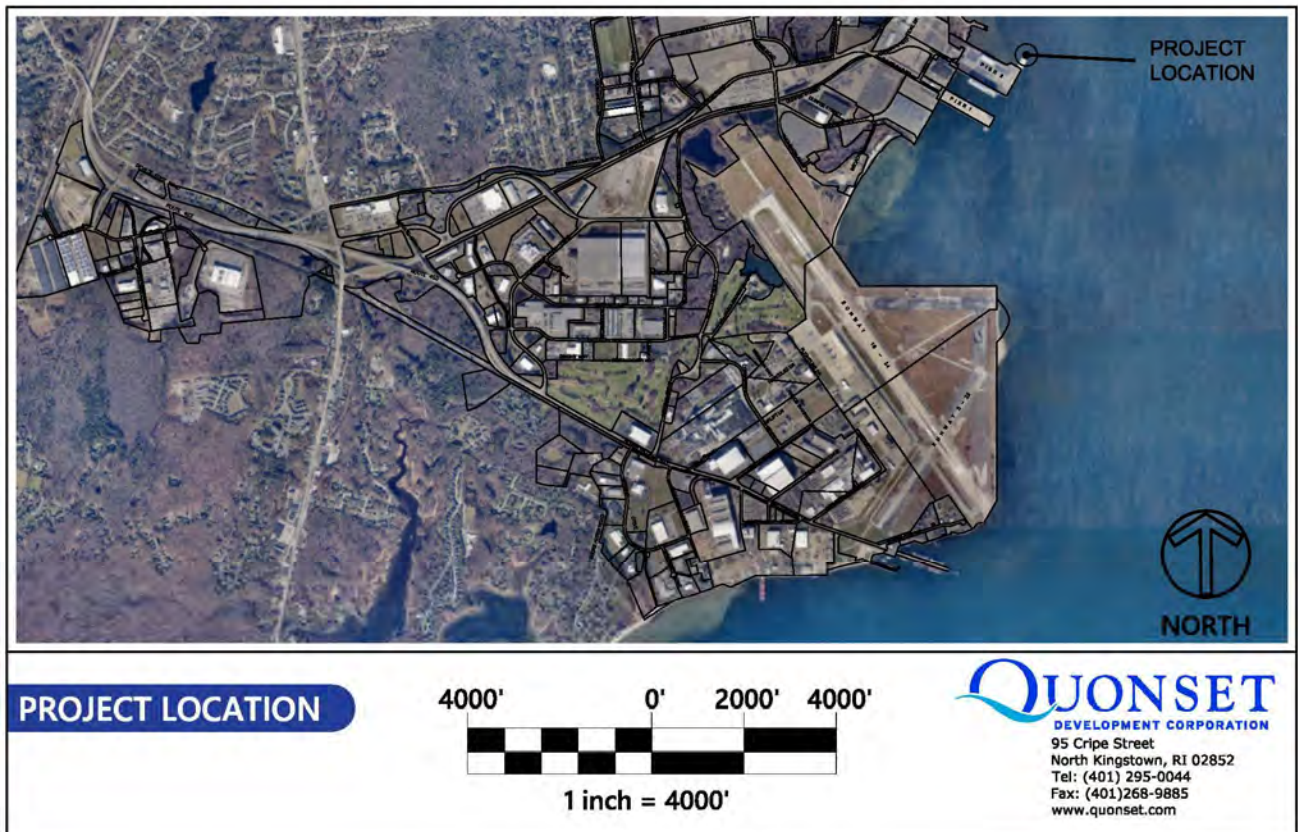


CRMC Application for State Assent Pier 2 Extension Wave Attenuator Port of Davisville



Quonset Development Corporation

North Kingstown Assessor's Plats 193 Lot 15

242 Terminal Way

North Kingstown, Rhode Island

Quonset Development Corporation

January 2025



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PROJECT NARRATIVE

INTRODUCTION

The proposed project consists of installing a wave attenuator system along the north side of the Pier 2 pile supported extension, known as the “Pier 2 Extension” (Assessor Plat 193, Lot 15), in the Port of Davisville, Quonset Business Park (Figure 1). The purpose of the wave attenuator system will be to minimize wave energy and decrease wave height, thereby protecting the launching, berthing, testing, and retrieval of prototype seaglider vehicles and other small commercial water-craft along the western side of the Pier 2 Extension.

Regent is a manufacturing startup that is in the process of developing all-electric, passenger-carrying, wing-in-ground-effect vehicles to service coastal routes. The current model in development is the Viceroy, Regent’s flagship 12-passenger vehicle that operates exclusively over water, traversing the sea in one of three modes: hull, hydrofoil, or flight in ground effect. Seaglidors have 160 nautical mile range with existing battery technology (upgradeable to over 400 nautical mile range with next generation battery technology) and are slated to enter service by 2025. Due to the unique configuration of the vehicle and its relatively low flight ceiling, these vehicles are reportedly regulated by the US Coast Guard, not the Federal Aviation Administration, as they are considered more akin to a vessel than a plane.

Due to the water-dependent nature of the seaglider, Regent has requested that QDC assist with installing a wave attenuator system to support the testing and development of the seaglider technology. As such, we are proposing to install a 220-foot-long wave attenuator system north of the northern edge of the Pier 2 extension. This wave attenuator will be secured, via a chain system, to a series of driven 30” coated steel pipe piles or helical soil anchors (to be determined during final design). As such, QDC is seeking a State Assent to install the new wave attenuator system pursuant to the Permit Submission plans enclosed.

DESCRIPTION OF EXISTING FACILITY & PRESENT CONDITIONS

Pier 2 (dubbed Terminal 2) is a 17-acre± earthen structure constructed of cellular cofferdams backfilled with hydraulically dredged material from the Quonset Channel (Photo No. 1). Originally constructed by the Navy in 1957, the Pier has undergone several improvement projects to maintain the Pier’s useful life, most recently the Pier 2 Modernization project. This project consisted of installing an anchored HZ-M Combination King Pile/Sheet Pile wall around the Pier to reinforce and extend the Pier’s useful life. This effort also included constructing a pile supported extension of the northeast berth of the Pier (Pier 2 Extension), and repaving of areas within the work zones.

Pier 2 is predominantly used for offloading Roll-On/Roll-Off (RoRo) vessels carrying imported finished automobiles. However, it is equipped with two heavy lift platforms for use by cranes, and can support heavy RoRo and project cargo as well. As such, it is suitable for a variety of water-dependent uses. The area to the immediate west of the Pier Extension is ideal for shallow-draft, small water-craft. However, the area is exposed to north-east winds traversing over a large fetch distance. As such, the project area is particularly susceptible to a high-energy wave environment as waves develop in Narragansett Bay and are reflected on the face of the bulkhead around Pier 2. The wave attenuator will help to minimize wave energy and decrease wave height, thereby protecting watercraft and facilities along the western side of the Pier 2 extension and further facilitating the Pier’s water-dependent uses.

The existing conditions at the project area consist of Narragansett Bay (Sheet Nos. C-1 and C-2) (Photo Nos. 3-6). Prudence Island is located approximately 4 miles to the east (Photo Nos. 2, 3 & 9), and Warwick is located

approximately 4 ¾ miles north of the proposed location (Photo No. 4). The area to the immediate west of the project location is the southern limit of Spinks Neck Beach (Photo Nos. 5 & 6).

Water elevations at the site are provided below and are listed in the Quonset Vertical Datum (QVD) and the North American Vertical Datum of 1988 (NAVD88).

<u>Water Level</u>	<u>Elevation (QVD)</u>	<u>Elevation NAVD88</u>
Mean Higher High Water (MHHW):	+4.93'	+1.88'
Mean High Water (MHW):	+4.68'	+1.63'
NAVD88:	+3.05'	0.00'
Mean Low Water (MLW):	+0.87'	-2.18'
Mean Lower Low Water (MLLW):	+0.72'	-2.33'
QVD	0.00'	-3.05'

The project area is located within a Federal Emergency Management Agency (FEMA) VE Flood Zone, with a flood elevation of El. 18.05 QVD (El. 15.0 NAVD88). Areas interior to Pier 2 are designated as FEMA AE Zone, with a flood elevation of El. 16.05 QVD (El. 13.0 NAVD88).

DETAILED DESCRIPTION OF THE PROPOSED ACTIVITY

The proposed work is expected to consist of installing a 220-foot-long wave attenuator system to the north of the Pier 2 Extension. This wave attenuator will be secured, via a chain system, to a series of proposed 30" coated steel pipe piles, or via helical soil anchors (to be determined as a part of final design) (Sheet No. C-3 and D-1).

The wave attenuator system will minimize wave energy and decrease wave height, thereby minimizing the risk to watercraft and facilities from potential damage. The wave attenuator system is comprised of the (3) - 48" diameter double-walled, plastic corrugated pipes chain-lashed together to marine grade aluminum frames, in 20-foot increments, to form the 220-foot-long wave attenuator. Affixed to the top of the wave attenuator system will be solar powered, U.S. Coast Guard approved, lights. The attenuator system is expected to be 96-inches wide by 84-inches tall, and will float with the tides. A cut sheet for the system is provided in Attachment G.

ANTICIPATED AREAS OF DISTURBANCE

The only anticipated area of disturbance will be the area under the driven piles/helical soil anchors. No other disturbances are expected.

PHASING

The construction phasing of the proposed work will ultimately be the responsibility of the Contractor based on its project approach, efficiency, and construction methods. However, it is expected that the general sequence of construction will be as follows:

1. Mobilize labor, materials, and equipment to the project site;
2. Set up and maintain a barge with a crane to facilitate construction of the work;
3. Install the steel pipe piles/helical soil anchors;
4. Connect the wave attenuator system to the steel piles via a network of chains; and
5. Demobilize major equipment and materials.



EQUIPMENT TO BE USED, CONSTRUCTION METHODS, ACCESS ROUTES, ETC.

EQUIPMENT TO BE USED

At this time, it is assumed that conventional marine construction equipment will be utilized to complete this project, which may include but would not be limited to barges, cranes, support vehicles, and/or work boats/floats, in addition to hand tools and support equipment.

CONSTRUCTION METHODS

See Above.

ACCESS ROUTES

Access to the site may be made from Pier 2. All work will take place via a barge.

EROSION AND SEDIMENTATION CONTROLS

Due to the nature of the work (i.e., pile driving or installation of soil anchors), the activities are not expected to produce silt, turbidity, or sedimentation. Accordingly, erosion and sedimentation controls are not expected to be required. However, should the proposed activities result in turbidity in the water-column during the work, the Contractor will be required to deploy a turbidity curtain to contain and minimize the effects of turbidity.

Absorbent booms/socks/pads and spill response kits will be maintained at all times onsite should a hazardous spill occur. All equipment and machinery will be required to use vegetable-based biodegradable hydraulic fluid for this project, and shall be inspected for leaks/spills prior to use on a daily basis.

DEMONSTRATION OF COMPLIANCE WITH CRMC STANDARDS

The appropriate sections for the Category B requirements are addressed below:

CRMC SECTION 1.3.1A CATEGORY B REQUIREMENTS

a. **Demonstrate need for the proposed activity or alteration:**

As discussed in the *Introduction* and *Detailed Description of the Proposed Activity* sections above, the purpose of the wave attenuator system will be to minimize wave energy and decrease wave height, thereby protecting the launching, berthing, testing, and retrieval of prototype seaglider vehicles and other small commercial water-craft along the western side of the Pier 2 Extension.

b. **Demonstrate that all applicable local zoning ordinances, building codes, flood hazard standards, and all safety codes, fire codes, and environmental requirements have or will be met:**

QDC has applied for all of the required regulatory permits for this project (i.e., RICRMC, USACE, and RIDEM), and will obtain said permits prior to starting construction. All applicable safety codes, predominantly as they relate to construction, will be required to be adhered to by the selected Contractor, and fire/building codes are not applicable to the type of construction and work being proposed. The proposed piles/soil anchors will



be driven during normal tidal conditions, and therefore, coastal flood hazards are not expected to have an effect on the proposed project.

Pursuant to the Town of North Kingstown Zoning Ordinance, the entire site falls within the “Quonset Business Park (QBP)” zoning district, and as such, shall be reviewed under the procedures and standards located in the Quonset Business Park Development Package (Sec. 21-100(c)). Per the Quonset Business Park Development Package, as amended by the Quonset Development Corporation Board of Directors in November 2018, the site is designated as Quonset Waterfront District (QWD) and the proposed project is permitted within the QWD.

c. Description of the boundaries of the coastal waters and land area that is anticipated to be affected:

The project site is located within CRMC Type 6 Waters, designated for use as Industrial Waterfronts and Commercial Navigation Channels, and within RIDEM Type B Waters.

d. Demonstrate that the alteration or activity will not result in significant impacts on erosion or deposition processes along the shore and in tidal waters:

As discussed in the *Anticipated Areas of Disturbance* section above, the only anticipated area of disturbance will be the footprint of the pile/soil anchor system. No other disturbances are expected.

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

The proposed project components are located within previously disturbed dredged areas and will not result in significant impacts on the diversity of plants and animal life.

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

The project site is located along the north side of the Pier 2 pile supported extension of the northeast berth of Pier 2, known as the “Pier 2 Extension” where public access to the shoreline is not accessible or applicable. Further, the proposed wave attenuator system will be located within the confines of Narragansett Bay, so the alteration will not alter the existing opportunity for public use of the tidal waters or the shoreline.

g. Demonstrate that the alteration will not result in significant impacts to water circulation, flushing, turbidity, and sedimentation:

The existing site does not discharge sedimentation or create turbidity in Narragansett Bay. This condition will not be changed by the proposed work. Additionally, there are no proposed project components that would have any effect on flushing or water circulation of Narragansett Bay.

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

As discussed above, given that the proposed project is only to install a series of piles and attach a wave attenuator to them, there will be no effect on the water-quality at the project site.



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

There are no identifiable historical and archaeological resources within the area of the proposed project site.

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

The proposed project is immediately adjacent to the Port, where activities such as recreational boating, fishing, and swimming are either limited or not typically permitted, and therefore will have no appreciable effect. The project is intended to directly benefit navigation and water-dependent commerce by calming the high-energy wave environment that currently exists on the west side of the Pier Extension. Additionally, the solar-powered navigation lights planned to be affixed to the attenuator will minimize the potential for navigational conflicts during low-visibility conditions.

- k. Demonstrate that measures have been taken to minimize any adverse scenic impact:

The proposed project will be required to meet the Development Requirements of the Quonset Development Corporation, ensuring that the visual element will be consistent with other development within the Park and minimizing adverse scenic impacts. Also, the project is situated in an industrialized shoreline just north of the Pier 2 Extension, and is in keeping with the visual aspect of this area.

Q:_QDC construction\2023-006A Pier 2 Big Top (Manafort)\13 Permit\2025_CRMC Wave Attenuator\02_Application\01_Submission Packet\03_00_20250124_Application Narrative.docx



Figures

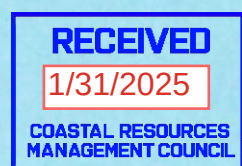


Figure 1: Project Location Map

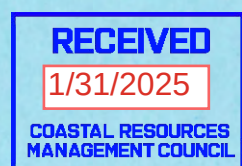
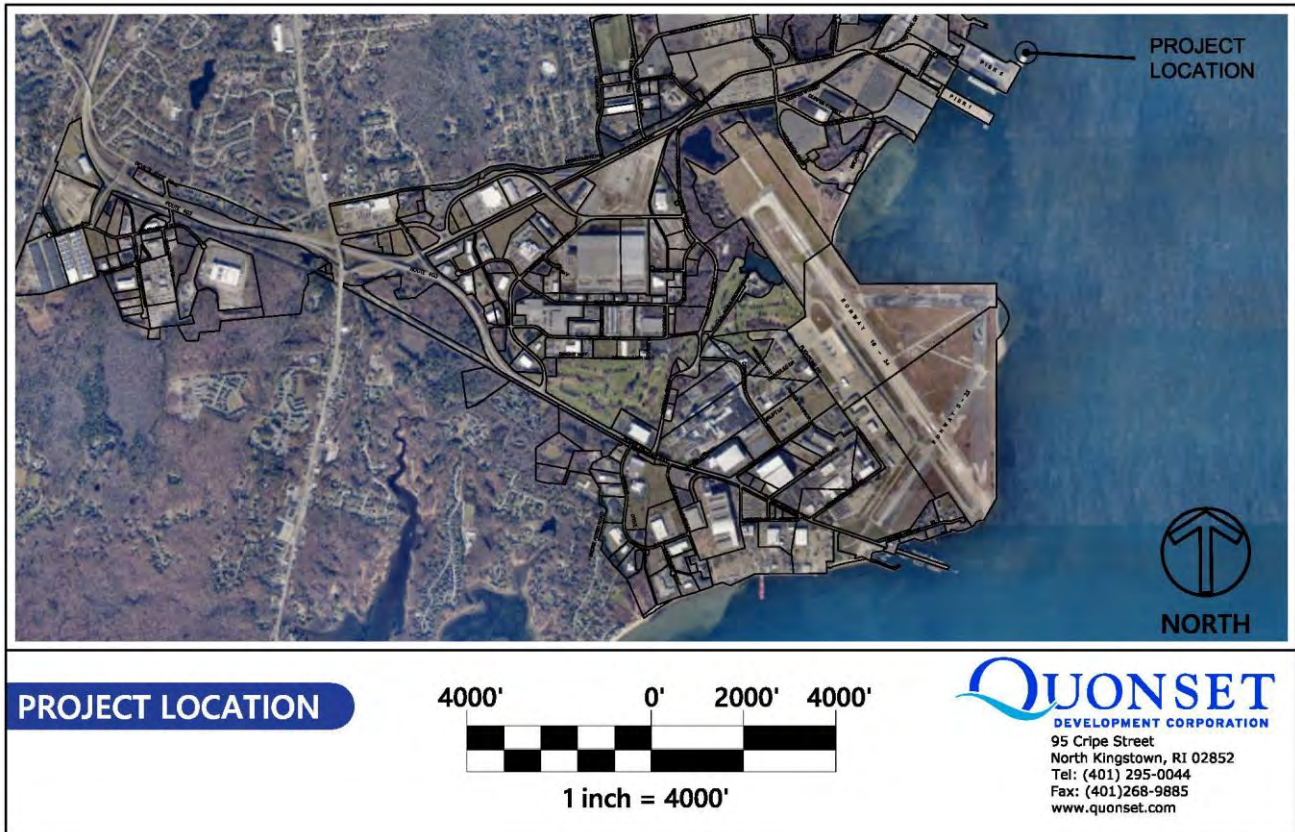


Figure 1: Project Location Map

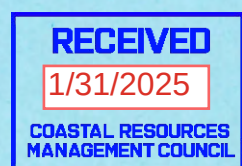


RECEIVED

1/31/2025

COASTAL RESOURCES
MANAGEMENT COUNCIL

Attachments



Attachment A - Photographs

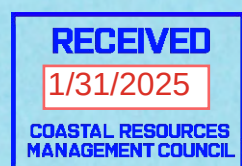




Photo No. 1:

Pier 2, facing southwest, photo taken on July 21, 2023.



Photo No. 2:

Standing on northeast corner of Pier 2 Extension (AP 193, Lot 15); Narragansett Bay is to north & east; AP 193, Lot 15 is to south & west; facing east; photo taken January 22, 2025





Photo No. 3:

Standing on northeast corner of Pier 2 Extension (AP 193, Lot 15); Narragansett Bay is to north & east;
AP 193, Lot 15 is to south & west; facing northeast; photo taken January 22, 2025

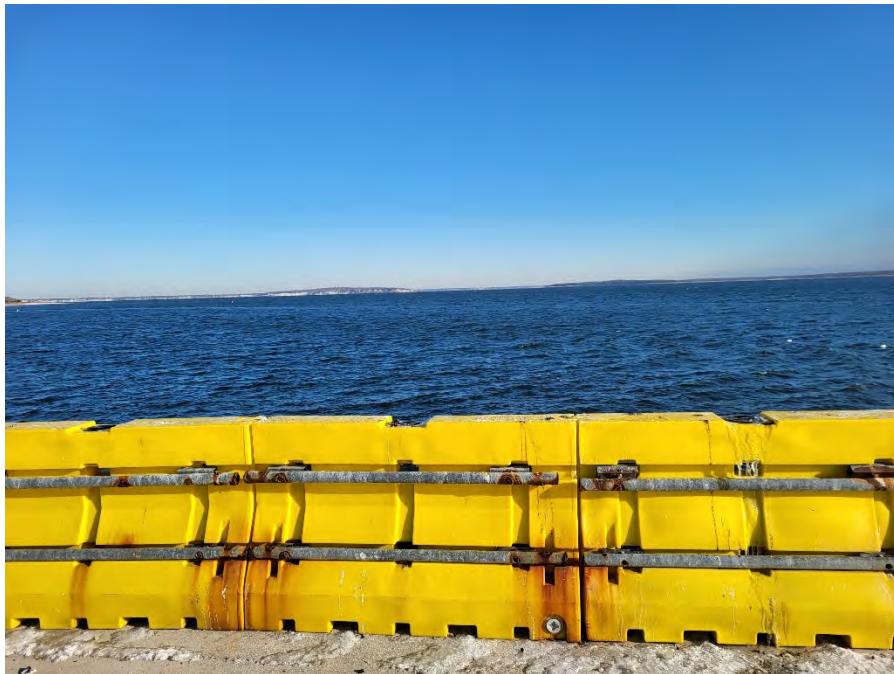


Photo No. 4:

Standing on north side of Pier 2 Extension (AP 193, Lot 15); Narragansett Bay is to north, east, & west;
AP 193, Lot 15 is to south; facing north; photo taken January 22, 2025



Photo No. 5:

Standing on northwest corner of Pier 2 Extension (AP 193, Lot 15); Narragansett Bay is to north & west;
AP 193, Lot 15 is to south & east; facing northwest; photo taken January 22, 2025



Photo No. 6:

Standing on west side of Pier 2 Extension (AP 193, Lot 15); Narragansett Bay is to north & west;
AP 193, Lot 15 is to south; facing west; photo taken January 22, 2025



Photo No. 7:

Standing on northwest corner of Pier 2 Extension (AP 193, Lot 15); Narragansett Bay is to north & west;
AP 193, Lot 15 is to south & east; facing southwest; photo taken January 22, 2025



Photo No. 8:

Standing on north side of Pier 2 Extension (AP 193, Lot 15); Narragansett Bay is to north, east, & west;
AP 193, Lot 15 is to south; facing south; photo taken January 22, 2025



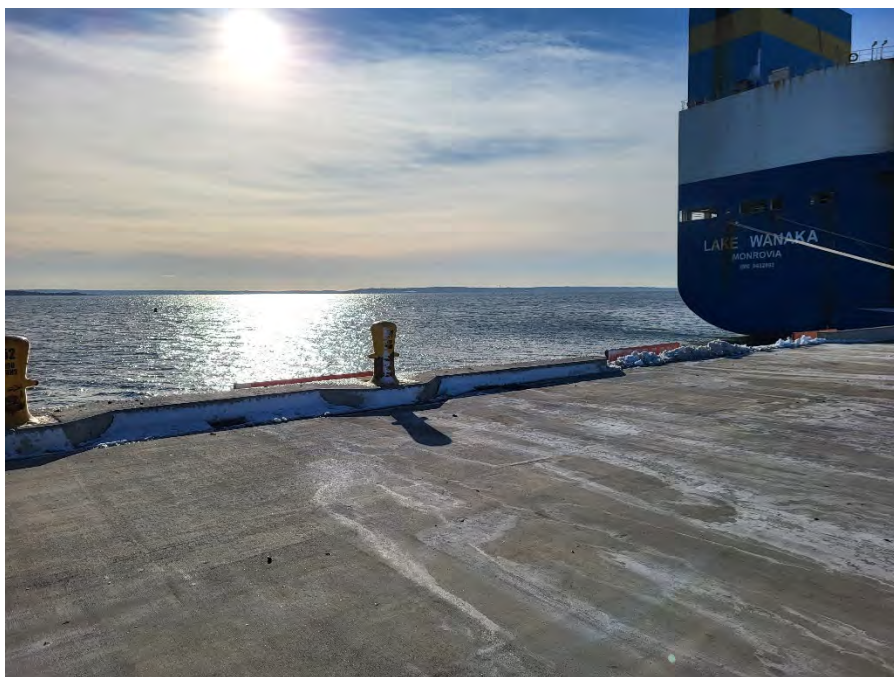
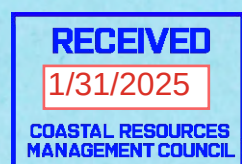


Photo No. 9:

Standing on northeast corner of Pier 2 Extension (AP 193, Lot 15); Narragansett Bay is to north & east;
AP 193, Lot 15 is to south & west; facing southeast; photo taken January 22, 2025



Attachment B – Proof of Property Ownership





Town of North Kingstown, Rhode Island

Assessor Department
100 Fairway Drive
North Kingstown, RI 02852
Phone: (401) 268-1531
www.northkingstownri.gov

January 21, 2025

To Whom It May Concern:

This letter serves as confirmation of ownership for Assessor Plat 193 Lot 15. The current owner of record is Rhode Island Commerce Corporation dba Quonset Development Corp. The property is also known as 242 Terminal Way, North Kingstown, RI.

Deborah Garneau, RICA
Assessor

North Kingstown is honored to be **Rhode Island's only and official American World War II Heritage City**, a designation bestowed by the U.S. National Park Service in 2024, recognizing the significant transformation within our community in support our country's historic role in World War II and our ongoing commitment to preserve that history.

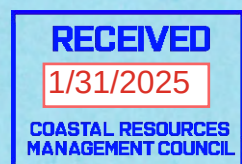


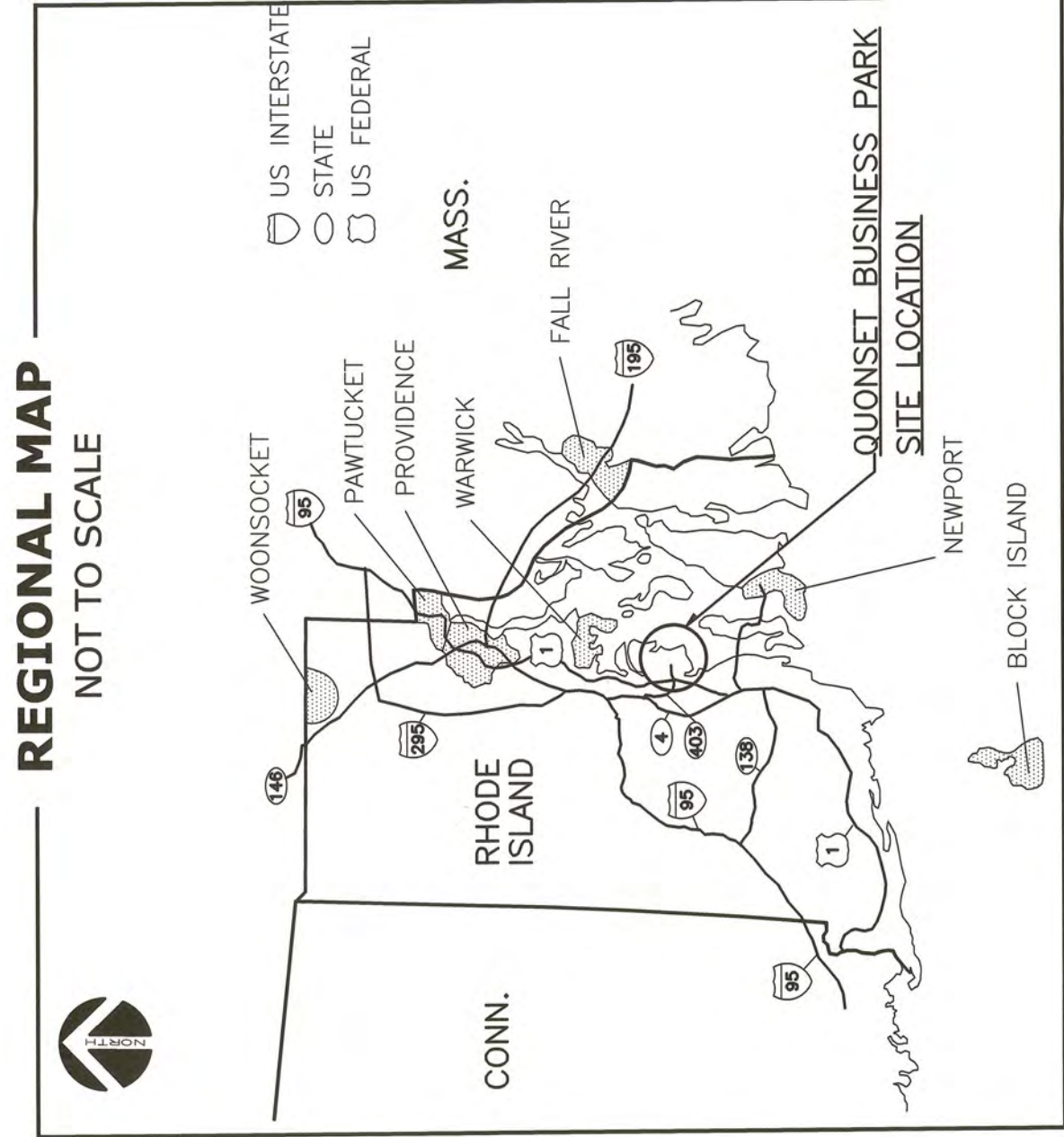


North Kingstown is honored to be **Rhode Island's only and official American World War II Heritage City**, a designation bestowed by the U.S. National Park Service in 2024, recognizing the significant transformation within our community in support our country's historic role in World War II and our ongoing commitment to preserve that history.



Attachment C – Site Plans





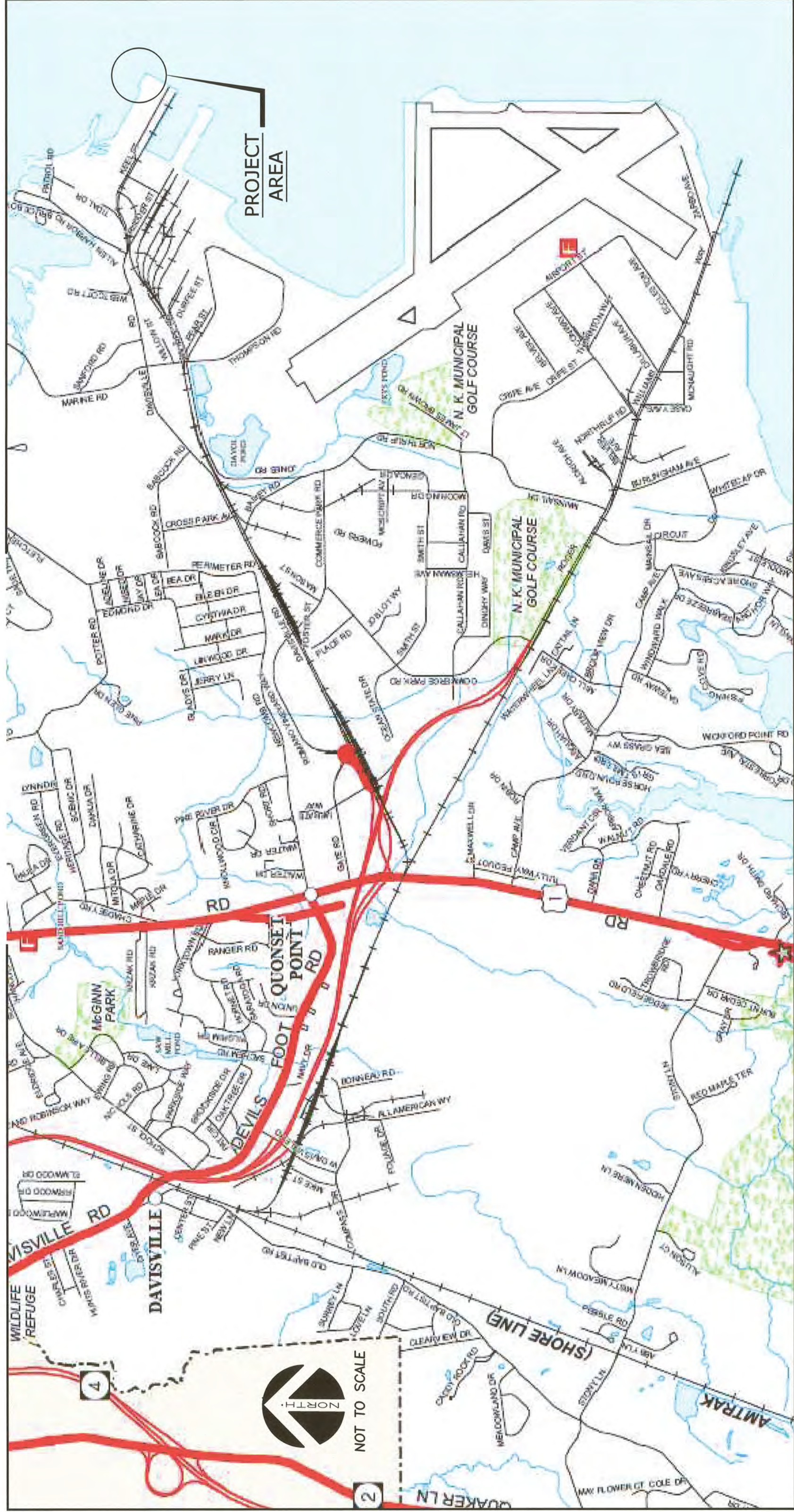
PIER 2 EXTENSION WAVE ATTENUATION PROJECT

AT THE
PORT OF DAVISVILLE

QDC CONTRACT NO.: 2023-006A

AP 193, Lot 015
242 Terminal Way
North Kingstown, Rhode Island
JANUARY 2024

SCHEDULE OF REVISIONS			
REV #	DESCRIPTION	DATE	APPROVED



QUONSET BUSINESS PARK
PROJECT AREA



Planning & Development
95 Cripe Street
North Kingstown, RI 02852
Tel: (401) 295-0044
Fax: (401) 268-9885

INDEX OF DRAWINGS	
SHEET No.	DESCRIPTION
G-0	COVER SHEET
G-1	NOTES I
G-2	NOTES II
G-3	LEGEND
C-1	OVERALL SITE PLAN
C-2	EXISTING CONDITIONS PLAN
C-3	PROPOSED WAVE ATTENUATOR PLAN
D-1	DETAILS I



Gregory J. Coren
January 31, 2024
Sheets 1/6 to 1/8



APPROVED

GREGORY J. COREN, P.E.
QDC MANAGER OF ENGINEER

DATE: 01/31/2025

SHEET NO.

G-0

1 OF 8 SHEETS

**PERMIT SUBMISSION
NOT FOR CONSTRUCTION**
01/31/2025

26916

GENERAL NOTES:

1. THE SITE IS LOCATED IN NORTH KINGSTOWN, RHODE ISLAND.
2. THIS PROJECT IS OWNED AND FUNDED BY THE QUONSET DEVELOPMENT CORPORATION. THEREFORE, SOME OF THE REFERENCES AND TERMINOLOGY OF THE STANDARD SPECIFICATIONS MAY SEEM OUT OF PLACE. WHERE CONFLICTS EXIST BETWEEN THE STANDARD SPECIFICATIONS AND THE REQUIREMENTS CALLED FOR HEREIN, THE REQUIREMENTS CALLED FOR HEREIN SHALL GOVERN.
3. AERIAL MAPING FOR THE SITE WAS PERFORMED BY WP SELLS IN MARCH 2010. HORIZONTAL DATUM IS R.I.S.P.C.S., N.A.D.1983 AND THE VERTICAL DATUM IS QUONSET VERTICAL DATUM (QVD). NOTE THAT ALL INFORMATION PROVIDED, BOTH THE MAPPING AND UTILITY ELEVATIONS ARE SUBJECT TO THE CONTRACTORS FIELD VERIFICATION.
4. THE PROPOSED WORK IS SITUATED IN A FEMA FLOOD ZONE 'VE' (EL.: 15 NAVD 88, EL.: 18.05 QVD) AS DESIGNATED ON THE "NATIONAL FLOOD INSURANCE PROGRAM, FIRM FLOOD INSURANCE RATE MAP WASHINGTON COUNTY, RHODE ISLAND (ALL JURISDICTIONS) PANEL 107 OF 368, TOWN OF NORTH KINGSTOWN MAP NUMBER 44009C0107J MAP REVISED: OCTOBER 16, 2013. FEDERAL EMERGENCY MANAGEMENT AGENCY."
5. EXISTING UTILITIES HAVE BEEN PLOTTED FROM BEST AVAILABLE DATA AND ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING DRAINAGE AND UTILITIES BOTH UNDERGROUND AND OVERHEAD BEFORE EXCAVATION BEGINS IN ACCORDANCE WITH THE "DIG SAFE LAW" ENACTED BY R.I. LEGISLATURE BILL NO. 795-291, WHICH BECAME EFFECTIVE JULY 1, 1979 AND BY CONTACTING THE INDIVIDUAL UTILITY COMPANIES. EXCAVATION SHALL BE IN ACCORDANCE WITH ALL STATUTES, ORDINANCES, RULES AND REGULATIONS OF ANY APPLICABLE CITY, TOWN, STATE OR FEDERAL AGENCY. THE CONTRACTOR SHOULD UNDERSTAND THAT NOT ALL UTILITIES SUBSCRIBE TO THE DIG SAFE PROGRAM. IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES AND ENSURE THAT ALL UTILITIES HAVE BEEN MARKED PRIOR TO COMMENCING THEIR WORK. ANY DAMAGE TO EXISTING UTILITIES MARKED IN THE FIELD, OR AS A RESULT OF FAILING TO CONTACT THE APPROPRIATE UTILITY COMPANY, SHALL BE REPAIRED OR REPLACED AT NO COST TO THE OWNER.
6. RIGHT-OF-WAY LINES, LEASE LINES, AND EASEMENT LINES, WHEN SHOWN ON THESE DRAWINGS, ARE CONSIDERED APPROXIMATE.
7. WATER ELEVATIONS AT THE SITE ARE TIDAL AND EXPECTED TO VARY.
8. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE APPROVED PLANS AND MATERIALS, STANDARD AND SPECIAL DETAILS, INVITATION TO BID, AND STANDARD SPECIFICATIONS. ANY WORK NOT MEETING THE APPROVED STANDARDS SHALL BE IMMEDIATELY REMOVED AND REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
9. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY DURING THE PERFORMANCE OF THE WORK. SAFETY PROVISIONS SHALL COMPLY WITH OSHA AND OTHER APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS. THESE REQUIREMENTS SHALL APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS.
10. STANDARD SPECIFICATIONS, WHEN REFERENCED IN THESE DRAWINGS, SHALL MEAN THE RIDOT 2022 EDITION "STANDARDS AND SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" INCLUDING ALL APPROVED COMPILATION OF SPECIFICATIONS; AND RIDOT 2022 "STANDARD DETAILS" INCLUDING ALL REVISIONS. ALL PROJECT SITE IMPROVEMENTS SHALL CONFORM TO THESE REGULATIONS AND THE SUB-REFERENCES INCORPORATED THEREIN, WHERE SPECIFICALLY REFERENCED. IN CASE OF A DISCREPANCY BETWEEN THE STANDARD SPECIFICATIONS AND THE REQUIREMENTS STATED WITHIN THE DRAWINGS, THE REQUIREMENTS STATED WITHIN THE DRAWINGS SHALL PREVAIL.
11. CONSTRUCTION WILL BE SUBJECT TO INSPECTION BY THE QDC.
12. THE CONTRACTOR SHALL MAINTAIN IN THE FIELD UP-TO-DATE AS-BUILT DRAWINGS OF ALL GRADING, DRAINAGE, AND UTILITY WORK. UPON COMPLETION OF THE WORK AND PRIOR TO FINAL ACCEPTANCE THE CONTRACTOR SHALL PROVIDE A FULL-SIZE SET OF RED-LINED AS-BUILT DRAWINGS TO QDC AT NO ADDITIONAL COST TO THE OWNER.
13. LOCATIONS AND DEPTHS OF EXISTING UNDERGROUND PIPES, CONDUITS, AND STRUCTURES, AS SHOWN, ARE APPROXIMATE ONLY. BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL PERFORM, AT ITS EXPENSE, TEST PITS IN ADDITION TO THOSE IDENTIFIED ON THE DRAWINGS, TO DETERMINE THE EXACT LOCATIONS OF UTILITIES AND STRUCTURES ESPECIALLY FOR CONNECTIONS TO EXISTING UTILITIES. ANY EXPENSE AND/OR DELAY CAUSED BY UTILITIES AND STRUCTURES, OR DAMAGE THERETO, INCLUDING THOSE NOT SHOWN, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER. ANY AND ALL STRUCTURES DESIGNATED FOR REMOVAL SHALL BE DISPOSED OF OFF-SITE, BY THE CONTRACTOR.
14. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COORDINATING ITS WORK WITH THE TELEPHONE, CABLE TV, ELECTRIC AND GAS COMPANIES. THE OWNER WILL NOT BE RESPONSIBLE FOR ANY LOST TIME BY THE CONTRACTOR IN DELAYS IN THE CONTRACTOR'S WORK CAUSED BY CONSTRUCTION ACTIVITIES OF THE TELEPHONE, ELECTRIC, OR GAS COMPANIES.
15. CONTRACTOR SHALL CONTACT DIG SAFE A MINIMUM OF THREE (3) BUSINESS DAYS PRIOR TO CONSTRUCTION AT PHONE NO. 1-888-DIG-SAFE. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING DRAINAGE AND UTILITIES BOTH UNDERGROUND AND OVERHEAD BEFORE EXCAVATION BEGINS IN ACCORDANCE WITH THE "DIG SAFE LAW" ENACTED BY R.I. LEGISLATURE BILL NO. 795-291, WHICH BECAME EFFECTIVE JULY 1, 1979 AND BY CONTACTING THE INDIVIDUAL UTILITY COMPANIES. EXCAVATION SHALL BE IN ACCORDANCE WITH ALL STATUTES, ORDINANCES, RULES AND REGULATIONS OF ANY APPLICABLE CITY, TOWN, STATE OR FEDERAL AGENCY. THE CONTRACTOR SHOULD UNDERSTAND THAT NOT ALL UTILITIES SUBSCRIBE TO THE DIG SAFE PROGRAM. IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES AND ENSURE THAT ALL UTILITIES HAVE BEEN MARKED PRIOR TO COMMENCING THEIR WORK. ANY DAMAGE TO EXISTING UTILITIES MARKED IN THE FIELD, OR AS A RESULT OF FAILING TO CONTACT THE APPROPRIATE UTILITY COMPANY, SHALL BE REPAIRED OR REPLACED AT NO COST TO THE OWNER.
16. ALL EXISTING PAVEMENT DISTURBED DURING CONSTRUCTION SHALL BE IMMEDIATELY REPAIRED WITH TEMPORARY PAVEMENT. PERMANENT PAVEMENT SHALL MEET RIDOT REQUIREMENTS AND SPECIFICATIONS AS DETAILED IN THE CONTRACT DOCUMENTS.
17. ALL EXISTING CURBING, SIDEWALK AND OTHER PAVEMENT DISTURBED BY THE CONTRACTOR SHALL BE REPLACED AND RESTORED, IN KIND AT NO ADDITIONAL COST TO THE OWNER.

ENVIRONMENTAL PROTECTION:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING PREVENTATIVE MEASURES TO AVOID ANY ENVIRONMENTAL IMPACTS. THESE MEASURES SHALL INCLUDE BUT ARE NOT LIMITED TO:

1. NO FUEL SHALL BE STORED ON SITE. ALL FUEL SHALL BE BROUGHT TO THE SITE AS REQUIRED.
2. ALL HOSES AND FUEL TRANSFER OPERATIONS SHALL BE CONDUCTED IN AN EFFICIENT AND SAFE MANNER IN ACCORDANCE WITH THE CONTRACTOR'S OPERATION MANUAL, AND AT A MINIMUM OF 100 FEET AWAY FROM ANY WATER BODIES.
3. OIL ABSORBENT PADS SHALL BE PLACED UNDER ALL MACHINERY DURING FUELING OPERATIONS.
4. ALL HYDRAULIC EQUIPMENT SHALL HAVE VEGETABLE OIL BASED, NON-TOXIC, NON-POLLUTING, HYDRAULIC FLUID.
5. EQUIPMENT SHALL BE PROPERLY MAINTAINED AND RECORDED IN WEEKLY LOGS AS TO REQUIREMENTS FOR AND ACTUAL MAINTENANCE COMPLETED.
6. A SPILL KIT OR ABSORBENT MATERIALS AND A MINIMUM OF 500 FEET OF USCG APPROVED OIL CONTAINMENT BOOM SHALL BE ON-SITE AT ALL TIMES DURING CONSTRUCTION OPERATIONS.
7. THE CONTRACTOR SHALL IMPLEMENT AND ADHERE TO ANY PROVISIONS REQUIRED BY ANY PERMITS ISSUED FOR THE WORK.

GENERAL EXECUTION:

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT CONSTRUCTION ACTIVITIES PROCEED IN A SMOOTH LOGICAL SEQUENCE AND IN A MANNER THAT WILL NOT CAUSE ANY DAMAGE TO OR CREATE EXCESSIVE STRESSES, LOADS, OR VIBRATIONS ON EXISTING OR PROPOSED STRUCTURES.
2. THE CONTRACTOR SHALL PROVIDE ADEQUATE FENCING, BARRICADES, AND SIGNS TO ENSURE THE SAFETY.
3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST OSHA REGULATIONS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A LEVEL AND STABLE SURFACE ON WHICH EQUIPMENT WILL OPERATE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING ITS OWN PICK/LIFT PROCEDURES INCLUDING, BUT NOT LIMITED TO SAFE PICKING RADIi, LIFTING DEVICES AND SLINGS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE WEIGHT OF EACH LIFT AND FOR ENSURING THE STABILITY OF EACH LIFT DURING ALL PHASES OF WORK.
7. THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO LOCATE AND PROTECT EXISTING UTILITIES IN THE AREA AS REQUIRED. OVERHEAD POWER LINES ADJACENT TO WORK AREAS ARE TO BE SHUT DOWN DURING OPERATIONS WHEN THE CONTRACTOR BELIEVES THEY MAY INTERFERE, OR ARE TOO CLOSE TO THE WORK. WHEN POWER LINES IN THE WORK AREA CAN NOT BE DEENERGIZED, THE CONTRACTOR SHALL MAINTAIN A SAFE DISTANCE AS DETERMINED BY OSHA. ALL UTILITIES SHALL BE LOCATED AND MARKED IN ACCORDANCE WITH OSHA STANDARDS.
8. ALL HOLES AND SLOTS SPECIFIED IN STEEL PLATES AND SHAPES FOR BOLTS SHALL BE FACTORY DRILLED OR MAG-DRILLED IN THE FIELD. NO BURNING SHALL BE ALLOWED.

- [illegible]

PIER 2 EXTENSION WAVE ATTENUATION PROJECT

NOTES I

Davisville Waterfront District
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AVAILABLE SUBSURFACE INFORMATION:

1. GEOTECHNICAL INFORMATION, AS INCLUDED AND SHOWN IN THE CONTRACT DOCUMENTS, WAS OBTAINED BY THE RHODE ISLAND ECONOMIC DEVELOPMENT CORP. AND THE QDC FOR USE IN THE COLLECTION OF GENERAL SITE INFORMATION RELATIVE TO SUBSURFACE CONDITIONS.
2. IT IS INTENDED THAT SUBSURFACE INFORMATION, AS NOTED ABOVE, BE USED ONLY AS AN INDICATION OF POSSIBLE SUBSURFACE CONDITIONS; AND THAT UPON THE CONTRACTOR'S REVIEW, FURTHER SUBSURFACE EXPLORATIONS MAY BE WARRANTED. SUCH EXPLORATIONS SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE.
3. THE CONTRACTOR SHALL USE THE INFORMATION PROVIDED AT ITS OWN RISK AND SHALL COMPLETELY HOLD HARMLESS THE QDC FROM ALL CONSEQUENCES AND/OR FAULT ARISING FROM ITS USE.

SOIL EROSION AND SEDIMENT CONTROL:

1. DISTURBANCE OF SOIL SURFACES IS REGULATED BY STATE LAW. ALL WORK SHALL COMPLY WITH THE RHODE ISLAND SOIL EROSION & SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
2. THE SOIL EROSION CONTROL MEASURES SHOWN AND DETAILED HEREIN SHOULD BE CONSIDERED THE MINIMUM ACCEPTABLE STANDARDS FOR THE PROJECT. THE INITIAL METHOD OUTLINED IS INTENDED TO ROUTE ALL PRACTICABLE SURFACE WATER FROM THE EXCAVATION AREAS INTO EROSION CONTROL FACILITIES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CLEAN ROADS, CONTROL DUST AND INSTALL ANY ADDITIONAL PROTECTIVE MEASURES NECESSARY TO CONTROL RUNOFF FROM THE SITE DURING CONSTRUCTION ACTIVITIES AND ENSURE THAT THE PROJECT SITE AND ALL ADJACENT PROPERTIES ARE MAINTAINED IN A CLEAN, MUD AND DUST FREE CONDITION AT ALL TIMES.
3. PRIOR TO COMMENCEMENT OF SITE PREPARATION OR EARTHWORK THE CONTRACTOR SHALL IMPLEMENT THE SOIL EROSION AND SEDIMENT CONTROL PLAN (SESCP). THE CONTRACTOR SHALL COMPLY WITH THE SOIL EROSION AND SEDIMENT CONTROL PLAN THROUGHOUT THE DURATION OF THE WORK.
4. CONTRACTOR SHALL STAKE OUT OR FENCE OFF THE LIMIT OF WORK IN THE FIELD TO ENSURE THAT ALL WORK WILL OCCUR WITHIN THE APPROVED LIMITS OF DISTURBANCE.
5. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES ON SITE, A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD ON SITE TO ESTABLISH SUPERVISORY AND INSPECTION PROCEDURES FOR SEDIMENT AND EROSION CONTROL MEASURES. THE MEETING SHALL BE ATTENDED BY THE CONTRACTOR AND A REPRESENTATIVE FROM QDC.

6. THE EROSION CONTROL MEASURES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE APPROVED PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE FINAL PROPOSED DRAINAGE PATTERNS. IT IS THE CONTRACTORS RESPONSIBILITY TO INSTALL & MAINTAIN EROSION CONTROL DEVICES FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION.

7. THE EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER EVERY RAINSTORM TO ENSURE THEY ARE FUNCTIONING PROPERLY, REPAIR ANY DAMAGED AREAS IMMEDIATELY AND REMOVE ALL CAPTURED SEDIMENT AS REQUIRED. A "WALK THROUGH" INSPECTION OF THE CONSTRUCTION SITE SHOULD BE COMPLETED BEFORE ANTICIPATED RAINFALL EVENTS.

8. ADDITIONAL EROSION CONTROL MEASURES SHALL BE PLACED AS DIRECTED BY QDC.

9. DEWATERING OF ALL EXCAVATIONS SHALL BE PUMPED THROUGH DEWATERING BAGS AND DISCHARGED INTO A TEMPORARY SILTATION BASIN WITHIN THE APPROVED PROJECT LIMIT OF DISTURBANCE.

10. AT NO TIME SHALL SILT LADEN WATER BE ALLOWED TO ENTER ENVIRONMENTALLY SENSITIVE AREAS, EXISTING OR NEW DRAINAGE SYSTEMS. RUNOFF FROM DISTURBED AREAS SHALL BE DIRECTED THROUGH A TEMPORARY SILTATION BASIN & EROSION CONTROL MEASURES PRIOR TO ENTERING ANY ENVIRONMENTALLY SENSITIVE AREA OR DRAINAGE SYSTEM.

- CONTRACTOR SHALL REDUCE SURFACE AND AIR MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES CAUSED BY CONSTRUCTION ACTIVITIES. CONSTRUCTION ACTIVITIES SHALL BE SCHEDULED SO THAT THE LEAST AREA OF DISTURBED SOIL IS EXPOSED AT ONE TIME. IN DISTURBED AREAS NOT SUBJECT TO TRAFFIC, CONTRACTOR SHALL USE TEMPORARY SEEDING AND MULCHING OPERATIONS. IN DISTURBED AREAS SUBJECT TO TRAFFIC, CONTRACTOR SHALL SPRINKLE SURFACE WITH WATER TO MINIMIZE DUST. DUST CONTROL MEASURES SHALL BE MAINTAINED THROUGH DRY WEATHER PERIODS UNTIL ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.

12. ALL DISTURBED AREAS NOT COVERED BY BUILDING, PAVEMENT OR OTHER GROUND COVER SHALL BE PLANTED IN ACCORDANCE WITH THE LOAM AND SEEDING SECTION HEREIN. IF SEEDING CANNOT BE COMPLETED IMMEDIATELY, DISTURBED AREAS SHALL BE STABILIZED WITH A SPREAD HAY MUCH APPROPRIATELY ANCHORED OR EROSION CONTROL BLANKET.

113. SURFACE STABILIZATION MUST BE IMPLEMENTED WITHIN 14 DAYS AFTER CONSTRUCTION ACTIVITY IN A PORTION OF THE SITE HAS CEASED OR BEEN TEMPORARY HALTED.

14. THE CONTRACTOR SHALL INSTALL REINFORCED SILT BARRIER AROUND STOCKPILE AREAS, TRUCK WASH DOWN AREAS AND VEHICLE REFUELING AREAS.

15. AS SOON AS CONSTRUCTION IS COMPLETED, ALL DRAINAGE STRUCTURES SHALL BE CLEANED OF ANY ACCUMULATED SEDIMENT AND DEBRIS. THEREAFTER, CLEAN UP SHOULD FOLLOW LONG TERM MAINTENANCE PLAN.

16. THE CONTRACTOR SHALL REMOVE CONSTRUCTION FENCE, SILT BARRIER AND EROSION CONTROL MEASURES ONLY AFTER ESTABLISHMENT OF PERMANENT VEGETATION.

STOCKPILE MANAGEMENT:

1. EXCAVATED MATERIAL GENERATED DURING THE EXECUTION OF THIS WORK SHALL BE TEMPORARILY STOCKPILED.
 2. THE CONTRACTOR SHALL MAINTAIN THE STOCKPILES AND THE AREAS AROUND THEM SO THEY ARE GRADED TO DRAIN. THE CONTRACTOR SHALL ALSO TAKE ALL NECESSARY PRECAUTIONS TO MINIMIZE EROSION FROM THE STOCKPILES INCLUDING, BUT NOT LIMITED TO, THE INSTALLATION OF HAY BALES OR SILT FENCES.
 3. EXCESS MATERIAL THAT DOES NOT MEET THE SPECIFIED GRADATION REQUIREMENTS AND/OR EXCAVATED MATERIAL IN EXCESS OF THAT REQUIRED FOR COMPLETING THIS PROJECT SHALL BE STOCKPILED AT THE QDC'S ACTIVE MATERIAL/STORAGE STOCKPILE AREA.
 4. MATERIAL THAT IS VISIBLY OR OLFACTORY CONTAMINATED SHALL BE TEMPORARILY PLACED ON 10 MIL PLASTIC TARPS AND THE STOCKPILED MATERIAL COVERED WITH 10 MIL PLASTIC TARPS TO PROTECT IT FROM THE ELEMENTS. QDC SHALL BE THE FIRST POINT OF CONTACT IF ANY MATERIAL APPEARS TO BE VISIBLY OR OLFACTORY CONTAMINATED, AND SHALL PROCESS THE MATERIAL AT QDC'S DIRECTION.
- CONSTRUCTION NOTES:
- MATERIALS
1. ALL BOLTS SHALL BE HOT-DIPPED GALVANIZED, ASTM F3125 GR. A325 TYPE 3.
 2. ALL NUTS AND WASHERS SHALL BE HOT DIPPED GALVANIZED, AND CONFORM TO ASTM A563 DH1 AND F436-3, RESPECTIVELY.
 3. ALL MISC. STEEL HARDWARE SHALL BE HOT-DIPPED GALVANIZED A36 STEEL (MIN).
 4. ALL STEEL PLATES AND STRUCTURAL SHAPES SHALL BE HOT-DIPPED GALVANIZED, ASTM A36, GR. 36 STEEL.
 5. THE WAVE ATTENUATION SYSTEM SHALL BE THE WAHOO WAVE, AS MANUFACTURED/SUPPLIED BY WAHOO DOCKS, OR APPROVED EQUAL.

[illegible]

DESIGN BY: GJC	CHECKED BY: MS
DRAWN BY: GJC	ENGINEER: GJC
SCALE:	QDC CONTRACT NO.: 2023-006A

CONTRACT NO.:	
FILE NAME:	

PIER 2 EXTENSION WAVE ATTENUATION PROJECT

NOTES II

Davisville Waterfront District
Quonset Business Park®

SHEET NO.	DRAWING NO.
G-2	26916
3 OF 8 SHEETS	

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LEGEND:

NOTE: LEGEND ITEMS ARE STANDARD AND DO NOT APPEAR ON EVERY SHEET.

EXISTING

PROPOSED

BASELINE

FEWA FLOOD

MHHW

MHW

MLW

MLLW

MEAN HIGHER HIGH WATER

MEAN HIGH WATER

MEAN LOW WATER

MEAN LOWER LOW WATER

PARCEL BOUNDARY

LEASE LINE

EASEMENT

LIMIT OF DISTURBANCE

TURBIDITY BARRIER

HAYBALES / SILT FENCE/COMPOST FILTER SOCK

MINOR CONTOUR

MAJOR CONTOUR

TEMPORARY SECURITY FENCE

GUARDRAIL

COMMUNICATIONS

COX COMMUNICATIONS

VERIZON COMMUNICATIONS

ELECTRIC SERVICE

ELECTRIC OVERHEAD WIRE

GAS OR PROPANE SERVICE

SANITARY SEWER GRAVITY SERVICE

SANITARY SEWER FORCE MAIN

STEAM SERVICE (ABANDONED)

STORM DRAIN SERVICE

WATER SERVICE (GENERIC)

WATER SERVICE (DOMESTIC)

WATER SERVICE (FIRE)

ABANDONED SERVICE

TEST PIT

SOIL BORING

COMMUNICATIONS HANDHOLE

COMMUNICATIONS MANHOLE

UTILITY POLE

ELECTRIC HANDHOLE

ELECTRIC MANHOLE

ELECTRIC OUTDOOR LIGHT

GAS VALVE

SEWER MANHOLE

SEWER CLEANOUT

SEWER FORCEMAIN PUMP

SEWER FORCEMAIN FLUSHING CONNECTION

SEWER FORCEMAIN VALVE

STORM DRAIN MANHOLE

STORM CATCH BASIN

WATER MANHOLE

WATER VALVE

WATER CURB STOP

FIRE HYDRANT

VALVE

MONITORING WELL

CAPPED PIPE

SEA GRASS/DUNE GRASS PLANTINGS

ROSA RUBIGOSA PLANTINGS

PAVEMENT AREAS

CONCRETE AREAS

GRAVEL AREAS

LAWN AREAS

PLANTED AREAS

BEACH AREAS

WAVE ATTENUATOR

STEEL PILE/SOIL ANCHOR

R.I. STANDARD DETAILS:

- 7.1.0

7.1.1

7.1.2

7.2.4

9.7.0

9.9.0

17.7.3

17.7.4
- PRECAST CONCRETE CURB (SEE DETAIL D21)

3' -0" PRECAST CONCRETE TRANSITION CURB (SEE DETAIL D22)

6' -0" PRECAST CONCRETE TRANSITION CURB (SEE DETAIL D23)

PRECAST CONCRETE CAR STOPS (SEE DETAIL D24)

DEWATERING BASIN (SEE DETAIL D14)

CONSTRUCTION ACCESS (SEE DETAIL D15)

TRAFFIC MONITORING STATION LOOP DIMENSIONS (SEE DETAIL D93)

TRAFFIC MONITORING STATION LOOP WIRE INSTALLATION (SEE DETAIL D94)
- 17.7.5

24.1.0

34.4.0

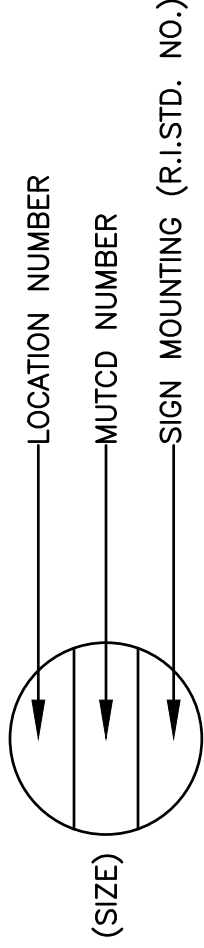
43.1.0
- TRAFFIC MONITORING STATION SAWCUT CROSS-SECTION WITH A PAVEMENT OVERLAY (SEE DETAIL D94)

SIGN POST (SEE DETAIL D25)

STEEL BACKED TIMBER GUARDRAIL (SEE DETAIL D91)

CONCRETE SIDEWALK (SEE DETAIL D37)

TYPICAL SIGN DESIGNATION SYMBOL



VERTICAL DATUM CONVERSION:

	2017	
	NAVD88	QVD
MHHW	1.88	4.93
MHW	1.63	4.68
NAVD88	0.00	3.05
MLW	2.18	0.87
MLLW	-2.33	0.72
QVD	-3.05	0.00
		-0.87

NOTES:

1. THE TIDAL DATA SHOWN WAS TAKEN THE U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) ONLINE VERTICAL DATUM TRANSFORMATION PROGRAM, DETERMINED AT THE FOLLOWING LOCATIONS:
LOCATION: QUONSET, RHODE ISLAND
LATITUDE: 41.614 N
LONGITUDE: 71.405 W
2. REFERENCE TO QVD WAS OBTAINED FROM A PLAN TITLED "SURVEY OF THE PLAN FOR ROAD AND SLURRY WALL DEVELOPMENT PROJECT" PREPARED BY GOLDER SURVEY COMPANY, OF WARWICK, RI AND LAST REVISED JULY 23, 2018.

PROJECT BENCH MARKS:

QDC CONTROL PT. 16
LOCATED AT THE TERMINUS OF ROGER WILLIAMS WAY
DISC 4049B
ELEVATION (QVD) 10.78
N: 183200.07
E: 353309.32

QDC CONTROL PT. 60
LOCATED AT COMPASS ROSE BEACH
IRON ROD SET
ELEVATION (QVD) 13.04
N: 358147.35
E: 351142.39

QUONSET

DEVELOPMENT CORPORATION

PLANNING & DEVELOPMENT

95 Cripe Street

North Kingstown, RI 02852

Tel.: (401) 295-0044

Fax: (401) 268-9885

www.quonset.com

LEGEND

Davisville Waterfront District
Quonset Business Park[®]

SHEET NO.

G-3

4 OF 8 SHEETS

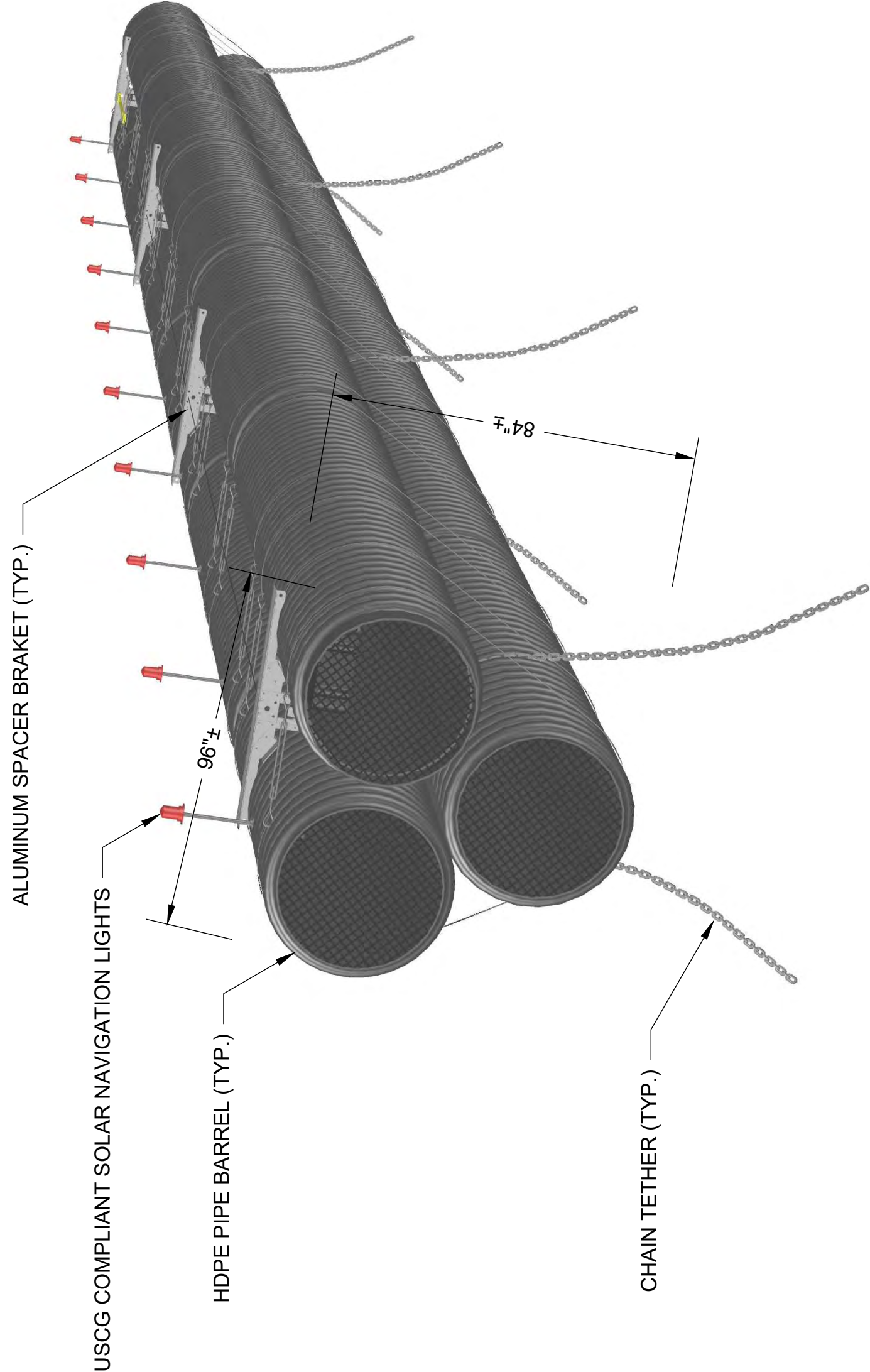
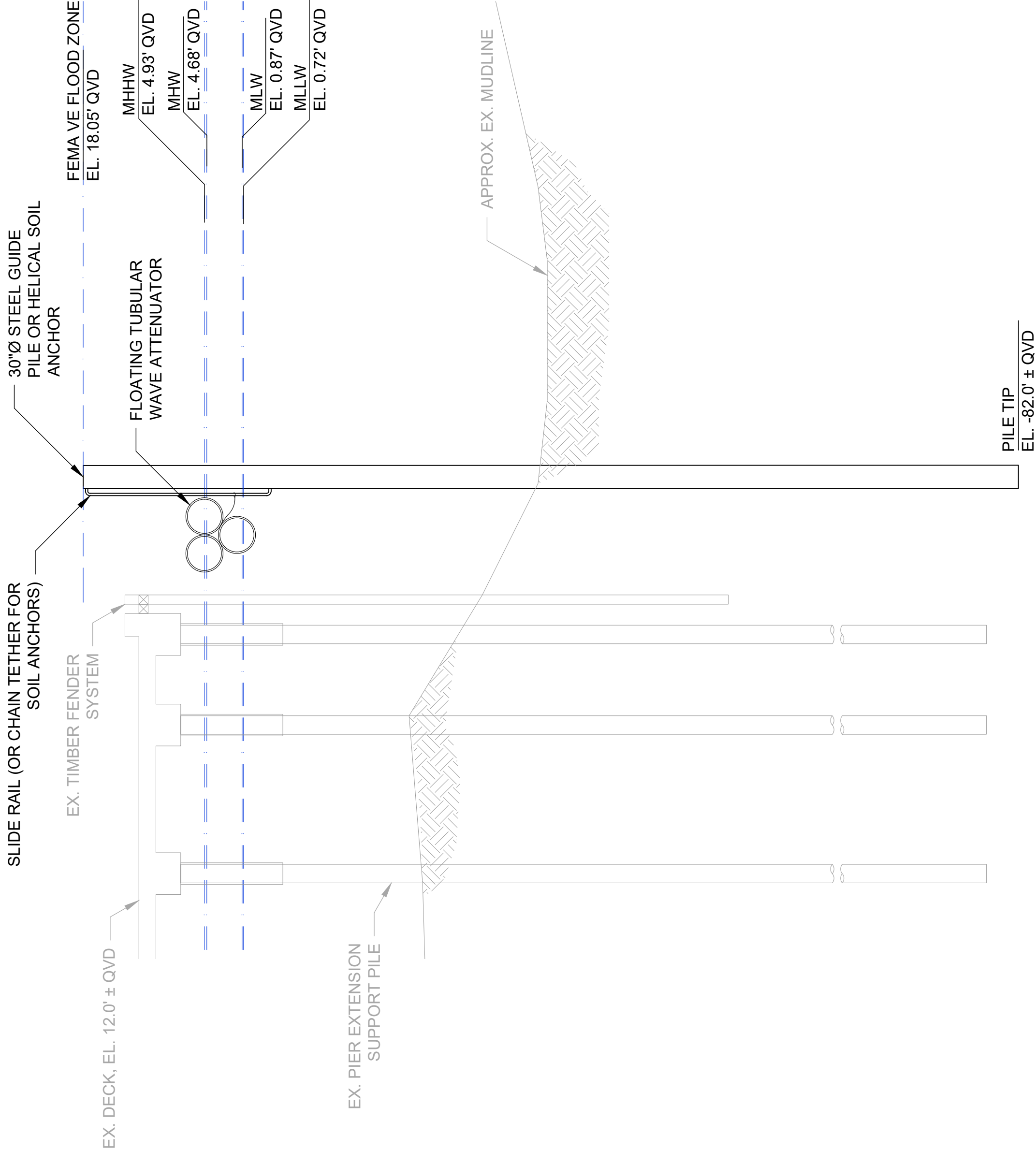
DRAWING NO.

26916

173172025

COASTAL RESOURCES
MANAGEMENT CORP.

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TYPICAL WAVE ATTENUATOR ISOMETRIC
SCALE: NTS

- NOTE:
- TIP ELEVATIONS FOR THE HELICAL SOIL ANCHORS ARE EXPECTED TO BE SHALLOWER THAN THE STEEL PILES, AND WILL BE DETERMINED DURING FINAL DESIGN OF THE WAVE ATTENUATOR ANCHOR SYSTEM. STEEL PILES ARE SHOWN TO REPRESENT THE GREATER DEGREE OF DISTURBANCE BETWEEN THE TWO PROPOSED SYSTEMS.

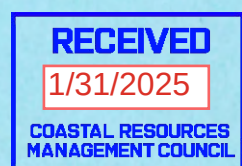
TYPICAL WAVE ATTENUATOR SECTION
SCALE: 1" = 10'

**PIER 2 EXTENSION
WAVE ATTENUATION
PROJECT**

DETAILS I

Davisville Waterfront District
Quonset Business Park[®]

Attachment D – Record of Previous CRMC Permits



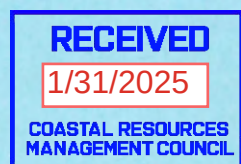
While preparing the Application for State Assent, access to the CRMC permit database was unavailable.
We will forward you a record of the previous CRMC Permits when available.

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MANAGEMENT COUNCIL

Attachment E – Building Official Letter



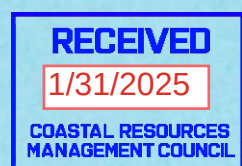
A Building Official's form was submitted to the RI State Architect for his review, but has not yet been provided back to QDC. Once this form is returned, it will be forwarded to CRMC. However, it is not expected that this work will require a Building Permit, as it does not fall under the International Building Code.

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Attachment F – Coastal Hazard Analysis Worksheet



RICRMC COASTAL HAZARD ANALYSIS WORKSHEET

APPLICANT NAME: Quonset Development Corporation

PROJECT SITE ADDRESS: (Plat 193, Lot 15) 242 Terminal Way North Kingstown, RI

STEP 1. PROJECT DESIGN LIFE

- ☐ A. For properties in a FEMA-designated **A**, or **X** Zone, provide the first floor elevation (FFE) of the proposed structure referenced to NAVD88, **OR** For properties in a FEMA-designated **V** or **Coastal A** Zone, please provide the elevation of the lowest horizontal structural member (LHSM) referenced to NAVD88. FFE N/A ft
OR
LHSM elevation N/A ft
- ☐ B. How long do you want your project to last? Identify the expected design life for the project (CRMC recommends a **minimum of 30 years**) Design Life: 30 yrs
- ☐ C. Add the number of years you identified in 1B to the current year. (For example, if you are completing this form in the year 2020, and you want your project to last 30 years, your design life year will be 2050.) Design Life Year: 2055

- ☐ D. CHECK beneath the sea level rise (SLR) projection that matches or comes closest to project design life year.

Year	2030	2040	2050	2060	2070	2080	2090	2100
SLR	0.71	1.11	1.60	2.29	3.17	4.19	5.35	6.47
	☐	☐	☒	☐	☐	☐	☐	☐

Source: Sea Level Rise (SLR) Projections (Feb. 2022). NOAA High Curve, Newport, RI Tide Gauge. All values are expressed in feet relative to NAVD88. https://sealevel.nasa.gov/task-force-scenario-tool?psmsl_id=351

NOTE: The present National Tidal Datum Epoch (NTDE) is 1983 through 2001. The NOAA 2017 data use a baseline starting at 2000, and the NOAA 2022 data use a baseline starting at 2020. Between 1991 and 2020 there was an annual average of 4.03 mm/year of sea level rise at the Newport (8452660) tide station based on the trends data from the Permanent Service for Mean Sea Level (<https://www.psmsl.org/products/trends/>). Because the PSMSL trends are based on a minimum 30 years of data we will assume a similar trend applies to the shorter 20 year period of 2000 to 2020. Thus, there was approximately 8.06 cm (3.39 inches) of sea level rise during the period 2000 to 2020. Accordingly, the MHHW elevation of 3.85 feet at the Newport station (Epoch 1983-2001) would be adjusted an additional 3.39 inches to 4.13 feet MHHW. For reference, NAVD88 at Newport is 2.04 feet.

STEP 2. SITE ASSESSMENT

- ☐ A. Open RICRMC [Coastal Hazard Mapping Tool](#). Following the tutorial along the left side of the screen, enter the project site address and turn on the sea level layer closest to the number you circled in 1D.
- ☐ B. ENTER the STORMTOOLS SLR map layer closest to the SLR value you checked in Step 1D above. If the value falls between the available STORMTOOLS SLR map layers, round up to the closest of these sea level rise (SLR) numbers: 1ft, 2ft, 3ft, 5ft, 7ft, 10ft, or 12ft 2 ft
- ☐ C. Does the STORMTOOLS SLR map layer you circled above expose your project site to future tidal inundation? CHECK YES or NO ☒ YES
☐ NO
- ☐ D. List any roads or access routes that are potentially inundated from SLR. To do this, ZOOM OUT from your project location, change BASEMAP on the viewer to "street view" – see Step 2A.

No roads or access routes are potentially inundated

****Please be advised that CRMC staff may also review the implications of sea level rise in combination with nuisance storm flooding and discuss these potential project concerns with the applicant. Nuisance flooding impacts may be viewed in STORMTOOLS [here](#).**

STEP 3. STORMTOOLS DESIGN ELEVATION (SDE)

- ☐ A. Follow the tutorial included along the left panels of the viewer to enter the address of your project site. Select the tab across the top that corresponds to the sea level rise projection you identified in STEP 1
- ☐ B. Click on the map at project site to identify STORMTOOLS Design Elevation (SDE)

from the pop up box. Enter the SDE value: 23.9 ft

RICRMCCOASTAL HAZARD APPLICATION WORKSHEET

STEP 4. SHORELINE CHANGE

- ☐ A. Using the [CRMC Shoreline Change maps](#), indicate the transect number closest to your site, and erosion rate listed for that transect.

Transect Number: 1708

Erosion Rate: 23.4 ft/year

- B. **CHECK** below the Projected Erosion Rate that corresponds to the design life you identified above.

Year	2050	2060	2070	2080	2090	2100
Projected Future Erosion Multiplier	1.34	1.45	1.57	1.70	1.84	2.00
	☒	☐	☐	☐	☐	☐

Source: Projected Shoreline Change Rate multipliers. (Oakley et al., 2016)

C. COMPLETE EROSION SETBACK CALCULATION:

Historic shoreline change rate, STEP 4A	Design Life, STEP 1C	Projected Future Erosion Multiplier, STEP 4B	Erosion Setback (ft) 4A x 1C x 4B
---	----------------------	--	--------------------------------------

$$23.4 \times 30 \times 1.34 = 941$$

NOTE: Setbacks are required per the [CRMC Red Book, Section 1.1.9](#). A minimum setback of 50-feet is required, but a greater setback may be necessary and/or desirable based on this analysis.

STEP 5. OTHER SITE CONSIDERATIONS: CERI & SLAMM

- ☐ A. Use the **Coastal Environmental Risk Index (CERI)** map (See Tab 5A on the viewer) to enter your address and **CHECK** the level of projected damage to your location, as indicated on the map that corresponds to the design life identified in STEP 1.

CERI Level: Moderate ☐ High ☐ Severe ☐ Extreme ☒ Inundated by 2100 ☐ Not applicable ☐

- ☐ B. **Sea Level Affecting Marshes Model (SLAMM)** (See Tab 5B on the Viewer) - This step is for Large Projects and Subdivisions only, six (6) or more units, as defined by the [CRMC Red Book Section 1.1.6.1\(1\)\(f\)](#). This step may be skipped for other projects. Use the Sea Level Affecting Marshes Model (SLAMM) Maps to assess potential impacts to large projects and subdivisions from salt marsh migration resulting from projected sea level rise. CRMC SLAMM maps can be accessed [here](#). The CRMC recommends using the 3-foot SLR projection within SLAMM to assess future potential project impacts on migrating marshes. Does the SLAMM map that corresponds to the design life you identified in STEP 1 expose your project site to future salt marsh migration? **CHECK YES or NO**

YES ☐ NO ☒

- ☐ C. Consider and discuss with your design consultant other forces or factors that might impact the development, such as coastal habitats, shoreline features, public access, wastewater, storm water, depth to watertable/groundwater dynamics, saltwater intrusion, or other issues not listed above. In addition, pressure from rising sea levels will result in rising subsurface groundwater levels ultimately effecting wells and septic systems.

STEP 6: DESIGN EVALUATION

- ☐ A. Using Chapter 7 of the RI Shoreline Change SAMP as a guide, investigate mitigation options for the exposure identified above and include that in the final application.

This fully completed Coastal Hazard Application Guidance worksheet must accompany the application. If you are a design or engineering professional, please print and sign here that you have discussed the findings of this worksheet with the Owner.

DESIGN/ENGINEER SIGNATURE:

Gregory J. Am

DATE:

1/31/25

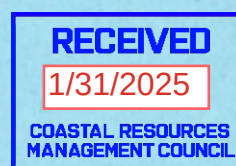
OWNER'S SIGNATURE:

[Signature]

DATE:

1/31/25

Attachment G – Wave Attenuator System Cut Sheet





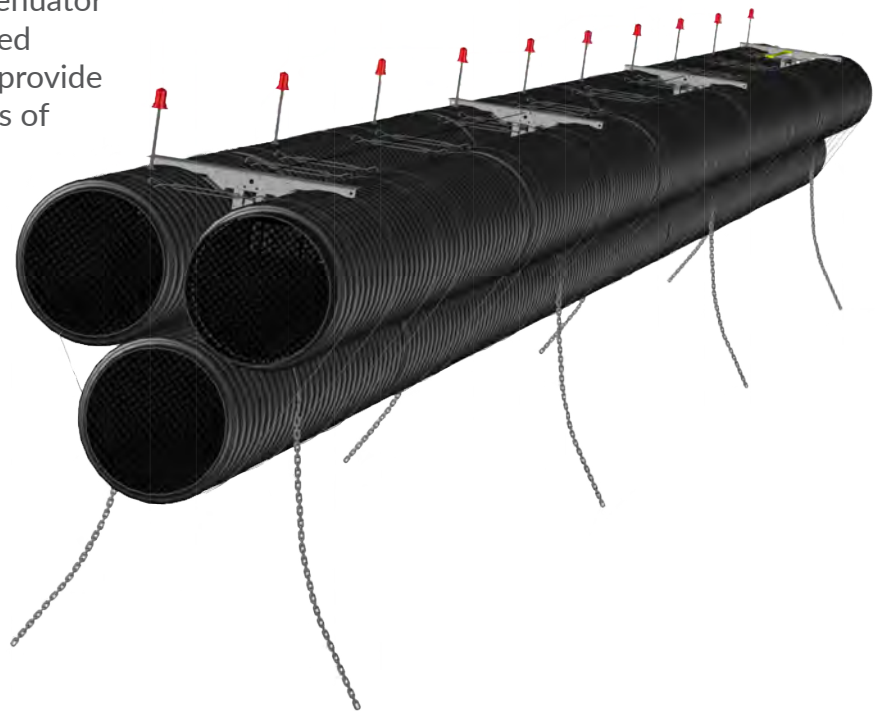
Intelligent Wave Attenuation

Wave attenuators minimize wave energy and decrease wave height, thereby protecting watercraft and facilities from potential damage and reducing shoreline erosion. Floating wave attenuators have been used for many years and come in various forms, from hollow concrete structures to floating docks. *Wahoo Wave* is built from durable materials that will not degrade in fresh or salt water and remain effective, as well as aesthetically appealing, over time.

Wahoo Wave is an efficiently designed wave attenuator that incorporates heavily-tested, mass-produced components and utilizes the water itself to provide mass. A 60-inch pipe will contain 1,100 pounds of water per linear foot.

Anchored using traditional cable weights, *Wahoo Wave* incorporates its *Ocean Spring* elastic mooring lines to adjust to fluctuating water levels. *Ocean Spring* is twenty times stronger and has more dynamic dampening properties than any other market leader.

When dual-purpose functionality is needed, such as the attenuator serving as a walking surface or docking facility, a dock can be designed on top of the *Wahoo Wave*.



Turbulence

The integrated ribs of the double-walled surface provide strength and rigidity to the assembly while also creating wave turbulence. This redirects energy and saps overall wave strength. The tubular shape of the attenuator also disrupts the natural flow of the wave.

Absorption

With *Ocean Spring* elastic mooring lines and a mass similar to concrete wave attenuators, *Wahoo Wave* offers maximum energy absorption.

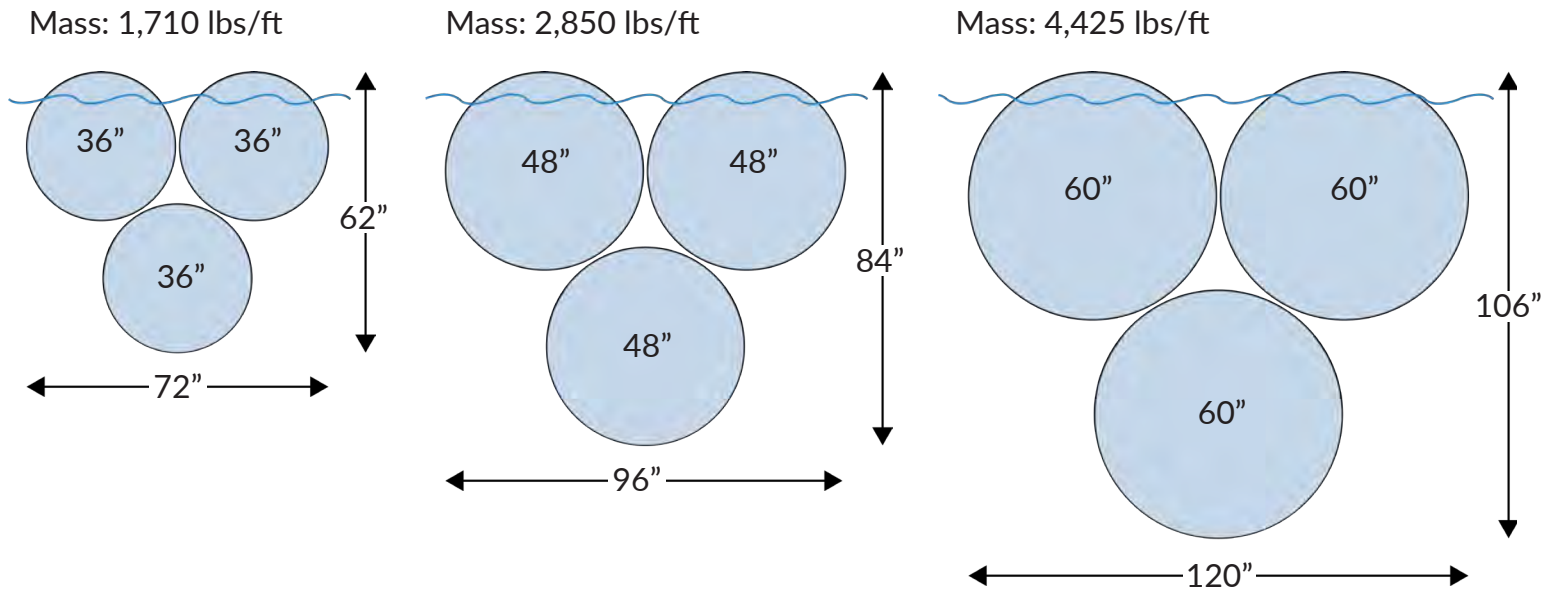
Reflection

Wahoo Wave provides a solid barrier, up to four feet in depth, which reflects wave energy.

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COASTAL RESOURCES
MANAGEMENT COUNCIL

Engineered for Excellence

- Double-walled corrugated plastic pipe, enhancing strength and floatation.
- 100% stainless steel fasteners and 3/8" stainless steel cables.
- Solar powered, U.S. Coast Guard approved, lights - lasting up to 9 days without sun and 2 miles of visibility.
- Integrated winches, winch mounts, and blocks for anchoring.
- *Ocean Spring* mooring lines.
- Marine-grade aluminum end caps.



- Available in 36 inch, 48 inch, & 60 inch diameters.
- Any length in 20 foot increments.
- Minimum of 100 feet.
- 3-year warranty, life expectancy of 10 to 20 years.

Wave Protection at a Lower Cost

Utilizing an engineered, double-walled, plastic corrugated pipe, *Wahoo Wave* is kept afloat either by itself or by flotation billets placed inside of the pipe, eliminating the need for external buoyancy. The result is a highly effective wave attenuator which costs only 30-60% the cost of a traditional wave attenuation system.

