Port of Davisville Blue Economy Support Docks & Vessel Launch Ramp

Project ID: 0016Q291.00

Prepared for

Quonset Development Corporation

95 Cripe Street
North Kingstown, RI 02852

Prepared by

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Table of Contents

Table of Contents (continued)

Page

Tables

Figures

Appendices

1. Introduction

The Quonset Development Corporation (QDC) is proposing the installation of the following structures to support Rhode Island's booming "Blue Economy":

- A 2,900 square foot (sf) pile supported vessel launch ramp and 4,100 sf fixed pile supported pier along the Terminal 5 shoreline;
- 9,000 square feet (sf) of floating support docks;
- 900 square foot (sf) crane pad
- A total of 440 linear feet (LF) of wave attenuation structure to provide a safe vessel dockage.

These proposed improvements will service the growing Blue Economy Industries that include but are not limited to marine aquaculture, offshore wind, and marine transportation. All of these industries work for the sustainable use of marine environment resources for economic growth. Through the installation of the floating dock, fixed pile supported pier and launch, and wave attenuation structure, the Quonset Business Park (QBP) can continue to grow while maintaining its existing marine services.

This work is intended to align with the State of Rhode Island's Blue Economy Action Plan which defines "Blue Economy" as the sustainable use of the ocean to create a resilient economy and good paying jobs. This action plan focuses on services from renewable energy, to increased food opportunities, to adaptation and resilience in the face of climate change to combine economic growth with environmental protection for coastal areas.

The project is located in the Port of Davisville (the Port) within the Quonset Business Park (QBP) in North Kingstown, Rhode Island (RI) (Figure 1). The proposed improvements are located on Plat 193, Lot 010 on the North Kingstown Assessors Map and at Lat. 41° 36' 42" N Long. 71° 24' 35" W along Narragansett Bay. A Project locus map is provided in Attachment A.

As part of this application, QDC is requesting a Programmatic General Permit (PGP) for the installation of floating docks, fixed pier and launch, and wave attenuation structure. The project meets the criteria to be classified as a PGP No. 4 under a Pre-Construction Notification (PCN) for the installation of pile-supported structures & floats and other miscellaneous structures. In addition, the QDC is requesting review of this application by the Rhode Island Coast Resource Management Council (RI CRMC) under a Category A Assent.

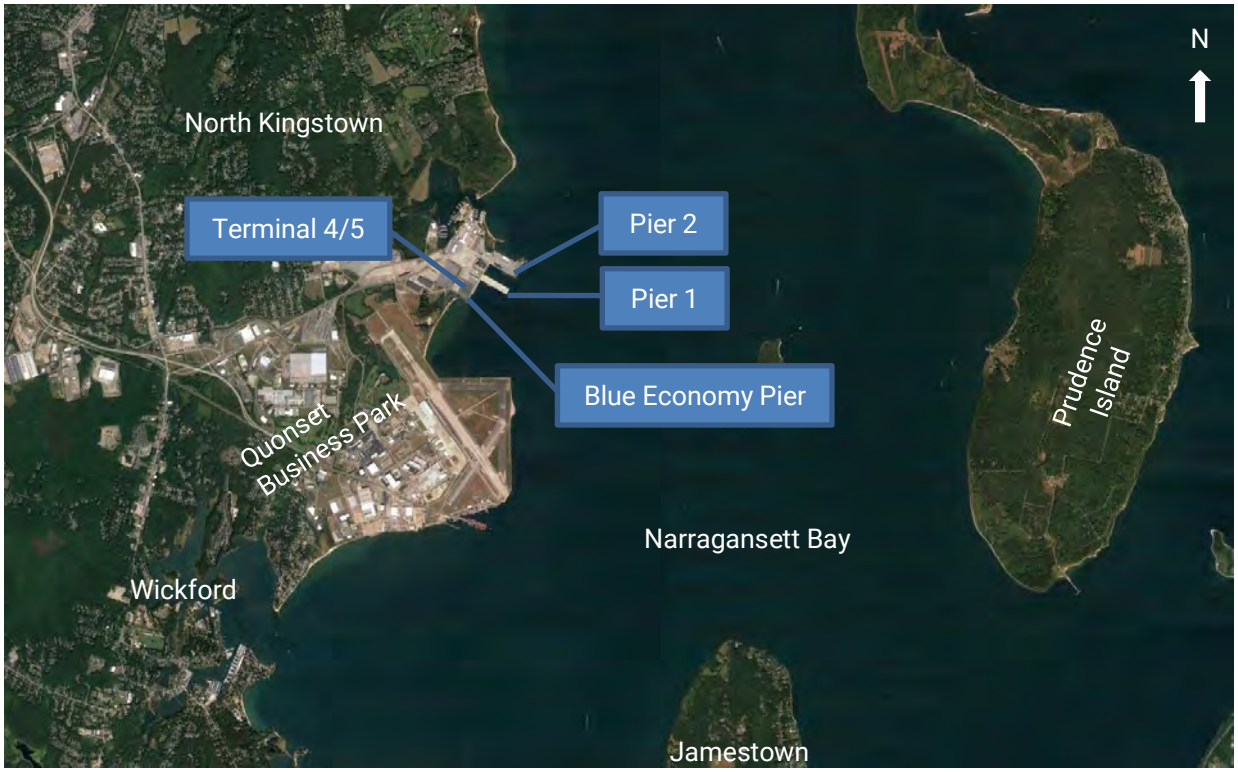


Figure 1: Proposed Project Location

1.1 Project Site

The existing project site is located entirely within the Port and consists of a riprap embankment along the shoreline adjacent to Terminal 5. Terminal 5 serves as a staging lot for finished automobile imports arriving by Roll-On/Roll-Off (RO/RO) vessels. The location of these proposed improvements is outlined below in Figure 2. The POD currently operates two (2) active piers to the north of the proposed site that support industries such as seafood, automobile transportation, and the growing offshore wind industry. In addition to the active Pier 1 and Pier 2, the Bule Economy Ramp and Docks are proposed to be constructed immediately south of the proposed Terminal 5 Pier, authorized under USACE Permit NAE-2022-02044 and CRMC Permit 2022-08-059. The Blue Economy Ramp and Docks will provide support for the growing QBP infrastructure as well as support the RI Blue Economy.

Figure 2: Location of Proposed Improvements

1.2 Scope of Work

The proposed work will consist of constructing a pile supported vessel launch ramp, pile supported fixed pier, floating docks, crane pad, and wave attenuation structures.

The pile-supported vessel launch ramp is expected to be about 24.5' wide by 118.5' long, and will consist of pre-cast concrete deck panels supported by eighteen (18) 16" steel piles. The fixed pile supported pier is expected to vary from about 10' to 36' wide by 154' long (approximately 4,200 sf), and will consist of pre-cast concrete deck panels supported by twenty-eight (28) 16" steel piles. Around the perimeter of the fixed pier, a continuous timber fender system with chocks and wales is also to be installed. The seaward edge of the proposed fixed pier will include two (2) timber pile clusters, consisting of twelve (12) timber piles, to protect interior support piles from damage.

A total of approximately 9,000 sf of floating timber dock is proposed directly south of the proposed Terminal 5 Pier. The floating docks will consist of 5,200 sf of main floating dock with nine (9) floating finger docks. To support the floating dock system, forty-eight (48) 18" steel piles will be installed. An aluminum gangway will also be installed to allow safe access to the floating docks from land.

The proposed pile supported cane pad will be of similar construction as the Blue Economy Fixed Pier and will be constructed entirely above the Annual High Tide Line (AHTL). It is anticipated to consist of six (6) 24" diameter steel piles, topped by precast concrete pile caps, precast concrete planks, and a cast-in-place topping slab. This crane pad will provide a reliable and resilient location for a mobile crane to offload cargo in support of the Blue Economy facility. The crane pad is situated such that the outboard pile row is landward of Mean High Water (MHW) and will be constructed over an existing crushed stone border that abuts the existing asphalt lot in Terminal 5. Pile supporting the pad also allows QDC to access and maintain the reinforced concrete drainage pipe below the pad and reduces the potential for earth pressures from surface surcharge loads to negatively affect the pipe at this location.

The proposed wave screen will be constructed of forty-seven (47) 30" diameter steel piles at 10'-0" on-center. The screen will consist of structural steel channels spanning horizontally from one pile to the next. The channels will mount onto steel sleeves that will be slid down onto the piles, forming individual panel sections. This will enable each panel section to be removed using a crane and maintained/replaced on an as-needed basis without expensive underwater work. Wave screen steel panels are anticipated to

span from -2.0 MLW to +8.0 MLW to rest above the mudline. At no time will the panels be allowed to rest on the mudline, no seabed impacts are anticipated. Locations and detailed layouts of the proposed improvements are provided within Attachment B.

1.3 Purpose and Need

Currently, the Port relies on Piers 1 and 2 to berth vessels, which in general consist of barges, RoRo vessels, cargo vessels, and offshore wind support vessels. However, there are not currently facilities to accommodate vessels under 50-feet that also provide floating docks or the ability to launch these smaller vessels. Accordingly, the proposed work will service a new market segment for the Port in a safe, efficient, and centralized manner.

As a result of the project, the Port can continue to grow and support the booming Blue Economy in Rhode Island. The proposed improvements will allow greater access for support vessels of the aquaculture, seafood, maritime shipping, and offshore wind industries, and the Port. The construction of the proposed improvements is anticipated to take place between 2024 and 2025.

2. Alternative Analysis

Below details the alternatives considered by the QDC when evaluating the future growth of the POD. In all, a total three (3) alternatives were assessed, as follows:

1. Pile Supported Support Docks, Pier & Ramp as proposed;
2. Backfilled Cofferdam Fixed Pier & Ramp; and
3. No Action

A description of each alternative and the results of its assessment are provided below.

2.1 Alternative 1 – Pile Supported Support Docks, Pier & Ramp (Recommended)

This scenario considers the proposed project as detailed in this application. This alternative allow for the existing riprap slope to remain under the pile supported structure. By doing so, it would preserve the rocky intertidal habitat that currently exists along the Terminal 5 waterfront. In addition, this alternative would produce the least amount of loss of benthic habitat. The area of marine habitat to remain below the pile supported pier would allow for continued utilization by marine species. With this recommended design, any significant impacts to the marine environment are anticipated to be localized to the areas of the proposed piles. Impacts to areas adjacent to the piles are anticipated to be limited to the construction phase and are expected to return to their original undisturbed state after installation.

2.2 Alternative 2 – Backfilled Cofferdam Pier & Ramp

Alternative 2 consists of the installation of the same site features detailed above. However, it proposes that the fixed pier and ramp be supported by a backfilled sheet pile cofferdam as opposed to pile supported structures. This alternative would provide several benefits over its lifetime including eliminating the need for piles, pile caps, and cast in place structural reinforced concrete, and may be designed for higher loads. However, this alternative also has disadvantages including the need to find suitable material to backfill the cofferdam as well as the potential for higher construction costs when compared to a pile supported vessel launch ramp and fixed pier.

This alternative would also result in a large area of permanent impact on the marine environment through the loss of rocky intertidal habitat produced by the existing riprap shoreline. In addition, this alternative would produce the largest permanent impact to benthic habitat as a result of the required backfilling in waters below the annual high tide line. Based on this, this scenario was not considered the most effective or beneficial alternative.

2.3 Alternative 3 – No Action

A no action alternative would propose no improvement to the existing, undeveloped, Terminal 5 riprap shoreline. This would leave the QDC with an underutilized shoreline and would impact the overall growth of the Rhode Island economy. Currently, there is no berthing capacity within the POD to support dockage of smaller vessels such as those required by the aquaculture, seafood, maritime shipping, and offshore wind industries. This would not support the State's overall goal to expand its Blue Economy and renewable energy initiatives. Based on this, this scenario was not considered a viable alternative.

3. Mitigation Measures and Permits

All special or supplemental requirements identified in permitting documents shall be adhered to during the construction process. Best management practices will be followed during construction. The proposed site is located within an active Port and an industrial/commercial business park. The following mitigation measures will be taken to minimize adverse impacts associated with the proposed project.

3.1 Threatened and Endangered Species

The QDC has considered and will implement the following effects of the project on sturgeon and sea turtles:

- For activities that increase levels of suspended sediment, the use of silt management and/or soil erosion best practices shall be implemented.
- For activities that may affect underwater noise levels, the use of a soft start, cushion blocks, and/or other noise attenuating tools shall be used to avoid reaching noise levels that will cause injury or behavioral disturbance to sturgeon and sea turtles. The table below shall be referenced in regard to noise criteria for injury/behavioral disturbance in sturgeon and sea turtles.

Table 3-1
Behavioral and Physiological (Injury) Thresholds for ESA-Listed Species in NMFS' Greater Atlantic Region

Species	Thresholds	Units
Sturgeon Behavioral	150	dB re 1 µPA RMS
Sturgeon Physiological	206	dB re 1 µPA Peak
Sturgeon Physiological (>2g)	187	dB re 1 μPa^2s cSEL
Sea turtle Behavioral	175	dB re 1 µPA RMS
Vibratory – Sea Turtle Permanent Threshold Shift (PTS, SEL weighted)	220	dB re 1 µPa2s SEL
Impact - Sea Turtle Permanent Threshold Shift (PTS, SEL weighted)	204	dB re 1 μPa^2s SEL
Impact - Sea Turtle Permanent Threshold Shift (PTS, Peak SPL)	232	dB re 1 µPA Peak

Notes:
cSEL = cumulative sound exposure levels
dB = decibel
g = gram
PTS = Permanent Threshold Shift
RMS = root mean square
SEL = sound exposure level
SPL = sound pressure level
TTS = Temporary Threshold Shift
µPA = micro Pascal

The maximum extents of the sound wave have been estimated using the GARFO Acoustic Tool in order to calculate the estimated SEL limits based on the design parameters. The governing threshold criteria for this project was determined from the above mentioned table. The agreed upon criteria identify sound pressure levels of 150 dB for Sturgeon behavioral threshold (vibratory hammer) as well as sound pressure levels of 206 dB peak and 187 dB accumulated SEL for Sturgeon (impact hammer). For vibratory pile driving, only behavioral thresholds exist for fish. For Sea Turtles, the agreed upon criteria identify sound pressure levels of 175 dB for behavioral threshold and 220 dB cumulative SEL (vibratory hammer), and sound pressure levels ranging from 232 dB Peak to 204 dB cumulative SEL (impact hammer).

Estimated SEL limits were calculated using 18-inch steel piles for the float docks and pier as well as 30" piles for the Wave Attenuation Structure. The calculator did not have the specific 30" nor 16" piles for determining impacts with a vibratory hammer so a 24" and 18" pile was used in the calculation. A full detailed report of the impacts determined by the GARFO Tool can be found in Attachment E in the Appendix.

It is the intent of the contractor to drive the piles using a vibratory hammer to the maximum extent possible followed by impact driving to the specified embedment depth.

The potential impacts of this project are minimal based on the overall impact area of the project. Nevertheless, QDC shall implement the following additional mitigation measures into the proposed project to reduce any adverse impacts:

- Soft start pile driving/removal will be conducted. This is expected to protect any threatened or endangered species that may be in the project vicinity.
- The piles will be driven utilizing a vibratory hammer to the maximum extent possible with the least amount of impact driving possible, which is not expected to exceed NMFS specifications regarding dBs noise levels.
- The extent of the project disturbance and ground disturbance shall be limited to the minimum necessary during construction.
- All debris generated during construction shall be removed from the site and disposed of at an appropriate upland disposal location in accordance with all local, State, and Federal laws and regulations.
- Appropriate BMPs shall be implemented throughout the project site.

3.2 Erosion Controls

The proposed improvements will have short-term and long-term effects to the physical environment localized to the area of the proposed piles. Any impacts on the physical environment due to construction will be minimized with the implementation of the best management practices (BMP), and mitigation measures specified in the required permits. In summary, the physical impacts from this project have minimal adverse impacts and are anticipated to be limited to construction activities.

Erosion controls, such as silt fencing and turbidity barriers, will be placed as necessary to minimize impacts of silt or suspended sediments from impacting waterways. These will be erected prior to starting work when required, and their effectiveness must be maintained until all work at the site is completed and the area has been stabilized against erosion.

3.3 Regulated Resources

Section 10 of the Federal Rivers and Harbors Act of 1899 give the U.S. Army Corps of Engineers (USACE) authority to regulate work and structures located in or that affect navigable waters of the United States. The waters adjacent to the proposed Blue Economy Support Docks and Boat Ramp are considered “navigable waters of the U.S.” as defined in the above referenced Acts and are therefore under the jurisdiction of the USACE.

The Rhode Island Water Quality Regulations have classified the waters adjacent to the proposed Blue Economy Support Docks as Class SB waters. This means they are designated for primary and secondary contact recreational activities, shellfish harvesting for controlled relay and depuration, and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation, and industrial cooling.

The proposed project will not negatively affect the objectives of CRMC, and in fact, conform to CRMC’s stated purpose of Type 6 designated waters. Coastal zone environmental concerns, such as wetlands, historic preservation, public access and nonpoint pollution control, will not be adversely impacted. Wildlife habitat is anticipated to have no long-term impacts due to the location and existing nature of the site within the Port.

No wetlands are located within the footprint of the proposed improvements. The nearest wetlands are approximately 500 feet south of the project area. These offsite wetlands consist of estuarian wetland/shrub along the Narragansett Bay, which will not be impacted, either in the short-term or long term.

3.4 Performance Standards

The USACE states that in Rhode Island a project is eligible under a Pre-Construction Notification (PCN) of the General Permit (GP) if they are subject to USACE jurisdiction, meet the general conditions of the GPs and are regulated by the State and received all applicable State approvals. Since this project consists of the construction of pile-supported structures & floats as well as other miscellaneous structures (vessel launch ramp), the described work falls within GP-4. Projects within Rhode Island seeking PCN authorizations must comply with the general conditions and other Federal laws such as the National Historic Preservation Act, the Endangered Species Act and the Wild and Scenic Rivers Act.

The Rhode Island Water Quality Regulations (Regulations) describe a number of impacts to water quality that are not allowed as the result of any activity. The proposed installation of the Blue Economy Support Docks and Vessel Launch Ramp will not result in the discharge of pollutants that will violate Water Quality Standards, interfere with the above-listed uses, or violate the Antidegradation provisions of the Regulations.

It is CRMC policy to support modernization and increased commercial activity related to shipping. The highest priority uses of Type 6 waters and adjacent lands include the construction and maintenance of dock space and facilities required for the support of the ports existing Blue Economy industries. The proposed improvements support the current day-to-day and future operations of the facility and are consistent with the CRMC goals for Type 6 Waters.

The CZM program is administered by the CRMC which has determined that any project in the Coastal Area that is authorized under Category 4 of the Corp's PGP is consistent with the CZM program and does not require additional CZM review.

3.5 Air

All local, state, and federal requirements shall be adhered to maintain and preserve air quality in and around the vicinity of the proposed support docks and boat ramp during construction. Project activities will employ dust suppression measures during construction to minimize impacts. In order to reduce any impacts due to the construction phase anti-idling and other measures to limit emissions from construction equipment shall be implemented. All construction equipment will be maintained in compliance with all applicable state and federal emission regulations. Equipment will not be idled without an operator in the cab.

3.6 Construction Methodology

The proposed work is expected to be completed using barge-mounted cranes, as determined by the selected contractor and approved by the Engineer. A general sequence of construction is provided below.

- The contractor will mobilize all equipment to the site, which is expected to consist of crane and materials barges, driving hammers (vibratory and impact), demolition equipment, and support vehicles.
- Erosion and sediment control devices will be deployed as required.
- The contractor will temporarily remove rip rap within the footprint of the structures on an as-needed basis along the existing.
- The new steel piles will be installed.
- Contractor will replace the riprap along the shoreline following pile installation.
- New precast concrete pile caps will be installed on the steel piles.
- Precast concrete deck panels will be installed on fixed pier and ramp.
- Installation of continuous timber fender system with chocks and Wales around perimeter of fixed pier.
- Floating docks and appurtenant structures will be installed.
- Contractor will demobilize all materials, equipment, and personnel.
- Contractor will minimize impacts to coastal resource areas at all times during the proposed work.

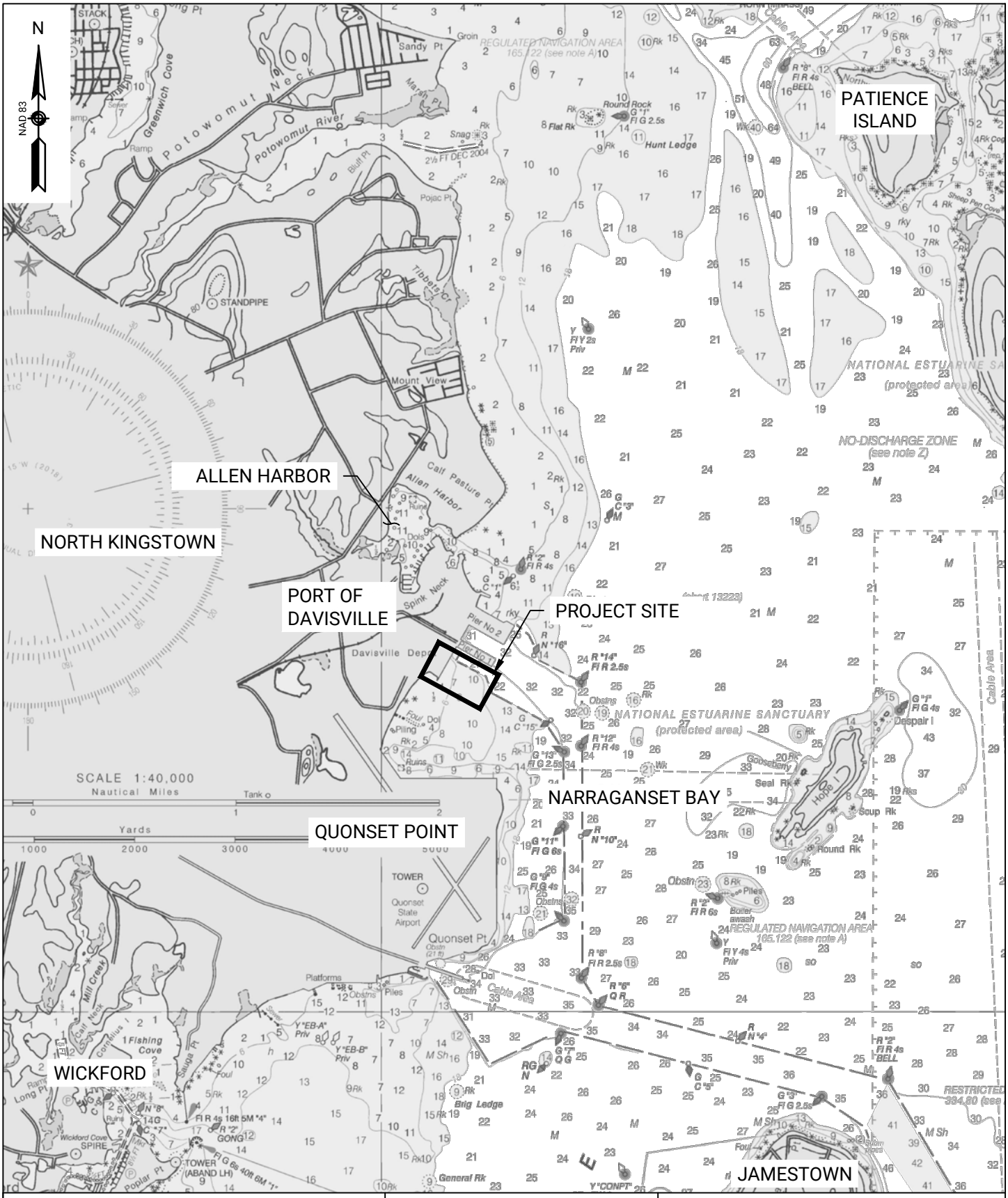
3.7 Summary of Mitigation Measures

The proposed construction of support docks and a new vessel launch ramp will be conducted so as to minimize impacts to the surrounding coastal resource areas, as follows:

- Soft start pile driving/removal will be conducted. This is to protect any threatened or endangered species that may be in the project vicinity.
- The piles will be driven utilizing a vibratory hammer to the maximum extent possible with the least amount of impact driving possible, which is not expected to exceed NMFS specifications regarding dBs noise levels.
- The extent of the project disturbance and ground disturbance shall be limited to the minimum necessary during construction.
- All debris generated as a result of the project construction shall be removed from the site and disposed of at an appropriate upland disposal location in accordance with all local, State, and Federal laws and regulations.
- Appropriate BMPs shall be implemented throughout the project site.
- All local, state, and federal requirements shall be adhered to maintain and preserve air quality in and around the vicinity of the proposed support docks and vessel launch ramp during construction.
- Project activities will employ dust suppression measures during construction to minimize impacts. In order to reduce any impacts due to the construction phase anti-idling and other measures to limit emissions from construction equipment shall be implemented.
- All construction equipment will be maintained in compliance with all applicable state and federal emission regulations. Equipment will not be idled without an operator in the cab.

Attachment A

Locus Plan & Resource Map



PURPOSE: PORT OF DAVISVILLE BLUE ECONOMY SUPPORT DOCKS & IMPROVEMENTS

DATUM:

MLLW = 0.00' MHW = +3.86'
MLW = +0.16' AHTL = +4.13'

FOTH INFRASTRUCTURE & ENVIRONMENT, LLC
15 CREEK ROAD, MARION MA, 02738

LOCUS MAP

0' 2000 4000
SCALE: 1 INCH =4000 FEET

PLAN ACCOMPANYING PETITION OF:
QUONSET DEVELOPMENT CORPORATION
NORTH KINGSTOWN, RI 02852

AT DAVISVILLE; NARRAGANSETT BAY
COUNTY OF: WASHINGTON

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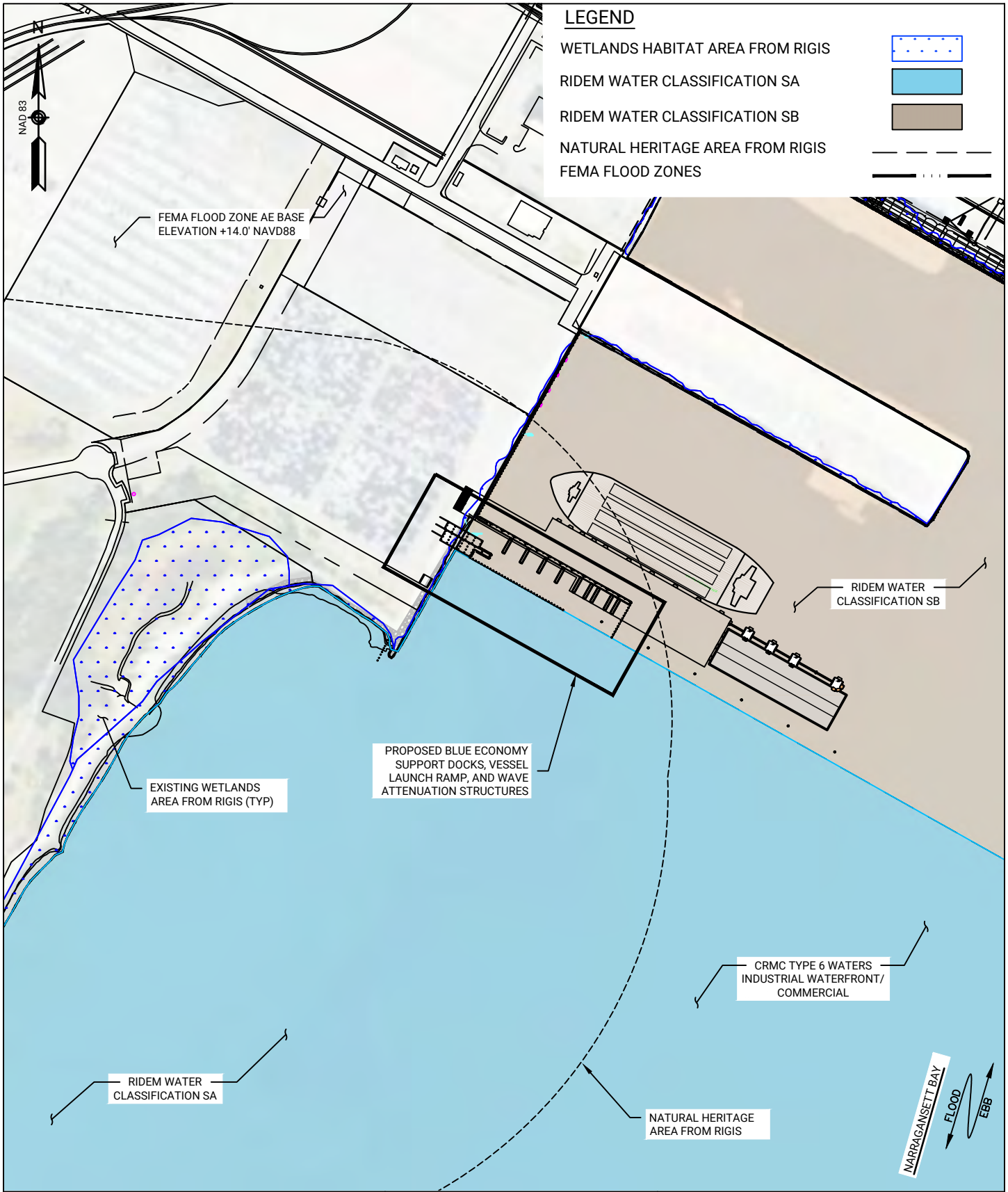

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FOTH INFRASTRUCTURE & ENVIRONMENT, LLC
15 CREEK ROAD, MARION MA, 02738

RESOURCE PLAN

0' 200 400
SCALE: 1 INCH = 400 FEET

PLAN ACCOMPANYING PETITION OF:
QUONSET DEVELOPMENT CORPORATION
NORTH KINGSTOWN, RI 02852

AT DAVISVILLE; NARRAGANSETT BAY
COUNTY OF: WASHINGTON

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