



State of Rhode Island and Providence Plantations
Coastal Resources Management Council
 Oliver H. Stedman Government Center
 4808 Tower Hill Road, Suite 3
 Wakefield, RI 02879-1900

(401) 783-3370
 Fax (401) 783-2069

APPLICATION FOR STATE ASSENT

To perform work regulated by the provisions of Chapter 279 of the Public Laws of 1971 Amended.

Project Location <u>395 Park Avenue</u> <u>Portsmouth</u> <small>No. Street City/Town</small>	File No. (CRMC USE ONLY) <p style="text-align: center; font-size: 1.2em;">2023-05-053</p>
Owner's Name <u>Mark Demello</u>	Plat: <u>25</u> Lot(s): <u>45</u>
Mailing Address <u>395 Park Ave.</u> City/Town <u>Portsmouth</u> State <u>RI</u> Zip Code <u>02871</u>	Contact No.: Email Address:
Contractor RI Reg. # Address	Email address: Tel. No.
Designer <u>Principe Company Inc.</u> <u>Tiverton, RI 02878</u> Address <u>27 Sakonnet Ridge Dr.</u>	Tel. No. <u>401.816.5385</u>
Name of Waterway <u>Sakonnet River</u>	Estimated Project Cost (EPC): Application Fee:
Describe accurately the work proposed. (Use additional sheets of paper if necessary and attach this form.) <u>Construction of a new residential dock, totalling in 118 linear feet (460 sf). The dock will terminate 50' from mean low water via a 4'x20' floating dock, centered on the ±40' wide lot.</u>	

Have you or any previous owner filed an application for and/or received an assent for any activity on this property?
 (If so please provide the file and/or assent numbers): 1985-10-011, 1993-05-005, 1993-05-006, 2013-09-100, 2017-01-065

Is this site within a designated historic district? YES NO 2021-10-002

Is this application being submitted in response to a coastal violation? YES NO

If YES, you must indicate NOV or C&D Number: _____

Name/ mailing addresses of adjacent property owners whose property adjoins the project site. Accurate mailing addresses will insure proper notification. Applicant **must** initial to certify accuracy of adjacent property owners and accuracy of mailing addresses.

MSJ
AP 25 - Lot 44: Vacant - Town of Portsmouth.
AP 25 - Lot 46: Rina, LLC - 5 Riverside St. - Portsmouth, RI, 02871

STORMTOOLS (<http://www.beachsamp.org/resources/stormtools/>) is a planning tool to help applicants evaluate the impacts of sea level rise and storm surge on their projects. The Council encourages applicants to use STORMTOOLS to help them understand the risk that may be present at their site and make appropriate adjustments to the project design.

NOTE: The applicant acknowledges by evidence of their signature that they have reviewed the Rhode Island Coastal Resources Management Program, and have, where possible, adhered to the policies and standards of the program. Where variances or special exceptions are requested by the applicant, the applicant will be prepared to meet and present testimony on the criteria and burdens of proof for each of these relief provisions. The applicant also acknowledges by evidence of their signature that to the best of their knowledge the information contained in the application is true and valid. If the information provided to the CRMC for this review is inaccurate or did not reveal all necessary information or data, then the permit granted under this application may be found to be null and void. Applicant requires that as a condition to the granting of this assent, members of the CRMC or its staff shall have access to the applicant's property to make on-site inspections to insure compliance with the assent. This application is made under oath and subject to the penalties of perjury.

08/04




Mark Demello
 Owner's Signature (sign and print)

PLEASE REVIEW REVERSE SIDE OF APPLICATION FORM

STATEMENT OF DISCLOSURE AND APPLICANT AGREEMENT AS TO FEES

The fees which must be submitted to the Coastal Resources Management Council are based upon representations made to the Coastal Resources Management Council by the applicant. If after submission of this fee the Coastal Resources Management Council determines that an error has been made either in the applicant's submission or in determining the fee to be paid, the applicant understands that additional fees may be assessed by the Coastal Resources Management Council. These fees must be paid prior to the issuance of any assent by the Coastal Resources Management Council.

The applicant understands the above conditions and agrees to comply with them.


Signature

4/27/2023
Date

MARK DEMELLO 395 PARK AVE Portsmouth RI
Print Name and Mailing Address



395 PARK AVE

Location 395 PARK AVE

Mblu 25/ 45/ / /

Acct#

Owner DEMELLO MARK A & CHERYL A

Assessment \$423,800

Appraisal \$423,800

PID 8153

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2022	\$169,500	\$254,300	\$423,800

Assessment			
Valuation Year	Improvements	Land	Total
2022	\$169,500	\$254,300	\$423,800

Owner of Record

Owner DEMELLO MARK A & CHERYL A
Co-Owner
Address 395 PARK AVE
PORTSMOUTH, RI 02871-4904

Sale Price \$440,000
Certificate
Book & Page 2078-239/0
Sale Date 08/04/2021
Instrument 00

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
DEMELLO MARK A & CHERYL A	\$440,000		2078-239/0	00	08/04/2021
WONG STEVEN P & ROSS ELIZABETH	\$0		413-78/0		11/01/1994
WONG STEVEN P & LIZ A ROSS	\$77,500		413-76/0		11/01/1994
CAVALLARO A JOSEPH VIRGINIA E	\$160,000		168-199/0		10/07/1987
RAPOSA PETER J ETAL JOSEPH JR	\$49,000		109-591/0		08/01/1985

Building Information

Building 1 : Section 1

Year Built: 1955

Living Area: 1,340
Replacement Cost: \$260,199
Building Percent Good: 65
Replacement Cost Less Depreciation: \$169,100

Building Attributes

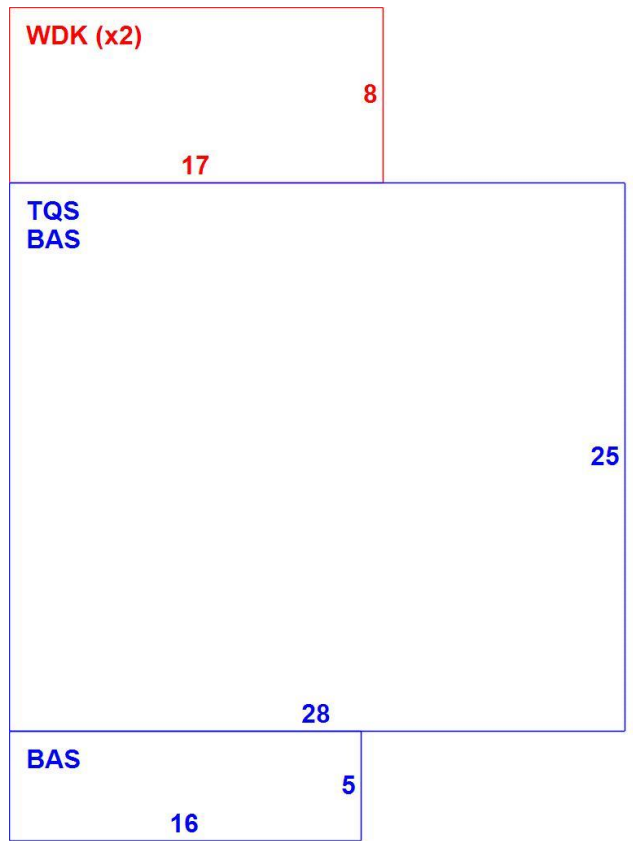
Field	Description
Style:	Cape Cod
Model	Residential
Grade:	Average
Stories:	1.75
Occupancy	1
Exterior Wall 1	Wood Shingle
Exterior Wall 2	Board & Batten
Roof Structure:	Gable/Hip
Roof Cover	Wood Shingle
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Flr 1	Hardwood
Interior Flr 2	Ceram Clay Til
Heat Fuel	Oil
Heat Type:	Hot Water
AC Type:	Heat Pump
Total Bedrooms:	2 Bedrooms
Total Bthrms:	1
Total Half Baths:	1
Total Xtra Fixtrs:	
Total Rooms:	5 Rooms
Bath Style:	Average
Kitchen Style:	Modern
Num Kitchens	01
Cndtn	
X KITCHEN	
FPL	
FPO	
FPG	
Num Park	
Fireplaces	
Fndtn Cndtn	
Basement	

Building Photo



(https://images.vgsi.com/photos/PortsmouthRIPhotos//0016\100_4034_16)

Building Layout



(ParcelSketch.ashx?pid=8153&bid=8153)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	780	780
TQS	Three Quarter Story	700	560
WDK	Deck, Wood	272	0
		1,752	1,340

Extra Features

Extra Features	<u>Legend</u>
No Data for Extra Features	

Land

Land Use		Land Line Valuation	
Use Code	1013	Size (Acres)	0.08
Description	SFR-WATERF MDL-01	Frontage	0
Zone	R10	Depth	0
Neighborhood	0040	Assessed Value	\$254,300
Alt Land Appr Category	No	Appraised Value	\$254,300

Outbuildings

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
PAT1	PATIO-AVG			360.00 S.F.	\$400	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2021	\$122,900	\$234,700	\$357,600
2020	\$122,900	\$234,700	\$357,600
2019	\$116,800	\$144,800	\$261,600

Assessment			
Valuation Year	Improvements	Land	Total
2021	\$122,900	\$234,700	\$357,600
2020	\$122,900	\$234,700	\$357,600
2019	\$116,800	\$144,800	\$261,600

APPLICATION FOR CRMC

CONSTRUCTION OF A NEW DOCK

FOR

Mark DeMello

AP 25 LOT 45

395 Park Avenue

Portsmouth, Rhode Island



PREPARED BY:
PRINCIPE COMPANY, INC.
ENGINEERING DIVISION
27 Sakonnet Ridge Drive
TIVERTON, RI 02878

April, 2023



PROJECT DESCRIPTION

Mark DeMello is the current owner of 395 Park Avenue in Portsmouth, where a new residential dock is being proposed. AP 25 Lot 45 is approximately 2,935 sf in total area. The project to be undertaken in which the CRMC approval is required involves construction of a new residential dock consisting of (2) portions of a fixed dock, (1) sloped dock, an aluminum gangway and a floating terminal dock. The areas of the fixed docks are 156 sf & 32 sf, 120 sf for the sloped dock, 72 sf for the gangway, and 80 sf for the floating dock, respectfully. The proposed dock will extend no further than 50 feet beyond the delineated mean low water, terminating in an area where approximately a 30" depth can be obtained at MLW. The work will commence this spring after CRMC and local permits are issued. Construction should take approximately 2-3 months. See attached site plan where the following work will be performed:

- Construction of a new dock including a 156 sf & 32 sf fixed dock, a 120 sf sloped dock, an 72 sf gangway, and a 80 sf floating dock. Thus, totaling 460 sf in total area, 335 sf of which is past MHW.

VARIANCES REQUESTED

Permission for the dock to be constructed 13.5' to the abutting property line extension in lieu of the 25' required is being requested in order to permit 25' to the other property line. The variance being requested is abutting Lot 44, a vacant lot owned by the Town of Portsmouth. 25' separation is provided to the single family residence on Lot 46.

RELATED SECTIONS

The project location is at 395 Park Avenue in Portsmouth, Rhode Island. The location is shown on the Portsmouth, RI (north)Water Type Map. The project is within Type-2 waters. Reference is made to the Coastal Resources Management Program dated March 30, 2010 and subsequent amendments. Applicable sections for water use and project type are addressed in detail as follows.

1.1.7 VARIANCE CRITERIA

1. The proposed construction conforms with applicable goals and policies of the Coastal Resources Management Program.

The project conforms with the Coastal Resources Management Program goals for Type 2 water to support low intensity recreational and residential uses.

2. The proposed construction will not result in significant adverse environmental impacts or use conflicts, including but not limited to, taking into account cumulative impacts.



The proposed construction will not result in significant adverse environmental impact. There was no SAV observed on the site.

3. Due to conditions at the subject lot, the applicable standard(s) cannot be met.

With the subject lot being about 40' in width, 25' to both property lines is unachievable. Because of this, a 4' wide dock is proposed, throughout the entire length of the dock, at 25' to the abutting (occupied) lot. The lot in which the applicant is seeking a variance is currently a vacant lot, owned by the Town of Portsmouth. In addition, there are no other variances being requested with this application.

4. The application requested by the owner is the minimum variance to the applicable standard(s) necessary to allow a reasonable alteration or use of the site.

As mentioned above, the narrowest dock is being proposed at 4' wide for the dock's length. The minimum 25' is provided to the occupied lot on the west.

5. The requested variance to the applicable standard(s) is not due to any prior action of the applicant or the applicant's predecessors in title. With respect to subdivisions, the Council will consider the factors as set forth in § 1.1.7(B) of this Part below in determining the prior action of the applicant.

Not applicable.

6. Due to the conditions of the site in question, the standard(s) will cause the applicant an undue hardship. In order to receive relief from an undue hardship, an applicant must demonstrate inter alia, the nature of the hardship, and that the hardship is shown to be unique or particular to the site. Mere economic diminution, economic advantage, or inconvenience does not constitute a showing of undue hardship that will support the granting of a variance.

In order to achieve the limited recreational use of the structure, the dock must be constructed closer to one property line. A vacant lot to the east abuts the variance request and the minimum setback distance is provided to the abutter on the west.

SECTION 1.2.1: Tidal and Coastal Pond Waters

Type 2 Waters- Low Intensity Use.

The proposed dock will support the Council's efforts to provide low intensity recreational and residential use while maintaining the scenic value, water quality, and fish and wildlife habitat in Type 2 waters.

SECTION 1.2.2(F): Coastal Cliffs, Bluffs, and Banks

Policies



1. The existing shoreline consists of a rocky & sandy area in order to mitigate erosion. In no case would the coastal feature be significantly altered as a result of the project, as these areas will remain undisturbed. The start of the deck will be from the raised patio above, provide 5' access below the dock at MHW, and extend into the Type 2 waters adjacent to the site.
2. Special Bluff areas, as recognized by the Council, are not involved in this Project.
3. There are no bluffs on the property, it is not considered to be subject to erosion problems.

SECTION 1.3.1(A): Category B Requirements

- The requirements herein for a Category B Assent are necessary data and information for the purposes of federal consistency reviews. All persons applying for a Category B Assent are required to:
- Demonstrate the need for the proposed activity or alteration;

The dock is needed to support low intensity recreational use as permitted in Type 2 waters.

- Demonstrate that all applicable local zoning ordinances, building codes, flood hazard standards, and all safety codes, fire codes, and environmental requirements have or will be met; local approvals are required for activities as specifically prescribed for non-tidal portions of a project in §§ 1.3.1(B), (C), (F), (H), (I), (K), (M), (O) and (Q) of this Part; for projects on state land, the state building official, for the purposes of this section, is the building official;

There are no potential impacts to fire code, flood hazards, safety codes, environmental requirements, or zoning ordinance since the deck will extend no further than what is acceptable to both CRMC and the constrained site.

- Describe the boundaries of the coastal waters and land area that is anticipated to be affected;

The proposed dock will extend approximately 50' beyond MLW in the Point Judith Pond.

- Demonstrate that the alteration or activity will not result in significant impacts on erosion and/or deposition processes along the shore and in tidal waters;

The proposed dock will not alter the existing shoreline in any way and therefore will not have any significant impacts on erosion or deposition along the shore.

- Demonstrate that the alteration or activity will not result in significant impacts on the abundance and diversity of plant and animal life;

The dock provides no threat to the abundance and diversity of plant and animal life.

- Demonstrate that the alteration will not unreasonably interfere with, impair, or significantly impact existing public access to, or use of, tidal waters and/or the shore;



The proposed dock will be just about even (in elevation) with the patio above the shoreline, with a total of 3 steps up to the dock. The walkway beneath provides the 6' vertical access allowable by CRMC. Therefore, there are no proposed impact to the public access, or use of, tidal waters and the shore. In addition, there are no mooring fields within 50' of the project.

- Demonstrate that the alteration will not result in significant impacts to water circulation, flushing, turbidity, and sedimentation;

The number of pilings proposed was minimized in order to prevent any significant impacts on water circulation, flushing, turbidity, and sedimentation while still providing structural support for the proposed dock.

- Demonstrate that there will be no significant deterioration in the quality of the water in the immediate vicinity as defined by DEM;

All materials used in the construction of the proposed dock are intended for marine use and will not have a significant effect on the water quality. The owners recognize the significance of maintaining good water quality and instill this on anyone that uses their space.

- Demonstrate that the alteration or activity will not result in significant impacts to areas of historic and archaeological significance;

The proposed dock will not impact any historic or archeologic areas.

- Demonstrate that the alteration or activity will not result in significant conflicts with water dependent uses and activities such as recreational boating, fishing, swimming, navigation, and commerce, and;

The proposed dock meets all length standards as set forth by CRMC. In addition, the Sakonnet River is an open-mouthed bay in which the subject lot sits at the north most end. There will be no impact to water dependent activities.

- Demonstrate that measures have been taken to minimize any adverse scenic impact (see § 1.3.5 of this Part).

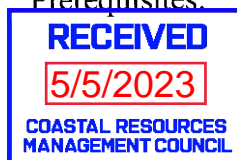
The dock will be no higher than what is necessary per CRMC's regulations and no lower than what is required to allow pedestrian bypass.

SECTION 1.3.1(D): Residential, Commercial, Industrial, and Public Recreational Structures

Policies

1. See Section 1.3.6 for Public Access Plan

Prerequisites:



7. Transportation and utility services for commercial and industrial structures do not apply to this project.

Prohibitions:

None of the prohibitions outlined in the CRMP would be violated as a result of this project.

Standards:

- 1.a,c. Grading of shoreline features and commercial docks are not applicable to this project.
- 2.a,b. Minimal excavation and grading shall be required as part of the project.

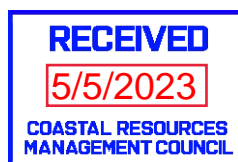
SECTION 1.3.5: GUIDELINES FOR THE PROTECTION AND ENHANCEMENT OF THE SCENIC VALUE OF THE COASTAL REGION

General:

The project will not change the skyline as viewed from the water as can be clearly illustrated from the photos on Sheet 3 of the proposed dock plan. Therefore, the project will maintain scenic value of the area while maintaining the existing natural coastal features. Additional photos are attached below.

CONCLUSION

This project meets all of the requirements of the CRMP for the designated water and shoreline type. Therefore, the project is consistent with the goals of the CRMP for preserving and protecting the state's coastal resources.

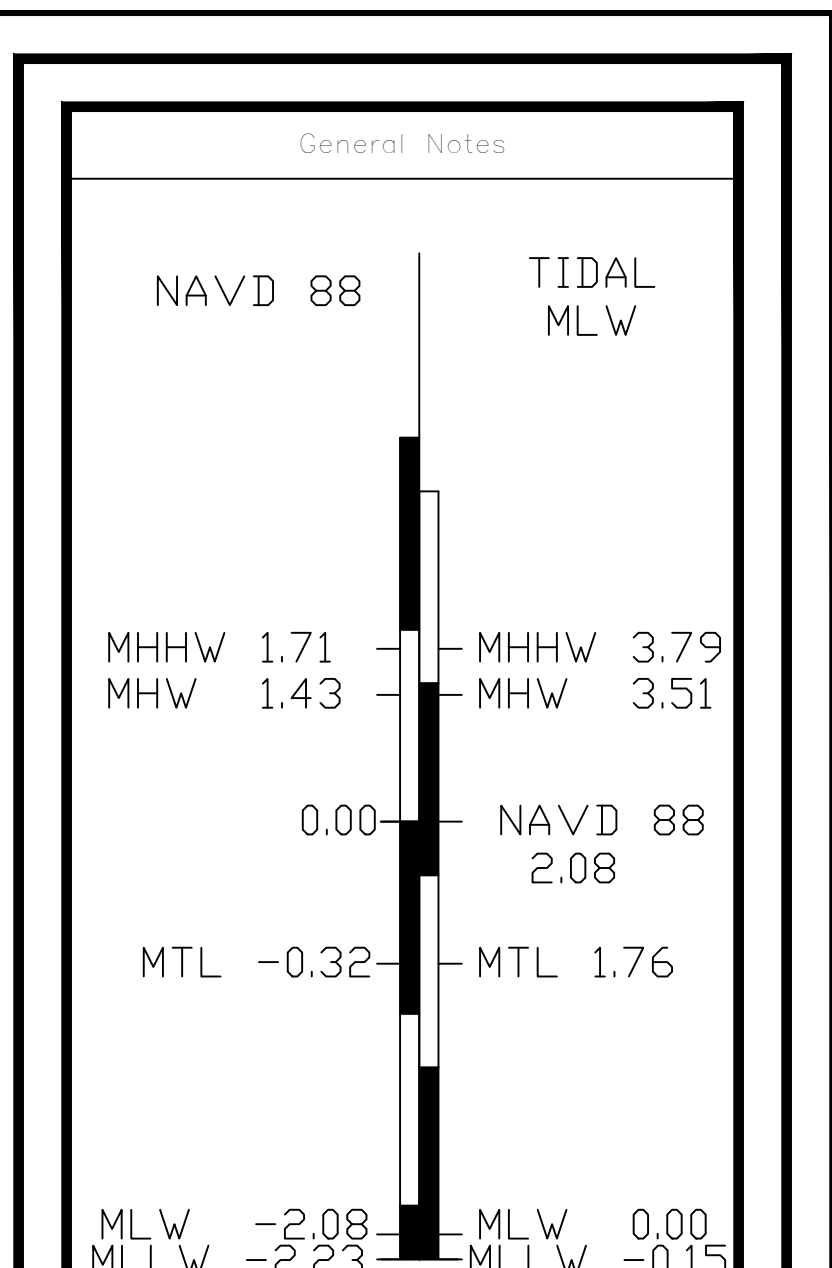
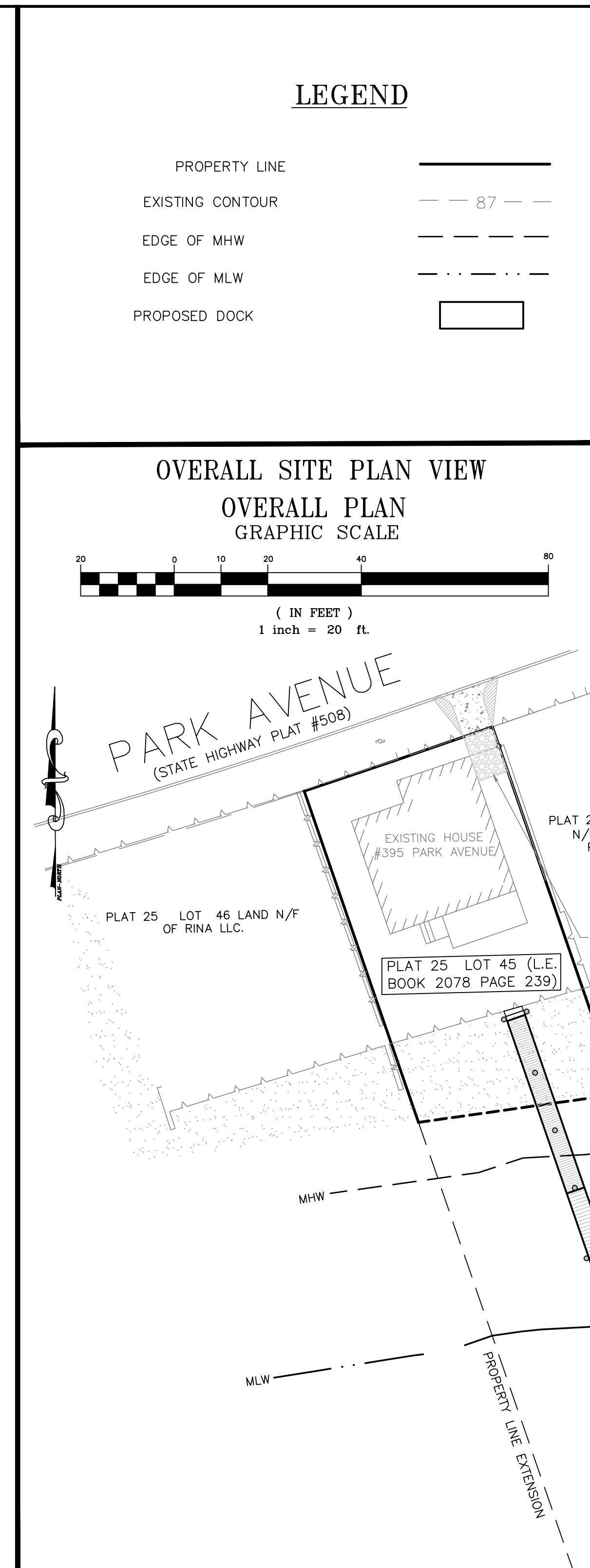
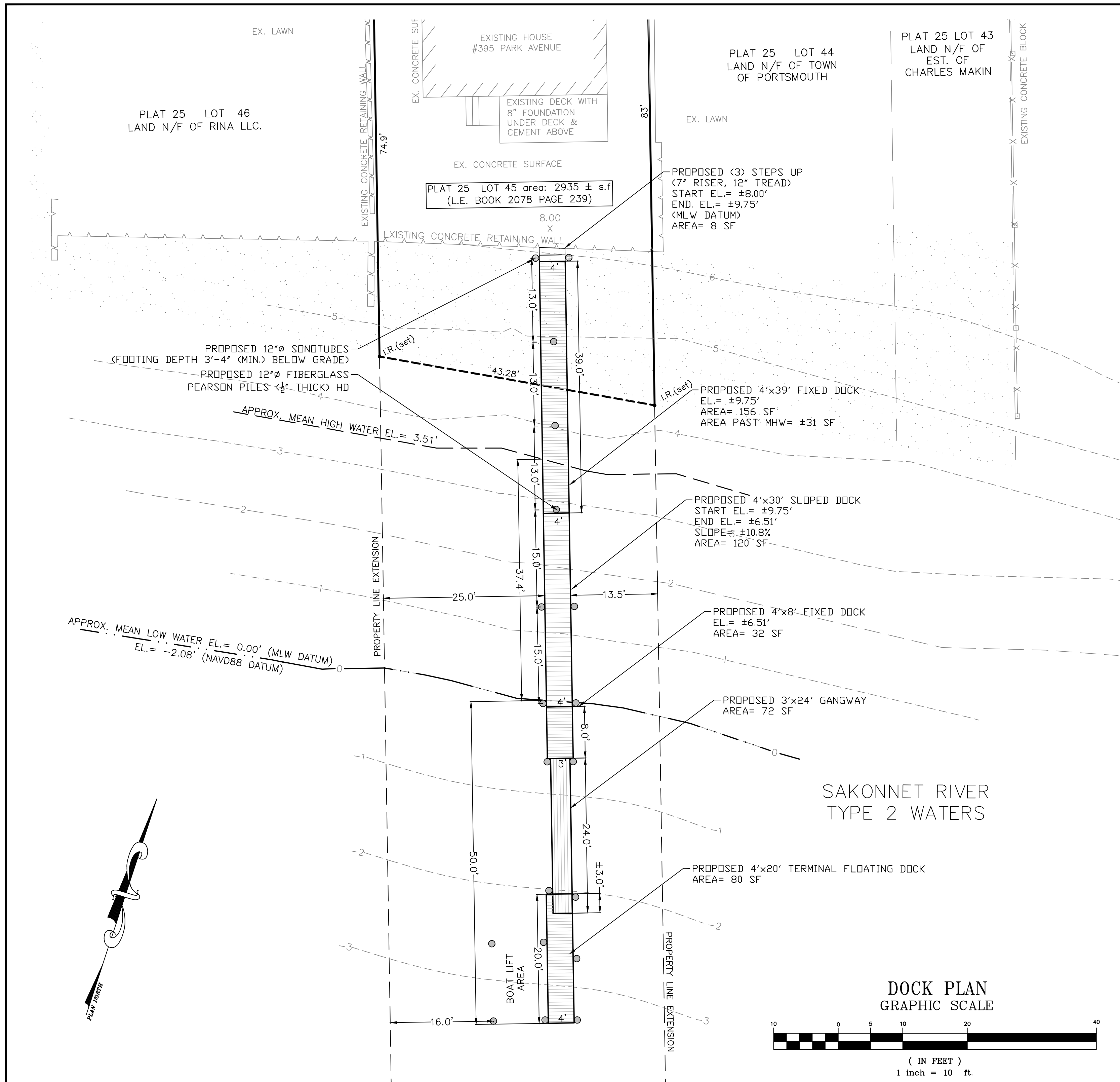




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MANAGEMENT COUNCIL



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MANAGEMENT COUNCIL



DATUM INFORMATION
NANNAQUAKET, RI 0450954

SURVEY NOTE:
CLASS 1 BOUNDARY SURVEY
PERFORMED BY:
JOHN BARKER, PLS
168 HIGH STREET
BRISTOL, RI 02809
401.254.0824

NOTE:
ALL ELEVATIONS ARE IN REFERENCE TO
MLW DATUM (SEE TIDAL CHART ABOVE)

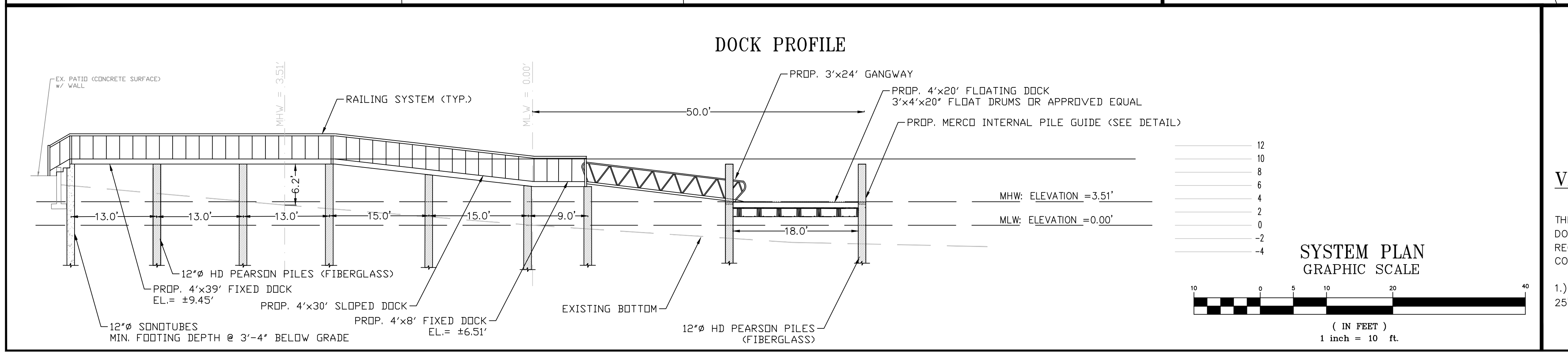
DOCK AREA:

4'x39' FIXED DOCK = 156 SF
4'x30' SLOPED DOCK = 120 SF
6'x8' FIXED DOCK = 32 SF
3'x24' GANGWAY = 72 SF
4'x20' TERMINAL = 80 SF

TOTAL DOCK AREA = 460 SF
TOTAL AREA PAST MHW = 335 SF

OWNER/APPLICANT
MARC DEMELLO

No.	Revision/Issue	Date



ZONING (R10):

MIN. LOT AREA: 10,000 SF
MIN. FRONT YARD: 100 FT
MIN. REAR YARD: 20 FT
MIN. SIDE YARD: 20 FT
MAX. LOT COVERAGE: 20%
MAX. BUILDING HEIGHT: 35 FT

VARIANCE NOTE:

THE FOLLOWING ARE A LIST OF ITEMS THAT DO NOT FULLY MEET CRMC'S RULES AND REGULATIONS DUE TO EXISTING SITE CONSTRAINTS AND ARE REQUESTING RELIEF:

1.) PROPERTY LINE (EXTENSION) SETBACK - 25' MIN. REQUIRED
-13.5' PROVIDED

PRINCIPE COMPANY, INC.
ENGINEERING DIVISION
ESTABLISHED IN 1981

PO BOX 298
TIVERTON, RI 02878
PHONE: 401.265.1090
EMAIL: PRINCIPEENGINEERING@GMAIL.COM
WWW.PRINCIPEBUILDERSRI.COM

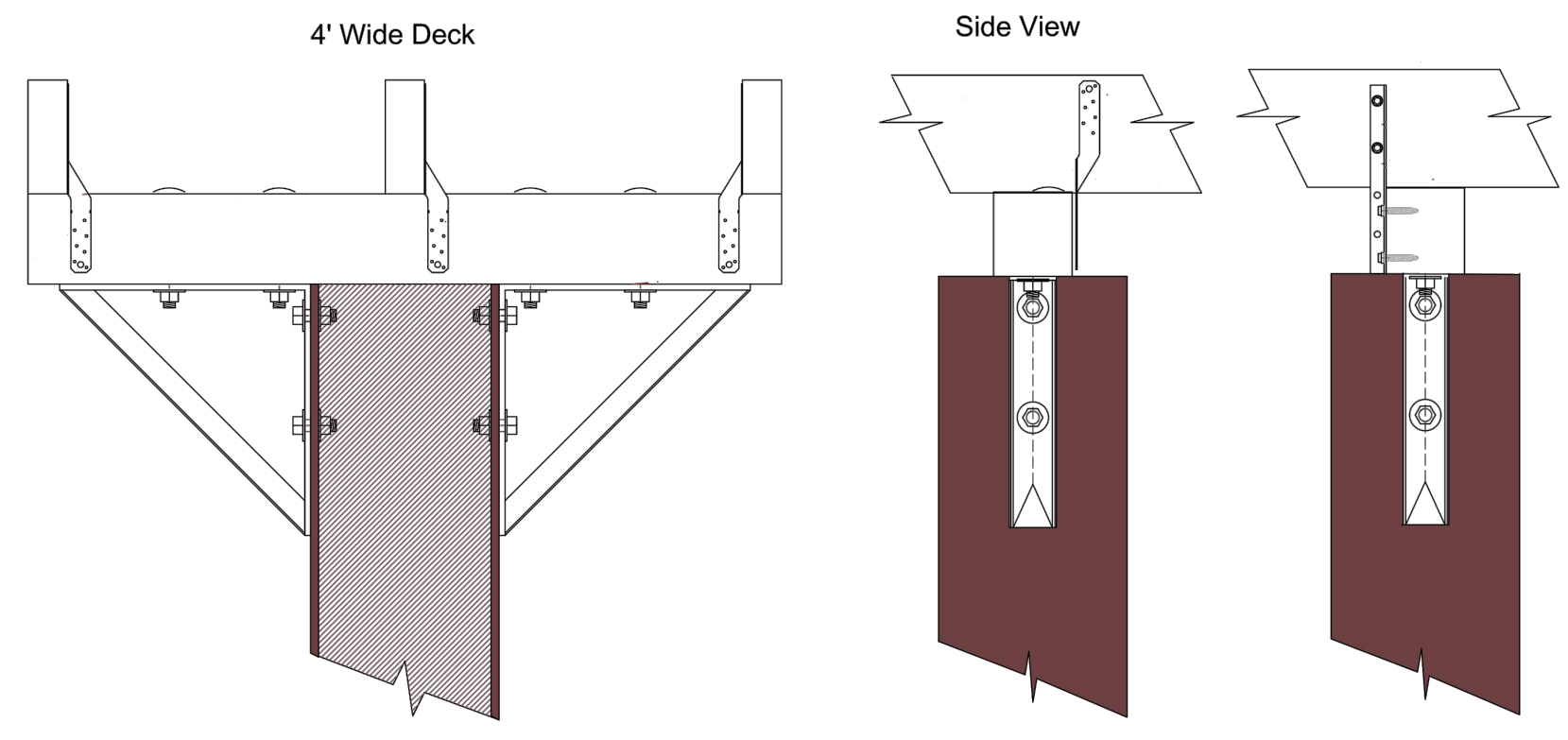
NEW DOCK PLANS
for
AP 25 LOT 45
395 PARK AVENUE
in
PORTSMOUTH, RHODE ISLAND

Project	Sheet
Date: 04/28/2023	1 OF 3
Scale:	

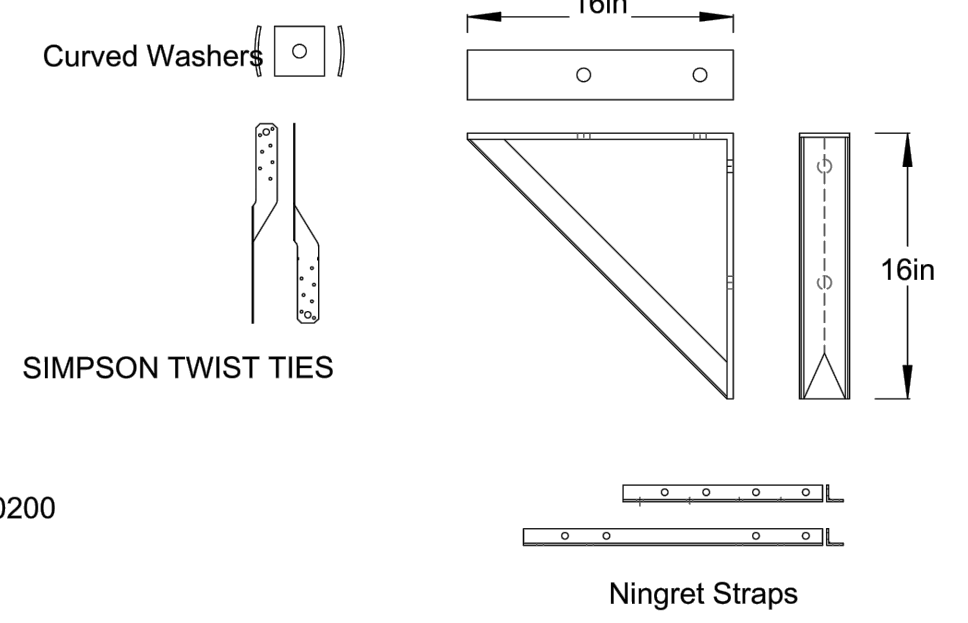
Thomas J. Principe, III
No. 9107
REGISTERED PROFESSIONAL ENGINEER

RECEIVED
5/5/2023
COASTAL RESOURCES MANAGEMENT COUNCIL

C:\Users\Joshua\Principe Engineering\Drawings\Survey\2022\SVY_2022-2_395_Park_Ave_Portsmouth_Dock Design.dwg, DWG, To: PDF, pc3



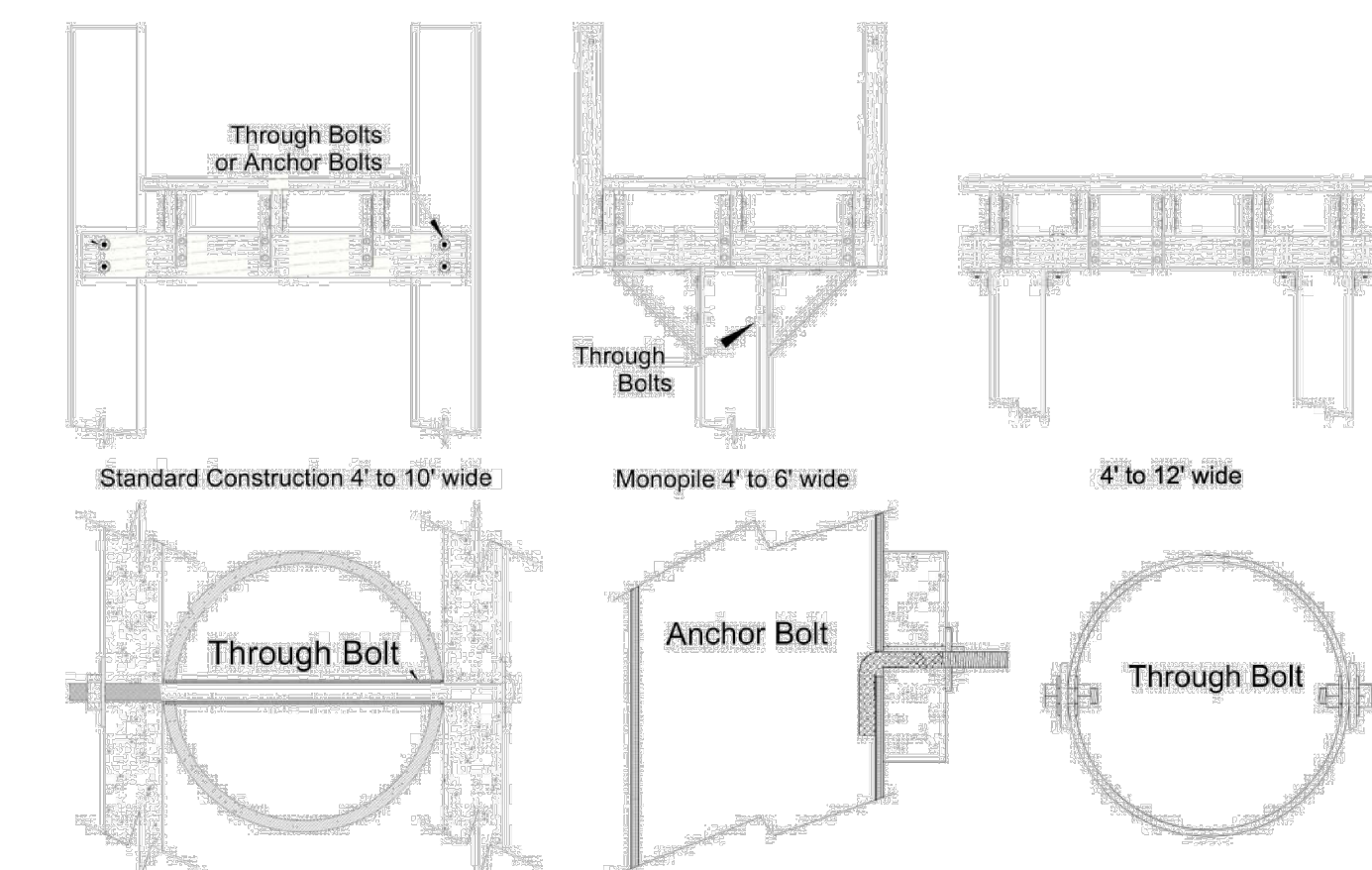
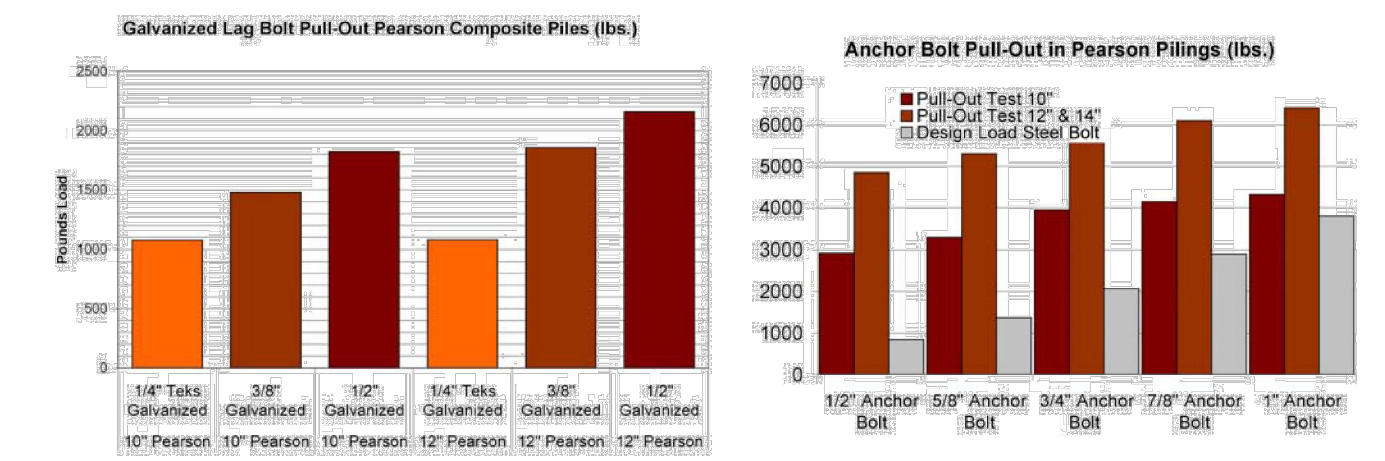
- Monopile Requirements:**
- 2 Monopile Brackets
 - 4 x 6 P.T. Beam (Pile Cap) for 4' wide deck
 - 4 - 3/4 x 2 Galvanized bolts
 - 8 - 3/4" Galvanized Standard Washers
 - 4 - 3/4" Galvanized Curved Washers
 - 4 - 3/4 x 8 Galvanized Timber Bolts (6" Timber)
 - Simpson MTS12 Twist Strap 16 ga.
 - 10d galvanized nails
 - (or Ningret Straps & Bolts) Ningret Marine - (401) 364-0200



Attachment and Assembly Data

Due to the three dimensional fiber architecture of Pearson Pilings fiberglass reinforcements, through-bolts and anchor bolts are all used for various installations and applications. Even lag bolts can be used for non-structural fastening. The holding and pull-out strength of bolted connections to the composite pile typically exceed the operating load recommendations for galvanized bolts as shown below. Structural cross members, beams, boat lifts and ramp hardware should be attached using either anchor bolts or through bolts.

Lag bolts may be used for non-structural connections and fitting of cleats, line holders, hand rails, fenders, ladders, benches and lighting fixtures. 1/2" Washer Head Tek screws should be used for attaching pile caps - most self tapping screws will work, but avoid those with flanges on the drill section.



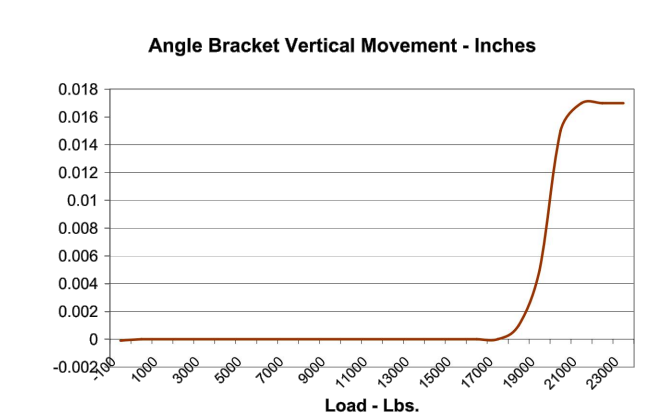
© 2007 Pearson Pilings LLC



Pearson Pilings Testing Angle Bracket / 3/4" Bolts

In order to determine recommended loading for the use of galvanized brackets with a single 3/4" bolt, an axial load test was performed. To simplify the fixture, the 4" square brackets were attached to the end of a 10" diameter pile so that the flats were above the pile top by .250".

The elongation in the pile wall did not propagate from 18,000 lbs. to 23,000 lbs. at which point the 3/4" bolts started to deform. The test was discontinued at this point.



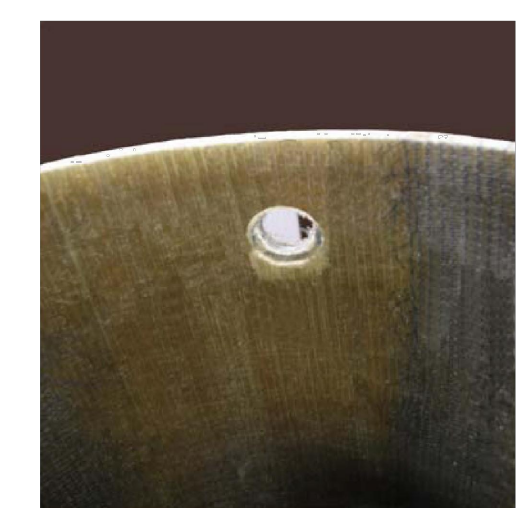
Assembled Brackets - 10" Pile



18,000 lb load distributed over 2 brackets. The load was applied in increments of 1,000 lbs. - there was a compressive deformation in the composite pile wall at 18,000 lbs. total load (9,000 lbs. per bracket).



Bolt Hole Elongation - exterior



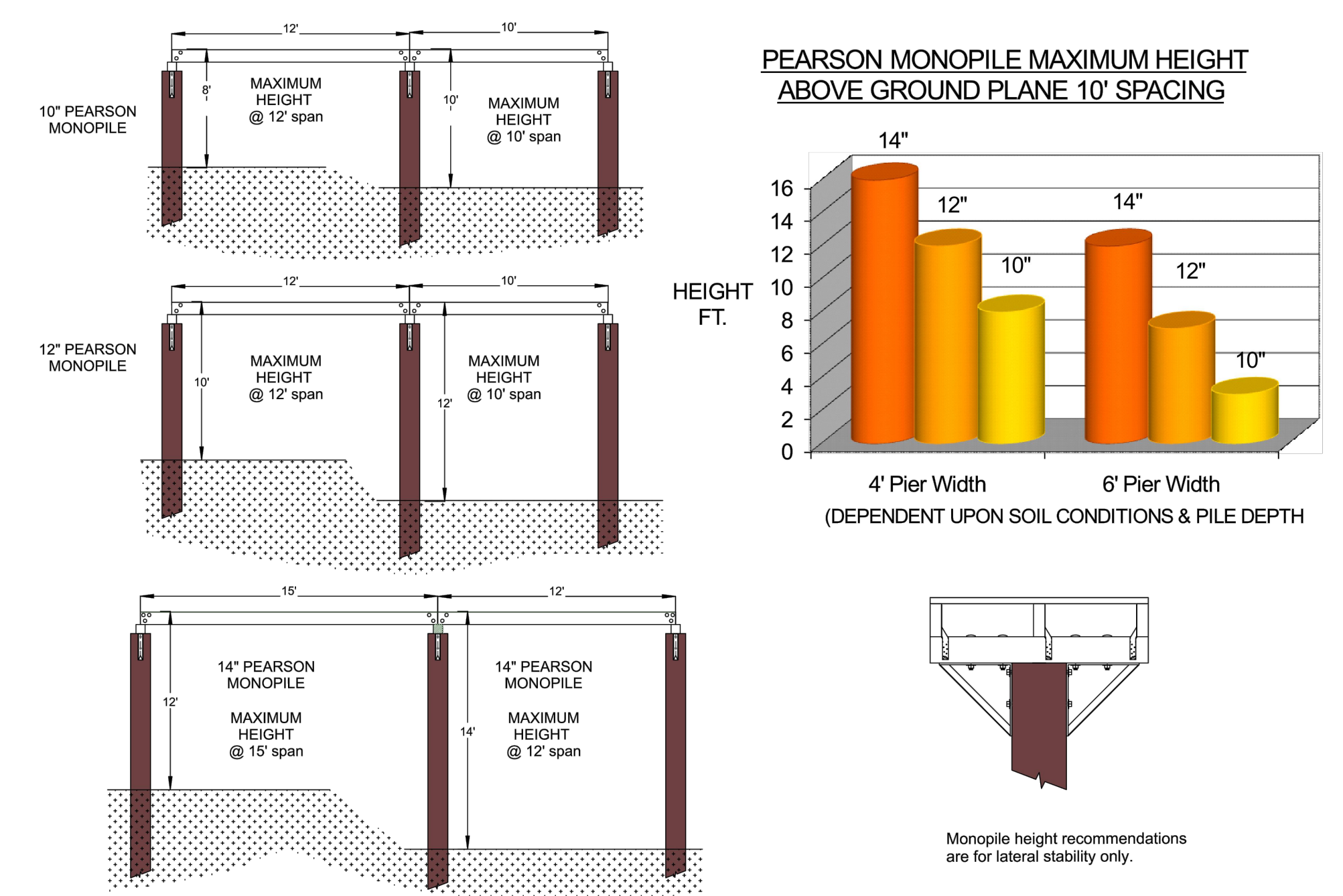
Bolt Hole Elongation - interior

The nominal working load of a 3/4" galvanized bolt is typically 4,400 lbs. and the yield of the composite pile wall (10" diameter) is 9,000 lbs. with a recommended capacity for bolt shear the same as the working load of the bolt.

Testing performed at the Kirk Laboratory, Civil Engineering Dept., University of Rhode Island © 2007 Pearson Pilings, LLC

Q1. What kind of pile drivers have you used on Pearson Piles?

A1. We have used drop, impact (hydraulic, pneumatic, diesel) and vibratory hammers with a sheet pile clamp to drive the composite piles with no problems and little or no damage to the cosmetics. What does seem to work best with vibratory hammers is a sheet pile clamp that grips one edge of the pile. We usually insert a 1/4 section of a pile cut-off to reduce cosmetic damage, but even without it we only damage 8" of the top. Normally this is cut off when capping the piles. A pile clamp works well, but the clamp pressure needs to be reduced and a wood plug inserted into the composite pile. The top 3-to-4 feet will then be trimmed off.

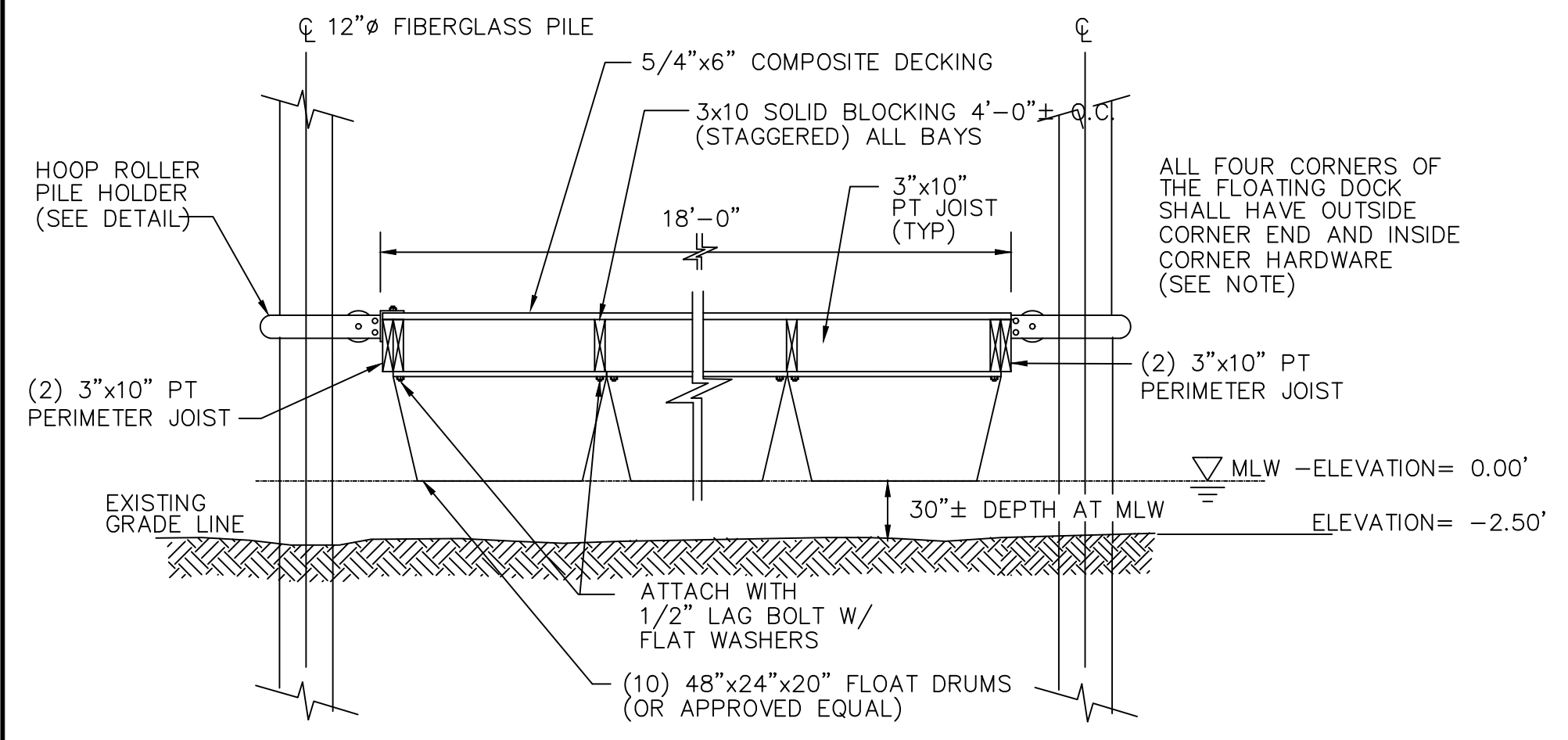


MONOPILE HEIGHT RECOMMENDATIONS

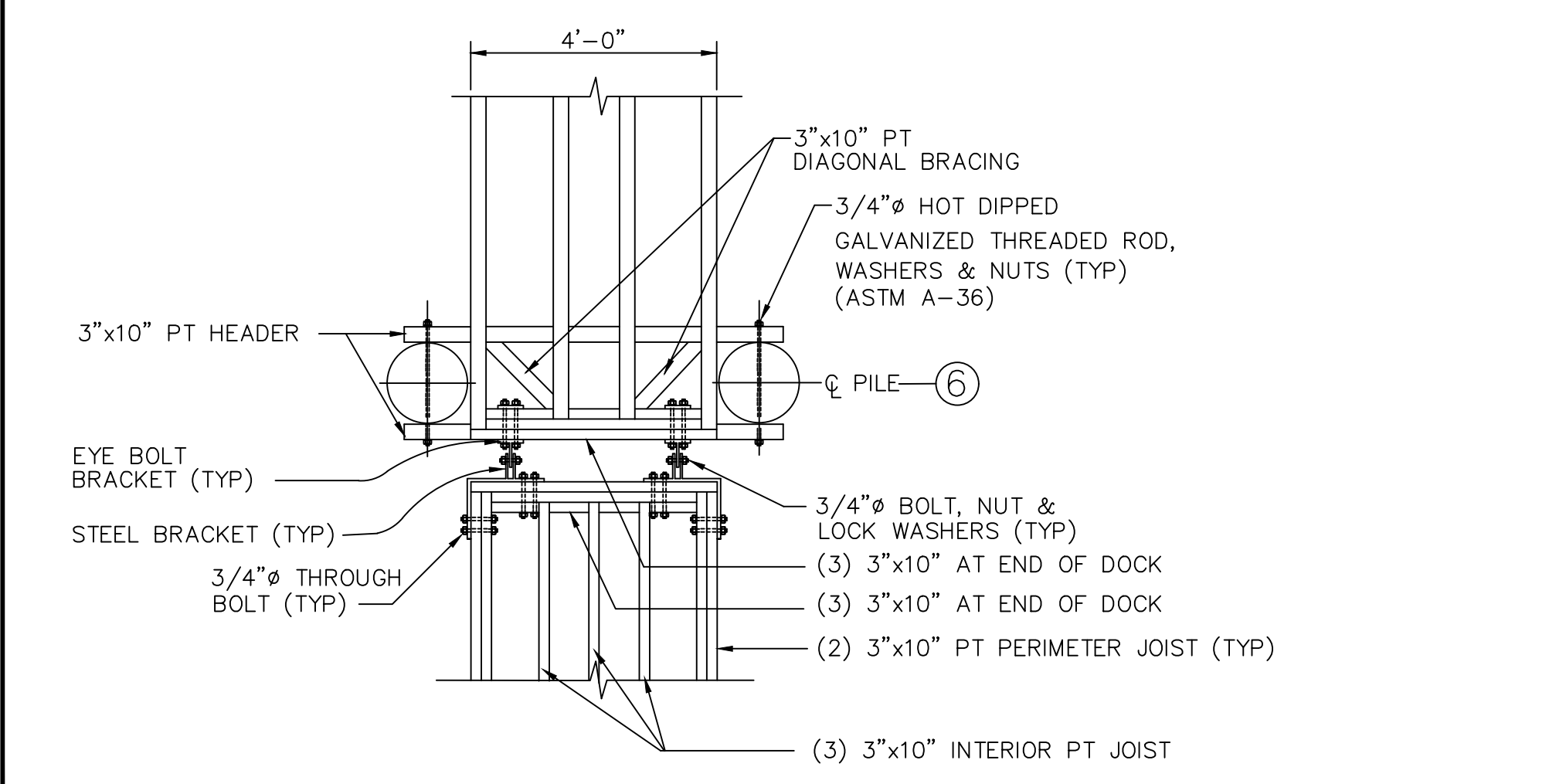
PEARSON PILINGS LLC
44 Airport Road
Fall River, MA 02720
508-675-0594
www.pearsonpilings.com

MONOPILE MATERIALS

PEARSON PILINGS LLC
44 Airport Road
Fall River, MA 02720
508-675-0594
www.pearsonpilings.com



SECTION B-B SCALE: 1/2"=1'-0"



DETAIL C-PLAN VIEW SCALE: 1/2"=1'-0"

Engineering Data - Pearson Composite Piles



Materials Properties	Piling Diameter				
	8"	10"	12"	14"	16"
Reinforcement (grams/square meter)	2269	6072	7997	8329	10084
A quasi-isotropic three dimensional proprietary fabric utilizing e-glass grade filaments Exceptional damage tolerance with no crack propagation					
Resin Matrix An epoxy / vinyl ester, with high elongation, low styrene monomer, excellent hydrolytic stability and high heat deflection temperature, will not leach, inert, high chemical resistance, insoluble in any common hydrocarbons, mild acidic or alkaline solutions					
Mechanical Properties	Piling Diameter				
Minimum Values	8"	10"	12"	14"	16"
Axial Tensile Strength - psi	50,122	50,490	68,000	66,890	64,300
Axial Tensile Modulus - (MOE) - psi	4,547,780	3,530,000	4,030,000	4,100,000	3,960,000
Axial Flexural Strength - psi	58,400	79,650	89,400	91,450	89,600
Axial Compressive Strength - psi	43,320	67,000	76,800	77,460	74,800
Transverse Tensile Strength - psi	11,733	29,000	27,600	28,700	28,400
Transverse Tensile Modulus - psi	2,433,870	1,760,000	1,774,000	1,760,000	1,770,000
Interlaminar Shear Strength - psi	13,000	12,000	12,000	12,000	12,000
Effective Bending Stiffness - psi	1.190E+08	3.214E+08	9.333E+08	1.528E+09	2.507E+09
Young's Modulus	4,547,780	3,530,000	4,030,000	4,100,000	3,960,000
Poisson's Ratio	0.22	0.25	0.23	0.24	0.24
Allowable Bending Moment - kips-ft (FS = 2)	16	19	56	69	101
Allowable Axial Load - kips short column	100	210	280	515	800
Barcol Hardness	>50	>50	>50	>50	>50
Glass to Resin Ratio - by weight	~60:40	~60:40	~60:40	~60:40	~60:40
Aprox. Wall Thickness - inches	~.117	~0.250	~0.375	~0.375	~0.500
Aprox. Weight - lbs/ft	4	7	10	13	20
Thermal Expansion - in/in/°F	<.000014	<.000012	<.000006	<.000006	<.000006
Water Absorption - %	<.25	<.25	<.25	<.25	<.25

For more information contact:
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Pearson Pilings does have the ability to customize laminates to meet the needs of your project should requirements exceed our standard piling specifications

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General Notes

Thomas J. Principe, III
No. 9107
REGISTERED PROFESSIONAL ENGINEER

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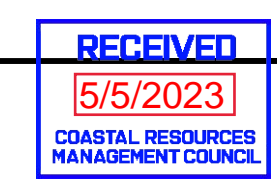


No.	Revision/Issue	Date

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NEW DOCK PLANS
for
AP 25 LOT 45
395 PARK AVENUE
in
PORTSMOUTH, RHODE ISLAND

Project	Sheet
Date: 04/28/2023	2 OF 3
Scale:	



C:\Users\Joshua\Principle Engineering\Drawings\Survey\2022\SVY_2022-2_395_Park_Ave_Portsmouth_Mark_DuMeno\SVY_2022-2_395_Park_Ave_Portsmouth... Dock Design.dwg, DWG, To PDF.pc3

CRMC DOCK NOTES: (Section 300.4 - Recreational Boating Facilities)

- The Executive Director or the Deputy Director may only grant a variance for the extension of a recreational or limited recreational boating facility out to 75 feet beyond MLW or up to a 50% increase beyond the fifty (50) foot standard (Section 300.4.E.3.1) provided engineering, biological, and other appropriate concerns are met.
- All residential and limited recreational dock designs shall be in accordance with Table 3 - Minimum Design Criteria, but in no case shall any structural member be designed to withstand less than 50 year storm frequency, including breaking wave conditions in accordance with ASCE 7 (current edition) and FEMA Manual 55. All design elements including the bathymetry shall be stamped by a Rhode Island registered Rhode Island Professional Engineer.
- Fixed structures which are for pedestrian access only shall be capable of supporting forty (40) pounds per square foot live load as well as their own dead weight; floating structures shall be capable of supporting a uniform twenty (20) pounds per square foot live load, or a concentrated load of four hundred (400) pounds. A written certification by the designer that the structure is designed to support the above design loads shall be included with the application.
- No creosote shall be applied to any portion of the structure.
- A residential or limited recreational boating facility shall be a maximum of four (4) feet wide, whether accessed by a fixed pier or float. The terminal float size shall not exceed one hundred fifty (150) square feet to be reviewed as a Category A application. A variance may be granted up to 200 square feet in excessive fetch areas, however this shall be reviewed as a Category B application at the full Council. In the absence of a terminal float, a residential boating facility may include a fixed terminal T or L section, no greater than four (4) by twenty (20) feet in size.
- All new or replacement floats shall utilize floatation that was specifically fabricated for marine use and warranted by its manufacturer for such use. Foam billets or foam bead shall not be utilized unless they are completely encapsulated within impact resistant plastic.
- Where possible, residential boating facilities shall avoid crossing coastal wetlands. In accordance with Section 300.17, those structures that propose to extend beyond the limit of emergent vegetative wetlands are considered residential boating facilities. Facilities shall be located along the shoreline so as to span the minimal amount of wetland possible. Facilities spanning wetlands shall be elevated a minimum of four (4) feet above the marsh substrate to the bottom of the stringers, or constructed at a 1:1 height to width ratio. Construction in a coastal wetland shall be accomplished by working out from completed sections. When pilings are placed within coastal wetlands, only the immediate area of piling penetration may be disturbed. Pilings should be spaced so as to minimize the amount of wetland disturbance. No construction equipment shall traverse the wetland while the facility is being built.
- Owners are required to maintain their facilities in good working condition. Facilities may not be abandoned. The owner shall remove from tidal waters and coastal features any structure or portions of structures which are destroyed in any natural or man-induced manner.
- Float ramps and other marine appurtenances or equipment shall not be stored on a coastal feature or any area designated as a CRMC buffer zone.
- The use of cribs for structural support shall be avoided. The use of cribs as support in tidal waters may be permitted given certain environmental design considerations. However, in these instances the size and square footage shall be minimized and the structure cannot pose a hazard to navigation. When cribs are permitted for structural support, they must be removed when the useful life of the structure has ceased (e.g. the structure is no longer used as a means of accessing tidal waters).
- Residential and limited recreational boating facilities shall not intrude into the area within twenty five (25) feet of an extension of abutting property lines unless (1) it is to be common structure for two or more adjoining owners, concurrently applying or (2) a letter or letters of no objection from the affected owner or owners are forwarded to the CRMC with the application. In the event that the applicant must seek a variance to this standard, the variance request must include a plan prepared by a RI registered Land Surveyor which depicts the relationship of the proposed facility to the affected property line(s) and their extensions.
- Residential and limited recreational boating facilities shall not extend beyond that point which is (1) 25% of the distance to the opposite shore (measured from mean low water), or (2) fifty (50) feet seaward of mean low water, whichever is the lesser.
- All residential and limited recreational docks, piers, and floats shall meet the setback policies and standards contained in municipal harbor management plans and/or harbor ordinances approved by the Council. However, in all cases, residential docks, piers, and floats shall be setback at least fifty (50) feet from approved mooring fields and three-times the U.S. Army Corps or Engineers authorized project depth from federal navigation projects (e.g., navigation channels and anchorage areas).
- The surface of the dock, pier and float shall be designed in a manner which provides safe traction and allows for the appropriate drainage of water.
- As part of a residential or limited recreational boating facility, the terminal float may be designed such that it facilitates the access of small vessels such as kayaks, dinghies, personal water craft, etc., onto the float, provided that all other programmatic requirements are met. Mechanical apparatus to accomplish this shall not exceed twenty four (24) inches in height from the top of the float.
- All residential and limited recreational docks shall have the centerline of the structure between its most seaward and most landward portion designated on the plans with State Plane Coordinates (NAD83). A WAAS enabled GPS system with an accuracy of +/- 3 meters shall be considered acceptable. The Executive Director shall have the discretion to require greater accuracy.
- Lateral Access shall be provided under, around or over as appropriate for the site conditions at all new residential docks.
- All residential and limited recreational docks shall be certified by the Design Engineer that it was constructed according to the approved plans within typical marine construction standards. The Executive Director shall have the discretion to require AS-BUILT survey plans of residential and limited recreational docks that includes property lines.

E.3.1 Residential and Limited Recreational Docks with Excessive Fetch Standards

- A location shall be considered to have excessive fetch if there is a 20° sector over four miles in any direction in which wind can blow over the water to generate waves.
- Boat lifts, suitably designed and installed, are encouraged for docks with excessive fetch.
- Residential and limited recreational docks with excessive fetch shall provide uplift calculations as part of the required calculation package.
- All structural elements, including the boat lift, shall be designed to withstand the 100 year storm frequency, including breaking wave conditions in accordance with ASCE 7 (current edition) and FEMA Manual 55.
- All residential and limited recreational docks with excessive fetch shall have an As-built plan on file with the CRMC within thirty (30) days of construction that certifies conformance with the approved plans.
- All residential and limited recreational docks with excessive fetch shall be inspected and certified by a Registered Professional Engineer licensed in Rhode Island that all elements of the dock and lift system meet the requirements of ASCE 7 (current edition) or FEMA Manual 55 every five (5) years.

DESIGN CRITERIA PER TABLE 3

- Min. Pile Tip diameter - 10"
- Min. Pile But diameter - 12"
- Residential Minimum Pile embedment - 10 feet
- Residential Deck load - 40 psf LL / 400 lb concentrated
- Min Float Freeboard - 12"
- *including LL and DL
- Design Wind Loads - wind gust based on 50 year return and natural period of 60 seconds
- Wave Conditions (min) - All fixed and floating structure shall be designed for a 3'
- Min / Max Float freeboard - 8" / 30"
- Minimum Stringer/Joist - 3"x10"
- Minimum through bolt Hardware Diameter - 3/4" hot dipped galvanized
- Minimum Cross bracing - 3"x10"
- Minimum lag bolt diameter - 1/2"
- Minimum Water depth at the terminus of recreational boating facilities - 18" MLW
- Required Datum - MLW

Min Pile Cut Off	V zone elevation + float freeboard +1'
Steel or cast steel	490 pcf
Cast iron	450 pcf
Aluminum alloys	175 pcf
Timber (untreated)	40-50 pcf
Timber (treated)	45 - 60 pcf
Concrete, reinforced (normal weight)	145 - 155 pcf
Concrete, reinforced (lightweight)	90-120 pcf
Asphalt paving	150 pcf
Granite Block	165 pcf

BREAKING WAVE LOAD ON VERTICAL PILE CALCULATION

$$F = \frac{1}{2} C \gamma D H^2 = \frac{1}{2} (1.75)(64 \text{ lb/ft}^3)(1 \text{ ft})(13.26 \text{ ft})^2 = \frac{1}{2} (19,693) = 9,846 \text{ lb}$$

$$M = 9,846 \text{ lb} (17 \text{ ft}) = 167,388 \text{ ft-lb} / 5 \text{ piles} = 33,477 \text{ ft-lb}$$

- F = drag force acting at the stillwater elevation
- C = breaking wave coefficient (1.75 for round piles)
- γ = specific weight of salt water (64 lb/ft³)
- D = pile diameter
- H = breaking wave height at design stillwater depth (H = 0.78(17 ft) = 13.26 ft)
- M = moment applied by breaking wave load

HYDRODYNAMIC LOAD ON VERTICAL PILE CALCULATION

$$F = \frac{1}{2} C \rho V^2 A = \frac{1}{2} (1.2)(1.99 \text{ slug/ft}^3)(17 \text{ ft/s})^2(17 \text{ ft}^2) = \frac{1}{2} (11,732) = 5,866 \text{ lb}$$

$$M = 5,866 \text{ lb} (8.5 \text{ ft}) = 49,862 \text{ ft-lb} / 5 \text{ piles} = 9,972 \text{ ft-lb}$$

- F = hydrodynamic load acting at mid-depth
- C = drag coefficient (1.2 for round piles)
- ρ = density of salt water (1.99 slug/ft³)
- A = surface area of pile normal to flow
- V = velocity of water (V = ds/t = 17ft / 1sec = 17 ft/s)
- M = moment applied by hydrodynamic load

DEBRIS IMPACT LOAD ON VERTICAL PILE CALCULATION

$$F = W V C_D C_B C_{str} = (1,000 \text{ lb})(11.7 \text{ ft/s})(1.0)(1.0)(0.2) = 2,340 \text{ lb}$$

$$M = 2,340 \text{ lb} (17 \text{ ft}) = 39,780 \text{ ft-lb} / 5 \text{ piles} = 7,956 \text{ ft-lb}$$

- F = debris impact load in pounds
- W = weight of the object (recommended 1,000 lb weight)
- C_D = depth coefficient (1.0 = for > 5 ft depth)
- C_B = blockage coefficient (1.0 = for no upstream screening)
- C_{str} = structure coefficient (0.2)
- V = velocity of water (V = 1/2(g ds)^(1/2) = 1/2(23.4) = 11.7 ft/s)
- M = moment applied by debris impact load

MAXIMUM BENDING MOMENT

$$M_{max} = 33,477 + 9,972 + 7,956 = 51,405 \text{ ft-lb} = 51.4 \text{ kip-ft} < 56 \text{ kip O.K.}$$

VERTICAL UPLIFT FORCE ON PIER DECK

$$F = \gamma h L W = (64 \text{ lb/ft}^3)(7.25 \text{ ft})(10 \text{ ft})(4 \text{ ft}) = 18,560 \text{ lb}$$

- F = vertical uplift force per pile from wave slam on pier deck
- γ = specific weight of salt water (64 lb/ft³)
- h = height of wave above pier deck (h = 17 ft - 9.75 ft = 7.25 ft)
- L = length of pier between piles (10 ft per design)
- W = width of pier deck (4 ft per design)

BUOYANCY UPLIFT FORCE PER PILE

$$F = \gamma (\text{vol.}) = (64 \text{ lb/ft}^3)(13.4 \text{ FT}^3) = 860 \text{ lb}$$

- F = upward buoyancy force per pile
- γ = specific weight of salt water (64 lb/ft³)
- vol. = volume of each pile (vol. = 17 ft x π (0.5')² = 13.4 ft³)

MAXIMUM UPLIFT FORCE

$$F_{max} = 18,560 + 860 = 19,420 \text{ lb} < 25,000 \text{ lb O.K.}$$

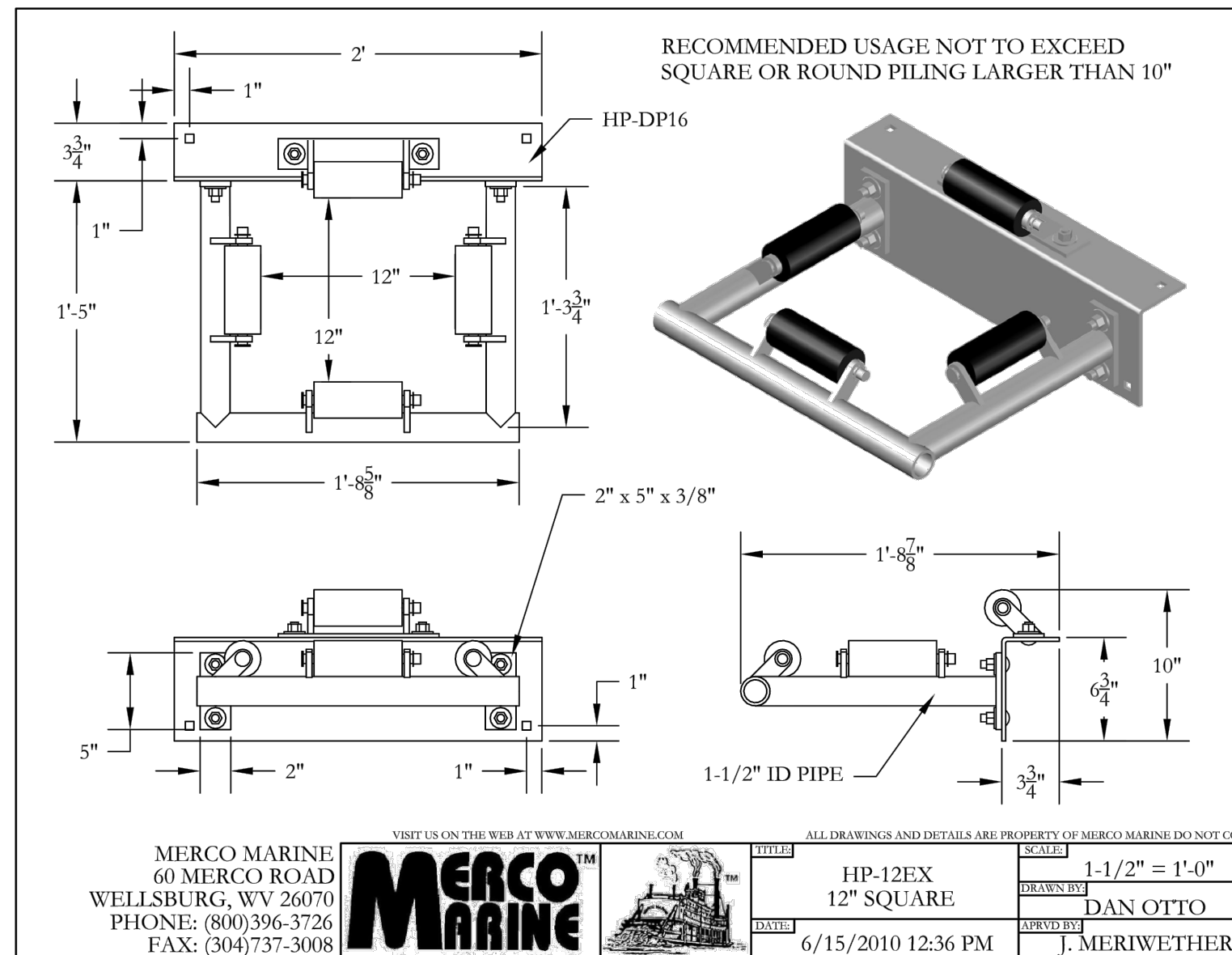
NOTE: Pile driver to establish a minimum resistance of 25,000 lb per pile according to above uplift calculations. All work to be coordinated with engineer.

NOTES:

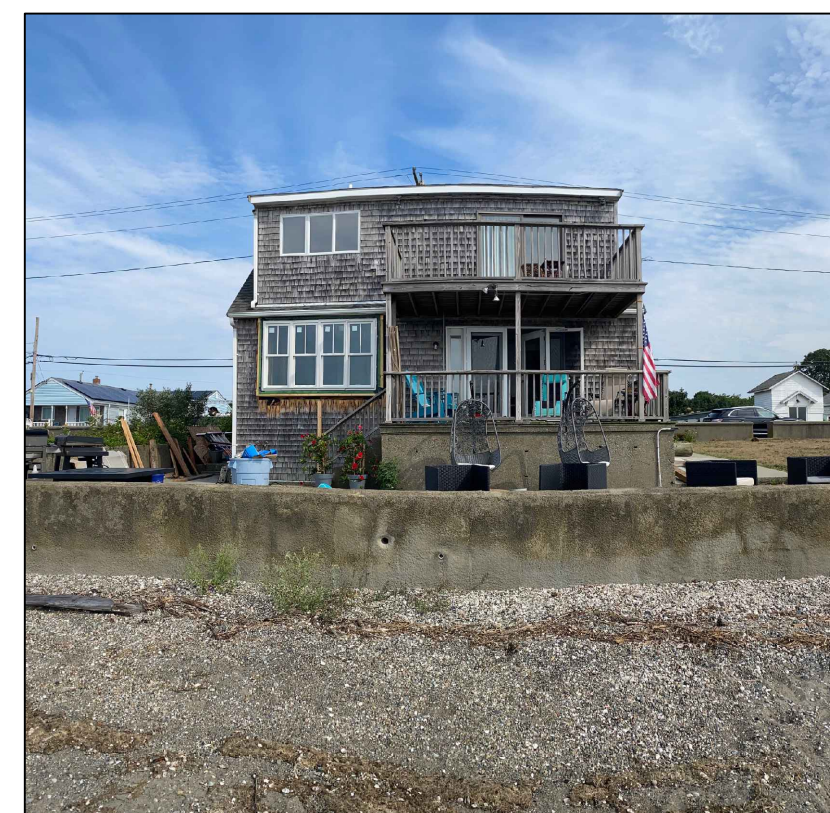
HOOP PILE HOLDER
MOUNTING FRAME SHALL BE MADE FROM 1/4" MILD STEEL AND HOOP MADE FROM 1 1/2" SCHEDULE 40 STEEL PIPE. ALL MATERIALS ARE TO BE HOT-DIPPED GALVANIZED AFTER ALL WELDING AND FABRICATION IS COMPLETE. MOUNTING FRAMES SHALL USE 3/4" GALVANIZED CARRIAGE BOLTS FOR ATTACHMENT TO THE DOCK. HOOPS ARE TO BE ATTACHED TO THE MOUNTING BRACKET WITH 3/4" STAINLESS STEEL HEX HEAD BOLTS AND NYLOCK NUTS. THE ROLLER IS TO BE FABRICATED OF RUBBER. THE HOOP PILE HOLDER SHALL BE FOLLANSBEE SERIES PH-H OR EQUAL.

FLOAT DRUMS
THE FLOAT DRUMS SHALL HAVE A HIGH DENSITY POLYSTHLENE (HDPE) SHELL FILLED WITH HIGH QUALITY EXPANDED POLYSTYRENE (EPS). EACH DRUM SHALL HAVE A 3" MOUNTING FLANGE MOLDED AROUND THE ENTIRE PERIMETER. A MINIMUM OF EIGHT (8) 1/2" LAG BOLTS WITH FLAT WASHERS SHALL BE USED TO ATTACH THE DRUMS TO THE DOCKS FRAMING ALL FLOAT DRUMS SHALL MEET STATE AND FEDERAL REQUIREMENTS FOR POSITIVE FLOTATION AND SHALL BE COAST GUARD APPROVED. THE FLOAT DRUMS SHALL BE FOLLANSBEE SERIES THREE FLOAT DRUM OR EQUAL.

FLOATING DOCK HARDWARE
ALL FOUR OUTSIDE CORNERS SHALL HAVE OUTSIDE CORNER ENDS AND INSIDE CORNER HARDWARE. ALL HARDWARE SHALL BE HOT-DIPPED GALVANIZED 1/4" HIGH STRENGTH CARBON STEEL. ALL HARDWARE SHALL BE ATTACHED USING 3/4" GALVANIZED BOLTS WITH NYLON LOCK NUTS.



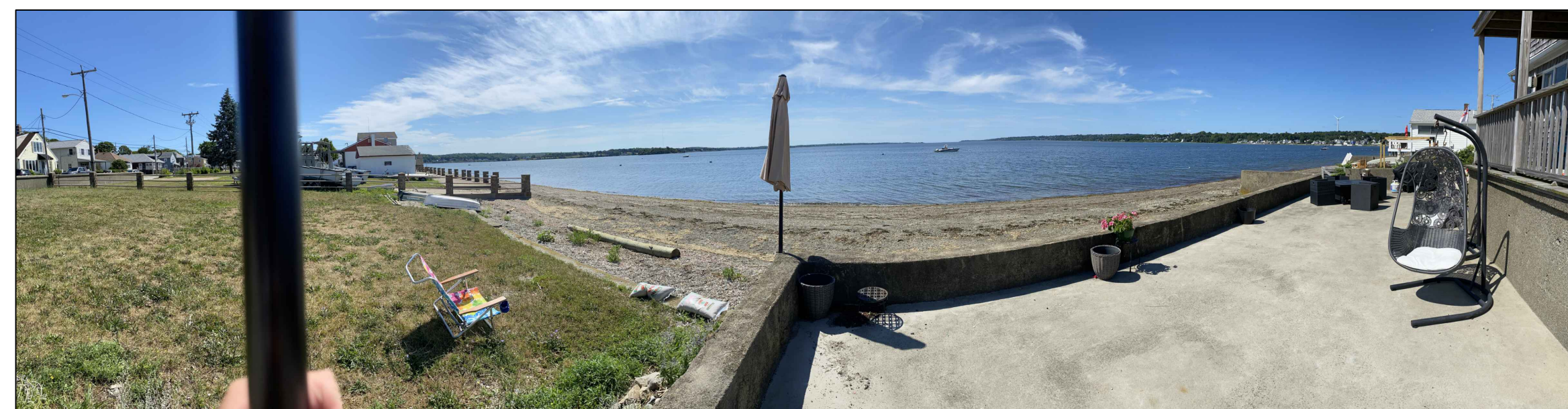
SITE PHOTOS



LOOKING NORTH

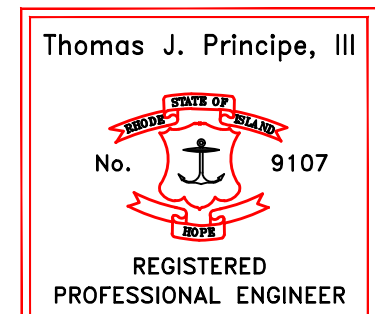


LOOKING WEST



LOOKING SOUTH

General Notes



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