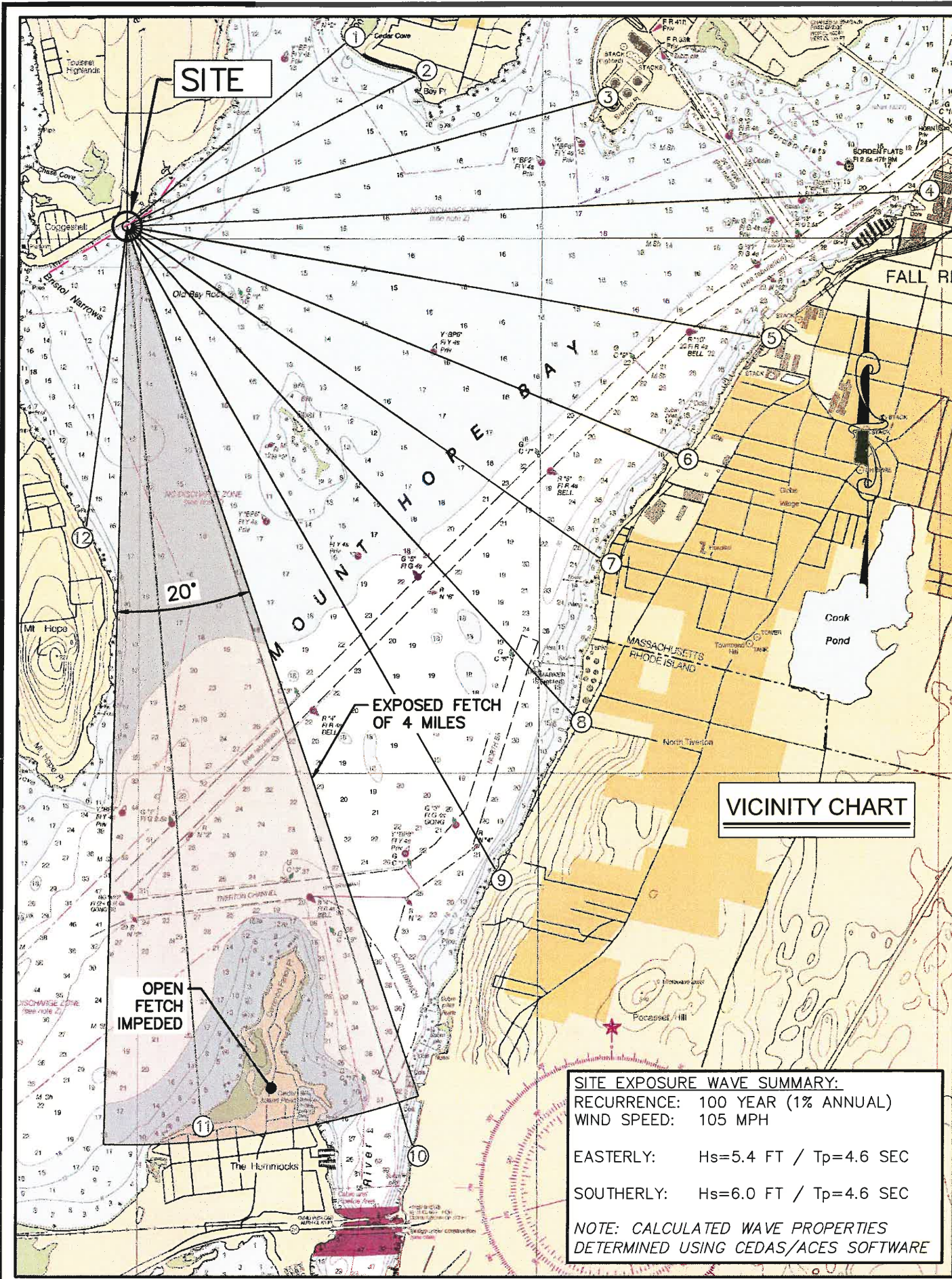


TABLE 1: SITE EXPOSURE

| | ANGLE | FETCH | |
|----|-------|-------|-------|
| | | FEET | MILES |
| 1 | 50 | 6408 | 1.2 |
| 2 | 62 | 7316 | 1.4 |
| 3 | 75 | 11009 | 2.1 |
| 4 | 87 | 18035 | 3.4 |
| 5 | 100 | 14678 | 2.8 |
| 6 | 112 | 13601 | 2.6 |
| 7 | 125 | 13197 | 2.5 |
| 8 | 137 | 15136 | 2.9 |
| 9 | 150 | 16950 | 3.2 |
| 10 | 162 | 22023 | 4.2 |
| 11 | 175 | 20394 | 3.9 |
| 12 | 187 | 6838 | 1.3 |

TABLE 2: TIDAL AND STORM SURGE BENCHMARKS IN FEET

| BENCHMARK | ELEVATION (MLWD) |
|---|------------------|
| FEMA BASE FLOOD ELEVATION (BFE) | +24.2 |
| FEMA 1% RECURRENCE (100YR) SWL | +13.4 |
| FEMA 2% RECURRENCE (50YR) SWL | +11.6 |
| FEMA 10% RECURRENCE (10YR) SWL | +8.7 |
| MEAN HIGHER HIGH WATER (MHHW) | +4.5 |
| MEAN HIGH WATER (MHW) | +4.2 |
| NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88) | +2.2 |
| MEAN LOW WATER (MLW) | 0.0 |
| MEAN LOWER LOW WATER (MLLW) | -0.2 |

REFERENCES:

1. NAVIGATION CHART PRESENTED HEREIN WAS OBTAINED FROM NOAA CHART #13226 FOR MOUNT HOPE BAY. SOUNDINGS INCLUDED ON THE CHART REFER TO MEAN LOWER LOW WATER (MLLW) DATUM.
2. STORM SURGE STILLWATER LEVEL (SWL) ELEVATIONS WERE OBTAINED FROM TRANSECT #20 FROM THE FLOOD INSURANCE STUDY (FIS) FOR BRISTOL COUNTY, RHODE ISLAND [STUDY #44001CV000B] PREPARED BY FEMA DATED 7/7/2014. SWL ELEVATIONS 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) #44001C0012H FOR BRISTOL COUNTY, RHODE ISLAND PREPARED BY FEMA DATED 7/7/2014. THE ELEVATION OF THE BASE FLOOD ELEVATION WAS CONVERTED FROM NAVD88 TO MLW.
4. TIDAL ELEVATIONS WERE OBTAINED FROM NOAA VDATUM ONLINE TOOL USING LAT/LONG COORDINATES IN THE VICINITY OF THE PROJECT AREA.



HARBOR ENGINEERING, LLC

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BARRINGTON, RI 02806
(401) 829-4870
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| No. | Revision | Date | App. |
|-----|--|---------|------|
| 2 | REDUCED SIZE OF FLOAT & INCLUDED MOORING FIELD | 11/6/23 | AJK |
| 1 | CONVERTED DATUM TO MLW REDUCED LENGTH OF PIER & ADDED NEARBY MOORINGS | 1/8/21 | AJK |



GRAPHIC SCALE

Client/Owner: **PAUL & CHRISTINE GRADY**
2 SHELL ROAD
WARREN, RI 02885
PATRICK LEBEAU & MEGHAN RAWSON
4 SHELL ROAD
WARREN, RI 02885

Issued for:
REGULATORY REVIEW & CONSTRUCTION

Drawing Title:
SHARED RESIDENTIAL DOCK
VICINITY CHART &
SITE EXPOSURE INFORMATION
FETCHES, TIDES & COASTAL FLOODING

AUGUST J. KREUZKAMP, III
No. 7949
REGISTERED PROFESSIONAL ENGINEER
CIVIL 11/16/23

| | |
|-----------------|------------|
| Date: | 5/26/2020 |
| Scale: | 1"=3,000FT |
| Designed By: | AJK/MNG |
| Drawn by: | AJK |
| Checked by: | AJK |
| Project Number: | 2020-03 |
| Sheet | 1 of 7 |
| Drawing Number: | 21 |

MANAGEMENT COUNCIL

SITE PLAN NOTES:

1. PLAN INFORMATION PRESENTED HEREIN IS BASED ON THE SITE PLAN PREPARED BY SOUTH COUNTY SURVEY COMPANY TITLED "EXISTING CONDITIONS SITE PLAN INCLUDING TOPOGRAPHY & BATHYMETRY IN THE TOWN OF WARREN, RHODE ISLAND A.P. 16 LOTS 195 & 196 ~ 2 & 4 SHELL ROAD" DATED APRIL 3, 2020 AND CAN ONLY REFLECT THE CONDITIONS OF THE SITE AT THAT TIME.
2. NO PROPERTY SURVEY WAS CONDUCTED. THE PROPERTY LINE EXTENSIONS WERE APPROXIMATED BASED ON THE EXISTING FENCE LOCATIONS FOR EACH PROPERTY.
3. THE SURVEY VERTICAL DATUM REFERS TO MEAN LOW WATER (MLW) DATUM TO MEET REGULATORY REVIEW REQUIREMENTS, 2.25 FEET BELOW NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88). SOUNDINGS AND BATHYMETRIC CONTOURS ARE APPROXIMATELY 0.2 FEET MORE SHALLOW THAN SHOWN RELATIVE TO MEAN LOWER LOW WATER DATUM.
4. BATHYMETRIC CONTOURS ARE NEGATIVE UNLESS DENOTED WITH A PLUS (+).

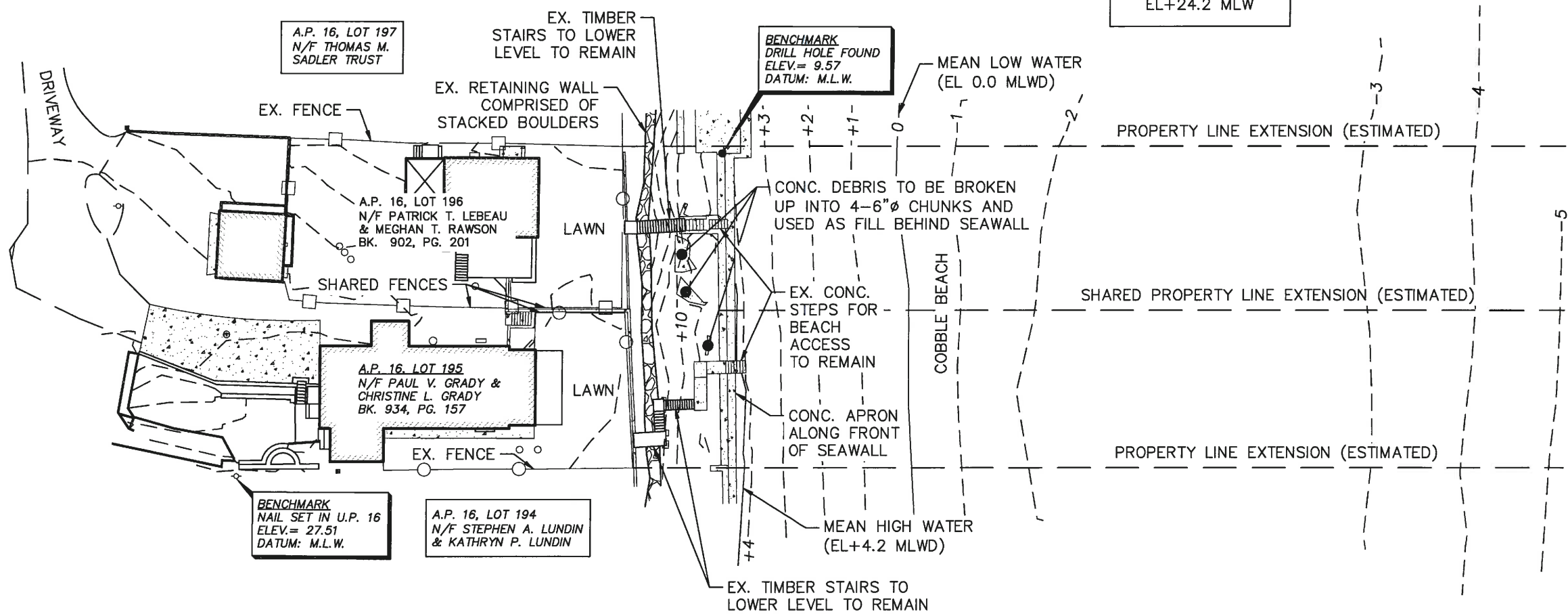
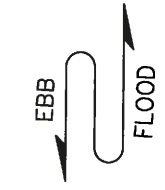


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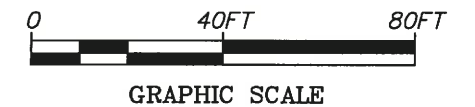
MOUNT HOPE BAY
RICRMC TYPE 2

FEMA VE ZONE
EL+22.0 NAVD88
EL+24.2 MLW



EXISTING CONDITIONS

| No. | Revision | Date | App. |
|-----|--|---------|------|
| 2 | REDUCED SIZE OF FLOAT & INCLUDED MOORING FIELD | 11/6/23 | AJK |
| 1 | CONVERTED DATUM TO MLW REDUCED LENGTH OF PIER & ADDED NEARBY MOORINGS | 1/8/21 | AJK |



Client/Owner: **PAUL & CHRISTINE GRADY**
2 SHELL ROAD
WARREN, RI 02885
PATRICK LEBEAU & MEGHAN RAWSON
4 SHELL ROAD
WARREN, RI 02885

Issued for:
REGULATORY REVIEW & CONSTRUCTION

Drawing Title:
SHARED RESIDENTIAL DOCK
EXISTING SITE PLAN
MLWD

AUGUST J. KREUZKAMP, III
No. 949
REGISTERED PROFESSIONAL ENGINEER CIVIL 11/6/23

| | |
|-----------------|-----------|
| Date: | 5/26/2020 |
| Scale: | 1"=40FT |
| Designed By: | AJK/MNG |
| Drawn by: | AJK |
| Checked by: | AJK |
| Project Number: | 2020-03 |
| Sheet | 2 of 7 |
| Drawing Number: | EX-1 |

COASTAL RESOURCES MANAGEMENT COUNCIL

VESSEL INFORMATION:

VESSELS OWNED BY THE APPLICANTS ARE TO BE STORED ON MOORINGS THAT HAVE BEEN PREVIOUSLY AUTHORIZED BY THE WARREN HARBOR COMMISSION. THE APPLICANTS WILL LAUNCH DINGHIES/KAYAKS FROM THE PROPOSED DOCK TO ACCESS THEIR BOATS ON THEIR MOORINGS AND BRING THE VESSELS TO THE FLOATING DOCK AS-NEEDED AND AS TIDE/WEATHER PERMITS TO LOAD/UNLOAD PASSENGERS AND GEAR. VESSELS INCLUDE:

1. **LEBEAU/RAWSON**

LOA: 24 FEET
DRAFT: 18 INCHES (OUTBOARD MOTOR RAISED)

2. **GRADY**

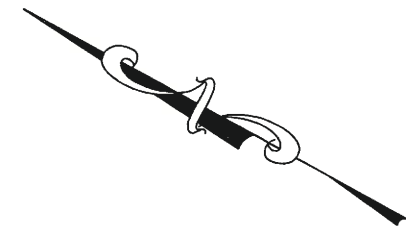
LOA: 21 FEET
DRAFT: 15 INCHES (OUTBOARD MOTOR RAISED)



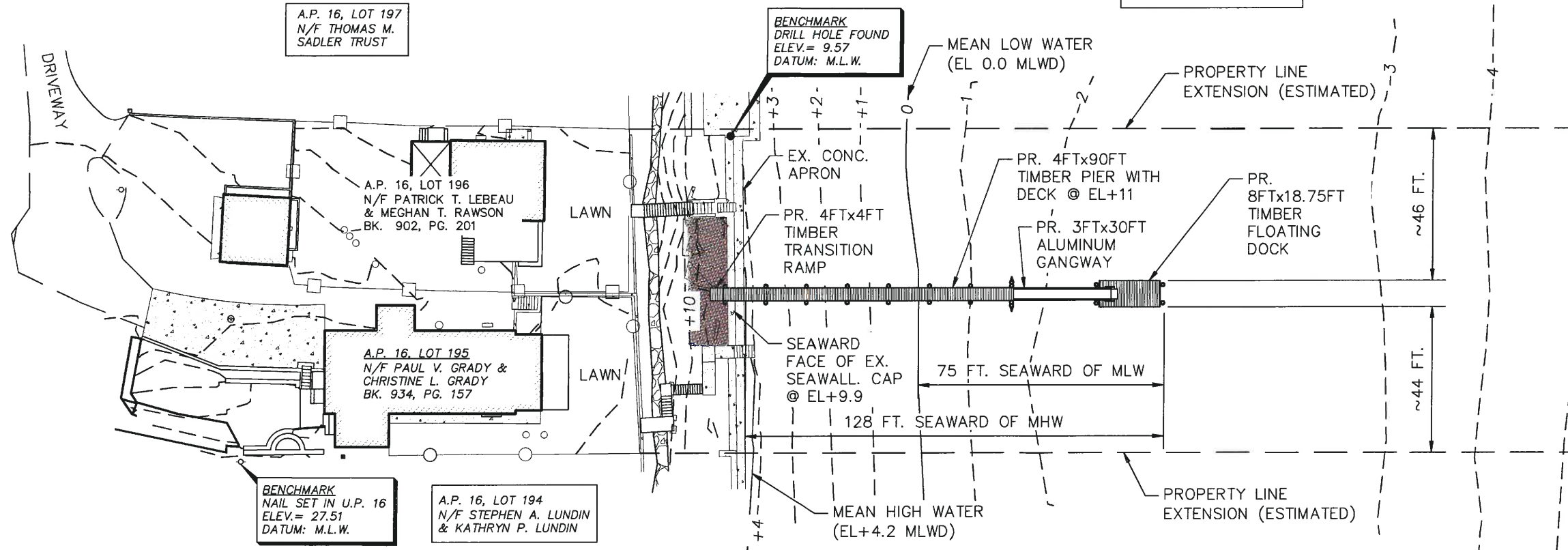
HARBOR ENGINEERING, LLC

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BARRINGTON, RI 02806
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MOUNT HOPE BAY
RICRMC TYPE 2



FEMA VE ZONE
EL+22.0 NAVD88
EL+24.2 MLW

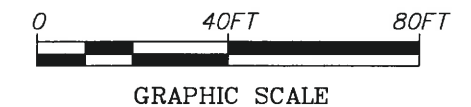


PROPOSED CONDITIONS

NOTES:

1. FOR SITE PLAN INFORMATION, SEE SHEET EX-1.

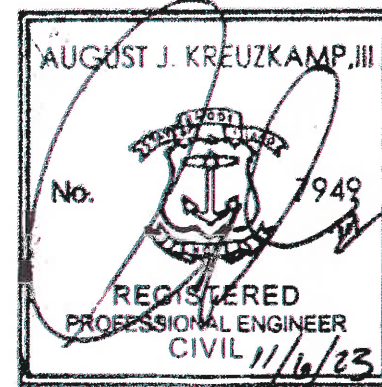
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|-----|---|---------|------|
| 2 | REDUCED SIZE OF FLOAT & INCLUDED MOORING FIELD | 11/6/23 | AJK |
| 1 | CONVERTED DATUM TO MLW & REDUCED LENGTH OF PIER & ADDED NEARBY MOORINGS | 1/8/21 | AJK |



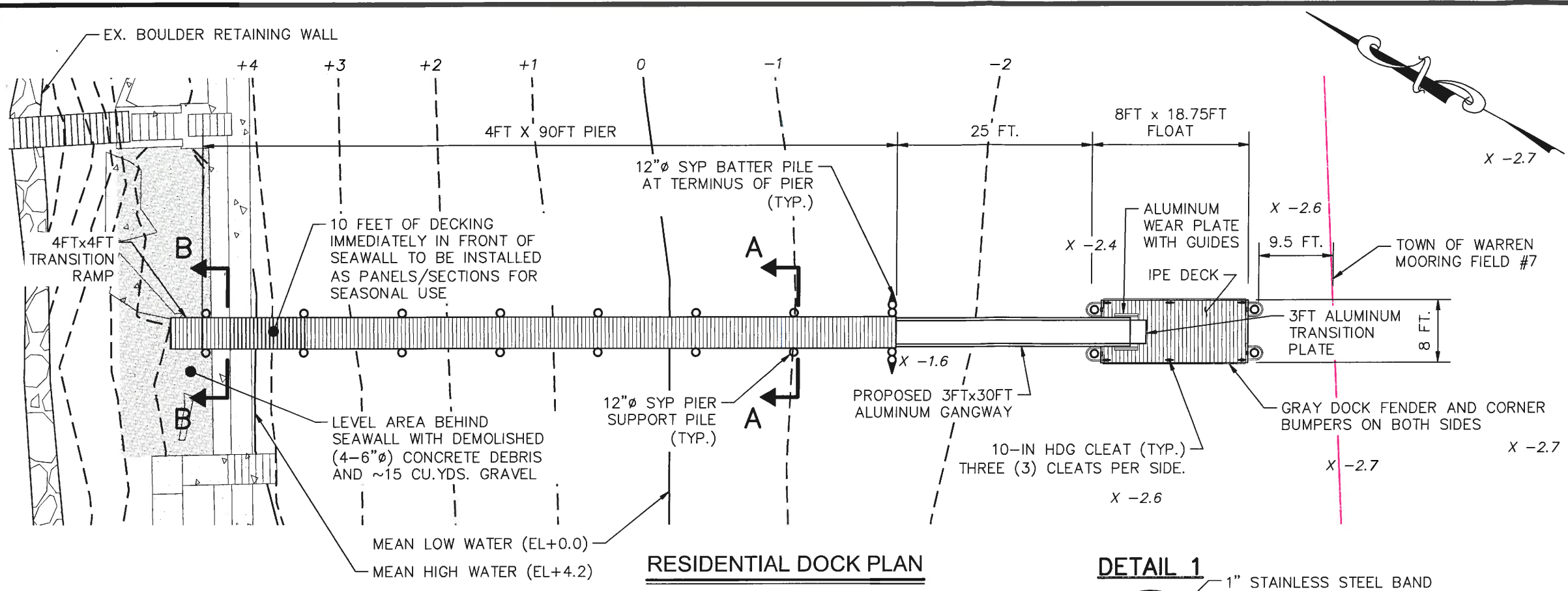
Client/Owner: **PAUL & CHRISTINE GRADY**
2 SHELL ROAD
WARREN, RI 02885
PATRICK LEBEAU & MEGHAN RAWSON
4 SHELL ROAD
WARREN, RI 02885

Issued for:
REGULATORY REVIEW & CONSTRUCTION

Drawing Title:
SHARED RESIDENTIAL DOCK
PROPOSED SITE PLAN
MLWD

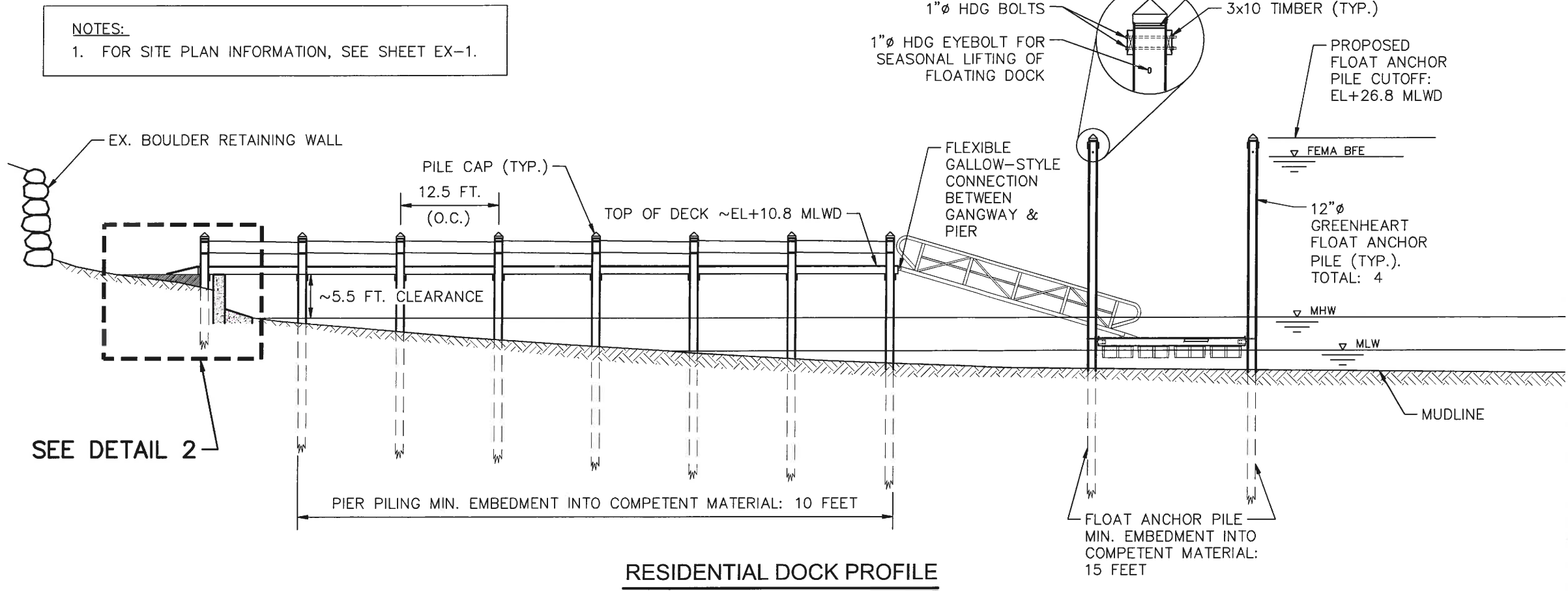


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|-----------------|-----------|
| Date: | 5/26/2020 |
| Scale: | 1"=40FT |
| Designed By: | AJK/MNG |
| Drawn by: | AJK |
| Checked by: | AJK |
| Project Number: | 2020-03 |
| Sheet | 3 of 7 |
| Drawing Number: | PR-1 |



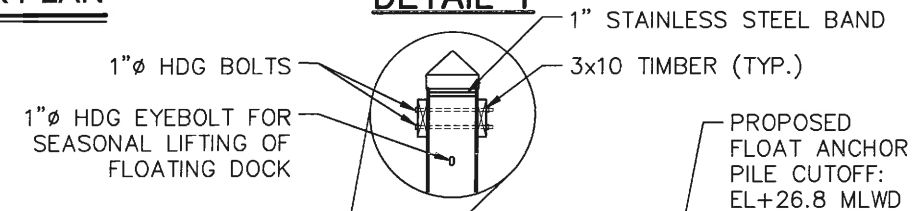
RESIDENTIAL DOCK PLAN

NOTES:
 1. FOR SITE PLAN INFORMATION, SEE SHEET EX-1.



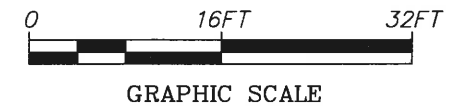
RESIDENTIAL DOCK PROFILE

DETAIL 1



HE
HARBOR ENGINEERING, LLC
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 BARRINGTON, RI 02806
 (401) 829-4870
 harboreng.com

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Issued for:
REGULATORY REVIEW & CONSTRUCTION

Drawing Title:
SHARED RESIDENTIAL DOCK
 PROPOSED PIER PLAN & PROFILE MLWD

AUGUST J. KREUZKAMP, III
 No. 7949
 REGISTERED PROFESSIONAL ENGINEER CIVIL 11/6/23

Date: 5/26/2020
 Scale: 1"=16FT
 Designed By: AJK/MNG
 Drawn by: AJK
 Checked by: [Signature]
 Project Number: 2020-03
 Sheet 4 of 7
 Drawing Number: PR-2

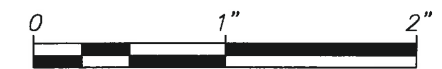
GENERAL RESOURCES MANAGEMENT COUNCIL



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| No. | Revision | Date | App. |



GRAPHIC SCALE

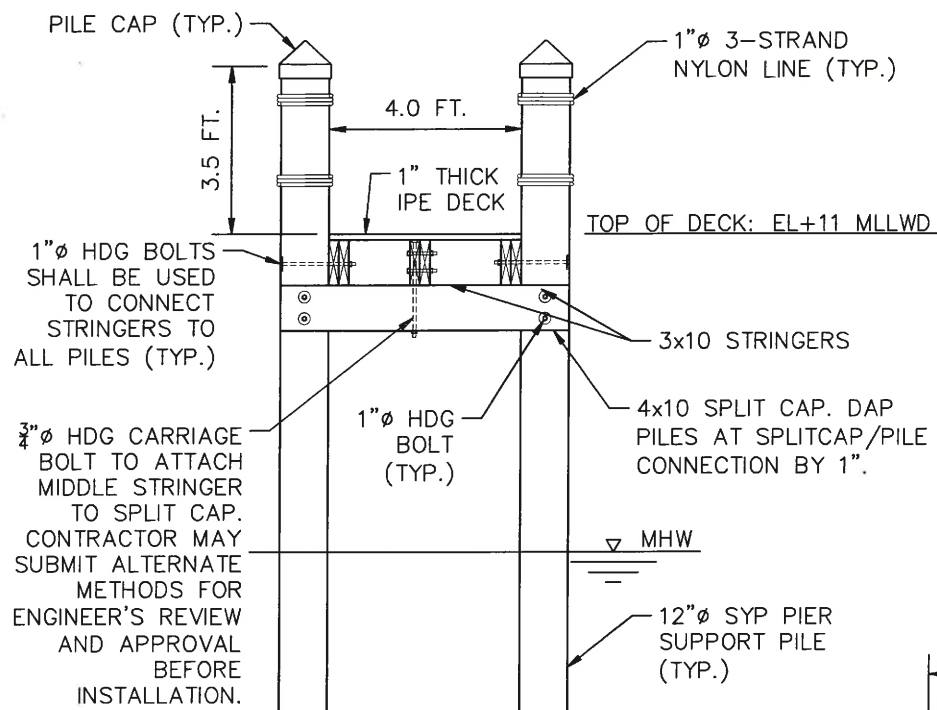
Client/Owner: PAUL & CHRISTINE GRADY
2 SHELL ROAD
WARREN, RI 02885
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PROPOSED PIER PLAN & PROFILE

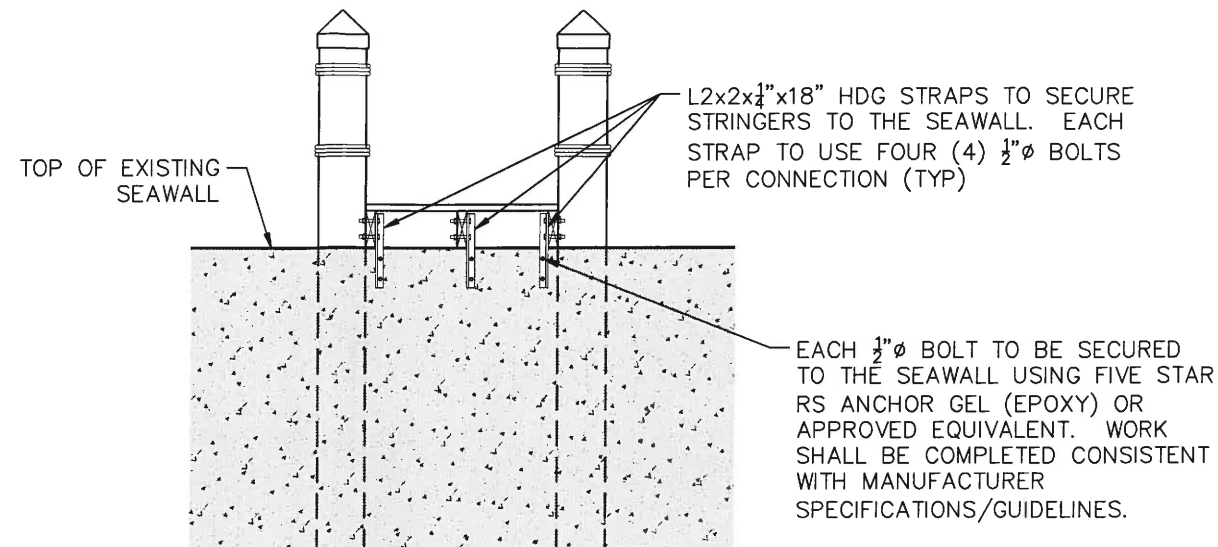
AUGUST J. KREUZKAMP, III
No. 949
REGISTERED PROFESSIONAL ENGINEER
CIVIL 11/6/23

| | |
|-----------------|-------------|
| Date: | 5/26/2020 |
| Scale: | VARIES |
| Designed By: | AJK/MNG |
| Drawn by: | AJK |
| Checked by: | [Signature] |
| Project Number: | 2020-03 |
| Sheet | 5 of 7 |
| Drawing Number: | PR-3 |



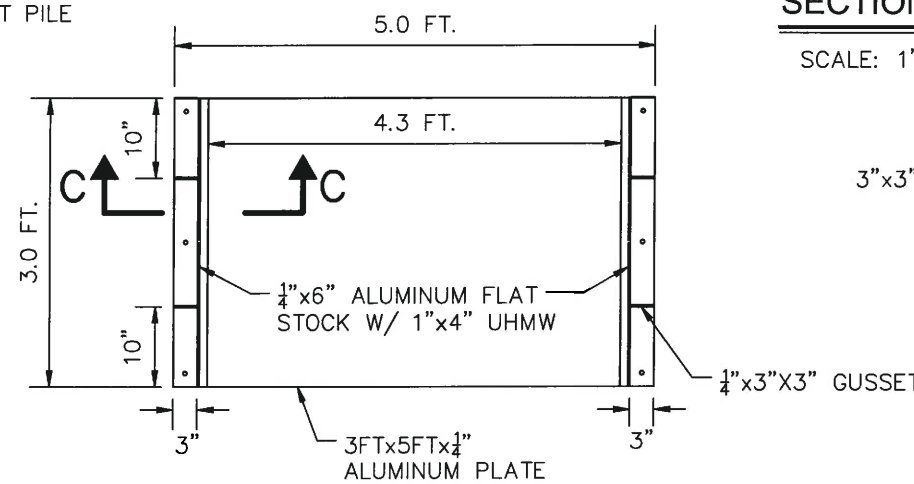
SECTION A-A

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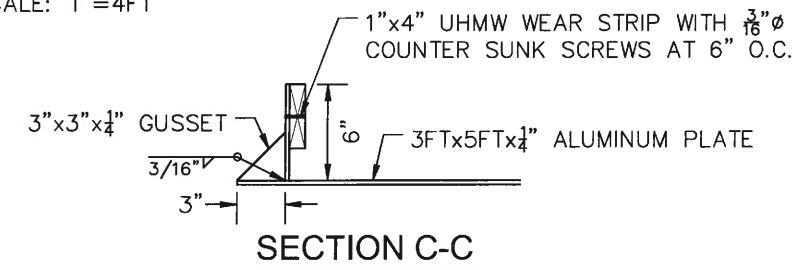
SECTION B-B

SCALE: 1"=4FT



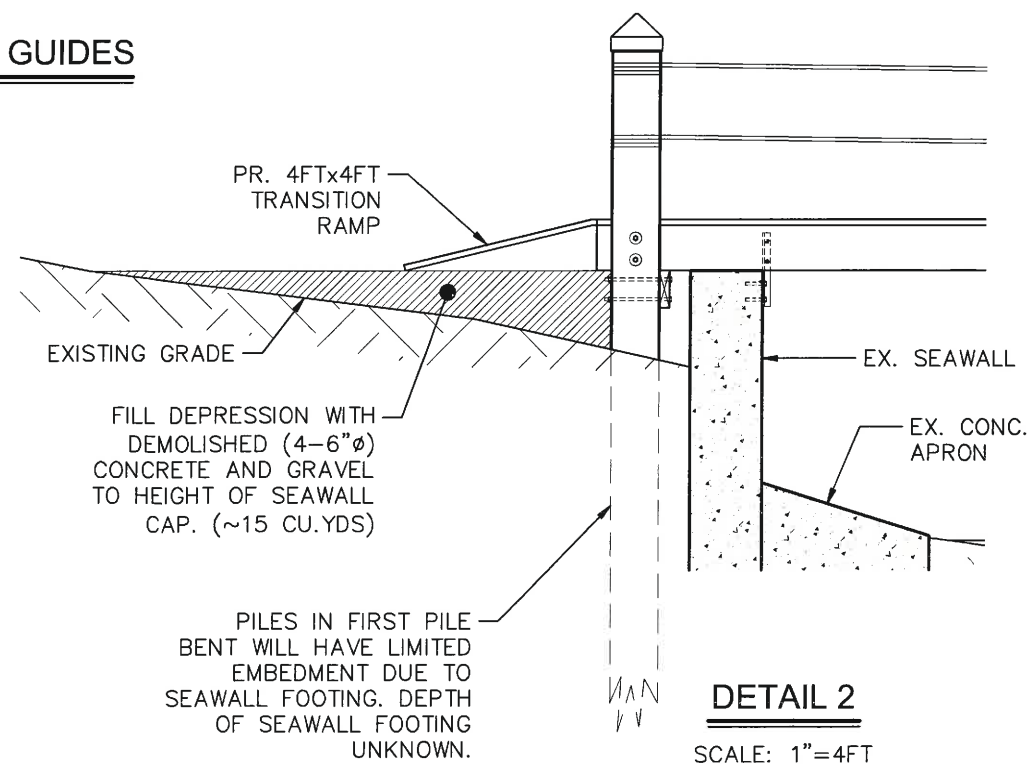
ALUMINUM WEAR PLATE WITH GUIDES

SCALE: 1"=2FT



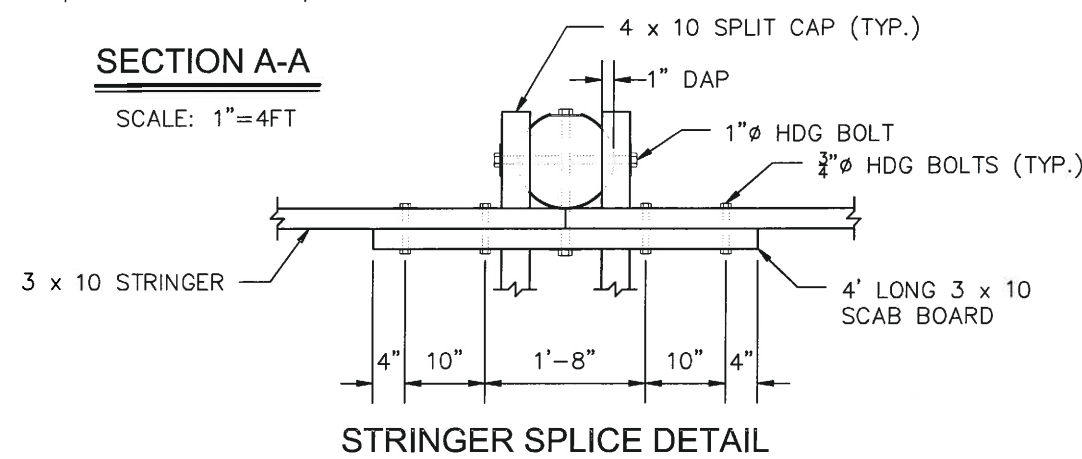
SECTION C-C

SCALE: 1"=1FT



DETAIL 2

SCALE: 1"=4FT



STRINGER SPLICE DETAIL

SCALE: 1"=2FT

GENERAL NOTES:

- DRAWING AND SPECIFICATIONS, AS INSTRUMENTS OF PROFESSIONAL SERVICE, ARE AND 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.

GENERAL CONSTRUCTION NOTES:

- ALL WORK SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS AS SHOWN IN THESE PLANS AND SPECIFICATIONS.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE CONDITIONS SHOWN HEREIN AND NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES IN DIMENSIONS AND/ OR SITE CONDITIONS PRIOR TO THE FABRICATION AND/OR ORDERING OF ANY CONSTRUCTION MATERIALS. THE CONTRACTOR SHALL NOT BEGIN CONSTRUCTION IN ANY SUCH AFFECTED AREA UNTIL THE DISCREPANCY HAS BEEN RESOLVED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR BRINGING ALL ELEMENTS OF THE PROJECT IN CONFORMANCE WITH THESE PLANS AND SPECIFICATIONS. IF ANY MODIFICATIONS ARE REQUIRED IN ANY ELEMENT, THE CONTRACTOR SHALL SUBMIT PROPOSED CHANGES IN WRITING TO THE ENGINEER FOR REVIEW.
- ALL SAFETY REGULATIONS ARE TO BE STRICTLY FOLLOWED. METHODS OF CONSTRUCTION AND ERECTION OF STRUCTURAL MATERIAL ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL WORK SHALL COMPLY WITH FEDERAL LAWS, STATE REGULATIONS, AND LOCAL LAWS AND STATUTES AND THE REQUIREMENTS AND CONDITIONS OF ALL REGULATORY PERMITS ISSUED FOR THE WORK.
- 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.
- IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE SURVEY SUPPORT NEEDED TO COMPLETE THE WORK, INCLUDING STAKEOUT, TO ENSURE THE WORK IS COMPLETED CONSISTENT WITH PROJECT PLANS AND ASSOCIATED REGULATORY APPROVALS.
- ALL MATERIAL STORAGE SHALL BE DONE VIA BARGE.
- 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:

- 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.
- PILES SHALL BE DRIVEN AS SPECIFIED ON THE PRECEDING SHEETS. CONTRACTOR SHALL POINT PILES AND BE PREPARED TO USE STEEL PILE TIPS OR SOCKET PILES TO ACHIEVE THE REQUIRED EMBEDMENT.
- 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 OWNER PRIOR TO PAYMENT. PILE LOGS SHALL INCLUDE: PILE ID, LOCATION, DEPTH TO MUDLINE (INCLUDING DATE & TIME RECORDED) AND TOTAL EMBEDMENT.

PILE CAPS:

- PILE CAPS SHALL BE WHITE, ROUND CONE, LOW DENSITY POLYETHYLENE CAPS.
- PILE CAPS SHALL BE SIZED APPROPRIATELY TO ACCOMMODATE THE UNIQUE SIZE OF EACH PILE BUTT.
- PILE CAPS SHALL BE ATTACHED USING FOUR (4) STAINLESS STEEL SCREWS.

TIMBER NOTES:

- DESIGN LIVE LOAD FOR FIXED PIER: 40PSF UNIFORM DISTRIBUTED LOAD.
- DECKING ON PIER AND FLOATING DOCK SHALL BE 1" NOM. IPE FASTENED TO STRINGERS USING STAINLESS STEEL SCREWS.
- PIER SUPPORT PILES SHALL BE 12"Ø SOUTHERN YELLOW PINE (SYP) WITH 10FT EMBEDMENT INTO COMPETENT MATERIAL.
- FLOAT ANCHOR PILES SHALL BE 12"Ø GREENHEART WITH 15FT EMBEDMENT INTO COMPETENT MATERIAL. GREENHEART PILES SHALL BE BANDED USING ONE 1" STAINLESS STEEL BAND AT EACH PILE BUTT TO PREVENT FUTURE BROOMING.
- UNLESS NOTED OTHERWISE, ALL TIMBER MATERIAL (INCLUDING STRINGERS, SPLIT CAPS AND OTHER FRAMING) SHALL BE SOLID SAWN LUMBER (S4S) SOUTHERN YELLOW PINE (SYP) GRADE NO. 2 OR BETTER IN ACCORDANCE WITH EITHER THE SOUTHERN PINE INSPECTION BUREAU OR THE TIMBER PRODUCTS INSPECTION BUREAU GRADING RULES.
- UNLESS NOTED OTHERWISE, SYP TIMBER MATERIALS SHALL BE TREATED WITH CCA PRESERVATIVE SUFFICIENT FOR MARINE CONSTRUCTION WITH THE FOLLOWING MINIMUM RETENTIONS:
 - SYP TIMBER PILES: 2.5 LBS PER CUBIC FOOT
 - SYP TIMBER FRAMING: 0.6 LBS PER CUBIC FOOT).
- BRUSH APPLY TWO (2) COATS OF WOOD PRESERVATIVE TO SURFACE OF PRESERVATIVE TREATED MATERIALS WHICH HAVE BEEN FIELD CUT, DRESSED OR DRILLED.
- SPLICING OF STRINGERS SHOULD OCCUR EXCLUSIVELY OVER THE CENTER OF A PILE BENT (OVER THE SPLIT CAP) WITH A 3FT BUTT SPLICE. EACH SPLICE SHALL INCLUDE A 3FT LONG 3X10 SCAB AND 18-INCH OVERLAP WITH THE BUTTING STRINGERS.
- TIMBER BLOCKING IS REQUIRED BETWEEN ALL STRINGERS AT MID-SPAN USING 3X10 TIMBERS AND ½"Ø HDG LAG BOLTS.

HARDWARE:

- ALL BOLTS SHALL BE ASTM A307 OR BETTER SIZED NO LESS THAN 1"Ø, UNLESS NOTED OTHERWISE, ACCOMPANIED BY APPROPRIATELY SIZED NUTS AND WASHERS.
- ALL HARDWARE INCLUDING NAILS, SCREWS, BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED (HDG) STEEL, UNLESS NOTED OTHERWISE.
- COUNTER SINK AREAS WHERE HARDWARE INTERFERES WITH CONSTRUCTION OR VESSEL BERTHING AREAS.
- CONTRACTOR TO SUBMIT DETAILS OF THE FLEXIBLE (GALLOW-STYLE) GANGWAY CONNECTION TO ENGINEER FOR REVIEW AND APPROVAL BEFORE FABRICATING.

FLOATING DOCK:

- FLOATING DOCKS SHALL BE CONSTRUCTED USING CCA TREATED TIMBER FRAMING, ENCAPSULATED PERMAFLOAT FLOATATION OR APPROVED EQUAL TUBS AND CCA SYP TIMBER DECKING.
- FLOAT FRAMING SHALL BE CONSTRUCTED SUCH THAT IT CAN ADEQUATELY MANAGE BEING LIFTED USING CHAINS CONNECTED TO THE BUTTS OF THE FLOAT ANCHOR PILES EACH WINTER FOR SEASONAL STORAGE.
- CONTRACTOR TO INSTALL A TOTAL OF SIX (6) HOT-DIPPED GALVANIZED STEEL CLEATS ON THE FLOATING DOCK, ATTACHED TO THE FRAMING OF THE FLOATING DOCK USING THROUGH BOLTS. CLEATS SHALL BE NO LESS THAN 10 INCHES IN LENGTH.
- DOCK FENDER SHALL BE EXTRUDED, NON-MARRING, MARINE GRADE VINYL, CONSISTENT SHADE OF GRAY IN COLOR INCLUDING BUMPER STRIP ALONG THE TWO (2) BERTHING SIDES OF THE FLOAT AND FOUR (4) CORNER BUMPERS.
- MODIFY FLOAT ANCHOR PILE GUIDES TO INCLUDE 1-INCH THICK UHMW PAD ATTACHED TO FACE OF DOCK/GUIDE IN ADDITION TO STANDARD GUIDE ROLLER.
- FLOAT DESIGN CRITERIA:
 - LIVE LOAD=40 PSF
 - DEAD LOAD FREEBOARD=20"



HARBOR ENGINEERING, LLC

26 BOSWORTH STREET
BARRINGTON, RI 02806
(401) 829-4870
harboreng.com

| 2 | REDUCED SIZE OF FLOAT & INCLUDED MOORING FIELD | 11/6/23 | AJK |
|-----|---|---------|------|
| 1 | CONVERTED DATUM TO MLW REDUCED LENGTH OF PIER & ADDED NEARBY MOORINGS | 1/8/21 | AJK |
| No. | Revision | Date | App. |

Client/Owner: **PAUL & CHRISTINE GRADY**
2 SHELL ROAD
WARREN, RI 02885
PATRICK LEBEAU & MEGHAN RAWSON
4 SHELL ROAD
WARREN, RI 02885

Issued for:
REGULATORY REVIEW & CONSTRUCTION

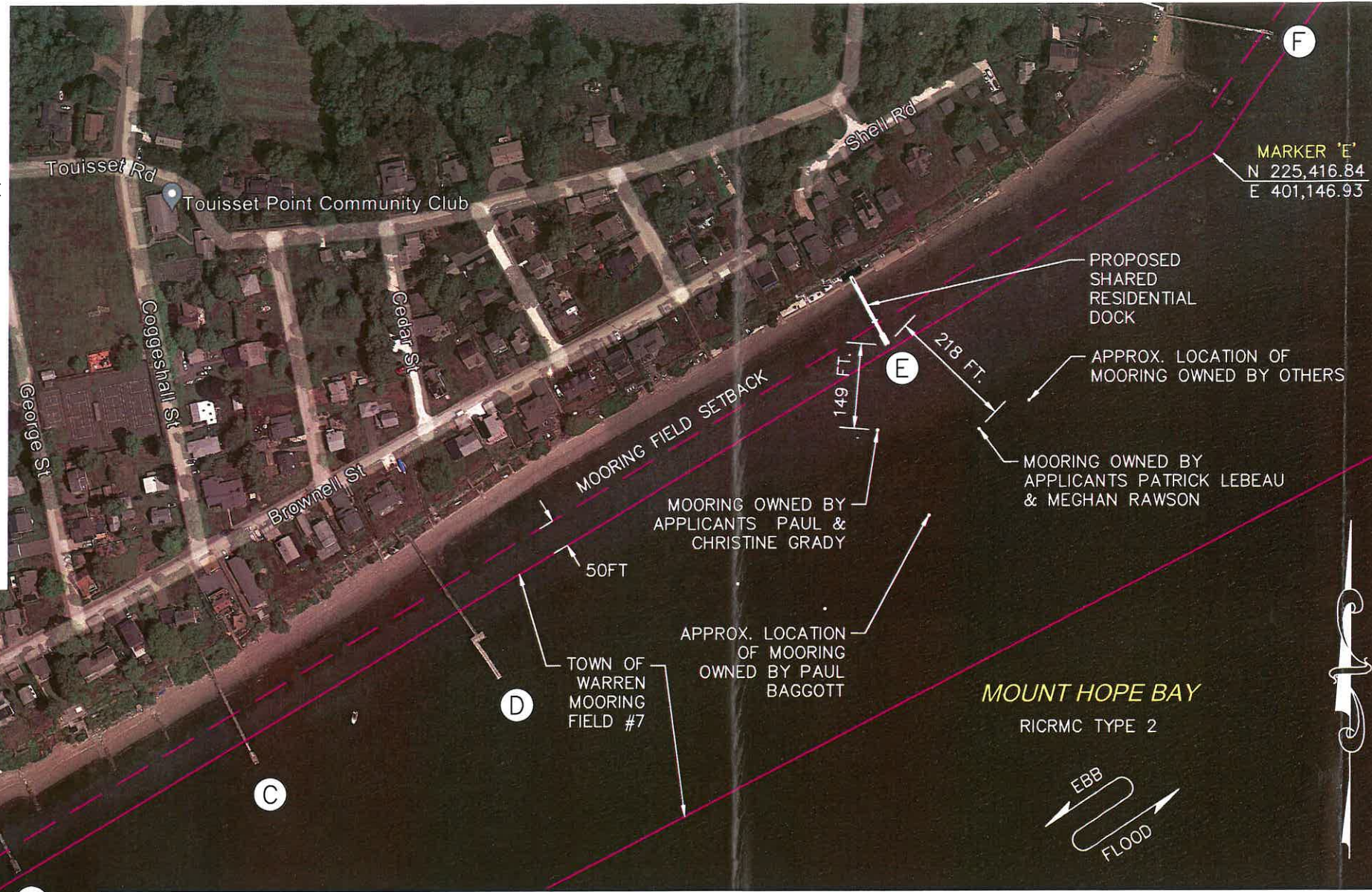
Drawing Title:
SHARED RESIDENTIAL DOCK
PROJECT NOTES

| | | |
|-----------------|-----------------|-----------|
| | Date: | 5/26/2020 |
| | Scale: | |
| | Designed By: | AJK/MNG |
| | Drawn by: | AJK |
| | Checked by: | AJK |
| | Project Number: | 2020-03 |
| Sheet | 6 | of 7 |
| Drawing Number: | N-1 | |

MANAGEMENT COUNCIL

NOTES:

1. THE ORTHOPHOTOGRAPH PRESENTED HEREIN WAS OBTAINED FROM GOOGLE EARTH. THE PHOTOGRAPH WAS TAKEN JUNE 6, 2022.
2. THE INFORMATION INCLUDED IN TABLE 3 WAS OBTAINED FROM REGULATORY FILES ASSOCIATED WITH EACH LOCATION. MEASUREMENTS THAT WERE NOT INCLUDED IN THE REGULATORY DOCUMENTS WERE MEASURED USING GOOGLE EARTH AND SHOULD BE CONSIDERED APPROXIMATE.
3. THE PLACEMENT OF THE TOWN'S MOORING FIELD #7 WAS BASED ON COORDINATES OBTAINED FROM THE TOWN OF WARREN HARBOR MANAGEMENT PLAN ADOPTED JANUARY 12, 2010 AND THE REVISED COORDINATES FOR MARKERS 'C', 'D' AND 'E' THAT WERE PROVIDED BY THE WARREN HARBORMASTER ON MAY 7, 2021. MOORING FIELD COORDINATES WERE ALL PROVIDED IN GPS (LATITUDE/LONGITUDE) AND CONVERTED TO STATE PLANE (NAD83) USING THE WWW.EARTHPOINT.US WEBSITE.



MARKER 'E'
N 225,416.84
E 401,146.93

MARKER 'A'
N 224,000.68
E 398,802.64

TABLE 3: NEARBY RESIDENTIAL BOATING FACILITIES

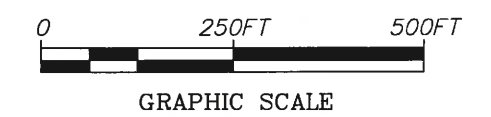
| | A | B | C | D | E | F |
|---|-------------------------|--|--|-------------------------|--|--|
| ADDRESS | 4 BROWNELL ST | 8 BROWNELL ST | 26 BROWNELL ST | 40 BROWNELL ST | 2 & 4 SHELL RD | 1 NORTH ST |
| RICRMC FILE # | 1995-07-098 | 2001-07-090 | 2005-08-051 | 1998-06-073 | PROPOSED | 2017-03-063 |
| DESCRIPTION OF FACILITY | 4FTx200FT PIER | 4FTx121FT PIER, 3FTx22FT RAMP & 8FTx18.5FT FLOAT | 4FTx112FT PIER, 3FTx38FT RAMP & 8FTx18.5FT FLOAT | 6-8FTx280FT PIER | 4FTx90FT PIER, 3FTx30FT RAMP & 8FTx18.75FT FLOAT | 4FTx140FT PIER, 3FTx25FT RAMP & 6FTx25FT FLOAT WITH FLOAT LIFT & MOORING PILES |
| LENGTH OF TOTAL STRUCTURE SEAWARD OF MLW | 96 FEET (ESTIMATED) | 66 FEET | 68 FEET | 214 FEET (ESTIMATED) | 75 FEET (PROPOSED) | 137 FEET |
| LENGTH OF TOTAL STRUCTURE SEAWARD OF MHW | 160 FEET (ESTIMATED) | 129 FEET | 135 FEET | 248 FEET (ESTIMATED) | 127 FEET (PROPOSED) | 193 FEET |
| FACILITY IMPINGES ON MOORING FIELD OR SETBACK | SETBACK & MOORING FIELD | SETBACK | SETBACK & MOORING FIELD | SETBACK & MOORING FIELD | SETBACK | SETBACK |



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Client/Owner: **PAUL & CHRISTINE GRADY**
2 SHELL ROAD
WARREN, RI 02885
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Issued for:
REGULATORY REVIEW & CONSTRUCTION

Drawing Title:
SHARED RESIDENTIAL DOCK
AREA RESIDENTIAL BOATING FACILITIES SUMMARY

Professional Engineer Seal for August J. Kreuzkamp, III, No. 949, Registered Professional Engineer Civil 11/6/23.

| | |
|-----------------|-----------|
| Date: | 5/26/2020 |
| Scale: | 1"=250FT |
| Designed By: | AJK/MNG |
| Drawn by: | AJK |
| Checked by: | |
| Project Number: | 2020-03 |
| Sheet | 7 of 7 |
| Drawing Number: | A-1 |

COASTAL RESOURCES MANAGEMENT COUNCIL