



CERTIFICATE OF PERMISSION
APPLICATION

CTDEEP Office of Long Island Sound
Certificate of Permission
&
USACE Connecticut General Permits
Self-Verification (Coastal: GP2)



STATE PIER FACILITY

Connecticut Port Authority
New London,
Connecticut

September 2019

AECOM
500 Enterprise Drive, Suites 1A & 3B
Rocky Hill, CT 06067

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September 10, 2019

Connecticut Department of Energy & Environmental Protection
Land & Water Resources Division
Bureau of Water Protection & Land Reuse
Attn: M. Grzywinski
C/O Central Permit Processing Unit
79 Elm Street, Hartford, CT 06106-5127

**Reference: State Pier Facility, New London, CT
OLIS Certificate of Permission Application**

Dear Mr. Grzywinski,

Please find the enclosed Certificate of Permission (COP) application for your use and review. As recently discussed, the enclosed permit application describes proposed activities, as well as anticipated impacts, avoidance and minimization measures anticipated in association with activities proposed by the Connecticut Port Authority (CPA).

The enclosed COP application is being submitted to the Connecticut Department of Energy and Environmental Protection (CT DEEP) Office of Long Island Sound (OLIS) for approvals in accordance with Connecticut General Statutes (CGS) 22a-361 through 22a-363c, and CGS sections 22a-28 through 22a-33. In addition, these application materials are being concurrently submitted to the U.S. Army Corps of Engineers (USACE) for authorizations under the Connecticut General Permit (CT GP; CP #2[Coastal]) via the USACE's Self-Verification (SV) process. A copy of this application is also being provided to the City of New London Mayor's Office and the Port Authority, acting as the local Harbor Management Commission.

The CPA is proposing activities as described herein, in order to maintain select previously constructed onsite infrastructure elements (the Northeast Bulkhead) and to remove certain derelict structures (the Northeast Annex and Mooring Dolphins) from the State Pier Facility located in New London, CT. As described in the accompanying application materials, the proposed Project will result in overall improvements to onsite facilities, allowing for safer marine commerce conditions at the site.

Please let us know if you have any questions or comments regarding this application. In addition, please do let us know if we can provide any additional information or materials to facilitate your review.

Thank you for your ongoing assistance.

Best Regards,



Michael J. Garbolski, P.E.
Project Manager
AECOM
D: 860 263-5821
M: 203 430-2655

Attachments: Certificate of Permission Application – 1 Original and 2 Copies
Application Fee
Proof of Mailing – New London Port Authority (As local Harbor Management Commission)

cc. Diane M. Ray, USACE
Honorable Mayor Michael Passero, City of New London
New London Port Authority (As the local Harbor Management Commission), City of New London
Joseph R. Salvatore, Connecticut Port Authority



Connecticut Department of
 Energy & Environmental Protection
 Bureau of Water Protection & Land Reuse
 Office of Long Island Sound Programs

Certificate of Permission Application Form

IMPORTANT - Please refer to the [instructions](#) (DEP-OLISP-INST-200) for completing this application form to ensure that all required information is provided. Print or type all information within the form, providing additional pages as necessary.

- If your town has a Harbor Management Commission, you must submit a copy of this application **by certified mail** to the Commission. Please check here to indicate you have done so.
- My town does not have a Harbor Management Commission.

CPPU USE ONLY	
App #:	_____
Doc #:	_____
Check #:	_____
Program: Certificate of Permission	

Part I: Application Description

Town where site is located:	<u>New London, CT</u>
Brief Description of Project:	<u>State Pier Facility structure reconfiguration and demolition work. Proposed elements include: 1) Northeast Bulkhead Work (Bulkhead Oversheeting and Demolition of "Northeast Annex"); and, 2) Demolition of Mooring Dolphins. Activities are proposed to remove non-functional infrastructure and implement required structure reconfiguration.</u>

Part II: Fee Information

A fee of \$375.00 must be submitted with this application form. Note: The fee for municipalities is \$187.50. [#410] The application will not be processed without the initial fee. The fee shall be non-refundable and shall be paid by check or money order to the Department of Energy and Environmental Protection.
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Part III: Applicant Information

- If an applicant is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of State. If applicable, applicant's name shall be stated **exactly** as it is registered with the Secretary of State. This information can be accessed at [CONCORD](#). See 1.a) ii, below.
- If an applicant is an individual, provide the legal name (include suffix) in the following format: First Name; Middle Initial; Last Name; Suffix (Jr, Sr., II, III, etc.)
- If there are any changes or corrections to your company/facility or individual mailing or billing address or contact information, please complete and submit the [Request to Change Company/Individual Information](#) to the address indicated on the form. If there is a change in name of the entity holding a DEEP license or a change in ownership, contact the Office of Planning and Program Development (OPPD) at 860-424-3003. For any other changes you must contact the specific program from which you hold a current DEEP license.

Part III: Applicant Information (continued)

1. Applicant Name: Connecticut Port Authority (CPA)

Mailing Address: **455 Boston Post Road, Suite 204**

City/Town: **Old Saybrook**

State: **CT**

Zip Code: **06475**

Business Phone: **860-577-5174**

ext. **N/A**

Contact Person: **David Kooris**

Title: **CPA Acting Chair**

*E-mail: **David.Kooris@CT.gov**

*By providing this e-mail address you are agreeing to receive official correspondence from the department, at this electronic address, concerning the subject application. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify the department if your e-mail address changes.

a) Applicant Type (check one):

individual federal agency state agency municipality tribal

*business entity (*If a business entity, complete i through iii):

i) check type: corporation limited liability company limited partnership
 limited liability partnership statutory trust Other: _____

ii) provide Secretary of the State business ID #: _____ This information can be accessed at the Secretary of State's database (CONCORD). (www.concord-sots.ct.gov/CONCORD/index.jsp)

iii) Check here if your business is **NOT** registered with the Secretary of State's office.

b) Applicant's interest in the property at which the proposed activity is to be located:

owner option holder lessee other (specify): _____

Check here if there are co-applicants. If so, label and attach additional sheet(s) with the required information as Attachment E.

2. Billing Contact, if different than the applicant.

Name: **N/A**

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.

Contact Person:

Title:

E-mail:

3. Primary contact for departmental correspondence and inquiries, if different than applicant:

Name: **Connecticut Port Authority - Joseph Salvatore, CPA Program Manager**

Mailing Address: **455 Boston Post Road, Suite 204**

City/Town: **Old Saybrook**

State: **CT**

Zip Code: **06475**

Business Phone: **860-577-5174**

ext. **4**

Contact Person: **Joseph Salvatore**

Title: **CPA Program Manager**

*E-mail: **Joseph.Salvatore@CT.gov**

*By providing this e-mail address you are agreeing to receive official correspondence from the department, at this electronic address, concerning the subject application. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify the department if your e-mail address changes.

Part III: Applicant Information (continued)

4. List Site Owner, if different than applicant:

Name: **N/A**

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.

Contact Person:

Title:

E-mail:

5. List Facility Owner, if different than applicant:

Name: **N/A**

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.

Contact Person:

Title:

E-mail:

6. List attorney or other representative, if applicable:

Firm Name: **N/A**

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.

Attorney:

E-mail:

7. List all engineer(s), surveyor(s) and/or other consultant(s) employed or retained to assist in preparing the application and designing or constructing the activity. Check here if additional sheets are necessary, and label and attach them as Attachment G.

Name: **AECOM**

Mailing Address: **500 Enterprise Drive, Suite 1A**

City/Town: **Rocky Hill**

State: **CT**

Zip Code: **06067**

Business Phone: **860-263-5821**

ext. **N/A**

Contact Person: **Michael Garbolski, P.E.**

Title: **Project Manager**

E-mail: **Michael.Garbolski@AECOM.com**

Service Provided: **Owner Representative and Environmental Permitting**

Part III: Applicant Information (continued)

8. Provide abutting or adjacent property owners' names and addresses as Attachment C.
9. If you met with Office of Long Island Sound Program (OLISP) staff in a pre-application meeting, please note the meeting date and OLISP staff person's name:

Staff Name: **M. Grzywinski, Others**

Meeting Date: **11/18, 01/19 - 09/19**

Part IV: Site Information and Resource Information

1. SITE NAME AND LOCATION:

Name of Site: **State Pier Facility, New London ("State Pier Facility")**

Street Address or Location Description: **200 State Pier Road**

City or Town: **New London**

State: **CT**

Zip Code: **06320**

Tax Assessor's Reference: Map **G10**

Block **254**

Lot **4**

See Attachment C for Detail H10

254

1

Latitude and longitude of the exact location of the proposed activity in degrees, minutes, and seconds or in decimal degrees: Latitude: **41.359373** Longitude: **-72.091748**

Method of determination (check one): _____

GPS USGS Map Other (please specify): **Google Maps**

If a USGS Map was used, provide the quadrangle name: **New London, CT-NY (1984 Quad & Prior)**

2. IS THE PROJECT SITE LOCATED IN A MUNICIPALITY WITHIN THE COASTAL AREA (check town list in the instructions)?

Yes No

3. ENDANGERED OR THREATENED SPECIES: According to the most current "State and Federal Listed Species and Natural Communities Map", is the project site located within an area identified as a habitat for endangered, threatened or special concern species? Yes No Date of Map: **June, 2019**

If yes, complete and submit a *Request for NDDB State Listed Species Review Form* (DEP-APP-007) to the address specified on the form. **Please note NDDB review generally takes 4 to 6 weeks and may require additional documentation from the applicant.**

A **copy** of the completed *Request for NDDB State Listed Species Review Form* and the CT NDDB response **must** be submitted with this completed application as Attachment D.

For more information visit the DEEP website at www.ct.gov/deep/nddbrequest or call the NDDB at 860-424-3011.

4. AQUIFER PROTECTION AREAS: Is the site located within a town required to establish Aquifer Protection Areas, as defined in section 22a-354a through 354bb of the General Statutes (CGS)?

Yes No To view the applicable list of towns and maps visit the DEEP website at www.ct.gov/deep/aquiferprotection

If yes, is the site within an area identified on a Level A map? Yes No

If yes, is the site within an area identified on a Level B map? Yes No

If your site is on a Level A map, check the DEEP website, [Business and Industry Information](#) to determine if your activity is required to be registered under the Aquifer Protection Area Program.

If your site is on a Level B map, no action is required at this time, however you may be required to register under the Aquifer Protection Area Program in the future when the area is delineated as Level A.

Part IV: Site Information and Resource Information (continued)

5. **CONSERVATION OR PRESERVATION RESTRICTION:** Is the property subject to a conservation or preservation restriction? Yes No

If Yes, proof of written notice of this application to the holder of such restriction or a letter from the holder of such restriction verifying that this application is in compliance with the terms of the restriction, must be included as Attachment G.

6. **Indicate the number and date of issuance of any previous state coastal permits or certificates issued by DEEP authorizing work at the site and the names to whom they were issued:**

<i>Permit/COP Number</i>	<i>Date Issued</i>	<i>Name of Permittee/Certificate Holder</i>
201807463-COP	06/27/2018	CT Port Authority
199800073-GW	01/15/1998	CT Department of Transportation
SD-83-198	11/25/1983	ConnDOT - Bureau of Waterways
201402416-MG	03/27/2014	CT Dept. of Transportation (CVRR Pier work)
SD-M-87-302	11/13/1987	Admiralty Group, Ltd. (CVRR Pier work)

If information on prior state coastal permits and certificates is unknown, list names of the owners of the property since 1939 and the years owned:

7. Identify any changes in conditions of the site (including ownership, development, use, or natural resources) since the issuance of the most recent DEEP coastal permit or certificate authorizing work at the site:

Sitewide physical aspects (i.e. built areas, natural resources, etc.) remain largely unchanged since issuance of 201807463-COP and its associated De Minimus Change Authorization (8/3/18). Work completed under these authorizations included the demolition and removal of derelict structures associated with the "Central Wharf Platform" located immediately west of Admiral Shear Pier. Terminal complex operation has shifted; with Gateway Terminals now holding the onsite concession agreement. Parcel ownership noted above remains unchanged since the prior filings.

8. Describe the *existing* structures, conditions and uses at the site of the proposed work. Provide photographs showing existing conditions as Attachment B:

Please see the attached narrative (Part IV.8) for a description of existing conditions onsite and structures subject to structural reconfiguration and/or removal activities. Photographs of the existing conditions at the proposed work areas are included in Attachment B.

9. Provide the name of the waterbody at the site of proposed work: **Thames River**

10. Provide the elevation of the applicable regulatory limit for your project referenced to NAVD88. Refer to the [instructions](#) for more information.

Tidal Wetlands Limit (TWL) = _____ Coastal Jurisdiction Limit (CJL) = 2.1'

11. How was the regulatory limit identified above determined? Please check one of the following:

[DEEP-calculated elevation](#)

Self-calculated elevation (If a self-calculated elevation is used, please provide the additional information and calculations per the instructions.)

Mean High Water elevation (use only if project is upstream of a tide gate, dam or weir)
(If a MHW elevation is used, provide a discussion of the location of the tide gate, dam or weir.)

If other than a DEEP calculated elevation was used to calculate the CJL, please provide the additional information and calculations per the instructions and label and attach them as Attachment G.

Part IV: Site Information and Resource Information (continued)

12. Provide the elevations of the mean high water and mean low water at the site and the reference datum used. Refer to the instructions regarding elevation datum.

MHW = **0.92'**

MLW = **-1.65'**

Datum = **NAVD88**

- Check here If NAVD88 is not referenced, and provide an orthometric conversion table in Attachment G.

13. Identify all aquatic resources on and adjacent to the site and describe the characteristics and condition of each resource (identify location of resources on plans submitted as Attachment A):

Please see the attached narrative (Part IV.13) and accompanying Attachment A plans for a description and depictions of the onsite aquatic resources.

14. Identify the locations of any osprey nesting platforms within 500 feet of the site.

No osprey nesting platforms are known or anticipated within 500 feet of the State Pier Facility.

Part V: Project Information

1. Describe the proposed regulated work and activities including construction methodology and sequencing and plans to minimize erosion and sedimentation.

Please see the attached narrative (Part V.1) for a description of the proposed activities.

2. **Provide plans of the project as Attachment A.** They must be 8 1/2" x 11" scaled plans of the site and proposed work including:
- A Vicinity Map;
 - A Tax Assessor's map showing the subject property and immediately adjacent properties;
 - Plan Views showing existing and proposed conditions; and
 - An Elevation or Cross-Section View showing existing and proposed conditions.

Please refer to instructions for identification of plan components.

3. Describe the purpose, need and use of the proposed work.

The purpose is to remove derelict structures (Northeast Annex and Mooring Dolphins) to ensure the safe, continued public/commercial use of the State Pier Facility. In addition, the Northeast Quay bulkhead wall is nearing the end of its design life, and requires substantial overhaul and strengthening. No significant changes to current facility operations or uses are anticipated in association with the work.

4. Identify and evaluate the adverse environmental impacts associated with proposed work and mitigation measures to be employed.

Please see the attached narrative (Part V.4) for details pertaining to anticipated impacts and mitigation measures associated with the proposed activities.

Part V: Project Information (continued)

5. Check each category of eligible activities that applies to this application:

CGS section 22a-363b(a):

- 1. Substantial maintenance or repair of existing structures, fill, obstructions or encroachments authorized pursuant to the Structures, Dredging and Fill Statutes, CGS section 22a-361, and/or the Tidal Wetlands Act, CGS section 22a-32.
- 2. Substantial maintenance of any structures, fill, obstructions or encroachments in place prior to June 24, 1939, and continuously maintained and serviceable since such time.
- 3. Maintenance dredging of areas which have been dredged and continuously maintained and serviceable as authorized pursuant to the Structures, Dredging and Fill Statutes, CGS section 22a-361, and/or the Tidal Wetlands Act, CGS section 22a-32.
- 4. Activities allowed pursuant to a perimeter permit and requiring authorization by the Commissioner of Energy & Environmental Protection.
- 5. The removal of derelict structures or vessels.
- 6. Minor alterations or amendments to activities permitted pursuant to CGS section 22a-361 and/or CGS section 22a-32 consistent with the original permit.
- 7. Minor alterations or amendments to activities completed prior to June 24, 1939.
- 8. Placement of temporary structures for water-dependent uses as defined in CGS section 22a-93(16).
- 9. Open water marsh management, tidal wetland restoration, resource restoration or enhancement activity, as defined in subsection (a) of section 22a-361, as amended by this act, and conservation activities undertaken by or under the supervision of the Department of Energy & Environmental Protection.
- 10. Placement or reconfiguration of piers, floats, docks, and moorings within existing waterward boundaries of recreational marinas or yacht clubs which have been authorized pursuant to Section 22a-361 and/or CGS section 22a-32.
- 11. Substantial maintenance or repair of structures, fill, obstructions or encroachments placed landward of the mean high waterline and waterward of the coastal jurisdiction line, completed prior to October 1, 1987, and continuously maintained and serviceable since said date.

CGS section 22a-363b(b):

- 12. Retention of pre-1995 unauthorized activities which do not interfere with navigation or littoral or riparian rights, and do not cause adverse impacts to coastal resources.
- 13. Substantial maintenance or repair of pre-1995 unauthorized activities which do not interfere with navigation or littoral or riparian rights, and do not cause adverse impacts to coastal resources.
- 14. Minor alterations or amendments to pre-1995 unauthorized activities which do not interfere with navigation or littoral or riparian rights, and do not cause adverse impacts to coastal resources.

6. In question 5, if item numbers 2 and/or 7 were checked, demonstrate that the structure(s) or activity for which work is proposed has been continuously maintained and serviceable since 1939. Check the box if documents have been provided in Attachment G.

Part V: Project Information (continued)

7. In question 5, if item numbers 1, 3, 4, 6 or 10 were checked, demonstrate that the structure(s) or activity has a prior authorization and has been continuously maintained and serviceable.

N/A

8. In question 5, if item numbers 11, 12, 13, or 14 were checked, please provide the date of installation of the structure(s) or the date the activity occurred and indicate how you made this determination.

Item #14, which is checked above, is applicable only to the proposed Northeast Bulkhead overshooting work. The proposed Mooring Dolphins and Northeast Annex Removal are covered by the above "Category 5" designation. The structures described herein were installed as follows:

- **Northeast Bulkhead (Item 14, above): Constructed by the U.S. Navy (USN) in or around 1982, as based on the accompanying plan included in Appendix G.**
- **Northeast Annex (Item 5, above): Constructed by the State of Connecticut in 1913-1916. NE Annex was initially constructed as part of Admiral Shear Pier installation, as based on the accompanying Attachment G documentation.**
- **Mooring Dolphins (Item 5, above): Constructed by USN in or around 1969, as based on the accompanying plan included in Attachment G.**

9. In question 5, if item numbers 11, 12, 13, or 14 were checked, demonstrate that the structure(s) or activity for which retention or work is proposed complies with all applicable standards and criteria.

Check the box if documents have been provided in Attachment G.

Based on initial consultations with CT DEEP, it is understood that overshooting of the Northeast Bulkhead meets applicable criteria and is therefore eligible for a COP.

No activities that would result in adverse impacts to aquatic resources, navigation, littoral or riparian rights - such as dredging, fill placement, circulation pattern interference or habitat degradation - are anticipated from the bulkhead overshooting. As such, the project is compliant.

10. In question 5, if item numbers 11, 12, 13, or 14 were checked, demonstrate that the structure(s) or activity has been continuously maintained and serviceable since January 1995.

Check the box if documents have been provided in Attachment G.

The Northeast Bulkhead - which will be subject to the proposed overshooting work and which represents the only "Item 14" element identified herein - has been continually used and maintained as a serviceable structure from its initial construction (around 1982) until present. Corresponding documentation of this continued use (aerial photographs documenting use of the Northeast Bulkhead over the past four decades) is included in Attachment G.

11. In question 5, if item numbers 12, 13, or 14 were checked, state whether the applicant conducted or was responsible for the unauthorized activity, or whether the applicant knew or had reason to know of the unauthorized activity at the time the property which is the site of the unauthorized activity was acquired.

Check the box if documents have been provided in Attachment G.

Construction of the Northeast Bulkhead was completed by the U.S. Navy's Naval Facilities Engineering Command (NAVFAC) in or around 1982, as based on the plans included in Attachment G. The U.S. Navy, rather than the CPA and the State of Connecticut (the applicant and current parcel owner, respectively), completed construction of the Northeast Quay and its associated Northeast Bulkhead. In addition, the USN completed the Mooring Dolphin installation c. 1969 (though work at this structure is identified as an "Item #5" element). The CPA understands that no CT DEEP authorizations were previously provided to USN for these prior construction activities.

Part V: Project Information (continued)

12. a. Is any portion of work for which authorization is being sought now complete or under construction?

Yes No

If Yes, specify what parts of the proposed work have been completed or are under construction and indicate when such work was undertaken or completed. Identify completed portions on the plans submitted.

N/A

b. If yes, is the application associated with an enforcement action pending with DEEP?

Yes No If yes, explain: **N/A**

Check here, if documents have been provided in Attachment G. Also please complete *Applicant Compliance Information Form* (DEP-APP-002).

13. Provide other relevant information you deem important to consider in the review of this application.

Check the box if documents have been provided in Attachment G:

N/A

Part VI: Supporting Documents

Check the applicable box below for each attachment being submitted with this application form. The specific information required in each attachment is described in the *Instructions for Completing a Certificate of Permission Application for the Office of Long Island Sound Programs* (DEP-OLISP-INST-200).

- Attachment A: Plans in accordance with Part V, item 2 of the instructions
- Attachment B: Photographs showing existing conditions of the site
- Attachment C: Abutting or adjacent property owner information; including names and mailing addresses
- Attachment D: **Copy** of the completed *Request for NDDB State Listed Species Review Form* (DEP-APP-007) and the NDDB response, if applicable.
- Attachment E: [Applicant Background Information Form](#) (DEP-APP-008) (if applicable)
- Attachment F: [Applicant Compliance Information Form](#) (DEP-APP-002)
- Attachment G: Other Information (if applicable)

Part VI: Application Certification

The applicant(s) *and* the individual(s) responsible for actually preparing the application must sign this part. An application will be considered insufficient unless *all* required signatures are provided.

<p>“I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of the individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief.</p> <p>I understand that a false statement in the submitted information may be punishable as a criminal offense, in accordance with section 22a-6 of the General Statutes, pursuant to section 53a-157b of the General Statutes, and in accordance with any other applicable statute.</p> <p>I certify that this application is on complete and accurate forms as prescribed by the commissioner without alteration of the text.”</p>	
	<p>9 September, 2019</p>
Signature of Applicant	Date
<p>David Kooris, CT Port Authority</p>	<p>CPA Acting Chair</p>
Name of Applicant (print or type)	Title (if applicable)
	<p>5 September, 2019</p>
Signature of Preparer (if different than above)	Date
<p>Kris van Naerssen, AECOM</p>	<p>Aquatic Ecologist</p>
Name of Preparer (print or type)	Title (if applicable)
<p><input checked="" type="checkbox"/> Check here if additional signatures are required. If so, please reproduce this sheet and attach signed copies to this sheet. You must include signatures of any person preparing any report or parts thereof required in this application (i.e., professional engineers, surveyors, soil scientists, consultants, etc.)</p>	

Note: Please submit the completed Application Form, Fee, and all Supporting Documents to:

CENTRAL PERMIT PROCESSING UNIT
 DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
 79 ELM STREET
 HARTFORD, CT 06106-5127

If your town has a Harbor Management Commission, you must submit a copy of this completed application *by certified mail* to the Commission and include a copy of the receipt with your application materials indicating that such documents were sent certified.

Submit one complete application copy to the U.S. Army Corps of Engineers, Regulatory Division, 696 Virginia Road, Concord, MA, 01742

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<p>N/A - See Above Signatures</p> <hr/> <p>Signature of Applicant</p>	<p>N/A - See Above Signatures</p> <hr/> <p>Date</p>
<p>David Kooris, CT Port Authority</p> <hr/> <p>Name of Applicant (print or type)</p>	<p>CPA Acting Chair</p> <hr/> <p>Title (if applicable)</p>
<p></p> <hr/> <p>Signature of Preparer (if different than above)</p>	<p>September 5, 2019</p> <hr/> <p>Date</p>
<p>Timothy O'Sullivan</p> <hr/> <p>Name of Preparer (print or type)</p>	<p>Wetland Ecologist / CT Soil Scientist</p> <hr/> <p>Title (if applicable)</p>
<p><input checked="" type="checkbox"/> Check here if additional signatures are required. If so, please reproduce this sheet and attach signed copies to this sheet. You must include signatures of any person preparing any report or parts thereof required in this application (i.e., professional engineers, surveyors, soil scientists, consultants, etc.)</p>	

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<p>N/A - See Above Signatures</p> <hr/> <p>Signature of Applicant</p>	<p>N/A - See Above Signatures</p> <hr/> <p>Date</p>
<p>David Kooris, CT Port Authority</p> <hr/> <p>Name of Applicant (print or type)</p> <p></p>	<p>CPA Acting Chair</p> <hr/> <p>Title (if applicable)</p>
<p>Signature of Preparer (if different than above)</p>	<p>September 9, 2019</p> <hr/> <p>Date</p>
<p>Joshua Singer, P.E.</p> <hr/> <p>Name of Preparer (print or type)</p>	<p>Design Engineer</p> <hr/> <p>Title (if applicable)</p>
<p><input checked="" type="checkbox"/> Check here if additional signatures are required. If so, please reproduce this sheet and attach signed copies to this sheet. You must include signatures of any person preparing any report or parts thereof required in this application (i.e., professional engineers, surveyors, soil scientists, consultants, etc.)</p>	

Note: Please submit the completed Application Form, Fee, and all Supporting Documents to:

CENTRAL PERMIT PROCESSING UNIT
 DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
 79 ELM STREET
 HARTFORD, CT 06106-5127

If your town has a Harbor Management Commission, you must submit a copy of this completed application *by certified mail* to the Commission and include a copy of the receipt with your application materials indicating that such documents were sent certified.

Submit one complete application copy to the U.S. Army Corps of Engineers, Regulatory Division, 696 Virginia Road, Concord, MA, 01742

Part III.7. List all engineers, surveyors, and/or other consultants employed or retained to assist in preparing the application and designing or constructing the activity.

Name: K2 Management, Inc.

Mailing Address: 203 Crescent Street, Suite 205, Waltham, MA 02453

Contact: William Follett

Phone: 207-807-5489

Email: bfo@k2management.com

Service Provided: Project Management

Name: Moffatt & Nichol, Inc.

Mailing Address: 180 Wells Avenue, Suite 302, Newton, MA 02459

Contact: Joshua Singer, P.E.

Phone: 617-299-7330

Email: jsinger@moffatnichol.com

Service Provided: Lead Design Engineer / Engineer of Record

Name: Martinez Couch and Associates, LLC

Mailing Address: 1084 Cromwell Avenue, Rocky Hill, CT 06067

Contact: Richard E. Couch, P.E.

Phone: 860-436-4364

Email: couchre@martinezcouch.com

Service Provided: Environmental Permitting (Including Initial Consultations)

Part IV.8. Describe the existing structures, conditions and uses at the site of the proposed work. Provide photographs showing existing conditions as Attachment B.

The existing structures, conditions and uses at the proposed work areas are further described below. Photographs of the overall site, as well as depictions of existing conditions at these proposed work areas, are included in Attachment B.

Site Overview

The State Pier Facility is located in New London Harbor along the Thames River, in far eastern Connecticut to the north of the Long Island Sound. The existing State Pier Facility encompasses nearly 30 upland acres and has three general operational areas: the piers themselves (Admiral Shear Pier [also known as "State Pier"] and the Central Vermont Railroad Pier [CVRR Pier]), the near-dock shoreline areas, and offsite areas. The site is owned by the State of Connecticut and CT Port Authority, as noted in Attachment C, and operations are managed by Gateway Terminals.

The property generally consists of paved, unpaved, and gravel surfaces that are uneven or contain small depressions which pond water during storm events. The property is bounded to the west by the New England Central Railroad (NECR) and to the east and south by the Thames River.

The near-dock shoreline area is located south of State Pier Road and accommodates most of the port's cargo activity. This area contains two heavy load warehouse buildings, two equipment forklift maintenance buildings and an administration building. The area located at the head of the two piers is largely paved to facilitate forklift and tractor trailer movements. The shore edge consists of a combination of sheet piling, pile-supported docks, and stone block quay walls. The western area adjoining the NECR siding yard are largely unpaved areas, with irregular topography. During work activities described herein, materials and/or equipment would be temporarily stockpiled or stored onsite only in the State Pier Facility's previously developed upland areas.

Though an overall site description is provided above, the actions proposed within this application are limited to the following work areas and efforts: 1) Northeast Bulkhead Work (Bulkhead Oversheeting and Derelict "Northeast Annex" Structure Removal); and, 2) Derelict Mooring Dolphin Removal. Additional detail regarding the existing structures, conditions and uses of these features is presented below. Select historic plans and figures are included in Attachment G.

Northeast Bulkhead

The existing Northeast Bulkhead, or Northeast Quay, is located in the eastern portion of the State Pier Facility. This feature was installed by the U.S. Navy's Naval Facilities Engineering Command (NAVFAC) unit in or around 1982 for small craft berthing purposes. Under current facility operations, this area currently serves primarily as onsite cargo storage and offers occasional vessel berthing.

Beginning at the eastern end of a granite quaywall located adjacent to the "Northeast Annex" (the Northeast Annex is further described below), a steel sheet pile (SSP) bulkhead extends for approximately 600 feet. The SSP bulkhead extends approximately 500 feet along the southern face of the Northeast Quay. This main face of the bulkhead is connected at both its northern and southern extents by two additional lengths of SSP (each approximately 50-feet). The existing SSP (PZ-27 and PZ-37 steel sheeting) is topped with typical marine bollards and cleats. At the northern terminus of SSP, a stone block retaining wall continues northeast for an additional 110 ft.¹

The steel sheetpiles and granite blocks noted above, represents the quay's upland / in-water interface. These features provide structural support for these developed shorefront areas.

¹ Milone & MacBroom, Inc. 2015. Preliminary Design Report State Pier Complex Improvements New London, Connecticut (revised April 2015). Prepared for ConnDOT. State Project No. 94-222/247. 68 pp + appendices.

An October 2018 inspection of the Northeast Quay Wall (aka Northeast Bulkhead) by Marine Infrastructure Engineering Solutions P.C. (Marine Solutions) of New York, NY indicated:

The Northeast Quay Wall is in Fair condition, with advanced section loss of the steel sheet pile bulkhead in the splash zone in the form of pack rust and isolated perforations. The rest of the steel sheets exhibit up to 50 percent coating loss in the intertidal zone and isolated areas of moderate pitting, with the submerged zone exhibiting no notable defects. The visible exposed portions of the tieback rods exhibited minor corrosion.

Northeast Annex

The Northeast Annex structure is an approximately 6,700 square foot (SF) area located at the intersection of the Northeast Bulkhead and the northeast corner of the Admiral Shear Pier (aka State Pier). The Northeast Annex is a pile-supported wharf structure and was originally constructed by the State of Connecticut between 1913 and 1916 as part of the larger Admiral Shear Pier installation project. The Northeast Annex area is presently condemned for general use, due to structural deficiencies. Additional historic USGS figures, historic orthoimagery, and site plans documenting this construction are included in Attachment G.

The Northeast Annex consists of a timber pile supported concrete deck wharf platform. The wharf platform is currently cordoned off and not used for vessel or storage operations because, as described below, it was previously rated in "serious" condition. Below deck, the Northeast Annex is bounded to the north and west by an approximately 125-foot length of granite block quay wall and to the northeast by the sheetpiling associated with the 1982 Northeast Bulkhead installation.

The Northeast Annex structure is currently in poor condition and is cordoned off in the upland portions by jersey barriers, in order to prevent unauthorized use of this portion of the facility. Specifically, Art DiCesare Associates [ADA] of Bridgeport, CT completed structural inspections of select onsite features in April, 2013. As part of this inspection, the following was noted relative to the Northeast Annex:

"The Northeast Annex of the Admiral Shear State Pier on the Thames River in New London is approximately 144 feet long and 47 feet wide. This part of the State Pier was not reconstructed with the main structure and is constructed of precast concrete panels supported by timber pile bents.

The overall condition of the Northeast Annex is "Serious" (Condition Rating=3), primarily due to timber piles with heavy to severe section loss from marine borer activity."

Additional Northeast Annex condition detail was provided in the ADA Report, as follows:

Deck: *The condition of the deck is "Poor" (Overall Rating=4). The deck has a bituminous overlay on top of precast concrete panels, and a 6-foot wide area of timber planks at the south (seaward) edge. The overlay exhibits 1/4" to 1" reflective cracks that are coincident to the joints in the precast panels (see [ADA] Photo No. 33). One (1) steel plate covers a wide gap between the precast deck panel and timber planks. Timber planks have checking, cracking, delamination and areas of soft and rotten wood. The deck is cordoned off to the waterway by means of concrete barrier (see [ADA] Dwg. No. NEA-02).*

Superstructure: The condition of the superstructure is "Fair" (Overall Rating=5). The precast concrete panel superstructure exhibits full width hairline cracks at the centerline of six panels. Hairline cracks were observed on the bottom of the fifth panel from the retaining wall between Bents 309 and 310, and between Bents 317 and 318 on the sixth panel from the retaining wall. Intermittent and isolated chamfer spalls were observed on the bottom of some of the beams.

Substructure: *The condition of the substructure is "Serious" (Overall Rating=3). The substructure comprises timber pile bents and stone masonry retaining wall. The retaining wall*

at the east end adjacent to the sheetpile wall has failed for the full height of a 4' wide area. The retaining wall exhibits up to 50% mortar loss in the tidal zone with up to 1.5' penetration. Timber piles exhibit light to moderate delamination with 1/4" to 1/2" loss of section in the tidal zone. Several piles exhibit checks up to 1/2" wide and areas of rot 3" deep above the tidal zone. Below the tidal zone, piles exhibit various degrees of marine borer deterioration. Approximately 20% of piles exhibit severe marine borer deterioration (see [ADA] Photo Nos. 36 to 38). Many piles have been jacketed at the mudline, or wrapped. Diagonal and horizontal wales exhibit splits, rot, and are intermittently loose or missing, with heavy to severe corrosion of hardware.

Waterway and Waterway Protection: The condition of the waterway and waterway protection is "Satisfactory" (Overall Rating=6). The waterway and waterway protection show minor changes to the mudline since the 2007 inspection. The rubber fenders have been detached from the fender piles at multiple locations, however the steel bolts remain. This creates a hazard to any ships navigating in close proximity to the Northeast annex. Riprap and armor stone up to 5.0' diameter comprise the mudline adjacent to the seawall. The bottom composition consists of sand, silt, and shells with up to 2.5' penetration.

Mooring Dolphin

Four existing mooring dolphins are located to the south of the Northeast Bulkhead and east of the Northeast Annex. These dolphins (or "mooring islands") were installed in or around 1969 by the U.S. Navy's NAVFAC unit to support naval operations at the Groton, CT Naval Base. The mooring dolphins are generally spaced 100 to 180 feet apart and consist of timber piles extending into the existing (previously dredged) mudline. The dolphin structures are capped with concrete, metal protective coverings and typical marine furniture above the waterline. The two westernmost dolphins are connected by a wooden gangway.

In October 2018, the mooring dolphins were deemed structurally unsound ("Serious" inspection rating) by Marine Solutions of New York, NY. Prior to this deficiency rating, the features had been occasionally used by local barge operators for vessel mooring. Additional detail from the Marine Solutions report and their associated recommendations are included below.

*"The Mooring Dolphins are in **Serious** condition. The plumb and batter piles which support the structure have concrete pile encasements which typically exhibit moderate to major cracking, and spalling of the outer 3 inches of the encasement. Below the encasements, the steel exhibits significant section loss throughout with isolated locations of up to 100 percent loss of section, and in some cases up to 2 inches of deflection due to bending of the steel. The fender system for the dolphins is no longer effective, the steel fender piles exhibit up to 100 percent section loss due to corrosion, and the timber fender piles and wales exhibit up to 100 percent section loss due to rot, Limnoria intrusion, and impact damage. There is a timber catwalk between Mooring Dolphins 'A' and 'B' which has begun to settle into the water at the north side and the whole structure can be considered to be failed. The underdeck of the concrete dolphin islands have spalls isolated at the mooring hardware connects, exposing the connections which display advanced to severe corrosion.*

Due to the severity of deterioration observed, Marine Solutions recommends conducting further structural analysis on the Mooring Dolphin facility to assess its ability to adequately support mooring loads. Until such an analysis has been conducted, it is recommended that further use of the mooring dolphins and the timber catwalk be discontinued.

Part IV.13. Identify all aquatic resources on and adjacent to the site and describe the characteristics and condition of each resource (identify location of resources on plans submitted as Attachment A):

The existing aquatic resources at and adjacent to the site are described below and identified in the accompanying plan sets. In general, the site-wide conditions are reported with select additional details provided for the distinct work areas described in this application. The locations of the following resource areas are included on the Attachment A plans and figures.

1.0 Existing Conditions Summary

Existing site conditions and regulated coastal resources¹ are described below. Regulated coastal resources in Connecticut include all land and water below the elevation of the Coastal Jurisdiction Line (CJL), which for New London, is 2.1 ft. in the North American Vertical Datum of 1988 (NAVD88). The following CT DEEP regulated coastal resources areas are located at the State Pier Facility and are further described below.

- **Developed Shorefront** - harbor areas which have been highly engineered and developed resulting in the functional impairment or substantial alteration of their natural physiographic features or systems;
- **Rocky Shorefronts** - shorefront composed of bedrock, boulders and cobbles that are highly erosion-resistant and are an insignificant source of sediments for other coastal landforms;
- **Nearshore Waters** - the area comprised of those waters and their substrates lying between mean high water and a depth approximated by the ten meter contour;
- **Offshore Waters** - the area comprised of those waters and their substrates lying seaward of a depth approximated by the ten meter contour; and
- **Coastal Hazard Areas** - those land areas inundated during coastal storm events or subject to erosion induced by such events, including flood hazard areas.

Aquatic resources anticipated at the Northeast Bulkhead and at the Mooring Dolphin work areas include:

Northeast Bulkhead

The Developed Shorefront, Nearshore Waters and Coastal Hazard Areas (VE Zone [14'] and AE Zone [11']²) resource areas are located at the proposed Northeast Bulkhead work area.

Northeast Annex

The Developed Shorefront, Nearshore Waters and Coastal Hazard Areas (VE Zone [14'] and AE Zone [11']) resource areas are located at the proposed Northeast Annex work area.

Mooring Dolphin

The Offshore Waters and Coastal Hazard Areas (VE Zone [14']) resource areas are located at the proposed Mooring Dolphin work areas.

¹ As defined by Connecticut General Statutes (CGS), Chapter 444 Coastal Management, Section 22a-93.

² FEMA Flood elevations for Map Panel 09011C0502J referenced to North American Vertical Datum of 1988 (NAVD88).

Additional descriptions of existing conditions and other ecological resources located at and adjacent to these work areas (i.e. at the full State Pier Facility) are further described below.

2.0 Existing Conditions – Additional Detail

This section describes the baseline existing conditions, natural resources, and habitats present within and adjacent to the State Pier Facility that could be affected by proposed construction activities. Data presented here were compiled from existing representative information. Where appropriate, discussion of coastal habitats and resources follow the nomenclature of Connecticut General Statutes (CGS), Chapter 444 Coastal Management, Section 22a-93 Definitions.

2.1 Thames River

The Thames River is an estuarine watercourse that discharges freshwater and sediment from the interior of eastern Connecticut into Long Island Sound (LIS). It is the main drainage of the Thames River Major Drainage Basin, which encompasses approximately 1,500 square miles of eastern Connecticut and central Massachusetts. The Thames River shoreline is characterized by steep slopes of exposed bedrock or shallow-to-bedrock till slopes. The lower Thames River and New London Harbor sustains a variety of military, commercial, and recreational vessel usage. New London Harbor provides protection to a number of these vessels from deeper, more open waters of the Atlantic Ocean and LIS.

Portions of the State Pier Facility site waters have been constructed or maintained by the United States Army Corps of Engineers (USACE) and / or U.S. Navy as part of the New London Harbor Navigation Project. The components of the navigation project in proximity to the State Pier Facility include:

- A 3.8-mile-long main ship channel, 40 feet deep and 600 feet wide, stretching from Long Island Sound to the State Pier at the northern end of the harbor. No work is proposed in this area.
- The 40-foot anchorage area located in the waters immediately east of the State Pier (anchorage previously constructed by Navy). The mooring dolphins are located in this area;
- The “Long Dock Branch Channel” (100 ft wide by 1,000 ft long) located between the State Pier and CVRR pier (no Certificate of Permission [COP]-eligible work is proposed here); and,
- The “Winthrop Branch Channel” (250 ft wide by 1,500 ft long) located south and west of CVRR and the New London shoreline (no COP-eligible work is proposed here).

The CT DEEP Water Quality Classification for the Thames River is SB. Class SB designated uses are habitat for marine fish and aquatic life and wildlife; commercial shellfish harvesting; recreation; industrial water supply; and navigation. The New London, Thames River, Connecticut tide station (ID 8461490) located at the State Pier has a mean tidal amplitude range of 2.56 ft and a diurnal range of 3.05 ft. Mean lower low water (MLLW) elevation is -1.84 ft NAVD88 and the mean higher high water (MHHW) is 1.21 ft NAVD88.

2.2 Nearshore and Offshore Waters

The State Pier Facility site encompasses approximately 7.26 acres of Nearshore Waters, which are defined by Connecticut CGS Chapter 444 as intertidal and subtidal waters and substrates lying between mean high water and the -10 meter (m)/ -33 ft contour (relative to mean low water

[MLW]). This is equivalent to a vertical elevation of approximately -31 ft NAVD88. The majority of Nearshore Waters are located in Winthrop Cove in areas immediately adjacent to CVRR Pier, and adjacent to the northern half of the Northeast Bulkhead, and shoreline areas extending to Winthrop Point.

In addition to Nearshore Waters, the State Pier Facility site encompasses approximately 4.35 acres of Offshore Waters, defined in Connecticut CGS Chapter 444 as waters and their substrates lying seaward of (i.e., deeper than) the -10-meter depth contour. Offshore Waters are located adjacent to the State Pier and along the southern half of the Northeast Bulkhead and extend easterly to the navigational channel.

According to the wetlands and deepwater classification system (Cowardin et, al. 1979³), the subtidal component of nearshore and offshore waters are classified as a subtidal estuarine system with an unconsolidated mud bottom (E1UB3).

2.3 Intertidal and Shallow Subtidal Habitats

The intertidal areas of the State Pier Facility site consist of three main shoreline habitat types including developed shorefront, rocky shorefront, and beaches and dunes. The majority of the shoreline is “developed shorefront” as defined in CGS Chapter 444 and characterized onsite as existing rip-rap or granite block and steel sheet pile pier and bulkhead faces. Most of the remaining shoreline is a “rocky shorefront” as defined in CGS Chapter 444 and characterized by erosion-resistant boulders and cobbles with little fine grained material. Rocky shorefront is present on the extreme western corner of the State Pier Facility site and north of the Northeast Bulkhead around Winthrop Point to the boat launch. Cowardin, et, al. (1979) classifies rocky shorefront as an estuarine intertidal rocky shore dominated by rubble (E2RS2). The northeastern corner the State Pier Facility site contains several small sandy pocket beaches interspersed within the eastern rocky shorefront habitat which are considered “beaches and dunes” as defined in CGS Chapter 444. The extreme western corner of the Project Area likewise exhibits a small pocket beach. Cowardin, et, al. (1979) classifies the beach component of the shorefront as an estuarine intertidal unconsolidated shore dominated by cobble-gravel and/or sand (E2US1/2). Both rocky shorefront and beaches are generally unvegetated.

2.3.1 High Intertidal

The high intertidal zone is flooded only during the highest of high tides, and generally exists in a narrow fringe between mean high water and mean higher high water (e.g. 0.92 to 1.21 ft NAVD88). The wrack lines associated with rocky shorefront and beach areas within the high intertidal habitat are littered with rubbish including plastic-based trash, timbers/wooden debris, and closed or open-celled foam washed onshore during high tide and storm events.

2.3.2 Mid Intertidal

The mid intertidal zone is regularly exposed and submerged by average tides (e.g., -1.65 to 0.92 ft NAVD88).

³ Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater. Habitats of the United States. FWS/OBS-79/31, 131p.

2.3.3 Low Intertidal

The low intertidal zone borders on the shallow subtidal zone and is only exposed to air at the lowest of low tides (e.g., -1.65 to -1.84 ft NAVD88) and is primarily marine in character.

2.3.4 Shallow Subtidal

Shallow subtidal habitat is a part of nearshore waters and does not have a jurisdictional definition. For the purposes of habitat evaluation at State Pier Facility, shallow subtidal habitats extend to a depth of -5 meters (-15.5 ft NAVD88).

2.4 Wetlands and Watercourses

On February 22, 2019, a Certified Professional Soil Scientist/Professional Wetlands Scientist from AECOM conducted an initial field visit to identify tidal and inland wetland and watercourses regulated under federal, state, or local statutes and regulations as described below. The survey area encompassed the entire inland portion of the State Pier Facility site and the Thames River shoreline from the western rail bridge over Winthrop Cove to the Thames River Boat Launch located northeast of the State Pier Facility site, under the northbound lanes of the Gold Star Bridge. Note that Winthrop Point is not currently included within the State Pier Facility work areas, but may be considered as restoration, enhancement, and/or mitigation areas in the future.

As noted above, the vast majority of the shoreline at the site is considered developed shorefront and characterized by granite block retaining/seawall, steel sheet pile bulkhead, pile-supported deck, and/or rip-rap armor. The remaining shoreline consists of rocky shorefront and/or pocket beach areas.

2.4.1 City of New London

Municipalities in Connecticut are responsible for the regulation of inland wetlands and watercourses. The City of New London (City) regulates inland wetlands and watercourses in accordance with the City of New London Inland Wetland & Watercourse Regulations (as amended through January 23, 2012) and Sections 22a-36 through 22a-45 of the CGS (i.e., the Inland Wetlands and Watercourses Act). Under these regulations, the City defines watercourses and wetlands as:

- “Watercourses” means rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs, and all other bodies of water, natural or artificial, vernal or intermittent, public or private, which are contained within, flow through or border upon this city or any portion thereof, not regulated pursuant to section 22a-28 through 22a-35 of the Connecticut General Statutes. Intermittent watercourses shall be delineated by a defined permanent channel and bank and the occurrence of two or more of the following characteristics: (A) evidence of scour or deposits of alluvium or detritus, (B) the presence of standing or flowing water for a duration longer than a particular storm incident and (C) the presence of hydrophytic vegetation.
- “Wetlands” means land, including submerged land as defined in Section 2.1(a) of these regulations, not regulated pursuant to Section 22a-28 through 22a-35, inclusive, of the Connecticut General Statutes, which consists of any of the soil types designated as poorly drained, very poorly drained, alluvial and flood plain by the National Cooperative Soils Survey, as it may be amended from time to time, of the Natural Resources Conservation Soils Survey of the U.S. Department of Agriculture (USDA). Such areas may include filled, graded, or

excavated sites which possess an aquic (saturated) soil moisture regime as defined by the USDA Cooperative Soil Survey.

There are no inland wetlands or watercourses within the Project Limits. The City also regulates coastal resources (e.g., tidal wetlands and tidal waters) as part of the Coastal Site Plan Review pursuant to Section 22a-90 through 22a-112 of the Connecticut General Statutes (i.e., the Coastal Management Act); however, state-owned lands and projects are typically exempt from local review.

2.4.2 Connecticut Department of Energy and Environmental Protection

The CT DEEP regulates coastal resources including tidal wetlands and tidal waters (e.g., nearshore, offshore, and intertidal) in accordance with Connecticut General Statutes Sections 22a-28 through 22a-35 (i.e., the Tidal Wetlands Act) and Sections 22a-359 through 22a-363f (i.e., the Structures, Dredging, and Fill Statutes, including Certificates of Permission [22a-363b]). Unlike inland wetlands, tidal wetlands include areas which border on or lie beneath tidal waters, such as, but not limited to banks, bogs, salt marsh, swamps, meadows, flats, or other low lands subject to tidal action, including those areas now or formerly connected to tidal waters, and whose surface is at or below the CJL an elevation of one foot above local extreme high water (Section 22a-29(2)) that support vegetation tolerant of saline environments. In New London, the CJL elevation is 2.1 ft NAVD88.

Unavoidable impacts including the placement of structures, dredging, and fill activities require a permit from the CT DEEP. The CT DEEP has established streamlined permitting for certain minor activities through the issuance of General Permits or COPs.

2.4.3 U.S. Army Corps of Engineers

The USACE regulates the discharge of dredged or fill material into Waters of the United States under Section 404 of the Clean Water Act. Waters of the United States include navigable waters and all their tributaries, adjacent wetlands, and other waters or wetlands with a significant nexus to navigable waters. The USACE also regulates activities in navigable waters under Section 10 of the Rivers and Harbor Act.

The USACE defines wetlands as *areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.* Unlike inland wetlands defined under Connecticut statutes and regulations, which are identified by their soil drainage classification, USACE-regulated wetlands need to meet hydric soil and hydrophytic vegetation criteria and exhibit evidence of wetland hydrology.

Activities that involve placement of dredged material or fill in Waters of the United States require a permit from the USACE under Section 404 of the Clean Water Act. The USACE has issued a General Permit for Connecticut, which authorizes many activities in Waters of the United States.

2.4.4 Site Visit and Resource Area Delineation

A site visit and resource area delineation was performed by an AECOM Professional Wetlands Scientist and Registered Soil Scientist on February 22, 2019. The goal of the site visit was to identify the location of any potential inland and/or tidal wetland or watercourse resources.

The site visit and resource area evaluation was conducted in accordance with the *Wetlands Delineation Manual and the Regional Supplement to the Army Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (Version 2.0). Hydric soil determinations were evaluated using the *Field Indicators of Hydric Soils in the United States, Version 8.0* (2016). In addition, surveys for inland wetlands and watercourses regulated by the CT DEEP were performed in accordance with the Connecticut Inland Wetlands and Watercourse Act and the City of New London's *Inland Wetland and Watercourse Regulations* (as amended January 23, 2012). The process included a general assessment of site soils, vegetation, topography, and landscape position/location that would indicate presence of a wetland or watercourse.

The site visit and resource area delineation resulted in the detection of no federal, state, or local jurisdictional inland or tidal wetland resources within the project work area described herein. Additionally, with the exception of the Thames River, no jurisdictional watercourses were identified within the State Pier Facility site.

2.5 Soils

The State Pier Complex is underlain by three mapped soil units, as indicated in **Figure 3**. These soil units include Urban Land, Udorthents-Urban land complex, and Hinckley loamy sand. None of these mapped soil units are hydric soils or prime farmland.

2.5.1 Udorthents-Urban land complex

The majority of the site is underlain by the Udorthents-Urban land complex. This soil unit consists of moderately well drained to excessively drained soils that have been disturbed by cutting or filling, and areas that are covered by buildings and pavement. The areas are mostly larger than 5 acres. The complex is about 70 percent Udorthents, 20 percent urban land, and 10 percent other soils. Most areas of these components are so intermingled that it was not practical to map them separately. Udorthents are in areas that have been cut to a depth of two (2) ft or more are on areas with more than two (2) ft of fill. Udorthents consist primarily of moderately coarse textured soil material and a few small areas of medium textured material.

2.5.2 Urban Land

Land occupied by the State Pier and adjacent warehouse buildings located immediately to the north are mapped as Urban Land. This soil unit consists of nearly level to moderately steep areas where the soils have been altered or obscured by urban works and structures. Buildings and pavement cover more than 85 percent of the surface.

2.5.3 Hinckley Loamy Sand

The Hinckley series consists of very deep, excessively drained soils formed in glaciofluvial materials. They are nearly level through very steep soils on outwash terraces, outwash plains, outwash deltas, kames, kame terraces, and eskers. The saturated hydraulic conductivity is high or very high. Within the State Pier Facility site, these soils occupy an elevated area of the northeastern portion of the site which is currently used for a road salt stockpile and distribution area. These soil areas are located uphill from the Northeast Bulkhead work site.

2.6 Benthos

Benthos is the community of organisms that live on and in the sediments of aquatic environments. Benthic macroinvertebrates and shellfish communities present within State Pier Facility are

discussed below.

2.6.1 Benthic Macroinvertebrates

Details regarding substrate and species composition may be provided upon completion of site-specific surveys completed in the summer of 2019. If requested, results of these surveys would be submitted in supplemental filings to CT DEEP.

2.6.2 Shellfish

According to the CT Department of Agriculture, Bureau of Aquaculture's (DA/BA) Aquaculture Mapping Atlas, commercial and recreational shellfish harvest is prohibited from the Thames River within and adjacent to the State Pier Facility site south of the Gold Star Bridge (CT DEEP, 2019⁴). Approximately 1.5 miles north of the bridge, the river is classified as restricted relay shellfish beds. No natural, recreational, state-managed shellfish beds are located within or adjacent to the State Pier Facility site.

2.7 Finfish

Extensive finfish monitoring and surveys have been conducted in the Thames River in the vicinity of the State Pier Facility. A subset of these surveys include biological sampling conducted by the United States Coast Guard Academy (USCGA) since 1974, an ongoing alosine survey conducted by CT DEEP since 1996, and a comprehensive finfish and ichthyoplankton (egg and larval life stage) survey of the waters adjacent to the Naval Submarine Base New London (SUBASE-NLON) conducted in 2014-2015. Data obtained from these surveys offer a representative characterization of the finfish community likely to utilize the waters of the State Pier Facility site.

According to the CT DEEP, New London Harbor serves as both nursery habitat and migratory corridor to several alosine species including American shad (*Alosa sapidissima*), alewife (*Alosa pseudoharengus*), and blueback herring (*Pomolobus aestivalis*) (Gephard, 2019⁵). These species are subject to an intensive restoration program in the Thames River Basin, including dam removal/fish passage projects that allow these species to reach spawning habitat.

2.7.1 USCGA Survey

The USCGA marine science class has performed biological sampling of the river from the Gold Star Bridge upriver to the Naval Submarine Base New London (SUBASE-NLON) facility since 1974. The ongoing survey utilizes a flat trawl net at shallow (15-30 ft) and deep (40-50 ft) depths and is conducted on a weekly basis from August to October. In addition to river trawls, seining is conducted in shallow subtidal areas.

A summary of fish species by ecological niche and habitat preference guilds collected as part of the USCGA surveys is presented in Table 1.

⁴ CT DEEP. 2019. Connecticut Environmental Conditions Online. *The Aquaculture Mapping Atlas*. <https://cteco.uconn.edu/viewer/index.html?viewer=aquaculture>. Accessed March 1, 2019.

⁵ Gephard, S. 2019. "RE: State Pier Improvements, New London." CT DEEP Fisheries Supervising Fisheries Biologist email message to R. Laukaitis, P.E. of Martinez Couch & Associates, LLC. March 15, 2019.

Table 1. Fish Species Guilds Established for the USCGA Survey Data

Guild	Meaning	Species Included
CD	Cold Temperate-Demersal	Cunner, Hake (Silver), Stickleback, Tomcod
CE	Cold Temperate-Epibenthic	Fundulus-mummichog, Sculpin (Longhorn), Toadfish, Fourbeard Rockling, Flounder (Fourspot), Flounder (Windowpane), Flounder (Winter), Flounder (yellowtail), Hake (Red), Hake (White), Sculpin (Grubby), Searobin (Northern), Skate (little), Oyster Toadfish
CP	Cold Temperate-Pelagic	Mackerel (Atlantic), Alewife, Herring (Atlantic), Smelt
WD	Warm Temperate-Demersal	Gunnel, Smooth Dogfish, Silversides (tidewater), Blackfish (Tautog), Kingfish, Lizardfish, Mullet, Scup (Porgy), Seabass (Black), Sheepshead Minnow, Silversides (Atlantic), Spot, Weakfish
WE	Warm Temperate-Epibenthic	Cusk eel, Fundulus-killifish, Hake(Spotted), Pipefish, Seahorse (lined), Fundulus diaphanus (banded killifish), <i>Lucania parva</i> (rainwater killifish), <i>Fundulus majalis</i> (striped killifish), Hake (Spotted), Hogchoker, Northern Pipefish, Blowfish (N. Puffer), Eel (American), Flounder (Gulf Stream), Flounder (Smallmouth), Flounder (Summer), Goby, Searobin (Striped)
WP	Warm Temperate-Pelagic	Mackerel (Spanish), Anchovy, Bass (Striped), Bluefish, Butterfish, Herring (blue back), Jack (Crevalle), Menhaden, Shad (American)
SP	Subtropic-Pelagic	Big Eye, Lookdown, Moonfish
SD	Subtropic-Demersal	Banded Rudderfish

Source: CT DEEP, 2017.

A shift in species guilds has been observed over the span of the USCGA sampling program from cold temperate-epibenthic to warm temperate-epibenthic species. Specifically, windowpane (*Scophthalmus aquosus*) and winter flounder (*Pseudopleuronectes americanus*) dominated the catch during the early years of the survey and were replaced by summer flounder (*Paralichthys dentatus*), scup (*Stenotomus chrysops*), and butterfish (*Peprilus triacanthus*) in recent years (CT DEEP, 2017).

2.7.2 CT DEEP Alosine Seining Survey

The CT DEEP conducts an annual study of marine recreational fisheries in Connecticut⁶. One component of the study is an alosine survey that typically includes biweekly seining in July and August between Uncasville and Norwich Harbor located north of the project area. This survey has been ongoing in the Thames River since 1996 through at least 2016.

⁶ CT DEEP. 2017. A Study of Marine Recreational Fisheries in Connecticut. https://www.ct.gov/deep/lib/deep/fishing/publications/2016_marine_fisheries_study_of_marine_recreational_fisheries_in_connecticut.pdf. Accessed March 26, 2019.

Results of the 2014 to 2016 survey data indicates the number of species or taxonomic groups was comparable among years and ranged from 23 to 28 (Table 2). Atlantic menhaden (*Brevoortia tyrannus*), Atlantic silverside (*Menidia menidia*), killifish (*Fundulus spp.*), and bluefish (*Pomatomus saltatrix*) were the top five occurrences during these recent sampling events. Atlantic silverside had the highest overall occurrence during each year.

Table 2. List of fish species or Group and Percent Frequency of Occurrence of Fish Collected in Thames River Alosine Seine Survey, 2014-2016

Species	Scientific Name	2014	2015	2016
alewife	<i>Alosa pseudoharengus</i>	3.70	9.76	2.04
American eel	<i>Anguilla rostrata</i>		2.44	4.08
American shad	<i>Alosa sapidissima</i>		2.44	
Atlantic needlefish	<i>Tylosurus marinus</i>	3.70		
Atlantic silverside	<i>Menidia menidia</i>	92.59	92.68	95.92
bay anchovy	<i>Anchoa mitchilli</i>	3.70	12.20	4.08
blueback herring	<i>Pomolobus aestivalis</i>	7.41	2.44	4.08
bluefish	<i>Pomatomus saltatrix</i>	44.44	78.05	53.06
blue runner	<i>Caranx crysos</i>		2.44	
butterfish	<i>Peprilus triacanthus</i>	3.70		4.08
crevalle jack	<i>Caranx hippos</i>	3.70	7.32	
Atlantic croaker	<i>Micropogon undulatus</i>			4.08
cunner	<i>Tautoglabrus adspersus</i>			2.04
grubby	<i>Cottus aeneus</i>	3.70		2.04
hogchoker	<i>Trinectes maculatus</i>	11.11	9.76	8.16
killifish & mummichog*	<i>Fundulus spp. & Lucania parva</i>	40.74	73.17	67.35
longhorn sculpin	<i>Myoxocephalus octodecemspinosus</i>	3.70		
lizardfish	<i>Synodus foetens</i>		24.39	2.04
Atlantic menhaden	<i>Brevoortia tyrannus</i>	51.85	53.66	44.90
naked goby	<i>Gobiosoma bosc</i>	11.11	9.76	10.20
northern kingfish	<i>Menticirrhus saxatilis</i>	3.70	21.95	10.20
northern puffer	<i>Sphoeroides maculatus</i>		2.44	
pipefish	<i>Syngnathus fuscus</i>		26.83	26.53
scup	<i>Stenotomus chrysops</i>	3.70	31.71	20.41
sheepshead minnow	<i>Cyprinodon variegatus</i>		2.44	2.04
spottail shiner	<i>Notropis hudsonius</i>	11.11	2.44	6.12
stickleback	<i>Apeltes quadracus</i>	11.11	12.20	2.04
striped bass	<i>Morone saxatilis</i>	3.70		14.29
summer flounder	<i>Paralichthys dentatus</i>	22.22	2.44	
sunfish*	N/A	3.70		2.04
tautog	<i>Tautoga onitis</i>	18.52	17.07	20.41
tomcod	<i>Microgadus tomcod</i>		2.44	

Species	Scientific Name	2014	2015	2016
weakfish	<i>Cynoscion regalis</i>		7.32	
white perch	<i>Morone americana</i>		7.32	
white sucker	<i>Catostomus commersonii</i>		4.88	
winter flounder	<i>Pseudopleuronectes americanus</i>	14.81	26.83	12.24

* Indicates multiple species.
Source: CT DEEP 2017.

2.7.3 SUBASE-NLON Finfish Survey

A comprehensive survey was completed by Tetra Tech to characterize the finfish resources near the SUBASE-NLON in 2014-2015⁷. This program included deep channel trawl sampling and collection of ichthyoplankton (egg and larval life stage) samples. The purpose of the program was to assess juvenile and adult fish seasonal fluctuations in species composition and abundance.

Trawl surveys targeted adult and juvenile finfish life stages and were completed in water depths ranging from 30 to 39 ft. The trawls were conducted three times per season, for a total of 12 surveys between the fall of 2014 and summer of 2015. A total of 29 species were collected with seasonal variations in juvenile and adult composition observed (Table 3). Four species comprised over 75% of the catch and include bay anchovy (*Anchoa mitchilli*), scup, butterfish, and Atlantic herring (*Clupea harengus*). Summer flounder, winter flounder, and alewife were captured in three out of the four seasons. Trawls in the winter had the lowest diversity and catch per unit effort (CPUE); CPUE was highest in summer and diversity was highest in summer and fall (Tetra Tech, 2016).

**Table 3. Seasonal Juvenile and Adult Finfish Relative Abundance and Species Composition
SUBASE-NLON**

Common Name	Scientific Name	Fall 2014	Winter 2015	Spring 2015	Summer 2015	Total Count	Total (% Comp.)
bay anchovy	<i>Anchoa mitchilli</i>	50	--	--	1,073	1,123	31.8%
scup	<i>Stenotomus chrysops</i>	299	--	--	269	568	16.1%
butterfish	<i>Peprilus triacanthus</i>	50	--	--	504	554	15.7%
Atlantic herring	<i>Clupea harengus</i>	--	--	182	228	410	11.6%
Atlantic moonfish	<i>Selene setapinnis</i>	176	--	--	123	299	8.5%
Atlantic silverside	<i>Menidia menidia</i>	--	6	--	169	175	5.0%
juvenile sciaenid	Family Sciaenidae	--	--	--	117	117	3.3%
bluefish	<i>Pomatomus saltatrix</i>	--	--	--	96	96	2.7%
winter flounder	<i>Pseudopleuronectes</i>	1	--	1	39	41	1.2%
alewife	<i>Alosa pseudoharengus</i>	32	1	--	1	34	1.0%

⁷ Tetra Tech, Inc. 2016. Nearshore Surveys at Naval Submarine Base (SUBASE) New London. Final Report. Task Order N62470-13-D-8016-WE08. Prepared for Naval Facilities Engineering Command Mid-Atlantic. April 2016.

Common Name	Scientific Name	Fall 2014	Winter 2015	Spring 2015	Summer 2015	Total Count	Total (% Comp.)
black seabass	<i>Centropristis striata</i>	24	--	--	--	24	0.7%
summer flounder	<i>Paralichthys dentatus</i>	13	--	3	3	19	0.5%
spotted hake	<i>Urophycis regia</i>	--	--	15	1	16	0.5%
Atlantic menhaden	<i>Brevoortia tyrannus</i>	--	--	--	14	14	0.4%
cunner	<i>Tautoglabrus adspersus</i>	--	--	5	1	6	0.2%
juvenile gadid sp.	<i>Family Gadidae</i>	--	--	6	--	6	0.2%
weakfish	<i>Cynoscion regalis</i>	6	--	--	--	6	0.2%
bluestripe lizardfish	<i>Synodus saurus</i>	4	--	--	--	4	0.1%
tautog	<i>Tautoga onitis</i>	3	--	1	--	4	0.1%
shorthorn sculpin	<i>Myoxocephalus Scorpius</i>	--	--	4	--	4	0.1%
northern pipefish	<i>Syngnathus fuscus</i>	4	--	--	--	4	0.1%
longfin squid	<i>Doryteuthis pealeii</i>	3	--	--	--	3	0.1%
Atlantic tomcod	<i>Microgadus tomcod</i>	--	--	1	--	1	T
fourspot flounder	<i>Paralichthys oblongus</i>	--	--	1	--	1	T
silver hake	<i>Merluccius bilinearis</i>	--	--	1	--	1	T
smallmouth	<i>Etropus microstomus</i>	1	--	--	--	1	T
striped anchovy	<i>Anchoa hepsetus</i>	1	--	--	--	1	T
striped searobin	<i>Prionotus evolans</i>	--	--	1	--	1	T
windowpane	<i>Scophthalmus aquosus</i>	--	--	--	1	1	T
Totals		667	7	221	2,639	3,534	

Note: T = trace (<0.1%).
Source: Tetra Tech 2016.

Ichthyoplankton samples were collected with a net (300 µm mesh) that was towed obliquely throughout the Thames River water column adjacent to the SUBASE-NLON. A total of 11 species were collected, with tautog (*Tautoga onitis*), Atlantic tomcod (*Microgadus tomcod*), winter flounder, American sand lance (*Ammodytes americanus*), Atlantic herring, and cunner (*Tautoglabrus adspersus*) comprising over 80% of the catch (Table 4). The winter, spring, and summer surveys resulted in fairly consistent CPUE, whereas the fall survey had the lowest CPUE. The spring survey resulted in the highest diversity with detection of eight (8) species. Summer and winter surveys resulted in detection of five (5) species whereas the fall survey resulted in only two (2) species.

Table 4. Ichthyoplankton Relative Abundance and Species Composition at SUBASE-NLON

Common Name	Scientific Name	Density (per 100 m3 of river water)				Total	Cumulative %
		Fall 2014	Winter 2015	Spring 2015	Summer 2015		
tautog	<i>Tautoga onitis</i>	-	-	5.5	8.2	13.7	19.7%
Atlantic tomcod	<i>Microgadus tomcod</i>	-	11.2	-	-	11.2	16.1%
winter flounder	<i>Pseudopleuronectes americanus</i>	2.5	1.0	7.2	-	10.7	15.4%
American sand lance	<i>Ammodytes americanus</i>	-	7.5	-	-	7.5	10.7%
Unknown egg	-	-	-	2.0	4.3	6.3	9.0%
Atlantic herring	<i>Clupea harengus</i>	1.7	-	4.3	-	6.0	8.6%
cunner	<i>Tautoglabrus adspersus</i>	-	-	0.7	4.6	5.3	7.6%
northern pipefish	<i>Syngnathus fuscus</i>	-	-	-	2.9	2.9	4.2%
grubby	<i>Myoxocephalus aeneus</i>	-	1.4	0.7	-	2.1	2.9%
rock gunnel	<i>Pholis gunnellus</i>	-	1.9	-	-	1.9	2.8%
searobin sp.	Family <i>Triglidae</i>	-	-	-	1.5	1.5	2.1%
striped bass	<i>Morone saxatilis</i>	-	-	0.8	-	0.7	1.0%
Totals		4.2	23.0	21.2	21.5	69.7	100.0

Source: Tetra Tech, 2016.

2.8 Wildlife

Wildlife utilizes terrestrial uplands, intertidal areas, and open-water portions of the State Pier Facility site throughout the year. The avian species assemblages present with the seasons. Terrestrial mammals, reptiles, and amphibian species are likely present year-round. For the purposes of this application (and as prescribed in DEEP-OLISP-APP-200 Part IV Item 13), a description of terrestrial wildlife anticipated onsite has been omitted. Marine wildlife species also utilize the Thames River Estuary. Additional details are presented below.

2.8.1 Avifauna

The assemblage of avifauna likely to utilize uplands, shoreline, and open water habitats of the State Pier Facility site includes a variety of passerines, wading birds, ducks, geese, and gulls. A list of birds for the New London Harbor birding “hotspot” generated from the publically-available bird sighting database and map viewer eBird (www.ebird.org) lists observations of 75 species (plus 9 other taxa). The eBird database is a citizen-science project managed by the Cornell Lab of Ornithology.

Shorebirds and wading birds could use the rocky shoreline, beach areas, and shallow nearshore waters for foraging during low tide. Examples of these species include spotted sandpiper (*Actitis macularius*), greater yellowlegs (*Tringa melanoleuca*), great blue heron (*Ardea herodias*), and green heron (*Butorides virescens*).

According to the US Fish and Wildlife Service (USFWS), the Thames River is a regionally significant habitat for migrating and wintering waterfowl⁸. Species that use the river include relatively large numbers of canvasback (*Aythya valisineria*), American wigeon (*Anas americana*), American black duck (*Anas rubripes*), gadwall (*Anas strepera*), mallard (*Anas platyrhynchos*), redhead (*Aythya americana*), common goldeneye (*Bucephala clangula*), and hooded merganser (*Lophodytes cucullatus*). Also found in the river are common and red-breasted merganser (*Mergus merganser* and *M. serrator*, respectively), and greater and lesser scaup (*Aythya marila* and *A. affinis*, respectively). Mute swans (*Cygnus olor*) also nest and winter within the Thames River habitats.

Several species of gull and tern are highly likely to utilize open water areas for feeding and rafting. Representative species include laughing (*Leucophaeus atricilla*), ring-billed (*Larus delawarensis*), herring (*Larus smithsonianus*), and great black-backed (*Larus marinus*) gulls and common tern (*Sterna hirundo*). Gulls will also use nearshore and intertidal areas in search for food and roosting/resting areas.

Osprey (*Pandion haliaetus*) are known to nest along the Thames River and use open water areas for fishing. No known osprey nests are located within or adjacent to the State Pier Facility site.

Per the CT DEEP Natural Diversity Data Base (NDDB) program, peregrine falcons (*Falco peregrinus*) have nested on the Gold Star Bridge, located immediately north of the State Pier Facility site. This species may hunt for passerine birds, gulls, ducks, and pigeons within the State Pier Facility site.

2.8.2 Sea Turtles

Four species of marine sea turtles are known to occur in LIS off the coast of Connecticut (CT DEEP, 2011⁹). These species include the leatherback (*Dermochelys coriacea*), Kemp's ridley (*Lepidochelys kempii*), green (*Chelonia mydas*), and loggerhead (*Caretta caretta*) sea turtles. All sea turtles are protected under federal and state statutes.

Sea turtles visit Connecticut's estuarine and marine waters in early summer as water temperatures rise and generally migrate south by mid-November in search of warmer waters (CT DEEP, 2015¹⁰). Sea turtles may utilize the Thames River estuary but are more likely to be found offshore in LIS.

2.8.3 Marine Mammals

Marine mammal sightings in Connecticut are a rare event (CT DEEP, 2015¹¹). However, several cetacean (whales, dolphins) and pinnipeds (seals) are known to occur and/or visit in the state.

⁸ USFWS. 1991. Final Report Northeast Coastal Study Areas Study: Significant Coastal Habitats of Southern New England and Portions of Long Island, New York. <https://nctc.fws.gov/resources/knowledge-resources/pubs5/necas/begin.htm>. Accessed March 28, 2019.

⁹ CT DEEP. 2011. Wildlife in Connecticut Notebook: Sea Turtles. Connecticut Wildlife. Volume 31, Number 6, 17-18. https://www.ct.gov/deep/lib/deep/wildlife/pdf_files/outreach/connecticut_wildlife_magazine/cwnd11.pdf#page=17. Accessed March 28, 2019.

¹⁰ CT DEEP. 2015. 2015 Connecticut Wildlife Action Plan. Prepared by Terwilliger Consulting, Inc. for Connecticut Department of Energy and Environmental Protection, Bureau of Natural Resources. Accessed March 28, 2019.

¹¹ Ibid.

Suitable habitat for these animals is not present within or adjacent to the State Pier Facility site and any occurrence of marine mammals is highly unlikely.

2.9 Connecticut-listed Species of Concern

A request for Natural Diversity Data Base (NDDDB) State Listed Species Review was initiated with CT DEEP in January 2019. NDDDB determination No. 201901490, issued March 19, 2019, indicated CT DEEP has extant records for State Threatened peregrine falcon and State Special Concern blueback herring that occur in close proximity to the State Pier Facility site¹². Additional coordination with CT NDDDB was completed in July, 2019, as detailed in Attachment D.

2.9.1 Peregrine Falcon

The peregrine falcon has adapted to life in urban settings and is associated with bridges and buildings for nesting and brood rearing purposes. The peregrine is Connecticut's largest falcon and can measure up to 20 inches in length. Adult peregrines are slate gray above and pale underneath with fine bars and spots of black; the bird has long pointed wings and a narrow tail. Young falcons have the same composite, but are browner overall with a darker belly. The peregrine falcon nesting season occurs between the months of April and June. Adult peregrines will actively and aggressively defend its nest site up to, and sometimes past, 75 yards.

To protect nesting peregrine falcons, the CT DEEP recommends construction be completed during non-nesting season months (July-May). Per the DEEP NDDDB, if work needs to be conducted during the nesting period, an ornithologist should evaluate and prepare a protection plan for the birds. All work must maintain a minimum buffer from an active nest. In the event that a nest is discovered during construction activities, all work should stop immediately and information regarding the nest should be reported to CT DEEP for further guidance.

As noted above, peregrine falcons have nested on the Gold Star Bridge, located immediately north of the State Pier Facility. Additional detail pertaining to CT DEEP NDDDB correspondence and the proposed CPA Peregrine Falcon Protection Plan is presented in Attachment D.

2.9.2 Blueback Herring

The blueback herring is an anadromous fish species with a native range along the Atlantic coast of Canada and the United States from Nova Scotia to Florida. Blueback herring have an overall silvery appearance with a characteristic deep bluish-green back and deeply forked tail. Blueback herring primarily feeds on zooplankton and small fish, may reach a maximum length of approximately 16 inches, and live up to 8 years. Blueback herring live in marine systems and migrate to deep, swift moving freshwater rivers to spawn in the spring. During spawning, eggs are deposited over hard bottom substrate, where they stick to gravel, stones, rocks, and other objects. Depending on water temperature, eggs hatch within a few days and larvae quickly develop into juvenile fish which may migrate out to sea when about a month old.

Due to significant declines in anadromous populations of blueback herring and alewife, the Connecticut Department of Environmental Protection (CT DEP) issued an emergency fishery closure in April 2002, which remains in effect in 2019. Potential causes of the declines to the

¹² McKay, D.M. 2019. NDDDB Determination No.: 201901490. CT DEEP Environmental Analyst 3 letter correspondence to R.E. Couch of Martinez Courh & Associates, LLC. March 19, 2019.

fishery include several factors such as loss of spawning habitat, impediments to migration, fishing, and predation due to the recovering striped bass (*Morone saxatilis*) population.

2.10 Federally-listed Species of Concern

The U.S. Fish and Wildlife Service (USFWS) was consulted to identify any threatened, endangered, proposed and candidate species as well as proposed and final designated critical habitat that may occur within the project area pursuant to Section 7(c) of the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 *et seq.*). The Information for Planning and Consultation (IPaC) report generated from the query resulted in the identification of three federally-listed species that may occur within the State Pier Facility site, and are discussed below. No proposed or final critical habitats were identified within the State Pier Facility site.

2.10.1 Northern Long-eared Bat

The Northern long-eared bat (*Myotis septentrionalis*) is listed as a threatened species under the federal ESA and an endangered species under the Connecticut ESA. It is a medium-sized insectivorous bat about 3-3.7 inches from head to tail with a wingspan of 9-10 inches and brown fur. As its name suggests, its distinguishing characteristic is long ears. As with most insectivorous North American bats, the Northern long-eared bat forages on flying insects using echolocation.

Northern long-eared bats spend winter hibernating in caves, mines, and tunnels, typically those with large passages, relatively constant and cool temperatures, high humidity, and no air currents¹³. Individuals often attach to hibernaculum ceilings in small crevices, drill holes, or other sites.

During the summer, Northern long-eared bats roost singly or in colonies underneath bark in cavities or crevices of live and dead trees. Maternity colonies generally consist of 30 to 60 females and young utilizing trees or snags with cavities or loose bark in upland forests. Females give birth to a single pup in early summer; the young are ready to fly within three weeks. Males and non-reproductive females may roost and forage within areas adjacent to maternity colonies, but may also be solitary. Northern long-eared bats may utilize man-made structures such as barns and sheds as daytime roosts.

According to the CT DEEP, the City of New London is not an area which supports any known Northern long-eared bat hibernacula (CT DEEP, 2016¹⁴). In addition, no suitable summer roost trees or maternity trees exist within or adjacent to the State Pier Facility site. Accordingly, Northern long-eared bats are unlikely to utilize the State Pier Facility site for roosting or maternity purposes.

2.10.2 Roseate Tern

The roseate tern (*Sterna dougallii dougallii*) is listed as an endangered species under both the federal ESA and Connecticut ESA. The roseate tern is a medium-sized white and light gray-backed tern with a black bill (has a reddish base), black head cap, orange feet and legs, and deeply forked tail. During the breeding season, the amount of red/pink at the base of the bill

¹³ USFWS. 2013. 2 October 2013. 12-month finding on a petition to list the eastern small-footed bat and the northern long-eared bat as endangered or threatened species; listing the northern long-eared bat as an endangered species. Federal Register 78(191):61046-61080.

¹⁴ http://www.ct.gov/deep/lib/deep/endangered_species/images/nleb_approved2_16.pdf. Accessed 8-26-2019.

increases and a pink hue may be visible on the bird's breast. The roseate tern inhabits saltwater coastlines and feeds almost exclusively on small fish.

The northern population of roseate terns nests in colonies on sand/gravel beaches or pebbly/rocky offshore islands along the Atlantic coast from Nova Scotia to Long Island. Roseate terns arrive from their tropical wintering grounds to breeding areas in Connecticut in late April and May. Eggs are laid in shallow scrapes and sometimes lined with dried grasses. Chicks hatch following an incubation period of 23-24 days and young birds subsequently fledge within 26-30 days of hatching. The third largest roseate tern colony in North America exists in Connecticut at Falkner Island, which is located in LIS approximately 30 miles southwest of New London. Several small islands in the New London area were occupied by roseate terns in the 1970s¹⁵. A review of the eBird database indicates several sightings of roseate terns in New London Harbor in the late spring and summer months (May through September) of recent years¹⁶.

No potential nesting habitat is located within the State Pier Facility site work areas. Sightings of roseate terns near the State Pier Facility site can be expected, as this species is highly mobile and individuals will follow and hunt schools of small fish in estuarine waters.

2.10.3 Small Whorled Pogonia

The small whorled pogonia (*Isotria medeoloides*) is listed as a threatened species under the federal ESA and an endangered species under the Connecticut ESA. The small whorled pogonia is a grayish-green orchid that grows about 10 inches tall when in flower and about 14 inches tall when in fruit. It has a whorl of five or six leaves near the top of the stem below its flower.

The small whorled pogonia grows in older hardwood stands with an open understory on acidic soils with a thick layer of dead leaves. It is often found on slopes near small streams.

No suitable habitat for the small whorled pogonia exists within the State Pier Facility site. Accordingly, this plant is highly unlikely to be present on the State Pier Facility site.

¹⁵ CT DEP. 1999. Wildlife in Connecticut Endangered and Threatened Species Series Roseate Tern (*Sterna dougallii*). https://www.ct.gov/deep/lib/deep/wildlife/pdf_files/outreach/fact_sheets/rtern.pdf. Accessed March 28, 2019.

¹⁶ <https://ebird.org/species/roster/US-CT-011>. Accessed 08-26-2019.

Part V.1. Describe the proposed regulated work and activities including construction methodology and sequencing and plans to minimize erosion and sedimentation.

The proposed work activities, including construction methodologies, sequencing and plans to minimize erosion and sedimentation are presented below. Additional detail regarding these proposed activities and associated environmental Best Management Practices (BMPs) are included in the Attachment A plans.

Northeast Bulkhead Oversheeting

The proposed Northeast Bulkhead oversheeting work involves the installation of a heavier, anchored sheet pile wall and tie back system directly outshore of existing Northeast Bulkhead. The bulkhead oversheeting and related upland strengthening work at the Northeast Quay (which is understood to be outside of CT DEEP COP jurisdiction), is proposed to achieve both regular required facility maintenance and to accommodate future, heavier loads anticipated at the facility.

Installation of a Z-pile type wall (typically AZ sheets) driven on the riverward side of the existing sheets is anticipated. Wales would be installed on the shore-side of the sheeting and the new wall would be tied back to an anchor system and backfilled. Flowable fill or gravel would be poured between the existing sheeting and the proposed sheets to create a robust stiff bulkhead that can facilitate future heavy lift operations. Though the selected contractor would determine final means and methods, the following general installation sequence is anticipated:

- Site preparations would be conducted, including the installation of sedimentation and erosion controls.
- The new Z sheets are vibrated fully into place. SSP is driven outshore of the existing bulkhead.
- The upland area would be prepared for the anchor system:
 - o Associated wales are installed at the bulkhead itself.
 - o Deadman installation occurs in the upland areas, approximately 50 feet inland.
 - Deadman is installed either via excavation/placement or additional SSP is driven in the uplands as the deadman.
 - o Excavate in the upland areas to the tie-rod elevations.
 - Tie rod elevations are located just above the site's mean higher high water (MHHW) elevation.
 - Upland excavation work would be completed either all at once (approximately 60' by approximately 650') or excavations would be completed in sections.
- Piles would be driven in uplands for a pile supported platform.
- Tierods and anchors will be installed and attached to deadman to provide lateral support for the bulkhead.
- The anchor rods are then tensioned and buried beneath fill.
- Flowable fill or crushed gravel is then poured between the existing and new bulkhead walls
- A concrete platform is poured
- Dense graded aggregate topping is installed
- Appropriate marine furniture is installed atop the bulkhead installation.
- Sedimentation and Erosion controls would be removed.

This work will be completed using a hydraulic vibratory hammer attached to a crane. Large excavators and earth moving and grading equipment will also be used.

Though the nature of this in-water work is relatively limited (i.e. only vibrating sheeting into place), floating containment booms will be installed prior to sheet pile advancement. Upland backfill (quay compaction materials) and placement of flowable fill or gravel between the piers would involve construction operations from the land-side. Measures will be taken to ensure that the flowable fill or gravel is placed in a contained and controlled manner, in order to avoid accidental discharge to aquatic resource areas. Straw wattles, silt curtains or similar would be installed in with the reference to the State of Connecticut 2002 sedimentation and erosion control criteria, during on-land construction activities.

The proposed Northeast Bulkhead Oversheeting installation would permanently affect approximately 1,855 SF of Nearshore Waters and Developed Shorefront via the placement of the new bulkhead seaward of the existing bulkhead.

Northeast Annex Removal

The proposed work activities include the demolition and removal of the existing Northeast Annex (i.e. the currently condemned pile supported platform located at western end of Northeast Bulkhead). As noted in recent inspection reports, the existing Northeast Annex structure is in poor condition. The Northeast Annex requires removal due to the identified structural deficiencies.

This concrete deck structure and associated appurtenances (such as concrete barrier and ship bollards) will be removed and the timber piles cutoff at the mudline. Surrounding and abutting structures and pavement will not be disturbed, nor removed. No site excavation or soil disturbance will be necessary.

This work will be completed using cranes, excavators, and hydraulic pile cutters working from land and/or from barges. No blasting or explosive equipment would be used. Measures will be taken to ensure that materials generated during structure demolition are removed in a contained and controlled manner, in order to avoid accidental discharge to aquatic resource areas. Materials generated during construction would be properly disposed of offsite. Though the nature of this in-water work is relatively limited (i.e. only cutting and removing the existing piles), floating containment booms will be installed prior to completion of construction activities.

No permanent adverse impacts to aquatic resource areas are anticipated in association with this proposed structure removal work.

Mooring Dolphin Removal

To address the identified structural deficiencies and in order to facilitate future access to the Northeast Bulkhead, the four existing mooring dolphins will be demolished. The concrete caps will be cut off using hydraulic pile cutters. The caps will then be strapped and removed by a large barge mounted crane. The remaining sections of the piles will be cut off 2 feet below the mudline. Materials generated during construction would be properly disposed of offsite.

This work will be completed using cranes, excavators, and hydraulic pile cutters working from barges. No blasting or explosive equipment would be used. Measures will be taken to ensure that materials generated during structure demolition are removed in a contained and controlled manner, in order to avoid accidental discharge to aquatic resource areas. Though the nature of this in-water work is relatively limited (i.e. only cutting and removing the existing piles), floating booms will be installed prior to completion of construction activities.

No permanent adverse impacts to aquatic resource areas are anticipated in association with this proposed structure removal work.

Part V.4. Identify and evaluate the adverse environmental impacts associated with proposed work and mitigation measures to be employed.

Anticipated adverse impacts associated with the proposed work activities, and associated mitigation measures, are described below.

Northeast Bulkhead Oversheeting

As noted above, approximately 1,855 SF of Nearshore Waters and Developed Shorefront are anticipated to be permanently impacted via the placement of the new bulkhead oversheeting. No additional adverse impacts are anticipated beyond this encroachment seaward of the existing developed shorefront. As the area already represents a developed shorefront, no significant adverse impacts to pristine aquatic resource areas are anticipated.

As noted above, floating containment booms will be installed prior to sheet pile advancement. Upland fill (Northeast Quay backfill materials and materials to be placed between the sheeting) would be placed only from the land-side. Measures will be taken to ensure that the placement of fill is conducted in a contained and controlled manner, in order to avoid accidental discharge to aquatic resource areas. Straw wattles, silt curtains or similar would be installed with reference to the State of Connecticut 2002 sedimentation and erosion control design criteria, during on-land construction activities.

Northeast Annex Removal

As the proposed work will involve only the removal of existing derelict structures, no permanent adverse impacts to aquatic resource areas are anticipated. Measures will be taken to ensure that the over-water and in-water demolition and removal activities are conducted in a controlled manner in order to avoid accidental discharges to aquatic resource areas. Any debris that is generated will be contained, removed and properly disposed of offsite.

Though the nature of this in-water work is relatively limited (i.e. only cutting and removing the existing piles), floating containment booms will be installed prior to completion of construction activities to further ensure avoidance of potential impacts to resource areas.

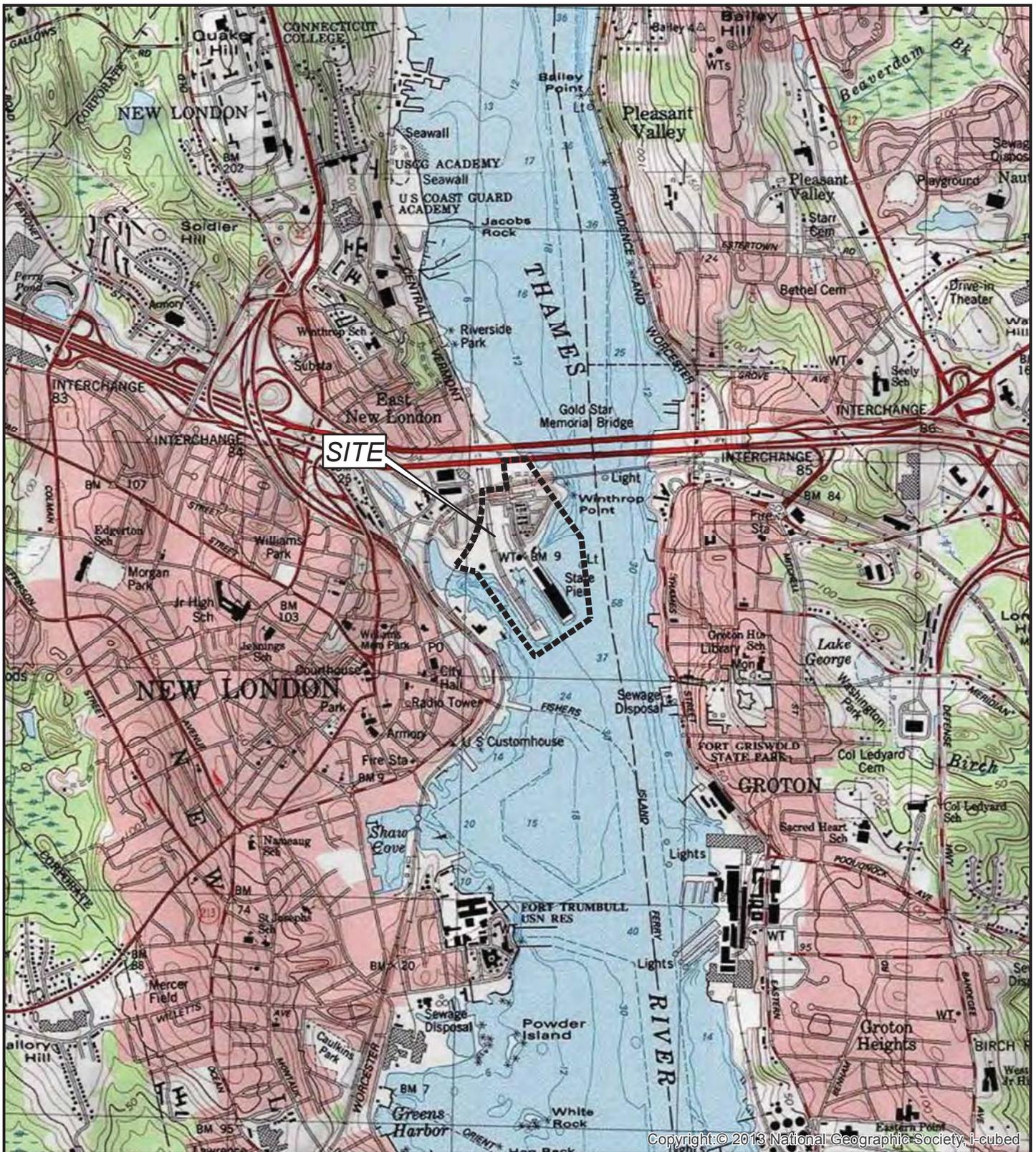
Mooring Dolphin Removal

As the proposed work will involve only the removal of existing derelict structures, no permanent adverse impacts to aquatic resource areas are anticipated. Measures will be taken to ensure that the over-water and in-water demolition and removal activities are conducted in a controlled manner and that any generated debris is properly contained, removed and properly disposed of offsite, in order to avoid accidental discharges to aquatic resource areas. No blasting or explosive equipment would be used as part of this demolition work.

Though the nature of this in-water work is relatively limited (i.e. only cutting and removing the existing piles), floating containment booms will be installed prior to completion of construction activities to further ensure avoidance of potential impacts to resource areas.

CERTIFICATE OF PERMISSION APPLICATION
State Pier Facility, New London, CT
Connecticut Port Authority

Attachment A – Project Plans



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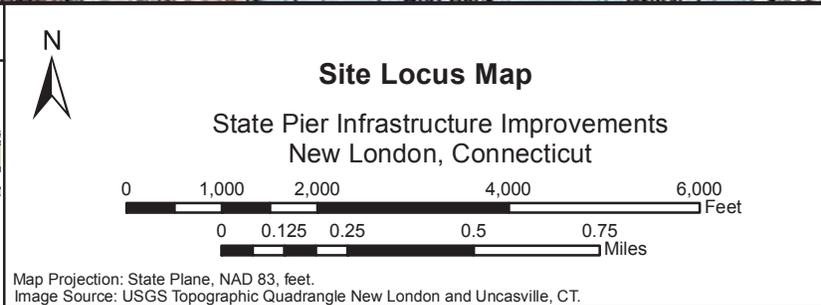


Figure 1

4/8/2019

Proj. #: 60579714



- Legend**
-  Tidal Wetland
 -  Beach
 -  Rocky Shorefront
 -  Developed Shorefront

Existing Coastal Resource Areas

State Pier Infrastructure Improvements
New London, Connecticut

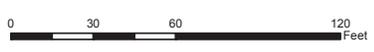


Figure 2

Sheet 1 of 3

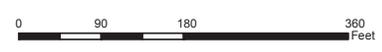
5/1/2019



- Legend**
-  Tidal Wetland
 -  Beach
 -  Rocky Shorefront
 -  Developed Shorefront

Existing Coastal Resource Areas

State Pier Infrastructure Improvements
New London, Connecticut

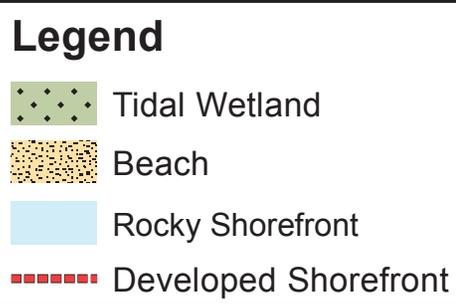


AECOM

Figure 2

Sheet 2 of 3

5/1/2019



Existing Coastal Resource Areas

State Pier Infrastructure Improvements
New London, Connecticut



Figure 2

Sheet 3 of 3

5/1/2019

Soil Map—State of Connecticut
(State Pier Infrastructure Improvements)



Map Scale: 1:8,700 if printed on A landscape (11" x 8.5") sheet.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut

Survey Area Data: Version 18, Dec 6, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

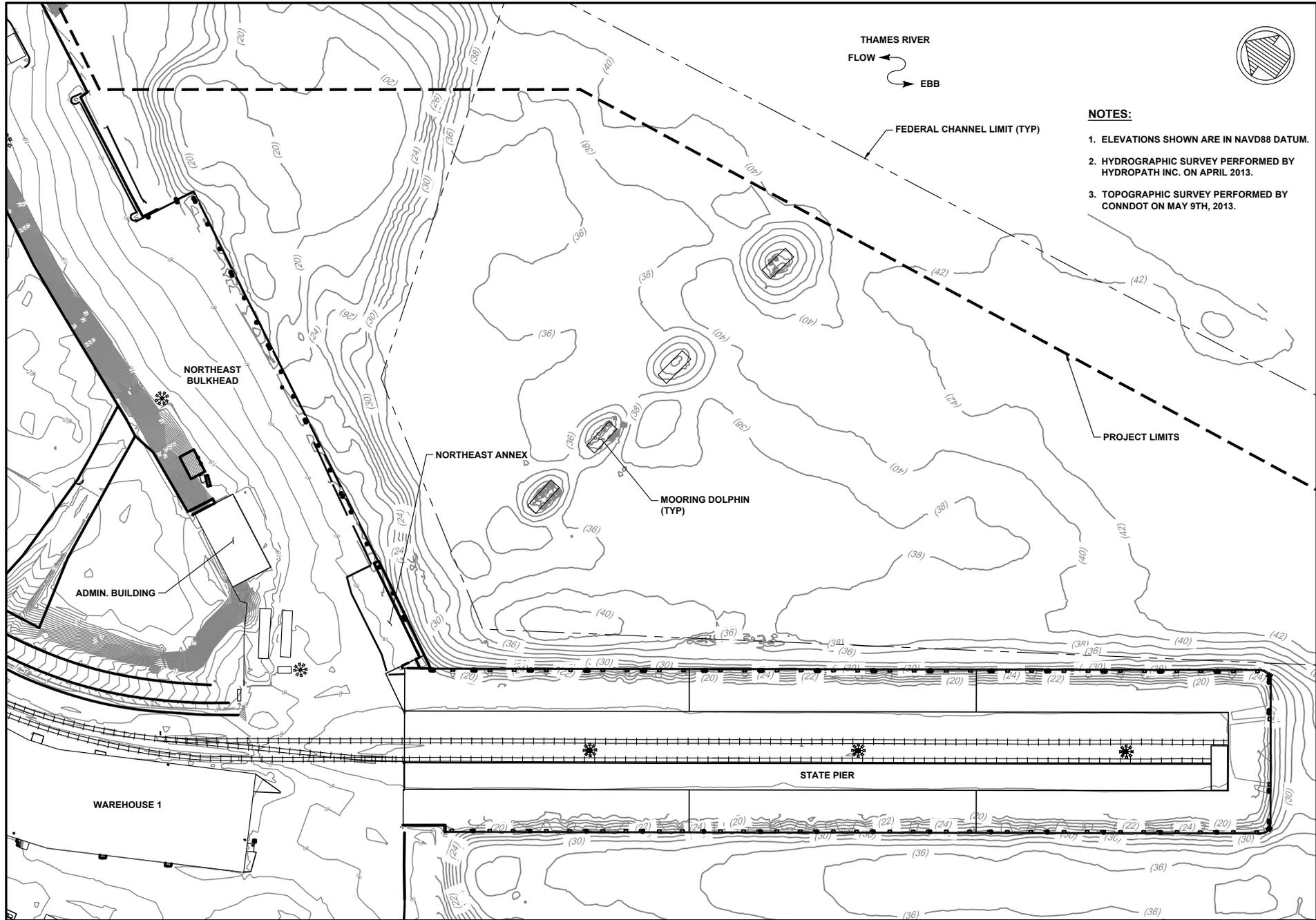
Date(s) aerial images were photographed: Mar 28, 2011—May 12, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
38C	Hinckley loamy sand, 3 to 15 percent slopes	4.1	1.1%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	12.5	3.2%
60D	Canton and Charlton soils, 15 to 25 percent slopes	0.4	0.1%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	4.5	1.1%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	4.2	1.1%
306	Udorthents-Urban land complex	152.6	39.0%
307	Urban land	70.4	18.0%
W	Water	142.6	36.4%
Totals for Area of Interest		391.4	100.0%

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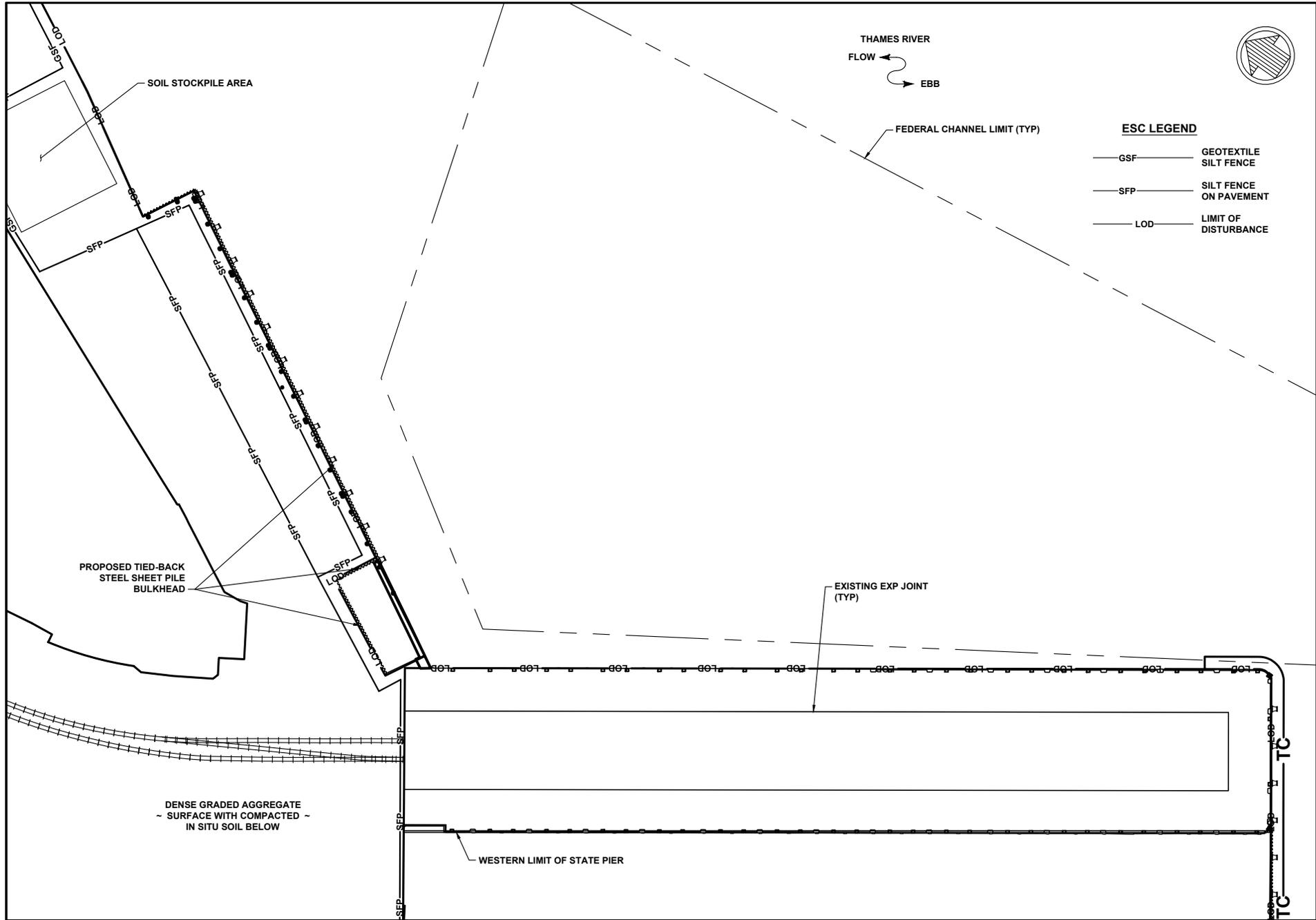
- NOTES:**
1. ELEVATIONS SHOWN ARE IN NAVD88 DATUM.
 2. HYDROGRAPHIC SURVEY PERFORMED BY HYDROPATH INC. ON APRIL 2013.
 3. TOPOGRAPHIC SURVEY PERFORMED BY CONNDOT ON MAY 9TH, 2013.



EXISTING TOPOGRAPHIC AND HYDROGRAPHIC CONDITIONS
STATE PIER FACILITY
 9/5/2019



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ESC LEGEND

— GSF —	GEOTEXTILE SILT FENCE
— SFP —	SILT FENCE ON PAVEMENT
— LOD —	LIMIT OF DISTURBANCE



EROSION SEDIMENT CONTROL PLAN
 STATE PIER FACILITY
 9/5/2019



GENERAL NOTES

1. ALL FEDERAL, STATE, AND LOCAL SAFETY REGULATIONS ARE TO BE STRICTLY FOLLOWED.
2. THE CONTRACTOR SHALL ABIDE BY ALL APPLICABLE FEDERAL, STATE, AND LOCAL ENVIRONMENTAL PROTECTION STANDARDS, LAWS AND REGULATIONS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE CONSTRUCTION SITE AND THE AREAS OF WORK WHILE PERFORMING THE WORK OF THIS CONTRACT. CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE CONSTRUCTION SITE ON A DAILY BASIS. NO BURNING OF DEBRIS SHALL BE PERMITTED.
4. DURING ALL PHASES OF THE WORK ALL PRECAUTIONS SHALL BE TAKEN AS NECESSARY OR AS REQUIRED TO PERMANENTLY PREVENT CONTAMINATED WATER, VEHICLE FLUIDS, CONSTRUCTION DEBRIS, AND ANY OTHER CONTAMINANT FROM ENTERING THE WATERWAY.
5. CONTRACTOR SHALL INSTALL A FLOATING BOOM SYSTEM THAT FULLY ENCLOSES THE WORK AREA. THIS BOOM SHALL BE ANCHORED IN PLACE OR ATTACHED TO A FIXED STRUCTURE. THIS BOOM SHALL BE CAPABLE OF COLLECTING ANY FLOATING DEBRIS GENERATED DURING CONSTRUCTION ACTIVITIES. DEBRIS SHALL BE COLLECTED AND DISPOSED OF FROM THIS BOOM ON A DAILY BASIS.

EROSION AND SEDIMENT CONTROL NOTES

GENERAL EROSION CONTROL NOTES

1. SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN CONFORMANCE WITH THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION (CT DEEP) "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENTATION CONTROL" DEEP BULLETIN NO. 34, LATEST REVISION, AND THE CONNECTICUT DEPARTMENT OF TRANSPORTATION (CTDOT) "2004 CONNECTICUT STORM WATER QUALITY MANUAL", LATEST REVISION, AND THE CTDOT FORM 817.
2. INSTALL ALL EROSION CONTROL MEASURES SHOWN, SPECIFIED OR REQUIRED BY THE ENGINEER PRIOR TO ANY CONSTRUCTION MEASURES UNTIL FINAL SURFACE TREATMENTS ARE IN PLACE AND/OR UNTIL ALL PERMANENT VEGETATION IS ESTABLISHED.
3. MARK WORK LIMIT LINE(S) PRIOR TO STARTING WORK. DO NOT DISTURB VEGETATION OR TOPSOIL BEYOND THE PROPOSED LIMIT LINE. COORDINATE WITH THE ENGINEER FOR THE LOCATIONS FOR THE TEMPORARY STOCKPILING OF TOPSOIL DURING CONSTRUCTION.
4. FINE GRADE AND IMMEDIATELY SEED ALL SIDE SLOPES, SHOULDER AREAS, AND DISTURBED VEGETATED AREAS. ALL GRADING TO BE A MAXIMUM SLOPE OF 2:1, COMPACTED, AND STABILIZED. SLOPES GREATER THAN 2:1 TO RECEIVE EROSION CONTROL BLANKET.
5. REMOVE ALL SEDIMENT TRACKED ON PUBLIC RIGHT-OF-WAYS AT THE END OF EACH DAY.
6. LAND DISTURBANCE SHALL BE KEPT TO A MINIMUM NECESSARY FOR CONSTRUCTION.
7. ALL CATCH BASINS SHALL BE PROTECTED WITH SILT SACKS, HAY BALE RINGS, OR SILT FENCE THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL ALL DISTURBED AREAS ARE THOROUGHLY STABILIZED.
8. WHENEVER POSSIBLE, EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION, ADDITIONAL CONTROL MEASURES SHALL BE INSTALLED DURING CONSTRUCTION.

9. THE CONTRACTOR SHALL USE APPROVED METHODS/MATERIALS FOR PREVENTING THE BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES ONTO ADJACENT PROPERTIES AND SITE AREAS.
10. AFTER CONSTRUCTION, EROSION AND SEDIMENTATION WITHIN PROJECT LIMITS WILL BE MANAGED BY FINISHED TERMINAL SURFACE.
11. MINIMIZING WIND EROSION AND CONTROLLING DUST WILL BE ACCOMPLISHED BY ONE OR MORE OF THE FOLLOWING METHODS:
 - A. COVERING 30% OR MORE OF THE SOIL SURFACE WITH NON-ERODIBLE MATERIAL.
 - B. ROUGHENING THE SOIL TO PRODUCE RIDGES PERPENDICULAR TO THE PREVAILING WIND.
 - C. FREQUENT WATERING OF EXCAVATION AND FILL AREAS.
12. THE CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACK OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 1-3" OF STONE, AS CONDITIONS DEMAND. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLE ONTO PUBLIC ROADWAY OR INTO STORM DRAIN MUST BE REMOVED IMMEDIATELY.
13. CONTRACTOR SHALL INSPECT CONTROL MEASURES AT THE END OF EACH WORKING DAY TO ENSURE MEASURES ARE FUNCTIONING PROPERLY.
14. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE AS DIRECTED BY THE ON SITE INSPECTOR OR THE CIVIL ENGINEER.
15. FAILURE TO INSTALL, OPERATE, OR MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE JOB UNTIL SUCH MEASURES ARE CORRECTED BACK TO THE APPROVED EROSION CONTROL PLANS.
16. THE SITE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTENANCE OF ALL EROSION CONTROL MEASURES INCLUDING REPLACING OR REPAIRING ANY DAMAGED DEVICES DUE TO ANY CONSTRUCTION ACTIVITY BY OTHERS.
17. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION ACTIVITY AND MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
18. SEDIMENT AND EROSION CONTROL MEASURES SHOULD BE CHECKED AFTER EACH RAIN EVENT. EACH DEVICE IS TO BE MAINTAINED OR REPLACED IF SEDIMENT ACCUMULATION HAS REACHED ONE HALF THE CAPACITY OF THE DEVICE. ADDITIONAL DEVICES MUST BE INSTALLED IF NEW CHANNELS HAVE DEVELOPED.

INITIAL PHASE EROSION CONTROL NOTES

1. PRIOR TO THE LAND DISTURBING CONSTRUCTION, THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE OWNER.
2. THE CONTRACTOR SHALL REVIEW THE PROJECT SEQUENCE SHOWN ON THE PLANS. THE CONTRACTOR SHALL MAINTAIN CAREFUL SCHEDULING AND PERFORMANCE TO ENSURE THAT LAND STRIPPED OF ITS NATURAL COVER IS EXPOSED ONLY IN SMALL QUANTITIES.

3. A COPY OF THE APPROVED LAND DISTURBANCE PLAN SHALL BE PRESENT ON THE SITE AT ALL TIMES.
4. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND-DISTURBING ACTIVITIES.
5. PRIOR TO COMMENCING LAND DISTURBANCE ACTIVITY, THE LIMITS OF LAND DISTURBANCE SHALL BE CLEARLY AND ACCURATELY DEMARCATED WITH STAKES, RIBBONS, OR OTHER APPROPRIATE MEANS. THE LOCATION AND EXTENT OF ALL AUTHORIZED LAND DISTURBANCE ACTIVITY SHALL BE DEMARCATED FOR THE DURATION OF THE CONSTRUCTION ACTIVITY. NO LAND DISTURBANCE SHALL OCCUR OUTSIDE THE APPROVED LIMITS INDICATED ON THE APPROVED PLANS.
6. PRIOR TO ANY OTHER CONSTRUCTION, A CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AT EACH POINT OF ENTRY TO OR EXIT FROM THE SITE OR ONTO ANY PUBLIC ROADWAY.
7. THE FOLLOWING INITIAL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED PRIOR TO ANY OTHER CONSTRUCTION ACTIVITY.
 - A. THE CONSTRUCTION ENTRANCE, CONSISTING OF A MINIMUM PAD SIZE OF 12 FT BY 50 FT WITH A MINIMUM OF 6" THICK STONE. THE STONE SIZE SHOULD CONSIST OF COURSE AGGREGATE BETWEEN 1-1/2" & 3-1/2" IN DIAMETER AND OVERLAIN ON A GEOTEXTILE UNDERLINER. THE GEOTEXTILE UNDERLINER SHALL MEET THE REQUIREMENTS OF AASHTO M288-96, SECTION 7.3 SEPARATION REQUIREMENTS. (ROCK INSTALLATION TO COINCIDE WITH DEMOLITION)
 - B. IMMEDIATELY AFTER THE ESTABLISHMENT OF CONSTRUCTION ENTRANCE, ALL PERIMETER EROSION CONTROL AND STORM WATER MANAGEMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE INITIAL EROSION CONTROL PLAN.
 - C. GEOTEXTILE SILT FENCE SHOULD BE INSTALLED AT THE PERIMETER OF THE DISTURBED AREA IF CONDITIONS WARRANT INSTALLATION OR SHOWN ON THE PLANS. THE GEOTEXTILE SILT FENCE SHOULD BE PLACED IN ACCORDANCE WITH THE CONNECTICUT EROSION & SEDIMENTATION CONTROL GUIDELINES. THE GEOTEXTILE SILT FENCE SHOULD BE KEPT ERECT AT ALL TIMES AND REPAIRED WHEN REQUESTED BY THE SITE INSPECTOR OR THE PROJECT DESIGN PROFESSIONAL OF RECORD. SILT SHOULD BE REMOVED WHEN ACCUMULATION REACHES 1/2 HEIGHT OF THE BARRIER. THE PERIMETER SILT FENCE SHOULD BE INSPECTED DAILY FOR ANY FAILURES. ANY FAILURES OF SAID FENCING SHOULD BE REPAIRED IMMEDIATELY.
 - D. INLET SEDIMENT PROTECTION MEASURES SHALL BE INSTALLED ON ALL EXISTING STORM STRUCTURES AS SHOWN ON THE PLAN, SEE SEPARATE DETAILS FOR SPECIFICS ON TYPE OF INLET PROTECTION SPECIFIED.
8. AFTER INSTALLATION OF INITIAL EROSION CONTROL MEASURES THE SITE CONTRACTOR SHALL SCHEDULE AN INSPECTION BY THE PROJECT RESIDENT ENGINEER. NO OTHER CONSTRUCTION ACTIVITIES SHALL OCCUR UNTIL THE PROJECT RESIDENT ENGINEER APPROVES THE INSTALLATION OF SAID EROSION CONTROL MEASURES. IF UNFORESEEN CONDITIONS EXIST IN THE FIELD THAT WARRANT ADDITIONAL EROSION CONTROL MEASURES, THE CONTRACTOR MUST CONSTRUCT ANY ADDITIONAL EROSION CONTROL DEVICES DEEMED NECESSARY BY THE SITE INSPECTION.
9. AFTER APPROVAL OF THE INITIAL EROSION CONTROL INSTALLATION, THE CONTRACTOR MAY PROCEED WITH CONSTRUCTION, CLEARING AND GRUBBING ACTIVITIES.

10. NO BURN OR BURY PITS SHALL BE PERMITTED ON THE CONSTRUCTION SITE.

GRADING AND FINAL PHASE EROSION CONTROL NOTES

1. DURING CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN CAREFUL SCHEDULING AND PERFORMANCE TO ENSURE THAT LAND STRIPPED OF ITS NATURAL GROUND COVER IS EXPOSED ONLY IN SMALL QUANTITIES AND THEREFORE LIMITED DURATIONS, BEFORE PERMANENT EROSION PROTECTION IS ESTABLISHED.
2. SEDIMENT SHALL NOT BE WASHED INTO INLETS. IT SHALL BE REMOVED FROM THE SEDIMENT TRAPS AND DISPOSED OF AND STABILIZED SO THAT IT WILL NOT ENTER THE INLETS AGAIN.
3. EROSION CONTROL DEVICES SHALL BE INSTALLED IMMEDIATELY AFTER GROUND DISTURBANCE OCCURS. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE APPROVED PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE PROPOSED DRAINAGE PATTERNS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE DESIGN PROFESSIONAL IMMEDIATELY.
4. CUT AND FILL SLOPES ARE TO BE AS SHOWN ON PLAN BUT SHALL NOT EXCEED "2H:1V"
5. THE FOLLOWING EROSION CONTROL MEASURES SHALL BE IMPLEMENTED DURING THE PRELIMINARY GRADING PHASE OF CONSTRUCTION.
 - A. GEOTEXTILE SILT FENCE SHALL BE PLACED AS SHOWN ON THE PLANS AND PER THE DETAIL SHOWN ON SHEET 6.
 - B. INLET SEDIMENT PROTECTION MEASURES SHALL BE INSTALLED ON ALL STORM STRUCTURES AS THEY ARE CONSTRUCTED/MODIFIED. SEE PLAN VIEW FOR SPECIFIC TYPE AND SEPARATE DETAILS FOR ADDITIONAL INFORMATION ON TYPE OF INLET PROTECTION SPECIFIED.
 - C. ALL DRAINAGE SWALES SHALL BE APPLIED WITH VEGETATIVE COVER AS SOON AS FINAL GRADE IS ACHIEVED.
 - D. ALL GRADED AREAS SHALL BE APPLIED WITH VEGETATIVE COVER AS SOON AS FINAL GRADE IS ACHIEVED.
6. THE FOLLOWING EROSION CONTROL MEASURES SHALL BE IMPLEMENTED DURING THE FINAL EROSION CONTROL PHASE OF CONSTRUCTION.
 - A. ALL GEOTEXTILE SILT FENCE SHALL BE REMOVED AT PROJECT COMPLETION.
 - B. INLET SEDIMENT PROTECTION MEASURES SHALL BE REMOVED.
 - C. ALL PERMANENT VEGETATIVE COVER WILL BE FULLY ESTABLISHED.
 - D. CONSTRUCTION ENTRANCE WILL BE ABANDONED AT PROJECT COMPLETION.
7. UPON COMPLETION OF THE PROJECT AND RECEIPT OF CERTIFICATE OF OCCUPANCY, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AND DISPOSE OF THEM UNLESS NOTED ON PLANS.

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EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN (ESPC)

SANITARY WASTES

CONTROLS

EROSION AND SEDIMENT CONTROLS

1. ALL PERIMETER GEOTEXTILE SILT FENCES AND CONSTRUCTION EXITS SHALL BE IN PLACE PRIOR TO ANY LAND DISTURBING ACTIVITIES.
2. WHEN CONSTRUCTION ACTIVITIES HAVE CEASED IN AN AREA, THAT AREA SHALL BE STABILIZED WITHIN 14 DAYS.

OTHER CONTROLS

NO WASTE WILL BE DISPOSED OF INTO STORMWATER INLETS OR WATERS OF THE STATE.

WASTE MATERIALS

1. ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL MEET ALL SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED A MINIMUM OF ONCE PER WEEK OR MORE OFTEN IF NECESSARY AND TRASH WILL BE HAULED AS REQUIRED BY LOCAL REGULATIONS. NO CONSTRUCTION WASTE WILL BE BURIED ON-SITE.
2. ALL PERSONNEL WILL BE INSTRUCTED ON PROPER PROCEDURES FOR WASTE DISPOSAL. A NOTICE STATING THESE PRACTICES WILL BE POSTED AT THE JOBSITE AND THE CONTRACTOR WILL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.

HAZARDOUS WASTE

1. ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL STATE, AND/OR FEDERAL REGULATIONS AND BY THE MANUFACTURER OF SUCH PRODUCTS. THE JOB SITE SUPERINTENDENT, WHO WILL ALSO BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED, WILL INSTRUCT SITE PERSONNEL IN THESE PRACTICES. MATERIAL SAFETY DATA SHEETS (MSDS'S) FOR EACH SUBSTANCE WITH HAZARDOUS PROPERTIES THAT IS USED ON THE JOB SITE WILL BE OBTAINED AND USED FOR THE PROPER MANAGEMENT OF POTENTIAL WASTES THAT MAY RESULT FROM THESE PRODUCTS. AN MSDS WILL BE POSTED IN THE IMMEDIATE AREA WHERE SUCH PRODUCT IS STORED AND/OR USED AND ANOTHER COPY OF EACH MSDS WILL BE MAINTAINED IN THE ESPCP FILE AT THE JOB SITE CONSTRUCTION TRAILER OFFICE. EACH EMPLOYEE WHO MUST HANDLE A SUBSTANCE WITH HAZARDOUS PROPERTIES WILL BE INSTRUCTED ON THE USE OF MSDS SHEETS AND THE SPECIFIC INFORMATION IN THE APPLICABLE MSDS FOR THE PRODUCT HE/SHE IS USING, PARTICULARLY REGARDING SPILL CONTROL TECHNIQUES.
2. THE CONTRACTOR WILL IMPLEMENT THE SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN FOUND WITHIN THE ESPCP AND WILL TRAIN ALL PERSONNEL IN THE PROPER CLEANUP AND HANDLING OF SPILLED MATERIALS. NO SPILLED HAZARDOUS MATERIALS OR HAZARDOUS WASTES WILL BE ALLOWED TO COME IN CONTACT WITH STORMWATER DISCHARGES. IF SUCH CONTACT OCCURS, THE STORMWATER DISCHARGE WILL BE CONTAINED ON SITE UNTIL APPROPRIATE MEASURES IN COMPLIANCE WITH STATE AND FEDERAL REGULATIONS ARE TAKEN TO DISPOSE OF SUCH CONTAMINATED STORMWATER. IT SHALL BE THE RESPONSIBILITY OF THE JOB SITE SUPERINTENDENT TO PROPERLY TRAIN ALL PERSONNEL IN THE USE OF THE SPCC PLAN.

1. A MINIMUM OF ONE PORTABLE SANITARY UNIT WILL BE PROVIDED FOR EVERY TEN (10) WORKERS ON THE SITE. ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE SANITARY UNITS A MINIMUM OF ONE TIME PER WEEK BY A LICENSED PORTABLE FACILITY PROVIDER IN COMPLETE COMPLIANCE WITH LOCAL AND STATE REGULATIONS.
2. ALL SANITARY WASTE UNITS WILL BE LOCATED IN AN AREA WHERE THE LIKELIHOOD OF THE UNIT CONTRIBUTING TO STORMWATER DISCHARGE IS NEGLIGIBLE. ADDITIONAL CONTAINMENT BMPs MUST BE IMPLEMENTED, SUCH AS GRAVEL BAGS OR SPECIALLY DESIGNED PLASTIC SKID CONTAINERS AROUND THE BASE, TO PREVENT WASTES FROM CONTRIBUTING TO STORMWATER DISCHARGES. THE LOCATION OF THE SANITARY WASTES UNITS MUST BE IDENTIFIED ON THE EROSION CONTROL PLAN GRADING PHASE BY THE CONTRACTOR ONCE THE LOCATIONS HAVE BEEN DETERMINED.

OFFSITE VEHICLE TRACKING

A STABILIZED CONSTRUCTION ENTRANCE IS TO BE PROVIDED TO HELP REDUCE VEHICLE TRACKING OF SEDIMENT. SEE SHEET 4 FOR CONSTRUCTION ENTRANCE DETAILS. THE PAVED STREET ADJACENT TO THE SITE EXIT WILL BE INSPECTED DAILY FOR TRACKING OF MUD, DIRT OR ROCK. DUMP TRUCKS HAULING MATERIAL FROM THE CONSTRUCTION SITE WILL BE COVERED WITH A TARPULIN.

INVENTORY FOR POLLUTION PREVENTION PLAN

THE FOLLOWING MATERIALS ARE EXPECTED ON-SITE DURING CONSTRUCTION: CONCRETE PRODUCTS, ASPHALT, PETROLEUM BASED FUELS AND LUBRICANTS FOR EQUIPMENT, TAR, METAL REINFORCING, PAINTS/FINISHES, PAINT SOLVENTS, LUMBER, CRUSHED STONE, PLASTIC, METAL, AND CONCRETE PIPES.

SPILL PREVENTION

PRACTICES SUCH AS GOOD HOUSEKEEPING, PROPER HANDLING OF HAZARDOUS PRODUCTS AND PROPER SPILL CONTROL PRACTICES WILL BE FOLLOWED TO REDUCE THE RISK OF SPILLS AND SPILLS FROM DISCHARGING INTO STORMWATER RUNOFF.

GOOD HOUSEKEEPING

1. QUANTITIES OF PRODUCTS STORED ON-SITE WILL BE LIMITED TO THE AMOUNT NEEDED FOR THE JOB.
2. PRODUCTS AND MATERIALS WILL BE STORED IN A NEAT, ORDERLY MANNER IN APPROPRIATE CONTAINERS PROTECTED FROM RAINFALL, WHERE POSSIBLE.
3. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH MANUFACTURER LABELS LEGIBLE AND VISIBLE.
4. PRODUCTS MIXING, DISPOSAL AND DISPOSAL OF PRODUCT CONTAINERS WILL BE ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
5. THE CONTRACTOR WILL INSPECT SUCH MATERIALS TO ENSURE PROPER USE, STORAGE AND DISPOSAL.

PRODUCT SPECIFIC PRACTICES

1. PETROLEUM BASED PRODUCTS - CONTAINERS FOR PRODUCTS SUCH AS FUELS, LUBRICANTS AND TARS WILL BE INSPECTED DAILY FOR LEAKS AND SPILLS. THIS INCLUDES ON-SITE VEHICLE AND MACHINERY DAILY INSPECTION AND REGULAR PREVENTIVE MAINTENANCE OF SUCH EQUIPMENT. EQUIPMENT MAINTENANCE AREAS WILL BE LOCATED AWAY FROM STATE WATER, NATURAL DRAINS AND STORMWATER DRAINAGE INLETS. IN ADDITION, TEMPORARY FUELING TANKS SHALL HAVE A SECONDARY CONTAINMENT LINER TO PREVENT/MINIMIZE SITE CONTAMINATION. DISCHARGE OF OILS, FUELS AND LUBRICANTS IS PROHIBITED. PROPER DISPOSAL METHODS WILL INCLUDE COLLECTION IN A SUITABLE CONTAINER AND DISPOSAL AS REQUIRED BY LOCAL AND STATE REGULATIONS.
2. PAINTS/FINISHES/SOLVENTS - ALL PRODUCTS WILL BE STORED IN TIGHTLY SEALED ORIGINAL CONTAINERS WHEN NOT IN USE. EXCESS PRODUCT WILL NOT BE DISCHARGED TO THE STORMWATER COLLECTION SYSTEM. EXCESS PRODUCT, MATERIALS USED WITH THESE PRODUCTS AND PRODUCT CONTAINERS WILL BE DISPOSED OF ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
3. CONCRETE TRUCK WASHING - NO CONCRETE TRUCKS WILL BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON THE OWNER'S PROPERTY.
4. FERTILIZER/HERBICIDES - THESE PRODUCTS WILL BE APPLIED AT RATES THAT DO NOT EXCEED THAT MANUFACTURER'S SPECIFICATIONS OR ABOVE THE GUIDELINES SET FORTH IN THE CROP .
5. BUILDING MATERIALS/FORMWORK - NO BUILDING OR CONSTRUCTION MATERIALS WILL BE BURIED OR DISPOSED OF ON-SITE. ALL SUCH MATERIAL WILL BE DISPOSED OF IN PROPER WASTE DISPOSAL PROCEDURES.

SPILL CLEANUP AND CONTROL PRACTICES

- LOCAL, STATE AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO SITE PERSONNEL.
- MATERIAL AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREAS. TYPICAL MATERIALS AND EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO, BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST AND PROPERLY LABELED PLASTIC AND METAL WASTE CONTAINERS.
- SPILL PREVENTION PRACTICES AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS.
- ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. ALL SPILLS WILL BE REPORTS AS REQUIRED BY LOCAL, STATE, AND FEDERAL REGULATIONS.
- FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN ON SURFACE WATER), THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-426-2675.
- FOR SPILLS OF UNKNOWN AMOUNT, THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-426-2675.
- FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE SPILL WILL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED.

INSPECTIONS

1. EACH DAY WHEN ANY TYPE OF CONSTRUCTION ACTIVITY HAS TAKEN PLACE AT THE CONTRACTOR'S SITE, QUALIFIED PERSONNEL PROVIDED BY THE CONTRACTOR SHALL INSPECT: (A) ALL AREAS AT THE CONTRACTOR'S SITE WHERE PETROLEUM PRODUCTS ARE STORED, USED, OR HANDLED FOR SPILLS AND LEAKS FROM VEHICLES AND EQUIPMENT; (B) ALL LOCATIONS AT THE CONTRACTOR'S SITE WHERE VEHICLES ENTER OF EXIT THE SITE FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING; AND (C) MEASURE RAINFALL ONCE EACH TWENTY-FOUR HOUR PERIOD AT THE SITE. THESE INSPECTIONS MUST BE CONDUCTED UNTIL PROJECT COMPLETION.
2. QUALIFIED PERSONNEL (PROVIDED BY THE CONTRACTOR) SHALL INSPECT AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OR GREATER THE FOLLOWING: (A) DISTURBED AREAS OF THE CONTRACTOR'S CONSTRUCTION SITE THAT HAVE NOT UNDERGONE FINAL STABILIZATION; (B) AREAS USED BY THE CONTRACTOR FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION THAT HAVE NOT UNDERGONE FINAL STABILIZATION; AND (C) STRUCTURAL CONTROL MEASURES IDENTIFIED IN THE PLAN APPLICABLE TO THE CONTRACTOR'S SITE SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S).
3. QUALIFIED PERSONNEL (PROVIDED BY THE CONTRACTOR) SHALL INSPECT AT LEAST ONCE PER MONTH UNTIL PROJECT COMPLETION THE AREAS OF THE SITE THAT HAVE UNDERGONE FINAL STABILIZATION. THESE AREAS SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM AND THE RECEIVING WATER(S). EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S).
4. BASED ON THE RESULTS OF EACH INSPECTION, THE SITE DESCRIPTION AND THE POLLUTION PREVENTION AND CONTROL MEASURES IDENTIFIED IN THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, THE PLAN SHALL BE REVISED AS APPROPRIATE NOT LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION. IMPLEMENTATION OF SUCH CHANGES SHALL BE MADE AS SOON AS PRACTICAL BUT IN NO CASE LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION.
5. A REPORT SUMMARIZING THE SCOPE OF EACH INSPECTION AND THE NAME(S) OF PERSONNEL MAKING EACH INSPECTION, THE DATE(S) OF EACH INSPECTION, MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN AND ACTIONS TAKEN SHALL BE MADE AND RETAINED AT THE SITE OR BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION UNTIL THE ENTIRE SITE OR THAT PORTION OF A CONSTRUCTION PROJECT THAT HAS BEEN PHASED HAS UNDERGONE FINAL STABILIZATION. SUCH REPORTS SHALL IDENTIFY ANY INCIDENTS OF NON-COMPLIANCE. WHERE THE REPORT DOES NOT IDENTIFY ANY INCIDENTS OF NON-COMPLIANCE, THE REPORT SHALL CONTAIN A CERTIFICATION THAT THE FACILITY IS IN COMPLIANCE WITH THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN.



NOTES - 2 OF 2
STATE PIER FACILITY
9/5/2019

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SEDIMENT FENCE (Sd1)

DEFINITION

A TEMPORARY SEDIMENT BARRIER CONSISTING OF A FILTER FABRIC STRETCHED ACROSS AND ATTACHED TO SUPPORTING POSTS AND ENTRENCHED. THE SEDIMENT FENCE IS CONSTRUCTED OF STAKES AND SYNTHETIC FILTER FABRIC WITH A RIGID WIRE FENCE BACKING WHERE NECESSARY FOR SUPPORT. SEDIMENT FENCE CAN BE PURCHASED WITH POCKETS PRESEWN TO ACCEPT USE OF STEEL FENCE POSTS.

PURPOSE

A SEDIMENT FENCE INTERCEPTS AND DETAINS SMALL AMOUNTS OF SEDIMENT FROM DISTURBED AREAS DURING CONSTRUCTION OPERATIONS AND REDUCES RUNOFF VELOCITY DOWN A SLOPE. SEDIMENT FENCES MAY ALSO BE USED TO CATCH WIND-BLOWN SAND AND TO CREATE AN ANCHOR FOR SAND DUNE CREATION.

DESIGN RECOMMENDATIONS

DEPTH OF IMPOUNDED WATER SHOULD NOT EXCEED 1.5 FEET AT ANY POINT ALONG THE FENCE.

DRAINAGE AREA LIMITED TO 1/4 ACRE PER 100 FT OF FENCE, AND NO MORE THAN 1.5 ACRES IN TOTAL; OR IN COMBINATION WITH A SEDIMENT BASIN ON A LARGER SITE. AREA IS FURTHER RESTRICTED BY SLOPE STEEPNESS AS SHOWN IN THE FOLLOWING TABLE.

MAXIMUM SLOPE	
LAND SLOPE (%)	DISTANCE ABOVE FENCE (FEET)
2	250
5	180
10	100
20	50
30	30

MATERIALS AND USE

FILTER FABRIC

THE FILTER FABRIC USED IN A SEDIMENT FENCE MUST HAVE SUFFICIENT STRENGTH TO WITHSTAND VARIOUS STRESS CONDITIONS. IT ALSO MUST HAVE THE ABILITY TO ALLOW PASSAGE OF WATER WHILE RETAINING SOIL PARTICLES. FILTER FABRIC FOR A SEDIMENT FENCE IS AVAILABLE COMMERCIALY.

SUPPORT POSTS

FOUR-INCH DIAMETER PINE, 1.33 LB./LINEAR FT. STEEL, OR SOUND QUALITY HARDWOOD

SEDIMENT FENCE

SCALE: N.T.S.

WITH A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES. STEEL POSTS SHOULD HAVE PROJECTIONS FOR FASTENING FABRIC. DRIVE POSTS SECURELY, AT LEAST 16 INCHES INTO THE GROUND, ON THE DOWNSLOPE SIDE OF THE TRENCH. SPACE POSTS A MAXIMUM OF 8 FEET IF FENCE IS SUPPORTED BY WIRE, 6 FEET IF EXTRA-STRENGTH FABRIC IS USED WITHOUT SUPPORT WIRE. ADJUST SPACING TO PLACE POSTS AT LOW POINTS ALONG THE FENCE LINE.

SUPPORT WIRE

WIRE FENCE (14 GAUGE WITH 6-INCH MESH) IS REQUIRED TO SUPPORT STANDARD STRENGTH FABRIC.

REINFORCED, STABILIZED OUTLETS

ANY OUTLET WHERE STORM FLOW BYPASS OCCURS MUST BE STABILIZED AGAINST EROSION.

SET OUTLET ELEVATION SO THAT WATER DEPTH CANNOT EXCEED 1.5 FEET AT THE LOWEST POINT ALONG THE FENCE LINE.

SET FABRIC HEIGHT AT 1 FOOT MAXIMUM BETWEEN SUPPORT POSTS SPACED NO MORE THAN 4 FEET APART. INSTALL A HORIZONTAL BRACE BETWEEN THE SUPPORT POSTS TO SERVE AS AN OVERFLOW WEIR AND TO SUPPORT TOP OF FABRIC. PROVIDE A RIPRAP SPLASH PAD A MINIMUM 5 FEET WIDE, 1 FOOT DEEP, AND 5 FEET LONG ON LEVEL GRADE. THE FINISHED SURFACE OF THE RIPRAP SHOULD BLEND WITH SURROUNDING AREA, ALLOWING NO OVERFALL. THE AREA AROUND THE PAD MUST BE STABLE.

CONSTRUCTION RECOMMENDATIONS

DIG A TRENCH APPROXIMATELY 8 INCHES DEEP AND 4 INCHES WIDE, OR A V-TRENCH; ALONG THE LINE OF THE FENCE, UPSLOPE SIDE.

FASTEN SUPPORT WIRE FENCE SECURELY TO THE UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES. WIRE SHOULD EXTEND 6 INCHES INTO THE TRENCH. ATTACH CONTINUOUS LENGTH OF FABRIC TO UPSLOPE SIDE OF FENCE POSTS. AVOID JOINTS, PARTICULARLY AT LOW POINTS IN THE FENCE LINE. WHERE JOINTS ARE NECESSARY, FASTEN FABRIC SECURELY TO SUPPORT POSTS AND OVERLAP TO THE NEXT POST.

PLACE THE BOTTOM ONE FOOT OF FABRIC IN THE TRENCH. BACKFILL WITH COMPACTED EARTH OR GRAVEL.

FILTER CLOTH SHALL BE FASTENED SECURELY TO THE WOVEN WIRE FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP, MID-SECTION, AND BOTTOM.

TO REDUCE MAINTENANCE, A SHALLOW SEDIMENT STORAGE AREA MAY BE EXCAVATED ON THE UPSLOPE SIDE OF FENCE WHERE SEDIMENTATION IS EXPECTED.

PROVIDE GOOD ACCESS TO DEPOSITION AREAS FOR CLEANOUT AND MAINTENANCE. SEDIMENT FENCES SHOULD BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.

RETAINED SEDIMENT MUST BE REMOVED AND PROPERLY DISPOSED OF, OR MULCHED AND SEEDED.

MAINTENANCE

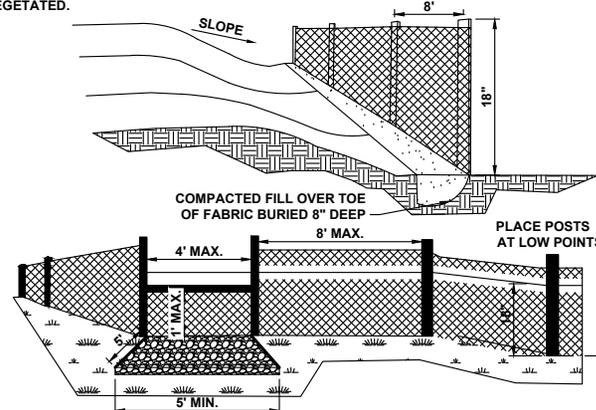
A SEDIMENT FENCE REQUIRES A GREAT DEAL OF MAINTENANCE. SILT FENCES SHOULD BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. REPAIR AS NECESSARY.

REMOVE SEDIMENT DEPOSITS PROMPTLY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON FENCE. TAKE CARE TO AVOID UNDERMINING FENCE DURING CLEANOUT.

IF THE FABRIC TEARS, DECOMPOSES, OR IN ANY WAY BECOMES INEFFECTIVE, REPLACE IT IMMEDIATELY.

REPLACE BURLAP USED IN SEDIMENT FENCES AFTER NO MORE THAN 60 DAYS.

REMOVE ALL FENCING MATERIALS AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED. SEDIMENT DEPOSITS REMAINING AFTER THE FABRIC HAS BEEN REMOVED SHOULD BE GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.



CONSTRUCTION ENTRANCE (Co)

DEFINITION

A TEMPORARY STONE-STABILIZED PAD LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS ON A CONSTRUCTION SITE.

PURPOSE

TO PROVIDE A STABLE ENTRANCE AND EXIT FROM A CONSTRUCTION SITE AND KEEP MUD AND SEDIMENT OFF PUBLIC ROADS.

DESIGN RECOMMENDATIONS

REMOVE ALL VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE AND CROWN FOUNDATION FOR POSITIVE DRAINAGE.

STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 1 TO 3-INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT PLACED ON A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.

PAD DIMENSIONS: THE MINIMUM LENGTH OF THE GRAVEL PAD SHOULD BE 50 FEET, EXCEPT FOR A SINGLE RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH MAY BE USED. LONGER ENTRANCES WILL PROVIDE BETTER CLEANING ACTION. THE PAD SHOULD EXTEND THE FULL WIDTH OF THE CONSTRUCTION ACCESS ROAD OR 10 FEET WHICHEVER IS GREATER. THE AGGREGATE SHOULD BE PLACED AT LEAST SIX INCHES THICK. A GEOTEXTILE FILTER FABRIC SHALL BE PLACED BETWEEN THE STONE FILL AND THE EARTH SURFACE BELOW THE PAD TO REDUCE THE MIGRATION OF SOIL PARTICLES FROM THE UNDERLYING SOIL INTO THE STONE AND VICE VERSA. FILTER CLOTH IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENCE LOT.

IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 6 TO 8 INCHES HIGH WITH 3:1 SIDE SLOPES, ACROSS THE FOUNDATION APPROXIMATELY 15 FT FROM THE ENTRANCE TO

DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHOULD BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.

WASHING: IF THE SITE CONDITIONS ARE SUCH THAT THE MAJORITY OF MUD IS NOT REMOVED FROM THE VEHICLE TIRES BY THE GRAVEL PAD, THEN THE TIRES SHOULD BE WASHED BEFORE THE VEHICLE ENTERS THE ROAD OR STREET. THE WASH AREA SHOULD BE A LEVEL AREA WITH 3-INCH WASHED STONE MINIMUM, OR A COMMERCIAL RACK. WASH WATER SHOULD BE DIRECTED INTO A SEDIMENT TRAP, A VEGETATED FILTER STRIP, OR OTHER APPROVED SEDIMENT TRAPPING DEVICE. SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY WATERCOURSES.

A FILTER FABRIC FENCE SHOULD BE INSTALLED DOWN-GRADIENT FROM THE CONSTRUCTION ENTRANCE IN ORDER TO CONTAIN ANY SEDIMENT-LADEN RUNOFF FROM THE ENTRANCE.

MAINTENANCE

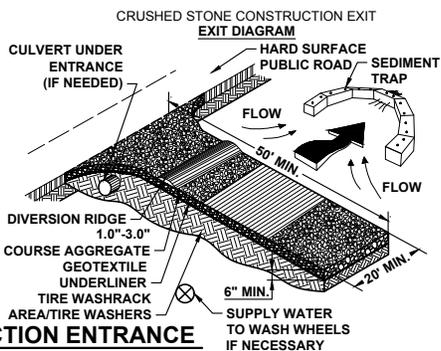
THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH ADDITIONAL STONE.

INSPECT ENTRANCE/EXIT PAD AND SEDIMENT DISPOSAL AREA WEEKLY AND AFTER HEAVY RAINS OR HEAVY USE. REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROAD IMMEDIATELY.

MUD AND SOIL PARTICLES WILL EVENTUALLY CLOG THE VOIDS IN THE GRAVEL AND THE EFFECTIVENESS OF THE GRAVEL PAD WILL NOT BE SATISFACTORY. WHEN THIS OCCURS, THE PAD SHOULD BE TOP-DRESSED WITH NEW STONE. COMPLETE REPLACEMENT OF THE PAD MAY BE NECESSARY WHEN THE PAD BECOMES COMPLETELY CLOGGED.

IF WASHING FACILITIES ARE USED, THE SEDIMENT TRAPS SHOULD BE CLEANED OUT AS OFTEN AS NECESSARY TO ASSURE THAT ADEQUATE TRAPPING EFFICIENCY AND STORAGE VOLUME IS AVAILABLE. VEGETATIVE FILTER STRIPS SHOULD BE MAINTAINED TO INSURE A VIGOROUS STAND OF VEGETATION AT ALL TIMES.

RESHAPE PAD AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL. REPAIR ANY BROKEN ROAD PAVEMENT IMMEDIATELY. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY PRACTICES ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHALL BE PERMANENTLY STABILIZED.



CONSTRUCTION ENTRANCE

SCALE: N.T.S.

DUST CONTROL ON DISTURBED AREAS (Du)

DEFINITION

CONTROLLING SURFACE AND AIR MOVEMENT OF DUST ON CONSTRUCTION SITES, ROADS, AND DEMOLITION SITES.

PURPOSE

TO PREVENT SURFACE AND AIR MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES.

TO REDUCE THE PRESENCE OF AIRBORNE SUBSTANCES THAT MAY BE HARMFUL OR INJURIOUS TO HUMAN HEALTH, WELFARE, OR SAFETY, OR TO ANIMALS OR PLANT LIFE.

CONDITIONS

THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO SURFACE AND AIR MOVEMENT OF DUST WHERE ON AND OFF-SITE DAMAGE MAY OCCUR WITHOUT TREATMENT.

METHOD AND MATERIALS

VEGETATIVE COVER. SEE SPECIFICATION DS2 - (DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)).

TILLAGE THIS PRACTICE IS DESIGNED TO ROUGHEN AND BRING CLODS TO THE

SURFACE. IT IS AN EMERGENCY MEASURE THAT SHOULD BE USED BEFORE WIND EROSION STARTS. BEGIN PLOWING ON WINDWARD SIDE OF CHISEL-TYPE PLOWS SPACED ABOUT 12 INCHES APART. SPRING-TOOTHED HARROWS, AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT THAT MAY PRODUCE THE DESIRED EFFECT.

IRRIGATION THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS WET. REPEAT AS NEEDED.

BARRIERS SOLID BOARD FENCES, SNOWFENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 15 TIMES THEIR HEIGHT ARE EFFECTIVE IN CONTROLLING WIND EROSION.

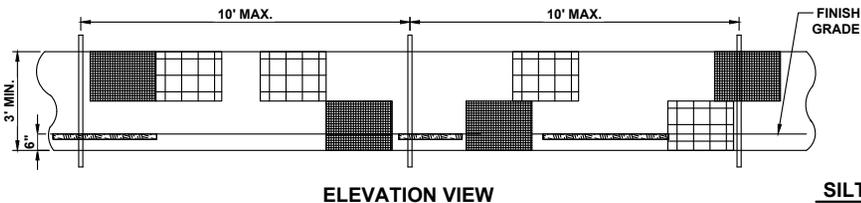
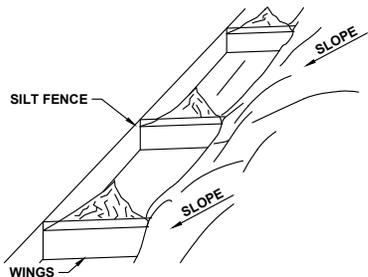
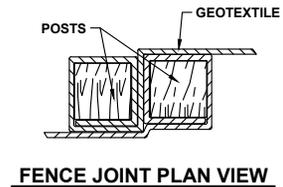
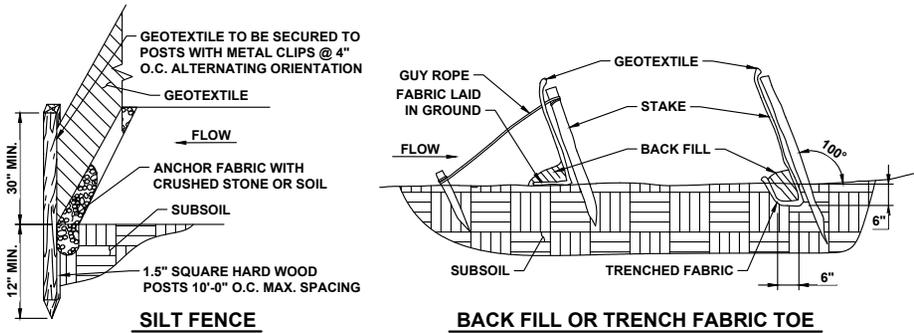
CALCIUM CHLORIDE APPLY AT RATE THAT WILL KEEP SURFACE MOIST. MAY NEED RETREATMENT.

PERMANENT VEGETATION SEE SPECIFICATION DS3-DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION). EXISTING TREES AND LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.

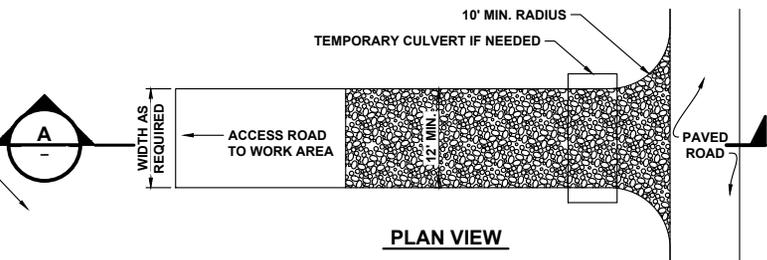
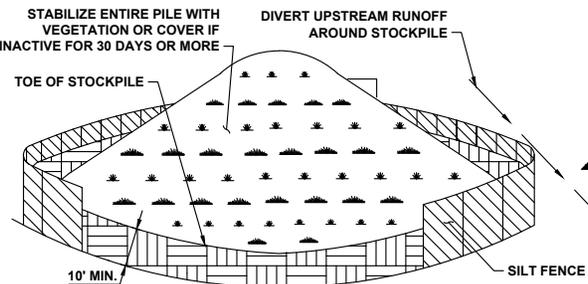
DUST CONTROL ON DISTURBED AREAS

SCALE: N.T.S.

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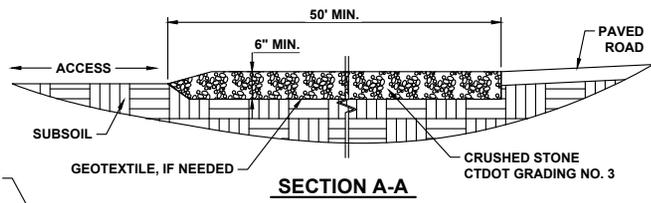


SILT FENCE SYSTEM PLACEMENT ON TOE OF SLOPE

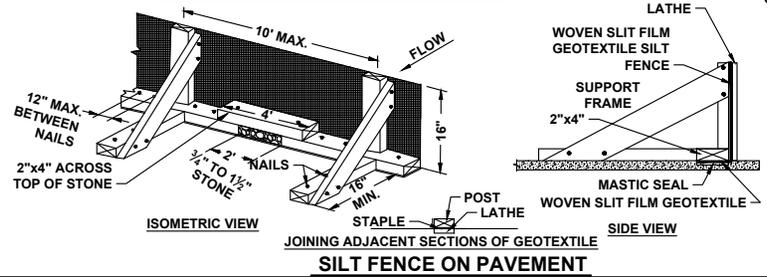


TEMPORARY SOIL STOCKPILING NOTES:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2H:1V.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR HAY BALES, THEN STABILIZED WITH VEGETATION OR COVERED WITH POLYETHYLENE SHEETING AND SANDBAGS.
4. A POLYETHYLENE MEMBRANE UNDERLAYMENT MAY BE REQUIRED PER ENGINEER REQUESTS.



TEMPORARY SOIL STOCKPILING



CONSTRUCTION ENTRANCE NOTES:

1. TOPSOIL AND ORGANICS SHOULD BE REMOVED PRIOR TO INSTALLATION.
 2. CONSTRUCTION ENTRANCE TO BE LOCATED WHERE ACCESS ROAD MEETS PAVED ACCESS/DRIVEWAY.
 3. AFTER CONSTRUCTION, ANY DEBRIS SHOULD BE CLEARED FROM THE TRACKING PAD, THE PAD RE-LEVELLED AND 2'-4" OF 3/4" CRUSHED GRAVEL SHOULD BE ADDED TO FILL VOIDS AND CREATE A SMOOTH SURFACE WITH A 2% CROWN OR CROSS-SLOPE.
1. USE NOMINAL 2 INCH X 4 INCH LUMBER.
 2. USE WOVEN SLIT FILM GEOTEXTILE, SUCH AS POLYPROPYLENE, NYLON, POLYESTER, ETHYLENE, OR APPROVED SIMILAR MATERIAL.
 3. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS.
 4. SPACE UPRIGHT SUPPORTS NO MORE THAN 10 FEET APART.
 5. PROVIDE A TWO FOOT OPENING BETWEEN EVERY SET OF SUPPORTS AND PLACE STONE IN THE OPENING OVER GEOTEXTILE.
 6. KEEP SILT FENCE TAUT AND SECURELY STAPLE TO THE UPSLOPE SIDE OF UPRIGHT SUPPORTS. EXTEND GEOTEXTILE UNDER 2x4.
 7. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, FOLD, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL. ATTACH LATHE.
 8. PROVIDE A MASTIC SEAL BETWEEN PAVEMENT, GEOTEXTILE, AND 2x4 TO PREVENT SEDIMENT-LADEN WATER FROM ESCAPING BENEATH SILT FENCE INSTALLATION.
 9. SECURE BOARDS TO PAVEMENT WITH 40D 5 INCH MINIMUM LENGTH NAILS.
 10. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. MAINTAIN WATER TIGHT SEAL ALONG BOTTOM. REPLACE STONE IF DISPLACED.

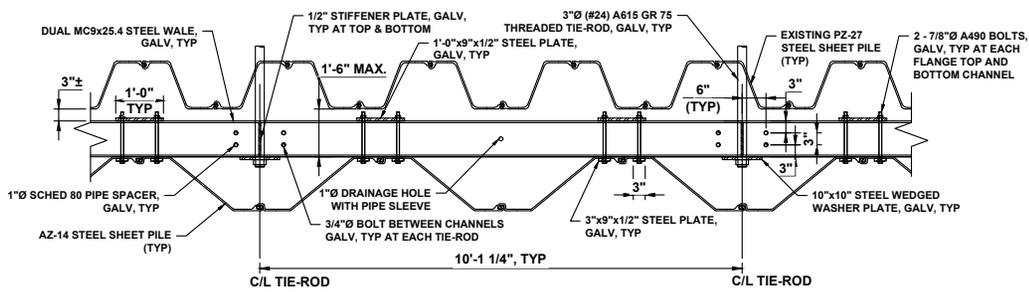
GEOTEXTILE SILT FENCE NOTES:

1. GEOTEXTILE FENCE SHOULD BE PLACED SO THE FENCE LEANS TOWARD THE SOURCE OF SEDIMENT.
2. MAXIMUM SPACING FOR WOODEN STAKES OR STEEL POSTS IS 10'-0".
3. WOOD STAKES SHALL HAVE A MINIMUM CROSS-SECTION SIZE OF 1.5"x1.5" AND A MINIMUM LENGTH OF 3'-6". SILT FENCE SUBJECT TO HEAVY LOADS SHALL BE REINFORCED WITH STEEL POSTS AT LEAST 0.5 LB. PER FOOT WITH A MINIMUM LENGTH OF 4 FT.
4. WOODEN STAKES OR STEEL POSTS SHALL BE DRIVEN TO A MINIMUM OF 12" INTO THE GROUND.
5. 6" OF GEOTEXTILE SHALL BE BURIED BY BACK FILLING OR TRENCHING AND AT LEAST 30" IN HEIGHT OF GEOTEXTILE SHALL BE EXPOSED.
6. FABRIC SHALL BE JOINED ONLY AT A SUPPORT POST WITH A MINIMUM OF 6" OVERLAP AND SECURELY SEALED.
7. UPON REESTABLISHMENT OF GROUND COVER IN DISTURBED AREAS AND WHEN DIRECTED BY THE ENGINEER OR UPON FINAL INSPECTION, FENCE AND ANY SEDIMENT SHALL BE REMOVED. AT NO TIME WILL THE FENCE REMAIN IN PLACE AFTER PROJECT COMPLETION.
8. GEOTEXTILE FENCE SHALL NOT BE USED IN A WATER COURSE.
9. ONLY GEOTEXTILE FROM THE DEPARTMENTS APPROVED PRODUCT LIST SHALL BE USED.
10. BACK FILLING OF GEOTEXTILE SHALL ONLY BE USED WHEN GROUND IS FROZEN OR WHERE OTHER OBSTRUCTIONS ARE ENCOUNTERED THAT PROHIBIT TRENCHING; E.G., STUMPS OR ROCKS.
11. CLEAN OUT ACCUMULATED SEDIMENT WHEN ONE-HALF OF THE ORIGINAL HEIGHT OF THE GEOTEXTILE FENCE BECOMES FILLED WITH SEDIMENT OR AS DIRECTED BY THE ENGINEER.
12. POSITION POSTS TO OVERLAP MAKING CERTAIN THAT FABRIC FOLDS AROUND EACH POST ONE FULL TURN.
13. DRIVE POSTS TIGHTLY TOGETHER AND SECURE TOPS OF POSTS BY TYING OFF WITH CORD OR WIRE TO PREVENT FLOW-THROUGH OF BUILT-UP SEDIMENT AT JOINTS.
14. WHEN USING SILT FENCE ALONG TOE OF SLOPE, ADD WINGS TO PREVENT SEDIMENT FROM MOVING ALONG THE FENCE AND OFF THE SITE.

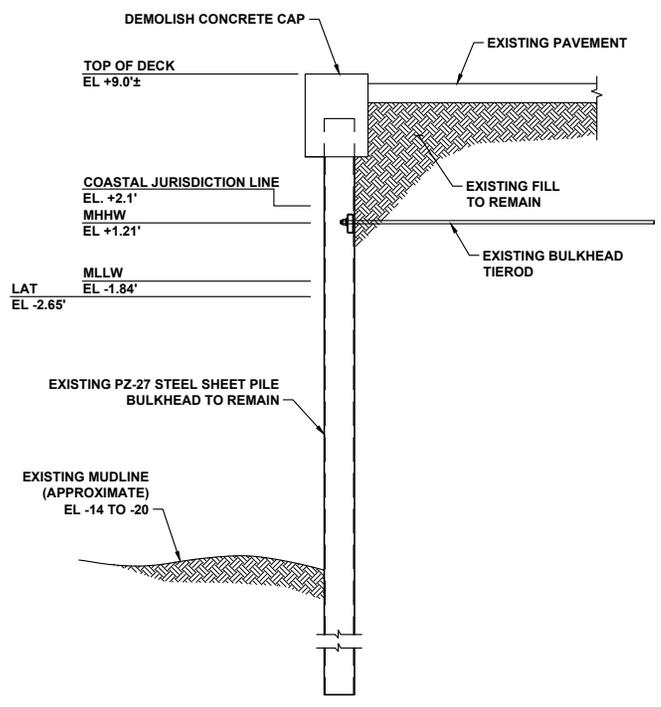
CONSTRUCTION SPECIFICATIONS



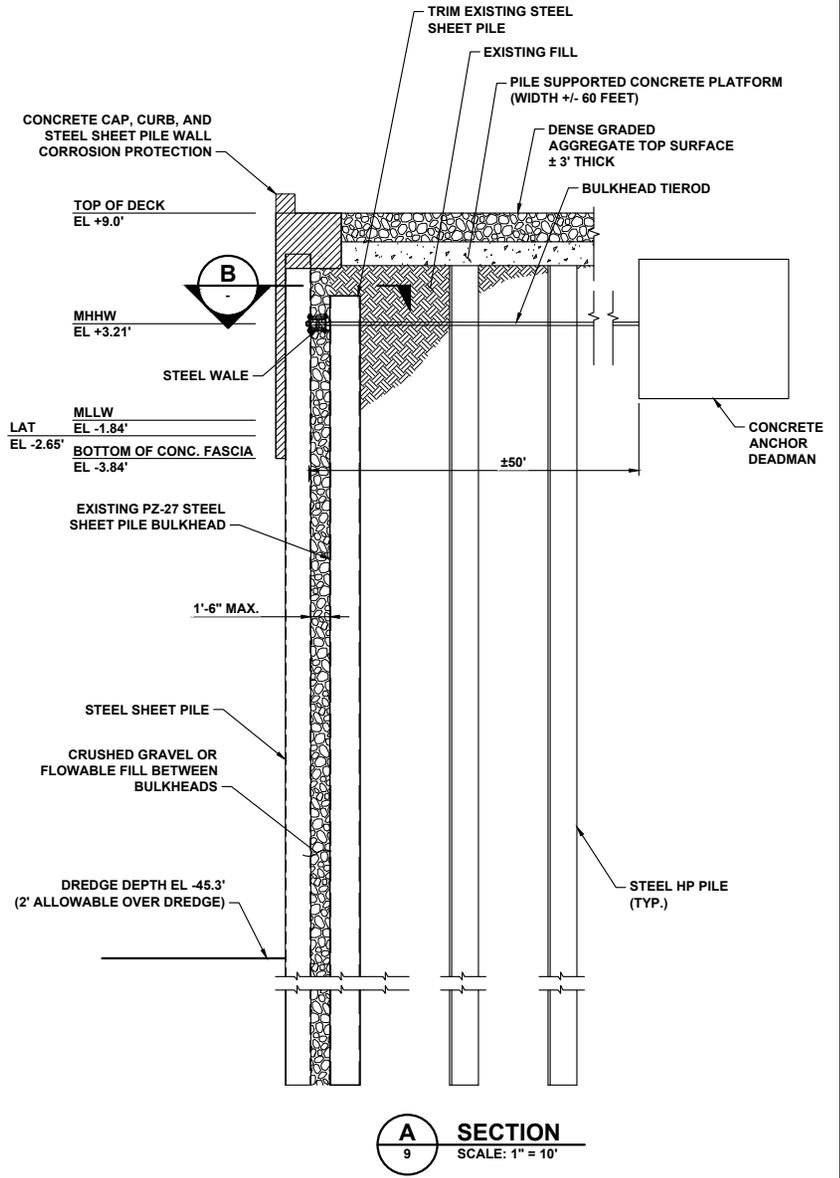
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B PROPOSED PLAN - STEEL SHEET PILE BULKHEAD
SCALE: 1/4" = 1'-0"



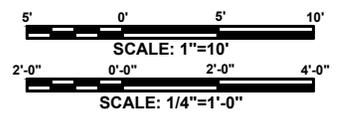
EXISTING - STEEL SHEET PILE BULKHEAD
SCALE: 1" = 10'



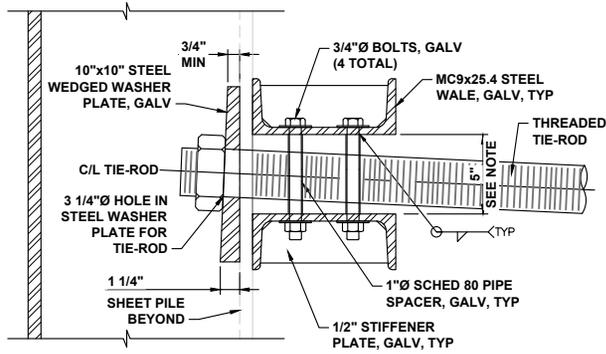
A SECTION
SCALE: 1" = 10'



NORTHEAST BULKHEAD SECTIONS
STATE PIER FACILITY
9/5/2019



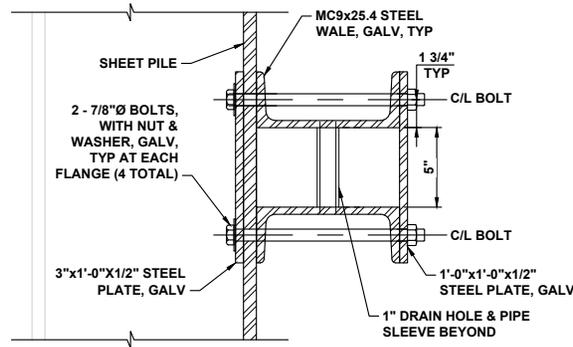
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NOTE:
CONTRACTOR SHALL VERIFY DIMENSION PRIOR TO INSTALLING WALES.

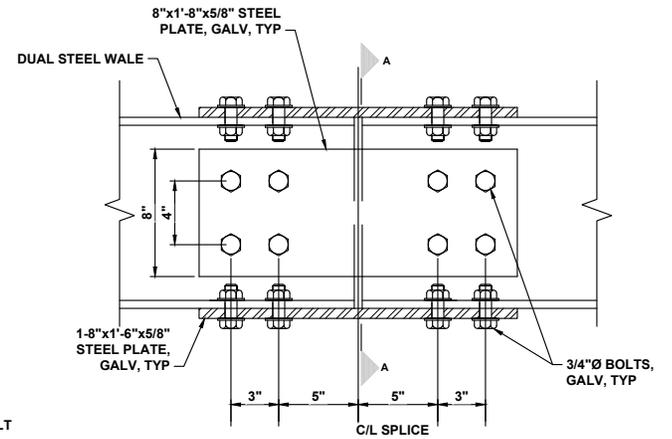
TIE-ROD CONNECTION @ WALE DETAIL

SCALE: 1" = 1'-0"

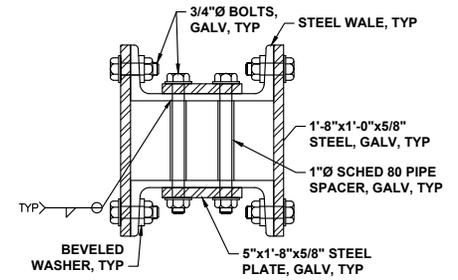


WALE-SHEET PILE CONNECTION DETAIL

SCALE: 1" = 1'-0"



PLAN



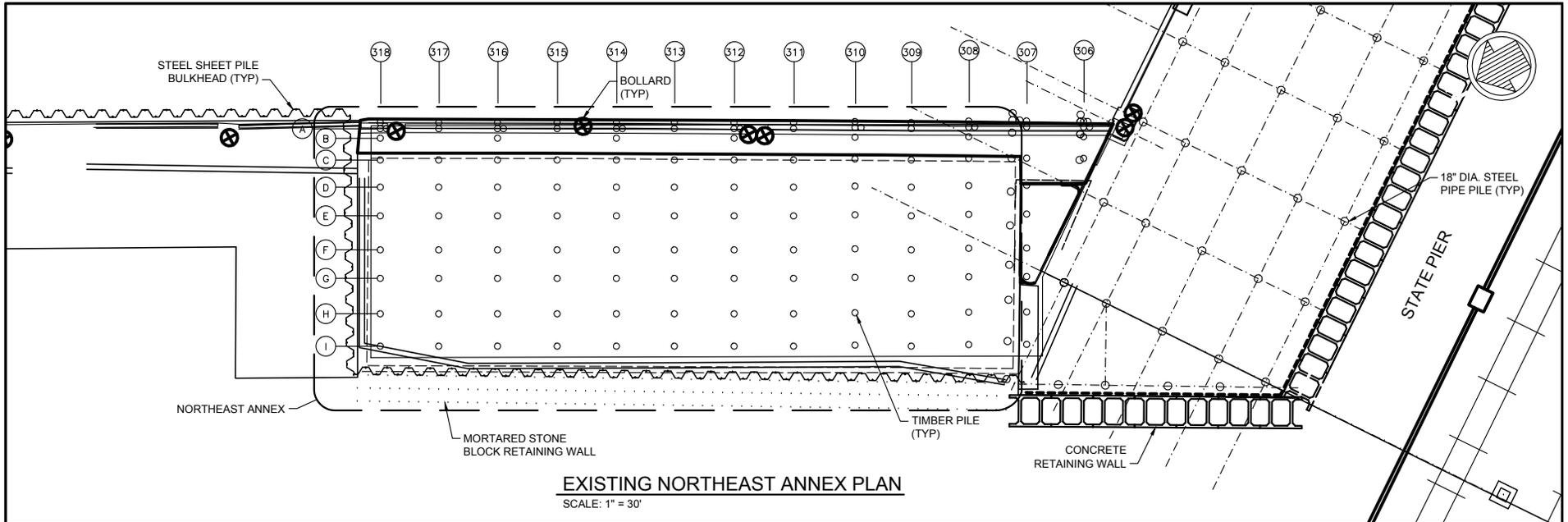
SECTION A-A

NOTE:
POSITION SPLICE AT CENTER OF SHEET PILE POCKET BETWEEN TIE-ROD LOCATION AS NECESSARY.

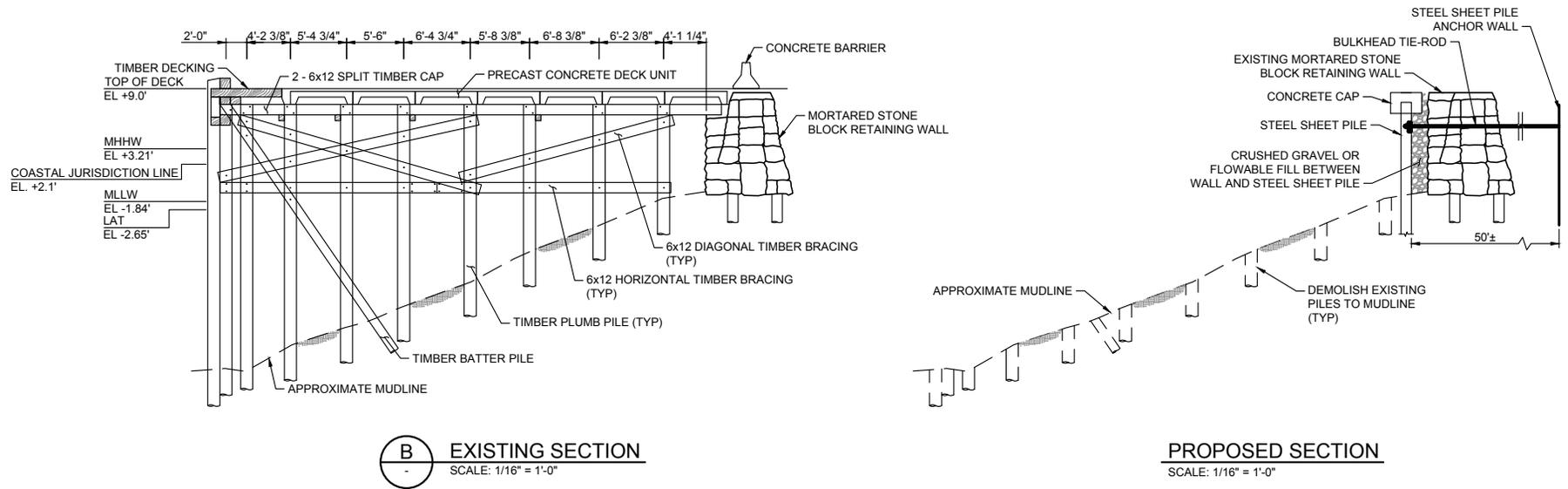
WALE SPLICE DETAIL

SCALE: 1" = 1'-0"

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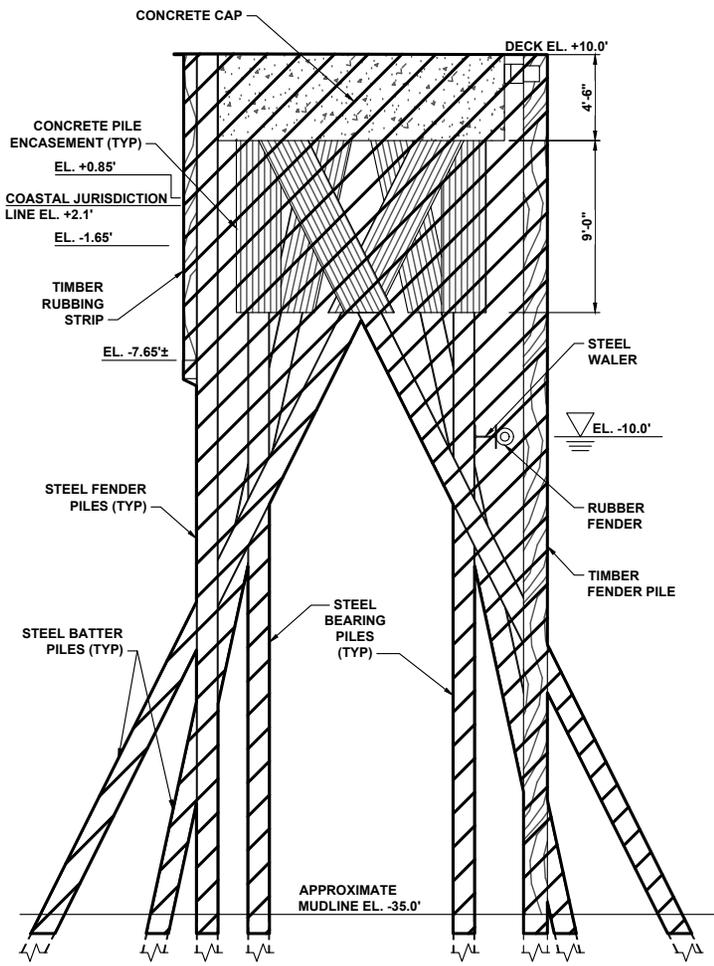
EXISTING NORTHEAST ANNEX PLAN
SCALE: 1" = 30'



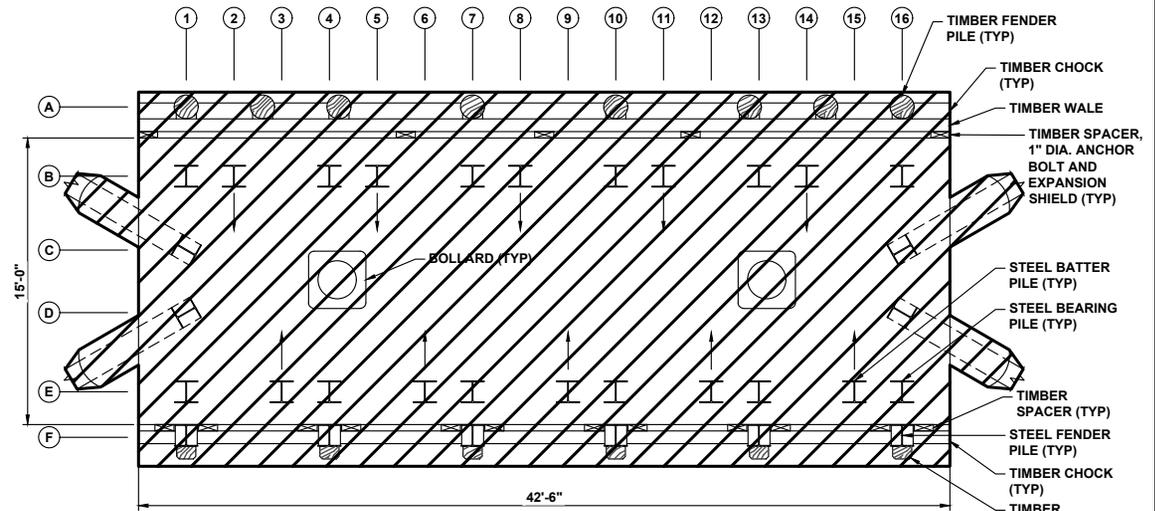
B EXISTING SECTION
SCALE: 1/16" = 1'-0"

PROPOSED SECTION
SCALE: 1/16" = 1'-0"

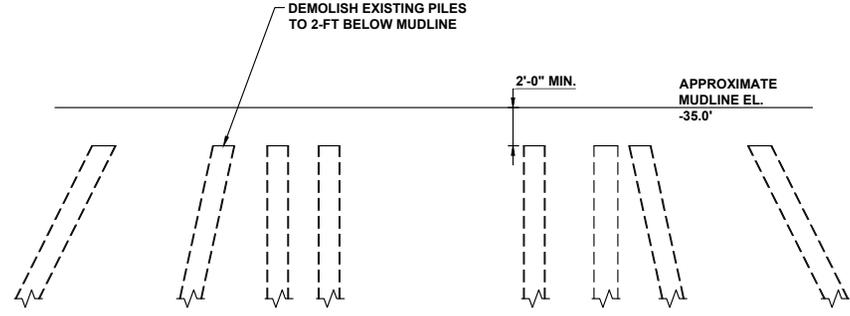
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C **TYPICAL PLATFORM SECTION (LOOKING WEST)**
SCALE: 1" = 10'



TYPICAL PLATFORM PLAN
SCALE: 1" = 10'



TYPICAL PLATFORM SECTION AFTER DEMO (LOOKING WEST)
SCALE: 1" = 10'

LEGEND
 DEMOLISH

- NOTES:**
- ELEVATIONS ARE IN NAVD88.
 - TOTAL OF 4 MOORING PLATFORMS EACH WITH 12 SUPPORT PILES, 14 BATTER PILES, AND 8 FENDER PILES TO BE DEMOLISHED.



MOORING PLATFORM DEMOLITION
STATE PIER FACILITY
 9/5/2019



CERTIFICATE OF PERMISSION APPLICATION
State Pier Facility, New London, CT
Connecticut Port Authority

Attachment B – Site Photographs

PHOTOGRAPHIC LOG

Client Name: CT Port Authority		Site Location: Connecticut State Pier, New London, CT General State Pier Facility Photos		Project No. 60579714
Photo No. 1	Date: N/A			
Direction Photo Taken: North				
Description: Aerial view of existing conditions at the State Pier Facility. Northeast Annex, Northeast Bulkhead and Mooring Dolphins visible in the upper right corner of photograph.				
Photo No. 2	Date: 8/15/2018			
Direction Photo Taken: Northeast				
Description: General view of Admiral Shear Pier from the Thames River. I-95 Gold Star Bridge visible in background. Photo by Marine Solutions.				

PHOTOGRAPHIC LOG

Client Name: CT Port Authority		Site Location: Connecticut State Pier, New London, CT Northeast Bulkhead (Northeast Quay) Photos		Project No. 60579714
Photo No. 3	Date: 6/12/2018			
Direction Photo Taken: North				
Description: Upland areas located at the Northeast Bulkhead (AKA Northeast Quay). Goldstar Memorial Bridge and Amtrak tracks in the background.				
Photo No. 4	Date: 6/12/2018			
Direction Photo Taken: South				
Description: Upland areas located at the Northeast Bulkhead.				

PHOTOGRAPHIC LOG

Client Name: CT Port Authority		Site Location: Connecticut State Pier, New London, CT Northeast Bulkhead (Northeast Quay) Photos		Project No. 60579714
Photo No. 5	Date: 8/15/2018			
Direction Photo Taken: North				
<p>Description: General view of the Northeast Bulkhead from the Thames River. Photo by Marine Solutions.</p> <p>A portion of the Northeast Annex is visible at the far left of the photograph. South-facing segment of the Northeast Bulkhead – area to be oversheeted – is visible along majority of the photo.</p>				
Photo No. 6	Date: 6/12/2018			
Direction Photo Taken: Northeast				
<p>Description: Utility box located at NOAA station / tide gauge New London (No. 8461490) at the Northeast Bulkhead.</p>				

PHOTOGRAPHIC LOG

Client Name: CT Port Authority		Site Location: Connecticut State Pier, New London, CT Northeast Bulkhead (Northeast Quay) Photos		Project No. 60579714
Photo No. 7	Date: 8/16/2018			
Direction Photo Taken: Northwest				
Description: Northeast Bulkhead (aka Northeast Quaywall) existing steel sheet piling (SSP). SSP exhibiting 40-60% section loss in the splash zone. View of the Northeast Annex feature visible on the left side of photograph. Photo by Marine Solutions.				

Photo No. 8	Date: 8/15/2018			
Direction Photo Taken: Northwest				
Description: View of Northeast Bulkhead Steel Sheetpiling. Typical minor corrosion of tieback rod ends. Photo by Marine Solutions.				

PHOTOGRAPHIC LOG

Client Name: CT Port Authority	Site Location: Connecticut State Pier, New London, CT Northeast Annex Photos	Project No. 60579714
--	---	--------------------------------

Photo No. 9	Date: 8/14/2018
-----------------------	---------------------------

Direction Photo Taken:
Northeast

Description:
General view of Northeast Annex. Photo by Marine Solutions.



Photo No. 10	Date: 4/2/2013
------------------------	--------------------------

Direction Photo Taken:
N/A

Description:
Northeast Annex Underdeck and Bent 317 (Note wrapped piles; split diagonal bracing and sistered diagonal repair). Photo by ADA.



PHOTOGRAPHIC LOG

Client Name: CT Port Authority		Site Location: Connecticut State Pier, New London, CT Northeast Annex Photos		Project No. 60579714
Photo No. 11	Date: 4/2/2013			
Direction Photo Taken: N/A				
Description: View of masonry wall beneath Northeast Annex Note missing mortar in tidal zone. Photo by ADA.				
Photo No. 12	Date: 4/3/2013			
Direction Photo Taken: N/A				
Description: Northeast Annex timber pile. Note 100% section loss – likely due to marine borer activity. Photo by ADA.				

PHOTOGRAPHIC LOG

Client Name: CT Port Authority		Site Location: Connecticut State Pier, New London, CT Northeast Annex Photos		Project No. 60579714
Photo No. 13	Date: 4/3/2013			
Direction Photo Taken: N/A				
Description: Northeast Annex timber pile view. Severe section timber loss visible - likely due to marine borer activity. Photo by ADA.				
Photo No. 14	Date: 4/2/2013			
Direction Photo Taken: Southwest				
Description: Northeast Annex – view of the topside, showing reflective cracking, steel plates and jersey barriers and fencing cordoning off area. Photo by ADA.				

PHOTOGRAPHIC LOG

Client Name: CT Port Authority		Site Location: Connecticut State Pier, New London, CT Mooring Dolphin Photos		Project No. 60579714
Photo No. 15	Date: 8/13/2018			
Direction Photo Taken: Northwest				
Description: General view of mooring dolphins. Photo by Marine Solutions.				
Photo No. 16	Date: 6/12/2018			
Direction Photo Taken: Southeast				
Description: General view of Mooring dolphins (westernmost dolphins and associated gangway).				

PHOTOGRAPHIC LOG

Client Name: CT Port Authority		Site Location: Connecticut State Pier, New London, CT Mooring Dolphin Photos		Project No. 60579714
Photo No. 17	Date: 8/16/2018			
Direction Photo Taken: N/A				
Description: General view of mooring dolphins. Dolphin plumb pile exhibiting up to 100% section loss of flanges, batter pile exhibiting up to 90% section loss, knife edging of flanges, and up to two inches of bending deflection. Photo by Marine Solutions.				
Photo No. 18	Date: 8/16/2018			
Direction Photo Taken: Northeast				
Description: View of mooring dolphins racked timber catwalk (leaning north). Dolphins also exhibiting: 100% section loss of timber fender wales due to rot and impact damage; severe open and closed corrosion spalls in the vicinity of mooring hardware connections of mooring dolphin underdeck.				

CERTIFICATE OF PERMISSION APPLICATION
State Pier Facility, New London, CT
Connecticut Port Authority

Attachment C – Abutting Property Information

CERTIFICATE OF PERMISSION APPLICATION

CTDEEP Office of Long Island Sound - Certificate of Permission &
USACE Connecticut General Permits - Self-Verification (Coastal: GP2)

"State Pier Facility" Subject Properties*

<u>Map ID</u>	<u>New London ID</u>	<u>Site Address</u>	<u>Owner Name</u>	<u>Co-Owner Name</u>	<u>Owner Address</u>	<u>Owner City</u>	<u>Owner State</u>	<u>Owner ZIP</u>
1	G10-245-3	State Pier Rd	Connecticut Port Authority		500 Hudson St.	Hartford	CT	06106
2	G10-245-3A	1 Thomas Griffin Rd	CV Properties Incorporated	Downtown Station	PO Box 8100	Montreal	OC	H3C 3N4
3*	G10-245-4	State Pier Rd	Connecticut Port Authority		500 Hudson St.	Hartford	CT	06106
4*	H10-245-1	State Pier Rd	State of Connecticut	C/O Dept. of Transportation	PO Box 317546	Newington	CT	06131
8	G09-244-12.3	State Pier Rd	State of Connecticut		State Pier Rd.	New London	CT	06320

***Work described in this application proposed only on Map ID Parcels "3" and "4".**

Direct Abutters to "Entire Subject Property Boundary" as depicted on MCA Figure 1 (MCA 500' Abutters Figure)**

<u>Map ID</u>	<u>New London ID</u>	<u>Site Address</u>	<u>Owner Name</u>	<u>Co-Owner Name</u>	<u>Owner Address</u>	<u>Owner City</u>	<u>Owner State</u>	<u>Owner ZIP</u>
7	G09-244-12	Fourth Street	CV Properties Incorporated	Downtown Station	PO Box 8100	Montreal	QC	H3C 3N4
14	G09-244-25	State Pier Rd	New London City Of		181 State St	New London	CT	06320
15	G-09-108-1	32 Walbach St	Penn Central Trans Co		400 N. Capitol ST NW	Washington	DC	20001
18	G10-237-5	35 Thomas Griffin	A&J Real Estate LLC		2 Ferry Street	New London	CT	06320
19	G10-245-2	3 State Pier Road	MCWild LLC	C/O Carwild Corp	3 State Pier Road	New London	CT	06320
28	G08-244-10.A	Eastern Ave	Eastern Avenue Properties, Inc.		PO Box 1429	New London	CT	06320

**Parcel ownership data current as of 07/23/2019.

CERTIFICATE OF PERMISSION APPLICATION
State Pier Facility, New London, CT
Connecticut Port Authority

Attachment D – CT DEEP NDDB Review Correspondence



Connecticut Department of
**ENERGY &
ENVIRONMENTAL
PROTECTION**

July 22, 2019

Richard E. Couch
Martinez Couch & Associates, LLC
1084 Cromwell Avenue
Rocky Hill, CT 06067
couchre@martinezcouch.com

Project: Proposed Demolition of Various Upland Buildings, Installation of New Structures Including Storm Water Retention & Treatment System, Addition of Administrative Offices with Parking and Maintenance Dredging at the State Pier at 200 State Pier Road in New London, Connecticut
NDDB Determination No.: 201901490 (REVISED)

Dear Richard Couch,

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map provided for the Proposed Demolition of Various Upland Buildings, Installation of New Structures Including Storm Water Retention & Treatment System, Addition of Administrative Offices with Parking and Maintenance Dredging at the State Pier at 200 State Pier Road in New London, Connecticut. We have known extant records for State Threatened *Falco Peregrinus* (peregrine falcon) and State Special Concern blueback herring that occur in close proximity to your project boundaries.

Please be advised that a DEEP Fisheries Biologist will review the permit applications you may submit to DEEP regulatory programs to determine if your project could adversely affect blueback herring. DEEP Fisheries Biologists are routinely involved in pre-application consultations with regulatory staff and applicants in order to identify potential fisheries issues and work with applicants to mitigate negative effects, including to endangered species. If you have not already talked with a Fisheries Biologist about your project, you may contact the Permit Analyst assigned to process your application for further information, including the contact information for the Fisheries Biologist assigned to review your application

Peregrine Falcon (Falco peregrinus) Protection Status: Threatened Species

The peregrine falcon is a state threatened species which has adapted to life in urban settings. The peregrine falcon is associated with bridges for nesting and brood rearing purposes. Peregrines will actively and aggressively defend the nest, whether a nest box or natural nest, up to and sometimes past 75 yards. The peregrine will attack anyone or anything that comes within the area of its nest. Peregrine falcons are Connecticut's largest falcon and can measure up to 20 inches. Adults are slate gray above and pale underneath with fine bars and spots of black; they have long pointed wings with a narrow tail. Young falcons have the same composite but are darker underneath and browner all over. The peregrine falcon nesting season occurs between the months of April and June. For this reason, special conditions regarding the timing of work on the structure must be applied. In order to protect this species, the proposed construction activities should be completed during non-nesting season months (July – March). No construction activities should occur between April 1st and June 30th.

Protection Recommendation:

In order to protect this species, the proposed construction activities should be completed during non-nesting season months (July – March). No construction activities should occur between April 1st and June 30th. If work needs to be conducted during the breeding season (April 1st to June 30th) then I recommend hiring an ornithologist (bird expert) to evaluate and prepare a protection plan for the birds. All work on this project must maintain a minimum buffer of 300' from the nest. If a nest is identified by workers all work should stop immediately and this information should be reported to our program for further assistance and guidance to complete the work safely. I concur with the Peregrine Falcon Protection Plan that was submitted to our program on July 2, 2019 by Timothy O'Sullivan of

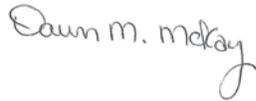
AECOM. If the Peregrine Falcon Protection Plan is followed it will minimize adverse impacts on the Peregrine Falcon.

Please re-submit an NDDDB Request for Review if the scope of work changes or if work has not begun on this project by July 22, 2021.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available. The result of this review does not preclude the possibility that listed species may be encountered on site and that additional action may be necessary to remain in compliance with certain state permits.

Please contact me if you have further questions at (860) 424-3592, or dawn.mckay@ct.gov . Thank you for consulting the Natural Diversity Data Base.

Sincerely,

A handwritten signature in cursive script that reads "Dawn M. McKay".

Dawn M. McKay
Environmental Analyst 3



Peregrine Falcon Protection Plan

State Pier Infrastructure Improvements
New London, Connecticut

July 2, 2019

Quality information

<u>Prepared by</u>	<u>Checked by</u>	<u>Verified by</u>	<u>Approved by</u>
Timothy O'Sullivan Wetland and Wildlife Biologist	Patrick Fellion Environmental Scientist		

Revision History

<u>Revision</u>	<u>Revision date</u>	<u>Details</u>	<u>Authorized</u>	<u>Name</u>	<u>Position</u>

Distribution List

<u># Hard Copies</u>	<u>PDF Required</u>	<u>Association / Company Name</u>

Prepared for:

Connecticut Port Authority
State Pier Facility
New London, Connecticut

Prepared by:

Timothy O'Sullivan
Wetland and Wildlife Biologist
T: 978-621-6756
E: tim.osullivan@aecom.com

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Rocky Hill, CT 06067
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Photos by NYS Thruway Authority

Table of Contents

1.0	Introduction and Project Description	1
2.0	Peregrine Falcon Physical Description and Habitat	3
2.1	Life History	3
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3.2	Construction Phase Survey and Monitoring Plan	4
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3.4	Reporting Requirements.....	5

Attachment A State Pier Facility, Site Locus

Attachment B CT DEEP/NDDB March 19, 2019 Response Letter

Attachment C Peregrine Falcon Fact Sheet

Attachment D Peregrine Falcon Monitoring Report, Hudson River Crossing Project

Attachment E Construction Monitoring Report Form

1.0 Introduction and Project Description

The existing State Pier Facility in New London Connecticut (Attachment A) encompasses nearly 30 acres and has three general operational areas: the piers (State Pier and Central Vermont Railroad), near dock shoreline areas, and offsite areas. The offsite areas comprise about one-fourth of the overall acreage and are situated north of and separated from the main port facility by State Pier Road and Amtrak's rail corridor embankment. The property generally consists of unpaved, gravel surfaces that are uneven or contain small depressions that pond water during storm events. The offsite areas are segmented by the rail siding to State Pier and bisected by the bridge piers for I-95's Gold Star Memorial Bridge. The property is bounded to the west by the New England Central Railroad (NECR) tracks and to the east by the Thames River.

The near-dock shoreline areas are south of State Pier Road and accommodate most of the port's cargo intermodal activity. This area contains two heavy load warehouse buildings totaling 102,000 square feet with railcar and truck loading docks, two 3,200-square-foot equipment/forklift maintenance buildings and an administration building. The area located at the head of the two piers is largely paved to facilitate forklift and tractor trailer movements. The shore edge consists of a combination of sheet piling, pile-supported docks, and stone block quay walls. The western portion of the site adjoining the NECR siding yard is largely unpaved areas, with irregular topography.

The work currently proposed by the Connecticut Port Authority (CPA), known as the State Pier Infrastructure Improvements (SPII or the Project), is anticipated to occur in two phases. Phase One "Upland Area" will occur primarily within upland portions of the site and will include the following actions:

- Demolition of various buildings and roads and rails,
- Site grading and installation of stormwater collection and treatment systems,
- Installation of potable and fire suppression water systems,
- Installation of perimeter fencing and associated lighting and security systems,
- Installation of electrical infrastructure to meet site requirements,
- Installation of dense graded aggregate top surface,
- Demolition of existing pile supported platform at western end of Northeast Bulkhead (NE BH),
- Installation of anchored combination wall bulkhead directly outshore of existing NE BH,
- Installation of energy absorbing fenders and bollards at NE BH,
- Demolition of four existing mooring dolphins in Thames River, and
- Installation of steel sheet pile wall directly outshore of existing Northwest Bulkhead granite block retaining wall.

Phase Two, "Waterfront Works" will consist of water based work, accomplished either from onshore or from barges, depending on the location and requirements of the task. This work will occur outshore of the upland NE BH, bulkheads on the State and CVRR Piers and the area between these two piers and will consist of the following actions:

- Dredging at NE BH to accommodate import and installation vessels,
- Selective demolition of SW corner of State Pier and SE corner of CVRR pier to accommodate the king pile wall,

- Installation of anchored king pile combination bulkhead between State and CVRR Piers,
- Placement of seven acres of fill between the CVRR and State Piers to match elevation of State Pier,
- Raising elevation of remaining horizontal surface of the CVRR Pier to match that of the State Pier,
- Installation of dense graded aggregate top surface,
- Installation of energy absorbing fenders and bollards,
- Dredging to south of king pile wall between State and CVRR Piers for jack-up installation vessel, and
- Seabed preparation for jack-up installation vessel.

Upland Area construction is anticipated to start in November 2019, and Waterfront Works construction is anticipated to start in October 2020. The entire project is expected to be completed over a 3 year period and construction is anticipated to be finished by April 2022.

A request for a Natural Diversity Database (NDDDB) state-listed species review was initiated for the Project in January 2019. In a response dated March 19, 2019 (Attachment B), NDDDB indicated the Connecticut Department of Energy and Environmental Protection (CT DEEP) had records for the state-threatened Peregrine Falcon [*Falco peregrinus*] or (falcon)] nesting on the Gold Star Memorial Bridge. To protect nesting falcons, the CT DEEP recommended construction be completed outside of the nesting season from July 1 through March 31 and that no construction activities should occur during the nesting season between April 1 and June 30. In this same letter, CT DEEP indicated that if construction needs to be completed during the stated nesting period of April 1 through June 30, CPA should hire an ornithologist to evaluate proposed activities and prepare a Peregrine Falcon Protection Plan. CT DEEP has further directed that all work associated with the Project maintain a minimum buffer of 600' from an active falcon nest site and that should a falcon nest be observed proximal to active Project construction work, all work should cease and the nest site should be reported to CT DEEP/NDDDB for further assistance and guidance.

2.0 Peregrine Falcon Physical Description and Habitat

Weighing up to 3.5 pounds, measuring up to 20 inches in length and with a wingspan of up to 43 inches, the Peregrine Falcon is Connecticut's largest falcon species. Adults are slate blue/gray above and pale underneath with barred underparts and a dark head with thick sideburns. As with all falcons, peregrines exhibit long pointed wings and a long, rounded tail with narrow, black bands ending with a broad, dark band tipped with white narrow fringe. The feet are yellow.

Peregrine Falcons will utilize a wide variety of habitats, from open country, such as coastal lowlands, as well as along rivers, to highly developed urban locations. In Connecticut, this species has adapted to life in urban settings and often nests on manmade structures such as high rise buildings and bridges. Such structures provide protection from land-based predators and a vantage point from which to hunt for prey such as pigeons, waterfowl and other small to medium sized birds, while expending minimal energy.

2.1 Life History

Nest sites, known as eyries, are a hollow, unlined scrape on a cliff, ledge, or rocky outcrop. Abandoned raven or hawk nests in suitable locations are also occasionally used. The most publicized nesting areas have been on roofs and ledges of city buildings, as well as bridges. Pairs mate for life and may use the same nest site for many years. Male peregrines arrive at the nest site first (as early as February/March) to reestablish territories and to attract the females to the site utilizing aerial displays.

According to the CT DEEP, typically three to four cream or buff-colored eggs, covered with red-brown markings, are laid in late April and into May at intervals of two to three days. Incubation, primarily done by the female but with some help from the male, begins with the second or third egg and lasts 28 to 29 days for each egg. The hatchlings are closely brooded by the female for the first 14 days. The male typically brings food for all to the nest and the female feeds the young. The young begin to fledge at 35 to 42 days but remain dependent on the adults for another two months. For additional information on the species, please refer to the Peregrine Falcon Fact Sheet located in Attachment C.

3.0 Peregrine Falcon Protection Provisions

During the construction period for the Project, the following measures are proposed:

- Construction Phase Contractor Awareness Program;
- Construction Phase Survey and Monitoring Plan;
- Coordination with CT DEEP; and,
- Reporting.

The measures are described separately below.

3.1 Construction Phase Contractor Awareness Program

A contractor awareness program will be implemented to ensure all personnel working on the Project are aware of the potential presence of an active Peregrine Falcon nest site on or proximal to the site. As part of site specific training, all personnel will be given a copy of the Peregrine Falcon fact sheet, produced by the CT DEEP (Attachment C of this document) and will be directed to stop work if activity is occurring within 600 feet of any suspected falcon nest site. Construction personnel would be further instructed to notify CPA's on-site environmental personnel of the suspected observation. Work would not resume until a determination has been made by a qualified wildlife biologist/ornithologist regarding the reported observation.

3.2 Construction Phase Survey and Monitoring Plan

In all years with active construction scheduled to occur within the identified nesting period (April 1 through June 30), CPA will make reasonable efforts, through on-site surveys by a qualified wildlife biologist/ornithologist and in coordination with CT DEEP, to determine if falcons are nesting on or proximal to the site and/or within 600 feet of planned and/or active construction. For the purposes of this plan, "pass through" construction vehicle traffic shall not be considered active construction.

Peregrine Falcons nesting in urban settings and/or areas with significant human presence/activities have become habituated and acclimated to these disturbances. The exposure and habituation of the falcons nesting on the Gold Star Bridge to high levels of baseline noise consisting of I-95 vehicular traffic, periodic maintenance activities on the bridge, high noise levels associated with wind passing through and around the bridge, passage of trains on the adjacent active railroad track and vessel traffic on the Thames River below has likely resulted in a high disturbance threshold for the individuals nesting on the bridge. Additionally, the difference in elevation between a potential bridge nest site and the elevation of the work itself is significant, further reducing the potential impact of construction related noise disturbance.

Peregrine Falcon studies conducted for the Hudson River Crossing Project have determined that bridge nesting Peregrine Falcons have a very high tolerance of human disturbance and are not easily impacted by human activity, including construction activity associated with heavy equipment in a maritime environment (Attachment D). Behavioral observations of the resident Peregrine Falcons on the Tappan Zee Bridge crossing of the Hudson River, carried out before and during implementation of a Pile Installation Demonstration Program, determined there was no observable difference in falcon behavior as a result of construction activity and anecdotally, there was no evidence to suggest the breeding pair was in any way disturbed.

Therefore, in the event an active falcon nest is confirmed proximal to active construction, under the full time supervision of a qualified wildlife biologist/ornithologist, CPA proposes to allow construction activities to proceed to within 300 feet of any active Peregrine Falcon nest site. If it is determined by the biologist,

through observation of falcon behavior, that construction activity may be negatively impacting the birds in any way, the full 600 feet of buffer will automatically go into effect, with the previously noted exception of “pass through” construction vehicle traffic.

3.3 Coordination with CT DEEP

In the event that an active peregrine falcon nest site is discovered proximal to the Project, CPA will immediately contact the CT DEEP NDDDB Program. The NDDDB will be provided with relevant nest site details such as location, distance to active and/or proposed construction, observed falcon behavior/activity, and photographic evidence, if possible. CPA will coordinate closely with the CT DEEP in order to seek guidance to perform the work safely and specify monitoring requirements.

3.4 Reporting Requirements

Immediately after conducting daily falcon monitoring, the monitor shall complete a Daily Construction Monitoring Report (Attachment E). After completion, the report shall be placed in a designated area. All Daily Construction Monitoring Reports shall be compiled and included in a final Peregrine Falcon Monitoring Report and submitted to the CT DEEP/NDDDB before the end of the calendar year. Since CPA does not anticipate the need to handle falcons at any time, no Scientific Collection Permit is anticipated for the monitoring work.

Attachment A

State Pier Facility, Site Locus

Attachment B

CT DEEP/NDDDB March 19, 2019 Response Letter



Connecticut Department of

ENERGY &
ENVIRONMENTAL
PROTECTION

March 19, 2019

Richard E. Couch
Martinez Couch & Associates, LLC
1084 Cromwell Avenue
Rocky Hill, CT 06067
couchre@martinezcouch.com

Project: Proposed Demolition of Various Upland Buildings, Installation of New Structures Including Storm Water Retention & Treatment System, Addition of Administrative Offices with Parking and Maintenance Dredging at the State Pier at 200 State Pier Road in New London, Connecticut
NDDDB Determination No.: 201901490

Dear Richard Couch,

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map provided for the Proposed Demolition of Various Upland Buildings, Installation of New Structures Including Storm Water Retention & Treatment System, Addition of Administrative Offices with Parking and Maintenance Dredging at the State Pier at 200 State Pier Road in New London, Connecticut. We have known extant records for State Threatened *Falco Peregrinus* (peregrine falcon) and State Special Concern blueback herring that occur in close proximity to your project boundaries.

Please be advised that a DEEP Fisheries Biologist will review the permit applications you may submit to DEEP regulatory programs to determine if your project could adversely affect blueback herring. DEEP Fisheries Biologists are routinely involved in pre-application consultations with regulatory staff and applicants in order to identify potential fisheries issues and work with applicants to mitigate negative effects, including to endangered species. If you have not already talked with a Fisheries Biologist about your project, you may contact the Permit Analyst assigned to process your application for further information, including the contact information for the Fisheries Biologist assigned to review your application

Peregrine Falcon (*Falco peregrinus*) Protection Status: Threatened Species

The peregrine falcon is a state threatened species which has adapted to life in urban settings. The peregrine falcon is associated with bridges for nesting and brood rearing purposes. Peregrines will actively and aggressively defend the nest, whether a nest box or natural nest, up to and sometimes past 75 yards. The peregrine will attack anyone or anything that comes within the area of its nest. Peregrine falcons are Connecticut's largest falcon and can measure up to 20 inches. Adults are slate gray above and pale underneath with fine bars and spots of black; they

have long pointed wings with a narrow tail. Young falcons have the same composite but are darker underneath and browner all over. The peregrine falcon nesting season occurs between the months of April and June. For this reason, special conditions regarding the timing of work on the structure must be applied. In order to protect this species, the proposed construction activities should be completed during non-nesting season months (July – March). No construction activities should occur between April 1st and June 30th.

Protection Recommendation:

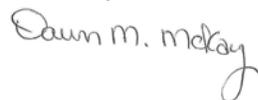
In order to protect this species, the proposed construction activities should be completed during non-nesting season months (July – March). No construction activities should occur between April 1st and June 30th. If work needs to be conducted during the breeding season (April 1st to June 30th) then I recommend hiring an ornithologist (bird expert) to evaluate and prepare a protection plan for the birds. All work on this project must maintain a minimum buffer of 600' from the nest. If a nest is identified by workers all work should stop immediately and this information should be reported to our program for further assistance and guidance to complete the work safely.

Please re-submit an NDDDB Request for Review if the scope of work changes or if work has not begun on this project by March 19, 2021.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available. The result of this review does not preclude the possibility that listed species may be encountered on site and that additional action may be necessary to remain in compliance with certain state permits.

Please contact me if you have further questions at (860) 424-3592, or dawn.mckay@ct.gov . Thank you for consulting the Natural Diversity Data Base.

Sincerely,



Dawn M. McKay
Environmental Analyst 3

Attachment C

Peregrine Falcon Fact Sheet

Connecticut Department of Energy & Environmental Protection

Peregrine Falcon

Falco peregrinus

State Threatened Species



Background: The peregrine falcon was a regular nester in Connecticut from the 1860s through the early 1900s. Prior to the Migratory Bird Treaty Act of 1918 and the strengthening of collection regulations, hundreds of peregrine eggs and many adult specimens were collected in Connecticut and Massachusetts. Some live birds and eggs were collected for use in falconry. Many more eggs and specimens were added to private collections as part of a popular late 19th century hobby. Peregrine nesting activity in Connecticut declined through the 1920s and 1930s, and the last documented nesting occurred on the Travelers Tower in Hartford in the late 1940s. Peregrines remained absent from Connecticut until 1997 when a pair successfully nested once again on the Travelers Tower. The peregrine falcon was listed in 1992 as an endangered species on Connecticut's Endangered Species List. It was reclassified as a threatened species in 2010.

Peregrine falcon populations declined rapidly between 1950 and 1965 throughout the United States and parts of Europe. By 1975, the entire population of peregrines in the eastern United States was considered to be extirpated (disappeared from that region). This decline is directly attributed to the effect of organochlorine pesticides, such as DDT, on breeding populations. The speed and global scale of this species' decline makes it one of the most remarkable events in recent environmental history.



Due to the population crash, the peregrine falcon was declared a federally endangered species, and extensive efforts were made to reestablish birds in the eastern United States. Successful reintroduction programs, using captive-bred birds, helped restore

small breeding populations along the East Coast. The Peregrine Fund, a non-profit organization dedicated to restoring peregrine populations, conducted the large captive breeding program. The reestablishment effort, coupled with restrictions placed on the use of organochlorine pesticides in the United States (DDT was banned in 1972), resulted in the recovery of the peregrine falcon population. The peregrine was removed from the federal endangered species list in 1999.

While Connecticut did not participate in any reintroduction programs, the state benefited from our neighboring states' efforts. In 1997, a peregrine pair successfully produced 3 chicks on the Travelers Tower. Leg bands revealed that the female of the pair had come from a 1994 reintroduction project in Greece, New York, sponsored by Rochester Gas & Electric, in cooperation with the New York Department of Environmental Conservation. In the years since peregrine falcons began nesting again in Connecticut, additional pairs have successfully produced young at locations in several towns. Every year, a number of dedicated volunteers and Wildlife Division staff monitor the nests throughout the nesting and fledging seasons. Division biologists also attempt to visit the nests (if they are accessible) to place identifying leg bands on the young before they fledge. This is an important management tool for monitoring this state threatened species.

Description: The peregrine falcon is a long-winged, medium-sized bird of prey. Adults have long, pointed wings and a long, rounded tail with narrow, black bands ending with a broad, dark band tipped with white. The barred upper parts are blue-gray, while the underparts are white to light buff and cross-banded with brown. The black crown and nape extend to the cheeks, forming a distinct black helmet. The feet are yellow.

Immature peregrines are similar, but the back and underparts are brown and the throat is heavily streaked with brown. Both adult and immature peregrines have a bold, dark, vertical whisker-like mark (mustache mark) on the sides of the head.

Range: The peregrine falcon is one of the most widespread birds in the world. It is found on all continents except Antarctica, and on many oceanic islands. Although widely distributed, the peregrine is common in only a few places.

Habitat and Diet: A wide variety of habitats are used by peregrine falcons. The birds are found in open country, such as coastal lowlands, as well as along rivers and in urban locations.

Pigeons, waterfowl, crows, jays, starlings, shorebirds, and other medium to small birds are the main prey items of the peregrine. In urban areas, pigeons and starlings comprise most of the diet. Beetles, dragonflies, and migrating monarch butterflies are eaten occasionally.

Life History: Nest sites, known as eyries, are located above an open area so the falcons can launch their aerodynamic hunts. The nest is a hollow, unlined scrape on a cliff, ledge, or rocky outcrop. Abandoned raven or hawk nests in similarly high locations are occasionally used. The most publicized nesting areas have been on roofs and ledges of city buildings. Pairs may use the same nest site for many years. Male peregrines arrive at the nest site first and go through a series



of aerial displays to attract the females to the site. Territories are usually reestablished by late March.

Three to 4 cream or buff-colored eggs, covered with red-brown markings, are laid in late April and May at intervals of 2 to 3 days. Incubation, primarily done by the female, begins with the second or third egg and lasts 28 to 29 days for each egg. The hatchlings are closely brooded by the female for the first 14 days. The male typically brings food for all to the nest and the female feeds the young. The young begin flying at 35 to 42 days but remain dependent on the adults for another 2 months.

Peregrine falcons reach sexual maturity at age 3, and they may reach 17-20 years of age.

Interesting Facts: The peregrine falcon is probably best known for its spectacular method of capturing prey in mid-air. It flies faster than most other birds and, when hunting, it increases its speed by making aerial dives with the wings partially or fully pulled in. The peregrine plunges at speeds up to 175 miles per hour (mph) to attack its prey, which is killed instantly. This hunting dive is called a "stoop." Normal flight speed can range between 28 to 60 mph.

Because of its habit of preying on waterfowl, the peregrine falcon has historically been referred to as the duck hawk.

Peregrines can be preyed upon by great horned owls, gyrfalcons, and other peregrines.

Peregrine falcons have adapted to living in cities. Cities offer tall buildings with ledges for nesting, water sources, large populations of pigeons and starlings for food, and have few natural predators.

The scientific name comes from the Latin words *falco*, meaning "hook-shaped," possibly referring to the beak or claws, and *peregrinus*, meaning "to wander."

As part of the reintroduction effort, The Peregrine Fund released more than 4,000 captive-reared peregrines in 28 states over a 25-year period.

What You Can Do: Respect locations of peregrine nest sites and do not disturb nesting birds.

North American peregrine falcon populations continue to be threatened by the use of DDT in the tropics where some spend the winter. Support for the advancement of alternative methods of pest control in developing nations will help not only the peregrine, but ospreys and countless species of songbirds that nest in the United States and Canada and winter in Central and South America.



The production of this Endangered and Threatened Species Fact Sheet Series is made possible by donations to the [Endangered Species/Wildlife Income Tax Checkoff Fund](#).

Content last updated on March 27, 2012.

Attachment D

Peregrine Falcon Monitoring Report, Hudson River Crossing Project

Tappan Zee Hudson River Crossing Project Peregrine Falcon Monitoring Report

JUNE 2012

1-1 EXECUTIVE SUMMARY

A monitoring plan approved by the New York State Department of Environmental Conservation (NYSDEC) was implemented to document any disturbance from the Pile Installation and Demonstration Program (PIDP) to the resident pair of peregrine falcons on the Tappan Zee Hudson River Crossing. Scan sampling was used to measure and compare peregrine falcon time budgets before and during a range of PIDP activities that were categorized by their expected potential to cause disturbance. Low disturbance activities included preliminary set-up work, such as towing cranes and other heavy equipment to the test pile locations, assembling vibration and impact hammers, installing bubble curtains, and similar in-water actions leading up to the driving of test piles. Activities of moderate disturbance potential included the construction of falsework and framing (temporary wooden or metal framework built to support a structure under construction) and the vibration of lower pile segments. Impact hammering, which was the loudest PIDP activity, was categorized as having high potential for disturbance. A total of 45 hours of observation on 15 separate days provided no indication that the birds' behavior was altered by the PIDP activities occurring at the time. The falcons were most often observed perched, and usually in the same distinct locations, independent of the PIDP work simultaneously occurring in the river below. There was no observation of any PIDP activity, including impact hammering, causing the birds to flush or otherwise respond. The birds were observed engaging in typical behaviors such as sharing food, provisioning young, and preening, which also suggests the birds were not in duress. The exposure and habituation of the peregrine falcons to extensive baseline levels of noise and other activity on the bridge under normal conditions has likely led to a high disturbance threshold in these individuals, possibly explaining why they did not appear to have any negative reaction to the PIDP. Further, the high noise levels on the bridge from traffic, maintenance operations, and wind likely masked much of the noise produced by PIDP work in the river below, including impact hammering. Impact hammering could not be heard by the peregrine falcon monitors from the observation point on the main span, and it is possible the impact hammering was inaudible to the birds as well. Bridge-nesting peregrine falcons inherently have a high tolerance of human disturbances, and on the basis of the monitoring summarized in this report, the resident pair on the Tappan Zee Hudson River Crossing does not appear to be sensitive to in-water construction activities such as those undertaken for the PIDP.

1-2 INTRODUCTION

Behavioral observations of the Tappan Zee Hudson River Crossing's resident pair of peregrine falcons were made before and during the Pile Installation Demonstration Program (PIDP) to investigate potential disturbance caused by the in-water construction

activity. The methodology and schedule for the peregrine falcon monitoring were reviewed and approved by NYSDEC in advance. The PIDP took place at four locations within the river, referred to as PLT1-PLT4, during the spring of 2012. A total of seven test piles were driven among these four locations (two piles in each of three locations and one pile in the fourth location). PLT1 and PLT2 were located within the Rockland County side of the project area, well west of the peregrine falcon nest box on the existing bridge's main span, whereas PLT3 and PLT4 were in closer proximity to the nest box location on the Westchester County side of the project area (**Figure 1**).

Initial site preparation included activities such as towing cranes and other heavy equipment to the test pile locations, assembling vibration and impact hammers, installing bubble curtains, and similar in-water actions leading up to the driving of test piles. Subsequent work included the installation of falsework piles (ancillary piles to support load frames) and framing (temporary wooden or metal framework built to support a structure under construction). Next, a low-noise, vibratory hammer was used to install the lower segment of each test pile. The upper segment was welded to the bottom segment, and then driven deeper into the riverbed by hydraulic impact hammering. Peregrine falcon monitoring spanned the range of these different PIDP activities, and included pre-PIDP observations as well as observations after all test piles had been installed. This report quantifies and compares the peregrine falcon behaviors observed during these periods.

1-3 METHODS

Observations were made from a closed lane on the bridge's main span road deck, which offered the best accessible vantage point. Lane closure schedules, however, greatly constrained the dates and times during which monitoring could occur. Generally, peregrine falcon monitoring was limited to weekdays, between approximately 9:30am and 12:00pm. For this reason, the peregrine falcons could not be comprehensively monitored throughout the full range of PIDP activities. However, dates and times of peregrine falcon monitoring were able to coincide with pile driving and other significant PIDP activities on at least one occasion. Observation dates and times, and the corresponding PIDP activities, are shown in **Table 1**.

Behavioral data were collected using an instantaneous scan sampling method (Gaibani and Csermely 2007), whereby the location and behavior of the birds were recorded at five minute intervals during the observation period and coded according to the ethogram in **Table 2** (adapted from Walter 1983). The sex of the birds could not be directly determined because peregrine falcons are not sexually dimorphic, aside from subtle differences in body size. Birds were seldom in close enough proximity to each other for size differences to be apparent. Instead, sex was presumed on the basis of the birds' behavior and all behavioral data are herein analyzed as such. For example, one bird often remained perched in front of the nest while the other bird flew long distances up- or down-river, or was otherwise out of view for extended periods of time. The bird that remained near the nest box was presumed to be female and the bird that would be absent for long periods was presumed to be male. Similarly, one bird often remained in (or near) the nest box while the other was perched on the top of the main span's north tower. The former was presumed to be female and the latter was presumed to be male. Even though male peregrine falcons contribute to incubation and nest attendance, the female performs these duties the majority of the time (White et al. 2002).

Often the birds (particularly the male) were not observable due to the limited range of visibility from the road deck. The male frequently perched somewhere out of view on or below the bridge, and often flew long distances down-river from the bridge until it could no longer be seen. Consequently, bird behaviors often had to be recorded as “unknown” during scan sampling. Also, the inside of the nest box could not be seen from the observation point, and a bird was only recorded as being inside the nest box if it had been seen entering or exiting the box at some point during the observation period.

Table #1
Peregrine Falcon Monitoring Schedule

Date	Monitoring time (EST)	Major PIDP activity	Location	Estimated breeding stage
5-Mar	10:00-11:40	None	N/A	Courtship
7-Mar	9:45-11:55	None	N/A	Courtship
8-Mar	10:10-12:10	None	N/A	Courtship
13-Mar	9:55-13:55	Equipment set-up	N/A	Courtship
19-Mar	9:50-11:50	Falsework / framing	PLT2	Courtship
2-Apr*	9:30-11:00	Falsework / framing	PLT3	Incubation
24-Apr	9:40-11:40	Equipment set-up	PLT4	Incubation
25-Apr	10:35-12:35	Equipment set-up	PLT3	Incubation
26-Apr	9:50-13:50	Equipment set-up	PLT3	Incubation
7-May	9:30-14:30	None- postponed	N/A	Chick rearing
8-May	9:35-12:45	Impact	PLT3	Chick rearing
14-May	10:00-13:00	Impact	PLT4	Chick rearing
16-May*	11:05-13:25	Impact*	PLT2	Chick rearing
18-May	9:40-13:20	Vibration & impact**	PLT3	Chick rearing
30-May	9:30-11:30	None***	N/A	Chick rearing

Notes:

*No birds were seen during Apr 2 and May 16 monitoring.

**Impact hammering occurred after the monitoring period ended.

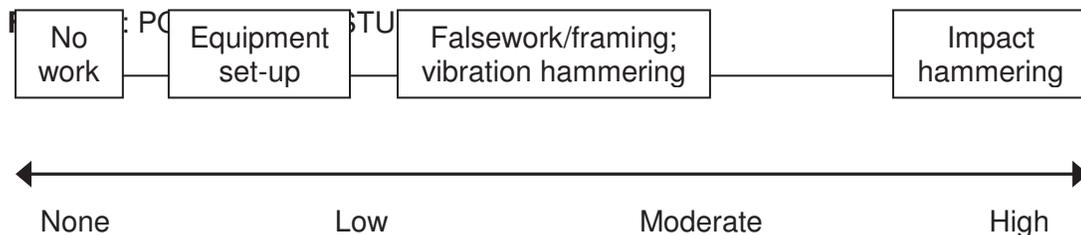
***Re-driving of piles 2A and 2B occurred over a span of approximately 8 minutes at 9:00; otherwise no major PIDP activity with potential to disturb the peregrine falcons occurred. The May 30 monitoring period is therefore considered a post-impact-hammering follow-up visit.

Table #2		
Peregrine Falcon Ethogram¹		
Behavioral Classification	Identification	Defining Action
Physical Status	P1	perched
	P2	in flight, but not in pursuit of prey or sexual display
	P3	lying down
	P4	hopping, walking
	P5	other
Feeding and Body Care	F1	feeding self
	F2	drinking
	F3	asleep
	F4	panting
	F5	preening, cleaning
	F6	scratching
	F7	shaking feathers, sunning
	F8	pellet extraction/defecating
	F9	other
Hunting	H1	prey chase, pursuit , stoop flight
	H2	prey capture, in possession of prey
	H3	prey transport
	H4	other
Agnostic Behavior and Human Impact	A1	physically harassing, attacking bird or other animal
	A2	physically harassing, attacking human
	A3	threat display towards animal (e.g., gaping, wings open)
	A4	threat display towards human
	A5	fleeing from human disturbance
	A6	other
Sexual Behavior	S1	display from perch (e.g., bowing)
	S2	aerial display
	S3	allopreening, billing, other contact
	S4	offering food
	S5	receiving food
	S6	copulation
	S7	other
Nest-Related Behavior	N1	inside nest box
	N2	feeding young
Vocalization	V1	vocalizing directed at mate
	V2	vocalizing at other conspecific
	V3	undirected vocalization
	V4	other
	-	(threat vocalization under a3 and a4)
Notes: ¹ a descriptive list of the known behaviors of a given species that is used to study animal behavior.		

The behavioral data collected from instantaneous scan sampling were used to calculate time budgets of the birds (i.e., proportion of the observation time that birds were

engaged in a given behavior). Time budgets were then compared among different phases of the PIDP that were categorized by their expected potential to cause disturbance to peregrine falcons (**Figure 2**). “No disturbance” periods include the pre-PIDP monitoring conducted on March 5, 7, and 8, and monitoring conducted on May 7 when equipment failure caused a suspension of the scheduled work. “Low disturbance potential” events include heavy equipment mobilization, set-up, and assembly at test pile locations during monitoring periods on March 13, April 24, 25, 26, and May 16. “Moderate disturbance potential” periods include the falsework and framing work performed on March 19 and the vibration hammering on May 18. “High disturbance potential” includes impact hammering on May 8 (at PLT3, the closest test location to the falcons’ nest site). On May 14, impact hammering (at PLT4) began prior to the morning lane closure and was completed approximately 0.5 hr after peregrine falcon monitoring was able to begin. Observation data collected during the 0.5 hr overlap of impact hammering at PLT4 and peregrine falcon monitoring were included in the analysis of “high disturbance potential” data. Observation data from the hour after impact hammering on May 14 had ended were also included to capture the birds’ behavior following the potential disturbance of impact hammering. All other impact hammering occurred on dates and at times when no lane was closed on the bridge and peregrine falcon monitoring was not feasible.

No birds were seen during the peregrine falcon monitoring conducted on April 2, and on May 16, only one bird was observed briefly (flying east from the bridge). On March 5 and May 18, only the female was seen. Overall, the male was not seen nearly as often as the female, and as such, sample sizes of behavioral data for the male are small.



PIDP work activities were categorized by their expected potential to cause disturbance to peregrine falcons. “Equipment set-up” included activities such as towing cranes and other heavy equipment to the test pile locations, assembling vibration and impact hammers, installing bubble curtains, and similar in-water actions leading up to the driving of test piles that were considered to have low potential to cause disturbance. Constructing falsework and framing, and vibrating lower pile segments were considered to have moderate potential to disturb peregrine falcons. Impact hammering was the loudest PIDP activity and considered to have the highest potential to cause disturbance.

1-4 RESULTS

Peregrine falcon monitoring was conducted for a total of approximately 45 hours over 15 different days. Behaviors of the female that were recorded by scan sampling included perching, nest attendance, receiving food, and feeding young (i.e., entering the next box with food at a time when the nest was expected to contain nestlings). Male

behaviors included perching, nest attendance, flying, offering food, and preening (**Table 3**).

In March and April, prior to egg laying, one bird (presumably female) would often be seen for the majority of the monitoring period, usually near the nest box, whereas the other bird (presumably male) would only be seen intermittently and would be absent for extended periods of time. Later in the season, when the pair was expected to have eggs, the presumed female was often in the nest box while the presumed male was often either perched on the top of the main span's north tower or was out of view for long periods of time.

As discussed above, monitoring effort differed among different phases of the PIDP and often could not be conducted during primary PIDP activities because of lane closure schedules, construction delays, and other logistical constraints. Further, birds were often unseen during the monitoring periods and their behavior could not be recorded. Sample sizes of behavioral data were particularly small for the male. Because of these disparities, the unevenness of the monitoring effort across PIDP phases, and the small sample sizes, data were not analyzed statistically. Qualitatively, there were no noticeable trends in the birds' behaviors during phases of the PIDP with different expected levels of potential disturbance (**Table 3**). Time budgets in the days preceding initiation of the PIDP were similar to those measured during the PIDP, including periods of impact hammering. Anecdotally, there was also no evidence to suggest that the peregrine falcons were in any way disturbed by the PIDP.

Table #3								
Time budgets (expressed as percentages) of peregrine falcons on the Tappan Zee Hudson River Crossing before and during PIDP stages categorized by their potential to cause disturbance								
Expected Disturbance Level	Number*	Behavior (% of scan samples)						
		Perched	In Nest Box	In Flight	Offering Food	Receiving Food	Feeding Young	Preening
Female								
None	108	19	79				2	
Low	124	20	78			2		
Medium	38	97	3					
High	47	11	87			2		
Follow-up**	24	100						
Male								
None	22	86	9	5				
Low	19	68	5	16				11
Medium	17	94		6				
High	3	1 of 3		1 of 3	1 of 3			
Follow-up**	14	86						14
Notes: See Table 1 and Figure 1 for corresponding dates and PIDP activities.								
*Number of scan samples during which the bird was seen and behavior could be determined.								
**Follow-up monitoring on May 30 after driving of all test piles had concluded.								

1-5 DISCUSSION

In New York City and many other metropolitan areas, peregrine falcons nest on bridges, high-rise buildings, and other tall artificial structures amidst the high levels of noise and human activity associated with an urban environment, thus demonstrating a high tolerance of disturbance and an ability to exploit resources in human-dominated landscapes (Cade et al. 1996, White et al. 2002). Peregrine falcons began nesting on the Tappan Zee Bridge in the 1980's (Mildner 1988, Frank 1994) and continue to do so to this day.

Existing conditions for peregrine falcons nesting on the Tappan Zee Bridge are characterized by consistent and extensive levels of human activity. Vehicular traffic and strong winds create a remarkably noisy environment. The resident pair of peregrine falcons' selection of the nest site inherently indicates a tolerance of these conditions, and based on the direct observations of the birds throughout the monitoring program, it is apparent that the birds are indifferent to the human activity around them. In addition to the high traffic volume passing below their nest site, painters and other bridge maintenance/repair crews were highly active in close proximity to the nest location throughout the monitoring period. At no point did the birds appear to react to the crews or work vehicles operating below them.

A comparison of the peregrine falcons' time budgets before and during PIDP activities indicates that the birds' behavior was unaffected. Birds were most often observed perched, and usually in the same distinct locations, independent of the concomitant PIDP work occurring in the river below. The presumed female was almost always inside the nest box or perched on the supporting cross beam within approximately 20 feet of the nest. The male most commonly perched on the top of the main span's north tower, over the southbound traffic lanes. For both sexes, the proportion of time perched was comparable between the periods with no in-water work and the PIDP activities that ranged from low to high disturbance potential. There was no indication that any PIDP activity, including impact hammering, caused the birds to flush or otherwise respond. The birds engaged in other typical behaviors during the PIDP as well, including sharing food, provisioning young, and preening, which also suggests the birds were not in duress. On May 8, the female remained inside the nest box throughout the impact hammering of test pile 3A (the closest test pile location to the nest) that occurred from 10:05am to 11:30am. Birds usually flush from their nest when approached or otherwise disturbed. At no point did the female peregrine falcon appear to flush from the nest box or otherwise flee the area in panic flight.

The exposure and habituation of the peregrine falcons to the extensive baseline levels of noise and other activity on the bridge has likely led to a high disturbance threshold in these individuals and likely explains why they did not appear to have any negative reaction to the PIDP. Further, the high noise levels on the bridge from traffic, maintenance operations, and wind likely masked the majority of the noise produced by the PIDP work in the river below, including impact hammering. Neither of the two peregrine falcon monitors that were on the bridge on May 8 and 14 heard the impact hammering of test piles 3A and 4A that took place during the monitoring period. Both monitors were unaware that the impact hammering had occurred until they were later informed by the engineer in charge. The impact hammering (and other PIDP activities) may have been inaudible to the peregrine falcons above the high ambient noise levels around their nest site and other areas of frequent occurrence on the bridge.

In conclusion, 45 hours of observations provided no evidence that peregrine falcons nesting on the Tappan Zee Hudson River Crossing were affected by the PIDP, including the impact hammering of test piles in close proximity to the nest site. No signs of disturbance or altered behavior, such as avoidance of the nest site, repeated displacement from typical areas of occurrence, threat displays (erect feathers on head, back, and/or breast), or open-mouth breathing, were observed. The birds, particularly the female, continued to engage in typical behaviors throughout the various stages of in-water activity. Nest attendance did not appear to be altered in any way. As impact hammering of test pile 4A was in progress relatively close to the nest, the male was observed delivering prey to the female at the nest, which suggests both birds were indifferent to any noise or visual disturbance generated by the pile driving. These overall findings are consistent with observations of peregrine falcons successfully nesting on the San Francisco-Oakland Bay Bridge during the bridge's earthquake retrofitting project in the early 2000's and the current, ongoing construction of its replacement bridge (Stewart 2011). Bridge-nesting peregrine falcons inherently have a high tolerance of human disturbances, and on the basis of the monitoring summarized in this report, the resident pair on the Tappan Zee Hudson River Crossing is not sensitive to in-water construction activities such as those undertaken for the PIDP. Similarly, future construction of a replacement bridge is not expected to cause nest-site abandonment or otherwise negatively impact peregrine falcons nesting on the existing bridge.

1-6 REFERENCES

- Cade, T.J, M. Martell, P. Redig, G. Septon, and H. Tordoff. 1996. Peregrine falcons in urban North America. In: D.M. Bird, D. Varland, and J. Negro (eds.) *Raptors in human landscapes: adaptations to built and cultivated environments*. Academic Press, San Diego, CA.
- Frank, S. 1994. *City peregrines: a ten-year saga of New York City falcons*. Hancock House, Blaine, WA.
- Gaibani, G. and D. Csermely. 2007. Behavioral studies. In: D.M. Bird, K.L. Bildstein, D.R. Barber, and A. Zimmerman (eds.). *Raptor research and management techniques*. Hancock House, Surrey, B.C., Canada.
- Mildner, D. 1988. An active peregrine eyrie along the Hudson. *Kingbird* 38: 246-247.
- Stewart, G.R. 2011. Personal communication between Glenn R. Stewart, Santa Cruz Predatory Bird Research Group and Chad L. Seewagen, AKRF Inc., November 18 and 21, 2011.
- Walter, H. 1983. The raptor actigram: a general alphanumeric notation for raptor field data. *Raptor Research* 17:1-8.
- White, C.M., N.J. Clum, T.J. Cade, and W.G. Hunt. 2002. Peregrine Falcon (*Falco peregrinus*). In: A. Poole and F. Gill (eds.) *The Birds of North America*, No. 660. The Birds of North America, Inc., Philadelphia, PA.

Attachment E

Construction Monitoring Report Form

DAILY CONSTRUCTION MONITORING REPORT

**State Pier Infrastructure Improvements
New London, CT**

Project Number: _____

Project Manager:

Date:

On-Site personnel:

WEATHER CONDITIONS:

WORK COMPLETED:

OBSERVATIONS / RECOMMENDATIONS:

SAFETY ISSUES:

OTHER COMMENTS:

CERTIFICATE OF PERMISSION APPLICATION
State Pier Facility, New London, CT
Connecticut Port Authority

Attachment E – Applicant Background Form



**Connecticut Department of
Energy & Environmental Protection**

Applicant Background Information

Check the box by the entity which best describes the applicant and complete the requested information. **You must choose one of the following:** corporation, limited liability company, limited partnership, general partnership, voluntary association and individual or business type. Be sure to include the signatory authority or authorized representative certifying the application.

Corporation

Check the box if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. Parent Corporation

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

2. Subsidiary Corporation:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

3. Directors:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

4. Officers:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

Applicant Background Information (continued)

Limited Liability Company

Check the box if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. List each member.

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

2. List any manager(s) who, through the articles of organization, are vested the management of the business, property and affairs of the limited liability company.

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

Applicant Background Information (continued)

Limited Partnership

Check the box if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. General Partners:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

2. Limited Partners:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

Applicant Background Information (continued)

General Partnership

Check the box if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. General Partners:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

Applicant Background Information (continued)

Voluntary Association

Check box if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. List authorized persons of association or list all members of association.

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

Individual or Other Business Type

Check the box, if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. Name: **Connecticut Port Authority (CPA)**

Mailing Address: 455 Boston Post Road, Suite 204

City/Town: Old Saybrook

State: CT

Zip Code: 06475

Business Phone: 860-577-5174

ext.: 4

E-mail: Joseph.Salvatore@CT.gov

2. State other names by which the applicant is known, including business names.

Name:

CERTIFICATE OF PERMISSION APPLICATION
State Pier Facility, New London, CT
Connecticut Port Authority

Attachment F – Applicant Compliance Information Form



**Connecticut Department of
Energy & Environmental Protection**

Applicant Compliance Information

DEEP ONLY

App. No. _____

Co./Ind. No. _____

Applicant Name: Connecticut Port Authority (CPA)

Mailing Address: **455 Boston Post Road, Suite 204**

City/Town: **Old Saybrook**

State: **CT**

Zip Code: **06475**

Business Phone: **860-577-5174**

ext.: **N/A**

Contact Person: **Joseph R. Salvatore**

Phone: **860-577-5174** ext. **4**

*E-mail: **Joseph.Salvatore@CT.gov**

If you answer *yes* to any of the questions below, you must complete the Table of Enforcement Actions on the reverse side of this sheet as directed in the instructions for your permit application.

- A. During the five years immediately preceding submission of this application, has the applicant been convicted in any jurisdiction of a criminal violation of any environmental law?

Yes No

- B. During the five years immediately preceding submission of this application, has a civil penalty been imposed upon the applicant in any state, including Connecticut, or federal judicial proceeding for any violation of an environmental law?

Yes No

- C. During the five years immediately preceding submission of this application, has a civil penalty exceeding five thousand dollars been imposed on the applicant in any state, including Connecticut, or federal administrative proceeding for any violation of an environmental law?

Yes No

- D. During the five years immediately preceding submission of this application, has any state, including Connecticut, or federal court issued any order or entered any judgement to the applicant concerning a violation of any environmental law?

Yes No

- E. During the five years immediately preceding submission of this application, has any state, including Connecticut, or federal administrative agency issued any order to the applicant concerning a violation of any environmental law?

Yes No

Table of Enforcement Actions

(1) Type of Action	(2a) Date Commenced	(2b) Date Terminated	(3) Jurisdiction	(4) Case/Docket/ Order No.	(5) Description of Violation

Check the box if additional sheets are attached. Copies of this form may be duplicated for additional space.

CERTIFICATE OF PERMISSION APPLICATION
State Pier Facility, New London, CT
Connecticut Port Authority

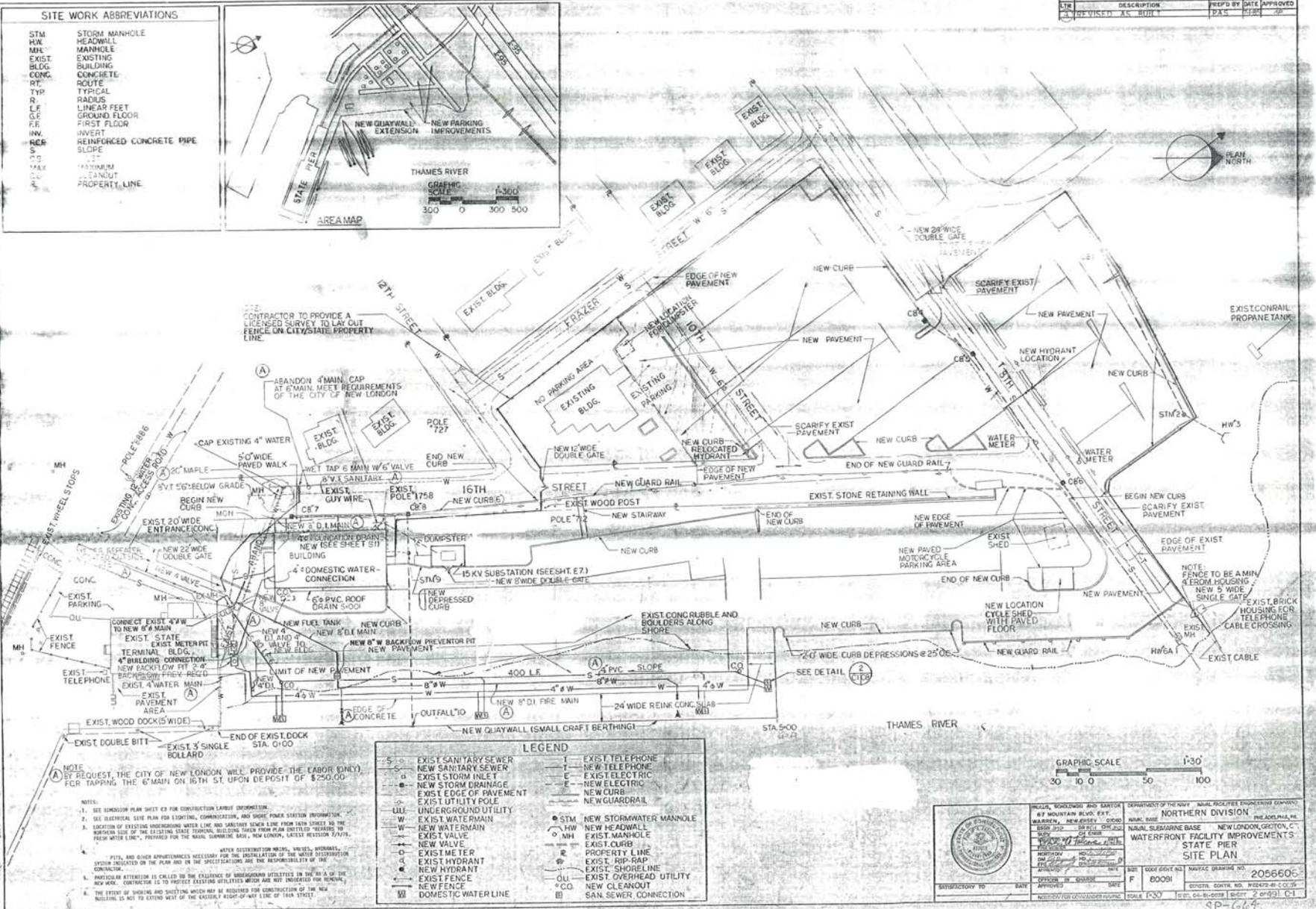
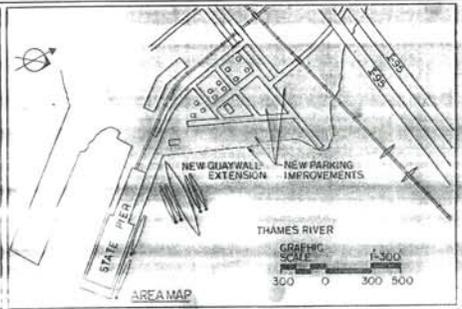
Attachment G – Other Information

CERTIFICATE OF PERMISSION APPLICATION
State Pier Facility, New London, CT
Connecticut Port Authority

Northeast Bulkhead Supporting Information

REVISIONS				
NO.	DESCRIPTION	PREP'D BY	DATE	APPROVED
1	REVISED AS BUILT	PA	1/28	JP

SITE WORK ABBREVIATIONS	
STM	STORM MANHOLE
HW	HEADWALL
MH	MANHOLE
EXIST.	EXISTING
BLDG.	BUILDING
CONC.	CONCRETE
RT	ROUTE
TYP	TYPICAL
R	RADIUS
LF	LINEAR FEET
GF	GROUND FLOOR
FF	FIRST FLOOR
HW	INVERT
RCP	REINFORCED CONCRETE PIPE
S	SLOPE
MIN	MINIMUM
END	END OUT
CL	PROPERTY LINE



CONTRACTOR TO PROVIDE A LICENSED SURVEY TO LAY OUT FENCE ON CITY/STATE PROPERTY LINE.

ABANDON 4" MAIN CAP AT 6" MAIN MEET REQUIREMENTS OF THE CITY OF NEW LONDON.

NOTE: REQUEST THE CITY OF NEW LONDON WILL PROVIDE THE LABOR ONLY FOR TAPPING THE 6" MAIN ON 16TH ST. UPON DEPOSIT OF \$250.00.

- NOTES:
- SEE CONSTRUCTION PLAN SHEET EX FOR CONSTRUCTION LARGE DIMENSIONS.
 - SEE GENERAL SITE PLAN FOR EXISTING, COMMUNICATION, AND SHIELD POWER STATION DIMENSIONS.
 - LOCATION OF EXISTING UNDERGROUND WATER LINE AND SANITARY SEWER LINE FROM 16TH STREET TO THE NORTHERN SIDE OF THE EXISTING STATE TOWNSHIP, BEING TAKEN FROM PLAIN UTILITIES "REVISED TO FRESH WATER LINE", PREPARED FOR THE NAVAL SUBMARINE BASE, NEW LONDON, LATEST REVISION 12/27/74.
 - UTILITIES AND OTHER APPROPRIATIONS NECESSARY FOR THE INSTALLATION OF THE WATER DISTRIBUTION SYSTEM INDICATED ON THE PLAN AND IN THE SPECIFICATIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
 - PARTICULAR ATTENTION IS CALLED TO THE EXISTENCE OF UNDERGROUND UTILITIES IN THE AREA OF THE NEW WORK. CONTRACTOR IS TO PROTECT EXISTING UTILITIES WHICH ARE NOT INDICATED ON THE PLAN.
 - THE METHOD OF PILING AND SHIELDING WHICH MAY BE REQUIRED FOR CONSTRUCTION OF THE NEW BUILDING IS NOT TO EXTEND BEYOND THE EXISTING RIGHT-OF-WAY LINE OF THIS STREET.

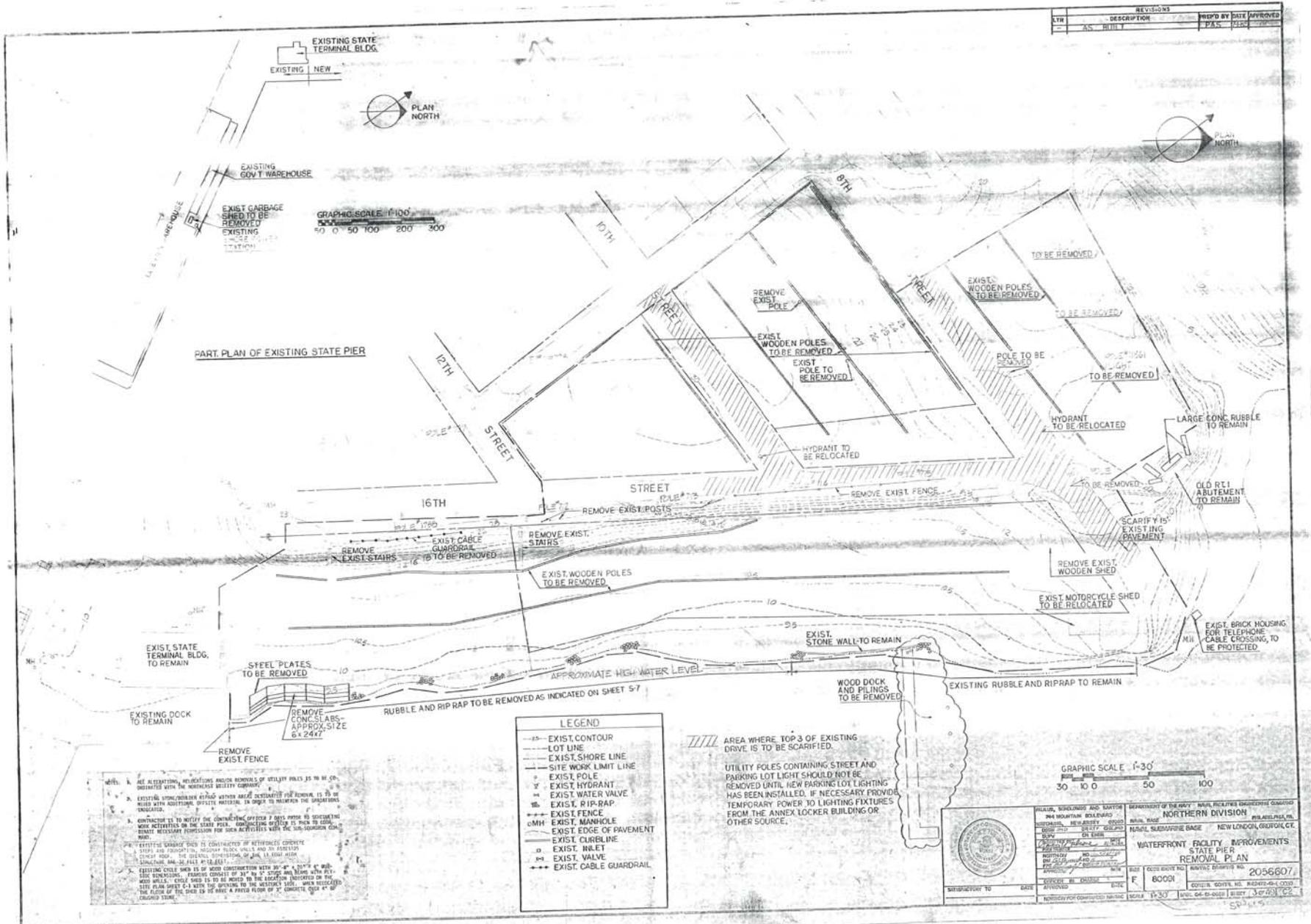
LEGEND	
S	EXIST. SANITARY SEWER
SS	NEW SANITARY SEWER
SI	EXIST. STORM INLET
SD	NEW STORM DRAINAGE
EP	EXIST. EDGE OF PAVEMENT
UP	EXIST. UTILITY POLE
UL	UNDERGROUND UTILITY
WL	EXIST. WATER MAIN
WN	NEW WATER MAIN
WV	EXIST. VALVE
WNV	NEW VALVE
OM	EXIST. METER
OH	EXIST. HYDRANT
OHV	NEW HYDRANT
OF	EXIST. FENCE
WF	NEW FENCE
W	DOMESTIC WATER LINE
T	EXIST. TELEPHONE
NT	NEW TELEPHONE
E	EXIST. ELECTRIC
NE	NEW ELECTRIC
C	NEW CURB
CG	NEW GUARDRAIL
STM	NEW STORMWATER MANHOLE
HW	NEW HEADWALL
MH	NEW MANHOLE
WV	NEW VALVE
PL	PROPERTY LINE
RP	EXIST. RIP-RAP
SH	EXIST. SHORELINE
OU	EXIST. OVERHEAD UTILITY
CO	NEW CLEANOUT
SC	SAN. SEWER CONNECTION



WILLIAM H. BOWEN, JR. AND SONS 817 MOUNTAIN BELLEVUE EXT. BALTIMORE, NEW YORK 12000 DIST. NO. 205660E	DEPARTMENT OF THE NAVY NORTHERN DIVISION NAVAL SUBMARINE BASE WATERFRONT FACILITY IMPROVEMENTS STATE PER SITE PLAN
SHEET NO. 0001 OFFICE NO. 0009 APPROVED BY: [Signature] DATE: 04-26-2019	DRAWING NO. 205660E GENERAL CONTRACT NO. 192472-01-CO-35 DATE: 04-26-2019 SHEET 2 OF 23 C-1

Gay Will

REVISIONS			
NO.	DESCRIPTION	PREP BY	DATE APPROVED
1	AS BUILT	PAS	1/10/77

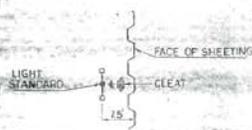


DESIGNED BY	DATE	APPROVED BY	DATE
PROJECT NO.	DATE	PROJECT NO.	DATE
PROJECT NO.	DATE	PROJECT NO.	DATE
PROJECT NO.	DATE	PROJECT NO.	DATE

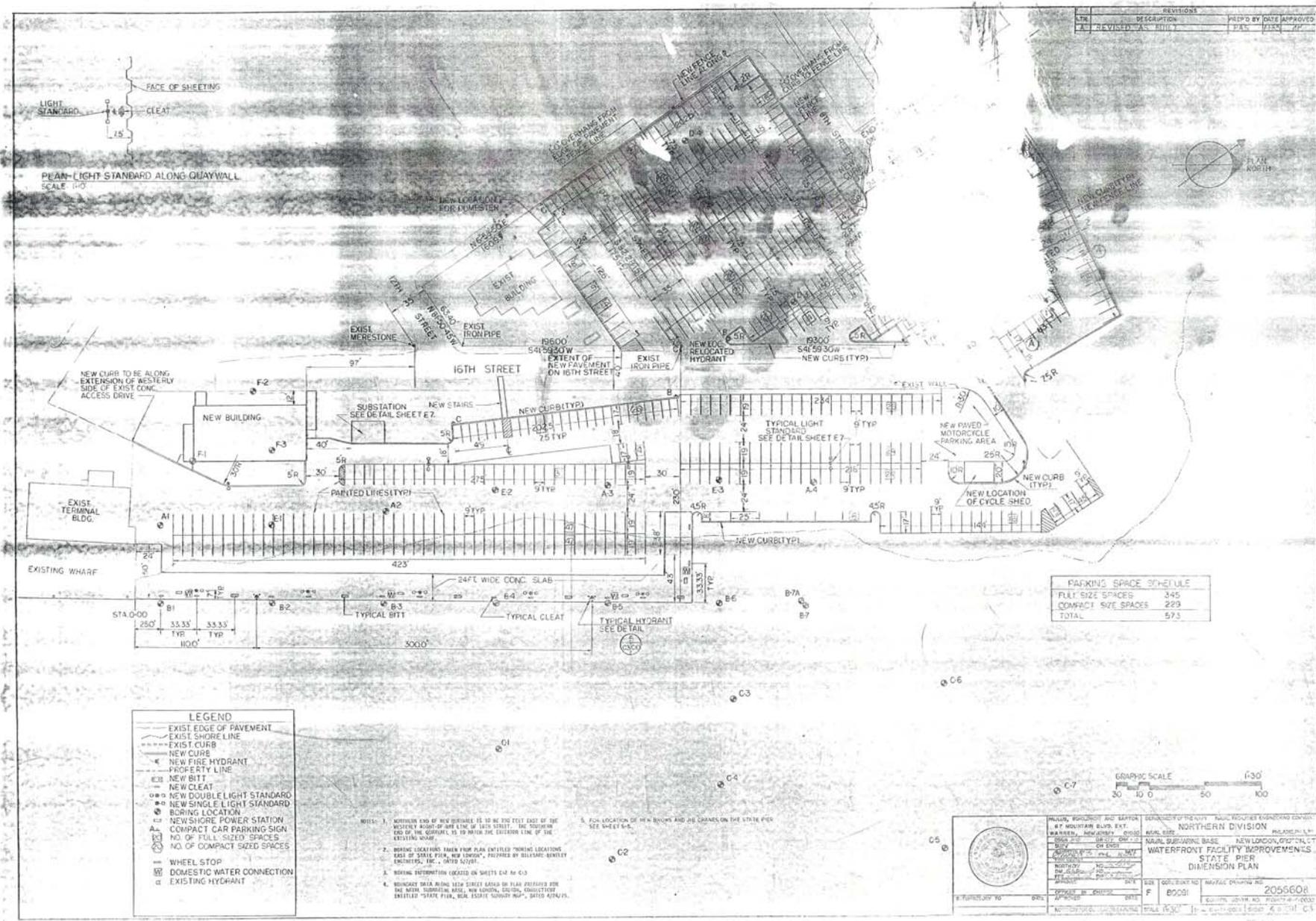
DEPARTMENT OF THE ARMY
NORTHERN DIVISION
WATERFRONT FACILITY IMPROVEMENTS
STATE PIER REMOVAL PLAN

PROJECT NO. 2056607
F 80091

REVISIONS			
NO.	DESCRIPTION	PREP'D BY	DATE APPROVED
1	REVISED AS BUILT	STAT	APR 20



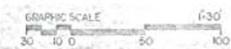
PLAN - LIGHT STANDARD ALONG QUAYWALL
SCALE 1/4"



PARKING SPACE SCHEDULE	
FLAT SIZE SPACES	345
COMPACT SIZE SPACES	229
TOTAL	573

LEGEND	
---	EXIST. EDGE OF PAVEMENT
---	EXIST. SHORE LINE
---	EXIST. CURB
---	NEW CURB
⊕	NEW FIRE HYDRANT
---	PROPERTY LINE
⊕	NEW BITT
⊕	NEW CLEAT
⊕	NEW DOUBLE LIGHT STANDARD
⊕	NEW SINGLE LIGHT STANDARD
⊕	BORING LOCATION
⊕	NEW SHORE POWER STATION
⊕	COMPACT CAR PARKING SIGN
⊕	NO. OF FULL-SIZED SPACES
⊕	NO. OF COMPACT SIZED SPACES
⊕	WHEEL STOP
⊕	DOMESTIC WATER CONNECTION
⊕	EXISTING HYDRANT

- NOTES:
1. NORTHERN END OF NEW CURBLINE IS TO BE TWO FEET EAST OF THE EXISTING EDGE OF NEW CONC. OR ASP. DRIVE. THE SOUTHERN END OF THE CURBLINE IS TO BE THE EXTERIOR LINE OF THE EXISTING ROAD.
 2. BORING LOCATIONS TAKEN FROM PLAN ENTITLED "BORING LOCATIONS EAST OF STATE PIER, NEW LONDON", PREPARED BY SILVERMAN-BENTLEY ENGINEERS, INC., JUNE 1968.
 3. BORING INFORMATION LOCATED ON SHEETS E-2 & C-3.
 4. BOUNDARY DATA ALONG 16TH STREET BASED ON PLAN PREPARED FOR THE NEW LONDON AREA, NEW LONDON, CONNECTICUT, ENTITLED "STATE PIER, NEW LONDON TOWNSHIP", DATED 1/19/67.
 5. FOR LOCATION OF NEW BOWNS AND JIB CRANES ON THE STAKE PER SEE SHEET C-6.

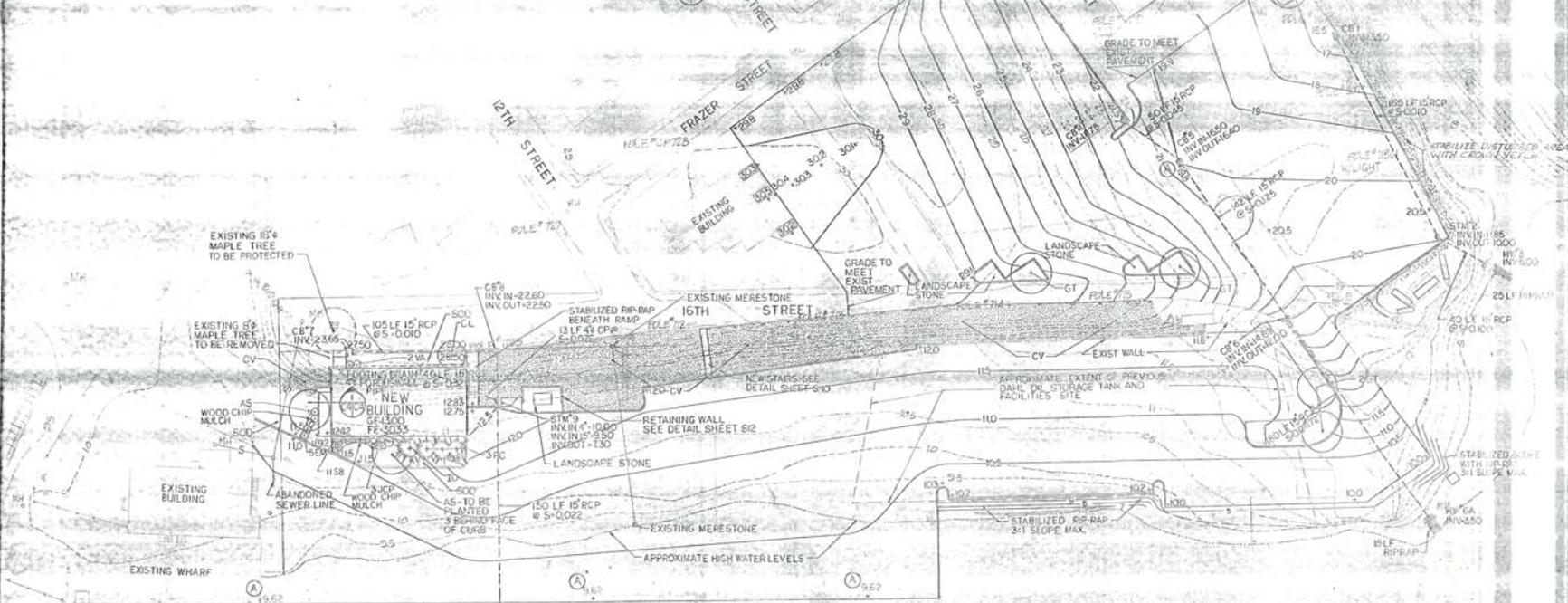
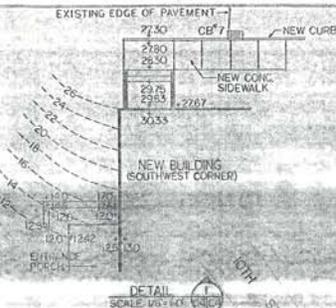


DESIGNER ENGINEER ARCHITECT SURVEYOR CIVIL ENGINEER ELECTRICAL ENGINEER MECHANICAL ENGINEER CHEMICAL ENGINEER INDUSTRIAL ENGINEER AERONAUTICAL ENGINEER AGRICULTURAL ENGINEER METALLURGICAL ENGINEER MINING ENGINEER NUCLEAR ENGINEER PETROLEUM ENGINEER SANITARY ENGINEER SURVEYING ENGINEER TRANSPORTATION ENGINEER WATER RESOURCES ENGINEER WIND ENGINEER WOODWORKING ENGINEER	PROJECT NO. SHEET NO. DATE SCALE DRAWN BY CHECKED BY APPROVED BY	DIVISION OF THE STATE ENGINEERING BOARD NORTHERN DIVISION MAINT. SUPERVISING ENGINEER NEW LONDON DISTRICT WATERFRONT FACILITY IMPROVEMENTS STATE PIER DIMENSION PLAN	PROJECT NO. 2056608 SHEET NO. 2056608-003 DATE 11/19/68 SCALE AS SHOWN DRAWN BY J. J. BROWN CHECKED BY J. J. BROWN APPROVED BY J. J. BROWN
---	--	--	--

REVISIONS			
NO.	DESCRIPTION	PREP BY	DATE
1	ISSUED FOR BIDDING

PLANT LIST				
KEY	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE
AS	ACER SACCHARUM	SUGAR MAPLE	2	8-10' B&B
CV	COONILLA VARIA	CROWN VETCH	*	
	PENN GFT			
EM	ELAEAGNUS MULTIFLORUS	CHERRY ELAEAGNUS	5	2-3
IO	ILEX OPACA	AMERICAN HOLLY	1	7-8' B&B
JCP	JUNIPERUS CHINENSIS	PIZZAZER JUNIPER	3	5-4' B&B
	PHITZERANA			
GT	GLEDITSIA TRIACANTHOS	MORNING HONEYLOCUST	6	8-10' B&B
	INERMIS MORANE			
SB	SPIREA EUMALDA	ANTHONY WATERED SPIREA	11	2-3
	ANTHONY WATERED			
VA	VIBURNUM ACERIFOLIUM	MAPLELEAF VIBURNUM	2	15-24"
CI	CLADOPASTIS FLUTEA	AMERICAN YELLOWWOOD	1	6-8' B&B
ST	STYRACIS GLABRA	SMOOTH STONE BARK	3	2-4' B&B

NOTE: CROWN VETCH TO BE SEARDED, INOCULATED AND APPLIED VIA A HYDROSEED MIXTURE. RYE GRASS IS TO BE USED FOR STABILIZATION.



LEGEND	
---	EXIST. EDGE OF PAVEMENT
- - -	EXIST. SHORE LINE
- - -	NEW STORM DRAINAGE
- - -	NEW GUARD RAIL
+	EXIST. FIRE HYDRANT
+	EXIST. CATCH BASIN
+	NEW DRAINAGE INLET
+	STAIR NEW STORM MANHOLE
+	HW NEW HEADWALL
+	EXIST. MANHOLE
+	EXIST. VALVE
+	EXIST. CONTOUR
+	NEW CONTOUR
+	1.00 SPOT ELEVATION
+	1.222 EXIST. ELEVATION
+	SHRUB
+	EVERGREEN
+	DECIDUOUS TREE
+	CROWN VETCH
+	NEW RIP-RAP

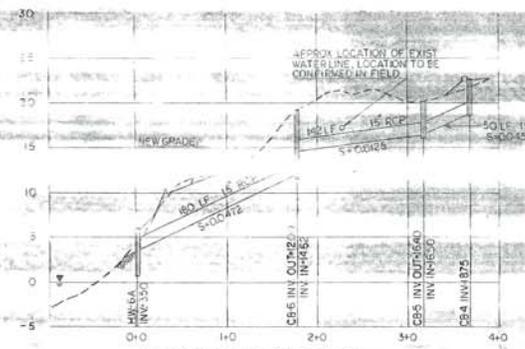
1. PORTALS AND/OR ENCASED LINES ARE TO BE SET BY C.P.
2. SEE SHEET A-1 FOR DIMENSIONS OF NEW BUILDING.
3. ALL NEW ELEVATIONS SHOWN ARE FINISHED UNLESS NOTED OTHERWISE.
4. ALL NEW AND EXISTING DRAINAGE SHALL BE 27" DIA. AND SHALL BE 18" CLASS 1 CONC. MANHOLE WITH 6" RCP.
5. VERIFY THE EXISTING GRADE OF THE WHARF AND THE LOCATION OF THE EXISTING WATER LINE PRIOR TO THE FIELD.
6. PRIOR TO CONSTRUCTION OF THE WHARF, THE EXISTING AND NEW LANDFILL SHALL BE VERIFIED BY THE CONTRACTOR USING SURVEYING METHODS TO BE APPROVED BY THE ENGINEER.
7. ALL EXISTING SHAFTS OR TANKS SHALL BE REINFORCED WITH CONCRETE AND SHALL BE SET TO THE SAME ELEVATION AS THE EXISTING SHAFTS OR TANKS.

NOTE: ALL SHRUBS, EVERGREENS, AND DECIDUOUS TREES SHALL BE SET BY THE CONTRACTOR AND SHALL BE SET TO THE SAME ELEVATION AS THE EXISTING TREES. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES AS SHOWN ON SHEET S-1. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES AS SHOWN ON SHEET S-1. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES AS SHOWN ON SHEET S-1.

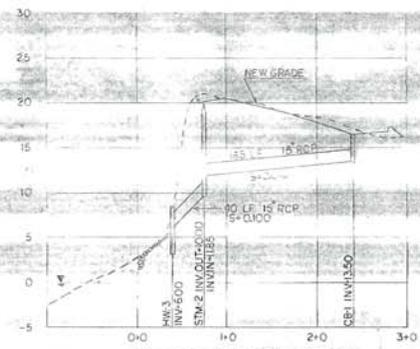


NORTHERN DIVISION	
NAME, ADDRESS AND EMBLEM OF REGISTERED PROFESSIONAL ENGINEER	NAME, ADDRESS AND EMBLEM OF REGISTERED PROFESSIONAL ENGINEER
...	...

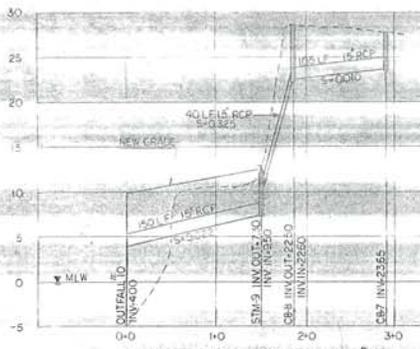
REVISIONS			
NO.	DESCRIPTION	PREP'D BY	DATE APPROVED
1	REVISED AS BUILT	PAS	03/20/07



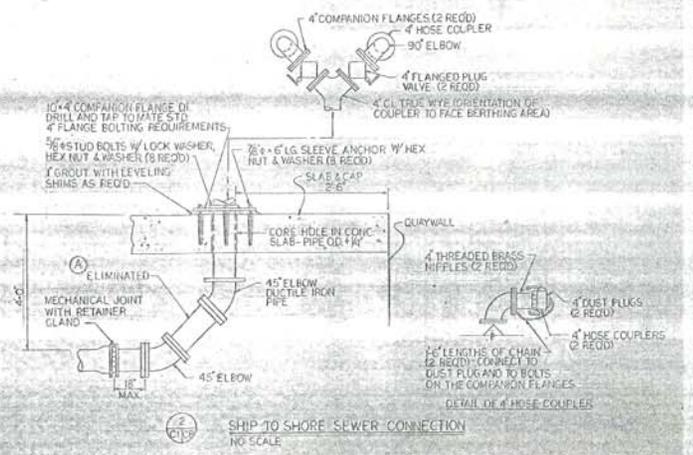
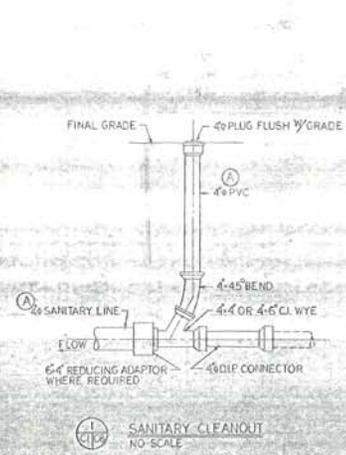
DRAINAGE PROFILE CB4 TO HW6A



DRAINAGE PROFILE CB1 TO HW3



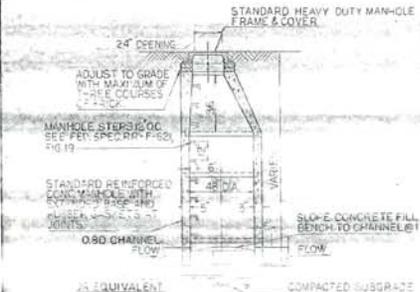
DRAINAGE PROFILE CB7 TO OUTFALL T



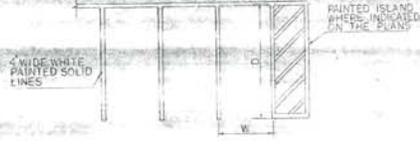
SCALE
HORIZONTAL 1" = 50'
VERTICAL 1" = 5'

	DESIGNER PAUL J. BERMAN 1000 PINE ST. SUITE 200 NEW ORLEANS, LA 70112 (504) 581-1111 FAX (504) 581-1112 www.pjberman.com	CHECKED BY J. B. BROWN 1000 PINE ST. SUITE 200 NEW ORLEANS, LA 70112 (504) 581-1111 FAX (504) 581-1112 www.pjberman.com	PROJECT NO. 2056613
	DRAWN BY J. B. BROWN 1000 PINE ST. SUITE 200 NEW ORLEANS, LA 70112 (504) 581-1111 FAX (504) 581-1112 www.pjberman.com	DATE 03/20/07	SCALE AS SHOWN

REVISIONS			
NO.	DESCRIPTION	BY	DATE
AS-BUILT		PAS	1/24/02

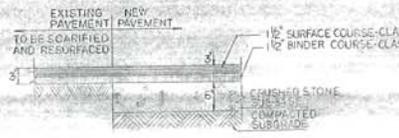


1 STANDARD MANHOLE
1/4" SCALE



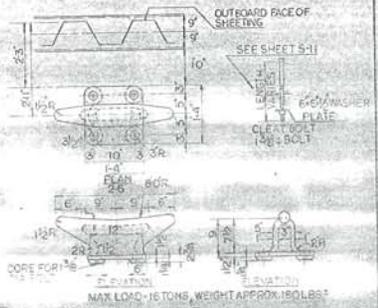
STANDARD SPACE	W	L
9-0	19-0	
7-6	17-0	

2 PARKING STALL DETAIL
1/4" SCALE

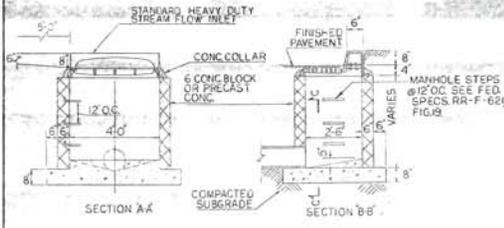


NOTE: WITHIN THE PARKING AREA EXISTING PAVEMENT IS TO BE SCARIFIED TO A DEPTH OF 3" AND RESURFACED WITH 3" OF NEW PAVEMENT. A PRIME COAT IS TO BE APPLIED TO THE SCARIFIED AREA PRIOR TO PAVING.

3 TYPICAL ASPHALT PAVEMENT DETAIL
1/4" SCALE

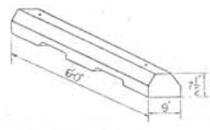


4 30 CAST STEEL CLEAT
NO SCALE

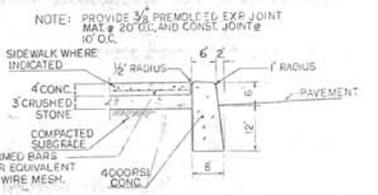


SECTION A-A

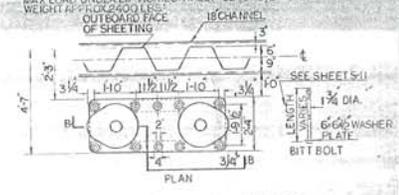
SECTION B-B



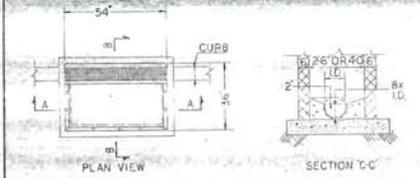
6 CONCRETE CURB DETAIL
NO SCALE



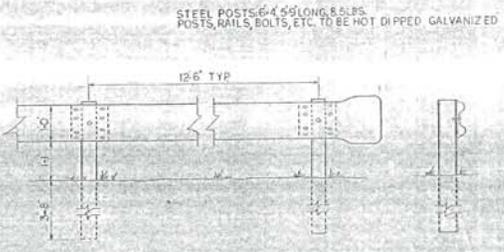
7 CONCRETE CURB DETAIL
NO SCALE



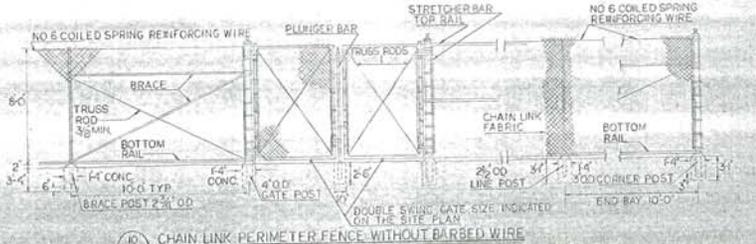
8 HIGH DOUBLE BITT WITH 1 1/2" CAST STEEL
NO SCALE



9 STANDARD CURB TYPE CATCH BASIN
NO SCALE



10 GUARD RAIL
NO SCALE



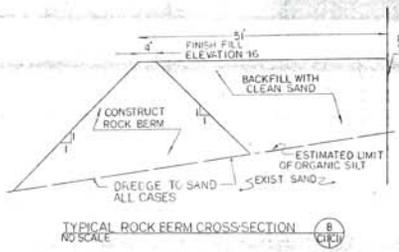
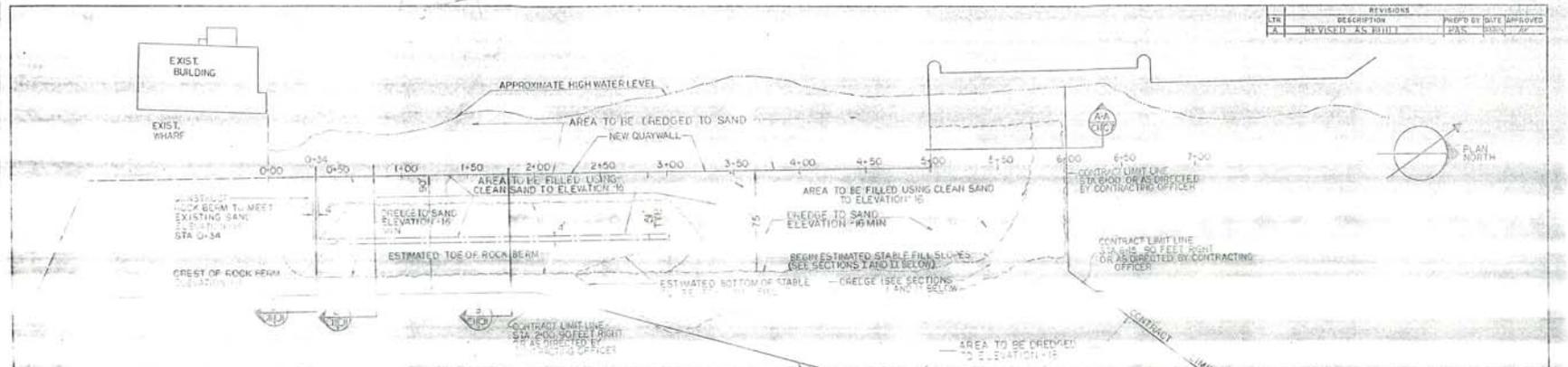
NOTE: CHAIN LINK FENCE ALONG RAMP TO NEW BUILDING IS TO BE 6 FEET HIGH WITH TOP AND BOTTOM RAILS. FENCE AROUND ELECT SUBSTATION IS TO BE 8 FEET HIGH WITH TOP AND BOTTOM RAILS. ALL OTHER FENCING IS TO BE 8 FEET HIGH WITH TOP WIRE AND BOTTOM RAIL AND WITH BRACING AS INDICATED IN THE SPECIFICATIONS.



DESIGNED BY		DRAWN BY		CHECKED BY		APPROVED BY	
PAS	1/24/02						

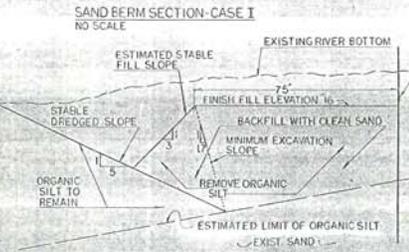
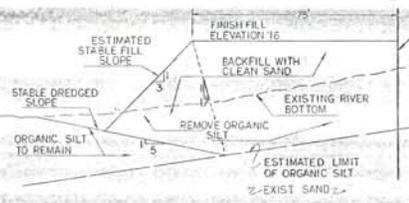
PROJECT: WATERFRONT FACILITY IMPROVEMENTS
 SHEET: 20566-1
 DATE: 1/24/02

REVISIONS			
NO.	DESCRIPTION	PREP'D BY	DATE APPROVED
1	REVISED AS SHOWN	ZAS	11/77

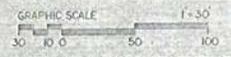
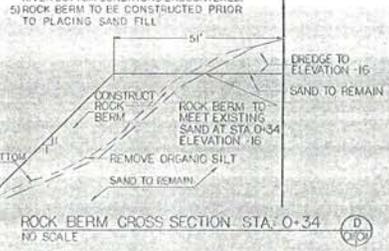
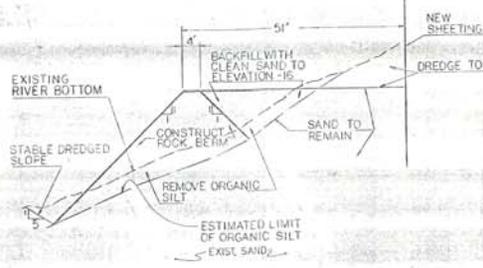


SIZE OF ROCK	PERCENT OF TOTAL WEIGHT SMALLER THAN THE GIVEN SIZE
100 LB	100
60 LB	80
25 LB	50
2 LB	NOT TO EXCEED 10

ROCK BERM GRADATION

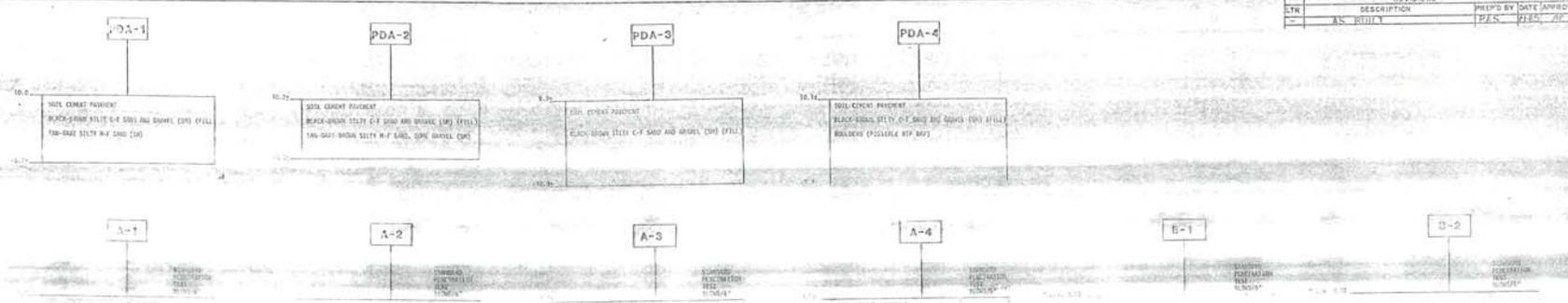


- NOTES:
- 1) FOR ADDITIONAL INFORMATION ON ROCK BERM SEE SPECIFICATIONS.
 - 2) DREDGE TO LIMITS OF ORGANIC SILT, NO ORGANIC SILTS, CLAYS OR OTHER HIGHLY COMPRESSIBLE MATERIALS TO REMAIN EXCEPT WHERE NOTED.
 - 3) DREDGE MATERIAL WILL BE DISPOSED AT THE NEW LONDON DISPOSAL SITE, A CIRCULAR AREA APPROXIMATELY ONE MILE RADIUS WITH THE CENTER LOCATED AT 41° 16' NORTH AND 72° 05' WEST, DEPTH OF WATER RANGES FROM 36 FEET TO 72 FEET.
 - 4) CONSTRUCTION OF SAND BERM SECTIONS-CASE I AND CASE II DEPEND ON ACTUAL RIVER BOTTOM CONDITIONS ENCOUNTERED.
 - 5) ROCK BERM TO BE CONSTRUCTED PRIOR TO PLACING SAND FILL.



	DESIGN OF THE NEW LONDON DISPOSAL SITE BY MONITOR BLVD. EXT. PROJECT NO. 2056616 DRAWING NO. 2056616-11 DATE 11/77 BY ZAS CHECKED BY APPROVED BY PROJECT NO. 2056616	DIVISION OF THE DIST. ENGINEERING CENTER NORTHERN DIVISION NAVAL SUBMARINE BASE NEW LONDON, GROTON, CT WATERFRONT FACILITY IMPROVEMENT STATE PIER DREDGING PLAN
	SHEET NO. 11 OF 11 CONTRACT NO. 2056616 DATE 11/77	SHEET NO. 11 OF 11 CONTRACT NO. 2056616 DATE 11/77

LTN	DESCRIPTION	PREP'D BY	DATE APPROVED
-	AS BUILT	P.J.S.	11/27/87



BORING	DEPTH (FEET)	SOIL DESCRIPTION	DATE
PDA-1	10.0	SOIL CORRECTION PROCEDURE	
	10.0-10.2	BLACK-BROWN SILTY C-F SAND AND GRAVEL (SM) (FILL)	11/11/87
	10.2-10.4	TAU-SANDY BROWN SILTY M-F SAND, SOME GRAVEL (SM)	11/11/87
	10.4-10.6	NO RECORD	
	10.6-10.8	NO RECORD	
	10.8-11.0	NO RECORD	
	11.0-11.2	NO RECORD	
	11.2-11.4	NO RECORD	
	11.4-11.6	NO RECORD	
	11.6-11.8	NO RECORD	
PDA-2	10.2	SOIL CORRECTION PROCEDURE	
	10.2-10.4	BLACK-BROWN SILTY C-F SAND AND GRAVEL (SM) (FILL)	11/11/87
	10.4-10.6	TAU-SANDY BROWN SILTY M-F SAND, SOME GRAVEL (SM)	11/11/87
	10.6-10.8	NO RECORD	
	10.8-11.0	NO RECORD	
	11.0-11.2	NO RECORD	
	11.2-11.4	NO RECORD	
	11.4-11.6	NO RECORD	
	11.6-11.8	NO RECORD	
	11.8-12.0	NO RECORD	
PDA-3	8.2	SOIL CORRECTION PROCEDURE	
	8.2-8.4	BLACK-BROWN SILTY C-F SAND AND GRAVEL (SM) (FILL)	11/11/87
	8.4-8.6	TAU-SANDY BROWN SILTY M-F SAND, SOME GRAVEL (SM)	11/11/87
	8.6-8.8	NO RECORD	
	8.8-9.0	NO RECORD	
	9.0-9.2	NO RECORD	
	9.2-9.4	NO RECORD	
	9.4-9.6	NO RECORD	
	9.6-9.8	NO RECORD	
	9.8-10.0	NO RECORD	
PDA-4	10.2	SOIL CORRECTION PROCEDURE	
	10.2-10.4	BLACK-BROWN SILTY C-F SAND AND GRAVEL (SM) (FILL)	11/11/87
	10.4-10.6	TAU-SANDY BROWN SILTY M-F SAND, SOME GRAVEL (SM)	11/11/87
	10.6-10.8	NO RECORD	
	10.8-11.0	NO RECORD	
	11.0-11.2	NO RECORD	
	11.2-11.4	NO RECORD	
	11.4-11.6	NO RECORD	
	11.6-11.8	NO RECORD	
	11.8-12.0	NO RECORD	
A-1	10.0	SOIL CORRECTION PROCEDURE	
	10.0-10.2	BLACK-BROWN SILTY C-F SAND AND GRAVEL (SM) (FILL)	11/11/87
	10.2-10.4	TAU-SANDY BROWN SILTY M-F SAND, SOME GRAVEL (SM)	11/11/87
	10.4-10.6	NO RECORD	
	10.6-10.8	NO RECORD	
	10.8-11.0	NO RECORD	
	11.0-11.2	NO RECORD	
	11.2-11.4	NO RECORD	
	11.4-11.6	NO RECORD	
	11.6-11.8	NO RECORD	
A-2	10.2	SOIL CORRECTION PROCEDURE	
	10.2-10.4	BLACK-BROWN SILTY C-F SAND AND GRAVEL (SM) (FILL)	11/11/87
	10.4-10.6	TAU-SANDY BROWN SILTY M-F SAND, SOME GRAVEL (SM)	11/11/87
	10.6-10.8	NO RECORD	
	10.8-11.0	NO RECORD	
	11.0-11.2	NO RECORD	
	11.2-11.4	NO RECORD	
	11.4-11.6	NO RECORD	
	11.6-11.8	NO RECORD	
	11.8-12.0	NO RECORD	
A-3	8.2	SOIL CORRECTION PROCEDURE	
	8.2-8.4	BLACK-BROWN SILTY C-F SAND AND GRAVEL (SM) (FILL)	11/11/87
	8.4-8.6	TAU-SANDY BROWN SILTY M-F SAND, SOME GRAVEL (SM)	11/11/87
	8.6-8.8	NO RECORD	
	8.8-9.0	NO RECORD	
	9.0-9.2	NO RECORD	
	9.2-9.4	NO RECORD	
	9.4-9.6	NO RECORD	
	9.6-9.8	NO RECORD	
	9.8-10.0	NO RECORD	
A-4	10.2	SOIL CORRECTION PROCEDURE	
	10.2-10.4	BLACK-BROWN SILTY C-F SAND AND GRAVEL (SM) (FILL)	11/11/87
	10.4-10.6	TAU-SANDY BROWN SILTY M-F SAND, SOME GRAVEL (SM)	11/11/87
	10.6-10.8	NO RECORD	
	10.8-11.0	NO RECORD	
	11.0-11.2	NO RECORD	
	11.2-11.4	NO RECORD	
	11.4-11.6	NO RECORD	
	11.6-11.8	NO RECORD	
	11.8-12.0	NO RECORD	
B-1	10.0	SOIL CORRECTION PROCEDURE	
	10.0-10.2	BLACK-BROWN SILTY C-F SAND AND GRAVEL (SM) (FILL)	11/11/87
	10.2-10.4	TAU-SANDY BROWN SILTY M-F SAND, SOME GRAVEL (SM)	11/11/87
	10.4-10.6	NO RECORD	
	10.6-10.8	NO RECORD	
	10.8-11.0	NO RECORD	
	11.0-11.2	NO RECORD	
	11.2-11.4	NO RECORD	
	11.4-11.6	NO RECORD	
	11.6-11.8	NO RECORD	
D-2	10.0	SOIL CORRECTION PROCEDURE	
	10.0-10.2	BLACK-BROWN SILTY C-F SAND AND GRAVEL (SM) (FILL)	11/11/87
	10.2-10.4	TAU-SANDY BROWN SILTY M-F SAND, SOME GRAVEL (SM)	11/11/87
	10.4-10.6	NO RECORD	
	10.6-10.8	NO RECORD	
	10.8-11.0	NO RECORD	
	11.0-11.2	NO RECORD	
	11.2-11.4	NO RECORD	
	11.4-11.6	NO RECORD	
	11.6-11.8	NO RECORD	

BORING	DEPTH (FEET)	SOIL DESCRIPTION	DATE
B-3	7.4	SOFT GRAY ORGANIC SILT, TRACE SHELLS (SM)	11/11/87
	7.4-7.6	SOFT GRAY ORGANIC SILT, TRACE F-C SAND, TRACE GRAY, TRACE SHELLS (SM)	11/11/87
	7.6-7.8	NO RECORD	
	7.8-8.0	NO RECORD	
	8.0-8.2	NO RECORD	
	8.2-8.4	NO RECORD	
	8.4-8.6	NO RECORD	
	8.6-8.8	NO RECORD	
	8.8-9.0	NO RECORD	
	9.0-9.2	NO RECORD	
B-4	7.2	SOFT GRAY ORGANIC SILT, TRACE SHELLS (SM)	11/11/87
	7.2-7.4	SOFT GRAY ORGANIC SILT, TRACE F-C SAND, TRACE GRAY, TRACE SHELLS (SM)	11/11/87
	7.4-7.6	NO RECORD	
	7.6-7.8	NO RECORD	
	7.8-8.0	NO RECORD	
	8.0-8.2	NO RECORD	
	8.2-8.4	NO RECORD	
	8.4-8.6	NO RECORD	
	8.6-8.8	NO RECORD	
	8.8-9.0	NO RECORD	
B-5	6.4	SOFT BLACK ORGANIC SILT, LITTLE F-C SAND, LITTLE F-C GRAVEL, TRACE SHELL FRAGMENTS (SM)	11/11/87
	6.4-6.6	SOFT GRAY ORGANIC SILT, TRACE CLAY, TRACE SHELLS (SM)	11/11/87
	6.6-6.8	NO RECORD	
	6.8-7.0	NO RECORD	
	7.0-7.2	NO RECORD	
	7.2-7.4	NO RECORD	
	7.4-7.6	NO RECORD	
	7.6-7.8	NO RECORD	
	7.8-8.0	NO RECORD	
	8.0-8.2	NO RECORD	
B-6	4.4	SOFT BLACK ORGANIC SILT, LITTLE F-C SAND, TRACE F-C GRAVEL, TRACE SHELLS (SM)	11/11/87
	4.4-4.6	SOFT GRAY ORGANIC SILT, SOME F-C SAND, TRACE F-C GRAVEL, TRACE SHELLS (SM)	11/11/87
	4.6-4.8	NO RECORD	
	4.8-5.0	NO RECORD	
	5.0-5.2	NO RECORD	
	5.2-5.4	NO RECORD	
	5.4-5.6	NO RECORD	
	5.6-5.8	NO RECORD	
	5.8-6.0	NO RECORD	
	6.0-6.2	NO RECORD	
B-7	7.0	SOFT BLACK ORGANIC SILT, LITTLE F-C GRAVEL, LITTLE F-C SAND, TRACE SHELLS (SM)	11/11/87
	7.0-7.2	SOFT GRAY ORGANIC SILT, LITTLE CLAY, TRACE F-C SAND, TRACE SHELLS (SM)	11/11/87
	7.2-7.4	NO RECORD	
	7.4-7.6	NO RECORD	
	7.6-7.8	NO RECORD	
	7.8-8.0	NO RECORD	
	8.0-8.2	NO RECORD	
	8.2-8.4	NO RECORD	
	8.4-8.6	NO RECORD	
	8.6-8.8	NO RECORD	
B-7A	6.4	SOFT BLACK ORGANIC SILT, LITTLE F-C SAND, LITTLE F-C GRAVEL, TRACE SHELLS (SM)	11/11/87
	6.4-6.6	SOFT GRAY ORGANIC SILT, TRACE CLAY, TRACE SHELLS (SM)	11/11/87
	6.6-6.8	NO RECORD	
	6.8-7.0	NO RECORD	
	7.0-7.2	NO RECORD	
	7.2-7.4	NO RECORD	
	7.4-7.6	NO RECORD	
	7.6-7.8	NO RECORD	
	7.8-8.0	NO RECORD	
	8.0-8.2	NO RECORD	

- NOTES**
- FOR BORING LOCATIONS SEE DRAWING C3
 - FOR INFORMATION REGARDING PERFORMANCE OF THE DRILLING PROGRAM SEE THE INDIVIDUAL BORING LOGS IN THE SPECIFICATIONS
 - ALL SOIL SAMPLES TAKEN IN CONFORMANCE WITH NAVFAC DM-7, TABLE I-4 UNIFIED SOIL CLASSIFICATION SYSTEM.
 - SOIL SAMPLES OBTAINED IN CONFORMANCE WITH ASTM 1586 FOR BORINGS DESIGNATED A, B, C, D, E.
 - SOIL SAMPLES OBTAINED FROM WASH BORINGS ARE DESIGNATED PDA AND PDE.
 - LOWER BOTTOM SAMPLES ARE KNOWN TO BE DENSE, HARD MATERIAL REQUIRING A TOOTHED DREDGING BUCKET FOR REMOVAL.

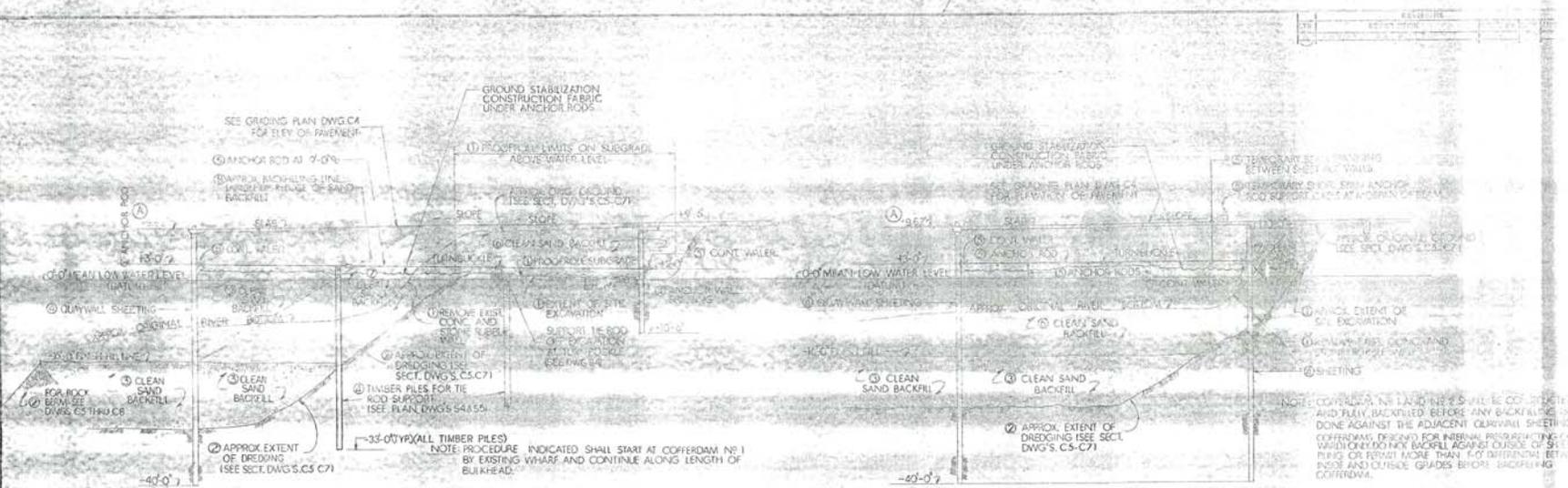
LEGEND

C COARSE
M MEDIUM
F FINE
UNIFIED SOIL CLASSIFICATION SYMBOL
OBSERVED GROUND WATER READING

WR WEIGHT OF RODS
M.W. MEAN WELL WATER
DO AS ABOVE

NEW JERSEY DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE
NORTHERN DIVISION
WATERWAY FACILITY IMPROVEMENTS
STATE PIERS
BORING LOG SUMMARY
2056817

DATE	REVISION

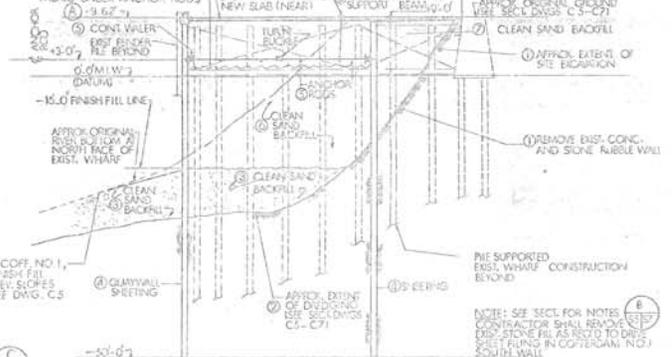


ANCHORED BULKHEAD GENERAL CONSTRUCTION PROCEDURE

SECTION A
NO SCALE

- NOTES: O- DENOTES CONSTRUCTION PROCEDURE AND SEQUENCE OF OPERATION.
- EXCAVATE SITE SOILS DOWN TO ANCHOR ROD ELEVATION. REMOVE EXIST. CONC. AND STONE RUBBLE. PROOFROLL SUBGRADE.
 - DREDGE EXISTING SOFT SOILS TO EXTENT SHOWN ON SECT. DWG'S. C5 THRU C7. CONSTRUCT ROCK BEAM.
 - BACKFILL TO FINISH FILL ELEV. SEE SECTION DWG'S. C5 THRU C7.
 - DRIVE SHEETING, ANCHOR WALL AND PILES.
 - PLACE WALKERS AND ANCHOR RODS. SUPPORT ANCHOR RODS ON PILES OR PROOFROLLED SUBGRADE.
 - GRADE CONTROLLED COMPACTED BACKFILL EACH SIDE OF ANCHOR WALL EQUALLY. (MAXIMUM 1" DIFFERENTIAL BETWEEN ELEVATION OF CONTROLLED BACKFILL EACH SIDE OF SHEETING. BACKFILL UP TO PAVEMENT SUBGRADE ELEVATION.)
 - PLACE CONTROLLED COMPACTED BACKFILL ABOVE RIVER WATER LEVEL. PROCEEDING FROM ANCHOR WALL TOWARD QUAYWALL SHEETING BY BACKFILLING UP TO PAVEMENT SUBGRADE ELEVATION.
 - BACKFILLING SHALL CONTINUE TOWARD QUAYWALL SHEETING UP TO PAVEMENT SUBGRADE ELEVATION UNTIL ANGLE OF REPOSE OF BACKFILL SANDS MEETS FINISH FILL LINE.
 - BACKFILL AGAINST SHEETING IN LIFTS OF UNIFORM THICKNESS. USE CONTROLLED COMPACTED BACKFILL ABOVE RIVER WATER LEVEL.

SECTION C
NO SCALE



COFFERDAM NO.1 GENERAL CONSTRUCTION PROCEDURE

COFFERDAM NO.2 GENERAL CONSTRUCTION PROCEDURE

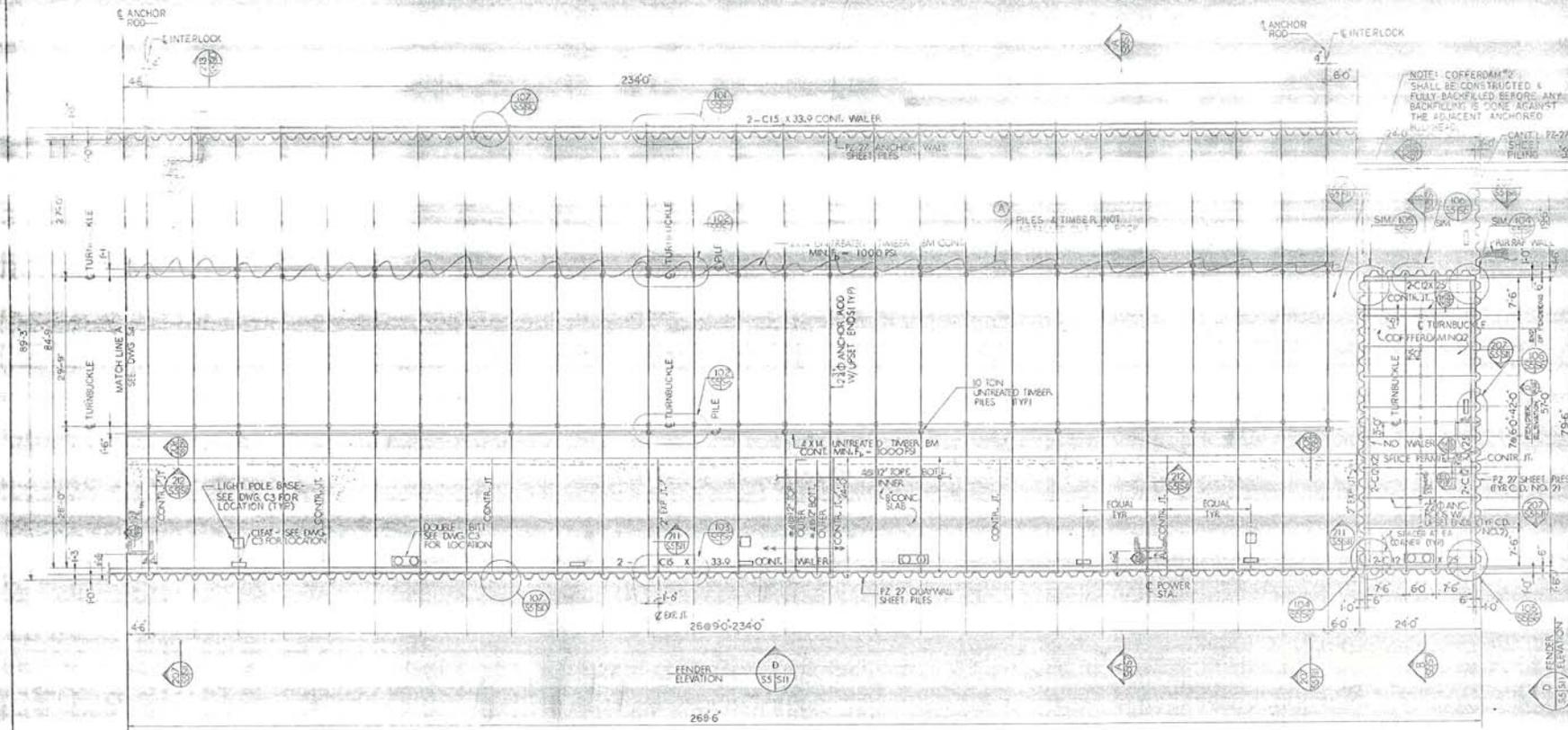
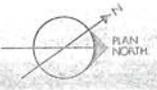
SECTION B
NO SCALE

- NOTES: O- DENOTES CONSTRUCTION PROCEDURE AND SEQUENCE OF OPERATION.
- EXCAVATE SITE SOILS AS REQUIRED. REMOVE EXIST. CONC. AND STONE RUBBLE.
 - DREDGE EXIST. SOFT SOILS TO EXTENT SHOWN ON SECT. DWG'S. C5 THRU C7.
 - BACKFILL TO FINISH FILL ELEVATION. SEE SECT. DWG'S. C5 THRU C7.
 - DRIVE SHEETING.
 - PLACE WALKERS AND ANCHOR RODS. PROVIDE TEMPORARY SUPPORT FOR LONG SPAN ANCHOR RODS. REMOVE TEMPORARY SUPPORT CALLS BEHIND AFTER 1" DIFFERENTIAL.
 - PLACE BACKFILL INSIDE COFFERDAM IN LIFTS OF UNIFORM THICKNESS. USE CONTROLLED COMPACTED BACKFILL ABOVE RIVER WATER LEVEL.
 - PLACE BACKFILL AGAINST COFFERDAM. USE CONTROLLED COMPACTED BACKFILL ABOVE RIVER WATER LEVEL.

NOTE: THE INTENT OF THIS DRAWING IS TO INDICATE TO THE CONTRACTOR THE DESIGN ASSUMPTIONS AND RESULTING CONSTRUCTION PROCEDURES AND SEQUENCE TO INSTALL THE COFFERDAM AND COFFERDAMS. A CONTRACTOR EXPERIENCED IN THIS TYPE OF INSTALLATION SHOULD USE HIS JUDGEMENT AND BACKGROUND TO REACH THE END PRODUCT.

	DRAWN BY: [Name] CHECKED BY: [Name] DATE: [Date]	PROJECT: [Project Name] SHEET NO.: [Sheet Number]
	SCALE: [Scale]	QUAYWALL STRUCTURAL DETAIL

REVISIONS			
NO.	DESCRIPTION	PREP'D BY	DATE APPROVED
1	REVISED AS BUILT	PAS.	12/1/77



NOTE: COFFERDAM SHALL BE CONSTRUCTED & FULLY BACKFILLED BEFORE ANY BACKFILLING IS DONE AGAINST THE ADJACENT ANCHORED WALL.

LIGHT POLE BASE
SEE DWG C3 FOR
LOCATION (TYF)

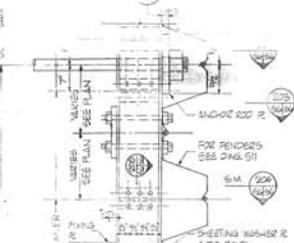
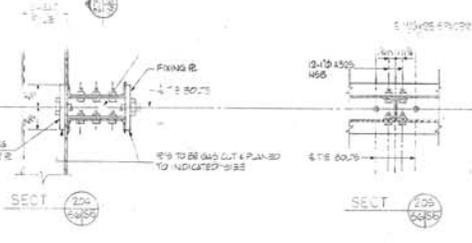
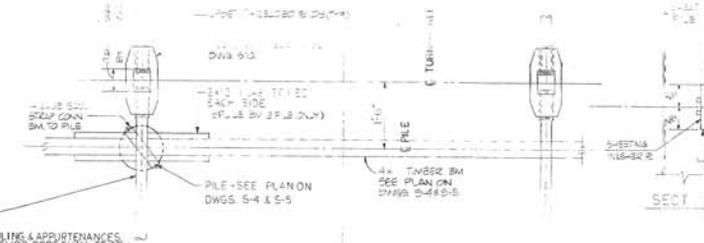
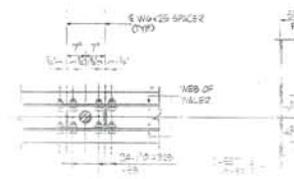
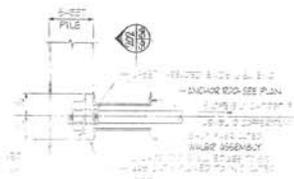
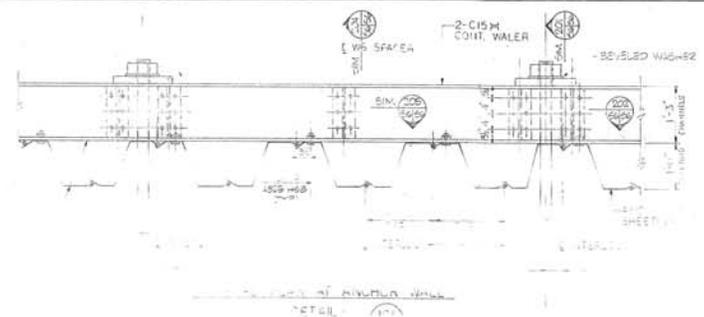
DOUBLE SEE DWG C3
FOR LOCATION

NORTH END
QUAYWALL STRUCTURAL PLAN
SCALE 1/4"=1'-0"
NOTE 1. SEE DWG 54 FOR NOTES

0 5 10 15 20
1"=0' SCALE
CHECK GRAPHIC SCALE BEFORE USING

	DESIGNED AND DRAWN BY	W. H. HESTER	DATE	12/1/77
	CHECKED BY	P. A. SHERMAN	DATE	12/1/77
	APPROVED BY	P. A. SHERMAN	DATE	12/1/77
	DESIGNED AND DRAWN BY	W. H. HESTER	DATE	12/1/77
PROJECT TITLE		NORTHERN DIVISION NAVAL SUBMARINE BASE WATERFRONT FACILITY IMPROVEMENTS STATE PIER QUAYWALL STRUCTURAL PLAN		
DRAWING NO.		2056633		
SCALE		AS SHOWN		

NO.	DESCRIPTION	PREP'D BY	DATE	APPROVED BY
1	AS BUILT	PA'S	11/28/77	



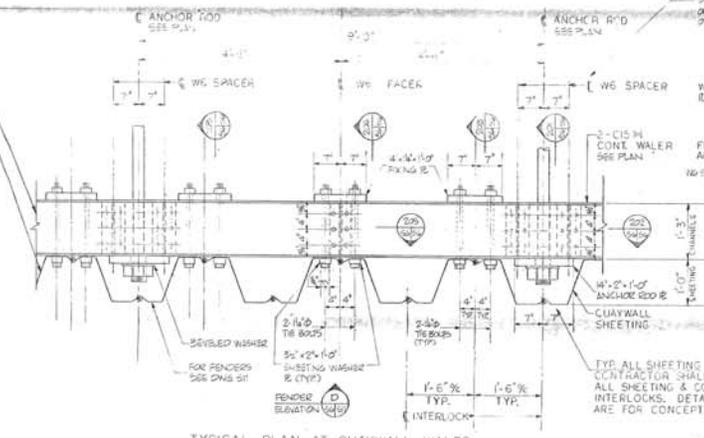
ALL SHEET PILING & APPURTENANCES, WALTERS & ANCHOR RODS SHALL BE COAL TAR EPOXY COATED BY THE SHOP FULL LENGTH & ALL SIDES (TYP). SEE SPECS. ALL GALV. HARDWARE SHALL BE COAL TAR EPOXY COATED IN FIELD.

TYPICAL PLAN AT TURNBUCKLE
DET-11
SCALE: 1/4"=1'-0"

COFFERDAM	HARDWARE	SCHEDULE
1	1/2" DIA. WELDED END PLATE	1/2" DIA. WELDED END PLATE
2	4x6 WELDED END PLATE	4x6 WELDED END PLATE

TYP ALL STEEL
SEE SPECS. NOTES FOR QUAYWALL
2x4 LAY AND SPACER FOR EACH W6
OR SHEET PILING CONTIGUOUS AND
SPACER W6

ALL PLATES TO BE SHIP CUT & PLASMA TO INDICATED SIZE



TYPICAL PLAN AT QUAYWALL WATER
DETAIL
SCALE: 1/4"=1'-0"

TYPICAL PLAN AT COFFERDAM NO2 CONNECTION
DETAIL
SCALE: 1/4"=1'-0"

TYPICAL PLAN AT COFFERDAM WATER
DETAIL
SCALE: 1/4"=1'-0"

TYPICAL PLAN AT COFFERDAM CORNER
DETAIL
SCALE: 1/4"=1'-0"



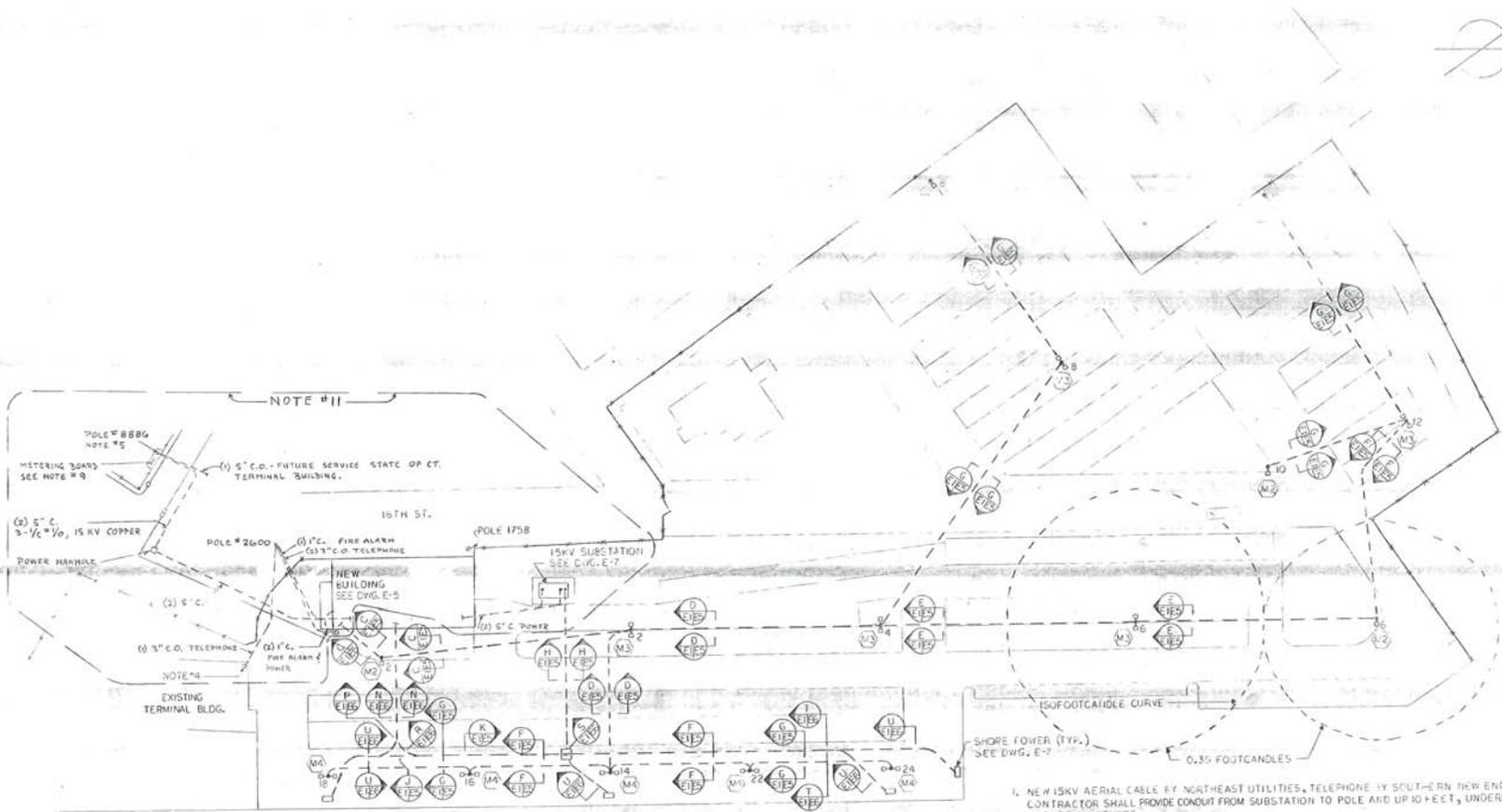
DETAIL
SCALE: 1/4"=1'-0"



DESIGNED BY
MOUNTAIN ENGINEERING CONSULTANTS
100 MOUNTAIN BLVD. EXT.
WATERBURY, CONNECTICUT 06705
PROJECT NO. 2056634
SHEET NO. 104 OF 104
DATE: 11/28/77
OFFICE IN CHARGE: PA'S
APPROVED: [Signature]
NORTHWEST CONTRACTOR: [Signature]

DEPARTMENT OF THE ARMY
NORTH DIVISION
NATURAL SUBMERGENCE ENGINEERING DIVISION
NATURAL SUBMERGENCE DIVISION
NEW LONDON, GROTON, CT
WATERFRONT FACILITY IMPROVEMENTS
STATE PIER
QUAYWALL STRUCTURAL DETAILS
2056634
CONTRACT NO. H4049-B-C(2)
SHEET NO. 104 OF 104
SCALE: 1/4"=1'-0"

REVISIONS			
NO.	DESCRIPTION	REVD BY	DATE APPROVED
1	REVISED AS BUILT	PAS	1/27/07



NOTE #11

(1) 5" C.O. - FUTURE SERVICE STATE OF CT. TERMINAL BUILDING.

(2) 5" C. 3-1/2" x 1/2" 15 KV COPPER

(3) 5" C.

(4) 3" C.O. TELEPHONE

NOTE #4

EXISTING TERMINAL BLDG.

NEW BUILDING SEE DWG. E-5

(5) 7" C. FIRE ALARM 2 1/2" C.O. TELEPHONE

(6) 7" C. FIRE ALARM POWER

15KV SUBSTATION SEE DWG. E-7

(7) 5" C. POWER

SHORE POWER (TYP.) SEE DWG. E-7

15' FOOT CAIRLE CURVE

0.35 FOOT CANDLES

- 11. DUCT BANK SECTIONS CALLED OUT ON THIS PLAN DECREASES DUCT BANK SECTIONS CALLED OUT ON PLAN E-5.
- 12. THE AS-BUILT CONDITIONS SHOWN ON THIS PLAN ARE A RESULT OF WITH PROTECT CONSTRUCTION (E.O. 12958) NEW LONDON, CT. AND INTERPRETATION OF THE MARKED-UP AS-BUILT PRINTS SUBMITTED TO THE EJA BY NORWICH, BURLINGTON, PA.

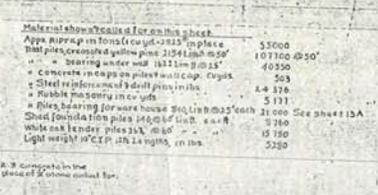
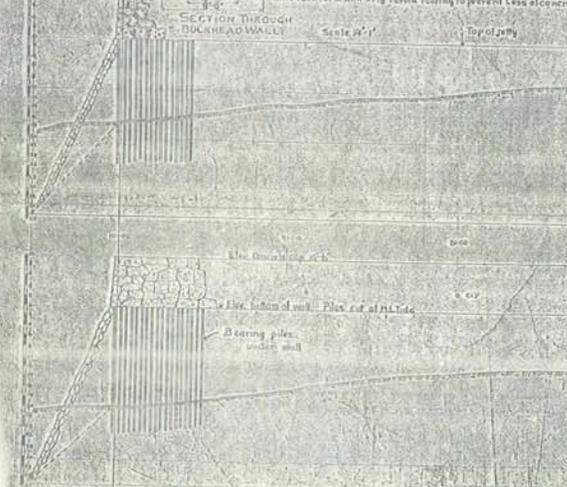
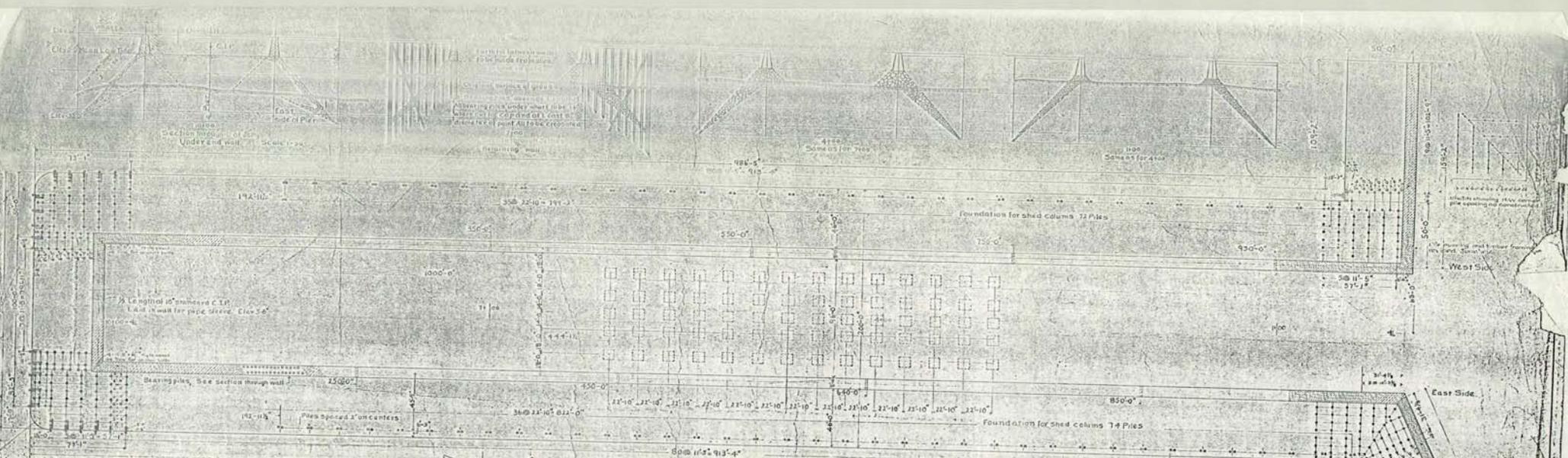
- 1. NEW 15KV AERIAL CABLE BY NORTHEAST UTILITIES, TELEPHONE BY SOUTH-EASTERN NEW ENGLAND BELL. CONTRACTOR SHALL PROVIDE CONDUIT FROM SUBSTATION TO POLE AND UP 10' EET, UNDERGROUND FEEDER BY OTHERS.
- 2. FOR DUCTBANK SECTIONS SEE DWGS. E-5 & E-6
- 3. CONTRACTOR SHALL FURNISH AND INSTALL ARRESTORS, BRANCH #834C AT LOCATION SHOWN FOR FIRE ALARM EXTENSION.
- 4. EXACT STUB-UP LOCATION OF CONDUIT TO BE DETERMINED IN FIELD.
- 5. CONTRACTOR SHALL RUN 1" 5" C.O. 10' UP POLE, OTHER CONDUIT SHALL BE STUBBED UP 6" AT BASE OF POLE AND CAPPED.
- 6. WHERE NO DUCT BANK SECTION IS SHOWN CONDUIT SHALL HAVE 5" MIN. CONCRETE ALL AROUND.
- 7. SEE EXISTING SITE PLAN.
- 8. ALL UNDERGROUND WORK SHALL BE IN ACCORDANCE WITH NAVY SPEC. 11101.
- 9. FOR METERING BOARD REQUIREMENTS SEE ATTACHMENT TO ENG. 1101.
- 10. TELEPHONE AND FIRE ALARM CONDUITS PER CONTRACT.



DESIGNED BY	DATE	APPROVED BY	DATE
OFFICE OF ENGINEERING			
DEPARTMENT OF THE NAVY - NAVAL FACILITIES ENGINEERING COMMAND		NAVAL DIVISION	
NORTH DIVISION		NORTH DIVISION	
NAVAL SUBMARINE BASE - NEW LONDON, GROTON, CT		WATERFRONT FACILITY IMPROVEMENT	
STATE PIER		ELECTRICAL SITE PLAN	
SIZE	SCALE	NAVAL DRAWING NO.	2056647
F	BOOSI	CONTR. CONTROL NO.	NAVAL E.C. 0035
DATE		SCALE 1" = 30'	
APPROVED FOR CONTRACTOR		SHEET 83 OF 83	

CERTIFICATE OF PERMISSION APPLICATION
State Pier Facility, New London, CT
Connecticut Port Authority

Northeast Annex Supporting Information



Material shown scaled for on this sheet.

Asph. Rivet in tons (cup & cone)	55000
Steel reinforcement yellow pine 2x4 (lb)	107300 @ 20'
Concrete in caps on piles (cu yd)	40550
Concrete in caps on piles (cu yd)	565
Steel reinforcement diaphragm wall (lb)	44376
Rebar in concrete	5171
Piles bearing for ware house (lb)	21000 See sheet 13A
Shed foundation piles (lb)	3760
Wharf under piles (lb)	13790
Light weight CIP (lb)	3290

STATE OF CONNECTICUT
 RIVERS, HARBORS & BRIDGES COMMISSION
 GENERAL PLAN
 OF
 FILLED PIER FOUNDATION
 Pier No. 1

Submitted by *W. C. Clark* SCIENTIFIC ENGINEER
 Approved by *W. C. Clark* CHIEF ENGINEER



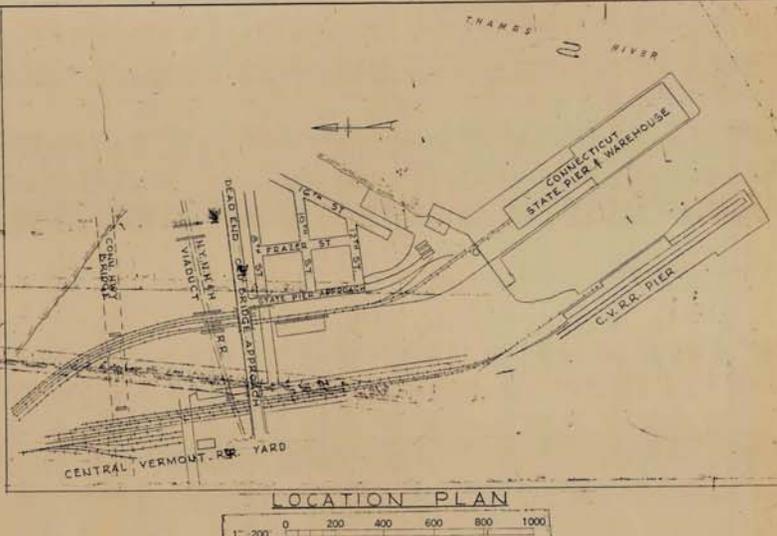
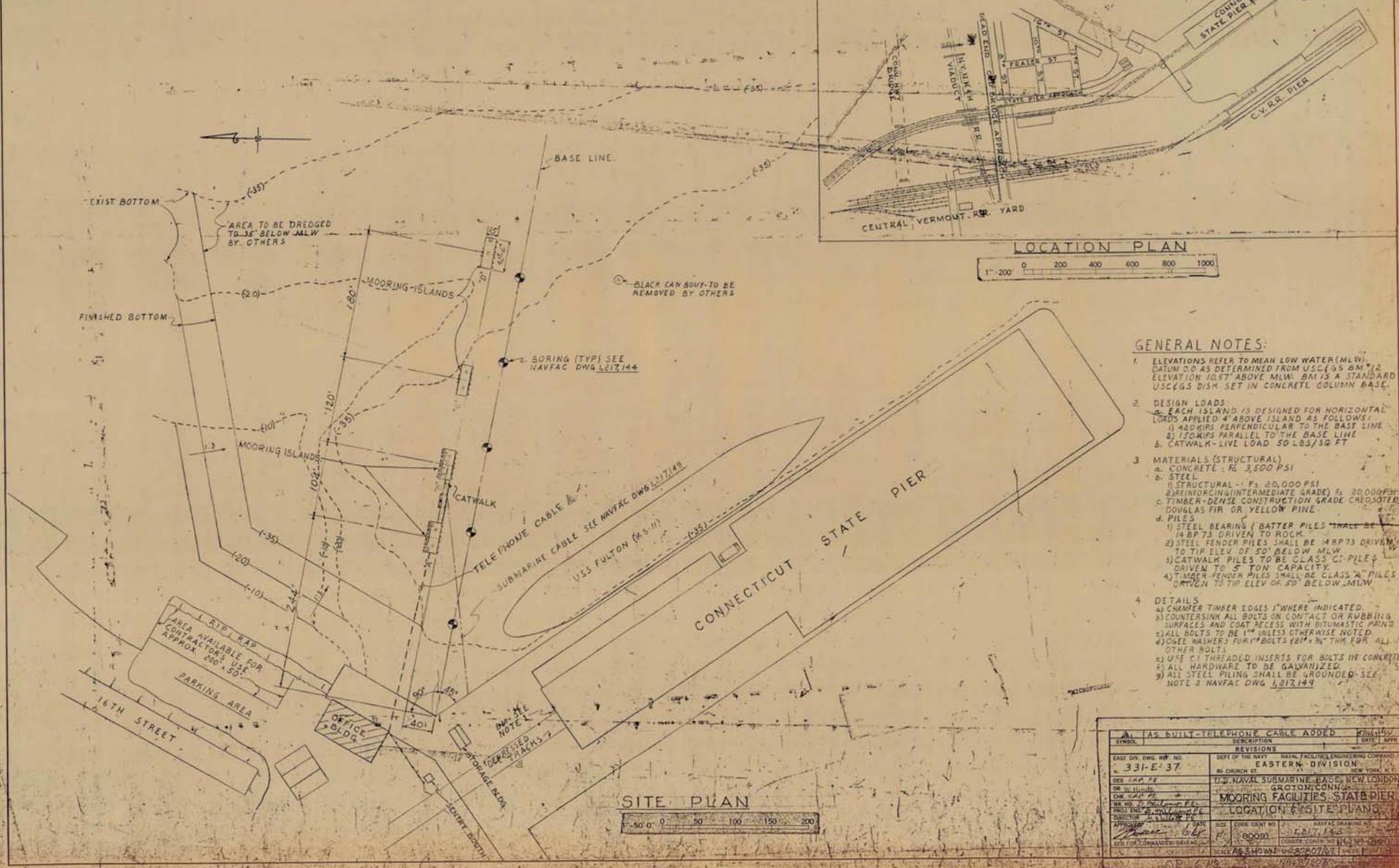
1934 CT Orthoimagery

CERTIFICATE OF PERMISSION APPLICATION
State Pier Facility, New London, CT
Connecticut Port Authority

Mooring Dolphins Supporting Information

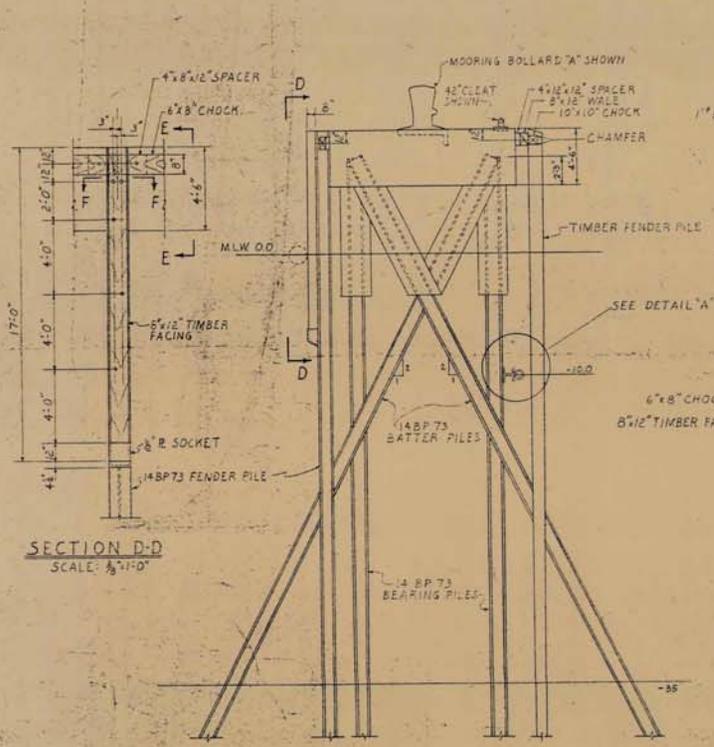
LIST OF DRAWINGS

NAVFAC DRAWING NO.	TITLE
12 17 143	MOORING FACILITIES - STATE PIER
12 17 143	LOCATION & SITE PLANS
12 17 144	BORING LOCATIONS & LOGS
12 17 145	MOORING ISLANDS - PLANS & DET'S
12 17 146	SECTIONS & ELEVATION
12 17 147	STRUCTURAL DETAILS
12 17 148	WATER LINE
12 17 149	ELECTRICAL - PLAN, ELEVATIONS AND DETAIL
12 17 150	ELECTRICAL - PLAN, ELEVATIONS AND WIRING DIAGRAM

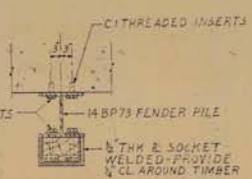


- ### GENERAL NOTES:
- ELEVATIONS REFER TO MEAN LOW WATER (MLW). DATUM 2.0 AS DETERMINED FROM USCGS BM #12 ELEVATION 10.57' ABOVE MLW. BAI IS A STANDARD USCGS DISH SET IN CONCRETE COLUMN BASE.
 - DESIGN LOADS:
 - a. EACH ISLAND IS DESIGNED FOR HORIZONTAL LOADS APPLIED 4' ABOVE ISLAND AS FOLLOWS:
 - 1) 40 KIPS PERPENDICULAR TO THE BASE LINE
 - 2) 150 KIPS PARALLEL TO THE BASE LINE
 - 3) CATWALK - LIVE LOAD 50 LBS/SQ FT
 - MATERIALS (STRUCTURAL)
 - a. CONCRETE - Fc 3,500 PSI
 - b. STEEL
 - 1) STRUCTURAL - Fy 20,000 PSI
 - 2) REINFORCING (INTERMEDIATE GRADE) Fy 20,000 PSI
 - 3) TIMBER - DENSE CONSTRUCTION GRADE CROSDOTED DOUGLAS FIR OR YELLOW PINE
 - c. PILES
 - 1) STEEL BEARINGS / BATTER PILES SHALL BE 14 RP73 DRIVEN TO ROCK
 - 2) STEEL FENDER PILES SHALL BE 14 RP73 DRIVEN TO TIP ELEV OF 50' BELOW MLW
 - 3) CATWALK PILES TO BE CLASS C PILES DRIVEN TO 5' TON CAPACITY
 - 4) TIMBER FENDER PILES SHALL BE CLASS A PILES DRIVEN TO TIP ELEV OF 50' BELOW MLW
 - DETAILS
 - 1) CHAMFER TIMBER EDGES 1" WHERE INDICATED.
 - 2) COUNTERSINK ALL BOLTS ON CONTACT OR RUBBING SURFACES AND COAT RECESS WITH BITUMASTIC PAINT
 - 3) ALL BOLTS TO BE 1" UNLESS OTHERWISE NOTED
 - 4) USE WASHERS FOR 1" BOLTS (2 1/2" THK FOR ALL OTHER BOLTS)
 - 5) USE 1/4" THREADED INSERTS FOR BOLTS IN CONCRETE
 - 6) ALL HARDWARE TO BE GALVANIZED
 - 7) ALL STEEL PILING SHALL BE GROUNDED - SEE NOTE 2 NAVFAC DWG 1217149

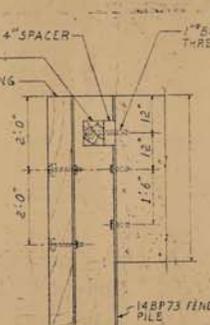
SYMBOL	REVISIONS
A	AS BUILT - TELEPHONE CABLE ADDED
DEPT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMANDANT EAST DIV. DWG. NO. 331-E-37 NO. CHURCH ST. EASTERN DIVISION NEW YORK, N.Y.	
DESIGNED BY	U.S. NAVAL SUBMARINE BASE, NEW LONDON
DR. BY	GEORGE CHENEY
CHK. BY	MOORING FACILITIES STATE PIER
DR. NO. TO DRAWING	LOCATION & SITE PLANS
DATE	NOV 1957
SCALE	AS SHOWN



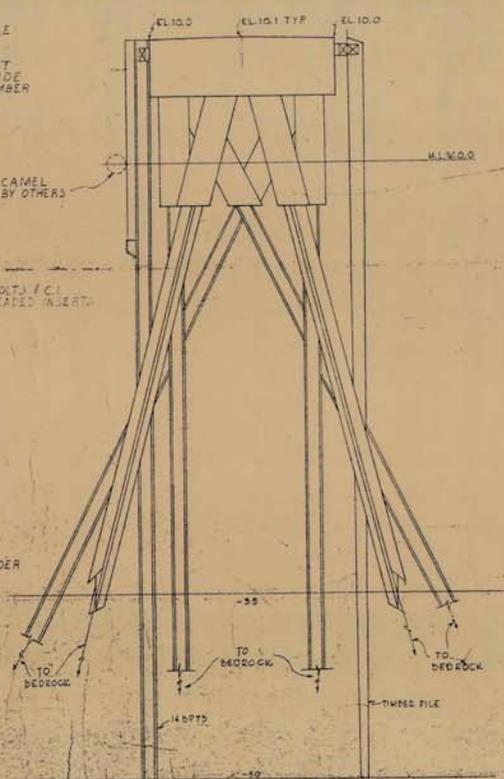
SECTION D-D
SCALE: 3/4" = 1'-0"



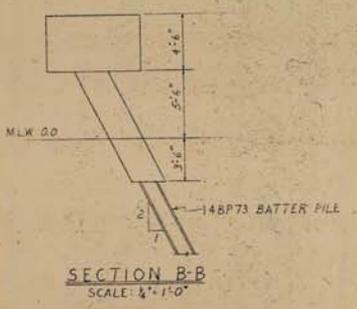
SECTION F-F
SCALE: 3/4" = 1'-0"



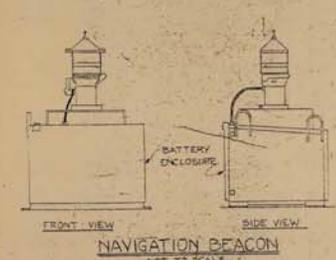
SECTION E-E
SCALE: 3/4" = 1'-0"



ELEVATION A-A
SCALE: 1/2" = 1'



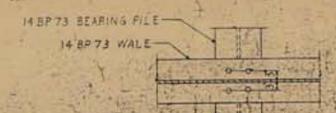
SECTION B-B
SCALE: 3/4" = 1'-0"



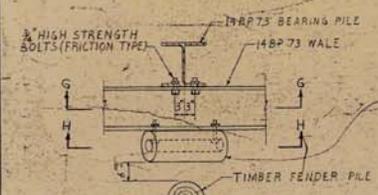
NAVIGATION BEACON
NOT TO SCALE

- NOTES:
 1. ELEV A-A, SECTIONS B-B, C-C TAKEN FROM NAVFAC DWG. 1217145
 2. FOR GENERAL NOTES SEE NAVFAC DWG. 1217143

SECTION C-C
SCALE: 1/2" = 1'



SECTION G-G



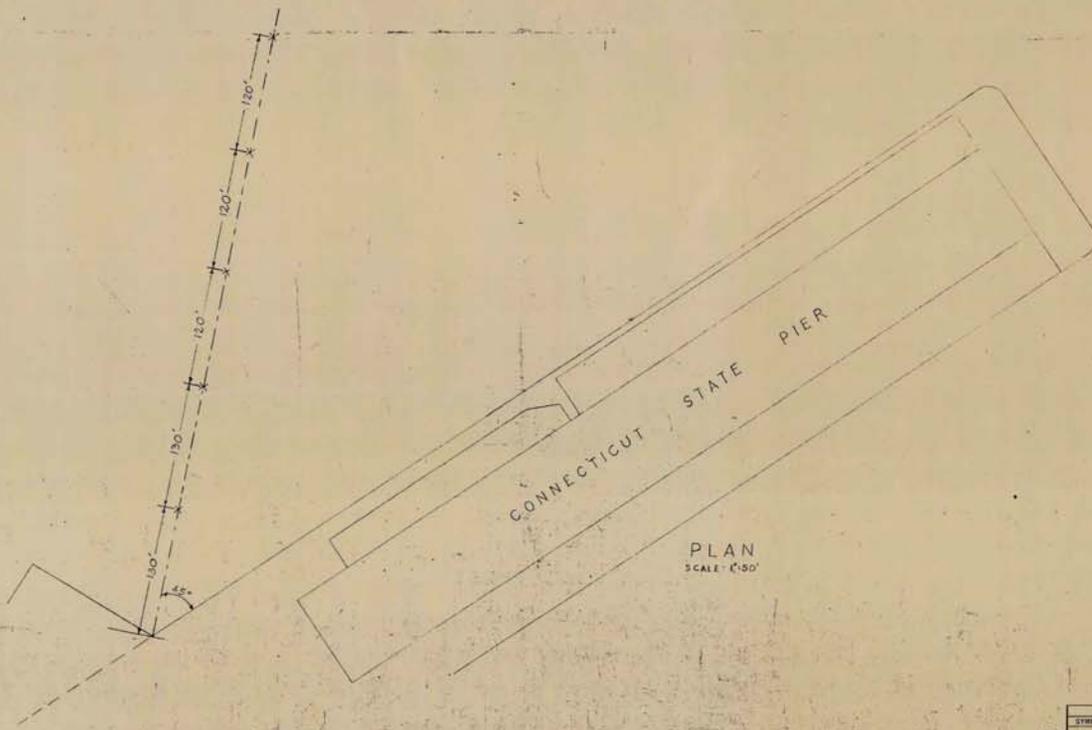
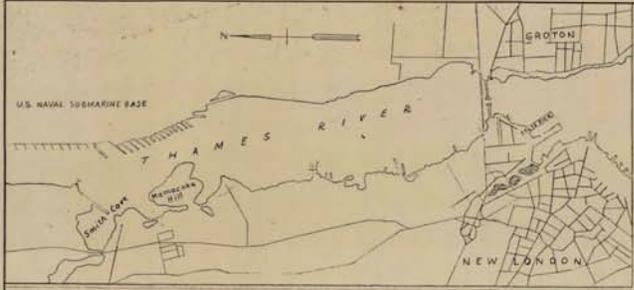
PLAN

DETAIL A
SCALE: 3/4" = 1'-0"

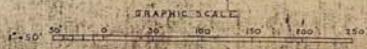
SECTION H-H



SYMBOL	AS BUILT	DESCRIPTION	DATE	APPR
REVISIONS				
EAST DIV. DWG. REF. NO. 331-E-40				
DEPT. OF THE NAVY - NAVAL FACILITIES ENGINEERING COMMAND - EASTERN DIVISION				
NO. DESIGN DIST. NEW YORK, N.Y.				
DES. 1217145				
U.S. NAVAL SUBMARINE BASE, NEW LONDON, GEORGE, CONN.				
OR (Name of Project)				
ONE SHEET				
NO. OF SHEETS TOTAL 11				
PROJECT NO. 1217145				
SECTION: ELEVATION				
DATE	NO.	BY	DATE	NO.
1/1/50	80091	F. J. 1217145		
DRAWN BY: F. J. 1217145				
CHECKED BY: F. J. 1217145				
APPROVED BY: F. J. 1217145				
PROJECT COMMANDER: NAVFAC				



PLAN
SCALE 1"=50'



SYMBOL	DESCRIPTION	DATE	APP'D
REVISIONS			
EAST DIVISION REF. NO. 331-D-764			
DEPT. OF THE NAVY U.S. NAVAL SUBMARINE BASE, NEW LONDON, GROTON, CONN.			
NO. CHANGES EASTERN DIVISION			
DESIGNED BY DR. A. R. & J. P. A.			
DRAWN BY ONE			
PROJECT ENGINEER			
CHECKED BY			
APPROVED BY			
DATE			
PROJECT NO. 80091			
DRAWING NO. 20547			
SCALE'S SHOWN			
SHEET NO. OF			