



AMBIT ENGINEERING, INC. CIVIL ENGINEERS AND LAND SURVEYORS
200 Griffin Road, Unit 3, Portsmouth, NH 03801 Phone (603) 430-9282 Fax 436-2315

10 September 2021

Wetland Inspector
New Hampshire Department of Environmental Services
Wetlands Bureau
29 Hazen Drive / P.O. Box 95
Concord, New Hampshire 03302

**Re: NHDES Major Impact Wetland Permit Application
Tax Map 223, Lot 30
597 Sagamore Avenue
Portsmouth, New Hampshire**

Dear Wetland Inspector:

This letter transmits a New Hampshire Department of Environmental Services (NHDES) Major Impact Wetland Permit Application request to permit 392 sq. ft. of permanent impact to tidal wetland and 64 sq. ft. of permanent impact to the previously developed 100' Tidal Buffer Zone for the construction of a tidal docking structure including a 4' x 16' accessway, a 6' x 12' fixed pier, a 4' x 30' gangway and a 10' x 20' float (overall structure length 52') providing one slip on 1,071 +/- feet of frontage along Sagamore Creek.

Attached to this application you will find a "NH DES Permit Plan-C2" which depicts the existing lot, jurisdictional areas, abutting parcels, existing structures, proposed work, and permanent impact areas.

Per Env-Wt 306.05, Certified Wetland Scientist Steve Riker from Ambit Engineering, Inc. classified all jurisdictional areas and identified the predominant functions off all relevant resources. The Highest Observable Tide Line marks the reference line for the 100' TBZ, as well the beginning of Tidal Wetland on the attached plan set. Attached to this application is a Wetland Functions and Values Assessment and Coastal Vulnerability Assessment summarizing these functions; as this project is subject to the requirements of Env-Wt 603.04 and Env-Wt 603.05.

The proposed structure will be constructed on piles within the tidal wetland further reducing permanent impacts to the tidal wetland resource. The project will have no impact on the functions and values of the adjacent tidal wetland. The docking structure has been designed to allow the adjacent tidal resource to maintain its current functions and values. The docking structure will not contribute to additional storm water or pollution. It is anticipated that there will be no affect on any fish and wildlife species that currently use the site for food, cover, and/or habitat. The tidal docking structure will not impede tidal flow or alter hydrology, it will not deter use by wildlife species that currently use the wetland area, and it will not impede any migrational fish movement. The float and gangway will be temporary docking structures and will be removed during winter months as to not interfere with ice floe.

The docking structure has been designed to provide recreational boating access utilizing the natural grade of the dock location. There is no grading of the shoreline required to construct the dock. There will be no construction activity that will disturb the area adjacent to the use. All work will be performed from a crane

barge at low tide. Piles to be driven are above the Mean Low Water (MLW) line and there is no need for erosion control. There will be no water in this location during pile driving and therefore no temporary disturbance associated with construction. The barge floats into position and the piles are driven by the crane equipped with a vibratory hammer. This method eliminates any contact of construction equipment with the protected resource. Portions of the docking structure are pre-fabricated off site and transported to the site via crane barge.

The construction sequence for the proposed structure are as follows:

- Mobilization of a crane barge, push boat, work skiff, materials and prefabricated components such as the gangway and float to the site via Sagamore Creek.
- Mobilization of equipment trucks to the site.
- The barge will be positioned alongside the proposed location of the new dock and waterward of any emergent vegetation to minimize impacts.
- Installation of the sub structure will be performed from a crane barge or skiff to reduce the amount of foot traffic in the intertidal area.
- All work will be performed at low tide to minimize sedimentation.
- Piles will be driven by a vibratory hammer eliminating any excavation for installation of the pilings. Piles are driven to refusal.
- Piles are cut and beam caps are installed and the super structure of the pier is built. Materials are lifted from the barge and set into position by the crane.
- Once the pier is complete, the gangway and float are brought into position and installed.

The project represents the alternative with the least adverse impacts to areas and environments while allowing reasonable use of the property.

Per Env-Wt 603.02(b), attached to this application you will find a plan set which depicts the existing lot, jurisdictional areas, all natural resources in the area, abutting parcels, existing structures, and proposed structures. Also included in this application are maps created in accordance with Env-Wt 603.03 and Env-Wt 603.05.

In order to complete the application package for this project, the DES Wetlands Bureau rules in Chapter Env-Wt 306.05 (a)(2) has been evaluated and addressed below.

(2) a. Contains any documented occurrences of protected species or habitat for such species, using the NHB DataCheck tool;

Attached to this application are the results of the NHB review and it was determined that four (4) exemplary natural communities have the potential to occur within the project area. Ambit Engineering will coordinate with NHB regarding the communities and comments will be forwarded to NH DES upon receipt.

(2) b. Is a bog;

Utilizing the NH DES WPPT, the subject property is not a bog, nor does it contain any portion of a bog.

- (2) c. Is a floodplain wetland contiguous to a tier 3 or higher watercourse;

Utilizing the NH DES WPPT, the subject property does contain a floodplain wetland contiguous to a tier 3 or higher watercourse.

- (2) d. Does the property contain a designated prime wetlands or a duly established 100-foot buffer; or

The property does not contain a prime wetland or duly established 100 foot buffer.

- (2) e. Does the property contain a sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone;

The property does not contain a sand dune. The property does contain a tidal wetland and tidal waters.

The DES Wetlands Bureau rules in Chapter Env-Wt 306.05 (a)(4) and (a)(7) has been evaluated and addressed below.

- (4) a. Is the subject property within LAC jurisdiction;

The property does not fall within an area of LAC jurisdiction.

- (4) b. Does the subject property fall within or contain any areas that are subject to time of year restrictions under Env-Wt 307;

The property does not fall within or contain any areas that are subject to time of year restrictions.

- (7) Does the project have potential to impact impaired waters, class A waters, or outstanding resource waters;

I do not believe the nature of the proposed project has the potential to impact an impaired water.

The DES Wetlands Bureau rules in Chapter Env-Wt 603.02 (e) & (f) have been evaluated and addressed below.

- (e)(1) The project meets the standard conditions in Env-Wt 307;

The project meets the standard conditions in Env-Wt 307 as the proposed docking structure meets the standards of Env-Wq 1000, RSA 483-B and Env-Wq 1400. Sediment and erosion controls will also be used and maintained during the proposed construction ensuring protection of water quality on the site. Since the construction will be conducted during low tide conditions, it is not anticipated that there will be any impacts to fish or shellfish. Under Env-Wt 306.05 (a)(2)a. a NHB review has been performed to ensure there are no impacts to protected species or habitats of such species. The protection of Prime Wetlands or Duly-Established 100 foot buffers does not apply as none exist on or adjacent to the subject lot.

- (e)(2) The project meets the approval criteria in Env-Wt 313.01;

The project meets the approval criteria in Env-Wt 313.01 as the project requires a functional assessment (attached), meets the avoidance and minimization requirements specified in Env-Wt 313.03, does not require compensatory mitigation, meets applicable conditions specified in Env-Wt 307 (above), meets project specific criteria listed in Env-Wt 600 (above), and the project is located entirely within the boundary of the applicants property.

- (f)(1) The project design narrative as described in Env-Wt 603.06;

The project design narrative is provided above.

(f)(2) Design plans that meet the requirements of Env-Wt 603.07;
The design plans meet the above standard.

(f)(3) The water depth supporting information required by Env-Wt 603.08;
The design plans provide water depth information.

(f)(4) A statement regarding impact on navigation and passage required by Env-Wt 603.09.
The Permit Plan Set will be provided to the Pease Development Authority, Division of Ports and Harbors, for formal review and comment by the Harbormaster. That documentation will be provided to NH DES upon receipt.

In accordance with New Hampshire Administrative Rule Env-Wt 606.02(a) and 606.06(e), the marine contractor which will be constructing the proposed dock modification utilizes a vibratory hammer to install piles. The vibratory hammer uses vibration to install the pile in the marine sediment, instead of a standard hammer which uses a physical force to drive the pile, and subsequently a much greater noise impact. Using the vibratory hammer is the least impacting alternative to drive piles for dock construction.

All of the proposed pile locations for the dock are located above the Mean Low Water (MLW) line and will be installed at low tide. Installation during "the dry" greatly reduces the amount of noise that is transmitted into the water column, as no water will be present at the pile location.

Lastly, the proposed structure will use CCA (Chromated Copper Arsenate) treated lumber. The proposed piles will be CCA treated 12" diameter southern yellow pine. Attached to this application is a Safety Data Sheet for CCA treated wood. Per the data sheet, toxicity is limited to inhalation of wood dust originating from CCA treated lumber. Additionally, per the Safety Data Sheet, 12. Ecological Information (page 12) "The product is not classified as environmentally hazardous. However, this does exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment." The product is also insoluble in water. The marine contractor that will be constructing the proposed docking structure receives the timber piles and lumber pre-treated. The marine contractor does not treat the lumber, and therefore there is no risk of spilling the treatment chemical in or near resource areas.

Please contact me if you have any questions or concerns regarding this application.

Respectfully submitted,



Steven D. Riker, CWS
NH Certified Wetland Scientist/Permitting Specialist
Ambit Engineering, Inc.

31 August, 2021

To Whom It May Concern:

RE: State of New Hampshire DES Wetlands Bureau Standard Dredge and Fill Application for proposed shoreline stabilization within the previously developed 100' Tidal Buffer Zone and jurisdictional wetlands for Tidewatch Condominiums of 579 Sagamore Ave Portsmouth, NH 03801

This letter is to inform the City of Portsmouth in accordance with State Law that the following entities:

Riverside Marine Construction, Inc.
Ambit Engineering, Inc

Are authorized to represent me as my agent in the approval process.

Please feel free to call me if there is any question regarding this authorization.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Harry Stow III". The signature is fluid and cursive, with the last name "Stow" being particularly prominent.

J. Harry Stow III, President
Tidewatch Board of Directors
579 Sagamore Ave.
Portsmouth, NH 03801



**STANDARD DREDGE AND FILL
WETLANDS PERMIT APPLICATION**
Water Division/Land Resources Management
Wetlands Bureau
[Check the Status of your Application](#)



RSA/Rule: RSA 482-A/Env-Wt 100-900

APPLICANT'S NAME: Tidewatch Condominium Assoc. **TOWN NAME:** Portsmouth

Administrative Use Only	Administrative Use Only	Administrative Use Only	File No.:
			Check No.:
			Amount:
			Initials:

A person may request a waiver of the requirements in Rules Env-Wt 100-900 to accommodate situations where strict adherence to the requirements would not be in the best interest of the public or the environment but is still in compliance with RSA 482-A. A person may also request a waiver of the standards for existing dwellings over water pursuant to RSA 482-A:26, III(b). For more information, please consult the [Waiver Request Form](#).

SECTION 1 - REQUIRED PLANNING FOR ALL PROJECTS (Env-Wt 306.05; RSA 482-A:3, I(d)(2))

Please use the [Wetland Permit Planning Tool \(WPPT\)](#), the Natural Heritage Bureau (NHB) [DataCheck Tool](#), the [Aquatic Restoration Mapper](#), or other sources to assist in identifying key features such as: [priority resource areas \(PRAs\)](#), [protected species or habitats](#), coastal areas, designated rivers, or designated prime wetlands.

Has the required planning been completed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Does the property contain a PRA? If yes, provide the following information:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<ul style="list-style-type: none"> Does the project qualify for an Impact Classification Adjustment (e.g. NH Fish and Game Department (NHF&G) and NHB agreement for a classification downgrade) or a Project-Type Exception (e.g. Maintenance or Statutory Permit-by-Notification (SPN) project)? See Env-Wt 407.02 and Env-Wt 407.04. 	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<ul style="list-style-type: none"> Protected species or habitat? <ul style="list-style-type: none"> If yes, species or habitat name(s): High salt marsh, intertidal flat, low salt marsh, salt marsh dwarf glasswort (<i>Salicornia bigelovii</i>) NHB Project ID #: 21-2611 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<ul style="list-style-type: none"> Bog? 	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<ul style="list-style-type: none"> Floodplain wetland contiguous to a tier 3 or higher watercourse? 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<ul style="list-style-type: none"> Designated prime wetland or duly-established 100-foot buffer? 	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<ul style="list-style-type: none"> Sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone? 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Is the property within a Designated River corridor? If yes, provide the following information:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<ul style="list-style-type: none"> Name of Local River Management Advisory Committee (LAC): N/A 	

lrn@des.nh.gov or (603) 271-2147

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www.des.nh.gov

<ul style="list-style-type: none"> A copy of the application was sent to the LAC on Month: <input type="text"/> Day: <input type="text"/> Year: <input type="text"/> 	
For dredging projects, is the subject property contaminated? <ul style="list-style-type: none"> If yes, list contaminant: <input type="text"/> 	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is there potential to impact impaired waters, class A waters, or outstanding resource waters?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
For stream crossing projects, provide watershed size (see WPPT or Stream Stats): <input type="text"/>	
SECTION 2 - PROJECT DESCRIPTION (Env-Wt 311.04(i)) Provide a brief description of the project and the purpose of the project, outlining the scope of work to be performed and whether impacts are temporary or permanent. DO NOT reply "See attached"; please use the space provided below.	
The project proposes 392 sq. ft. of permanent impact to tidal wetland and 64 sq. ft. of permanent impact to the previously developed 100' Tidal Buffer Zone for the construction of a tidal docking structure including a 4' x 16' accessway, a 6' x 12' fixed pier, a 4' x 30' gangway and a 10' x 20' float (overall structure length 52') providing one slip on 120+/- feet of frontage along Sagamore Creek. 1,071	
SECTION 3 - PROJECT LOCATION Separate wetland permit applications must be submitted for each municipality within which wetland impacts occur.	
ADDRESS: 597 Sagamore Avenue	
TOWN/CITY: Portsmouth	
TAX MAP/BLOCK/LOT/UNIT: Map 223, Lot 30	
US GEOLOGICAL SURVEY (USGS) TOPO MAP WATERBODY NAME: Sagamore Creek <input type="checkbox"/> N/A	
(Optional) LATITUDE/LONGITUDE in decimal degrees (to five decimal places): X:1,228,198.2423° North	

irm@des.nh.gov or (603) 271-2147

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Y:202,740.2343° West

SECTION 4 - APPLICANT (DESIRED PERMIT HOLDER) INFORMATION (Env-Wt 311.04(a))

If the applicant is a trust or a company, then complete with the trust or company information.

NAME: Tidewatch Condominium Association

MAILING ADDRESS: C/O CP Management, 11 Court Street

TOWN/CITY: Exeter

STATE: NH

ZIP CODE: 03833

EMAIL ADDRESS: samr@cpmanagement

FAX:

PHONE: 603-778-6300

ELECTRONIC COMMUNICATION: By initialing here: , I hereby authorize NHDES to communicate all matters relative to this application electronically.

SECTION 5 - AUTHORIZED AGENT INFORMATION (Env-Wt 311.04(c))☐ N/A

LAST NAME, FIRST NAME, M.I.: Riker, Steven, D.

COMPANY NAME: Ambit Engineering, inc.

MAILING ADDRESS: 200 Griffin Road, Unit 3

TOWN/CITY: Portsmouth

STATE: NH

ZIP CODE: 03801

EMAIL ADDRESS: sdr@ambitengineering.com

FAX:

PHONE: 603-430-9282

ELECTRONIC COMMUNICATION: By initialing here: *SR*, I hereby authorize NHDES to communicate all matters relative to this application electronically.**SECTION 6 - PROPERTY OWNER INFORMATION (IF DIFFERENT THAN APPLICANT) (Env-Wt 311.04(b))**

If the owner is a trust or a company, then complete with the trust or company information.

☐ Same as applicant

NAME:

MAILING ADDRESS:

TOWN/CITY:

STATE:

ZIP CODE:

EMAIL ADDRESS:

FAX:

PHONE:

ELECTRONIC COMMUNICATION: By initialing here: , I hereby authorize NHDES to communicate all matters relative to this application electronically.

SECTION 7 - RESOURCE-SPECIFIC CRITERIA ESTABLISHED IN Env-Wt 400, Env-Wt 500, Env-Wt 600, Env-Wt 700, OR Env-Wt 900 HAVE BEEN MET (Env-Wt 313.01(a)(3))

Describe how the resource-specific criteria have been met for each chapter listed above (please attach information about stream crossings, coastal resources, prime wetlands, or non-tidal wetlands and surface waters):

Please see attached narrative.

SECTION 8 - AVOIDANCE AND MINIMIZATION

Impacts within wetland jurisdiction must be avoided to the maximum extent practicable (Env-Wt 313.03(a)).* Any project with unavoidable jurisdictional impacts must then be minimized as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization](#) and the [Wetlands Permitting: Avoidance, Minimization and Mitigation Fact Sheet](#). For minor or major projects, a functional assessment of all wetlands on the project site is required (Env-Wt 311.03(b)(10)).*

Please refer to the application checklist to ensure you have attached all documents related to avoidance and minimization, as well as functional assessment (where applicable). Use the [Avoidance and Minimization Checklist](#), the [Avoidance and Minimization Narrative](#), or your own avoidance and minimization narrative.

**See Env-Wt 311.03(b)(6) and Env-Wt 311.03(b)(10) for shoreline structure exemptions.*

SECTION 9 - MITIGATION REQUIREMENT (Env-Wt 311.02)

If unavoidable jurisdictional impacts require mitigation, a mitigation [pre-application meeting](#) must occur at least 30 days but not more than 90 days prior to submitting this Standard Dredge and Fill Permit Application.

Mitigation Pre-Application Meeting Date: Month: Day: Year:

☒ N/A - Mitigation is not required

SECTION 10 - THE PROJECT MEETS COMPENSATORY MITIGATION REQUIREMENTS (Env-Wt 313.01(a)(1)c)

Confirm that you have submitted a compensatory mitigation proposal that meets the requirements of Env-Wt 800 for all permanent unavoidable impacts that will remain after avoidance and minimization techniques have been exercised to the maximum extent practicable: ☐ I confirm submittal.

☒ N/A – Compensatory mitigation is not required

SECTION 11 - IMPACT AREA (Env-Wt 311.04(g))

For each jurisdictional area that will be/has been impacted, provide square feet (SF) and, if applicable, linear feet (LF) of impact, and note whether the impact is after-the-fact (ATF; i.e., work was started or completed without a permit).

For intermittent and ephemeral streams, the linear footage of impact is measured along the thread of the channel. *Please note, installation of a stream crossing in an ephemeral stream may be undertaken without a permit per Rule Env-Wt 309.02(d), however other dredge or fill impacts should be included below.*

For perennial streams/ivers, the linear footage of impact is calculated by summing the lengths of disturbances to the channel and banks.

Permanent impacts are impacts that will remain after the project is complete (e.g., changes in grade or surface materials).

Temporary impacts are impacts not intended to remain (and will be restored to pre-construction conditions) after the project is completed.

JURISDICTIONAL AREA		PERMANENT			TEMPORARY		
		SF	LF	ATF	SF	LF	ATF
Wetlands	Forested Wetland						
	Scrub-shrub Wetland						
	Emergent Wetland						
	Wet Meadow						
	Vernal Pool						
	Designated Prime Wetland						
	Duly-established 100-foot Prime Wetland Buffer						
Surface Water	Intermittent / Ephemeral Stream						
	Perennial Stream or River						
	Lake / Pond						
	Docking - Lake / Pond						
	Docking - River						
Banks	Bank - Intermittent Stream						
	Bank - Perennial Stream / River						
	Bank / Shoreline - Lake / Pond						
Tidal	Tidal Waters						
	Tidal Marsh						
	Sand Dune						
	Undeveloped Tidal Buffer Zone (TBZ)						
	Previously-developed TBZ	64					
	Docking - Tidal Water	392					
TOTAL		456					

SECTION 12 - APPLICATION FEE (RSA 482-A:3, I)

☐ **MINIMUM IMPACT FEE:** Flat fee of \$400.

☐ **NON-ENFORCEMENT RELATED, PUBLICLY-FUNDED AND SUPERVISED RESTORATION PROJECTS, REGARDLESS OF IMPACT CLASSIFICATION:** Flat fee of \$400 (refer to RSA 482-A:3, 1(c) for restrictions).

☒ **MINOR OR MAJOR IMPACT FEE:** Calculate using the table below:

Permanent and temporary (non-docking):		SF	×	\$0.40 =	\$	
Seasonal docking structure:	320	SF	×	\$2.00 =	\$	640.0
Permanent docking structure:	136	SF	×	\$4.00 =	\$	544.0
Projects proposing shoreline structures (including docks) add \$400 =					\$	400.0
Total =					\$	1,584
The application fee for minor or major impact is the above calculated total or \$400, whichever is greater =					\$	

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SECTION 13 - PROJECT CLASSIFICATION (Env-Wt 306.05)

Indicate the project classification.

☐ Minimum Impact Project☐ Minor Project☒ Major Project**SECTION 14 - REQUIRED CERTIFICATIONS (Env-Wt 311.11)**

Initial each box below to certify:

Initials:

SR

To the best of the signer's knowledge and belief, all required notifications have been provided.

Initials:

SR

The information submitted on or with the application is true, complete, and not misleading to the best of the signer's knowledge and belief.

Initials:

SR

The signer understands that:

- The submission of false, incomplete, or misleading information constitutes grounds for NHDES to:
 1. Deny the application.
 2. Revoke any approval that is granted based on the information.
 3. If the signer is a certified wetland scientist, licensed surveyor, or professional engineer licensed to practice in New Hampshire, refer the matter to the joint board of licensure and certification established by RSA 310-A:1.
- The signer is subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641.
- The signature shall constitute authorization for the municipal conservation commission and the Department to inspect the site of the proposed project, except for minimum impact forestry SPN projects and minimum impact trail projects, where the signature shall authorize only the Department to inspect the site pursuant to RSA 482-A:6, II.

Initials:

SR

If the applicant is not the owner of the property, each property owner signature shall constitute certification by the signer that he or she is aware of the application being filed and does not object to the filing.

SECTION 15 - REQUIRED SIGNATURES (Env-Wt 311.04(d); Env-Wt 311.11)

SIGNATURE (OWNER):

PRINT NAME LEGIBLY:

DATE:

SIGNATURE (APPLICANT, IF DIFFERENT FROM OWNER):

PRINT NAME LEGIBLY:

DATE:

SIGNATURE (AGENT, IF APPLICABLE):

SR

PRINT NAME LEGIBLY:

Steven D. Riker

DATE:

8/31/21

SECTION 16 - TOWN / CITY CLERK SIGNATURE (Env-Wt 311.04(f))

As required by RSA 482-A:3, I(a)(1), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

TOWN/CITY CLERK SIGNATURE:

PRINT NAME LEGIBLY:

TOWN/CITY:

DATE:



**AVOIDANCE AND MINIMIZATION
WRITTEN NARRATIVE**
Water Division/Land Resources Management
Wetlands Bureau
[Check the Status of your Application](#)



RSA/ Rule: RSA 482-A/ Env-Wt 311.04(j); Env-Wt 311.07; Env-Wt 313.01(a)(1)b; Env-Wt 313.01(c)

APPLICANT'S NAME: Tidewatch Condominium Association **TOWN NAME:** Portsmouth

An applicant for a standard permit shall submit with the permit application a written narrative that explains how all impacts to functions and values of all jurisdictional areas have been avoided and minimized to the maximum extent practicable. This attachment can be used to guide the narrative (attach additional pages if needed). Alternatively, the applicant may attach a completed [Avoidance and Minimization Checklist \(NHDES-W-06-050\)](#) to the permit application.

SECTION 1 - WATER ACCESS STRUCTURES (Env-Wt 311.07(b)(1))

Is the primary purpose of the proposed project to construct a water access structure?

Yes. A component of the project is to construct a new structure for recreational boating access.

SECTION 2 - BUILDABLE LOT (Env-Wt 311.07(b)(1))

Does the proposed project require access through wetlands to reach a buildable lot or portion thereof?

No. This is not applicable.

SECTION 3 - AVAILABLE PROPERTY (Env-Wt 311.07(b)(2))*

For any project that proposes permanent impacts of more than one acre, or that proposes permanent impacts to a PRA, or both, are any other properties reasonably available to the applicant, whether already owned or controlled by the applicant or not, that could be used to achieve the project's purpose without altering the functions and values of any jurisdictional area, in particular wetlands, streams, and PRAs?

**Except as provided in any project-specific criteria and except for NH Department of Transportation projects that qualify for a categorical exclusion under the National Environmental Policy Act.*

Since the proposal includes the construction of a tidal docking structure, providing a water dependent function, this is not applicable.

SECTION 4 - ALTERNATIVES (Env-Wt 311.07(b)(3))

Could alternative designs or techniques, such as different layouts, different construction sequencing, or alternative technologies be used to avoid impacts to jurisdictional areas or their functions and values as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization?](#)

The project proposes to install a 4' x 16' accessway, 6' x 12' fixed wood pier, a 4' x 30' gangway, a 10' x 20' main float, resulting in 392 sq. ft. of permanent impact to tidal wetland. Since the proposed tidal dock will provide a water dependent function, practicable alternatives are severely reduced. The location of the pier was designed to avoid any amount of surface area over the saltmarsh associated with the property's frontage representing the least impacting alternative.

SECTION 5 - CONFORMANCE WITH Env-Wt 311.10(c) (Env-Wt 311.07(b)(4))**

How does the project conform to Env-Wt 311.10(c)?

***Except for projects solely limited to construction or modification of non-tidal shoreline structures only need to complete relevant sections of Attachment A.*

The proposed docking structure will be constructed on pilings within the tidal wetland further reducing permanent impacts to the tidal wetland resource. The docking structure has been designed to allow the adjacent tidal resource to maintain its current functions and values. The tidal docking structure will not impede tidal flow or alter hydrology, it will not deter use by wildlife species that currently use the wetland area, and it will not impede any migrational fish movement. As a result, The project will have no impact on the functions and values of the adjacent tidal wetland. A Wetland Functions and Values Assessment is attached to this application.



COASTAL RESOURCE WORKSHEET

Water Division/Land Resources Management Wetlands Bureau

[Check the Status of your Application](#)



RSA/Rule: RSA 482-A/ Env-Wt 600

APPLICANT LAST NAME, FIRST NAME, M.I.: Tidewatch Condominium Association

This worksheet may be used to present the information required for projects in coastal areas, in addition to the information required for Lower-Scrutiny Approvals, Expedited Permits, and Standard Permits under Env-Wt 603.01.

Please refer to Env-Wt 605.03 for impacts requiring compensatory mitigation.

SECTION 1 - REQUIRED INFORMATION (Env-Wt 603.02; Env-Wt 603.06; Env-Wt 603.09)

The following information is required for projects in coastal areas.

Describe the purpose of the proposed project, including the overall goal of the project, the core project purpose consisting of a concise description of the facilities and work that could impact jurisdictional areas, and the intended project outcome. Specifically identify all natural resource assets in the area proposed to be impacted and include maps created through a data screening in accordance with Env-Wt 603.03 (refer to Section 2) and Env-Wt 603.04 (refer to Section 3) as attachments.

The project proposes the installation of a 4' x 16' accessway, 6' x 12' fixed wood pier, a 4' x 30' gangway, and a 10' x 20' float, resulting in 392 sq. ft. of permanent impact to tidal wetland and 64 sq. ft. of permanent impact to the previously developed 100' Tidal Buffer Zone. The tidal wetlands to be impacted would be classified as an estuarine intertidal unconsolidated shore cobble-gravel wetland system that is irregularly flooded by the tides (E2US1P) and an estuarine intertidal unconsolidated shore mud wetland system that is irregularly exposed by the tides (E2US3M). The purpose of the dock is to provide recreational boating access to Sagamore Creek. Since the proposed tidal dock will provide a water dependent function, practicable alternatives are severely reduced.

irm@des.nh.gov or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO BOX 95, Concord, NH 03302-0095

www.des.nh.gov

For standard permit projects, provide:

- ☒ A Coastal Functional Assessment (CFA) report in accordance with Env-Wt 603.04 (refer to Section 3).
- ☒ A vulnerability assessment in accordance with Env-Wt 603.05 (refer to Section 4).

Explain all recommended methods and other considerations to protect the natural resource assets during and as a result of project construction in accordance with Env-Wt 311.07, Env-Wt 313, and Env-Wt 603.04.

A Coastal Functional Assessment is attached to this application per Env-Wt 603.04. An Avoidance & Minimization Form is attached to this application, and also described in the attached narrative letter per Env-Wt 311.07 and Env-Wt 313.

Provide a narrative showing how the project meets the standard conditions in Env-Wt 307 and the approval criteria in Env-Wt 313.01.

The project plan set, specifically the Details-Sheet D1 includes all notes demonstrating compliance with Env-Wt 307 and Env-Wt 313.01.

Provide a project design narrative that includes the following:

- ☒ A discussion of how the proposed project:
 - Uses best management practices and standard conditions in Env-Wt 307;
 - Meets all avoidance and minimization requirements in Env-Wt 311.07 and Env-Wt 313.03;
 - Meets approval criteria in Env-Wt 313.01;
 - Meets evaluation criteria in Env-Wt 313.01(c);
 - Meets CFA requirements in Env-Wt 603.04; and
 - Considers sea-level rise and potential flooding evaluated pursuant to Env-Wt 603.05;
- ☒ A construction sequence, erosion/siltation control methods to be used, and a dewatering plan; and
- ☒ A discussion of how the completed project will be maintained and managed.

The completed project will result in a permanent fixed pier, with an attached gangway and associated floats. The gangway and floats are/will be seasonal structures and will be removed in the non-boating season. Other than removal and re-installation, there is no maintenance or management of the tidal docking structure over its expected life span, which is 50-100 years

- ☒ Provide design plans that meet the requirements of Env-Wt 603.07 (refer to Section 5);
- ☒ Provide water depth supporting information required by Env-Wt 603.08 (refer to Section 6); and
- ☒ For any major project that proposes to construct a structure in tidal waters/wetlands or to extend an existing structure seaward, provide a statement from the Pease Development Authority Division of Ports and Harbors (DP&H) chief harbormaster, or designee, for the subject location relative to the proposed structure's impact on navigation. If the proposed structure might impede existing public passage along the subject shoreline on foot or by non-motorized watercraft, the applicant shall explain how the impediments have been minimized to the greatest extent practicable.

Review and comment by the Pease Development Authority will be provided to NH DES upon receipt.

SECTION 2 - DATA SCREENING (Env-Wt 603.03, in addition to Env-Wt 306.05)

Please use the Wetland Permit Planning Tool, or any other database or source, to indicate the presence of:

- ☒ Existing salt marsh and salt marsh migration pathways;
- ☒ Eelgrass beds;
- ☒ Documented shellfish sites;
- ☒ Projected sea-level rise; and
- ☒ 100-year floodplain.

Conduct data screening as described to identify documented essential fish habitat, and tides and currents that may be impacted by the proposed project, by using the following links:

- ☒ [National Oceanic and Atmospheric Administration \(NOAA\) Tides & Currents](#); and
- ☒ [NOAA Essential Fish Habitat Mapper](#).
- ☒ Verify or correct the information collected from the data screenings by conducting an on-site assessment of the subject property in accordance with Env-Wt 406 and Env-Wt 603.04.

SECTION 3 - COASTAL FUNCTIONAL ASSESSMENT/ AVOIDANCE AND MINIMIZATION (Env-Wt 603.04; Env-Wt 605.01; Env-Wt 605.02; Env-Wt 605.03)

Projects in coastal areas shall:

- ☒ Not impair the navigation, recreation, or commerce of the general public; and
- ☒ Minimize alterations in prevailing currents.

An applicant for a permit for work in or adjacent to tidal waters/wetlands or the tidal buffer zone shall demonstrate that the following have been avoided or minimized as required by Env-Wt 313.04:

- ☒ Adverse impacts to beach or tidal flat sediment replenishment;
- ☒ Adverse impacts to the movement of sediments along a shore;
- ☒ Adverse impacts on a tidal wetland's ability to dissipate wave energy and storm surge; and
- ☒ Adverse impacts of project runoff on salinity levels in tidal environments.

For standard permit applications submitted for minor or major projects:

- ☒ Attach a CFA based on the data screening information and on-site evaluation required by Env-Wt 603.03. The CFA for tidal wetlands or tidal waters shall be:
 - Performed by a qualified coastal professional; and
 - Completed using one of the following methods:
 - a. The US Army Corps of Engineers (USACE) Highway Methodology Workbook, dated 1993, together with the USACE New England District *Highway Methodology Workbook Supplement*, dated 1999; or
 - b. An alternative scientifically-supported method with cited reference and the reasons for the alternative method substantiated.

For any project that would impact tidal wetlands, tidal waters, or associated sand dunes, the applicant shall:

- ☐ Use the results of the CFA to select the location of the proposed project having the least impact to tidal wetlands, tidal waters, or associated sand dunes;
- ☐ Design the proposed project to have the least impact to tidal wetlands, tidal waters, or associated sand dunes;
- ☐ Where impact to wetland and other coastal resource functions is unavoidable, limit the project impacts to the least valuable functions, avoiding and minimizing impact to the highest and most valuable functions; and
- ☐ Include on-site minimization measures and construction management practices to protect coastal resource areas.

Projects in coastal areas shall use results of this CFA to:

- ☐ Minimize adverse impacts to finfish, shellfish, crustacean, and wildlife;
- ☐ Minimize disturbances to groundwater and surface water flow;
- ☐ Avoid impacts that could adversely affect fish habitat, wildlife habitat, or both; and
- ☐ Avoid impacts that might cause erosion to shoreline properties.

SECTION 4 - VULNERABILITY ASSESSMENT (Env-Wt 603.05)

Refer to the New Hampshire Coastal Flood Risk Summary Part 1: Science and New Hampshire Coastal Flood Risk Summary Part II: Guidance for Using Scientific Projections or other best available science to:

Determine the time period over which the project is designed to serve.

See attached CVA.

Identify the project's relative risk tolerance to flooding and potential damage or loss likely to result from flooding to buildings, infrastructure, salt marshes, sand dunes and other valuable coastal resource areas.

See attached CVA.

Reference the projected sea-level rise (SLR) scenario that most closely matches the end of the project design life and the project's tolerance to risk or loss.

See attached CVA.

Identify areas of the proposed project site subject to flooding from SLR.

See attached CVA.

Identify areas currently located within the 100-year floodplain and subject to coastal flood risk.

See attached CVA.

Describe how the project design will consider and address the selected SLR scenario within the project design life, including in the design plans.

See attached CVA.

Where there are conflicts between the project's purpose and the vulnerability assessment results, schedule a pre-application meeting with the department to evaluate design alternatives, engineering approaches, and use of the best available science.

☐ Pre-application meeting date held: **N/A**

SECTION 5 - DESIGN PLANS (Env-Wt 603.07, in addition to Env-Wt 311)

Submit design plans for the project in both plan and elevation views that clearly depict and identify all required elements.

The plan view shall depict the following:

- ☐ The engineering scale used, which shall be no larger than one inch equals 50 feet;
- ☐ The location of tidal datum lines depicted as lines with the associated elevation noted, based on North American Vertical Datum of 1988 (NAVD 88), derived from https://tidesandcurrents.noaa.gov/datum_options.html, as described in Section 6.
- ☐ An imaginary extension of property boundary lines into the waterbody and a 20-foot setback from those property line extensions;
- ☐ The location of all special aquatic sites at or within 100 feet of the subject property;
- ☐ Existing bank contours;
- ☐ The name and license number, if applicable, of each individual responsible for the plan, including:
 - a. The agent for tidal docking structures who determined elevations represented on plans; and
 - b. The qualified coastal professional who completed the CFA report and located the identified resources on the plan;
- ☐ The location and dimensions of all existing and proposed structures and landscape features on the property;
- ☐ Tidal datum(s) with associated elevations noted, based on NAVD 88; and
- ☐ Location of all special aquatic sites within 100-feet of the property.

The elevation view shall depict the following:

- ☐ The nature and slope of the shoreline;
- ☐ The location and dimensions of all proposed structures, including permanent piers, pilings, float stop structures, ramps, floats, and dolphins; and
- ☐ Water depths depicted as a line with associated elevation at highest observable tide, mean high tide, and mean low tide, and the date and tide height when the depths were measured. Refer to Section 6 for more instructions regarding water depth supporting information.

See specific design and plan requirements for certain types of coastal projects:

- Overwater structures (Env-Wt 606).
- Tidal shoreline stabilization (Env-Wt 609).
- Dredging activities (Env-Wt 607).
- Protected tidal zone (Env-Wt 610).
- Tidal beach maintenance (Env-Wt 608).
- Sand Dunes (Env-Wt 611).

SECTION 6 - WATER DEPTH SUPPORTING INFORMATION REQUIRED (Env-Wt 603.08)

Using current predicted NOAA tidal datum for the location, and tying field measurements to NAVD 88, field observations of at least three tide events, including at least one minus tide event, shall be located to document the range of the tide in the proposed location showing the following levels:

- ☐ Mean lower low water;
- ☐ Mean low water;
- ☐ Mean high water;
- ☐ Mean tide level;
- ☐ Mean higher high water;
- ☐ Highest observable tide line; and
- ☐ Predicted sea-level rise as identified in the vulnerability assessment in Env-Wt 603.05.

The following data shall be presented in the application project narrative to support how water depths were determined:

- ☐ The date, time of day, and weather conditions when water depths were recorded; and
- ☐ The name and license number of the licensed land surveyor who conducted the field measurements.

For tidal stream crossing projects, provide:

- ☐ Water depth information to show how the tier 4 stream crossing is designed to meet Env-Wt 904.07(c) and (d).

For repair, rehabilitation or replacement of tier 4 stream crossings:

- ☐ Demonstrate how the requirements of Env-Wt 904.09 are met.

SECTION 7 - GENERAL CRITERIA FOR TIDAL BEACHES, TIDAL SHORELINE, AND SAND DUNES (Env-Wt 604.01)

Any person proposing a project in or on a tidal beach, tidal shoreline, or sand dune, or any combination thereof, shall evaluate the proposed project based on:

- ☐ The standard conditions in Env-Wt 307;
- ☐ The avoidance and minimization requirements in Env-Wt 311.07 and Env-Wt 313.03;
- ☐ The approval criteria in Env-Wt 313.01;
- ☐ The evaluation criteria in Env-Wt 313.05;
- ☐ The project specific criteria in Env-Wt 600;
- ☐ The CFA required by Env-Wt 603.04; and
- ☐ The vulnerability assessment required by Env-Wt 603.05.

New permanent impacts to sand dunes that provide coastal storm surge protection for protected species or habitat shall not be allowed except:

- ☐ To protect public safety; and
- ☐ Only if constructed by a state agency, coastal resiliency project, or for a federal homeland security project.

Projects in or on a tidal beach, tidal shoreline, or sand dune shall support integrated shoreline management that:

- ☐ Optimizes the natural function of the shoreline, including protection or restoration of habitat, water quality, and self-sustaining stability to flooding and storm surge; and
- ☐ Protects upland infrastructure from coastal hazards with a preference for living shorelines over hardened shoreline practices.

SECTION 8 - GENERAL CRITERIA FOR TIDAL BUFFER ZONES (Env-Wt 604.02)

The 100-foot statutory limit on the extent of the tidal buffer zone shall be measured horizontally. Any person proposing a project in or on an undeveloped tidal buffer zone shall evaluate the proposed project based on:

- ☐ The standard conditions in Env-Wt 307;
- ☐ The avoidance and minimization requirements in Env-Wt 311.07 and Env-Wt 313.03;
- ☐ The approval criteria in Env-Wt 313.01;
- ☐ The evaluation criteria in Env-Wt 313.05;
- ☐ The project specific criteria in Env-Wt 600;
- ☐ The CFA required by Env-Wt 603.04; and
- ☐ The vulnerability assessment required by Env-Wt 603.05.

Projects in or on a tidal buffer zone shall preserve the self-sustaining ability of the buffer area to:

- ☐ Provide habitat values;
- ☐ Protect tidal environments from potential sources of pollution;
- ☐ Provide stability of the coastal shoreline; and
- ☐ Maintain existing buffers intact where the lot has disturbed area defined under RSA 483-B:4, IV.

SECTION 9 - GENERAL CRITERIA FOR TIDAL WATERS/WETLANDS (Env-Wt 604.03)

Except as allowed under Env-Wt 606, permanent new impacts to tidal wetlands shall be allowed only to protect public safety or homeland security. Evaluation of impacts to tidal wetlands and tidal waters shall be based on:

- ☐ The standard conditions in Env-Wt 307;
- ☐ The avoidance and minimization requirements in Env-Wt 311.07 and Env-Wt 313.03;
- ☐ The approval criteria in Env-Wt 313.01;
- ☐ The evaluation criteria in Env-Wt 313.05;
- ☐ The project specific criteria in Env-Wt 600;
- ☐ The CFA required by Env-Wt 603.04; and
- ☐ The vulnerability assessment required by Env-Wt 603.05.

Projects in tidal surface waters or tidal wetlands shall:

- ☐ Optimize the natural function of the tidal wetland, including protection or restoration of habitat, water quality, and self-sustaining stability to storm surge;
- ☐ Be designed with a preference for living shorelines over hardened stabilization practices; and
- ☐ Be limited to public infrastructure or restoration projects that are in the interest of the general public, including a road, a bridge, energy infrastructure, or a project that addresses predicted sea-level rise and coastal flood risk.

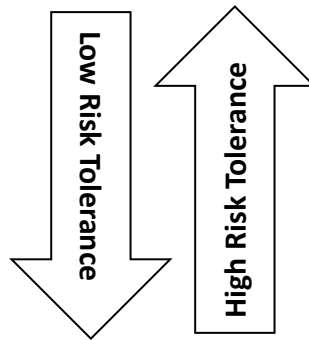
SECTION 10 – GUIDANCE

Your application must follow the New Hampshire Coastal Risk and Hazards Commission's Guiding Principles or other best available science. Below are some of these guidance principles:

- Incorporate science-based coastal flood risk projections into planning;
- Apply risk tolerance* to assessment, planning, design, and construction;
- Protect natural resources and public access;
- Create a bold vision, start immediately, and respond incrementally and opportunistically as projected coastal flood risks increase over time; and
- Consider the full suite of actions including effectiveness and consequences of actions.

*Risk tolerance is a project's willingness to accept a higher or lower probability of flooding impacts. The diagram below gives examples of project with lower and higher risk tolerance:

Critical infrastructures, historic sites, essential ecosystems, and high value assets typically have lower risk tolerance, and thus should be planned, designed, and constructed using higher coastal flood risk projections.



Sheds, pathways, and small docks typically have higher risk tolerance and thus may be planned, designed, and constructed using less protective coastal flood risk projections.



STANDARD DREDGE AND FILL WETLANDS PERMIT APPLICATION ATTACHMENT A: MINOR AND MAJOR PROJECTS



Water Division/Land Resources Management
Wetlands Bureau

[Check the Status of your Application](#)

RSA/ Rule: RSA 482-A/ Env-Wt 311.10; Env-Wt 313.01(a)(1); Env-Wt 313.03

APPLICANT'S NAME: Tidewatch Condominium Assoc. **TOWN NAME:** Portsmouth

Attachment A is required for *all minor and major projects*, and must be completed *in addition* to the [Avoidance and Minimization Narrative](#) or [Checklist](#) that is required by Env-Wt 307.11.

For projects involving construction or modification of non-tidal shoreline structures over areas of surface waters having an absence of wetland vegetation, only Sections I.X through I.XV are required to be completed.

PART I: AVOIDANCE AND MINIMIZATION

In accordance with Env-Wt 313.03(a), the Department shall not approve any alteration of any jurisdictional area unless the applicant demonstrates that the potential impacts to jurisdictional areas have been avoided to the maximum extent practicable and that any unavoidable impacts have been minimized, as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization](#).

SECTION I.I - ALTERNATIVES (Env-Wt 313.03(b)(1))

Describe how there is no practicable alternative that would have a less adverse impact on the area and environments under the Department's jurisdiction.

THE PROJECT PROPOSES TO INSTALL A 4' X 16' ACCESSWAY, 6' X 12' FIXED WOOD PIER, A 4' X 30' GANGWAY, AND A 10' X 20' FLOAT, RESULTING IN 392 SQ. FT. OF PERMANENT IMPACT TO TIDAL WETLAND AND 64 SQ. FT. OF PERMANENT IMPACT TO THE PREVIOUSLY DEVELOPED TIDAL BUFFER ZONE. THE TIDAL WETLANDS TO BE IMPACTED WOULD BE CLASSIFIED AS AN ESTUARINE INTERTIDAL UNCONSOLIDATED SHORE COBBLE-GRAVEL WETLAND SYSTEM THAT IS IRREGULARLY FLOODED BY THE TIDES (E2US1P) AND AN ESTUARINE INTERTIDAL UNCONSOLIDATED SHORE MUD WETLAND SYSTEM THAT IS IRREGULARLY EXPOSED BY THE TIDES (E2US3M). SINCE THE PROPOSED TIDAL DOCK WILL PROVIDE A WATER DEPENDENT FUNCTION, PRACTICABLE ALTERNATIVES ARE SEVERELY REDUCED. THE LOCATION OF THE PIER WAS DESIGNED TO AVOID ANY SURFACE AREA OVER THE SALTMARSH ASSOCIATED WITH THE PROPERTY'S FRONTAGE REPRESENTING THE LEAST IMPACTING ALTERNATIVE.

SECTION I.II - MARSHES (Env-Wt 313.03(b)(2))

Describe how the project avoids and minimizes impacts to tidal marshes and non-tidal marshes where documented to provide sources of nutrients for finfish, crustacean, shellfish, and wildlife of significant value.

The location of the pier was designed to avoid any surface area over the saltmarsh associated with the property's frontage representing the least impacting alternative.

SECTION I.III - HYDROLOGIC CONNECTION (Env-Wt 313.03(b)(3))

Describe how the project maintains hydrologic connections between adjacent wetland or stream systems.

The proposed docking structure will be constructed on piles within the tidal wetland further reducing permanent impacts to the tidal wetland resource. Since the docking structure will be constructed on piles, the structure will not impede tidal flow or alter hydrology, it will not deter use by wildlife species that currently use the wetland area, and it will not impede any migrational fish movement.

SECTION I.IV - JURISDICTIONAL IMPACTS (Env-Wt 313.03(b)(4))

Describe how the project avoids and minimizes impacts to wetlands and other areas of jurisdiction under RSA 482-A, especially those in which there are exemplary natural communities, vernal pools, protected species and habitat, documented fisheries, and habitat and reproduction areas for species of concern, or any combination thereof.

Per the NHB Review, high saltmarsh, intertidal flat, low salt marsh, salt marsh and dwarf glasswort have been identified as sensitive species or habitats on or near the project site. Coordination with NHB in regards to the above protected species and habitats is expected and comments from those departments will be forwarded to NH DES upon receipt.

SECTION I.V - PUBLIC COMMERCE, NAVIGATION, OR RECREATION (Env-Wt 313.03(b)(5))

Describe how the project avoids and minimizes impacts that eliminate, depreciate or obstruct public commerce, navigation, or recreation.

The proposed tidal docking structure has been designed to not impede recreation, public commerce, and navigation. The docking structure does not extend into any federal or local navigation channel and maintains the required 20 foot setbacks from boundary lines extended over water.

SECTION I.VI - FLOODPLAIN WETLANDS (Env-Wt 313.03(b)(6))

Describe how the project avoids and minimizes impacts to floodplain wetlands that provide flood storage.

The project does not propose any impacts to floodplain wetlands as the dock will be constructed on piles therefore providing no significant decrease in flood storage potential.

SECTION I.VII - RIVERINE FORESTED WETLAND SYSTEMS AND SCRUB-SHRUB – MARSH COMPLEXES (Env-Wt 313.03(b)(7))

Describe how the project avoids and minimizes impacts to natural riverine forested wetland systems and scrub-shrub – marsh complexes of high ecological integrity.

The project does not propose impacts to riverine forested wetland systems and scrub shrub marsh complexes.

SECTION I.VIII - DRINKING WATER SUPPLY AND GROUNDWATER AQUIFER LEVELS (Env-Wt 313.03(b)(8))

Describe how the project avoids and minimizes impacts to wetlands that would be detrimental to adjacent drinking water supply and groundwater aquifer levels.

The wetland resources associated with the project site are not hydrologically connected to a groundwater aquifer or drinking water supply.

SECTION I.IX - STREAM CHANNELS (Env-Wt 313.03(b)(9))

Describe how the project avoids and minimizes adverse impacts to stream channels and the ability of such channels to handle runoff of waters.

The project does not propose any impacts to stream channels.

SECTION I.X - SHORELINE STRUCTURES - CONSTRUCTION SURFACE AREA (Env-Wt 313.03(c)(1))

Describe how the project has been designed to use the minimum construction surface area over surface waters necessary to meet the stated purpose of the structures.

The location of the pier was designed to place the least amount of surface area over the saltmarsh associated with the property's frontage representing the least impacting alternative. The dock design also provides for adequate length to extend beyond a salt marsh community to avoid the float resting on vegetated shallows at low tide. The dock length is the minimum necessary to provide the property owner with boating access.

SECTION I.XI - SHORELINE STRUCTURES - LEAST INTRUSIVE UPON PUBLIC TRUST (Env-Wt 313.03(c)(2))

Describe how the type of construction proposed is the least intrusive upon the public trust that will ensure safe docking on the frontage.

The proposed docking structure will be constructed on piles within the tidal wetland further reducing permanent impacts to the tidal wetland resource. The docking structure will be constructed on piles, with pile sets spaced 12 feet apart to allow passive recreation within the public trust.

SECTION I.XII - SHORELINE STRUCTURES – ABUTTING PROPERTIES (Env-Wt 313.03(c)(3))

Describe how the structures have been designed to avoid and minimize impacts on ability of abutting owners to use and enjoy their properties.

The proposed structure maintains the 20 foot setback from property lines extended and also does not create navigational interference with docks on abutting parcels.

SECTION I.XIII - SHORELINE STRUCTURES – COMMERCE AND RECREATION (Env-Wt 313.03(c)(4))

Describe how the structures have been designed to avoid and minimize impacts to the public's right to navigation, passage, and use of the resource for commerce and recreation.

The proposed structure maintains the 20 foot setback from property lines extended and also does not create navigational interference with docks on abutting parcels. The proposed float location is also located a great distance from the Federal Navigational Channel associated with Sagamore Creek.

SECTION I.XIV - SHORELINE STRUCTURES – WATER QUALITY, AQUATIC VEGETATION, WILDLIFE AND FINFISH HABITAT (Env-Wt 313.03(c)(5))

Describe how the structures have been designed, located, and configured to avoid impacts to water quality, aquatic vegetation, and wildlife and finfish habitat.

The proposed docking structure will be constructed on piles within the tidal wetland further reducing permanent impacts to the tidal wetland resource. The docking structure will be constructed on piles, with pile sets spaced 12 feet apart to allow passive recreation within the public trust. Since the docking structure will be constructed on piles, the structure will not impede tidal flow or alter hydrology, it will not deter use by wildlife species that currently use the wetland area, and it will not impede any migrational fish movement.

SECTION I.XV - SHORELINE STRUCTURES – VEGETATION REMOVAL, ACCESS POINTS, AND SHORELINE STABILITY (Env-Wt 313.03(c)(6))

Describe how the structures have been designed to avoid and minimize the removal of vegetation, the number of access points through wetlands or over the bank, and activities that may have an adverse effect on shoreline stability.

The location of the pier was designed to place the least amount of surface area over the saltmarsh associated with the property's frontage representing the least impacting alternative. Since the docking structure will be constructed on piles, there is no vegetation removal needed to construct the dock. The dock has single access point over the bank associated with Sagamore Creek.

PART II: FUNCTIONAL ASSESSMENT**REQUIREMENTS**

Ensure that project meets the requirements of Env-Wt 311.10 regarding functional assessment (Env-Wt 311.04(j); Env-Wt 311.10).

FUNCTIONAL ASSESSMENT METHOD USED:

Wetland functions and values were assessed using the Highway Methodology Workbook, Wetland Functions and Values: A Descriptive Approach. U.S. Army Corps of Engineers. 1999. The Highway Methodology Workbook Supplement, Wetland Functions and Values: A Descriptive Approach. U.S. Army Corps of Engineers. New England Division. 32pp. NAEPP-360-1-30a.

NAME OF CERTIFIED WETLAND SCIENTIST (FOR NON-TIDAL PROJECTS) OR QUALIFIED COASTAL PROFESSIONAL (FOR TIDAL PROJECTS) WHO COMPLETED THE ASSESSMENT: STEVEN D. RIKER, CWS

DATE OF ASSESSMENT: 3/3/21

Check this box to confirm that the application includes a NARRATIVE ON FUNCTIONAL ASSESSMENT:

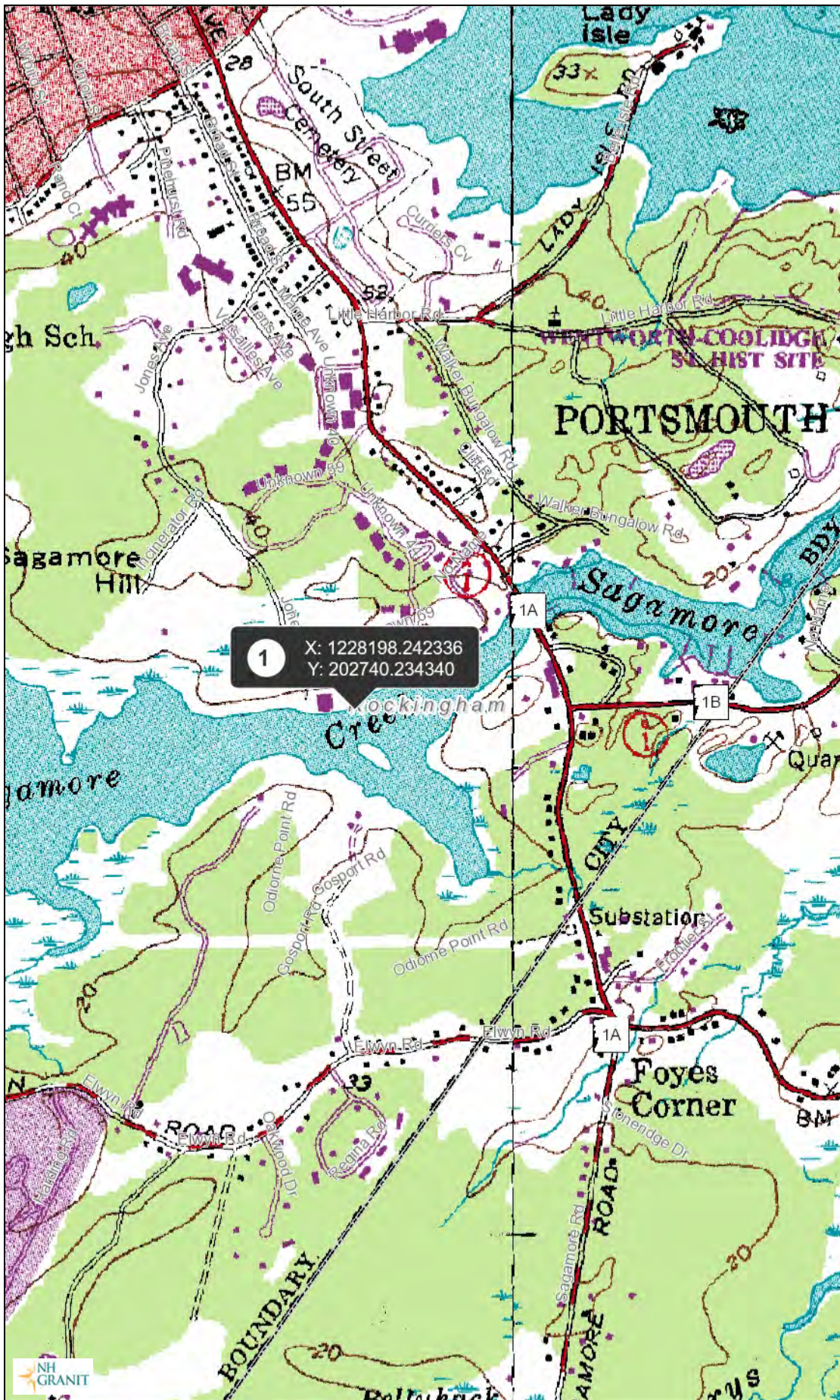


For minor or major projects requiring a standard permit without mitigation, the applicant shall submit a wetland evaluation report that includes completed checklists and information demonstrating the RELATIVE FUNCTIONS AND VALUES OF EACH WETLAND EVALUATED. Check this box to confirm that the application includes this information, if applicable:



Note: The Wetlands Functional Assessment worksheet can be used to compile the information needed to meet functional assessment requirements.

Map by NH GRANIT



Legend

- State
- County
- City/Town

Map Scale

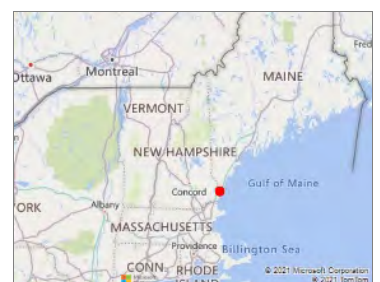
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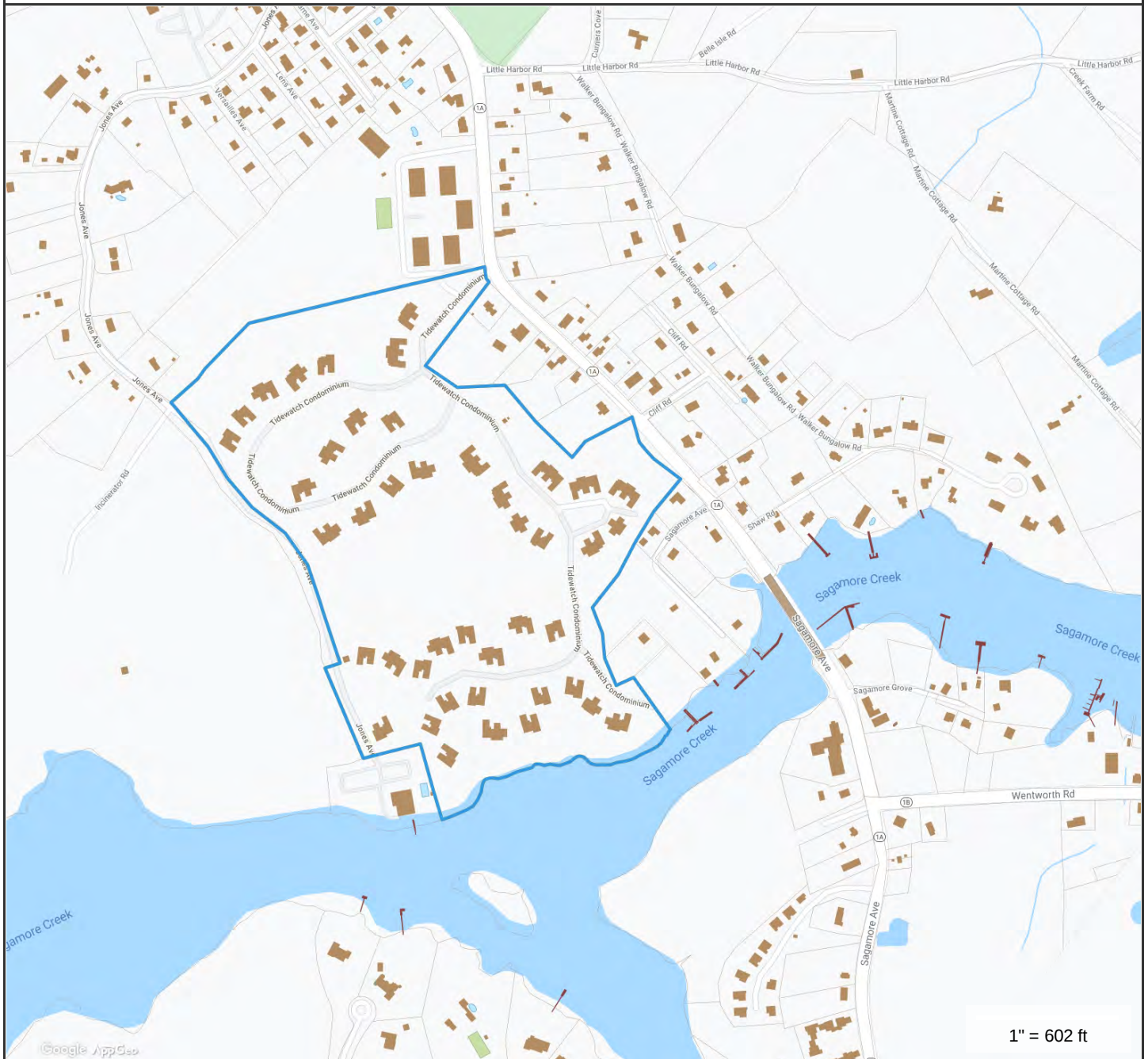
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Map Generated: 8/12/2021



Notes



**Property Information**

Property ID 0223-0030-0000
Location 579 SAGAMORE AVE
Owner TIDEWATCH CONDO MASTERCARD

**MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT**

City of Portsmouth, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 4/1/2019
Data updated 7/17/2019

Print map scale is approximate.
Critical layout or measurement
activities should not be done using
this resource.



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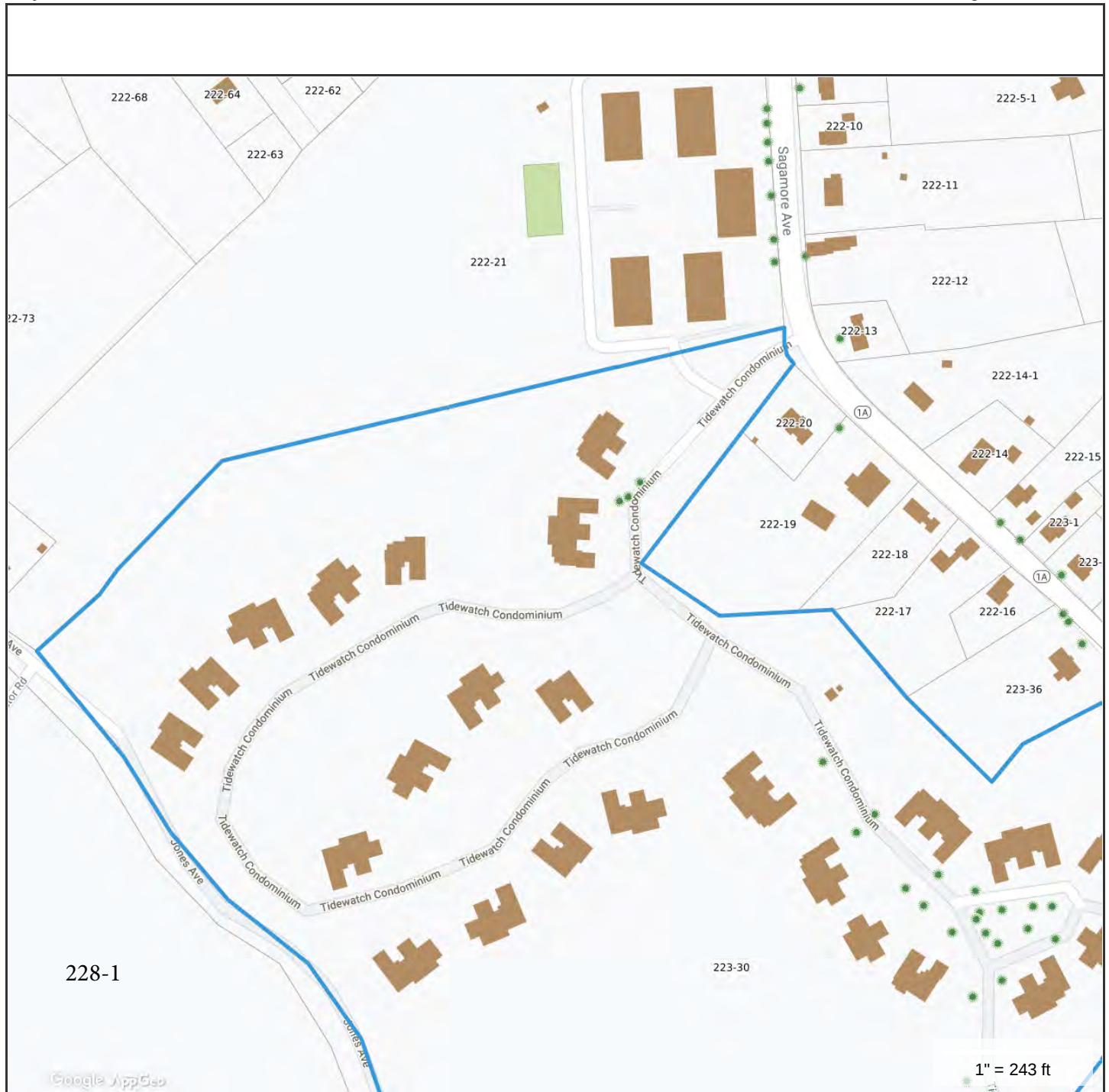


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this resource.

Ambit Engineering Abutter List
Tidewatch Condominium Association
597 Sagamore Avenue
Portsmouth, NH

Job # 2552.19

Applicant/Owner(s)

Map	Lot	Deed	Owner (s) First/Trust	Owner(s) Last, Trustee	Mailing Address	City	State	Zip
223	30		Tidewatch Condominium Association	C/O CP Management	11 Court Street	Exeter	NH	03833

Engineer	Ambit Engineering Civil Engineers & Land Surveyors			200 Griffin Road, Unit #3	Portsmouth	NH	03801
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Other Consultants							
Other Consultants							
Other Consultants							

Job #	2552.19	Abutters						
Map	Lot	Deed	Owner(s) First/Trust	Owner(s) Last /Trustee	Mailing Address	City	State	Zip
223	28		Golter Lobster Sales LLC		30 Nantucket Place	Greenland	NH	03840
223	29		Fanel	Dobre	919 Sagamore Avenue	Portsmouth	NH	03801
223	27		Hogswave LLC		912 Sagamore Avenue	Portsmouth	NH	03801
223	33		Debra M.	DuPont	911 Sagamore Avenue	Portsmouth	NH	03801
223	34		High Marsh Boat Shop LLC		579 Sagamore Avenue #119	Portsmouth	NH	03801
223	36		Kevin P.	O'Keefe	749 Sagamore Avenue	Portsmouth	NH	03801
222	16		Trygg & Kaitlin	Engen	713 Sagamore Avenue	Portsmouth	NH	03801
222	17		Natan Aviezri & Debra S. Klein		697 Sagamore Avenue	Portsmouth	NH	03801
222	18		Thomas P.	Nicholson	695 Sagamore Avenue	Portsmouth	NH	03801
222	19		Hines Family Revocable Trust	William A. Hines Trustee	635 Sagamore Avenue	Portsmouth	NH	03801
222	20		Evan W.	Patten	607 Sagamore Avenue	Portsmouth	NH	03801
222	21		Sagamore Court Limited Partnership	C/O Forest Properties Management, Inc.	625 Mount Auburn Street, Suite 210	Cambridge	MA	02138
228	1		City of Portsmouth DPW		PO Box 628	Portsmouth	NH	03802
227	1		Portsmouth Lodge 97 of Elks		PO Box 143	Portsmouth	NH	03802



AMBIT ENGINEERING, INC. CIVIL ENGINEERS AND LAND SURVEYORS
200 Griffin Road, Unit 3, Portsmouth, NH 03801 Phone (603) 430-9282 Fax 436-2315

10 September 2021

Sagamore Court Limited Partnership
C/O Forest Properties Management
625 Mount Auburn Street
Cambridge, MA 02138

RE: New Hampshire Wetland Application for construction of a tidal docking structure for Tidewatch Condominium Association, 597 Sagamore Avenue, Portsmouth, NH.

Dear Property Owner,

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Please feel free to call if you have any questions or comments.

Sincerely,

Steven D. Riker
NH Certified Wetland Scientist – Permitting Specialist

CERTIFIED MAIL/Return Receipt Requested



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10 September 2021

City of Portsmouth DPW
PO Box 628
Portsmouth, NH 03802

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10 September 2021

Evan W. Patten
607 Sagamore Avenue
Portsmouth, NH 03801

RE: New Hampshire Wetland Application for construction of a tidal docking structure for Tidewatch Condominium Association, 597 Sagamore Avenue, Portsmouth, NH.

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10 September 2021

Kevin P. O'Keefe
749 Sagamore Avenue
Portsmouth, NH 03801

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Dear Property Owner,

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200 Griffin Road, Unit 3, Portsmouth, NH 03801 Phone (603) 430-9282 Fax 436-2315

10 September 2021

Thomas P. Nicholson
695 Sagamore Avenue
Portsmouth, NH 03801

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200 Griffin Road, Unit 3, Portsmouth, NH 03801 Phone (603) 430-9282 Fax 436-2315

10 September 2021

Hogswave LLC
912 Sagamore Avenue
Portsmouth, NH 03801

RE: New Hampshire Wetland Application for construction of a tidal docking structure for Tidewatch Condominium Association, 597 Sagamore Avenue, Portsmouth, NH.

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200 Griffin Road, Unit 3, Portsmouth, NH 03801 Phone (603) 430-9282 Fax 436-2315

10 September 2021

Hines Family Revocable Trust
William A. Hines Trustee
635 Sagamore Avenue
Portsmouth, NH 03801

RE: New Hampshire Wetland Application for construction of a tidal docking structure for Tidewatch Condominium Association, 597 Sagamore Avenue, Portsmouth, NH.

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200 Griffin Road, Unit 3, Portsmouth, NH 03801 Phone (603) 430-9282 Fax 436-2315

10 September 2021

High Marsh Boat Shop LLC
579 Sagamore Avenue #119
Portsmouth, NH 03801

RE: New Hampshire Wetland Application for construction of a tidal docking structure for Tidewatch Condominium Association, 597 Sagamore Avenue, Portsmouth, NH.

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200 Griffin Road, Unit 3, Portsmouth, NH 03801 Phone (603) 430-9282 Fax 436-2315

10 September 2021

Golter Lobster Sales LLC
30 Nantucket Place
Greenland, NH 03840

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200 Griffin Road, Unit 3, Portsmouth, NH 03801 Phone (603) 430-9282 Fax 436-2315

10 September 2021

Dobre Fanel
919 Sagamore Avenue
Portsmouth, NH 03801

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200 Griffin Road, Unit 3, Portsmouth, NH 03801 Phone (603) 430-9282 Fax 436-2315

10 September 2021

Trygg & Kaitlin Engen
713 Sagamore Avenue
Portsmouth, NH 03801

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200 Griffin Road, Unit 3, Portsmouth, NH 03801 Phone (603) 430-9282 Fax 436-2315

10 September 2021

Portsmouth Lodge 97 of Elks
PO Box 143
Portsmouth, NH 03802

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200 Griffin Road, Unit 3, Portsmouth, NH 03801 Phone (603) 430-9282 Fax 436-2315

10 September 2021

Debra M. DuPont
911 Sagamore Avenue
Portsmouth, NH 03801

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10 September 2021

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Site Photograph #1

August 2021



Site Photograph #2

August 2021



Site Photograph #3

August 2021



Site Photograph #4

August 2021





Map by NH GRANIT



Legend

- 2019
- Coastal 2019 1-foot RGB

Map Scale

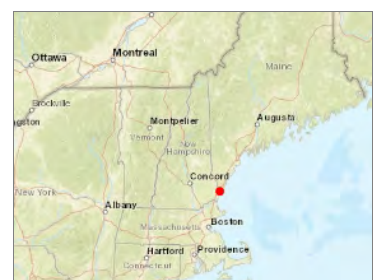
1: 3,247

© NH GRANIT, www.granit.unh.edu
Map Generated: 8/31/2021



Notes

2019 Eelgrass



Map by NH GRANIT



Legend

Current Shellfish Beds

- Blue Mussel
- Oyster
- Razor Clam
- Softshell Clam
- Surf Clam

Coastal 2019 1-foot RGB

Map Scale

1: 3,247

© NH GRANIT, www.granit.unh.edu

Map Generated: 8/31/2021



Notes

Shellfish Beds



Map by NH GRANIT



Legend

Highest Ranked Wildlife Hat

- Not Top Ranked
 - Highest Ranked Habitat in NH
 - Highest Ranked Habitat in Region
 - Supporting Landscape
- Coastal 2019 1-foot RGB

Map Scale

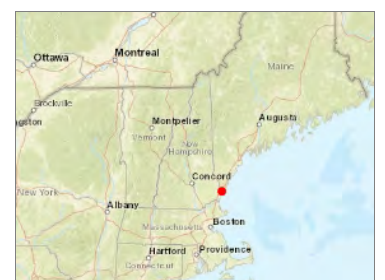
1: 3,247

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Map Generated: 8/31/2021



Notes



EFH Mapper Report

EFH Data Notice

Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional fishery management councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

[Greater Atlantic Regional Office](#)

[Atlantic Highly Migratory Species Management Division](#)

Query Results

Degrees, Minutes, Seconds: Latitude = 43° 3' 10" N, Longitude = 71° 14' 48" W

Decimal Degrees: Latitude = 43.053, Longitude = -70.753



















The query location intersects with spatial data representing EFH and/or HAPCs for the following species/management units.

*** WARNING ***

Please note under "Life Stage(s) Found at Location" the category "ALL" indicates that all life stages of that species share the same map and are designated at the queried location.

EFH

Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
		Atlantic Sea Scallop	ALL	New England	Amendment 14 to the Atlantic Sea Scallop FMP
		Atlantic Wolffish	ALL	New England	Amendment 14 to the Northeast Multispecies FMP
		Winter Flounder	Eggs Juvenile Larvae/Adult	New England	Amendment 14 to the Northeast Multispecies FMP
		Little Skate	Juvenile Adult	New England	Amendment 2 to the Northeast Skate Complex FMP
		Atlantic Herring	Juvenile Adult Larvae	New England	Amendment 3 to the Atlantic Herring FMP
		Atlantic Cod	Larvae Adult Eggs	New England	Amendment 14 to the Northeast Multispecies FMP

Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
		Pollock	Juvenile Eggs Larvae	New England	Amendment 14 to the Northeast Multispecies FMP
		Red Hake	Adult Eggs/Larvae/Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP
		Windowpane Flounder	Adult Larvae Eggs Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP
		Winter Skate	Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP
		Smooth Skate	Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP
		White Hake	Adult Eggs Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP
		Thorny Skate	Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP
		Atlantic Mackerel	Eggs Larvae Juvenile	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11
		Bluefish	Adult Juvenile	Mid-Atlantic	Bluefish
		Atlantic Butterfish	Adult	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11

Salmon EFH

No Pacific Salmon Essential Fish Habitat (EFH) were identified at the report location.

HAPCs

No Habitat Areas of Particular Concern (HAPC) were identified at the report location.

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.

****For links to all EFH text descriptions see the complete data inventory: [open data inventory -->](#)**

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****For links to all EFH text descriptions see the complete data inventory: [open data inventory -->](#)**

All spatial data is currently available for the Mid-Atlantic and New England councils,

Secretarial EFH,

Bigeye Sand Tiger Shark,

Bigeye Sixgill Shark,

Caribbean Sharpnose Shark,

Galapagos Shark,

Narrowtooth Shark,

Sevengill Shark,

Sixgill Shark,

Smooth Hammerhead Shark,

Smalltail Shark

Memo

NH Natural Heritage Bureau NHB DataCheck Results Letter

Please note: portions of this document are confidential.

Maps and NHB record pages are confidential and should be redacted from public documents.

To: John Chagnon, Ambit Engineering, Inc.
200 Griffin Road
Unit 3
Portsmouth, NH 03801

From: Jessica Bouchard, NH Natural Heritage Bureau

Date: 8/17/2021 (valid until 08/17/2022)

Re: Review by NH Natural Heritage Bureau

Permits: NHDES - Wetland Standard Dredge & Fill - Major, USACE - General Permit

NHB ID: NHB21-2611 **Town:** Portsmouth **Location:** 597 Sagamore Avenue
Description: The project proposes construction of a tidal dock consisting of a 4' x 16' accessway, a 6' x 12' pier, a 4' x 30' gangway and a 10' x 20' float providing recreational boating access on Sagamore Creek.

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments **NHB: Please send photos of the proposed tidal dock construction area, including marsh areas along the shoreline, preferably at low tide. Describe the method of construction and where work will be staged, and provide an existing and proposed conditions plan.**
F&G: No Comments At This Time

Natural Community	State ¹	Federal	Notes
High salt marsh	--	--	
Intertidal flat	--	--	
Low salt marsh	--	--	
Salt marsh system	--	--	Threats are primarily changes to the hydrology of the system, introduction of invasive species, and increased input of nutrients and pollutants.
Plant species	State ¹	Federal	Notes
dwarf glasswort (<i>Salicornia bigelovii</i>)*	E	--	Threats are primarily alterations to the hydrology of the wetland, such as ditching or tidal restrictions that might affect the sheet flow of tidal waters across the intertidal flat, activities that eliminate plants, and increased input of nutrients and pollutants in

Memo

NH Natural Heritage Bureau NHB DataCheck Results Letter

Please note: portions of this document are confidential.

Maps and NHB record pages are confidential and should be redacted from public documents.

tundra alkali grass (<i>Puccinellia pumila</i>)*	E	--	stormrunoff. Primarily vulnerable to changes to the hydrology of its habitat, especially alterations that change water levels. It may also be susceptible to increased pollutants and nutrients carried in stormwater runoff.
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¹Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

CONFIDENTIAL – NH Dept. of Environmental Services review

NHB21-2611



New Hampshire Natural Heritage Bureau - Community Record

High salt marsh

Legal Status

Federal: Not listed
State: Not listed

Conservation Status

Global: Not ranked (need more information)
State: Rare or uncommon

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank: --

Detailed Description: 2006: Observed and photographed **high salt marsh** as the dominant community in the Sagamore Creek estuary. 1997: Dominated by the perennial grass *Spartina patens* (salt-meadow cord-grass). Covered more area than the **low salt marsh**. This zone had the highest species richness within the high marsh and included *Solidago sempervirens* (seaside goldenrod), *Festuca rubra* (red fescue), *Hierochloa odorata* (sweet grass), *Elytrigia repens* (quack-grass), *Ligusticum scoticum* (Scotch lovage), *Panicum virgatum* (switch-grass), *Aster novi-belgii* (New York aster), *Teucrium canadensis* (germander), *Sanguisorba canadensis* (Canadian burnet), *Spartina pectinata* (fresh-water cord-grass), *Carex hormathodes* (necklace sedge), and *Juncus arcticus* var. *littoralis* (shore rush). *Distichlis spicata* mixed with *S. patens*, growing at similar elevations on the high marsh or dominated in of the wetter, more poorly drained areas with *Triglochin maritimum* (arrow-grass). Some of these *Triglochin* (forb) pannes supported large numbers of the rare plants *Agalinis maritima* (salt-marsh gerardia) and *Salicornia bigelovii* (dwarf glasswort). *Spartina alterniflora* (short form) pannes occurred on less firm peat soils and appeared to be somewhat deeper, often larger, and saturated or flooded for longer periods than forb pannes.

General Area: 1997: Sagamore Creek is a relatively diverse, sizable, and significant estuary supporting good quality estuarine habitat. Three small, fair quality **brackish marshes** occurred landward of the **high salt marsh**. **Low salt marsh**, **tidal creek bottoms**, a **saline/brackish intertidal flat**, and an undifferentiated **saline/brackish subtidal channel/bay bottom** occur toward the channel. A population of *Puccinellia paupercula* var. *alaskana* (Alaskan goose-grass) was found on the cobbly shore of one of two "salt marsh islands" in the estuary. These islands were covered by **hemlock-beech-oak-pine forest**. Moderate residential and commercial development occurs particularly around the western lobe where Rte. 1 crosses the estuary. Estuarine tidal flow was evaluated as adequate for the salt marsh west of Rte. 1 and unaffected for the remainder of the marsh (USDA Soil Conservation Service 1994).

General Comments: --
Management: --
Comments: --

Location

Survey Site Name: Sagamore Creek
Managed By:

County: Rockingham
Town(s): Portsmouth
Size: 64.4 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Park at Urban Forestry Center on Elwyn Road. Trails lead from here down to the southern edge of the salt marsh along Sagamore Creek, and east through adjacent upland forest to more trails leading to the eastern side of the salt marsh. The western side of the marsh can be accessed from the Episcopal Church near the southeast edge along Rte. 1. The Rte. 1 bridge crosses the creek at the western edge of the salt marsh (the marsh continues on the western side of the bridge but it has been heavily ditched there and is not exemplary).

Dates documented

First reported:	1997-06-18	Last reported:	2006-05-24
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New Hampshire Natural Heritage Bureau - Community Record

Intertidal flat

Legal Status

Federal: Not listed
State: Not listed

Conservation Status

Global: Not ranked (need more information)
State: Rare or uncommon

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank: --

Detailed Description: 2006: Mudflats observed and photographed at low-mid tide. 1997: No details.
General Area: 1997: Sagamore Creek is a relatively diverse, sizable, and significant estuary supporting good quality estuarine habitat. Three small, fair quality **brackish marshes** and **high and low salt marshes** occur landward of the flats. **Tidal creek bottoms** and an undifferentiated **saline/brackish subtidal channel/bay bottom** occur toward the channel. A population of *Puccinellia paupercula* var. *alaskana* (Alaskan goose-grass) was found on the cobbly shore of one of two "salt marsh islands" in the estuary. These islands were covered by **hemlock-beech-oak-pine forest**. Moderate residential and commercial development occurs particularly around the western lobe where Rte. 1 crosses the estuary. Estuarine tidal flow was evaluated as adequate for the salt marsh west of Rte. 1 and unaffected for the remainder of the marsh (USDA Soil Conservation Service 1994).

General Comments: 1997: Intertidal sand and mud flats are gently sloping, sparsely vegetated, habitats. The substrate, exposed completely at extra low spring tide, ranges in composition from sands to muds and silts. Benthic diatoms and other microalgae occurring in this environment are important contributors to the primary productivity of the total estuarine system (Sickley 1989). Macroalgae is typically uncommon across the exposed substrate. Characteristic invertebrates found in New Hampshire's intertidal mudflats include polychaete worms (including *Nereis virens*, *Nephtys caeca*, *Clymenella tortuata*, and *Scoloplos* spp.) and mollusks (including soft-shelled clam [*Mya arenaria*], Baltic Macoma [*Macoma balthica*], gem shell [*Gemma gemma*], and swamp Hydrobia [*Hydrobia minuta*] (NAI 1973). Arthropods are also well represented and include green crabs (*Carcinus maenas*), rock crabs (*Cancer irroratus*), flat-clawed hermit crabs (*Pagurus pollicaris*), and horseshoe crabs (*Limulus polyphemus*). During the diurnal (twice daily) tidal flooding, several species of fish and other aquatic species feed on the benthos and epibenthic algae. This community also provides important foraging habitat for shorebirds and other animals when the intertidal flat is exposed. The diverse variety of primary foods (microalgae, phytoplankton, and detritus) available to consumers supports the high productivity found on intertidal flats. The substrate is composed of sand or silt and clay rich in organic matter. Vascular plants are sparse to more typically absent.

Management
Comments: --

Location

Survey Site Name: Sagamore Creek
Managed By:

County: Rockingham
Town(s): Portsmouth
Size: 88.5 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Occurs between estuarine marshes or other coastal communities landward and subtidal communities seaward and includes tidal creek channels exposed at low tide. Park at Urban Forestry Center on Elwyn Road. Trails lead from here down to the southern edge of the salt marsh. Salt marsh can also

be accessed from the Rte. 1 bridge on the western side.

Dates documented

First reported:	1997-06-18	Last reported:	2006-05-24
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New Hampshire Natural Heritage Bureau - Community Record

Low salt marsh

Legal Status

Federal: Not listed
State: Not listed

Conservation Status

Global: Not ranked (need more information)
State: Rare or uncommon

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank: --

Detailed Description: 2006: Observed and photographed along the edges of tidal creeks and along the lower fringes of the much more dominant **high salt marsh** community. 1997: *Spartina alterniflora* (smooth cord-grass) dominates. The band of *S. alterniflora*, reaching heights of 4-6 feet, generally was restricted to a narrow fringe along ditches, tidal creeks, and margins of Sagamore Creek.

General Area: 1997: The transition between **high** and **low salt marsh** occurred approximately at the mean high water mark; **high salt marsh** stretched landward from mean high water to the upper reaches of spring tides. Sagamore Creek is a relatively diverse, sizable, and significant estuary supporting good quality estuarine habitat. Three small, fair quality **brackish marshes** and a **high salt marsh** occurred landward of the **low salt marsh**. **Tidal creek bottoms**, a **saline/brackish intertidal flat**, and an undifferentiated **saline/brackish subtidal channel/bay bottom** occurred toward the channel. A population of *Puccinellia paupercula* var. *alaskana* (Alaskan goose-grass) was found on the cobbly shore of one of two "salt marsh islands" in the estuary. These islands were covered by **hemlock-beech-oak-pine forest**. Moderate residential and commercial development occurs particularly around the western lobe where Rte. 1 crosses the estuary. Estuarine tidal flow was evaluated as adequate for the salt marsh west of Rte. 1 and unaffected for the remainder of the marsh (USDA Soil Conservation Service 1994).

General Comments: 1997: The **low salt marsh** has more frequent tidal flooding, lower soil oxygen, and reduced soil salinity compared to the **high salt marsh**. *S. alterniflora* dominated the physically stressful low marsh due to its ability to oxygenate its roots and rhizosphere.

Management
Comments: --

Location

Survey Site Name: Sagamore Creek
Managed By:

County: Rockingham
Town(s): Portsmouth
Size: 64.4 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Occurs between mean sea level and mean high tide. Park at Urban Forestry Center on Elwyn Road. Trails lead from here down to the southern edge of the salt marsh along Sagamore Creek, and east through adjacent upland forest to more trails leading to the eastern side of the salt marsh. The western side of the marsh can be accessed from the Episcopal Church near the southeast edge along Rte. 1. The Rte. 1 bridge crosses the creek at the western edge of the salt marsh (the marsh continues on the western side of the bridge but it has been heavily ditched there and is not exemplary).

Dates documented

First reported: 1997-06-18 Last reported: 2006-05-24

New Hampshire Natural Heritage Bureau - System Record

Salt marsh system

Legal Status

Federal: Not listed
State: Not listed

Conservation Status

Global: Not ranked (need more information)
State: Rare or uncommon

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank: --

Detailed Description: A relatively diverse, sizable, and significant estuary supporting good quality estuarine habitat. Three small, fair quality *brackish marshes* and a *high salt marsh* occur landward of the *low salt marsh*.

General Area: 2006: Borders intertidal flats and a subtidal system.
General Comments: --
Management: --
Comments:

Location

Survey Site Name: Sagamore Creek
Managed By: Urban Forestry Center

County: Rockingham
Town(s): Portsmouth
Size: 64.4 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Sagamore Creek east of Rte. 1.

Dates documented

First reported: 1997-06-18 Last reported: 2007-10-17

New Hampshire Natural Heritage Bureau - Plant Record

dwarf glasswort (*Salicornia bigelovii*)**Legal Status**

Federal: Not listed
 State: Listed Endangered

Conservation Status

Global: Demonstrably widespread, abundant, and secure
 State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
 Comments on Rank: --

Detailed Description: 1997: More than 3,000 plants on north shore, and 200-400 on the south shore. 1983: (North of Urban Forestry Center) 20 by 20 foot area. Old (last years) inflorescences with new growth, ca. 2 cm in height, none flowering. Specimen at UNH. 1973: (North shore) ca. 101-1000 plants with seeds dispersing. Specimen S.N. at NHA.

General Area: 1997: Triglochin forb pannes on the **high salt marsh**. Associated dominants were *Triglochin maritimum* (arrow-grass), *Distichlis spicata* (spike-grass), *Spartina alterniflora* (smooth cord-grass), and *S. patens* (salt-meadow cord-grass). *Salicornia europaea* (common glasswort) also present. 1973: 0-10 feet, flat, full sun, wet mud, surrounded by *Spartina* (cord-grass) species. In salt marsh. Marsh pannes on green.

General Comments: This occurrence may have been impacted by 1995/96 Dept. of Transportation bridge replacement project. Several colonies (1983) Coastal Zone Report, Bertrand and Dunlop (1983); F.D. Richardson, NH Water Resources Board (1973).

Management
 Comments: --

Location

Survey Site Name: Sagamore Creek
 Managed By: Sagamore Creek Land

County: Rockingham

Town(s): Portsmouth

Size: 14.8 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Three known sites: (1) Rte 1 and Sagamore Creek, south of Sagamore Creek and east of Rte 1. Wet panne about 30 yards from Rte 1 between 2 telephone poles. Just above State of NH Urban Forestry Center; (2) north shore of Sagamore Creek on either side of small tributary, southwest of Sagamore Hill; (3) south shore of Sagamore Creek ca. 0.5 miles ESE of Rte 1 bridge.

Dates documented

First reported: 1973

Last reported: 1997-06-18

New Hampshire Natural Heritage Bureau - Plant Record

tundra alkali grass (*Puccinellia pumila*)**Legal Status**

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank: --

Detailed Description: 1997: Ca. 50-100 ramets observed, all in flower, of normal vigor.
General Area: 1997: Salt marsh community. Associated species include *Suaeda linearis* (southern sea-blite) and *Plantago maritima* var. *juncoides* (salt marsh plantain).
General Comments: --
Management: --
Comments:

Location

Survey Site Name: Urban Forestry Center
Managed By: Urban Forestry Center

County: Rockingham
Town(s): Portsmouth
Size: 2.8 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: [From Portsmouth, take Rte. 1 south. After crossing Sagamore Creek, turn left on Elwyn Road.] Park at Urban Forestry Center on the left. Population is at NE corner of east island.

Dates documented

First reported: 1997-06-18 Last reported: 1997-06-18



SAFETY DATA SHEET

1. Identification

Product identifier

CCA Treated Wood

Other means of identification

SDS number

92-KPC

Recommended use

Preservative Treated Wood for various weather protected and exterior uses.

Recommended restrictions

None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name

Koppers Performance Chemicals Inc.

Address

1016 Everee Inn Rd., Griffin, GA 30224

Telephone number

770-233-4200

Contact person

Regulatory Manager, KPC Inc.

Emergency Telephone

CHEMTREC 1-800-424-9300

Number

E-mail

KPCmgrsds@koppers.com

2. Hazard(s) identification

Physical hazards

Not classified.

Health hazards

Carcinogenicity (Inhalation)

Category 1A

OSHA defined hazards

Combustible dust

Label elements



Signal word

Danger

Hazard statement

May cause cancer by inhalation. May form combustible dust concentrations in air.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Wear protective gloves/protective clothing/eye protection/face protection. Prevent dust accumulation to minimize explosion hazard. Observe good industrial hygiene practices.

Response

If exposed or concerned: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use water fog, foam, carbon dioxide, dry chemical for extinction. Collect spillage.

Storage

Store away from incompatible materials.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)

None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Arsenic Pentoxide	1303-28-2	<3
Copper Oxide	1317-39-1	<1.5
Trivalent Chromium	1308-38-9	<3.5
Wood	N/A	<85

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
Components not listed are either non-hazardous or are below reportable limits.

Depending on the additives applied to the treating solution, this wood may also contain <1 % of mold inhibitors, <1% of a non-hazardous oil emulsion, and <% of a colorant.

4. First-aid measures

Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately. Some species may cause allergic respiratory reactions with asthma-like symptoms in sensitized individuals.
Skin contact	Remove contaminated clothing. Wash skin thoroughly with soap and water for several minutes. Prolonged contact with treated wood and/or treated wood dust, especially when freshly treated at the plant, may cause irritation to the skin. Abrasive handling or rubbing of the treated wood may increase skin irritation. Some wood species, regardless of treatment, may cause dermatitis or allergic skin reactions in sensitized individuals. In case of rashes, wounds or other skin disorders: Seek medical attention and bring along these instructions.
Eye contact	Do not rub eye. Immediately flush eye(s) with plenty of water. Remove any contact lenses and open eyelids wide apart. If irritation persists get medical attention.
Ingestion	Rinse mouth thoroughly if dust is ingested. Get medical attention if any discomfort continues.
Most important symptoms/effects, acute and delayed	Wood dust: May cause nasal dryness, irritation and mucostasis. Coughing, wheezing, sneezing, sinusitis and prolonged colds have also been reported. Depending on wood species may cause respiratory sensitization and/or irritation. Symptoms can include irritation, redness, scratching of the cornea, and tearing. May cause eczema-like skin disorders (dermatitis). Airborne treated or untreated wood dust may cause nose, throat, or lung irritation and other respiratory effects.
Indication of immediate medical attention and special treatment needed	If one ounce of treated wood dust per 10 lbs. of body weight are ingested, acute arsenic intoxication is a possibility.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Carbon dioxide (CO ₂). Dry chemical powder. Apply extinguishing media carefully to avoid creating airborne dust.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Explosion hazard: Avoid generating dust; fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard. Depending on moisture content, and more importantly, particle diameter and airborne concentration, wood dust in a contained area may explode in the presence of an ignition source. Wood dust may similarly deflagrate (combustion without detonation like an explosion) if ignited in an open or loosely contained area. An airborne concentration of 40 grams (40,000 mg) of dust per cubic meter of air is often used as the LEL for wood dusts. Reference NFPA Standards- 654 and 664 for guidance. Toxic vapors from wood and preservative may be given off in a fire. Ash will contain free arsenic and chromium and may be toxic.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	May form combustible dust concentrations in air.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Use only non-sparking tools. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Stop the flow of material, if this is without risk.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize dust generation and accumulation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Explosion-proof general and local exhaust ventilation. Avoid prolonged exposure. Wear appropriate personal protective equipment. Avoid release to the environment. Do not burn preserved wood. Do not use preserved wood as Mulch. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Keep away from heat, spark, open flames and other sources of ignition. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

U.S. - OSHA

Components	Type	Value	Form
Wood Dust (CAS N/A)	PEL	5 mg/m ³	Respirable dust.
		15 mg/m ³	Total fraction.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Trivalent Chromium (CAS 1308-38-9)	PEL	0.5 mg/m ³

ACGIH

Components	Type	Value	Form
Wood Dust (CAS N/A)	TWA	1 mg/m ³	Inhalable fraction.

US. ACGIH Threshold Limit Values

Components	Type	Value
Arsenic Pentoxide (CAS 1303-28-2)	TWA	0.01 mg/m ³
Trivalent Chromium (CAS 1308-38-9)	TWA	0.5 mg/m ³

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Arsenic Pentoxide (CAS 1303-28-2)	Ceiling	0.002 mg/m ³	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Copper Oxide (CAS 1317-39-1)	TWA	1 mg/m3	Dust and mist.
Trivalent Chromium (CAS 1308-38-9)	TWA	0.5 mg/m3	
Wood Dust (CAS N/A)	TWA	1 mg/m3	Dust.

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Arsenic Pentoxide (CAS 1303-28-2)	35 µg/l	Inorganic arsenic, plus methylated metabolites, as As	Urine	*

* - For sampling details, please see the source document.

Appropriate engineering controls Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear dust-resistant safety goggles with side shields where there is danger of eye contact.

Skin protection

Hand protection

When handling wood, wear leather or fabric gloves.

Other

Wear suitable protective clothing. Use of an impervious apron is recommended.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use a NIOSH-approved respirator if there is a potential for exposure to dust exceeding exposure limits (See 29 CFR 1910.134, respiratory protection standard).

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

If wood dust contacts the skin, workers should wash the affected areas with soap and water. Clothing contaminated with wood dust should be removed, and provisions should be made for the safe removal of the chemical from the clothing. Persons laundering the clothes should be informed of the hazardous properties of wood dust. A worker who handles wood dust should thoroughly wash hands, forearms, and face with soap and water before eating, using tobacco products, using toilet facilities, applying cosmetics, or taking medication. Workers should not eat, drink, use tobacco products, apply cosmetics, or take medication in areas where wood dust is handled, or processed.

9. Physical and chemical properties

Appearance

Physical state	Solid.
Form	Solid.
Color	Yellow/green.

Odor Wood odor.

Odor threshold Not available.

pH Not applicable.

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Combustible solid.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not applicable.
Vapor density	Not applicable.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Highly insoluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not applicable.
Other information	
Density	As wood.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Keep away from heat, sparks and open flame. Minimize dust generation and accumulation. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Toxic vapors from wood and preservative may be given off in a fire. Ash will contain free arsenic and chromium and may be toxic.

11. Toxicological information**Information on likely routes of exposure**

Inhalation	Wood dust, treated or untreated, is irritating to the nose, throat and lungs. Prolonged or repeated inhalation of wood dusts may cause respiratory irritation, recurrent bronchitis and prolonged colds. Some species may cause allergic respiratory reactions with asthma-like symptoms in sensitized individuals. Prolonged exposure to wood dusts by inhalation has been reported to be associated with nasal and paranasal cancer.
Skin contact	Handling may cause splinters. Prolonged contact with treated wood and/or treated wood dust, especially when freshly treated at the plant, may cause irritation to the skin. Abrasive handling or rubbing of the treated wood may increase skin irritation. Some wood species, regardless of treatment, may cause dermatitis or allergic skin reactions in sensitized individuals.
Eye contact	Dust may irritate the eyes.
Ingestion	Not likely, due to the form of the product. However, ingestion of dusts generated during working operations may cause nausea and vomiting. If one ounce of treated wood dust per 10 lbs. of body weight are ingested, acute arsenic intoxication is a possibility. Certain species of wood and their dusts may contain natural toxins, which can have adverse effects in humans.
Symptoms related to the physical, chemical and toxicological characteristics	Wood dust: May cause nasal dryness, irritation and mucostasis. Coughing, wheezing, sneezing, sinusitis and prolonged colds have also been reported. Depending on wood species may cause respiratory sensitization and/or irritation. Symptoms can include irritation, redness, scratching of the cornea, and tearing. May cause eczema-like skin disorders (dermatitis). Airborne treated or untreated wood dust may cause nose, throat, or lung irritation and other respiratory effects.

Information on toxicological effects

Acute toxicity	Not expected to be acutely toxic.
Skin corrosion/irritation	Dust may irritate skin.
Serious eye damage/eye irritation	Dust may irritate the eyes.

Respiratory or skin sensitization

ACGIH Sensitization

Wood (CAS N/A)

Dermal sensitization

Respiratory sensitization

Respiratory sensitization

Exposure to wood dusts can result in hypersensitivity,

Skin sensitization

Exposure to wood dust can result in the development of contact dermatitis. The primary irritant dermatitis resulting from skin contact with wood dusts consist of erythema, blistering, and sometimes erosion and secondary infections occur.

Germ cell mutagenicity

No component of this product present at levels greater than or equal to 0.1% is identified as a mutagen by OSHA.

Carcinogenicity

May cause cancer by inhalation.

This classification is based on an increased incidence of nasal and paranasal cancers in people exposed to wood dusts.

IARC Monographs. Overall Evaluation of Carcinogenicity

Arsenic Pentoxide (CAS 1303-28-2)

1 Carcinogenic to humans.

Trivalent Chromium (CAS 1308-38-9)

3 Not classifiable as to carcinogenicity to humans.

Wood (CAS N/A)

1 Carcinogenic to humans.

NTP Report on Carcinogens

Arsenic Pentoxide (CAS 1303-28-2)

Known To Be Human Carcinogen.

Wood Dust (CAS N/A)

Known To Be Human Carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Arsenic Pentoxide (CAS 1303-28-2)

Cancer

Reproductive toxicity

This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure

Not classified.

Specific target organ toxicity - repeated exposure

Not classified.

Aspiration hazard

Not likely, due to the form of the product.

Chronic effects

Chronic exposure to wood dusts can result in pneumonitis, and coughing, wheezing, fever and the other signs and symptoms associated with chronic bronchitis. Individuals with pre-existing disease in or a history of ailments involving the skin, kidney, liver, respiratory tract, eyes, or nervous system are at a greater than normal risk of developing adverse effects from woodworking operations with this product.

Further information

The effects of industrial exposure to the chrome-copper-arsenic preservative used to treat CCA wood has been evaluated in three independent epidemiology studies. In each case the authors concluded that workers exposed on a daily basis to these preservatives were at no increased risk of death or disease as a result of their exposure.

Recreational exposure to children using CCA treated wood playground equipment has been evaluated. The results of this study indicate that the amount of arsenic transferred from the wood surface to the child is within the normal variation of total arsenic exposure to children and that the maximum risks of skin cancer associated with the exposure approximates the skin cancer risk from the sunlight experienced during play periods. Leaf, stem, and fruit of grape plants grown adjacent to CCA treated wood poles did not take up preservative components from the poles above background levels (limit of detection 0.2 and 0.05 ppm for chrome and arsenic, respectively).

12. Ecological information

Ecotoxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability

No data is available on the degradability of this product.

Bioaccumulative potential

No data available on bioaccumulation.

Mobility in soil

The product is insoluble in water.

Mobility in general

The product is not volatile but may be spread by dust-raising handling.

Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. DO NOT BURN! Ash may be toxic and a hazardous waste; combustion vapors may be toxic. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

US RCRA Hazardous Waste P List: Reference

Arsenic Pentoxide (CAS 1303-28-2) P011

Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are listed on or exempt from the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Arsenic Pentoxide (CAS 1303-28-2)	Cancer Liver Skin Respiratory irritation Nervous system Acute toxicity
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CERCLA Hazardous Substance List (40 CFR 302.4)

Arsenic Pentoxide (CAS 1303-28-2)	LISTED
Copper Oxide (CAS 1317-39-1)	LISTED
Trivalent Chromium (CAS 1308-38-9)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - No Delayed Hazard - Yes Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No
--------------------------	--

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
Arsenic Pentoxide	1303-28-2	1		100	10000

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Arsenic Pentoxide	1303-28-2	<3
Copper Oxide	1317-39-1	<1.5
Trivalent Chromium	1308-38-9	<3.5

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Arsenic Pentoxide (CAS 1303-28-2)
Trivalent Chromium (CAS 1308-38-9)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Arsenic Pentoxide (CAS 1303-28-2)
Trivalent Chromium (CAS 1308-38-9)

US. New Jersey Worker and Community Right-to-Know Act

Arsenic Pentoxide (CAS 1303-28-2)
Copper Oxide (CAS 1317-39-1)
Trivalent Chromium (CAS 1308-38-9)
Wood Dust (CAS N/A)

US. Pennsylvania Worker and Community Right-to-Know Law

Arsenic Pentoxide (CAS 1303-28-2)
Trivalent Chromium (CAS 1308-38-9)
Wood Dust (CAS N/A)

US. Rhode Island RTK

Arsenic Pentoxide (CAS 1303-28-2)
Copper Oxide (CAS 1317-39-1)
Trivalent Chromium (CAS 1308-38-9)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Wood Dust (CAS N/A)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 05-April-2015
Revision date 01-June-2015
Version # 02

Further information

HMIS® is a registered trade and service mark of the NPCA.
E - Safety Glasses, Gloves, Dust Respirator

PERCENTAGE OF HAZARDOUS INGREDIENTS COMPONENT %:

0.25 pcf

Arsenic Pentoxide 0.3%, Copper Oxide 0.15%, Chromium Trioxide 0.4%, Wood Dust* 84.28%

0.4 pcf

Arsenic Pentoxide 0.4%, Copper Oxide 0.2%, Chromium Trioxide 0.6%, Wood Dust* 83.98%

0.6 pcf

Arsenic Pentoxide 0.6%, Copper Oxide 0.3%, Chromium Trioxide 0.9%, Wood Dust* 83.47%

1.0 pcf

Arsenic Pentoxide 1.0%, Copper Oxide 0.6%, Chromium Trioxide 1.4%, Wood Dust* 82.45%

2.5 pcf

Arsenic Pentoxide 2.6%, Copper Oxide 1.3%, Chromium Trioxide 3.3%, Wood Dust* 78.88%

* This represents the maximum amount of wood dust that could be generated if the wood was completely machined.

The above percentages are based on the applicable retention, a wood density of 32 pcf., and a moisture content of 15%, the above values may vary due to the variability of treatment and the natural variability of wood.

HMIS® ratings

Health: 1*

Flammability: 1

Physical hazard: 0

Personal protection: E

NFPA ratings



Disclaimer

Koppers Performance Chemicals Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

Wetland Functions and Values Assessment

Prepared for:

**Tidewatch Condominium Association
597 Sagamore Avenue
Portsmouth, New Hampshire 03801**

Prepared By:

**Ambit Engineering, Inc
200 Griffin, Unit 3
Portsmouth, New Hampshire 03801**



Date: August 31, 2021

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INTRODUCTION

The applicant is proposing the construction of a tidal docking structure at 597 Sagamore Avenue, Portsmouth, New Hampshire. The project site is identified on Portsmouth Tax Map 223 as Lot 30, and is approximately 53.3 acres in size. As currently designed, the proposed project would require impacts to tidal wetlands associated with Sagamore Creek.

The purpose of this report is to present the existing functions and values of the tidal wetlands and to assess any impacts the proposed project may have on their ability to continue to perform these functions and values. The tidal wetlands being impacted were assessed with consideration to their association with Sagamore Creek and the larger marine ecosystem, and was not limited to the tidal wetlands immediately on-site.

METHODS

DATA COLLECTION

The tidal wetlands associated with this project area were identified and characterized through field survey and review of existing information. Ambit Engineering, Inc. (Ambit) conducted a site visit in March of 2021 to characterize the tidal wetlands and collect the necessary information to complete a functions and values assessment. In addition, Ambit contacted the New Hampshire Natural Heritage Bureau (NHB) regarding existing information of documented rare species or natural communities within the vicinity of the project site.

WETLAND FUNCTIONS AND VALUES ASSESSMENT

Ambit assessed the ability of the tidal wetlands to provide certain functions and values and analyzed the potential affects the proposed project may have on their ability to continue to provide those functions and values. Wetland functions and values were assessed using the *Highway Methodology Workbook, Wetland Functions and Values: A Descriptive Approach*.¹ This method bases function and value determinations on the presence or absence of specific criteria for each of the 13 wetland functions and values (see definitions below). These criteria are assessed through direct field observations and a review of existing resource maps and databases. As part of the evaluation, the most important functions and values associated with the on-site wetlands are identified. In addition, the ecological integrity of the wetlands is evaluated based on the existing levels of disturbance and the overall significance of the wetlands within the local watershed.

- ° **Groundwater Interchange (Recharge/Discharge)**

This function considers the potential for the project area wetlands to serve as groundwater recharge and/or discharge areas. It refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

- ° **Floodwater Alteration (Storage and Desynchronization)**

This function considers the effectiveness of the wetlands in reducing flood damage by attenuating floodwaters for prolonged periods following precipitation and snow melt events.

- ° **Fish and Shellfish Habitat**

This function considers the effectiveness of seasonally or permanently flooded areas within the subject wetlands for their ability to provide fish and shellfish habitat.

- ° **Sediment/Toxicant Retention**

This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland to function as a trap for sediments, toxicants, or pathogens, and is generally related to factors such as the type of soils, the density of vegetation, and the position in the landscape.

- ° **Nutrient Removal/Retention/Transformation**

This wetland function relates to the effectiveness of the wetland to prevent or reduce the adverse effects of excess nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers, or estuaries.

¹ U.S. Army Corps of Engineers. 1999. *The Highway Methodology Workbook Supplement, Wetland Functions and Values: A Descriptive Approach*. U.S. Army Corps of Engineers. New England Division. 32pp. NAEPP-360-1-30a.

° **Production Export (Nutrient)**

This function relates to the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

° **Sediment/Shoreline Stabilization**

This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion, primarily through the presence of persistent, well-rooted vegetation.

° **Wildlife Habitat**

This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

° **Recreation (Consumptive and Non-Consumptive)**

This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting, and other active or passive recreational activities.

° **Educational/Scientific Value**

This value considers the effectiveness of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

° **Uniqueness/Heritage**

This value relates to the effectiveness of the wetland or its associated water bodies to provide certain special values such as archaeological sites, unusual aesthetic quality, historical events, or unique plants, animals, or geologic features.

° **Visual Quality/Aesthetics**

This value relates to the visual and aesthetic qualities of the wetland.

° **Endangered Species Habitat**

This value considers the suitability of the wetland to support threatened or endangered species.

FUNCTIONS AND VALUES ASSESSMENT

Results of the wetland functions and values assessment are presented below. This assessment includes a discussion of potential changes to existing wetland functions and values that may occur as a result of the proposed project:

Groundwater Interchange (Recharge/Discharge)

Because there is no identified sand and gravel aquifer underlying the project area, and the wetlands are not underlain by sands or gravel, it is unlikely that significant groundwater recharge is occurring within the tidal wetlands.

Floodwater Alteration (Storage and Desynchronization)

The tidal wetlands associated with Sagamore Creek receive floodwaters from the surrounding watershed and connected waterways; therefore, is considered a principal function considering the large size of the combined waterways.

Fish and Shellfish Habitat

The tidal wetland does provide fish and shellfish habitat, is associated with Sagamore Creek and the Atlantic Ocean; therefore, is considered a principal function.

Sediment/Toxicant Retention

The tidal wetland (on site) contains dense vegetation and a significant source of sediments or toxicants; therefore, is considered a principal function.

Nutrient Removal/Retention/Transformation

The tidal wetland (on site) contains dense vegetation and a significant source of sediments or toxicants; therefore, is considered a principal function.

Production Export (Nutrient)

Production export is a wetland function that typically occurs in the form of nutrient or biomass transport via watercourses, foraging by wildlife species, and removal of timber and other natural products. Because the tidal wetland provides fish and wildlife habitat, commercial and recreational fisheries opportunities, and nutrients are transferred over several trophic levels in the marine ecosystem, this is considered a principal function.

Sediment/Shoreline Stabilization

Due to the tidal nature and wave action of this wetland; sediment/shoreline stabilization is considered a principal function.

Wildlife Habitat

The greater tidal wetland and Sagamore Creek provide a variety of coastal and marine habitats, therefore would be considered a principal function.

Recreation (Consumptive and Non-Consumptive)

The greater tidal wetland and Sagamore Creek provides a variety of consumptive and non-consumptive recreational opportunities including hunting, fishing and bird watching; therefore, would be considered a principal function.

Education/Scientific Value

The greater tidal wetland and Sagamore Creek are part of a larger marine ecosystem with multiple areas of public access making this a principal value.

Uniqueness/Heritage

The tidal wetland and Sagamore Creek are unique to the seacoast area. Additionally, there are pre and post-colonial historical components associated with the Bellamy River and the surrounding areas making this a principal value.

Visual Quality/Aesthetics

The Bellamy River provides aesthetically pleasing coastal views that are viewable from surrounding uplands as well as from the water, making this a principal function.

Endangered Species Habitat

An online inquiry with the NHB resulted in the potential for high saltmarsh, intertidal flat, low saltmarsh, saltmarsh system and dwarf glasswort to possibly occur near the project area. Project information will be provided to NHB and comments will be provided to NH DES upon receipt.

PROPOSED IMPACTS

This report is accompanying a New Hampshire Department of Environmental Services (NHDES) Major Impact Wetland Permit Application request to propose 392 sq. ft. of permanent impact to tidal wetland and 64 sq. ft. of permanent impact to the previously developed 100' Tidal Buffer Zone for the construction of a tidal docking structure including a 4' x 16' accessway, a 6' x 12' fixed pier, a 4' x 30' gangway and a 10' x 20' float (overall structure length 52') providing one slip on 1,071+/- feet of frontage along Sagamore Creek.

SUMMARY AND CONCLUSIONS

The jurisdictional tidal wetland is part of a large marine system and provides eleven principal functions and values when evaluated as a whole. These functions and values include: floodflow alteration, fish and shellfish habitat, production export, sediment/shoreline stabilization, wildlife habitat, recreation, education/scientific value, uniqueness/heritage, and visual quality aesthetics. While the entire marine system provides these principal functions and values, the proposed impacts associated with the dock modification will not have any effect on its ability to continue to provide them.

The proposed impacts have been minimized to the greatest extent practicable, while allowing reasonable use of the property. The proposed docking structure will be constructed on piles within the tidal wetland

further reducing permanent impacts. The docking structure will not contribute to additional storm water or pollution. It is anticipated that there will be no effect on any fish or wildlife species that currently use the site for food, cover, and/or habitat. The tidal docking structure will not impede tidal flow or alter hydrology, it will not deter use by wildlife species that currently use the wetland area, and it will not impede any migrational fish movement. The float and gangway will be temporary docking structures and will be removed during winter months as to not interfere with ice floe.

The docking structure has been designed to provide recreational boating access utilizing the natural grade of the dock location. There is no grading of the shoreline required to construct the dock. There will be no construction activity that will disturb the area adjacent to the use. All work will be performed from a crane barge at low tide. Piles to be driven are above the Mean Low Water line and there is no need for erosion control. There will be no water in this location during pile driving and therefore no temporary disturbance associated with construction. The barge floats into position and the piles are driven by the crane equipped with a vibratory hammer. This method eliminates any contact of construction equipment with the protected resource. Portions of the docking structure are pre-fabricated off site and transported to the site via crane barge.













Based on our assessment of the current functions and values, the proposed modification of the existing tidal docking structure; it is our belief that the proposed project will have no significant impact on the tidal wetlands or greater marine systems ability to continue to provide their functions and values.

APPENDIX A

WETLAND FUNCTION - VALUE EVALUATION FORM

Wetland Function – Value Evaluation Form

Wetland Description: Wetland A is a tidal wetland associated with Sagamore Creek.		File number: 2552.19	
		Wetland identifier: Wetland A	
		Latitude:X:1,228,198.24	Longitude:Y:202,740.
		Preparer(s): Ambit Engineering, Inc.	
		200 Griffin Road	
		Date: March 3, 2021	

Function/Value	Capability Y N		Summary	Principal Yes/No
 Groundwater Recharge/Discharge		X	This wetland does not possess the characteristics needed to provide this function as there are no identified underlying sand or gravel aquifers.	—
 Floodwater Alteration	X		The tidal wetland and the Bellamy River do receive floodwater from the surrounding watershed and connected waterways; therefore, this would be considered a principal function.	Y
 Fish and Shellfish Habitat	X		The tidal wetland and the Bellamy River are part of a larger coastal marine system and provide both fish and shellfish habitat. This is considered a Principal Function.	Y
 Sediment/Toxicant Retention	X		The immediate tidal wetland contains dense vegetation and a source of sediments and toxicants, therefore a principal function.	Y
 Nutrient Removal	X		The immediate tidal wetland contains dense vegetation and a source of nutrients, therefore a principal function.	Y
 Production Export	X		Because the tidal wetland provides fish and wildlife habitat, commercial and recreational fishing opportunities, and nutrients are transferred over several trophic levels in the marine ecosystem, this is considered a principal function.	Y
 Sediment/Shoreline Stabilization	X		Due to the tidal nature and wave action of this wetland; sediment/shoreline stabilization is considered a principal function.	Y
 Wildlife Habitat	X		The greater tidal wetland and the Bellamy River provides a variety of coastal and marine habitat, therefore would be considered a principal function.	Y
 Recreation	X		The adjacent tidal wetland provides a variety of consumptive and non-consumptive recreational opportunities including hunting, fishing and bird watching; therefore, would be considered a principal function.	Y
 Education/Scientific Value	X		The tidal wetland and the Bellamy River are part of a larger marine ecosystem with multiple areas of public access making this a principal value.	Y
 Uniqueness/Heritage	X		The tidal wetland and the Bellamy River are unique to the seacoast area. Additionally, there are pre and post-colonial historical components associated with the Bellamy River and the surrounding areas making this a principal value.	Y
 Visual Quality/Aesthetics	X		The Bellamy River provides aesthetically pleasing coastal views that are seeable from surrounding uplands as well as from the water, making this a principal function.	Y
ES Endangered Species Habitat	X		An online inquiry with the NH Natural Heritage Bureau resulted in an occurrence of sensitive species near the project area. Ambit Engineering will coordinate with NHB and NHF & G and will forward comment to NH DES upon receipt.	—
Other				

Notes:

* Attach list of considerations.

APPENDIX B

PHOTO LOG

Site Photograph #1

August 2021



Site Photograph #2

August 2021



Site Photograph #3

August 2021



Site Photograph #4

August 2021





APPENDIX C

NEW HAMPSHIRE NATURAL HERITAGE BUREAU CORRESPONDENCE

Memo

NH Natural Heritage Bureau NHB DataCheck Results Letter

Please note: portions of this document are confidential.

Maps and NHB record pages are confidential and should be redacted from public documents.

To: John Chagnon, Ambit Engineering, Inc.
200 Griffin Road
Unit 3
Portsmouth, NH 03801

From: Jessica Bouchard, NH Natural Heritage Bureau

Date: 8/17/2021 (valid until 08/17/2022)

Re: Review by NH Natural Heritage Bureau

Permits: NHDES - Wetland Standard Dredge & Fill - Major, USACE - General Permit

NHB ID: NHB21-2611 **Town:** Portsmouth **Location:** 597 Sagamore Avenue
Description: The project proposes construction of a tidal dock consisting of a 4' x 16' accessway, a 6' x 12' pier, a 4' x 30' gangway and a 10' x 20' float providing recreational boating access on Sagamore Creek.

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments **NHB: Please send photos of the proposed tidal dock construction area, including marsh areas along the shoreline, preferably at low tide. Describe the method of construction and where work will be staged, and provide an existing and proposed conditions plan.**
F&G: No Comments At This Time

Natural Community	State ¹	Federal	Notes
High salt marsh	--	--	
Intertidal flat	--	--	
Low salt marsh	--	--	
Salt marsh system	--	--	Threats are primarily changes to the hydrology of the system, introduction of invasive species, and increased input of nutrients and pollutants.
Plant species	State¹	Federal	Notes
dwarf glasswort (<i>Salicornia bigelovii</i>)*	E	--	Threats are primarily alterations to the hydrology of the wetland, such as ditching or tidal restrictions that might affect the sheet flow of tidal waters across the intertidal flat, activities that eliminate plants, and increased input of nutrients and pollutants in

Memo

NH Natural Heritage Bureau NHB DataCheck Results Letter

Please note: portions of this document are confidential.

Maps and NHB record pages are confidential and should be redacted from public documents.

tundra alkali grass (<i>Puccinellia pumila</i>)*	E	--	stormrunoff. Primarily vulnerable to changes to the hydrology of its habitat, especially alterations that change water levels. It may also be susceptible to increased pollutants and nutrients carried in stormwater runoff.
--	---	----	--

¹Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

CONFIDENTIAL – NH Dept. of Environmental Services review

NHB21-2611



New Hampshire Natural Heritage Bureau - Community Record

High salt marsh

Legal Status

Federal: Not listed
State: Not listed

Conservation Status

Global: Not ranked (need more information)
State: Rare or uncommon

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank: --

Detailed Description: 2006: Observed and photographed **high salt marsh** as the dominant community in the Sagamore Creek estuary. 1997: Dominated by the perennial grass *Spartina patens* (salt-meadow cord-grass). Covered more area than the **low salt marsh**. This zone had the highest species richness within the high marsh and included *Solidago sempervirens* (seaside goldenrod), *Festuca rubra* (red fescue), *Hierochloa odorata* (sweet grass), *Elytrigia repens* (quack-grass), *Ligusticum scoticum* (Scotch lovage), *Panicum virgatum* (switch-grass), *Aster novi-belgii* (New York aster), *Teucrium canadensis* (germander), *Sanguisorba canadensis* (Canadian burnet), *Spartina pectinata* (fresh-water cord-grass), *Carex hormathodes* (necklace sedge), and *Juncus arcticus* var. *littoralis* (shore rush). *Distichlis spicata* mixed with *S. patens*, growing at similar elevations on the high marsh or dominated in of the wetter, more poorly drained areas with *Triglochin maritimum* (arrow-grass). Some of these *Triglochin* (forb) pannes supported large numbers of the rare plants *Agalinis maritima* (salt-marsh gerardia) and *Salicornia bigelovii* (dwarf glasswort). *Spartina alterniflora* (short form) pannes occurred on less firm peat soils and appeared to be somewhat deeper, often larger, and saturated or flooded for longer periods than forb pannes.

General Area: 1997: Sagamore Creek is a relatively diverse, sizable, and significant estuary supporting good quality estuarine habitat. Three small, fair quality **brackish marshes** occurred landward of the **high salt marsh**. **Low salt marsh**, **tidal creek bottoms**, a **saline/brackish intertidal flat**, and an undifferentiated **saline/brackish subtidal channel/bay bottom** occur toward the channel. A population of *Puccinellia paupercula* var. *alaskana* (Alaskan goose-grass) was found on the cobbly shore of one of two "salt marsh islands" in the estuary. These islands were covered by **hemlock-beech-oak-pine forest**. Moderate residential and commercial development occurs particularly around the western lobe where Rte. 1 crosses the estuary. Estuarine tidal flow was evaluated as adequate for the salt marsh west of Rte. 1 and unaffected for the remainder of the marsh (USDA Soil Conservation Service 1994).

General Comments: --
Management: --
Comments: --

Location

Survey Site Name: Sagamore Creek
Managed By:

County: Rockingham
Town(s): Portsmouth
Size: 64.4 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Park at Urban Forestry Center on Elwyn Road. Trails lead from here down to the southern edge of the salt marsh along Sagamore Creek, and east through adjacent upland forest to more trails leading to the eastern side of the salt marsh. The western side of the marsh can be accessed from the Episcopal Church near the southeast edge along Rte. 1. The Rte. 1 bridge crosses the creek at the western edge of the salt marsh (the marsh continues on the western side of the bridge but it has been heavily ditched there and is not exemplary).

Dates documented

First reported:	1997-06-18	Last reported:	2006-05-24
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New Hampshire Natural Heritage Bureau - Community Record

Intertidal flat

Legal Status

Federal: Not listed
State: Not listed

Conservation Status

Global: Not ranked (need more information)
State: Rare or uncommon

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank: --

Detailed Description: 2006: Mudflats observed and photographed at low-mid tide. 1997: No details.
General Area: 1997: Sagamore Creek is a relatively diverse, sizable, and significant estuary supporting good quality estuarine habitat. Three small, fair quality **brackish marshes** and **high and low salt marshes** occur landward of the flats. **Tidal creek bottoms** and an undifferentiated **saline/brackish subtidal channel/bay bottom** occur toward the channel. A population of *Puccinellia paupercula* var. *alaskana* (Alaskan goose-grass) was found on the cobbly shore of one of two "salt marsh islands" in the estuary. These islands were covered by **hemlock-beech-oak-pine forest**. Moderate residential and commercial development occurs particularly around the western lobe where Rte. 1 crosses the estuary. Estuarine tidal flow was evaluated as adequate for the salt marsh west of Rte. 1 and unaffected for the remainder of the marsh (USDA Soil Conservation Service 1994).

General Comments: 1997: Intertidal sand and mud flats are gently sloping, sparsely vegetated, habitats. The substrate, exposed completely at extra low spring tide, ranges in composition from sands to muds and silts. Benthic diatoms and other microalgae occurring in this environment are important contributors to the primary productivity of the total estuarine system (Sickley 1989). Macroalgae is typically uncommon across the exposed substrate. Characteristic invertebrates found in New Hampshire's intertidal mudflats include polychaete worms (including *Nereis virens*, *Nephtys caeca*, *Clymenella tortuata*, and *Scoloplos* spp.) and mollusks (including soft-shelled clam [*Mya arenaria*], Baltic Macoma [*Macoma balthica*], gem shell [*Gemma gemma*], and swamp Hydrobia [*Hydrobia minuta*]) (NAI 1973). Arthropods are also well represented and include green crabs (*Carcinus maenas*), rock crabs (*Cancer irroratus*), flat-clawed hermit crabs (*Pagurus pollicaris*), and horseshoe crabs (*Limulus polyphemus*). During the diurnal (twice daily) tidal flooding, several species of fish and other aquatic species feed on the benthos and epibenthic algae. This community also provides important foraging habitat for shorebirds and other animals when the intertidal flat is exposed. The diverse variety of primary foods (microalgae, phytoplankton, and detritus) available to consumers supports the high productivity found on intertidal flats. The substrate is composed of sand or silt and clay rich in organic matter. Vascular plants are sparse to more typically absent.

Management
Comments: --

Location

Survey Site Name: Sagamore Creek
Managed By:

County: Rockingham
Town(s): Portsmouth
Size: 88.5 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Occurs between estuarine marshes or other coastal communities landward and subtidal communities seaward and includes tidal creek channels exposed at low tide. Park at Urban Forestry Center on Elwyn Road. Trails lead from here down to the southern edge of the salt marsh. Salt marsh can also

be accessed from the Rte. 1 bridge on the western side.

Dates documented

First reported:	1997-06-18	Last reported:	2006-05-24
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New Hampshire Natural Heritage Bureau - Community Record

Low salt marsh

Legal Status

Federal: Not listed
State: Not listed

Conservation Status

Global: Not ranked (need more information)
State: Rare or uncommon

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank: --

Detailed Description: 2006: Observed and photographed along the edges of tidal creeks and along the lower fringes of the much more dominant **high salt marsh** community. 1997: *Spartina alterniflora* (smooth cord-grass) dominates. The band of *S. alterniflora*, reaching heights of 4-6 feet, generally was restricted to a narrow fringe along ditches, tidal creeks, and margins of Sagamore Creek.

General Area: 1997: The transition between **high** and **low salt marsh** occurred approximately at the mean high water mark; **high salt marsh** stretched landward from mean high water to the upper reaches of spring tides. Sagamore Creek is a relatively diverse, sizable, and significant estuary supporting good quality estuarine habitat. Three small, fair quality **brackish marshes** and a **high salt marsh** occurred landward of the **low salt marsh**. **Tidal creek bottoms**, a **saline/brackish intertidal flat**, and an undifferentiated **saline/brackish subtidal channel/bay bottom** occurred toward the channel. A population of *Puccinellia paupercula* var. *alaskana* (Alaskan goose-grass) was found on the cobbly shore of one of two "salt marsh islands" in the estuary. These islands were covered by **hemlock-beech-oak-pine forest**. Moderate residential and commercial development occurs particularly around the western lobe where Rte. 1 crosses the estuary. Estuarine tidal flow was evaluated as adequate for the salt marsh west of Rte. 1 and unaffected for the remainder of the marsh (USDA Soil Conservation Service 1994).

General Comments: 1997: The **low salt marsh** has more frequent tidal flooding, lower soil oxygen, and reduced soil salinity compared to the **high salt marsh**. *S. alterniflora* dominated the physically stressful low marsh due to its ability to oxygenate its roots and rhizosphere.

Management
Comments: --

Location

Survey Site Name: Sagamore Creek
Managed By:

County: Rockingham
Town(s): Portsmouth
Size: 64.4 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Occurs between mean sea level and mean high tide. Park at Urban Forestry Center on Elwyn Road. Trails lead from here down to the southern edge of the salt marsh along Sagamore Creek, and east through adjacent upland forest to more trails leading to the eastern side of the salt marsh. The western side of the marsh can be accessed from the Episcopal Church near the southeast edge along Rte. 1. The Rte. 1 bridge crosses the creek at the western edge of the salt marsh (the marsh continues on the western side of the bridge but it has been heavily ditched there and is not exemplary).

Dates documented

First reported: 1997-06-18 Last reported: 2006-05-24

New Hampshire Natural Heritage Bureau - System Record

Salt marsh system

Legal Status

Federal: Not listed
State: Not listed

Conservation Status

Global: Not ranked (need more information)
State: Rare or uncommon

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank: --

Detailed Description: A relatively diverse, sizable, and significant estuary supporting good quality estuarine habitat. Three small, fair quality *brackish marshes* and a *high salt marsh* occur landward of the *low salt marsh*.

General Area: 2006: Borders intertidal flats and a subtidal system.

General Comments: --

Management: --

Comments:

Location

Survey Site Name: Sagamore Creek

Managed By: Urban Forestry Center

County: Rockingham

Town(s): Portsmouth

Size: 64.4 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Sagamore Creek east of Rte. 1.

Dates documented

First reported: 1997-06-18

Last reported: 2007-10-17

New Hampshire Natural Heritage Bureau - Plant Record

dwarf glasswort (*Salicornia bigelovii*)**Legal Status**

Federal: Not listed
 State: Listed Endangered

Conservation Status

Global: Demonstrably widespread, abundant, and secure
 State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
 Comments on Rank: --

Detailed Description: 1997: More than 3,000 plants on north shore, and 200-400 on the south shore. 1983: (North of Urban Forestry Center) 20 by 20 foot area. Old (last years) inflorescences with new growth, ca. 2 cm in height, none flowering. Specimen at UNH. 1973: (North shore) ca. 101-1000 plants with seeds dispersing. Specimen S.N. at NHA.

General Area: 1997: Triglochin forb pannes on the **high salt marsh**. Associated dominants were *Triglochin maritimum* (arrow-grass), *Distichlis spicata* (spike-grass), *Spartina alterniflora* (smooth cord-grass), and *S. patens* (salt-meadow cord-grass). *Salicornia europaea* (common glasswort) also present. 1973: 0-10 feet, flat, full sun, wet mud, surrounded by *Spartina* (cord-grass) species. In salt marsh. Marsh pannes on green.

General Comments: This occurrence may have been impacted by 1995/96 Dept. of Transportation bridge replacement project. Several colonies (1983) Coastal Zone Report, Bertrand and Dunlop (1983); F.D. Richardson, NH Water Resources Board (1973).

Management
 Comments: --

Location

Survey Site Name: Sagamore Creek
 Managed By: Sagamore Creek Land

County: Rockingham

Town(s): Portsmouth

Size: 14.8 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Three known sites: (1) Rte 1 and Sagamore Creek, south of Sagamore Creek and east of Rte 1. Wet panne about 30 yards from Rte 1 between 2 telephone poles. Just above State of NH Urban Forestry Center; (2) north shore of Sagamore Creek on either side of small tributary, southwest of Sagamore Hill; (3) south shore of Sagamore Creek ca. 0.5 miles ESE of Rte 1 bridge.

Dates documented

First reported: 1973

Last reported: 1997-06-18

New Hampshire Natural Heritage Bureau - Plant Record

tundra alkali grass (*Puccinellia pumila*)**Legal Status**

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank: --

Detailed Description: 1997: Ca. 50-100 ramets observed, all in flower, of normal vigor.
General Area: 1997: Salt marsh community. Associated species include *Suaeda linearis* (southern sea-blite) and *Plantago maritima* var. *juncoides* (salt marsh plantain).
General Comments: --
Management: --
Comments:

Location

Survey Site Name: Urban Forestry Center
Managed By: Urban Forestry Center

County: Rockingham
Town(s): Portsmouth
Size: 2.8 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: [From Portsmouth, take Rte. 1 south. After crossing Sagamore Creek, turn left on Elwyn Road.] Park at Urban Forestry Center on the left. Population is at NE corner of east island.

Dates documented

First reported: 1997-06-18 Last reported: 1997-06-18

Coastal Vulnerability Assessment

Prepared for:

**Tidewatch Condominium Association
597 Sagamore Avenue
Portsmouth, New Hampshire 03820**

Prepared By:

**Ambit Engineering, Inc
200 Griffin, Unit 3
Portsmouth, New Hampshire 03801**



Introduction

This Coastal Vulnerability Assessment (CVA) is being provided in support of a New Hampshire Department of Environmental Services (NHDES) Wetland Permit Application for the construction of a tidal docking structure at 597 Sagamore Avenue, Portsmouth, NH (herein referred to as “project site”). The project site contains residential condominiums located on the northern side of Sagamore Creek, to the east of Jones Avenue and to the west of Sagamore Avenue. The surrounding land use is residential with similar docking structures.

Methods

On March 3, 2021, Steven D. Riker, CWS from Ambit Engineering, Inc. conducted a site visit to evaluate coastal characteristics of the project site, as well as the functions and values of the tidal wetland area (see attached Coastal Functions and Values assessment). This CVA was completed utilizing the NH Coastal Flood Risk Science and Technical Advisory Panel (2019). New Hampshire Coastal Flood Risk Summary Part: Guidance for Using Scientific Projections. Report Published by the University of New Hampshire (herein referred to as Guidance Document).

Part 1.1 – Project Type

This project proposes the construction of a tidal docking structure on a residential lot adjacent to Sagamore Creek. The purpose for the docking structure is to provide the applicant with recreational boating access to Sagamore Creek. For more details regarding construction of the docking structure and construction sequences; please refer to the NH DES Wetlands Bureau Application Letter to the Wetlands Inspector, and attached NHDES Permit Plan – C2 and Detail Sheet D1.

Part 1.2 – Project Location

The project location is 597 Sagamore Avenue, Portsmouth NH, Tax Map 223, Lot 30 and consists of 53.3 acres of residential upland and 1,071+/- of shoreline frontage along Sagamore Creek. Access to the project site will be from the roadway network within the association property for the staging of equipment, and Sagamore Creek for the staging of the barge to be used for dock and pile installation.

Part 1.3 – Timeline for Desired Useful Life

The desired useful life for this project is considered to be 2100 (50-100 years) due to the fact that it is a docking structure which has a life expectancy of approximately 50-75 years.

2.1 – Project Risk Tolerance

The proposed project is considered to have a high risk tolerance considering that the docking structure has a relatively low cost, is relatively easy to modify, proposes little to no implications on public function and/or safety; and has relatively low sensitivity to inundation, as docks are designed to withstand fluctuating tidal conditions including storm surge.


2.2 – Risk Tolerance of Important Access and Service Areas

The risk tolerance of surrounding access and service areas is not applicable to this project, as the project occurs on a residential, private lot and is intended for private use; primary access of which would be by foot from the residence.

3.1 – Relative Sea Level Rise Scenario (RSLs)

Based on Table 3 in the Guidance Document (see table below), the RSLs for this project (based on the previously determined high risk tolerance) is considered to be on the lower magnitude, and higher probability. The following table depicts the probable sea level rise from 2000 through 2150.

Table 3 from the Guidance Document:

Risk Tolerance	High	Medium	Low	Extremely Low
Example Project	Walking Trail *Docking structure & Stone Revetment	Local Road Culvert	Wastewater Treatment Facility	Hospital
Timeframe	Manage to the following sea level rise (ft*) <i>Compared to the sea level in the year 2000</i>			
	Lower magnitude Higher probability			Higher magnitude Lower probability
2030	0.7	0.9	1.0	1.1
2050	1.3	1.6	2.0	2.3
2100	2.9	3.8	5.3	6.2
2150	4.6	6.4	9.9	11.7

*Added by Ambit Engineering, Inc. based on the application of the Guidance Document towards our project.

3.2 – RSLR Impacts to the Project Evaluation

Please see the attached Figure 1 – Projected SLR's; which depicts the project site and relevant Highest Observable Tide Line (HOTL), MHHW, and the projected SLR's for the year 2100. Relative to surrounding topography and considering the High Risk Tolerance of this project; it is not expected the projected RSLR for this project needs to be a strong consideration. The fixed pier will be constructed at elevation 15. The projected sea level rise in year 2100 is 2.9 feet resulting in future Mean High Water (MHW) elevation of 11.33 feet. MHW and projected SLR is depicted in the profile view on Details-Sheet D1 in relation to the proposed dock elevation.

3.3 – Other Factors

Other factors were evaluated in conjunction with RSLR including surface water levels, groundwater levels, and current velocities which will increase with sediment erosion and deposition, which will also change. The project's position in the landscape was also considered relative to other infrastructure. The closest surface water to the project site is the adjacent Sagamore Creek, projections of RSLR of which have already been depicted and discussed. There are no current restrictions on the project site or associated with the proposed project. Mean High Water (MHHW) associated with the project site is located approximately at elevation 8.43. Considering a 2.9 foot RSLR in the year 2100 resulting in an elevation of 11.33, and the proposed tidal docking structure constructed at elevation 14, the structure will function as intended throughout the expected useful life of the residential structure they will serve, simply by the means in which they are constructed.

4.1 – RSLR and Coastal Storms

Due to the project site location being immediately adjacent to Sagamore Creek, it is anticipated that RSLR and storm surge on the proposed project site will be comparable to adjacent properties

with similar docking structures. Considering the high risk tolerance of this project, it is not anticipated that this project has a significant level of vulnerability to RSLR and coastal storms given the method in which tidal docks are constructed.

4.2 – Other Factors

Other factors such as surface water levels, groundwater levels, wind and current velocities have been considered. Considering the high risk tolerance of this project, it is not anticipated that this project has a significant level of vulnerability to groundwater levels, wind and current velocities given the method in which tidal docks are constructed.

5.1 – Projected RSL-Induced Groundwater Rise

Based on the Sea-Level Rise Mapper, there is projected groundwater rise associated with RSLR on the project site, however given that the project provides a structure that has a water dependent use, we do not believe groundwater rise should be a strong consideration.

5.2 – Projected Groundwater Depth at the Project Location

Based on knowledge of the site and soil morphology of the site, groundwater depth (Estimated Seasonal High Water Table) is between 20-30” below the soil surface.

6.1 – Best Available Precipitation Estimates

Please see the attached Extreme Precipitation Tables from the Northeast Regional Climate Center.

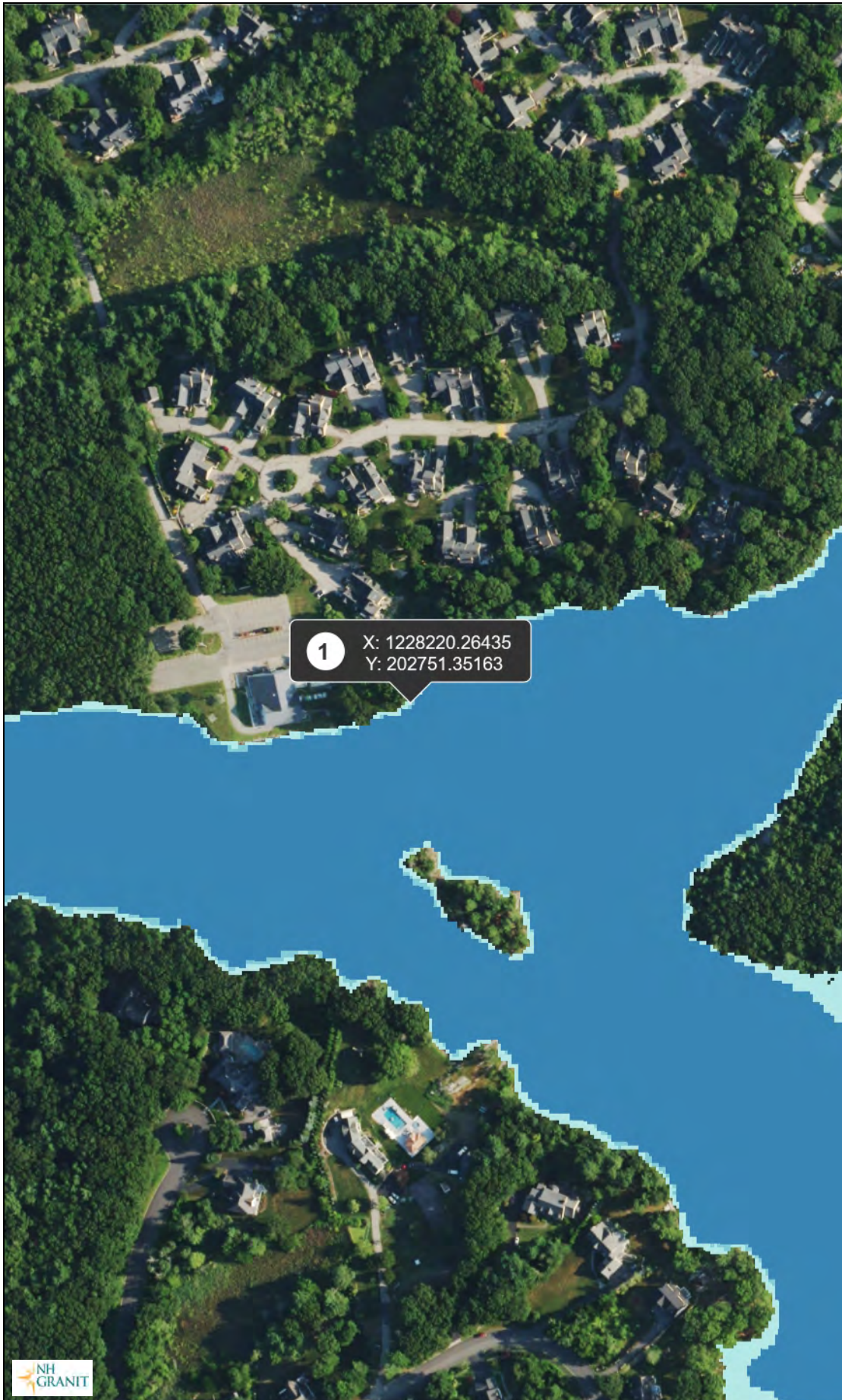
7.1 – Cumulative Coastal Flood Risk to the Project

Based on the high risk tolerance of this project combined with all other factors including RSLR, coastal storms, RSLR-induced groundwater rise, extreme precipitation and/or freshwater flooding occurring together; this project is not considered to be at high risk from coastal flooding.

7.2 – Possible Actions to Mitigate Coastal Flood Risk

Given the high risk tolerance of the proposed project, it is not anticipated that it is necessary to mitigate for coastal flood risk beyond what has already been incorporated into the design plan for the docking structure. The projected SLR scenario through 2100 is 2.9’ (See profile view on Sheet D1), and the proposed docking structure has been designed to account for this projection.

Map by NH GRANIT



Legend

MHHW + 1-ft SLR

0 - 2

2 - 4

4 - 6

6 - 8

8 - 10

Coastal 2019 1-foot RGB

Map Scale

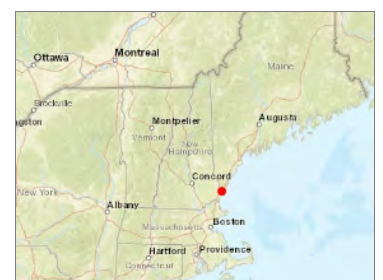
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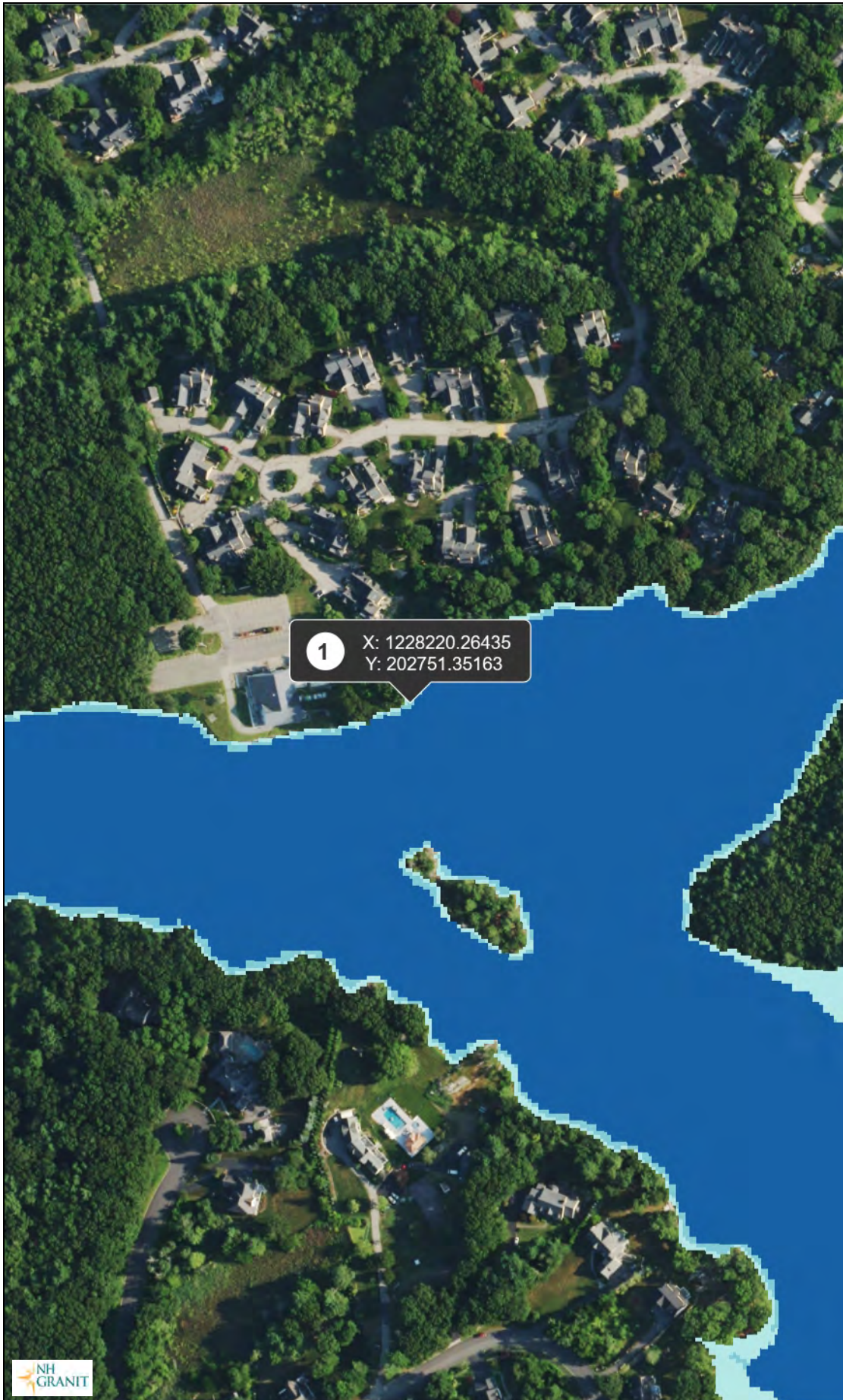
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Notes



Map by NH GRANIT



Legend

MHHW + 2-ft SLR

- 0 - 2
- 2 - 4
- 4 - 6
- 6 - 8
- 8 - 10
- 10 +

Coastal 2019 1-foot RGB

Map Scale

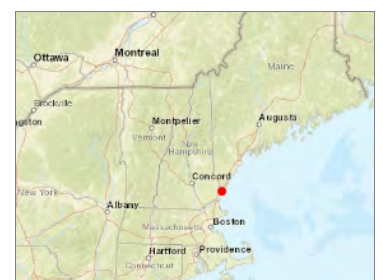
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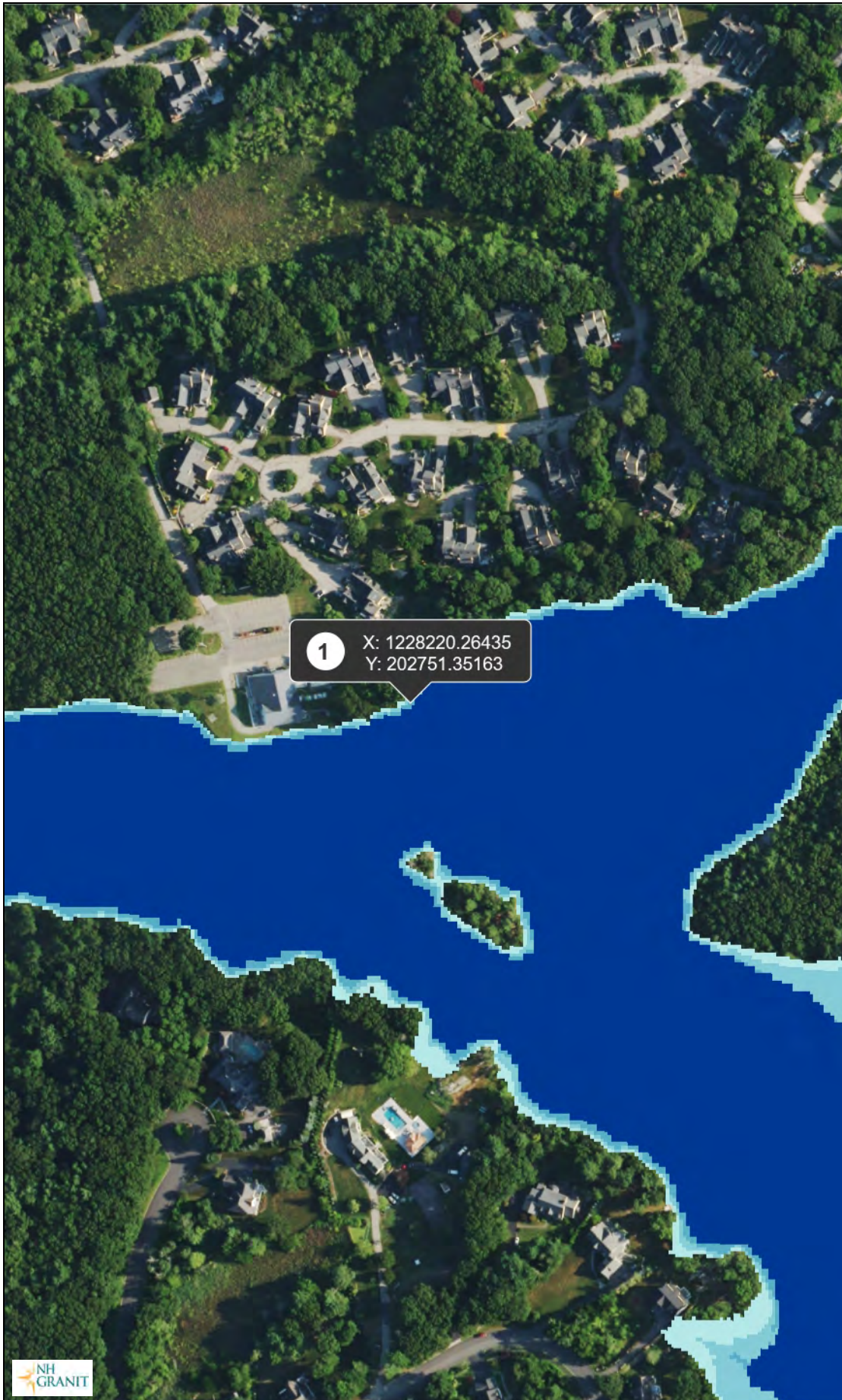
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Notes



Map by NH GRANIT



Legend

MHHW + 4-ft SLR

- 0 - 2
- 2 - 4
- 4 - 6
- 6 - 8
- 8 - 10
- 10 +

Coastal 2019 1-foot RGB

Map Scale

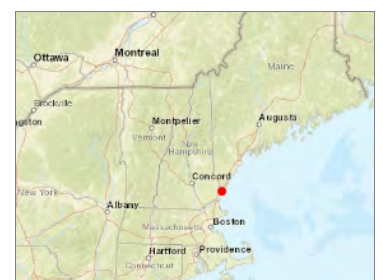
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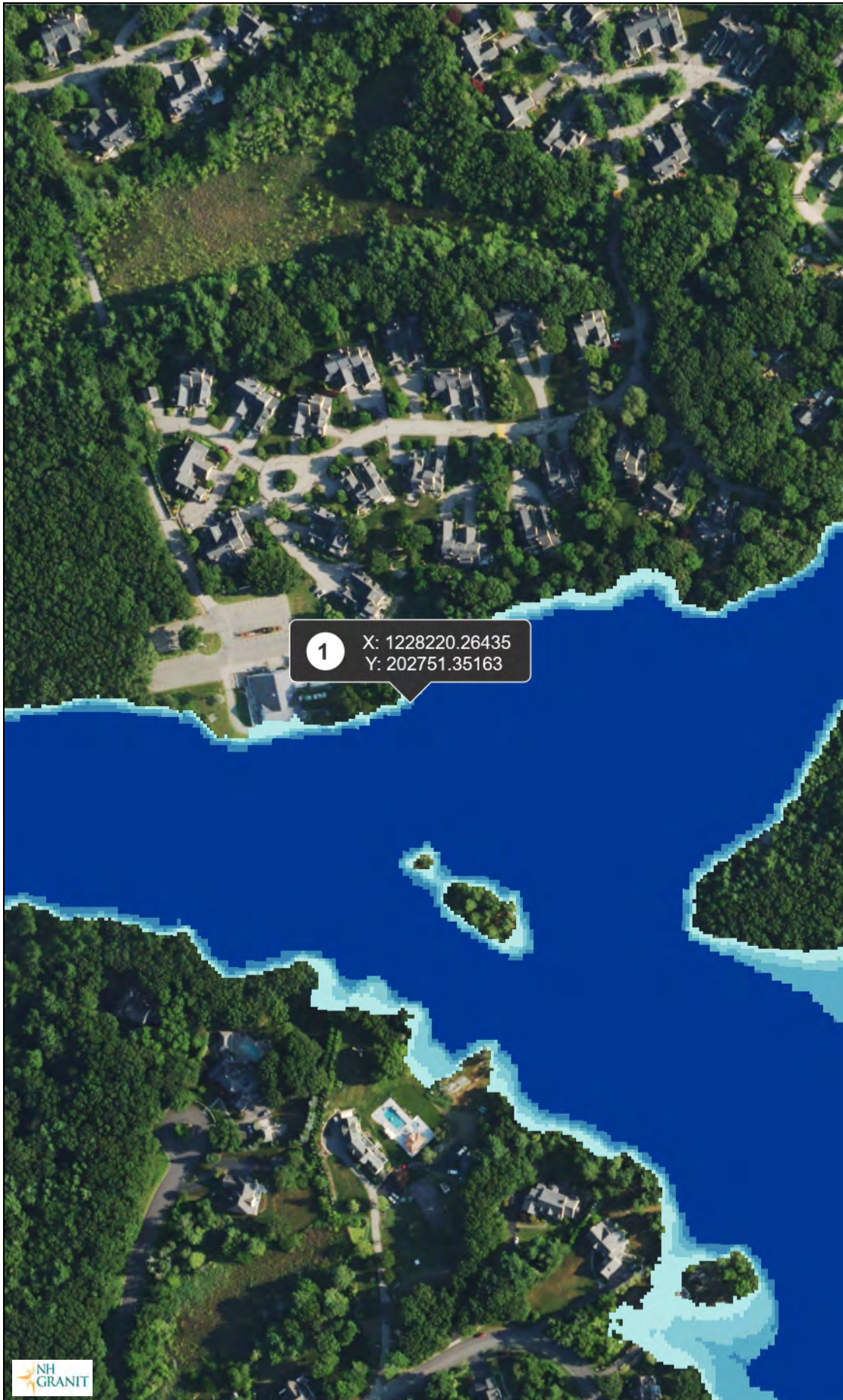
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Notes



Map by NH GRANIT



Legend

MHHW + 6-ft SLR

- 0 - 2
- 2 - 4
- 4 - 6
- 6 - 8
- 8 - 10
- 10 +

Coastal 2019 1-foot RGB

Map Scale

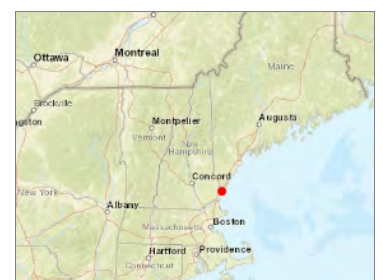
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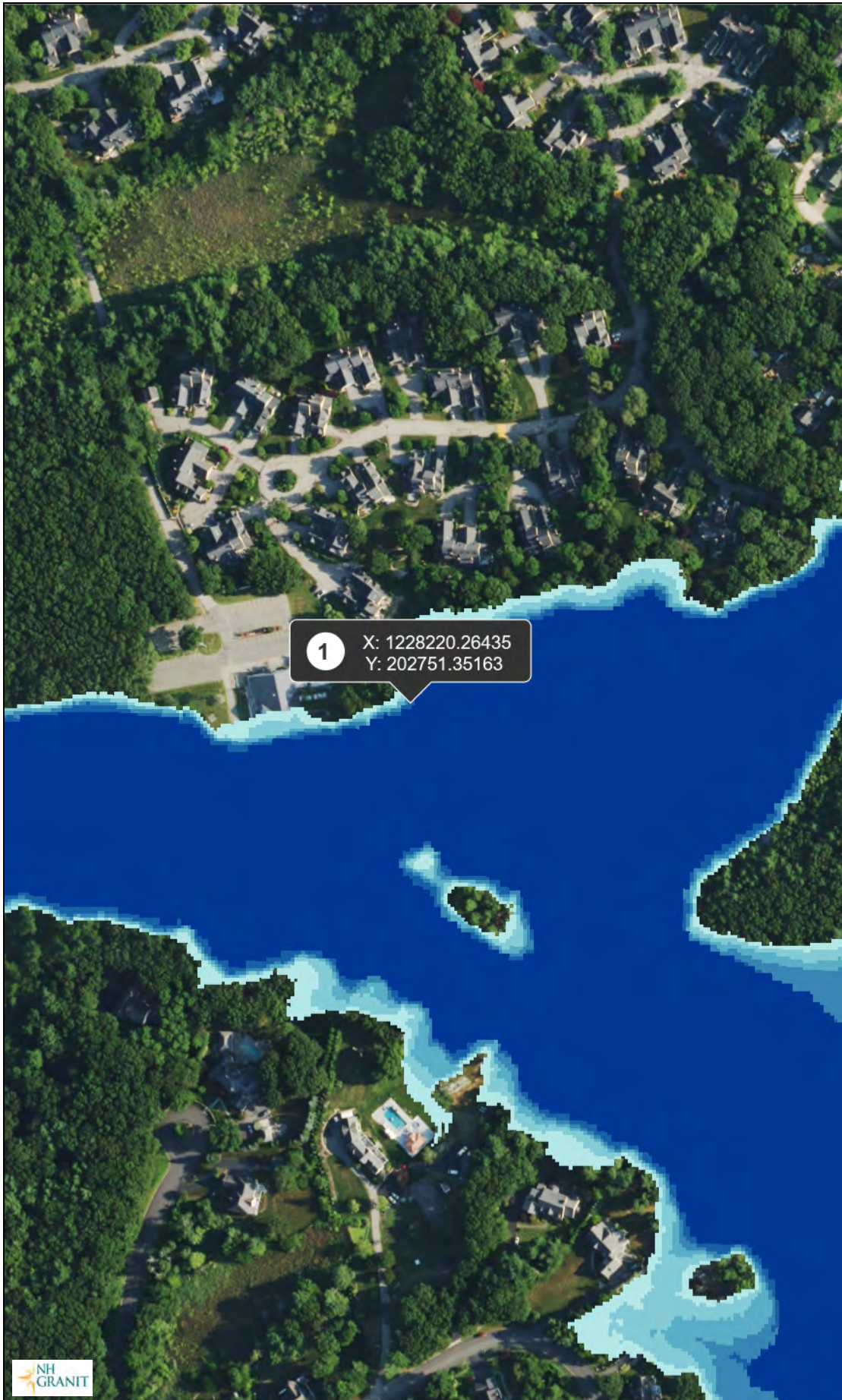
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Notes



Map by NH GRANIT



Legend

MHHW + 8-ft SLR

- 0 - 2
- 2 - 4
- 4 - 6
- 6 - 8
- 8 - 10
- 10 +

Coastal 2019 1-foot RGB

Map Scale

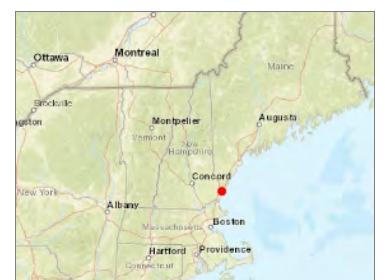
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Map Generated: 8/31/2021



Notes



Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	
Location	
Longitude	70.745 degrees West
Latitude	43.071 degrees North
Elevation	0 feet
Date/Time	Tue, 21 Jan 2020 12:37:30 -0500

Precipitation estimates multiplied by 1.15 are listed below:

1-yr: 3.06
2-yr: 3.69
10-yr: 5.59
50-yr: 8.49

Extreme Precipitation Estimates

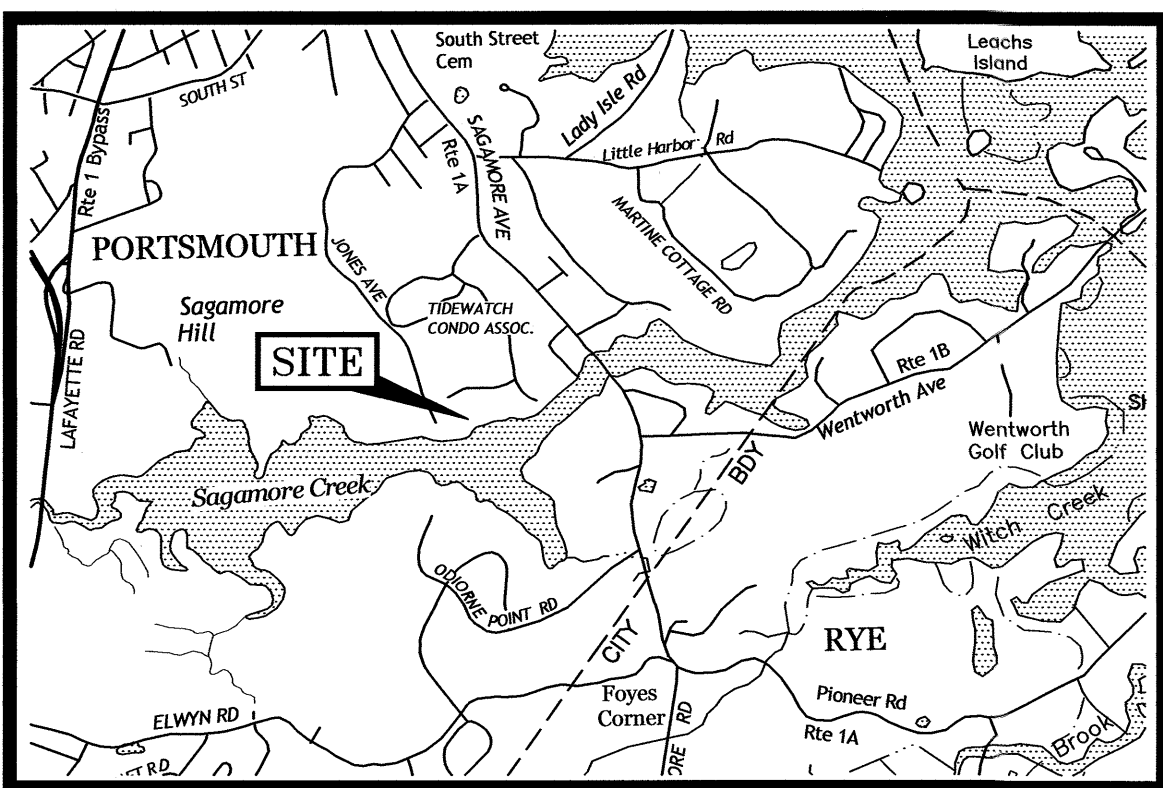
	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.04	1yr	0.70	0.98	1.21	1.56	2.03	2.66	2.92	1yr	2.35	2.81	3.22	3.94	4.55	1yr
2yr	0.32	0.50	0.62	0.81	1.02	1.30	2yr	0.88	1.18	1.52	1.94	2.49	3.21	3.57	2yr	2.84	3.43	3.94	4.68	5.33	2yr
5yr	0.37	0.58	0.73	0.98	1.25	1.61	5yr	1.08	1.47	1.89	2.43	3.14	4.07	4.58	5yr	3.60	4.40	5.04	5.94	6.70	5yr
10yr	0.41	0.65	0.82	1.12	1.45	1.89	10yr	1.25	1.73	2.23	2.90	3.75	4.86	5.53	10yr	4.30	5.32	6.09	7.11	7.98	10yr
25yr	0.48	0.76	0.97	1.34	1.78	2.34	25yr	1.54	2.15	2.78	3.64	4.74	6.17	7.10	25yr	5.46	6.83	7.81	9.02	10.05	25yr
50yr	0.54	0.86	1.10	1.54	2.08	2.77	50yr	1.79	2.53	3.30	4.33	5.67	7.38	8.58	50yr	6.54	8.25	9.43	10.81	11.97	50yr
100yr	0.60	0.97	1.25	1.78	2.43	3.27	100yr	2.09	2.99	3.92	5.17	6.77	8.85	10.37	100yr	7.83	9.98	11.39	12.96	14.26	100yr
200yr	0.68	1.11	1.43	2.05	2.84	3.85	200yr	2.45	3.53	4.63	6.14	8.09	10.60	12.54	200yr	9.38	12.06	13.76	15.54	17.00	200yr
500yr	0.80	1.32	1.72	2.50	3.50	4.79	500yr	3.02	4.40	5.79	7.72	10.23	13.47	16.13	500yr	11.92	15.51	17.68	19.77	21.47	500yr

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.72	0.88	1yr	0.62	0.86	0.93	1.33	1.69	2.25	2.48	1yr	1.99	2.38	2.87	3.20	3.91	1yr
2yr	0.31	0.49	0.60	0.81	1.00	1.19	2yr	0.86	1.16	1.37	1.82	2.33	3.06	3.45	2yr	2.71	3.32	3.82	4.55	5.09	2yr
5yr	0.35	0.54	0.67	0.92	1.17	1.40	5yr	1.01	1.37	1.61	2.11	2.73	3.78	4.18	5yr	3.35	4.02	4.72	5.53	6.23	5yr
10yr	0.39	0.59	0.73	1.03	1.33	1.60	10yr	1.14	1.56	1.80	2.38	3.05	4.36	4.85	10yr	3.86	4.66	5.43	6.40	7.18	10yr
25yr	0.44	0.67	0.83	1.19	1.56	1.90	25yr	1.35	1.86	2.10	2.75	3.52	4.74	5.87	25yr	4.20	5.64	6.62	7.77	8.66	25yr
50yr	0.48	0.73	0.91	1.31	1.76	2.16	50yr	1.52	2.12	2.34	3.06	3.91	5.36	6.76	50yr	4.75	6.50	7.69	9.01	9.99	50yr
100yr	0.53	0.81	1.01	1.46	2.01	2.46	100yr	1.73	2.41	2.62	3.40	4.32	6.03	7.80	100yr	5.34	7.50	8.92	10.47	11.53	100yr
200yr	0.59	0.89	1.13	1.63	2.27	2.81	200yr	1.96	2.75	2.93	3.76	4.76	6.77	8.99	200yr	5.99	8.64	10.34	12.17	13.33	200yr
500yr	0.68	1.02	1.31	1.90	2.70	3.36	500yr	2.33	3.28	3.41	4.28	5.40	7.89	10.84	500yr	6.99	10.43	12.56	14.89	16.15	500yr

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.29	0.44	0.54	0.72	0.89	1.09	1yr	0.77	1.06	1.26	1.74	2.20	2.97	3.17	1yr	2.63	3.05	3.58	4.37	5.04	1yr
2yr	0.34	0.52	0.64	0.87	1.07	1.27	2yr	0.92	1.24	1.48	1.96	2.52	3.42	3.71	2yr	3.03	3.57	4.10	4.84	5.62	2yr
5yr	0.40	0.62	0.77	1.05	1.34	1.62	5yr	1.15	1.59	1.89	2.54	3.26	4.34	4.97	5yr	3.84	4.78	5.38	6.39	7.17	5yr
10yr	0.47	0.72	0.89	1.25	1.61	1.98	10yr	1.39	1.94	2.29	3.11	3.97	5.34	6.22	10yr	4.72	5.98	6.84	7.86	8.77	10yr
25yr	0.58	0.88	1.09	1.56	2.05	2.58	25yr	1.77	2.52	2.96	4.08	5.17	7.74	8.37	25yr	6.85	8.05	9.20	10.36	11.43	25yr
50yr	0.67	1.03	1.28	1.84	2.47	3.14	50yr	2.13	3.07	3.61	5.02	6.35	9.69	10.50	50yr	8.57	10.10	11.51	12.76	13.99	50yr
100yr	0.79	1.20	1.50	2.17	2.98	3.83	100yr	2.57	3.74	4.39	6.18	7.81	12.11	13.17	100yr	10.72	12.66	14.41	15.74	17.13	100yr
200yr	0.93	1.40	1.77	2.57	3.58	4.68	200yr	3.09	4.57	5.36	7.61	9.61	15.19	16.53	200yr	13.44	15.89	18.08	19.41	20.97	200yr
500yr	1.16	1.72	2.21	3.21	4.57	6.07	500yr	3.94	5.94	6.96	10.07	12.67	20.50	22.33	500yr	18.14	21.48	24.39	25.60	27.40	500yr



LOCATION MAP

1" = 2000'

LEGEND:

- N/F
RP
RCRD
MAP 11 / LOT 21
IRON ROD/IRON PIPE FOUND
DRILL HOLE FOUND
MEAN HIGH WATER LINE
MEAN LOW WATER LINE
MEAN LOWER LOW WATER LINE
NH DES HIGHEST OBSERVABLE TIDE LINE
CONTOUR
SPOT ELEVATION
SALT MARSH AREA
TEMPORARY BENCHMARK
ELEVATION
INVERT
TEMPORARY BENCHMARK
TYPICAL

WETLAND NOTES:

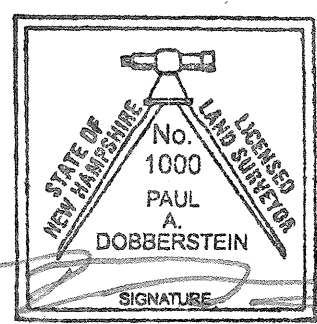
- 1) HIGHEST OBSERVABLE TIDE LINE DELINEATED BY STEVEN D. RIKER, CWS ON 3/3/2021 IN ACCORDANCE WITH THE FOLLOWING STANDARDS:
- A) U.S. ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL, TECHNICAL REPORT Y-87-1 (JAN. 1987), AND REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHEASTRAL AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012.
- B) FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.2, USDA-NRCS, 2018 AND (FOR DISTURBED SITES) FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4. NEIWPCC WETLANDS WORK GROUP (2019).
- C) NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: NORTHEAST (REGION 1). USFWS (MAY 1988).
- D) CLASSIFICATION OF WETLANDS AND DEEPWATER HABITATS OF THE UNITED STATES. USFW MANUAL FWS/OBS-79/31 (1997).
- E) "IDENTIFICATION AND DOCUMENTATION OF VERNAL POOLS IN NEW HAMPSHIRE" (1997). NEW HAMPSHIRE FISH AND GAME DEPARTMENT.

- 2) WETLAND FLAGS WERE FIELD LOCATED BY AMBIT ENGINEERING, INC.

"I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000."

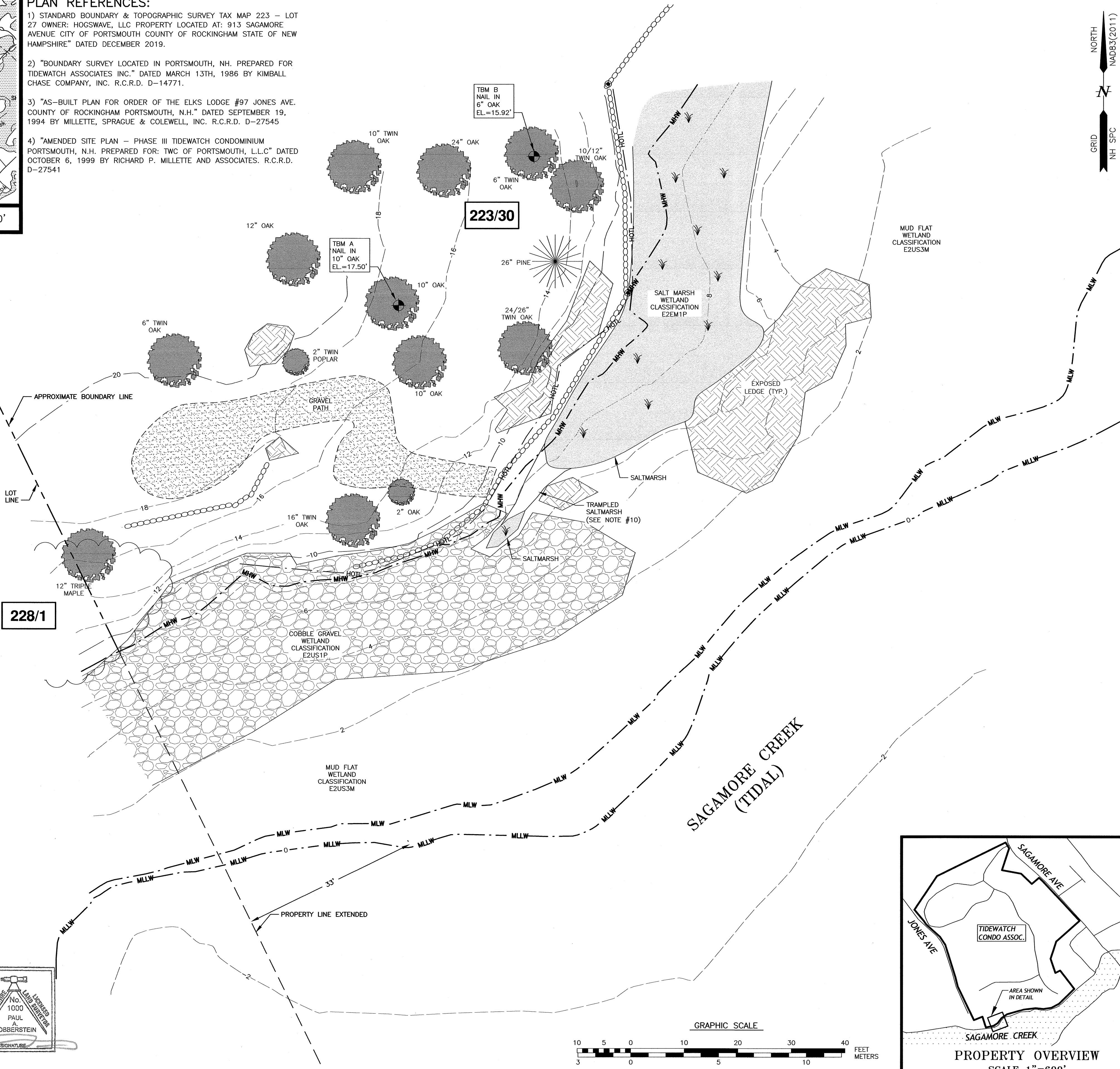
PAUL A DOBBERSTEIN, LLS

DATE



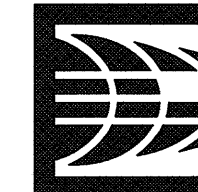
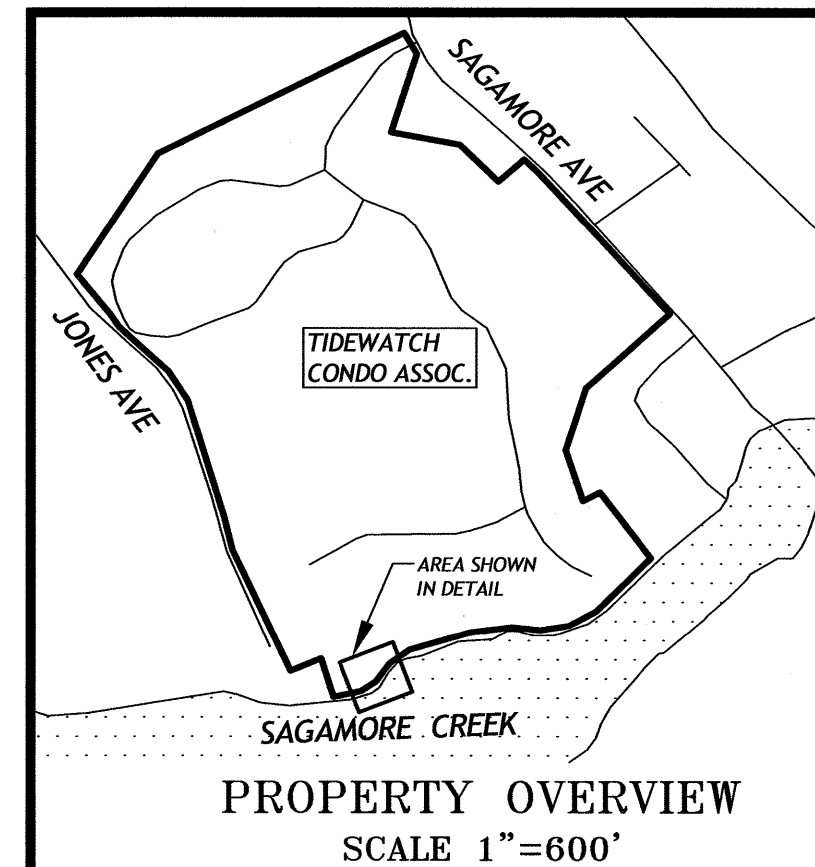
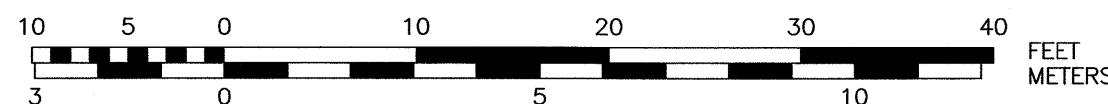
PLAN REFERENCES:

- 1) STANDARD BOUNDARY & TOPOGRAPHIC SURVEY TAX MAP 223 - LOT 27 OWNER: HOGSWAVE, LLC PROPERTY LOCATED AT: 913 SAGAMORE AVENUE CITY OF PORTSMOUTH COUNTY OF ROCKINGHAM STATE OF NEW HAMPSHIRE DATED DECEMBER 2019.
- 2) "BOUNDARY SURVEY LOCATED IN PORTSMOUTH, NH. PREPARED FOR TIDEWATCH ASSOCIATES INC." DATED MARCH 13TH, 1986 BY KIMBALL CHASE COMPANY, INC. R.C.R.D. D-14771.
- 3) "AS-BUILT PLAN FOR ORDER OF THE ELKS LODGE #97 JONES AVE. COUNTY OF ROCKINGHAM PORTSMOUTH, N.H." DATED SEPTEMBER 19, 1994 BY MILLETTE, SPRAGUE & COLEWELL, INC. R.C.R.D. D-27545
- 4) "AMENDED SITE PLAN - PHASE III TIDEWATCH CONDOMINIUM PORTSMOUTH, N.H. PREPARED FOR: TWC OF PORTSMOUTH, L.L.C." DATED OCTOBER 6, 1999 BY RICHARD P. MILLETTE AND ASSOCIATES. R.C.R.D. D-27541



SAGAMORE CREEK
(TIDAL)

GRAPHIC SCALE



AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

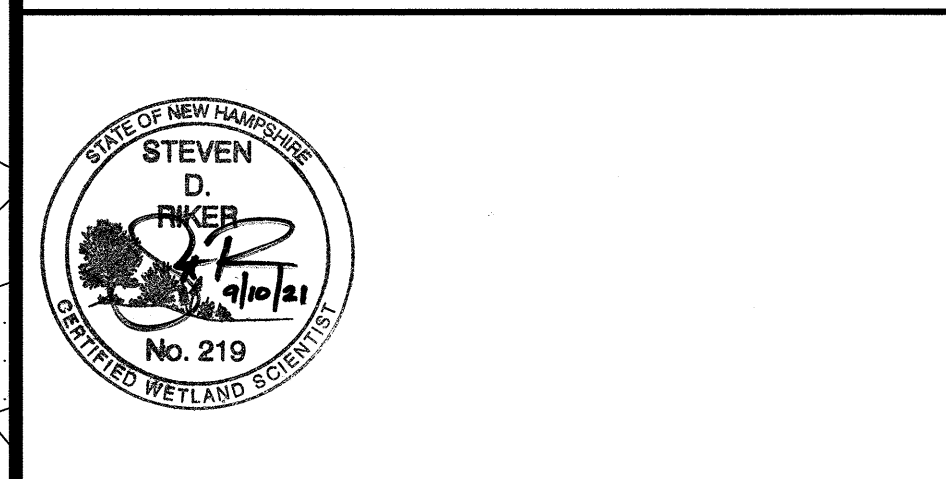


NOTES:

- 1) PARCEL IS SHOWN ON THE TOWN OF PORTSMOUTH ASSESSOR'S MAP 223 AS LOT 30.
- 2) OWNERS OF RECORD:
TIDEWATCH CONDOMINIUM ASSOCIATION
597 SAGAMORE AVE
PORTSMOUTH, NH 03801
- 3) A PORTION OF THE PARCEL IS IN A SPECIAL FLOOD HAZARD AREA ZONE AE (EL.8) AS SHOWN ON FIRM PANEL 33015C0286F. EFFECTIVE DATE 1/29/2021.
- 4) EXISTING LOT AREA:
53.338± ACRES (PLAN REFERENCE 2)
- 5) PARCEL IS LOCATED IN THE SINGLE RESIDENTIAL A (SRA) DISTRICT.
- 6) THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS ON A PORTION OF ASSESSOR'S MAP 223 LOT 30 IN THE CITY OF PORTSMOUTH.
- 7) VERTICAL DATUM IS MEAN LOWER LOW WATER (MLLW). MLLW BASED ON NOAA STATION 8419870 PORTSMOUTH HARBOR, SEAVEY ISLAND. MLLW BEING 4.62' LOWER THAN 0.0 NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GPS OBSERVATIONS (±0.2').
- 8) MEAN HIGH WATER LINE SHOWN AT ELEVATION 8.43 PER NOAA STATION 8419870 SEAVEY ISLAND, PORTSMOUTH HARBOR.

TIDEWATCH
CONDOMINIUMS
SAGAMORE AVENUE
PORTSMOUTH, N.H.

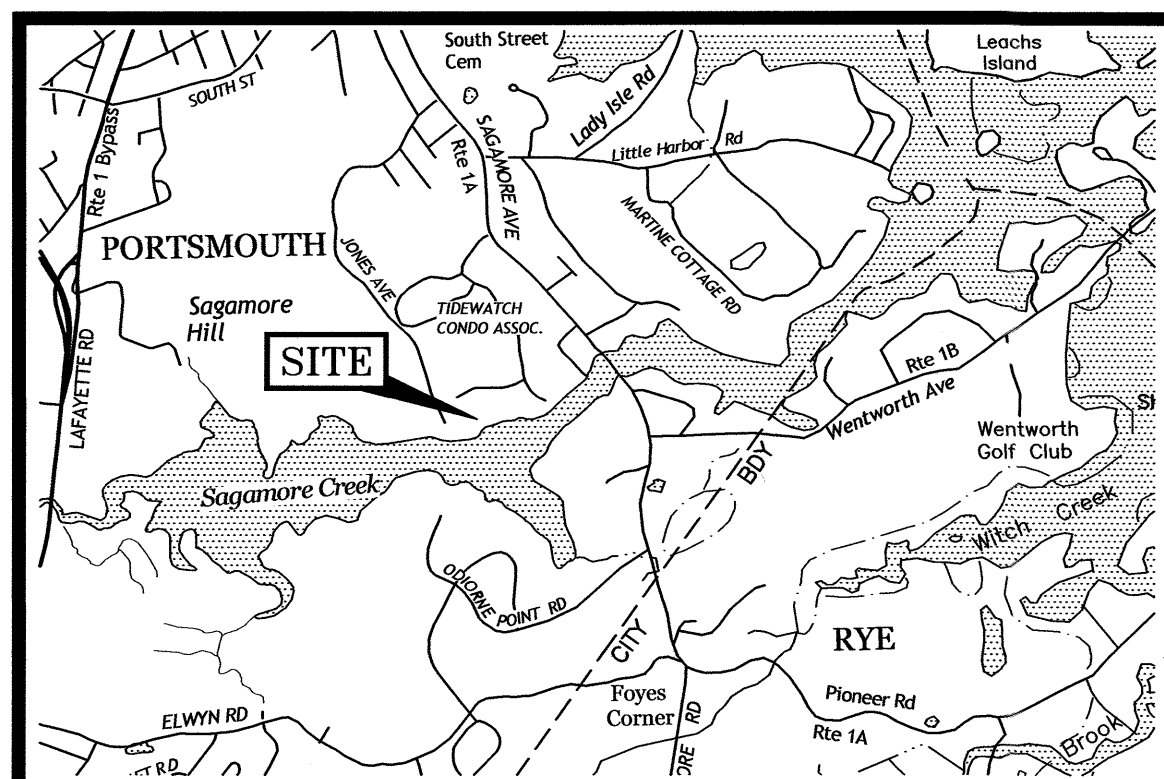
NO.	DESCRIPTION	DATE
1	ADD APPROXIMATE BOUNDARY LINE	8/31/21
0	ISSUED FOR COMMENT	7/16/21



SCALE: 1" = 10' JULY 2021

EXISTING CONDITIONS
PLAN

C1



LOCATION MAP

1" = 2000'

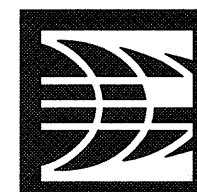
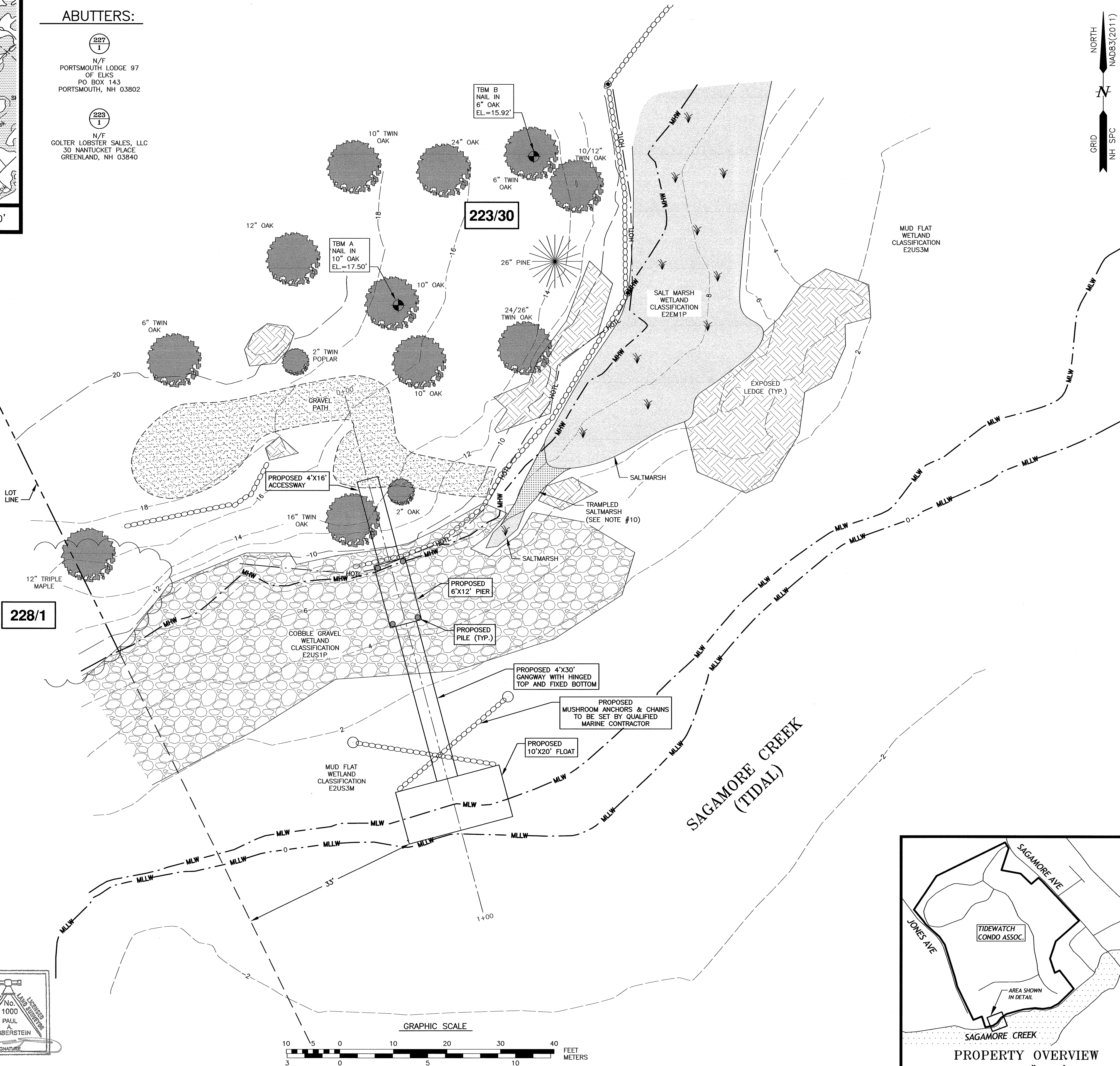
LEGEND:

- N/F
RP
RCRD
11/21
O
●
--- MHW ---
--- MLW ---
--- MLLW ---
--- HOTL ---
100
97x3
●
EL.
INV.
TBM
TYP.
- NOW OR FORMERLY
RECORD OF PROBATE
ROCKINGHAM COUNTY REGISTRY OF DEEDS
MAP 11 / LOT 21
IRON ROD/IRON PIPE FOUND
DRILL HOLE FOUND
MEAN HIGH WATER LINE
MEAN LOW WATER LINE
MEAN LOWER LOW WATER LINE
NH DES HIGHEST OBSERVABLE TIDE LINE
CONTOUR
SPOT ELEVATION
SALT MARSH AREA
TEMPORARY BENCHMARK
ELEVATION
INVERT
TEMPORARY BENCHMARK
TYPICAL

ABUTTERS:

227
N/F
PORTSMOUTH LODGE 97
OF ELKS
PO BOX 143
PORTSMOUTH, NH 03802

223
N/F
GOLTER LOBSTER SALES, LLC
30 NANTUCKET PLACE
GREENLAND, NH 03840



AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

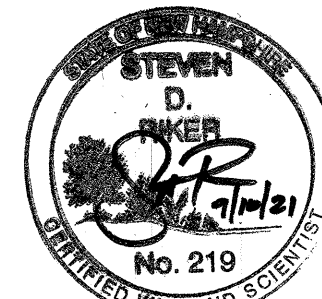
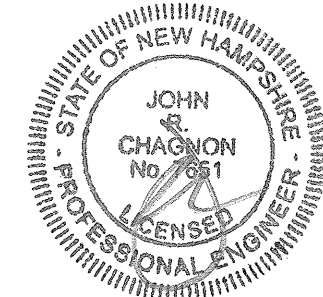


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- 8) MEAN HIGH WATER LINE SHOWN AT ELEVATION 8.43 PER NOAA STATION 8419870 SEAVEY ISLAND, PORTSMOUTH HARBOR.
- 9) PROPOSED DOCKING STRUCTURE IS NOT LOCATED ADJACENT TO OR IN PROXIMITY OF A FEDERAL NAVIGATIONAL CHANNEL. AS ONE DOES NOT EXIST IN THIS REACH OF THE SAGAMORE CREEK.
- 10) AREA TO BE PROVIDED WITH A TEMPORARY BARRIER TO RESTRICT ANY FOOT TRAFFIC TO AID IN VEGETATION RE-GENERATION.

**TIDEWATCH
CONDOMINIUMS
SAGAMORE AVENUE
PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	9/5/21
REVISIONS		



SCALE: 1" = 10'

JULY 2021

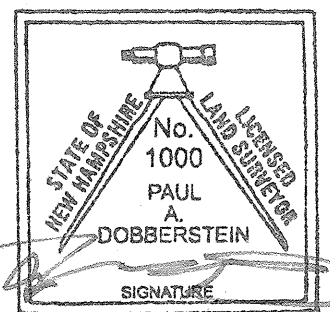
**NHDES PERMIT
PLAN**

C2

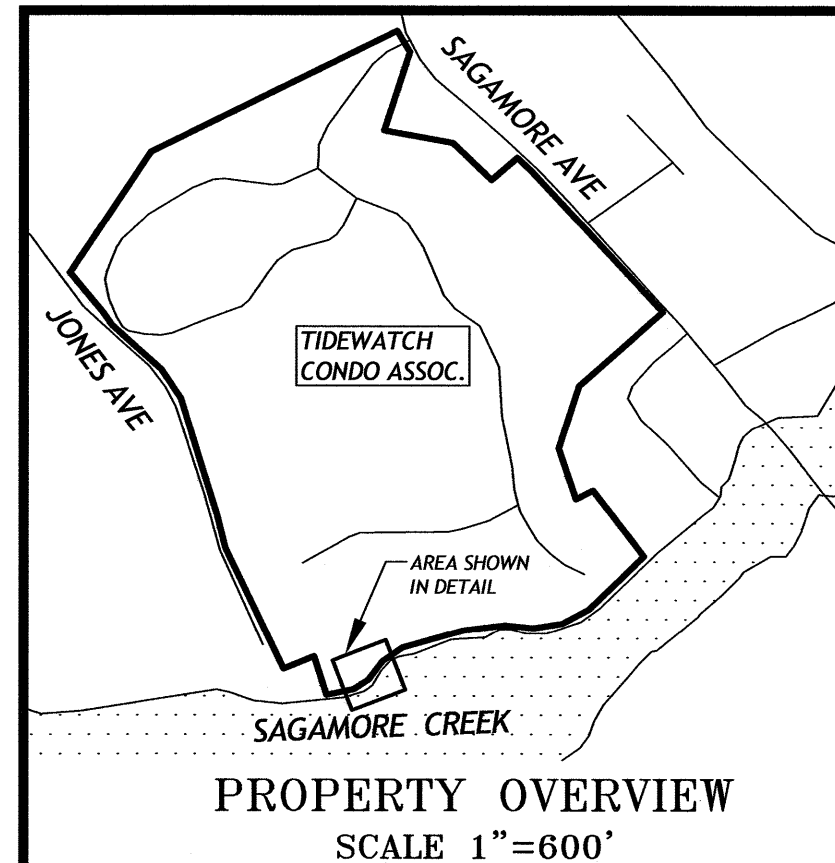
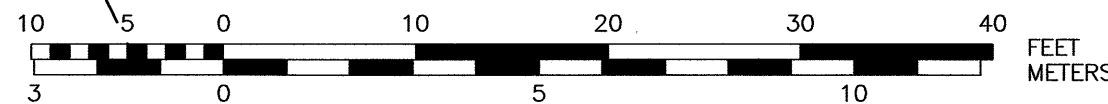
"I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000."

PAUL A DOBBERSTEIN, LLS

DATE



GRAPHIC SCALE



SEQUENCE OF CONSTRUCTION

- 1) MOBILIZATION OF A CRANE BARGE, PUSH BOAT, WORK SKIFF, MATERIALS AND PREFABRICATED COMPONENTS SUCH AS THE GANGWAY AND FLOAT TO THE SITE VIA APPROVED ACCESS.
- 2) MOBILIZATION OF EQUIPMENT TRUCKS TO THE SITE.
- 3) THE BARGE WILL BE POSITIONED ALONGSIDE THE PROPOSED LOCATION OF THE NEW DOCK AND WATERWARD OF ANY EMERGENT VEGETATION TO MINIMIZE IMPACTS
- 4) INSTALLATION OF THE SUB STRUCTURE WILL BE PERFORMED FROM A CRANE BARGE OR SKIFF TO REDUCE THE AMOUNT OF FOOT TRAFFIC IN THE INTERTIDAL AREA.
- 5) ALL WORK WILL BE PERFORMED AT LOW TIDE TO MINIMIZE SEDIMENTATION.
- 6) PILINGS WILL BE MECHANICALLY DRIVEN BY A CRANE ELIMINATING ANY EXCAVATION FOR INSTALLATION OF THE PILINGS. PILING ARE DRIVEN TO REFUSAL.
- 7) PILINGS ARE CUT AND BEAM CAPS ARE INSTALLED AND THE SUPER STRUCTURE OF THE PIER IS BUILT. MATERIALS ARE LIFTED FROM THE BARGE AND SET INTO POSITION BY THE CRANE.
- 8) ONCE THE PIER IS COMPLETE, THE GANGWAY AND FLOAT ARE BROUGHT INTO POSITION AND INSTALLED.

DISCHARGES, AVOIDANCE, MINIMIZATION AND MITIGATION

DISCHARGES OF DREDGED OR FILL MATERIAL INTO WATERS OF THE U.S. AND ANY SECONDARY IMPACTS SHALL BE AVOIDED AND MINIMIZED TO THE MAXIMUM EXTENT PRACTICABLE. PERMITTEES MAY ONLY FILL THOSE JURISDICTIONAL WETLANDS AND WATERWAYS THAT THE CORP AND NHDES AUTHORIZES TO BE FILLED AND IMPACT THOSE AREAS THAT THE CORPS AND AND NHDES AUTHORIZES AS SECONDARY IMPACTS. IF NOT SPECIFICALLY AUTHORIZED BY USACE AND AND NHDES, ANY UNAUTHORIZED FILL OR SECONDARY IMPACT TO WETLANDS MAY BE CONSIDERED AS A VIOLATION OF THE CWA.

- UNLESS SPECIFICALLY AUTHORIZED USACE AND AND NHDES, NO WORK SHALL DRAIN A WATER OF THE U.S. BY PROVIDING A CONDUIT FOR WATER ON OR BELOW THE SURFACE.

HEAVY EQUIPMENT IN FRESH WATER WETLANDS

HEAVY EQUIPMENT OTHER THAN FIXED EQUIPMENT (DRILL RIGS, FIXED CRANES, ETC.) WORKING IN WETLANDS SHALL NOT BE STORED, MAINTAINED OR REPAIRED IN WETLANDS, UNLESS IT IS LESS ENVIRONMENTALLY DAMAGING OTHERWISE, AND AS MUCH AS POSSIBLE SHALL NOT BE OPERATED WITHIN THE INTERTIDAL ZONE. WHERE CONSTRUCTION REQUIRES HEAVY EQUIPMENT OPERATION IN WETLANDS, THE EQUIPMENT SHALL EITHER HAVE LOW GROUND PRESSURE (<3 PSI), OR SHALL NOT BE LOCATED DIRECTLY ON WETLAND SOILS AND VEGETATION; IT SHALL BE PLACED ON SWAMP MATS THAT ARE ADEQUATE TO SUPPORT THE EQUIPMENT IN SUCH A WAY AS TO MINIMIZE DISTURBANCE OF WETLAND SOIL AND VEGETATION. SWAMP MATS ARE TO BE PLACED IN THE WETLAND FROM THE UPLAND OR FROM EQUIPMENT POSITIONED ON SWAMP MATS IF WORKING WITHIN A WETLAND. DRAGGING SWAMP MATS INTO POSITION IS PROHIBITED. OTHER SUPPORT STRUCTURES THAT ARE LESS IMPACTING AND ARE CAPABLE OF SAFELY SUPPORTING EQUIPMENT MAY BE USED WITH WRITTEN CORPS AND NHDES AUTHORIZATION. SIMILARLY, NOT USING MATS DURING FROZEN, DRY OR OTHER CONDITIONS MAY BE ALLOWED WITH WRITTEN CORPS AND NHDES AUTHORIZATION. AN ADEQUATE SUPPLY OF SPILL CONTAINMENT EQUIPMENT SHALL BE MAINTAINED ON SITE. CORDUROY ROADS AND SWAMP/CONSTRUCTION MATS ARE CONSIDERED AS FILL WHETHER THEY'RE INSTALLED TEMPORARILY OR PERMANENTLY.

TIME OF YEAR WORK WINDOW AND NOISE RESTRICTIONS

- I. PILES INSTALLED IN-THE-DRY DURING LOW WATER OR IN-WATER BETWEEN NOV. 8TH - APR. 9TH, OR
 - II. MUST BE DRILLED AND PINNED TO LEDGE, OR
 - III. VIBRATORY HAMMERS USED TO INSTALL ANY SIZE AND QUANTITY OF WOOD, CONCRETE OR STEEL PILES, OR
 - IV. IMPACT HAMMERS LIMITED TO ONE HAMMER AND <50 PILES INSTALLED/DAY WITH THE FOLLOWING: WOOD PILES OF ANY SIZE, CONCRETE PILES ≤18-INCHES DIAMETER, STEEL PILES 12-INCHES DIAMETER IF THE HAMMER IS ≤3000 LBS. AND A WOOD CUSHION IS USED BETWEEN THE HAMMER AND STEEL PILE.
- FOR II-IV ABOVE:
- I. IN-WATER NOISE LEVELS SHALL NOT >187dB SEL RE $1_{\mu}Pa$ OR 206dB PEAK RE $1_{\mu}Pa$ AT A DISTANCE >10M FROM THE PILE BEING INSTALLED, AND
 - II. IN-WATER NOISE LEVELS >155dB PEAK RE $1_{\mu}Pa$ SHALL NOT EXCEED 12 CONSECUTIVE HOURS ON ANY GIVEN DAY AND A 12 HOUR RECOVERY PERIOD (I.E., IN-WATER NOISE BELOW 155dB PEAK RE $1_{\mu}Pa$) MUST BE PROVIDED BETWEEN WORK DAYS.

WORK SITE RESTORATION

- 1) UPON COMPLETION OF CONSTRUCTION, ALL DISTURBED WETLAND AREAS SHALL BE PROPERLY STABILIZED. ANY SEED MIX SHALL CONTAIN ONLY PLANT SPECIES NATIVE TO NEW ENGLAND.
- 2) THE INTRODUCTION OR SPREAD OF INVASIVE PLANT SPECIES IN DISTURBED AREAS IS PROHIBITED.
- 3) IN AREAS OF AUTHORIZED TEMPORARY DISTURBANCE, IF TREES ARE CUT THEY SHALL BE CUT AT GROUND LEVEL AND NOT UPROOTED IN ORDER TO PREVENT DISRUPTION TO THE WETLAND SOIL STRUCTURE AND TO ALLOW STUMP SPROUTS TO REVEGETATE THE WORK AREA, UNLESS OTHERWISE AUTHORIZED.
- 4) WETLAND AREAS WHERE PERMANENT DISTURBANCE IS NOT AUTHORIZED SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AND ELEVATION, WHICH UNDER NO CIRCUMSTANCES SHALL BE HIGHER THAN THE PRE-CONSTRUCTION ELEVATION. ORIGINAL CONDITION MEANS CAREFUL PROTECTION AND/OR REMOVAL OF EXISTING SOIL AND VEGETATION, AND REPLACEMENT BACK TO THE ORIGINAL LOCATION SUCH THAT THE ORIGINAL SOIL LAYERING AND VEGETATION SCHEMES ARE APPROXIMATELY THE SAME, UNLESS AUTHORIZED.

SEDIMENTATION AND EROSION CONTROL

ADEQUATE SEDIMENTATION AND EROSION CONTROL MANAGEMENT MEASURES, PRACTICES AND DEVICES, SUCH AS PHASED CONSTRUCTION, VEGETATED FILTER STRIPS, GEOTEXTILE SILT FENCES, STORMWATER DETENTION AND INFILTRATION SYSTEMS, SEDIMENT DETENTION BASINS, OR OTHER DEVICES SHALL BE INSTALLED AND PROPERLY MAINTAINED TO REDUCE EROSION AND RETAIN SEDIMENT ON-SITE DURING AND AFTER CONSTRUCTION. THEY SHALL BE CAPABLE OF PREVENTING EROSION, OF COLLECTING SEDIMENT, SUSPENDED AND FLOATING MATERIALS, AND OF FILTERING FINE SEDIMENT. THE DISTURBED AREAS SHALL BE STABILIZED AND THESE DEVICES SHALL BE REMOVED UPON COMPLETION OF WORK. THE SEDIMENT COLLECTED BY THESE DEVICES SHALL BE REMOVED AND PLACED AT AN UPLAND LOCATION, IN A MANNER THAT WILL PREVENT ITS LATER EROSION INTO A WATERWAY OR WETLAND. ALL EXPOSED SOIL AND OTHER FILLS SHALL BE PERMANENTLY STABILIZED AT THE EARLIEST PRACTICABLE DATE.

SPAWNING AREAS.

DISCHARGES OF DREDGED OR FILL MATERIAL, AND/OR SUSPENDED SEDIMENT PRODUCING ACTIVITIES IN FISH AND SHELLFISH SPAWNING OR NURSERY AREAS, OR AMPHIBIAN AND MIGRATORY BIRD BREEDING AREAS, DURING SPAWNING OR BREEDING SEASONS SHALL BE AVOIDED. IMPACTS TO THESE AREAS SHALL BE MINIMIZED TO THE MAXIMUM EXTENT PRACTICABLE DURING ALL TIMES OF THE YEAR. INFORMATION ON SPAWNING HABITAT FOR SPECIES MANAGED UNDER THE MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT (I.E., EFH FOR SPAWNING ADULTS) CAN BE OBTAINED FROM THE NMFS WEBSITE AT: WWW.NERO.NOAA.GOV/HCD.

STORAGE OF SEASONAL STRUCTURES.

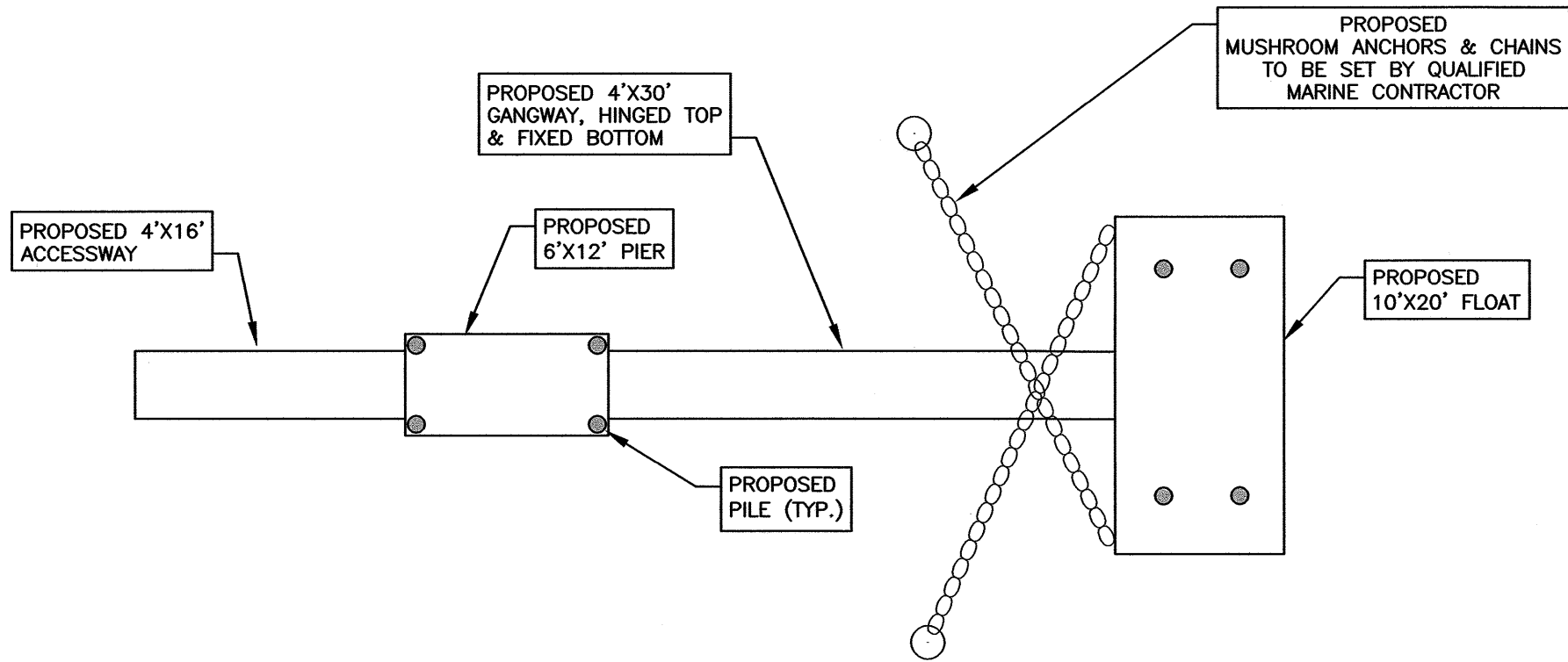
COASTAL STRUCTURES SUCH AS PIER SECTIONS, FLOATS, ETC., THAT ARE REMOVED FROM THE WATERWAY FOR A PORTION OF THE YEAR (OFTEN REFERRED TO AS SEASONAL STRUCTURES) SHALL BE STORED IN AN UPLAND LOCATION, LOCATED ABOVE HIGHEST OBSERVABLE TIDE LINE (HOTL) AND NOT IN TIDAL WETLANDS. THESE SEASONAL STRUCTURES MAY BE STORED ON THE FIXED, PILE-SUPPORTED PORTION OF THE STRUCTURE THAT IS SEAWARD OF HOTL. THIS IS INTENDED TO PREVENT STRUCTURES FROM BEING STORED ON THE MARSH SUBSTRATE AND THE SUBSTRATE SEAWARD OF MHW.

ENVIRONMENTAL FUNCTIONS AND VALUES

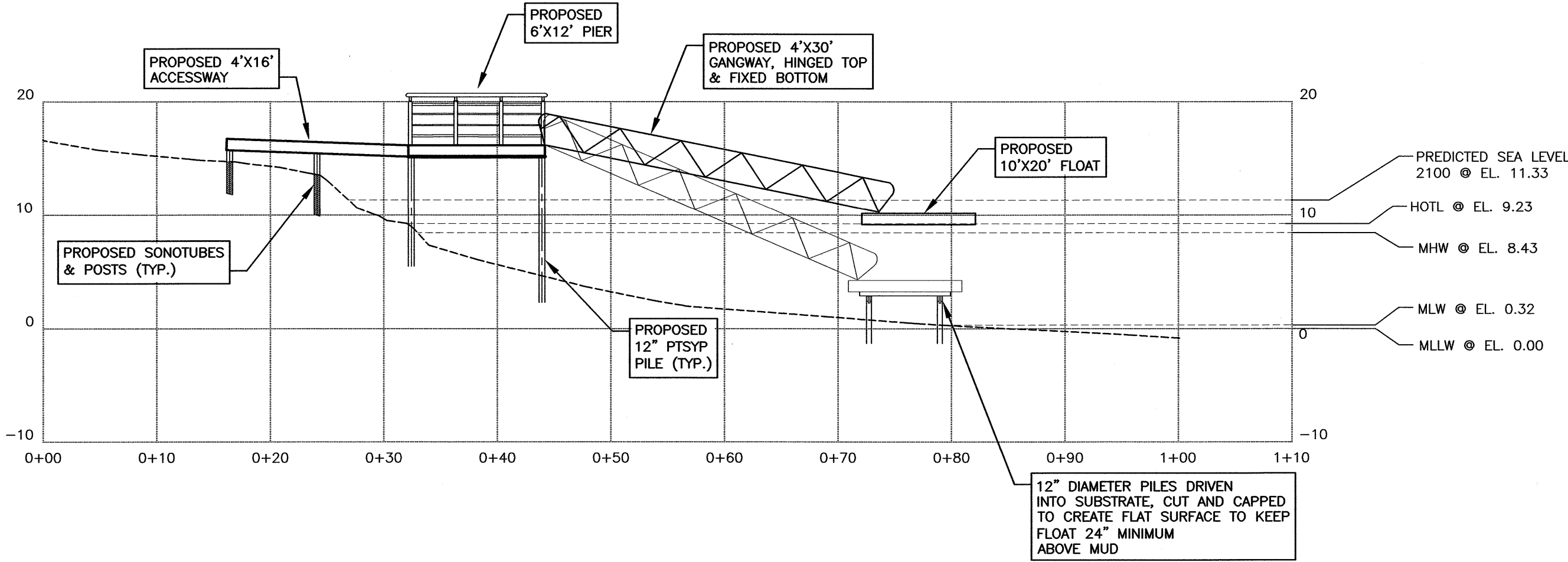
THE PERMITTEE SHALL MAKE EVERY REASONABLE EFFORT TO 1) CARRY OUT THE CONSTRUCTION OR OPERATION OF THE WORK AUTHORIZED BY USACE AND NHDES HEREIN IN A MANNER THAT MINIMIZES ADVERSE IMPACTS ON FISH, WILDLIFE AND NATURAL ENVIRONMENTAL VALUES, AND 2) PROHIBIT THE ESTABLISHMENT OR SPREAD OF PLANT SPECIES IDENTIFIED AS NON-NATIVE INVASIVE SPECIES BY ANY FEDERAL OR STATE AGENCY. SEE THE SECTION ON INVASIVE SPECIES AT [HTTP://WWW.NAE.USACE.ARMY.MIL/REGULATORY/](http://WWW.NAE.USACE.ARMY.MIL/REGULATORY/) FOR CONTROL METHODS.

INSPECTIONS

THE PERMITTEE SHALL ALLOW THE CORPS AND NHDES TO MAKE PERIODIC INSPECTIONS AT ANY TIME DEEMED NECESSARY IN ORDER TO ENSURE THAT THE WORK IS BEING OR HAS BEEN PERFORMED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THIS PERMIT. THE CORPS AND NHDES MAY ALSO REQUIRE POST-CONSTRUCTION ENGINEERING DRAWINGS FOR COMPLETED WORK, AND POST-DREDGING SURVEY DRAWINGS FOR ANY DREDGING WORK.

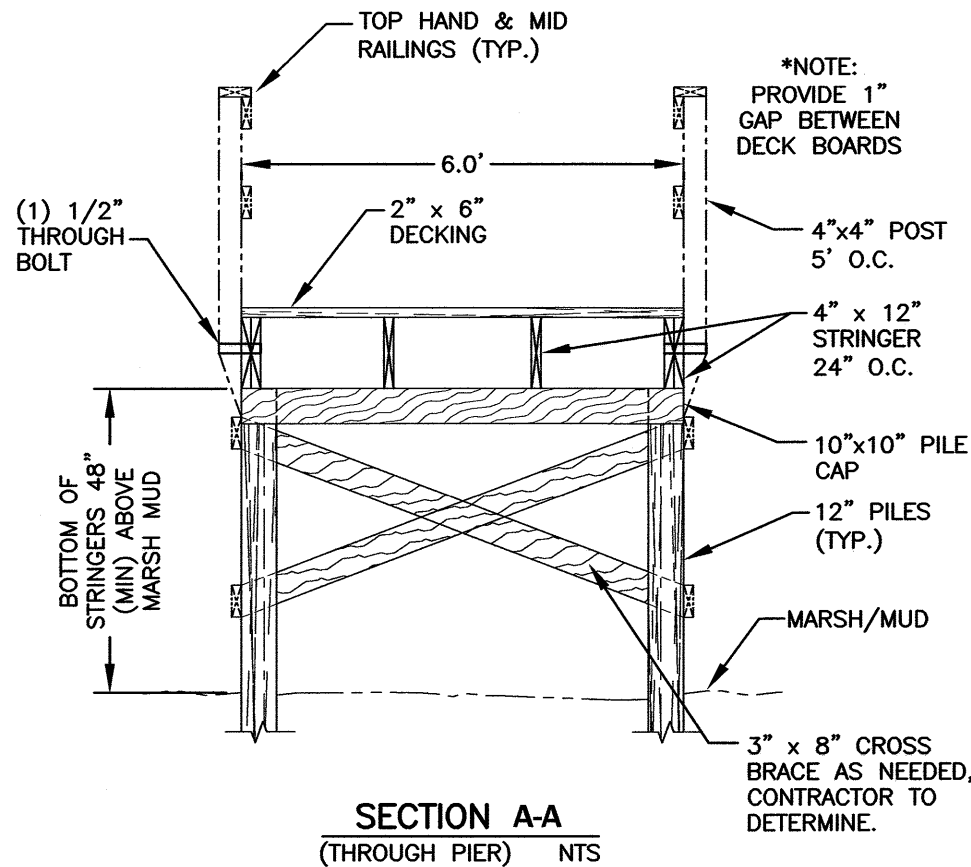


PROPOSED DOCK PLAN

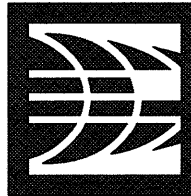
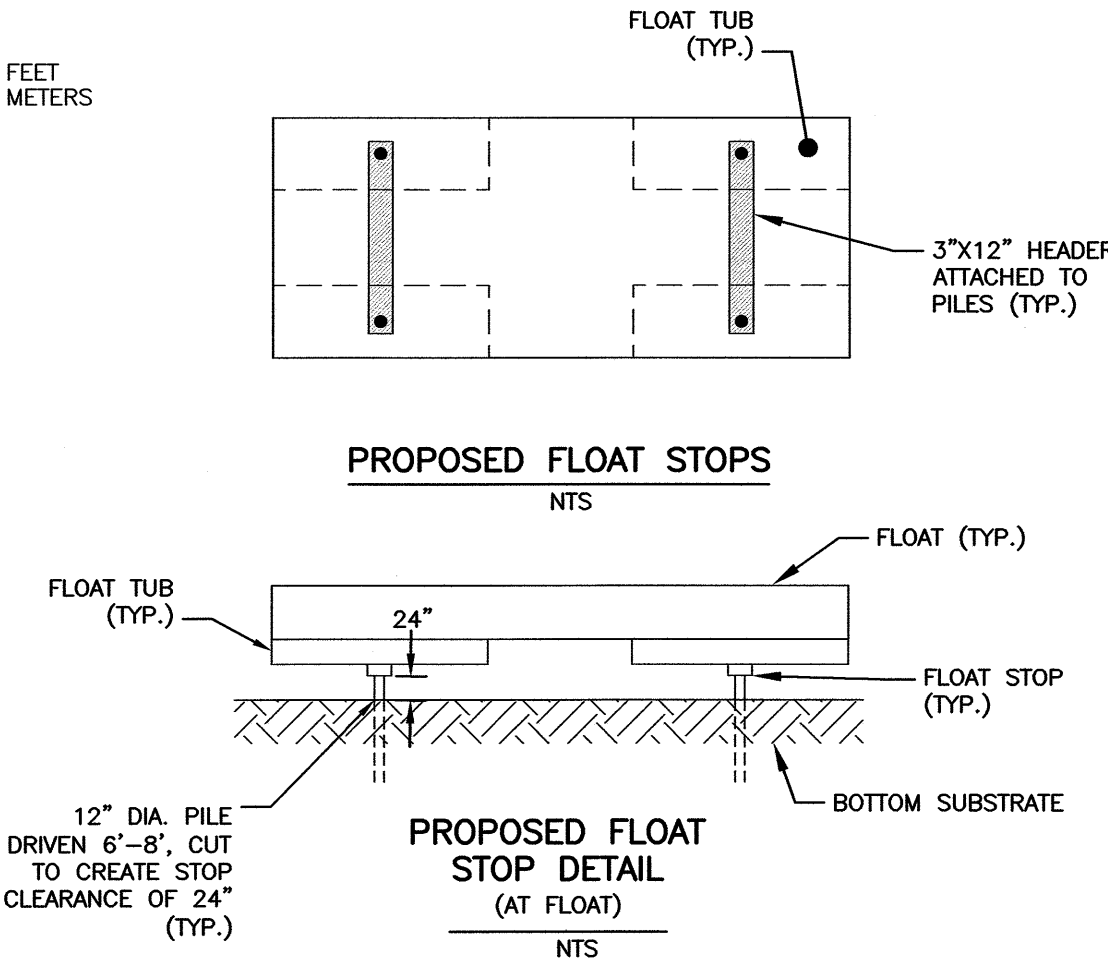
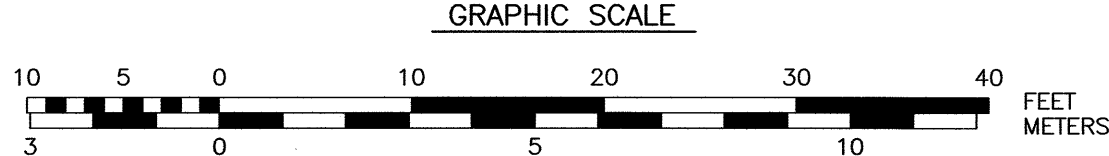


PROPOSED DOCK ELEVATION

PROPOSED PIER, GANGWAY & FLOAT



PROPOSED PIER DETAIL



AMBIT ENGINEERING, INC.

Civil Engineers & Land Surveyors

200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315



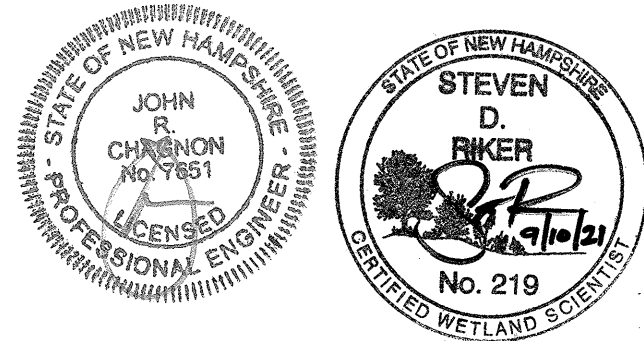
NOTES:

- 1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.
- 2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.
- 3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).
- 4) NUMBER OF PILES TO BE DRIVEN FOR DOCKING STRUCTURE NOT TO EXCEED 8 AS DEPICTED ON PROPOSED DOCK ELEVATION. ALSO NOTE TIME OF YEAR AND NOISE RESTRICTIONS FOR DRIVING OF PILES.

TIDEWATCH
CONDOMINIUMS
SAGAMORE AVENUE
PORTSMOUTH, N.H.

0	ISSUED FOR COMMENT	9/5/21
NO.	DESCRIPTION	DATE

REVISIONS



SCALE: 1" = 10'

JULY 2021

PIER
DETAILS

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