

# CONTRACT DOCUMENTS

FOR

## 90 BRIDGE STREET PIERS CHATHAM, MA



January 2025

Owner:  
Town of Chatham  
549 Main Street  
Chatham, MA 02633

Design Engineer:  
GEI Consultants, Inc.  
124 Grove Street, Suite 300  
Franklin, MA 02038  
(774) 277 6001

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**SECTION 00 01 00**  
**INVITATION FOR BIDS**

**TOWN OF CHATHAM**  
**CHATHAM, MASSACHUSETTS**  
**90 BRIDGE STREET PIERS**

INVITATION FOR BIDS

The Town of Chatham is soliciting written bids pursuant to the provisions of G.L. c. 30, §39M for 90 Bridge Street Piers, located at the Mitchell River Pier, 90 Bridge Street, Chatham, MA 02633, until **2:00PM**, local time, **Thursday, February 13, 2025** at which time the Bids received will be publicly opened and read. Such Bids shall be addressed to the Town Manager and endorsed "**BID FOR 90 BRIDGE STREET PIERS**".

The project generally consists of constructing a timber pier extension, a new timber and concrete pier, three concrete floating docks, four timber upweller floating docks, three timber finger floating docks, three gangways, and miscellaneous associated work.

Bids will be received for a single prime Contract. Bids shall be on a lump sum and unit price basis, with bid items as indicated in the Bid Form.

The project is subject to MA Prevailing Wage Rates.

The Issuing Office for the Bidding Documents is: The Town of Chatham, MA, 549 Main Street, Chatham, MA 02633.

Prospective Bidders may obtain copies of the Bidding Documents electronically from the Project Engineer, GEI Consultants, Inc., located at 124 Grove Street Suite 300 Franklin, MA 02038 (tel: 774-277-6001). Requests for electronic delivery of the Contract Documents should be addressed to Daniel Robbins at drobbins@geiconsultants.com. Bidding Documents will be available on or after **10:00 a.m. Wednesday, January 15, 2025**. There is no charge for electronic delivery of the contract documents. No partial sets will be issued.

A non-mandatory Pre-Bid Conference/Site Inspection will occur at **11:00 a.m. Wednesday, January 22, 2025** at the project site, 90 Bridge Street, Chatham, MA. The project site is accessible and can be viewed at any time.

All questions pertaining to the plans, specifications, or any of the Contract Documents must be submitted in writing, addressed to the attention of Daniel Robbins and delivered by email to drobbins@geiconsultants.com. To be given consideration, all questions must be received by **12:00 p.m. Tuesday, February 4, 2025**. No questions will be answered if received after the deadline indicated.

Any and all interpretations and any supplemental instructions will be in the form of written Addenda to the Contract Documents which, if issued, will be provided to all persons on record as having received a complete set of Contract Documents at the respective addresses furnished for such purposes. Such Addenda will be provided not later than 48 hours prior to the time set for opening of bids. Failure of any Bidder to receive any Addendum or interpretation shall not relieve such bidder from any obligation under his Bid as submitted. No oral interpretations will be made to any potential respondent as to the meaning of any requirements specified within this Invitation for Bids. In preparing its proposal, the Contractor shall rely only on what has been communicated in writing, and no oral communication shall become the basis for any subsequent protest of the selection process.

Each bid shall be submitted to the Town of Chatham Town Manager and endorsed "BID FOR 90 BRIDGE STREET PIERS" at 549 Main Street, Chatham, MA 02633, on or before **2:00 pm Thursday February 13, 2025** local time. Each bid shall be in a separate sealed envelope. Award is subject to appropriation and the availability of sufficient funding. Bids will be awarded based on the Base Bid and Proposed Schedule.

All procurement procedures will be in accordance with the Massachusetts General Laws Chapter 149, sections 26-27D and General Laws Chapter 30, sections 39M, which are incorporated herein by reference, as amended.

The Town reserves the right to waive any informalities and to reject any or all bids if it be in the public interest to do so in accordance with G.L. c. 30, §39M(b).

\*\*\*END OF SECTION\*\*\*

**SECTION 00 04 00**  
**INFORMATION TO BIDDERS**

**1.01 SECURING DOCUMENTS**

Bidders may obtain complete set(s) of Contract Documents electronically from the Project Engineer, GEI Consultants Inc., located at 124 Grove Street Suite 300 Franklin, MA 02038 (tel: 774-277-6001) on or after **10:00 a.m. Wednesday, January 15, 2025**. No partial sets will be issued. Requests for electronic delivery of the Contract Documents should be addressed to [drobbins@geiconsultants.com](mailto:drobbins@geiconsultants.com). There is no charge for electronic delivery of the contract documents.

**1.02 BID REQUIREMENTS**

In order to receive consideration, bids shall be prepared and submitted in conformance with the following requirements and instructions:

1. Bidders shall carefully examine the site of the proposed work and the Contract Documents. It will be assumed that the bidder has investigated and is satisfied as to the conditions to be encountered, and as to the character, quality, and quantities of work to be performed, materials to be furnished, and as to the requirements of these contract documents.
2. Specific data required in regard to the location of existing public utility companies' pipes, conduits and structures as required to perform the work shall be obtained by the Contractor from the respective public utility companies.
3. Bids shall be prepared and submitted only on the forms supplied by the Owner and shall be signed by the bidder. Contractors must complete all bid items; no incomplete bids will be accepted. Written amounts shall prevail over numbers. If the unit price and the total amount named by the bidder for any item do not agree, the unit price shall govern. The Bidder Certification, fully completed and executed by the bidder, shall accompany the bid.
4. If the bid is by an individual, his/her name and address shall be shown; if by a firm, the firm or partnership name shall be shown; or if by a corporation, the bid shall show the name and the State under the laws of which the corporation is chartered and addresses of the President and of the Secretary and/or Treasurer. All bids shall be signed in long-hand and executed by a principal duly authorized to make contracts. Verbal or telephonic bids or modifications will not be considered. Bidders shall include with their bid a completed Certificate of Vote of Authorization. Such forms are included with the bid documents. Electronic bids will not be accepted.
5. Bids shall not contain any recapitulation of the work to be done. Alternative bids will not be considered, unless called for. The completed form shall be without interlineations or alterations.
6. All bids shall be presented to the Owner under sealed cover, and plainly marked on the outside with the title of the work being proposed and the name of the bidder. It is the sole responsibility of the bidder to ensure that his/her bid is received by the Owner prior to the time specified for receipt of bids. Any bid received after the scheduled closing time for receipt of bids shall be returned to the bidder unopened and will be deemed unresponsive and thus rejected by the Owner(s).

7. Every bid shall be accompanied by a bid deposit in the form of: (1) a bid bond or (2) a certified check on, or a treasurer's or cashier's check issued by, a responsible bank or trust company, payable to the Owner. The amount of the bid deposit shall be five percent (5%) of the value of the bid.

### 1.03 BID QUANTITIES

See Bid Form in Section 00 30 000 for BID FORMS.

### 1.04 CONTRACTOR'S LICENSE

Prior to submitting bids, bidders shall be licensed (if applicable) as contractors under the laws of the Commonwealth of Massachusetts to perform the type and class of work contemplated by the Contract Documents.

Subcontractors of bidding Contractors shall be licensed under the laws of the Commonwealth of Massachusetts to perform the type and class of work contemplated by the Contract Documents.

### 1.05 WITHDRAWAL OF BID

Any bid may be withdrawn by the bidder prior to, but not after, the time fixed for the opening of bids, either personally or by telegraphic or written request. The withdrawal of a bid shall not prejudice the right of a bidder to file a new bid. No bid may be withdrawn for a period of sixty (60) calendar days after the bid opening. Any withdrawal after that time shall be in writing and shall not be effective until received by Owner.

### 1.06 INTERPRETATION OF DOCUMENTS AND PLANS

If any person contemplating submitting a bid for the proposed contract is in doubt as the true meaning of any part of the plans, specifications, or other contract documents, or finds discrepancies in, or omissions from the drawings or specifications, he/she may submit to the Project Engineer a written request for an interpretation or corrections thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation or corrections of the proposed documents will be made only by addendum duly issued and a copy of such addendum will be mailed, emailed, or delivered to all persons known by the Project Engineer to have received a set of Contract Documents. Neither the Owner nor the Project Engineer will be responsible for any other explanations or interpretations of the proposed Contract Documents.

### 1.07 ADDENDA

The Contract Documents are subject to revision prior to the time fixed for opening bids by submitting the revision, in writing, to all persons who are known by Owner to have secured such documents for purposes of submitting bids. All addenda issued shall become an integral and integrated part of the contract documents and shall be included in any bid submitted. Bidders are responsible for verifying that they have received all addenda.

### 1.08 OPENING OF BIDS

Written Bids for the Contract will be received by the Office of the Town Manager, 549 Main Street, Chatham, MA 02633, no later than **2:00 pm EST Thursday February 13, 2025**, and at that time and place will be publicly opened and read aloud.

### 1.09 AWARD OF CONTRACT OR REJECTION OF BIDS

The Contract will be awarded to the responsible and eligible bidder offering the lowest-price bid provided that such bid meets the Town's preferred schedule and does not exceed the amount of funds appropriated or available to finance such a contract. If the lowest bidder exceeds the amount of available funds, the Town reserves the right to negotiate with the lowest qualified bidder.

Bids may be rejected if they show any alterations of form, additions not called for, conditional bids, incomplete bids, erasures, or irregularities of any kind. The Owner reserves the right to waive any irregularities in the bids as received.

The Owner reserves the right to reject any or all bids. More than one bid from an individual, firm or partnership, corporation, or association, under the same or different name, will not be considered. Reasonable grounds for believing that a bidder is interested in more than one bid for work contemplated, will cause the rejection of all bids in which said bidder is interested. Bids in which prices are obviously unbalanced may be rejected by the Owner.

#### 1.10 COMPETENCY OF BIDDERS

Bidders may be required to furnish evidence of financial competency, organizational ability and experience to enable them to undertake and successfully complete the work to be performed, including past performance which shall include past performance on projects performed for the Owner.

Bidders shall provide the lists of past projects and minimum references as outlined in the Bid.

#### 1.11 BONDS AND INSURANCE

Bidder's attention is directed to the provisions of the contract documents relating to the requirements of contract bonds. The successful bidder, simultaneously with execution of the Agreement, will be required to furnish a faithful performance bond in an amount equal to at least one hundred percent (100%) of the contract price, and a labor and material bond in an amount equal to at least fifty percent (50%) of the contract price; both of said bonds to be secured from a corporate surety admitted in the Commonwealth of Massachusetts and satisfactory to the Owner.

Bidder's attention is further directed to the provisions relating to the Contractor's insurance requirements, and the prescribed form of Bidder's Bond, Agreement, Contract Bonds, and insurance documentation.

#### 1.12 CONTRACT PROGRESS SCHEDULE

Bidder's attention is directed to the provisions of the Contract Documents relating to the requirement for the submission of a contract progress schedule with the Contractor's Bid. Contractors shall provide a project schedule with their bids. Time is of the essence with respect to completion of the Contract work and adherence to the project schedule is an essential term of the Contract.

#### 1.13 LEGAL RELATIONS AND RESPONSIBILITIES

Bidder's attention is specifically directed to the provisions of the General Conditions concerning laws to be observed, hours of labor, minimum wages, employment of labor, safety codes, patents, taxes, and other matters of concern to the bidder.

The prevailing wages to be paid mechanics, apprentices, teamsters, chauffeurs, and laborers on the Project shall be established by the Prevailing Wage Schedule, as determined by the Commissioner of Labor and Industries, pursuant to the provisions of M.G.L. Chapter 149, Section 26 to 27D, inclusive, as amended, which Schedule is included in the Contract Documents.

#### 1.14 SUBCONTRACTORS

Each bidder must identify in his/her bid the subcontractors he/she intends to employ to perform any work, labor, or render any service to the Contractor for the construction of the work or improvement in an amount in excess of one half of one percent of the Contractor's bid. This statement shall



include the name of each subcontractor, the location of his/her place of business, and the nature of the work to be performed by him/her.

\*\*\*END OF SECTION\*\*\*

**SECTION 00 30 00**  
**BID FORM**

Dear Owner:

The undersigned, as a bidder, declares that he/she has carefully examined the location of the proposed work, the bid form of Agreement, and Contract Documents, and he/she proposes and agrees that, if this bid is accepted, he/she will contract with the Owner to provide all necessary labor, equipment, machinery, tools, and apparatus, to perform all the work and furnish all the materials specified in the Contract Documents in the manner and time therein set forth required to complete the following project:

**90 BRIDGE STREET PIERS**  
**CHATHAM, MA**

The work to be performed pursuant to this Bid shall be in strict conformity with the Contract Documents prepared therefore by the Owner, copies of which are on file in the office of the Project Engineer, which Contract Documents are hereby made a part thereof, and incorporated by this reference as if fully set forth herein.

The bidder proposes and agrees to contract with the Owner to furnish and perform all of the described work.

A breakdown of the Contract Price is attached hereto marked Exhibit "A" and incorporated by this reference.

Owner reserves the right to add or delete items from this bid. The Contract Price shall be adjusted accordingly. The price set forth herein includes any and all costs and expenses of whatever source or nature for the work to be performed pursuant to the terms and conditions of the Contract Documents.

If awarded the contract, the undersigned hereby agrees to sign said Contract and to furnish the necessary bonds within ten (10) days after being requested to do so by the Owner.

The undersigned has examined the location of the proposed work and is familiar with the Contract Documents and the local conditions at the place where the work is to be done.

The undersigned has checked carefully all of the above figures and understands that the Owner will not be responsible for any errors or omissions on the part of the undersigned in making up this bid.

The undersigned hereby certifies that this bid is genuine, and not sham or collusive, or made in the interest or in behalf of any person not herein named, and that the undersigned has not directly or indirectly induced or solicited any other bidder to put in a sham bid or any other person, firm or corporation to refrain from bidding and that the undersigned has not in any manner sought by collusion to secure for himself or herself an advantage over any other bidder.

The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work; that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the

time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and that he will comply fully with all laws and regulations applicable to awards made subject to section 44A.

The undersigned has satisfied him/herself by personal examination of the location of proposed work, and by such other measures as they may prefer, as to the actual conditions and requirements of the work, and shall not, after submission of the bid, dispute, complain or assert that there was any misunderstanding in regard to the nature or amount of the work to be done.

**Contractor acknowledges receipt of Addenda Nos. \_\_\_\_\_ through \_\_\_\_\_.**

**Contractor :** \_\_\_\_\_

**Signature :** \_\_\_\_\_

**Signed by :** \_\_\_\_\_

**Title :** \_\_\_\_\_

**Address:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Telephone :** \_\_\_\_\_

**Facsimile :** \_\_\_\_\_

**Dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_**

**License No. \_\_\_\_\_ Class(es) \_\_\_\_\_**

**Exp. Date: \_\_\_\_\_**

**NOTE:** Bidders must hold current licenses as required under the laws of the Commonwealth of Massachusetts and all Federal Statutes.

**EXHIBIT "A"**  
**BASE BID FORM ITEMS**

The Bidder agrees to perform all the Work described in the Contract Documents for the following prices:

<b>ITEM NO.</b>	<b>DESCRIPTION AND UNIT PRICES WRITTEN</b>	<b>ESTIMATED QUANTITY</b>	<b>UNIT PRICE IN FIGURES</b>	<b>ITEM AMOUNT</b>
02 00 00-1	Mobilization  Unit Price in Words: _____ _____	11 Lump Sum	\$ _____	\$ _____
02 00 00-2	Site Preparation  Unit Price in Words: _____ _____	Lump Sum	\$ _____	\$ _____
02 41 00-1	Demolition  Unit Price in Words: _____ _____	1 Lump Sum	\$ _____	\$ _____
02 41 00-2	Silt Curtain Removal  Unit Price in Words: _____ _____	1 Lump Sum	\$ _____	\$ _____
03 31 30-1	Concrete Pile Cap  Unit Price in Words: _____ _____	1 Lump Sum	\$ _____	\$ _____

03 31 30-2	Precast Concrete Decking Unit Price in Words: _____ _____	1 Lump Sum	\$ _____	\$ _____
03 31 30-3	Cast-in-Place Concrete Decking Unit Price in Words: _____ _____	1 Lump Sum	\$ _____	\$ _____
03 31 30-4	Concrete Curb Unit Price in Words: _____ _____	1 Lump Sum	\$ _____	\$ _____
05 52 13.16-1	Ladders Unit Price in Words: _____ _____	2 EA.	\$ _____	\$ _____
06 13 00-1	Timber Upweller Pier Apron Unit Price in Words: _____ _____	1 Lump Sum	\$ _____	\$ _____
06 13 00-2	Timber Fender System Unit Price in Words: _____ _____	1 Lump Sum	\$ _____	\$ _____
06 13 00-3	Timber T-Pier Extension Unit Price in Words: _____ _____	1 Lump Sum	\$ _____	\$ _____
06 15 19-1	Timber Decking Unit Price in Words: _____ _____	1 Lump Sum	\$ _____	\$ _____
06 73 00-1	Composite Decking Unit Price in Words: _____ _____	1 Lump Sum.	\$ _____	\$ _____

31 62 00-1	Mooring Piles Unit Price in Words: _____ _____	10 EA.	\$ _____	\$ _____
31 62 19.13-1	Timber Bearing Piles Unit Price in Words: _____ _____	55 EA.	\$ _____	\$ _____
31 62 19.13-2	Timber Fender Piles Unit Price in Words: _____ _____	6 EA.	\$ _____	\$ _____
31 62 19.13-3	Obstruction Removal During Timber Pile Installation Unit Price in Words: _____ _____	10 Hour	\$ _____	\$ _____
31 62 23 -1	Composite Guide Piles Unit Price in Words: _____ _____	7 EA.	\$ _____	\$ _____
35 51 13.01-1	Concrete Floating Dock Unit Price in Words: _____ _____	1 Lump Sum	\$ _____	\$ _____
35 51 13.23-1	Timber Floating Docks Unit Price in Words: _____ _____	1 Lump Sum	\$ _____	\$ _____
35 51 20-1	Aluminum Gangways Unit Price in Words: _____ _____	1 Lump Sum	\$ _____	\$ _____
35 59 33-1	Mooring Cleats Unit Price in Words: _____ _____	1 Lump Sum	\$ _____	\$ _____

Bidder acknowledges that (1) each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

	<p>Total Base Bid Unit Price in Words:</p> <p>_____</p> <p>_____</p> <p>\$ _____</p>	<p>\$ _____</p>
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**LIST OF SUBCONTRACTORS**

Any person making a bid or offer to perform the work, shall in his or her bid or offer, set forth: (a) The name and location of the place of business of each subcontractor who will perform work or labor or render service to the prime Contractor in or about the construction of the work or improvement, or a subcontractor licensed by the Commonwealth of Massachusetts who, under subcontract to the primary Contractor specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of one percent (0.5%) of the prime Contractor's total bid; (b) The portion of the work which will be done by each such subcontractor under this act. The prime Contractor shall list only one subcontractor for each such portion as defined by the prime Contractor in his or her bid.

Any item of work, which does not set forth a designated Sub-Contractor will be done by the Prime Contractor.

**Name & Address**

**Portion of Work**

Name & Address	Portion of Work
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

\_\_\_\_\_  
(Prime Contractor)

Signed by: \_\_\_\_\_

Title: \_\_\_\_\_



**BIDDER CERTIFICATIONS**

1.01 INSURANCE AND BOND VERIFICATION

**A.** The undersigned Bidder Certifies that he has the following insurance coverage:

1. Workers' Compensation:

Carrier: \_\_\_\_\_

Address: \_\_\_\_\_

Phone and Fax: \_\_\_\_\_

Policy Number: \_\_\_\_\_

2. General Liability:

Carrier: \_\_\_\_\_

Address: \_\_\_\_\_

Phone and Fax: \_\_\_\_\_

Policy Number: \_\_\_\_\_

Policy Limits: \$ \_\_\_\_\_

A.M. Best Rating: \_\_\_\_\_

3. Automotive Liability:

Carrier: \_\_\_\_\_

Address: \_\_\_\_\_

Phone and Fax: \_\_\_\_\_

Policy Number: \_\_\_\_\_

Policy Limits: \$ \_\_\_\_\_

A.M. Best Rating: \_\_\_\_\_

4. All-risk Course of Construction:  
Carrier: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone and Fax: \_\_\_\_\_  
Policy Number: \_\_\_\_\_  
Policy Limits: \$ \_\_\_\_\_  
A.M. Best Rating: \_\_\_\_\_
5. Excess Liability (if applicable):  
Carrier: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone and Fax: \_\_\_\_\_  
Policy Number: \_\_\_\_\_  
Policy Limits: \$ \_\_\_\_\_  
A.M. Best Rating: \_\_\_\_\_

Additional endorsements to insurance are required for the following coverages:

1. Additional Insured:  
It is hereby understood and agreed that Additional Insured for General Liability and Auto Liability Coverage shall include: The Owner, its Board, commissions, committees, boards, officers, employees, and agents as additional insured as respects to work done by Named Insured.
2. Primary Coverage  
With respect to claims arising out of the operations of the Name Insured, such insurance as afforded by the policy is primary, and is not additional to or contributing with any other insurance carried by or for the benefit of the above Additional Insureds.
3. Cross Liability/Severability of Interest  
The naming of more than one person, firm or corporation as insured under this policy shall not, for that reason alone, extinguish any rights of the insured against another, but this endorsement, and the naming of multiple insureds, shall not increase the total liability of the Company under this policy.
4. Notice of Cancellation for General Liability and Auto Liability:  
It is understood and agreed that in the event of cancellation of or reduction in the policy for any reason, including non-payment of premium, 30 days' written notice will be sent to the Project Engineer.

The name of the Bidder's Bonding Company is as follows:

Carrier/Surety:

\_\_\_\_\_

Address: \_\_\_\_\_

Phone and Fax: \_\_\_\_\_

A.M. Best Rating: \_\_\_\_\_

**1.02 RELEVANT EXPERIENCE**

- A. List Bidder's comparable projects (Minimum five projects of similar size and scope, Minimum one project performed for a Massachusetts Municipality or State Agency) completed by Bidder in the last ten years, with Owner contact information. (Attach separate sheets if necessary).
- B. List any projects where Bidder has been default terminated by an Owner or has been involved in arbitration/litigation with an Owner on a construction project. Provide Owner contact information:
- C. Contractors shall provide a list of all projects completed within the last five years.

**1.03 SAFETY & EXPERIENCE RECORD**

- A. The following statements as to safety and experience of Bidder are submitted, and Bidder guarantees the truthfulness and accuracy of the information:

1. Safety

- a. List Bidder's Interstate Experience Modification Rate for the last three years.

2022: \_\_\_\_\_

2023: \_\_\_\_\_

2024: \_\_\_\_\_

- b. State the name of Bidder's safety engineer/manager or Site Safety Officer:

\_\_\_\_\_

**1.04 CONTRACTOR EXPLANATION OR NOTES ON ANY OF THE ABOVE:**

- 1.05 LIST OF ALL EQUIPMENT TO BE USED ON THIS PROJECT (include year, type, size and condition):
- 1.06 CONTRACTOR'S NARRATIVE ON CONSTRUCTION SCHEDULE AND METHODOLOGY: (Please describe in as much detail as possible how your firm/company will proceed with the work as described within the contract documents. Attach or utilize additional sheets if necessary. The Construction Schedule shall be provided with the Contractor's Bid.

BIDDER CERTIFIES, UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE COMMONWEALTH OF MASSACHUSETTS, THAT THE FOREGOING INFORMATION IS CURRENT AND ACCURATE AND AUTHORIZES OWNER AND ITS AGENTS AND REPRESENTATIVES TO OBTAIN A CREDIT REPORT AND/OR VERIFY ANY OF THE ABOVE INFORMATION.

BIDDER: \_\_\_\_\_  
(COMPANY NAME)

BY: \_\_\_\_\_  
NAME TITLE

BY: \_\_\_\_\_  
SIGNATURE DATE

NOTE: This bid must bear the written signature of the Bidder. If the Bidder is a partnership, the bid must be signed by a partner. If the Bidder is a corporation, the bid must be signed by a duly authorized officer or agent of such corporation.

**90 BRIDGE STREET PIERS  
CHATHAM, MA**

**NOTICE OF AWARD**

Dated: \_\_\_\_\_

TO: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**RE:**

**TOWN OF CHATHAM, MASSACHUSETTS  
90 BRIDGE STREET PIERS**

The Contract Sum of your contract is \_\_\_\_\_

\_\_\_\_\_ Dollars (\$\_\_\_\_\_).

Two copies of each of the Contract Documents accompanying will be delivered separately or otherwise made available to you.

You must comply with the following conditions precedent within ten (10) calendar days after the date of this Notice of Award, that is by \_\_\_\_\_.

1. You must deliver to the Owner four (4) fully executed counterparts of the Agreement. Each of the Contract Documents must bear your signature.
2. You must deliver to the Owner the Performance Bond, executed by you and your surety.
3. You must deliver to the Owner the Construction Labor and Material Payment Bond, executed by you and your surety.
4. Provide all certificates of insurance and endorsement pages required hereunder to the Owner.

Further, you may deliver any requests for substitution within thirty-five (35) days of the date of this Notice of Award, that is by \_\_\_\_\_.

Failure to comply with these conditions within the time specified will entitle the Owner to consider your Bid abandoned, to annul this Notice of Award, and to declare your Bid Security forfeited.

Within ten (10) Days after you comply with those conditions, the Owner will return to you one fully signed counterpart of the Agreement Owner: (Town of Chatham)

BY:

\_\_\_\_\_  
(Name and Title)

\*\*\*END OF SECTION\*\*\*

**SECTION 00 55 00**  
**CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY**

---

**MUST BE SUBMITTED WITH BID FORM**

Instructions:

This certificate is required pursuant to Executive Order 11246 (30 F.R. 12319-25). The implementing rules and regulations provide that any bidder or prospective CONTRACTOR, or any of their proposed SUBCONTRACTORS, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause, and if so, whether it has filed all compliance report within seven calendar days after bid opening. No contract shall be awarded unless such report is submitted.

Certification by Bidder:

Name and Address of Bidder (include zip code)

1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause. Yes\_\_\_No\_\_\_
2. Compliance reports were required to be filed in connection with such contract or subcontract. Yes\_\_\_No\_\_\_
3. Bidder has filed all compliance reports due under applicable instructions, including Monthly Employment Utilization Report (257). Yes\_\_\_No\_\_\_
4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended? Yes\_\_\_No\_\_\_

Name and Title of Signer (please type)

Signature\_\_\_\_\_Date\_\_\_\_\_

\*\*\*END OF SECTION\*\*\*

**SECTION 00 56 00**  
**CERTIFICATE OF COMPLIANCE WITH TAX LAWS**

---

**MUST BE SUBMITTED WITH BID FORM**

I, \_\_\_\_\_ of \_\_\_\_\_, certify under  
(principal) (corporation)  
penalties of perjury that said corporation has complied with all the laws of the Commonwealth of  
Massachusetts relating to taxes.

\_\_\_\_\_  
(date)

\_\_\_\_\_  
(signature)

\_\_\_\_\_  
(title)

\_\_\_\_\_  
Federal Tax Identification Number

\*\*\*END OF SECTION\*\*\*

**SECTION 00 57 00**  
**CERTIFICATE OF NON-COLLUSION**

---

**MUST BE SUBMITTED WITH BID FORM**

The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

By: \_\_\_\_\_ Duly  
Authorized Individual

\_\_\_\_\_  
Name of Business

\_\_\_\_\_  
Address

\_\_\_\_\_  
Date

\*\*\*END OF SECTION\*\*\*



**SECTION 00 58 00**  
**CORPORATE SIGNATORY AUTHORIZATION**

---

**IF APPLICABLE, SUBMIT WITH BID FORM**

If the Bidder is a corporation, complete the following certification: At a duly authorized meeting of the Board of Directors of the

\_\_\_\_\_ held on \_\_\_\_\_  
(Name of Corporation) (Date)

at which all the Directors were present or waived notice, it was

VOTED that, \_\_\_\_\_  
(Name) (Officer)

of this company is authorized to execute contracts and bonds in the name and behalf of said company, and affix its corporate seal thereto, and such execution of any contract or obligation in this company's name on its behalf by such \_\_\_\_\_ of the  
(Officer)  
company, shall be valid and binding upon this company.

I hereby certify that I am the Clerk of the \_\_\_\_\_

that \_\_\_\_\_ is the duly elected \_\_\_\_\_  
(Officer)

of said company, and that the above vote has not been amended or rescinded and remains in full force and effect as of the date of the Contract.

A true copy,

Attest \_\_\_\_\_ (Clerk)

Place of Business \_\_\_\_\_

\_\_\_\_\_  
(Corporate Seal)

\*\*\*END OF SECTION\*\*\*

**SECTION 00 61 00**  
**PERFORMANCE BOND**

KNOW ALL PEOPLE BY THESE PRESENTS: that, WHEREAS, Town of Chatham ("Owner"), Commonwealth of Massachusetts, has awarded to \_\_\_\_\_, hereinafter designated as the "Principal", a contract (the "Contract"), the terms and provisions of which Contract are incorporated herein by reference, for constructing the following project:

**90 BRIDGE STREET PIERS**  
**CHATHAM, MA**

WHEREAS, said Principal is required under the terms of said Contract to furnish a bond for the faithful performance of said Contract;

NOW, THEREFORE, we, the Principal, and \_\_\_\_\_, as surety, are held and firmly bound unto Owner, in the penal sum of \_\_\_\_\_ and \_\_\_\_\_ / 100 Dollars (\$ \_\_\_\_\_), lawful money of the United States, being one hundred percent (100%) of the Contract amount, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the above bounden Principal, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and will truly keep and faithfully perform the covenants, conditions, and agreements in the said Contract and any alterations made as therein provided, on his or their part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless, Owner, its Board, officers, employees and agents, as therein stipulated, then this obligation shall be null and void; otherwise it shall be and remain in full force and virtue.

As a condition precedent to the satisfactory completion of the said Contract, the above obligation shall hold good for a period of one (1) year after the completion and acceptance of the said work, during which time if the above bounded Principal, his or its heirs, executors, administrators, successors or assigns shall fail to make full, complete and satisfactory repair and replacements or totally protect the said Owner from loss or damage made evident during said period of one (1) year from the date of acceptance of said work, and resulting from or caused by defective materials or faulty workmanship, in the prosecution of the work done, the above obligation shall be and remain in full force and virtue.

And the said Surety, for value received, hereby stipulates and agrees to waive any consent to change, including changes in price, extension of time, alteration, or addition to the terms of the Contract or to the work to be performed thereunder or the Specifications accompanying the same which shall in any way affect its obligations on this bond; and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract, or to the work, or to the Specifications.

In the event Owner, or its successors or assigns, shall be the prevailing party in an action brought upon this bond, then, in addition to the penal sum hereinabove specified, we agree to pay to the said Owner, or its successors or assigns, a reasonable sum on account of attorney's fees in such action, which sum shall be fixed by the court.

IN WITNESS THEREOF, the above bounden parties have executed this instrument under their seals this day of \_\_\_\_\_, 2025, the name and corporate seal of each corporate party being hereto affixed, and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Principal

Witness as to Principal

By: \_\_\_\_\_ By: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Surety: \_\_\_\_\_

ATTEST:

\_\_\_\_\_  
Witness to Surety

\_\_\_\_\_  
Attorney-in-Fact

\_\_\_\_\_  
(Seal)

If Contractor is partnership, all partners must execute BOND.

\*\*\*END OF SECTION\*\*\*

**SECTION 00 61 50**  
**PAYMENT BOND**

KNOW ALL MEN BY THESE PRESENTS: That we, \_\_\_\_\_

as Principal, and, \_\_\_\_\_ organized and existing under the laws of the Commonwealth of Massachusetts, and authorized to execute bonds and undertaking as sole surety, as Surety, are held and firmly bound unto any and all persons named whose claim has not been paid by the Contractor, company or corporation in the aggregate total of \_\_\_\_\_ and \_\_\_\_ / 100 Dollars (\$\_\_\_\_\_) (being 50% of the Contract amount) for the payment whereof, well and truly to be made, said Principal and Surety bond themselves, their heirs, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH that, whereas the above with Town of Chatham ("Owner") to do the following work, to-wit:

**90 BRIDGE STREET PIERS**  
**CHATHAM, MA**

NOW, THEREFORE, if the above-bounden Principal or his subcontractors fail to pay any of the persons named or unnamed, or amounts due under the Unemployment Insurance Code with respect to work or labor performed under the Contract, or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the Contractor and his subcontractor pursuant to the Unemployment Insurance Code of the Commonwealth of Massachusetts, with respect to such work and labor, the surety will pay for the same, in the amount not exceeding the sum specified in this bond, and also, in case suit is brought upon this bond, a reasonable attorney's fee, to be fixed by the Court.

This bond shall inure to the benefit of any person named or who has provided goods or services so as to give a right of action to them or their assignees in suit brought upon this bond.

And the said Surety, for value received, hereby stipulates and agrees to waive the provisions regarding consent to change, including changes in price, extension of time alteration, or addition to the terms of the Contract, or to the work to be performed thereunder, or the Specifications accompanying the same, which shall in any way affect its obligations on this bond; and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract, or to the work, or to the Specifications.

IN WITNESS WHEREOF, the above bounden parties have executed this instrument under their seals this \_\_\_\_\_ day of \_\_\_\_\_, 2025 the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Principal

Witness as to Principal

By: \_\_\_\_\_

By: \_\_\_\_\_

\_\_\_\_\_  
Address

\_\_\_\_\_  
Surety

ATTEST:

\_\_\_\_\_  
Witness to Surety

\_\_\_\_\_  
Attorney-in-Fact

\_\_\_\_\_(Seal)

If Contractor is partnership, all partners must execute BOND.

\*\*\* END OF SECTION \*\*\*

**SECTION 00 62 00**  
**OWNER-CONTRACTOR AGREEMENT**

The Town of Chatham (the "Owner") and \_\_\_\_\_, hereinafter referred to as "Contractor", for the consideration hereinafter stated, hereby agree as follows:

1. PROJECT. Contractor shall perform everything required to be performed, shall provide and furnish all of the labor, equipment, materials, tools, and appurtenances to perform, within **Two Hundred (200)** calendar days after the NOTICE TO PROCEED, which is anticipated to be given no later than **Tuesday, March 14, 2025** for the following work:

**90 BRIDGE STREET PIERS**  
**CHATHAM, MA**

in strict accordance with the Contract Documents pertaining thereto and signed by the Engineer for the Owner, which Documents are incorporated herein and made a part of this Agreement as if herein fully set forth. Subject to all authorized modifications, completion of all construction activities must be achieved no later than **September 30, 2025**.

CONTRACT AMOUNT. Owner shall pay to Contractor, as full consideration for the faithful performance by Contractor of the aforementioned work, the amount of \_\_\_\_\_ Dollars (\$\_\_\_\_\_) computed in accordance with Contractor's accepted Bid dated \_\_\_\_\_, which accepted Bid is incorporated herein by reference thereto as if herein fully set forth.

2. SUPERVISION. All of the work to be done shall be done under the direction and supervision of, and to the approval of, Owner or its authorized representative, and the work shall be done in the best workmanlike manner, conforming strictly to the provisions of the specifications and plans made thereof.
3. COMPLIANCE WITH LAWS. (a) Contractor shall comply with all applicable provisions of the Massachusetts General Laws inclusionary of any and all Labor and Labor Relations Statutes. All applicable provisions of Federal, state, or local law, by-laws, rules, or regulations are incorporated into the Contract as if fully set forth therein and shall prevail over any conflicting provisions of the General or Special Conditions.

Before the Agreement between Owner and Contractor is entered into, Contractor shall submit written evidence that it and any subcontractors have obtained for the period of the Contract, full Workers' Compensation insurance coverage for all persons whom they employ or may employ in carrying out the work under this Contract. This insurance shall be in accordance with the requirements of the most current and applicable state Workers' Compensation insurance laws. The Contractor in signing this Agreement certifies to Owner as true the following statement:

I am aware of the provisions of Massachusetts General Laws, which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of this Contract.

5. PERFORMANCE STANDARDS. The Work must be performed and completed in accordance with all requirements of law and no Work shall be undertaken until Contractor has been issued all required permits from all applicable municipal, state and federal governmental bodies. "Completion" of the Work includes obtaining all certificates, or amendments of existing certificates, as the case may be, which relate to the performance

- of the Work. Unless otherwise specified in this Agreement, the Work must be performed in a good and workmanlike manner and in accordance with the best modern practice and with materials and workmanship of the highest quality. Contractor shall check and verify all dimensions, grades, and levels before commencement of performance and whenever necessary during the progress thereof.
6. **PAYMENTS.** Owner shall pay the Contractor in accordance with the provisions of G.L. c. 30, §39G for complete and accepted performance of the Work, subject to additions and deductions by Change Orders, and provided that, notwithstanding anything in the Contract Documents to the contrary, any and all payments which the Town is required to make under this Contract shall be subject to appropriation or other availability of funds as certified by the Town Accountant. In the absence of appropriation or availability as certified herein, this Contract shall be immediately terminated without liability for damages, penalties or other charges to the Town. In the event this is a multi-year contract, this Contract shall be subject to annual appropriation and in the event funds are not so appropriated, this Contract shall terminate immediately without liability for damages, penalties or charges to the Town. The Contractor further agrees to provide with each payment application (invoice), lien waivers sufficient to discharge any liability from the Owner to Contractor. Periodic payments shall cover work completed through the end of each month. When periodic payments are to be made, the Contractor shall submit to the Owner, on Owner' forms, an estimate of the total amount of work accomplished, which will show the computed amount due less the retention authorized by G.L. c. 30, §39G. Upon receipt from the Contractor of a complete periodic estimate requesting payment of the amount due for the preceding periodic estimate period, the Owner shall make a periodic payment to the Contractor for the work performed during the preceding estimate period and for the materials not incorporated in the work but delivered and suitably stored at the site, or at some location agreed upon in writing, to which the Contractor has title or to which a Subcontractor has title and has authorized the Contractor to transfer title to the Owner, upon certification by the Contractor that he is the lawful owner and that the materials are free from all encumbrances. The Owner may deduct from a periodic payment a retention based on its estimate of the fair value of its claims against the Contractor, a retention for direct payments to subcontractors based on demands for same in accordance with the provisions of G.L. c.30, §39F, and a retention to secure satisfactory performance of the contractual in the amount of five percent (5%) of the approved amount of any periodic payment, and the same right to retention shall apply to bonded subcontractors entitled to direct payment under said §39F of chapter 30. Each periodic payment application must be approved by the Project Engineer and will not be considered as submitted until the Owner, Contractor and Project Engineer agree to unit quantities covered by the payment application. Once Owner has received the approved request for payment application, Owner shall process the Contractor's invoice and pay Contractor any undisputed amount within fifteen (15) calendar days from the date of receipt of a complete application for payment from Contractor.
7. **JOB SITE.** The Contractor shall at all times enforce strict discipline and good order among its employees and shall not employ on the Work any unfit person or anyone not skilled in the assigned task. The Contractor at all times shall keep the job site free from accumulation of waste materials or rubbish caused by its operations. At the completion of the Work, it shall remove all its waste materials and rubbish from and about the job site as well as its tools, construction equipment, machinery and surplus materials. The Contractor shall comply with all laws, ordinances, rules, regulations, and lawful orders of any public

- authority bearing on the performance of the Work, the safety of persons and property and their protection from damage, injury, or loss. Contractor shall provide repair response within twenty-four (24) hours of request by Owner during the course of performance of the Work under this Agreement for any repair work that has been poorly constructed and or performed or any work that results in either consequential or actual damage to any property associated with the Contractor's operations.
8. **STORAGE OF MATERIALS.** Materials and equipment shall be stored in a neat and orderly manner at locations designated by the Owner, taking all necessary precautions to prevent fire hazards and spontaneous combustion and to conform to the requirements of all applicable regulatory agencies and insurance policies.
  9. **EQUIPMENT AND MATERIALS.** Contractor shall furnish all labor, tools, scaffolding, ladders, equipment, supplies and materials required in performing all Work under this Agreement. Owner assumes no liability or responsibility for the care, safety, or preservation of any tools, machinery, equipment, material or supplies and all risks thereof are assumed by Contractor.
  10. **SAFETY PROCEDURES.** Contractor shall at all times take all necessary and customary precautions in introducing and maintaining safety measures to protect the persons and property of others on or adjacent to the Work site against all damage, loss, or injury resulting from the Work involved under this Agreement. Contractor shall comply with any site-specific safety plans for the individual project properties. Protective arrangements will be taken in all instances to prevent Work operations from in any way damaging the premises or any personal property or any other work or operations, and from causing or allowing any pollution to leak, flow, or escape into any waterway or sewer. Contractor's obligation to protect shall include the duty to provide, place, and adequately maintain at or about the Worksite suitable and sufficient guards, lights, barricades, and enclosures. Contractor shall dispose of all hazardous materials used or produced in connection with this Agreement in the manner required by law.
  11. **PERMITS AND TAXES.** The Contractor shall pay any and all federal, state, and municipal taxes for which the Contractor may be liable in carrying out this Agreement.
  12. **LIQUIDATED DAMAGES.** If the Contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as a part consideration for the awarding of this Contract, to pay to the Owner, not as a penalty but as liquidated damages for such breach of contract, the amount of \$500.00 for each and every calendar day that the Contract shall be in default after the time stipulated in the Contract for completing the work. The said amount is fixed and agreed upon by and between the Contractor and the Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, and said amount is agreed to be the amount of damages which the Owner would sustain and said amount shall be retained from time to time by, and credited to, the Owner from current periodic and the final payment estimates. Contractor shall accordingly prosecute all Work diligently, using such means and methods of construction as will assure full completion not later than the dates set forth, respectively, as such dates may for good cause (as set forth in the Construction Documents) be extended by the Owner. Nothing in this Article, however, grants the Contractor the privilege to use means or methods that do not accord with sound and accepted practices. The amounts of liquidated damages established herein shall be cumulative and may, at Owner' option, be retained or deducted in whole or in part as a credit from any Contract



Sum amounts then owed Contractor or which may have been paid to the Contractor. If no amounts are then owed to Contractor, Contractor shall pay to Owner the amount of liquidated damages upon written demand therefor. The assessment of liquidated damages shall cease once the Contractor has fully and completely remedied any breach as set forth hereunder.

13. **ABANDONMENT; INCREASE.** All Work shall be performed according to a mutually agreed upon schedule. The suspension of work by the Contractor for any reason (other than the sole fault of the Owner) which exceeds twenty (20) calendar days shall be deemed abandonment of the project by the Contractor, and the Owner shall have available any and all remedies, including but not limited to surety participation pursuant to the terms of the Performance Bond.

It is further agreed that in case the work called for under this Agreement is not completed in all of its parts and requirements within the number of calendar days specified, Owner shall have the right to increase the number of calendar days or not, as may seem best to serve the interest of Owner; and if it is decided to increase the said number of calendar days, Owner shall further have the right to charge to Contractor, and deduct from the final payment for the work, all or any part, as Owner may deem proper, of the actual cost of engineering, inspection, superintendence, and other overhead expenses of Owner which are directly chargeable to this Agreement, except that the cost of final surveys and the preparation of the final estimate shall not be included in such charges to be paid by Contractor.

14. **GUARANTY.** Except as otherwise may be provided herein, Contractor hereby expressly guarantees for two (2) full years from the date of the final completion of the work under this Agreement and acceptance thereof by Owner, to repair or replace any part of the work performed hereunder which constitutes a defect resulting from the use of inferior or defective materials, equipment or workmanship. If, within said period, any repairs or replacements in connection with the work are, in the opinion of the Project Engineer, rendered necessary as a result of the use of inferior or defective materials, equipment or workmanship, Contractor agrees, upon receipt of notice from Owner, and without expense to Owner, to promptly repair or replace such material or workmanship and/or correct any and all defects therein. If Contractor, after such notice, fails to proceed promptly to comply with the terms of this guarantee, Owner may perform the work necessary to effectuate such correction and recover the cost thereof from Contractor or his sureties.

Any and all other special guarantees which may be applicable to definite parts of the work under this Agreement shall be considered as an additional guarantee and shall not reduce or limit the guarantee as provided by Contractor pursuant to this paragraph during the first year of the life of such guarantee.

Upon request of the Owner, as security for the faithful performance by the Contractor for maintenance for the period herein required, the Contractor, upon acceptance of the work performed under the Contract, in addition to the Performance and Material and Labor Bonds required hereunder, shall also provide the owner with a Maintenance Bond in the penal sum of ten percent (10%) of the contract price.

15. **INDEMNIFICATION.** The Contractor hereby indemnifies and shall at all times save and hold harmless the Town of Chatham, and its officers, attorneys, employees, and agents from and against any and all claims (including workers' compensation and wage claims), demands, suits, actions, liabilities, damages, penalties, judgments, and costs and expenses,

including without limitation additional engineering costs and attorney's fees and the costs and expenses of litigation, of or by anyone that in any way is caused by, arises out of, or is occasioned by the performance, activities, operations, conducts, negligence, or omissions of the Contractor, or any of its agents or employees, including subcontractors.

16. **INSURANCE.** Contractor, at its sole cost and expense, shall acquire and maintain in full force and effect throughout the term of this Agreement Workers' Compensation, employer's liability, commercial general liability, and owned, non-owned and hired automobile liability insurance coverage relating to Contractor's Work to be performed hereunder covering Owner' and Department's respective risks, as their interest may appear, in form subject to the approval of the Owner. The minimum amounts of coverage corresponding to the aforesaid categories of insurance per insurable event shall be as follows:

Insurance Category	Minimum Limits
Workers' Compensation	Statutory minimum
Employer's Liability	\$1,000,000.00 per accident for bodily injury or disease.
Commercial General Liability	\$3,000,000.00 general aggregate, \$1,000,000 per occurrence for bodily injury, personal injury and property damage.
Excess Liability (Umbrella)	\$3,000,000.00 per occurrence for bodily injury, personal injury and property damage.
Automobile Liability	\$1,000,000.00 per accident for bodily injury and property damage (coverage required to the extent applicable to Contractor's vehicle usage in performing work hereunder).

Any deductibles or self-insured retentions must be declared to and approved by Owner. At the option of Owner either Contractor's insurer shall reduce or eliminate the deductibles or self-insured retentions with respect to Owner, its Board, commissions, boards, committees, officers, agents and employees, or Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

Concurrently with the execution of this Agreement, Contractor shall furnish Owner with certificates of the insurance required hereunder and, with respect to evidence of commercial general liability automobile liability and fire insurance coverage, original endorsements:

- a. Precluding cancellation or reduction in coverage before the expiration of thirty (30) days after Owner shall have received written notification of cancellation or reduction in coverage first class mail.

- b. Providing that Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability (cross liability endorsements);
  - c. Naming Owner, its Board, commissions, boards, committees, officers, employees and agents as additional insureds, including identification of the Owner as an additional insured on any certificates of insurance; and
  - d. Providing that Contractor's insurance shall be primary insurance relating to Contractor's work hereunder with respect to Owner, and further providing that any insurance or self-insurance maintained by Owner shall not be excess of Contractor's insurance and shall not be contributory with it.
17. **FAITHFUL PERFORMANCE BOND.** Contractor shall provide, on the execution of this Agreement, a good and sufficient corporate surety bond in the penal sum of one hundred percent (100%) of amount bid, which bond shall be conditioned upon the faithful performance of all work required to be performed by Contractor under this Agreement. Said bond shall be liable for any and all penalties and obligations which may be incurred by Contractor under this Agreement. Acceptance of the bond by the Owner is subject to the review and approval of the bond by the Owner's Counsel.
18. **PAYMENT BOND.** In addition to the faithful performance bond required herein, Contractor shall furnish a good and sufficient corporate surety bond in the penal sum of fifty percent (50%) of amount of bid. Acceptance of the bond by the Owner is subject to the review and approval of the bond by the Owner's Counsel.
19. **TIME DELAYS; NO DAMAGES FOR DELAY.** If the Contractor is delayed in the performance of the Work due to changes ordered in the Work by the Owner or, by labor disputes, fire, unusual delay in transportation, unavoidable casualties, certified natural disasters, then the contract time may be extended by a Change Order for such reasonable time as both parties have mutually agreed upon. Winter weather conditions are not a reason for a delay in the Contractor's performance of work. Except as may otherwise be provided herein, Contractor agrees, as a special inducement to the Owner, to make no claim for damages for delay in the performance of this Contract occasioned by the Owner's act, or omission to act, or the acts or omissions of anyone acting on the Owner's behalf. Contractor agrees that any claim for such delays attributable to the Owner or anyone acting on its behalf shall be fully and exclusively addressed by an extension of time to complete performance of the Contract Work.
20. **PAYMENT OF MATERIALMAN AND LABORERS; DIRECT PAYMENT.** The Contractor shall make prompt payment of all claims for labor performed and materials furnished, used or consumed in the Work, including without limitation fuel, lumber, building materials, machinery, vehicles, tractors, equipment, fixtures, apparatus, tools, appliances, supplies, electric energy, gasoline and other motor oil, lubricating oil and greases, and the premiums for Worker's Compensation insurance. Contractor shall indemnify and hold Owner harmless for any and all losses or expenses from any and all mechanic's or material man's liens from being filed on any Owner's Property. Should any mechanic's liens or materials man's liens be filed by Contractor agrees to have any and all releases cleared and satisfied prior to any payments being released. The Owner shall, in its discretion notify Contractor and or Contractor's representative of any lien and require Contractor to release liens as a condition precedent to further monthly progress payments.

Direct Payment (G.L. c. 30, §39F).

(a) Forthwith after the Contractor receives payment on account of a periodic estimate, the Contractor shall pay to each Subcontractor the amount paid for the labor performed and the materials furnished by that Subcontractor, less any amount specified in any court proceedings barring such payment and also less any amount claimed due from the Subcontractor by the Contractor.

(b) Not later than the sixty-fifth day after each Subcontractor substantially completes his work in accordance with the plans and specifications, the entire balance due under the subcontract less amounts retained by the Owner as the estimated cost of completing the incomplete and unsatisfactory items of work, shall be due the Subcontractor; and the Owner shall pay that amount to the Contractor. The Contractor shall forthwith pay to the Subcontractor the full amount received from the Owner less any amount specified in any court proceedings barring such payment and also less any amount claimed due from the Subcontractor by the Contractor.

(c) Each payment made by the Owner to the Contractor pursuant to subparagraphs (a) and (b) of this section for the labor performed and the materials furnished by a Subcontractor shall be made to the Contractor for the account of that Subcontractor; and the Owner shall take reasonable steps to compel the Contractor to make each such payment to each such Subcontractor. If the Owner has received a demand for direct payment from a Subcontractor for any amount which has already been included in a payment to the Contractor or which is to be included in a payment to the Contractor for payment to the Subcontractor as provided in subparagraphs (a) and (b), the Owner shall act upon the demand as provided in this section.

(d) If, within seventy days after the Subcontractor has substantially completed the subcontract work, the Subcontractor has not received from the Contractor the balance due under the subcontract including any amount due for extra labor and materials furnished to the Contractor, less any amount retained by the Owner as the estimated cost of completing the incomplete and unsatisfactory items of work, the Subcontractor may demand direct payment of that balance from the Owner. The demand shall be by a sworn statement delivered to or sent by certified mail to the Owner, and a copy shall be delivered to or sent by certified mail to the Contractor at the same time. The demand shall contain a detailed breakdown of the balance due under the subcontract and also a statement of the status of completion of the subcontract work. Any demand made after substantial completion of the subcontract work shall be valid even if delivered or mailed prior to the seventieth day after the Subcontractor has substantially completed the subcontract work. Within ten days after the Subcontractor has delivered or so mailed the demand to the Owner and delivered or so mailed a copy to the Contractor, the Contractor may reply to the demand. The reply shall be by a sworn statement delivered to or sent by certified mail to the Owner and a copy shall be delivered to or sent by certified mail to the Subcontractor at the same time. The reply shall contain a detailed breakdown of the balance due under the subcontract including any amount due for extra labor and materials furnished to the Contractor and of the amount due for each claim made by the Contractor against the Subcontractor.

(e) Within fifteen days after receipt of the demand by the Owner, but in no event prior to the seventieth day after substantial completion of the subcontract work, the Owner shall make direct payment to the Subcontractor of the balance due under the subcontract including any amount due for extra labor and materials furnished to the Contractor, less any amount (i) retained by the Owner as the estimated cost of completing the incomplete or unsatisfactory items of work, (ii) specified in any court proceedings barring such

payment, or (iii) disputed by the Contractor in the sworn reply; provided, that the Owner shall not deduct from a direct payment any amount as provided in part (iii) if the reply is not sworn to, or for which the sworn reply does not contain the detailed breakdown required by subparagraph (d). The Owner shall make further direct payments to the Subcontractor forthwith after the removal of the basis for deductions from direct payments made as provided in parts (i) and (ii) of this subparagraph.

(f) The Owner shall forthwith deposit the amount deducted from a direct payment as provided in part (iii) of subparagraph (e) in an interest-bearing joint account in the names of the Contractor and the Subcontractor in a bank in Massachusetts selected by the Owner or agreed upon by the Contractor and the Subcontractor and shall notify the Contractor and the Subcontractor of the date of the deposit and the bank receiving the deposit. The bank shall pay the amount in the account, including accrued interest, as provided in an agreement between the Contractor and the Subcontractor or as determined by decree of a court of competent jurisdiction.

(g) All direct payments and all deductions from demands for direct payments deposited in an interest-bearing account or accounts in a bank pursuant to subparagraph (f) shall be made out of amounts payable to the Contractor at the time of receipt of a demand for direct payment from a Subcontractor and out of amounts which later become payable to the Contractor and in the order of receipt of such demands from Subcontractors. All direct payments shall discharge the obligation of the Owner to the Contractor to the extent of such payment.

(h) The Owner shall deduct from payments to the Contractor amounts which, together with the deposits in interest-bearing accounts pursuant to subparagraph (f), are sufficient to satisfy all unpaid balances of demands for direct payment received from Subcontractors. All such amounts shall be earmarked for such direct payments, and the Subcontractors shall have a right in such deductions prior to any claims against such amounts by creditors of the Contractor.

**21. SUBSTANTIAL COMPLETION AND FINAL PAYMENT (G.L. c.30, §39G).**

Upon substantial completion of the work required by the Contract, the Contractor shall present in writing to the Owner its certification that the work has been substantially completed. Within twenty-one days thereafter, the Owner shall present to the Contractor either a written declaration that the work has been substantially completed or an itemized list of incomplete or unsatisfactory work items required by the contract sufficient to demonstrate that the work has not been substantially completed. The Owner may include with such list a notice setting forth a reasonable time, which shall not in any event be prior to the contract completion date, within which the Contractor must achieve substantial completion of the work. In the event that the Owner fails to respond, by presentation of a written declaration or itemized list as aforesaid, to the Contractor's certification within the twenty-one day period, the Contractor's certification shall take effect as the Owner's declaration that the work has been substantially completed.

Within sixty-five days after the effective date of a declaration of a substantial completion, the Owner shall prepare and forthwith send to the Contractor for acceptance a substantial completion estimate for the quantity and price of the work done and all but one per cent retainage, if held by the Owner, on that work, including the quantity, price and all but one per cent retainage, if held by the Owner, for the undisputed part of each work item and extra work item in dispute but excluding the disputed part thereof, less the estimated cost

of completing all incomplete and unsatisfactory work items and less the total periodic payments made to date for the work. The Owner also shall deduct from the substantial completion estimate an amount equal to the sum of all demands for direct payment filed by Subcontractors and not yet paid to Subcontractors or deposited in joint accounts pursuant to G.L. c. 30, §39F, but no contract subject to said §39F shall contain any other provision authorizing the Owner to deduct any amount by virtue of claims asserted against the contract by Subcontractors, material suppliers or others.

If the Owner fails to prepare and send to the Contractor any substantial completion estimate required by this section on or before the date herein above set forth, the Owner shall pay to the Contractor interest on the amount which would have been due to the Contractor pursuant to such substantial completion estimate at the rate of three percentage points above the rediscount rate then charged by the Federal Reserve Bank of Boston from such date to the date on which the Owner sends that substantial completion estimate to the contractor for acceptance or to the date of payment therefor, whichever occurs first. The Owner shall include the amount of such interest in the substantial completion estimate.

Within fifteen days after the effective date of the declaration of substantial completion, the Owner shall send to the Contractor by certified mail, return receipt requested, a complete list of all incomplete or unsatisfactory work items, and, unless delayed by causes beyond his control, the Contractor shall complete all such work items within forty-five days after the receipt of such list or before the then contract completion date, whichever is later. If the Contractor fails to complete such work within such time, the Owner may, subsequent to seven days' written notice to the Contractor by certified mail, return receipt requested, terminate the contract and complete the incomplete or unsatisfactory work items and charge the cost of same to the Contractor.

Within thirty days after receipt by the Owner of a notice from the Contractor stating that all of the work required by the contract has been completed, the Owner shall prepare and forthwith send to the Contractor for acceptance a final estimate for the quantity and price of the work done and all retainage, if held by the Owner, on that work less all payments made to date, unless the Owner's inspection shows that work items required by the contract remain incomplete or unsatisfactory, or that documentation required by the contract has not been completed. If the Owner fails to prepare and send to the Contractor the final estimate within thirty days after receipt of notice of completion, the Owner shall pay to the Contractor interest on the amount which would have been due to the Contractor pursuant to such final estimate at the rate hereinabove provided from the thirtieth day after such completion until the date on which the Owner sends the final estimate to the Contractor for acceptance or the date of payment therefor, whichever occurs first, provided that the Owner's inspection shows that no work items required by the contract remain incomplete or unsatisfactory. Interest shall not be paid hereunder on amounts for which interest is required to be paid in connection with the substantial completion estimate as hereinabove provided. The Owner shall include the amount of the interest required to be paid hereunder in the final estimate.

The Owner shall pay the amount due pursuant to any substantial completion or final estimate within thirty-five days after receipt of written acceptance for such estimate from the Contractor and shall pay interest on the amount due pursuant to such estimate at the rate hereinabove provided from that thirty-fifth day to the date of payment.

23. **CHANGE ORDERS.** (a) Contractor understands that the Owner may modify or change the details of the Project so as to require the performance of extra Work. All change orders or modifications to the Agreement shall be in writing, signed by the Contractor and the Owner. If any changes are made, Contractor will perform the same but only after receiving a written order for such performance from the Owner, it being understood by Contractor that under no circumstances shall any extra Work be performed unless and until such written order is given to Contractor by the Owner. For any such extra Work performed, Contractor shall be compensated by the Owner at the unit prices set forth in the Contract Documents, or for unspecified items shall be negotiated by the Owner and Contractor in a commercially reasonable amount at the time the Change Order is signed. The Owner may at its election omit items from the Contract Work whenever the Owner deems it advisable to do so. And if the Owner shall notify Contractor of such omission, the omitted Work shall not be performed and there shall be deducted from the Contract price at the stated amounts set forth in the Contract Documents or for unspecified items, a commercially reasonable amount at the time the Change Order is signed to compensate for the omission.

If any dispute shall arise at any time on a claim by Contractor that an item of Work is not Contract Work but extra Work, Contractor shall nevertheless perform the same if directed to do so by the Owner. However, to preserve Contractor's right to claim extra compensation for the disputed Work, Contractor must, prior to the commencement of the disputed Work, notify the Owner in writing that Contractor is performing the same under protest. The same procedure shall prevail as to any dispute as to a deduction for omitted Work (or as the case may be, to sustain Contractor's contention as to the appropriate compensation for extra Work that is not disputed to be an "extra" as long as the Contractor so notifies the Owner prior to commencement of the "extra") the notice in that circumstance to be given no later than ten (10) days after the tender of payment by the Owner to Contractor of the reduced amount (failing such written protest, it shall be deemed that Contractor has acquiesced to the Owner's contention that the Work is not extra but Contract Work or that the reduction (or amount of compensation for a non-disputed "extra" is correct, as the case may be). The giving of the protest provided for above, and giving it timely, are express conditions precedent to maintaining any remedial procedure, whether arbitration or otherwise, pertaining to Contractor's claim.

24. **WARRANTIES AND CORRECTION OF WORK.** Contractor warrants materials and workmanship to be in compliance with all applicable codes, ordinances and laws, constructed according to sound engineering and construction standards, in a workmanlike manner, and to be free from defects and liens at the time of installation and performance and as of the Completion Date. Contractor shall promptly perform such work and supply such materials necessary to correct, at its own expense, defects in materials and workmanship, and any Work failing to conform to the Agreement. In the event that Contractor fails to perform any Warranty Work within thirty (30) days of written notice by the Owner, or in the event that performance is not possible within such time period because of weather or other unavoidable delays and if the Contractor fails to provide a written undertaking to the Owner to perform such Warranty Work within a specific time period after notice, then the Owner shall be entitled to contract for the repairs or replacement of the defective work with a third party and Contractor agrees to reimburse the Owner for the costs of such Warranty Work promptly upon demand, together with interest at the rate provided herein on any sums unpaid under the Agreement and all costs of collection, including reasonable attorney's fees, if such reimbursement is not made within thirty (30) days of written demand therefore by the Owner.

25. COOPERATION WITH CONSULTANT. Contractor understands and agrees that the Owner has hired GEI Consultants Inc. as, Project Engineer and Project Consultant and may have separate Construction Management and/or oversight. Contractor agrees to fully cooperate with all selected Owner's Representatives or any other such person or organization with regard to such oversight.
26. DEFAULT AND TERMINATION. The following shall be considered to be Events of Default under the Contract:
- a. Contractor's failure to complete all Work in accordance with the schedule or schedules provided for in the Contract Documents;
  - b. Contractor's failure to perform the Work described in the Contract Documents in accordance with the scope of services and specifications provided;
  - c. The dissolution, termination of existence, insolvency, or business failure of the Contractor;
  - d. The appointment of a receiver for any property belonging to Contractor;
  - e. Contractor's making of an assignment for the benefit of creditors, or the commencement of proceedings under a bankruptcy or insolvency law by or against the Contractor;
  - f. The failure of the Contractor to obtain or maintain any insurance coverage required under the Contract Documents; and
  - g. Contractor's failure to comply with any of the terms and conditions as set forth in the Agreement, specifications, plans and permits required.

If an Event of Default is not corrected or remedied within five (5) working days of written notice of such default, then the Owner shall be entitled to terminate this Contract without further notice. In such event, the Owner shall be entitled to contract for the completion of the Work to be performed under the Contract by a third party and Contractor shall be responsible for all extra costs and damages incurred by the Owner.

27. NOTICES. Notices to be given under this Agreement shall be in writing and may be personally delivered or sent by United States mail, first class postage prepaid, addressed to the respective party at the address set forth above, or to such other addresses that the parties shall designate in writing from time to time. Notices shall be deemed given when personally delivered or three (3) business days after mailing.
28. CAPTIONS. Any captions to or headings of the sections, paragraphs or subparagraphs of this Agreement are solely for the convenience of the parties, are not a part of this Agreement and shall not be used for the interpretation or determination of the validity of this Agreement or any provision hereof.
29. INCONSISTENCIES. To the extent that any term or provision of the Contractor's Bid is inconsistent with any term or provision contained in this document, the terms and provisions contained in this document shall supersede and control this Agreement. To the extent that any term or provision in this agreement is found to be void or unenforceable, nevertheless any and all remaining terms shall remain in full force.
30. DEFINITIONS. Terms and phrases, which are defined in any part of this Agreement, shall have the defined meanings wherever used throughout this Agreement. The terms "hereunder" and "herein" and similar terms used in this Agreement shall refer to this



Agreement in its entirety and not merely the article, section, sub-section, paragraph or sub-paragraph in which they are used.

31. **STATE LAW.** This Agreement and its application shall be governed by the laws of the Commonwealth of Massachusetts. Any and all disputes shall be brought in the trial court for **Barnstable County, Massachusetts.**
32. **ENTIRE AGREEMENT; INTEGRATION.** This Agreement supersedes any and all other Agreements, either oral or in writing, and contains all of the covenants and agreements between the parties. Each party to this Agreement acknowledges that no representations, inducements, promises or agreements, orally or otherwise, have been made by either party or anyone acting on behalf of any party to this Agreement, which are not embodied herein, and that no other agreement, statement or promise not contained in this Agreement shall be valid or binding. Any modification of this Agreement will be effective only if it is in writing, signed by the party to be charged. If any provision in this Agreement is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remaining provisions will nevertheless continue in full force without being impaired or invalidated in any way. Failure of any party hereto at any time to require performance by the other party of any provision of this Agreement shall not affect the right of such party to require performance of that provision, and any waiver by any party of any breach of any provision of this Agreement shall not be construed as a waiver of any continuing or succeeding breach of such provision, a waiver of the provision itself, or a waiver of any right under this Agreement. This Agreement may be executed in any number of counterparts by different parties hereto in separate counterparts, each of which when so executed and delivered shall be deemed to an original and all of which counterparts of this Agreement, taken together, shall constitute but one and the same instrument. Neither Contractor nor Owner shall assign, sublet or transfer any rights under or interest of this Agreement (including, but without limitation, moneys that may become due or moneys that are due) without the prior written consent of the other, except to the extent that any assignment, subletting or transfer is mandated by law or the effect of this limitation may be restricted by law. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement. Contractor and Owner each is hereby bound, and the partners, successors, approved assigns, executors, administrators, and legal representatives of each are hereby bound to the other party to this Agreement and to the partners, successors, approved assigns, executors, administrators, and legal representatives of such other party, in respect to all covenants, agreements and obligations of this Agreement.

The documents listed below are part of the Contract Documents and are incorporated by this reference as if fully set forth herein. Contractor shall pay particular attention to any and all mitigation measures set forth in the permit documents and shall comply with same.

- A. Contract Specifications
- B. Contract Plans
- C. Addendums
- D. Notice to Bidders
- E. Bidding Requirements
- F. Bid Notice of Award
- G. Agreement
- H. Faithful Performance and Payment Bonds
- I. General and Special Conditions

- J. Permits
  - K. MassDOT Standard Specifications
  - L. Attachment A: Prevailing Wage Rates
  - M. Any modification, including Change Orders, duly delivered after execution of Agreement.
33. **UNDISPUTED PAYMENTS.** The acceptance by Contractor of an undisputed payment made under the terms of the Contract shall operate as, and shall be, a release to Owner, and their duly authorized agents, from all claim of and/or liability to Contractor arising by virtue of the Contract related to those amounts. Disputed contract claims in stated amounts may be, specifically excluded by Contractor from the operation of the release.
34. **SUBSTITUTION OF SECURITIES.** The Contractor may substitute securities for the amounts retained by the Owner to ensure performance of the Contract in a form acceptable to the Owner(s).
35. **STATEMENT UNDER PENALTY OF PERJURY.** The representations made herein, including the Bidder's licensing information hereinafter furnished, are made under penalty of perjury. The undersigned understands that any bid not containing said licensing information, or containing any information, which is subsequently proven false, shall be considered non-responsive, and shall be rejected by Owner.
36. **UNENFORCEABILITY.** In the event that any provision of this Agreement is unenforceable or held to be unenforceable, then the parties agree that all other provisions of this Agreement have force and effect and shall not be affected thereby.
37. **FINAL PAYMENT SUBJECT TO ACCEPTANCE.** Final Payment is subject to acceptance of the Project by Owner.
38. **FORCE MAJEURE.** Either party's performance under this agreement is subject to acts of God, war (declared or undeclared), government regulation, terrorism, disaster, strikes, civil disorder, curtailment of transportation facilities, or similar occurrence beyond the party's control, making it impossible, illegal or commercially impracticable for one or both parties to perform its obligations under this agreement, in whole or in part. Either party may terminate this agreement without liability for any one or more of such reasons upon written notice to the other party within ten (10) days of such occurrence or receipt of notice of any of the above occurrences.
39. **AUTHORIZATION.** Each party by signing below hereby warrants that they are fully and duly authorized to enter into this agreement, do so freely and have read and understand the conditions and terms set forth herein along with any and all other documents forming the Contract Documents.

IN WITNESS WHEREOF, the respective parties hereto have hereinto set their hands and seals

the day \_\_\_\_\_ of \_\_\_\_\_, 2025.

TOWN OF CHATHAM

ATTEST:

BY: \_\_\_\_\_  
(Name) (Title)

THE CONTRACTOR

ATTEST:

BY: \_\_\_\_\_  
(Name) (Title)

\*\*\*END OF SECTION\*\*\*

**SECTION 00 65 00**  
**CERTIFICATE OF INSURANCE**

This is to certify that the \_\_\_\_\_ (Company) has issued the policies listed below, that these policies are written in accordance with the Company's standard policies and endorsements, except as indicated below or as noted in the attachments hereto, which policies and endorsements will be made available to OWNER upon request, that they provide coverage and limits of liability shown with respect to the insurance indicated, that they are in force on this date, that all deductible amounts are indicated below, and that this Certificate is furnished in accordance with and for the purpose of satisfying the requirements of OWNER in connection with the award and performance of a contract or agreement between the Town of Chatham, MA (OWNER) and

1. Name of Insured \_\_\_\_\_
2. Address of Insured \_\_\_\_\_
3. Location and Description of Work \_\_\_\_\_

\_\_\_\_\_  
Project Contract No.

\_\_\_\_\_  
Coverage and Limits of Liability  
(at least as shown below)

\_\_\_\_\_  
Bodily Injury  
Liability

\_\_\_\_\_  
Property Damage  
Liability

\_\_\_\_\_  
Policy No.      Effective Date      Expiration Date      Each Occurrence      Aggregate

**INSURANCE REQUIREMENTS**

- A. The General Contractor shall purchase and maintain such insurance as will protect him from claims under worker's compensation acts and from claims for damages because of bodily injury, including death, and property damage which might arise from and during operations under this contract, whether such operations be by himself or by a Subcontractor or anyone directly or indirectly employed by either of them.
- B. Contractor shall not commence work under this Contract until he has obtained all insurance required herein nor until such insurance has been approved by the Owner. Contractor shall not allow any Subcontractor to

commence work until the insurance required of the Subcontractor has been obtained and approved.

- C. Subcontracts: Contractor shall either (1) require each Subcontractor to procure and to maintain during the life of his Subcontract, Subcontractor General Liability and Property Damage Insurance of same type and in such manner as specified herein, or (2) Insure activities of his Subcontractors on his own policy.
- D. All insurance required by this Document shall be provided by a Best “A+ VIII” rated company, or companies, authorized to do business in the Commonwealth of Massachusetts and satisfactory to the owner and shall be written for not less than any limits of liability specified herein, or required by law, whichever is greater.
- E. Certificates: Certificates of Insurance acceptable to the Owner shall be submitted in triplicate to the Owner simultaneously with the execution of the Contract. Certificates shall indicate that broad form Contractual Liability coverage is in force, as well as deletions of the XCU exclusions. Certificates shall contain a provision that the insurance company will notify the Owner by registered mail at least (60) calendar days in advance of any cancellation, non-renewal, change or expiration of the policies. Certificates shall include description of coverage, effective dates and expiration dates of policies and shall clearly indicate all exclusions (other than standard policy form exclusions contained in the basic policy) which will be added to the policies provided.
- F. Deductibles: In the event of paid claims, Contractor shall bear costs of any amounts deductible.
- G. The Owner shall be named as additional insured under all policies.
- H. Before any blasting is done, Contractor shall present evidence that blasting damage is included in his insurance coverage.

**COVERAGE AND LIMITS**

- A. Workers’ Compensation Insurance:

The Contractor shall maintain and cause all subcontractors and lower tier contractors to maintain Workers Compensation and Employers Liability Insurance in accordance with the law and regulations of the Commonwealth of Massachusetts. The limits of liability provided shall be as follows:

Coverage A:	Statutory
Coverage B:	\$500,000/\$500,000/\$500,000

**B. Contractor's Liability Insurance**

The Contractor shall purchase and maintain Commercial General Liability Insurance and cause all subcontractors and lower tier contractors to maintain the same throughout the term of the Work. Commercial General Liability Insurance must comply with all applicable broad form endorsements. Such insurance shall be on the 1986 standard insurance Service Office occurrence coverage form (or any later amendments or revisions thereto).

Limits of liability to be provided shall be as follows:

Bodily Injury and Property Damages	\$1,000,000
Personal Injury and Advertising Injury	\$1,000,000
General Aggregate	\$3,000,000
Products/Completed Operations Aggregate	\$3,000,000
Medical Payments	\$ 10,000

Coverage shall specifically include blanket contractual liability covering Contractor's indemnity obligations as contained in this Document. The Town of Chatham, MA must be added as an additional Insured as their interest may appear.

**C. Business Automobile Liability:**

The Contractor shall maintain and cause all subcontractors and lower tier contractors to maintain business automobile liability insurance covering all owned, non-owned, leased, rented and hired automobiles (symbol 1). The limits of liability shall be as follows:

Bodily Injury and Property Damage: \$1,000,000 per occurrence

Automobile physical damage coverage shall be at the option of the Contractor, all subcontractors and lower tier contractors. The Owner shall not be liable for physical loss or damage to any owned, non-owned, leased, rented, or hired automobile.

The Town of Chatham, MA must be added as an additional insured as their interest may appear.

**D. Umbrella or Excess Liability**

Umbrella or Excess Liability shall be provided in excess of the primary limits of liability required above. Coverage shall be at least as broad as provided in the primary coverage required. The limits of liability to be provided shall be as follows:

\$3,000,000 per occurrence Bodily Injury and Property Damage  
\$3,000,000 per occurrence Personal Injury and Advertising Injury  
\$3,000,000 General Aggregate  
\$3,000,000 Products and Completed Operations Aggregate

Coverage shall specifically include blanket contractual liability covering Contractor's indemnity obligations as contained in this Document. The Town of Chatham, MA must be added as an additional Insured as their interest may appear.

#### INDEMNIFICATION

The Contractor shall take responsibility for the work and take all precautions for preventing injuries to persons and property in or about the work and shall bear all losses resulting to it on account of amount or character of the work. The Contractor shall pay or cause payment to be made for all labor performed or furnished and for all materials used or employed in carrying out the Contract. The Contractor shall assume the defense of, and indemnify and save harmless, the Engineer, the Owner, and their officers and agents from all claims relating to labor performed or furnished and materials used or employed for the work: to inventions, patents and patent rights used in and in doing the work unless injuries to any person or corporation received or sustained by or from the Contractor and its employees, and subcontractors and employees, in doing the work, or in consequence of any improper materials, implements or labor used or employed therein; and to any act, omission or neglect of the Contractor and its employees therein.

#### PERFORMANCE AND PAYMENT BONDS

The Contractor shall provide the Owner with a performance bond and a labor and materials or payment bond executed by a surety company licensed by the Commonwealth of Massachusetts.

\*\*\*END OF SECTION\*\*\*

**SECTION 00 72 00**  
**GENERAL CONDITIONS**

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**SECTION 00 72 00**  
**GENERAL CONDITIONS**

ARTICLE I - GENERAL

- A. Every provision of this Contract shall have the same force and effect as if included and repeated in every division or subdivision of the Contract under which it may apply.
- B. Headings, letterings, and numbers of the various divisions and subdivisions of and in the Contract are intended for convenience of reference only and have no force or effect whatever on the intent of the Contract.

ARTICLE II - DEFINITIONS

Wherever the words defined in this Article or pronouns used in their stead occur in this Contract, they shall have the meanings here given.

- A. The words "Contract Documents" and "the Contract" shall mean this Contract and shall include Notice to Bidders, Information for Bidders, Proposal, Bid Bond, Agreement, Performance and Payment Bond, General Conditions, Special Conditions, Construction Specifications, Drawings, Addenda, Notice of Award, Notice to Proceed, the Change Orders. The Contract Documents represent the entire and integrated agreement between the Owner and the Contractor. The Contract shall not be construed to create any contractual relationship of any kind between the Engineer and the Contractor, but the Engineer shall be entitled to performance of obligations intended for his benefit and to enforcement thereof. Nothing in the Contract Documents shall create any contractual relationship between the Owner or the Engineer and any Subcontractor.
- B. The word "Town" or "Owner" or "Project Sponsor" or "Awarding Authority," shall mean the Town of Chatham, MA.
- C. The word "State" shall mean the Commonwealth of Massachusetts.
- D. The word "Commonwealth" shall mean the Commonwealth of Massachusetts.
- E. The words "Approval of the Owner" or "Approved by the Owner," "Approval of the Engineer" or "Approved by the Engineer," shall mean approval in writing.
- F. The word "Contractor" shall mean the party termed as such by the Agreement, his/her heirs, executors, administrators, successors, or assigns as regards the obligations of the Contract.
- G. "Subcontractor." A person, firm, or corporation supplying labor and materials, or only labor, for work at the site of the project under separate Contract or agreement with the Contractor.
- H. The word "Contract Drawings" or words of like effect shall mean the Drawings listed by that number and title herein.
- I. The words "as permitted," "as required," or words of like effect shall mean that the permission

or requirement of the Engineer is intended; the words "approved," "acceptable," "satisfactory," or words of like import shall mean approved by, or acceptable to, or satisfactory to the Engineer - and the words "necessary," "suitable," "equal," or words of like import shall mean necessary, suitable, or equal in the opinion of the Engineer.

- J. The Owner is treated as if it were of singular number and neuter gender and the Contractor and the Engineer are treated as if each were of the singular number and masculine gender.
- K. The words "Notice to Proceed" shall mean a written notice to the Contractor of the date on which he is to begin the prosecution of the work for which he has contracted.
- L. Any communication to the Owner shall be addressed to the Town of Chatham, MA.
- M. The word "work" shall mean all performance, including the furnishing of materials, labor, tools, equipment, and incidentals required of the Contractor under the terms of this Contract, including the transportation of the materials and supplies to or from the location of the project by employees of the Contractor and any subcontractor.

#### ARTICLE III - INTERPRETATION OF CONTRACT

The Contractor shall at his own proper cost and expense provide and do everything necessary to prepare for and perform everything required under the conditions and requirements of the Contract, and he hereby agrees that the Engineer shall in the first instance be the interpreter of the Contract Documents, and all the work contemplated and described therein shall be so done as to satisfy him that its intent is fulfilled. The Engineer shall promptly render impartial decision on all claims of either party against the other and on all other matters governed by this intent, including questions as to the execution and progress of the work, the quality and types of materials and workmanship, the suitability of methods, and costs and values. The determination and decision of the Engineer shall be final and binding on both parties and shall be a condition precedent to the right of the Contractor to receive any money hereunder, except as to those areas of disputed work covered under ARTICLE XII - DISPUTED WORK, DETERMINATION OR ORDER.

#### ARTICLE IV - DRAWINGS AND SPECIFICATIONS

The Owner will furnish to the Contractor, at no charge electronic copies of the Contract Drawings, and Contract Specifications. Hard copies of the Contract Drawings and Contract Specifications shall be provided at the Contractor's expense.

The Plans, Drawings, Specifications and other data and documents prepared for use in connection with this Contract are intended to be complementary to each other, but should any discrepancy appear or any misunderstanding arise as to the import of anything contained in them or any of them, except to those areas of disputed work covered by ARTICLE XII - DISPUTED WORK, DETERMINATION OR ORDER the explanation or decisions of the Engineer shall be final and binding on the parties hereto.

Any errors or omissions in Plans, Drawings or Specifications or in other data or documents may be corrected by the Engineer when such correction is necessary for the proper fulfillment of their intention as construed by him, such correction to govern only from the time that the Engineer gives notice in writing thereof to the Contractor.

The Contractor shall not take any advantage or make any claim for damages on account of any omission, discrepancy or error in any soundings, borings, estimates, schedules, specifications, drawings, plans, or other data or documents furnished him, but shall report same to the Engineer as soon as it comes to his knowledge.

ARTICLE V - NOT TO SUBLET OR ASSIGN

The Contractor shall keep the Contract under his control; and shall not assign, by power of attorney or otherwise, any portion of said work, or any moneys payable under the Contract or his claim thereto, unless by the previous approval of the Owner and the Surety. No part of this work shall be sublet except to parties skilled in and equipped properly for the same and satisfactory to the Engineer and approved by the Owner.

ARTICLE VI - INSURANCE REQUIREMENTS

- A. The General Contractor shall purchase and maintain such insurance as will protect him from claims under worker's compensation acts and from claims for damages because of bodily injury, including death, and property damage which might arise from and during operations under this contract, whether such operations be by himself or by a Subcontractor or anyone directly or indirectly employed by either of them.
- B. Contractor shall not commence work under this Contract until he has obtained all insurance required herein nor until such insurance has been approved by the Owner. Contractor shall not allow any Subcontractor to commence work until the insurance required of the Subcontractor has been obtained and approved.
- C. Subcontracts: Contractor shall either (1) require each Subcontractor to procure and to maintain during the life of his Subcontract, Subcontractor General Liability and Property Damage Insurance of same type and in such manner as specified herein, or (2) Insure activities of his Subcontractors on his own policy.
- D. All insurance required by this Document shall be provided by a Best "A+ VIII" rated company, or companies, authorized to do business in the Commonwealth of Massachusetts and satisfactory to the owner and shall be written for not less than any limits of liability specified herein, or required by law, whichever is greater.
- E. Certificates: Certificates of Insurance acceptable to the Owner shall be submitted in triplicate to the Owner simultaneously with the execution of the Contract. Certificates shall indicate that broad form Contractual Liability coverage is in force, as well as deletions of the XCU exclusions. Certificates shall contain a provision that the insurance company will notify the Owner by registered mail at least (60) calendar days in advance of any cancellation, non-renewal, change or expiration of the policies. Certificates shall include description of coverage, effective dates and expiration dates of policies and shall clearly indicate all exclusions (other than standard policy form exclusions contained in the basic policy) which will be added to the policies provided.
- F. Deductibles: In the event of paid claims, Contractor shall bear costs of any amounts deductible.
- G. The Owner shall be named as additional insured under all policies.

- H. Before any blasting is done, Contractor shall present evidence that blasting damage is included in his insurance coverage.

COVERAGE AND LIMITS

A. Workers' Compensation Insurance:

The Contractor shall maintain and cause all subcontractors and lower tier contractors to maintain Workers Compensation and Employers Liability Insurance in accordance with the law and regulations of the Commonwealth of Massachusetts. The limits of liability provided shall be as follows:

Coverage A:	Statutory
Coverage B:	\$500,000/\$500,000/\$500,000

B. Contractor's Liability Insurance

The Contractor shall purchase and maintain Commercial General Liability Insurance and cause all subcontractors and lower tier contractors to maintain the same throughout the term of the Work. Commercial General Liability Insurance must comply with all applicable broad form endorsements. Such insurance shall be on the 1986 standard insurance Service Office occurrence coverage form (or any later amendments or revisions thereto).

Limits of liability to be provided shall be as follows:

Bodily Injury and Property Damages	\$1,000,000
Personal Injury and Advertising Injury	\$1,000,000
General Aggregate	\$3,000,000
Products/Completed Operations Aggregate	\$3,000,000
Medical Payments	\$ 10,000

Coverage shall specifically include blanket contractual liability covering Contractor's indemnity obligations as contained in this Document. The Town of Chatham, MA must be added as an additional Insured as their interest may appear.

C. Business Automobile Liability:

The Contractor shall maintain and cause all subcontractors and lower tier contractors to maintain business automobile liability insurance covering all owned, non-owned, leased, rented and hired automobiles (symbol 1). The limits of liability shall be as follows:

Bodily Injury and Property Damage: \$1,000,000 per occurrence

Automobile physical damage coverage shall be at the option of the Contractor, all subcontractors and lower tier contractors. The Owner shall not be liable for physical loss

or damage to any owned, non-owned, leased, rented or hired automobile.

The Town of Chatham, MA must be added as an additional insured as their interest may appear.

**D. Umbrella or Excess Liability**

Umbrella or Excess Liability shall be provided in excess of the primary limits of liability required above. Coverage shall be at least as broad as provided in the primary coverage required. The limits of liability to be provided shall be as follows:

\$3,000,000 per occurrence Bodily Injury and Property Damage  
\$3,000,000 per occurrence Personal Injury and Advertising Injury  
\$3,000,000 General Aggregate  
\$3,000,000 Products and Completed Operations Aggregate

Coverage shall specifically include blanket contractual liability covering Contractor's indemnity obligations as contained in this Document. The Town of Chatham, MA must be added as an additional Insured as their interest may appear.

**INDEMNIFICATION**

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:

1. The preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
2. Giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

**PERFORMANCE AND PAYMENT BONDS**

The Contractor shall provide the Owner with a performance bond and a labor and materials or payment bond executed by a surety company licensed by the Commonwealth of Massachusetts.

**ARTICLE VII - ALTERATIONS OF WORK**

- A. The Owner may make alterations in the form or character of any of the work done, or to be done, and in the requirements of the Contract Documents, and the Engineer may order in writing such alterations to be made. Such order shall be by means of a written Change Order, supplemented with drawings when in the opinion of the Engineer it is necessary, which shall include a description of the change with revised specifications, estimated quantities, and prices of the work involved in the alterations made. Each Change Order shall make provisions for revising the time of completion of all work to be done under this Contract or shall state that no revision of time is necessary. All such Change Orders shall be approved in writing by the Owner's Chief Procurement Officer (Town Manager) and accepted in writing by the Contractor before they become effective. If the Owner and Contractor do not agree on the revised prices of the work involved in the alterations, the work shall be paid for on the cost-plus basis as provided for Extra Work in ARTICLE VIII - EXTRA WORK.
- B. All work involved in the alterations shall be made under the terms and as a part of this Contract, and the security for the performance of the Contract shall in no ways be invalidated but shall be held to secure in like manner the performance of the work involved in the alterations made under the Contract.

**ARTICLE VIII - EXTRA WORK**

- A. For the purpose of this Contract all Change Orders which include extra work shall be referred to as Extra Work Orders.
- B. The Contractor shall do any work in addition to the obligations required under the Contract in the original form of its Contract Documents and not herein otherwise provided for as ordered in writing by the Engineer. Such work shall be termed Extra Work. All orders for Extra Work shall contain particular reference to this Article. Before any work is commenced under any Extra Work Order, the order shall be approved by the Owner's Chief Procurement Officer (Town Administrator) in writing and accepted in writing by the Contractor. It is understood that the Owner may, at its option, have other parties do work in connection with the work to be done under this Contract, which is not within the limits or is not an integral part of the work herein specified, in lieu of having such work done as Extra Work under this Contract.
- C. All requirements of this Contract and its documents shall be applicable to Extra Work. The Contractor shall not receive any compensation for Extra Work, regardless of its nature, unless

the work was ordered done in the manner prescribed above. The Contractor waives all rights to claim any compensation for any work done except (a) that provided for payment as stated in the Proposal, (b) alterations of the work as provided for in ARTICLE VII ALTERATIONS OF WORK, and (c) that provided for as Extra Work ordered done as described in this Article.

- D. All written orders for Extra Work issued by the Engineer shall be accompanied by drawings, if in the opinion of the Engineer drawings are necessary; all orders shall describe the work to be done, shall make provisions for revising the time of completion of all work to be done under this Contract or shall state no revision of time is necessary, and shall prescribe unit prices or the total cost of the Extra Work agreed to by the Owner and Contractor for the work to be done. If the Owner and the Contractor do not agree on unit prices or the total cost of the Extra Work to be done, the orders for Extra Work shall provide for the work to be done on a cost-plus basis, so that the Contractor will receive for full compensation for providing and doing everything required to prepare for and perform everything included in the Extra Work Order the actual cost to him of the following items applicable to the Extra Work Order:
1. All labor directly on the Contractor's payroll at specified rates;
  2. Salaries of Contractor's employees stationed at the field office, engaged at shops or on the road in expediting the production or transportation of material;
  3. Fees for licenses and permits required particularly for the extra work involved and not required for the work as planned in the original Contract;
  4. Minor expenses, such as telephone service, express, and similar petty cash items;
  5. Cost of hand tools not owned by the workmen consumed in the prosecution of the work, and depreciation of such tools used but not consumed and which shall remain the property of the Contractor;
  6. Cost of moving equipment from and to the Contractor's yard; and
  7. Cost of Bonds
- E. To the cost of items 1 to 7, inclusive, there shall be added a fixed fee to be agreed upon but not to exceed 15 percent of the total of items 1 to 7, inclusive. The fee shall be compensation to cover the cost of general supervision, overhead, profit, and other general expenses.
- F. If the work is done by a subcontractor, and the cost is determined on the actual cost basis, there shall be added an additional fixed fee to be agreed upon but not to exceed 5 percent of the total of item 1 to 7, inclusive. This additional fee shall be compensation to cover the General Contractor. In no case shall the combined overhead and profit allowed to the Subcontractor and General Contractor exceed 20 percent.
- G. The Contractor shall furnish to the Engineer an itemized statement of all costs incurred in Extra Work during any calendar month on or about the first of the next following month. All quantities (labor, equipment, etc.) shall be agreed upon on daily basis, in writing, by the Contractor and Engineer.
- H. Unless otherwise specifically provided for in the Extra Work Orders, the compensation agreed to, whether unit prices, total cost or the cost-plus basis as described above, includes payment for

any damages or expense caused the Contractor by any delays to other work to be done under the Contract resulting from or on account of Extra Work, and the Contractor waives all rights to any compensation for such damage or expense except as may be provided for in the Extra Work Orders.

ARTICLE IX - PAYMENTS

- A. The Owner shall pay and the Contractor shall receive as full compensation for providing and doing everything required to prepare for and perform everything called for by this Contract, and as full compensation also for all loss or damage arising out of the nature of the work under the Contract, or from the action of the elements, or from fire, or from any unforeseen obstructions or difficulties which may be encountered in the prosecution of the said work; also for all expenses incurred by, or in consequence of, the suspension or discontinuance of said work in accordance with the Contract, including all work incidental thereto, the prices stated in the bid Schedule of Prices, or the prices revised, if such are revised as provided for in ARTICLE VII ALTERATIONS OF WORK, and also the cost of Extra Work authorized under ARTICLE VIII EXTRA WORK.
- B. It is understood and agreed that the Contractor shall receive payment in accordance with the Schedule indicated under the lump sum item.
- C. A retainage of 5 percent of the total amount of work invoiced shall be retained by the Town until the construction work has been completed to the approval of the Engineer. The full Contract price shall be paid to the Contractor only after all work is completed and final acceptance has been given by the Owner and Engineer in writing.

ARTICLE X - GUARANTEE

- A. The Contractor guarantees that the work and services to be performed under the Contract, and all workmanship, materials and equipment performed, furnished, used or installed in the construction of the same, shall be free from defects and flaws, and shall be performed and furnished in strict accordance with the Drawings, Specifications and other Contract Documents, that the strength of all parts of all manufactured equipment shall be adequate and as specified and that the performance test requirements of the Contract shall be fulfilled. This guarantee shall be for a period of one year from and after the date of completion which date of completion shall be determined under the provisions of ARTICLE IX PAYMENTS herein. If part of the work is accepted in accordance with the Special Conditions, the guarantee for that part of the work shall be for a period of one year from the date fixed for such acceptance. Said guarantees are in addition to any other guarantees provided by law or otherwise.
- B. If at any time within the said period of guarantee any part of the work requires repairing, correction or replacement, the Owner may notify the Contractor in writing to make the required repairs, corrections, or replacements. If the Contractor neglects to commence making such repairs, corrections, or replacements to the satisfaction of the Owner within seven (7) days from the date of receipt of such notice or having commenced failed to prosecute such work with diligence, the Owner may employ other persons to make the same, and all direct and indirect costs of making said repairs, corrections or replacements, including compensation for additional professional services, shall be paid by the Contractor.



ARTICLE XI - RIGHT OF THE OWNER TO TERMINATE CONTRACT

- A. If the Contractor shall be adjudged bankrupt or if he shall make a general assignment for the benefit of his creditors, or if a receiver shall be appointed of his property, or if the work to be done under this Contract shall be abandoned, or if this Contract or any part thereof shall be sublet without the previous written consent of the Owner, or if the Contract or any claim thereunder shall be assigned by the Contractor otherwise than as herein specified, or if at any time the Engineer shall certify in writing to the Owner that the rate of progress of the work or any part thereof is unsatisfactory or that the work or any part thereof is unnecessarily or unreasonably delayed, or that the Contractor has violated any of the provisions of this Contract, the Owner may notify the Contractor to discontinue all work or any part thereof; and thereupon, the Contractor shall discontinue such work or such part thereof as the Owner may designate and charge the entire expense of so completing the work or part thereof to the Contractor; and for such completion, the Owner for itself or its contractors may take possession of and use or cause to be used in the completion of the work or part thereof any of such materials, machinery, implements and tools of every description as may be found upon the site of the Contractor's operations. The Owner may at its option require the surety or sureties to complete the Contract.
- B. All expenses charged under this Article shall be deducted and paid by the Owner out of any money then due or to become due the Contractor under this Contract or any part thereof; and in such accounting, the Owner shall not be held to obtain the lowest figures for the work of completing the Contract or any part thereof, or for ensuring its proper completion, but all sums actually paid therefore shall be charged to the Contractor. In case the expenses so charged are less than the sum which would have been payable under this Contract if the same had been completed by the Contractor, the Contractor shall be entitled to receive the difference, but only for work actually completed by the Contractor. If such expenses shall exceed the said sum, the Contractor shall pay the amount of the excess to the Owner upon completion of the work without further demand being made therefor.

ARTICLE XII - DISPUTED WORK, DETERMINATION OR ORDER

- A. If the Contractor is of the opinion that any work ordered to be done as Contract work by the Engineer is in fact Extra Work and not Contract work, or that any determination or order of the Engineer violates the provisions of this Contract, he must promptly, and before proceeding with such work or complying with the determination or order, notify the Owner and Engineer in writing of his contentions with respect thereto and request a final determination thereon.
- B. If the Owner determines that the work is Contract work and not Extra Work, or that the determination or order complained of is proper, it will direct the Engineer to order the Contractor to proceed and the Contractor must promptly comply. However, in order to reserve the right to claim compensation for such work or damages resulting from such compliance, the Contractor must, within five days after receiving notice of the Owner's determination, notify the Owner and Engineer in writing that the work is being performed or that the determination is being complied with under protest.
- C. If the Contractor fails to so appeal to the Owner and Engineer, or having appealed, should the Contractor fail to notify the Owner and Engineer in writing of his doing the work under protest,

the Contractor shall be deemed to have waived any claim for extra compensation or damages. No oral appeals or oral protests shall be deemed as compliance with the provisions of this Article.

**ARTICLE XIII – MINORITY PROCUREMENT GOALS**

- A. Under Massachusetts Executive Order 237, it is the policy of the Commonwealth to promote the fullest participation of all citizens in resources provided by municipal government. Therefore, the Town of Chatham, MA invites the participation of minority and women owned businesses in any and all parts of the contract.
  
- B. The Town of Chatham, MA invites all qualified women and minority owned business firms to respond to bid invitations.

**ARTICLE XIV – OSHA 10 TRAINING**

All employers must certify at the time of the bid that all employees to be employed at the jobsite have successfully taken an OSHA 10-hour course. Documentation of successful course completion for each employee must be submitted with the first certified payroll report (CPR) on which the employee's name appears. Employers shall attach copies of the OSHA 10-hour cards to the first certified payroll report.

\*\*\*END OF SECTION\*\*\*

**SECTION 00 82 00**  
**SPECIAL CONDITIONS**

**Index**

<b><u>NUMBER</u></b>	<b><u>TITLE</u></b>
1.	COMMENCEMENT AND COMPLETION
2.	LIQUIDATED DAMAGES
3.	SHOP DRAWINGS AND CERTIFICATES
4.	PROTECTION OF WORK AND MATERIALS
5.	CHANGED CONDITIONS
6.	SUPERINTENDENCE, SKILLED LABOR, AND EMPLOYEES
7.	PROTECTION OF UTILITIES
8.	FIRE PROTECTION
9.	USE OF PORTIONS BEFORE ENTIRE COMPLETION OF WORK
10.	MASSACHUSETTS SALES TAX EXEMPTION
11.	ANTI-DISCRIMINATION CLAUSE
12.	MISPLACED MATERIALS
13.	WAGE RATES
14.	CONTRACT AND REFERENCE DRAWINGS

**SECTION 00 82 00  
SPECIAL CONDITIONS**

1. COMMENCEMENT AND COMPLETION

- a. The Contractor shall commence work within ten (10) calendar days after the dates specified in the Notice to Proceed and shall fully complete the work as herein prescribed no later than **September 30, 2025**.
- b. It is specifically understood that "Completion" as used herein shall mean full and entire completion including, without limitation, all incidentals. Substantial performance is not completion within the meaning of the contract.

2. LIQUIDATED DAMAGES

- a. Contractor agrees to pay \$500 per calendar day if in default of completing the work by the prescribed completion date, not as a penalty, but as liquidated damages, due to the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would sustain in the event of a delay in completing the work by the prescribed completion date.
- b. It is hereby understood and mutually agreed by and between the Contractor and the Owner that the date of beginning and the time for completion are **ESSENTIAL CONDITIONS** of this Contract; and it is further mutually understood and agreed that the work embraced in this Contract shall be commenced as stated in the Contract Documents.

3. SHOP DRAWINGS AND CERTIFICATES

- a. The Contractor shall submit so as to avoid delay in its work, or that of any Subcontractor, five copies or electronic files of all shop, detail or working drawings and samples, and certificates required for the work and the Engineer shall review them noting comments. If required, the Contractor shall make corrections and resubmit electronic files or five corrected copies or samples for final review and furnish such other copies as may be needed.
- b. The Engineer's review of such Drawings and/or certificates shall not relieve the Contractor from responsibility for deviations from the Contract Drawings or Specifications, unless it had in writing called the Engineer's attention to such deviations at the time of submission, and unless the Engineer shall have issued a written waiver of the pertinent Specification, nor shall it relieve him from responsibility for errors of any sort in Shop Drawings.

4. PROTECTION OF WORK AND MATERIALS

The Contractor shall protect all work, equipment and materials from deterioration and damage. All work of whatever kind, which during its progress or before the final acceptance of the work as

established by the Engineer's Certificate of Completion may have become damaged from any cause, shall be removed and replaced by good and satisfactory work, and at no additional cost to the Owner, both for labor and materials.

5. CHANGED CONDITIONS

- a. If, during the progress of the work, the Contractor or the Owner discovers that the actual sub-surface or latent physical conditions encountered at the site differ substantially or materially from those shown on the plans or indicated in the Contract Documents either the Contractor or the Owner may request an equitable adjustment in the Contract Price of the Contract applying to work affected by the differing site conditions, in compliance with Chapter 30, Section 39N of the Massachusetts General Laws. A request for such an adjustment shall be in writing and shall be delivered by the party making such claim to each other party as soon as possible after such conditions are discovered. Upon receipt of such a claim from a Contractor, or upon its own initiative, the Owner will make an investigation of such physical conditions, and, if they differ substantially or materially from those shown on the plan or indicated in the Contract Documents and are of such a nature as to cause an increase or decrease in the cost of performance of the work or a change in the construction methods required for the performance of the work which results in an increase or decrease in the cost of the work, the Owner will make an equitable adjustment in the Contract Price and the Contract will be modified in writing accordingly.
- b. Any adjustment in compensation and/or any adjustment in Contract time because of any changes resulting from one or more of the conditions described in the foregoing paragraph will be made in accordance with the provisions of ARTICLE VII - ALTERATIONS OF WORK contained within the General Conditions and Chapter 30, Section 39N of the Massachusetts General Laws.

6. SUPERINTENDENCE, SKILLED LABOR, AND EMPLOYEES

- a. The Contractor shall employ qualified personnel for scheduling all materials and equipment to be used in the Project and for preparation of suitable working drawings. The Contractor shall employ a suitable superintendent and foremen to represent him at all the several parts of the work and they shall be present at all times while the work entrusted to them is in progress and shall be informed thoroughly regarding it. The foremen, workers, and others employed by the Contractor shall be skilled and experienced in the particular work which is given them to do.

7. PROTECTION OF UTILITIES

Location and depth of existing utilities are estimated and should not be relied upon by the Contractor. The Contractor shall check and verify the location of all existing utilities, both underground (by test pits or other approved means) and overhead before proceeding to begin the work or to order materials. Excavation, if any, shall be in accordance with Chapter 502 of the Acts of 1980 entitled, "An Act Further Regulating Excavation in Public Ways," which became effective in the Commonwealth of Massachusetts on October 12, 1980, including any

amendments thereto, and all other statutes, by-laws, rules and regulations of any city, state or federal agency that may be applicable. Any damage to the existing utilities and any other costs arising out of said excavation or by reason thereof shall be the Contractor's sole responsibility.

8. FIRE PROTECTION

The Contractor shall take all necessary precautions to prevent fires adjacent to the work and its buildings and it shall prevent the spread of fires to areas outside the limits of the work. It shall provide adequate facilities for extinguishing fires.

9. USE OF PORTIONS BEFORE ENTIRE COMPLETION OF WORK

The Owner and its duly authorized representative may enter upon and use any portions of the work for the Owner's benefit before final completion of the whole work to be done under this Contract, without any claim by the Contractor for payment for said use, or for any damage for delay caused by such use.

10. MASSACHUSETTS SALES TAX EXEMPTION

Materials for use in the work under this Contract are exempt from the Massachusetts Sales Tax. The Tax Exemption number shall be provided.

11. ANTI-DISCRIMINATION CLAUSE

In connection with the performance of work under this Contract, the Contractor agrees not to discriminate against any employee or applicant for employment because of race, color, religious creed, national origin, age or ancestry. The aforesaid provision shall include but not be limited to the following: employment upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; conditions or privileges of employment; and selection for training, including apprenticeship. The Contractor agrees to post hereafter in conspicuous places available for employees and applicants for employment, notices to be provided by the Massachusetts Commission Against Discrimination setting forth the provisions of the fair employment practice law of the Commonwealth. The aforesaid provision shall be binding upon all subcontractors, except subcontractors for standard commercial supplies or raw materials.

12. MISPLACED MATERIALS

Should the Contractor during the progress of the work, lose, dump, sink, or misplace any material, plant, machinery, or appliance, which in the opinion of the Engineer or Owner is unsatisfactory, the Contractor shall recover and remove the same with the utmost dispatch. If such material must be removed by the Owner, the cost of such removal may be deducted from any money due the Contractor or may be recovered under its bond.

13. WAGE RATES

All construction work will be governed by the prevailing Minimum Wage Rates established for

this project as determined by the commissioner of the Massachusetts Department of Labor and Industries pursuant to M.G.L.C. 149, Sections 26 and 27.

14. CONTRACT AND REFERENCE DRAWINGS

The work shall conform to contract drawings.

\*\*\* END OF SECTION\*\*\*

**SECTION 01 10 00**  
**SUMMARY OF WORK**

**PART 1 GENERAL**

**1.1. SCOPE OF WORK**

- A. Perform all activities and furnish all labor, materials, equipment, Subcontractor services, and incidentals to implement the Work in accordance with the Contract between the Owner and the Contractor. 90 Bridge Street Piers and Site Improvements generally consists of constructing a bath house foundation, timber pier extension, three concrete floating docks, a timber and concrete pier, four timber upweller floats, three gangways, fender system, and site improvements.as outlined in the Contract Drawings. Contractor shall maintain a silt curtain around the work area as indicated within the Contract Drawings
- B. The Owner has retained GEI Consultants, Inc. (GEI) to serve as the engineer of record for the Project (Engineer). GEI will provide input on the review of submittals and Requests for Information (RFIs), and other ancillary services as may be requested by the Owner.
- C. All tasks, requirements, deliverables, etc. contained in the Contract Documents are the sole responsibility of the Contractor unless specifically assigned to Others. Project Work to be performed by the Contractor includes, but is not limited to, the following:
  - 1. Prepare and implement a Contractor Health and Safety Plan.
  - 2. Install, operate, and maintain temporary facilities and controls, including:
    - a. Worker health and safety measures.
    - b. Sanitary facilities.
    - c. Sedimentation controls.
  - 3. Establishing additional survey control points, as necessary.
  - 4. Obtaining all construction-related permits and clearances as required for completion of the Work.
  - 5. Read, understand, and abide by the provisions of all permits and provide coordination and adequate notice as may be required by the regulatory agencies.
  - 6. Perform the Work:
    - a. Identify, temporarily relocate, or protect existing utilities and site features to remain after the Project is complete.
    - b. Perform monitoring, surveys, and testing as required by the Contract Document
    - c. Site mobilization and demobilization.
    - d. Maintain silt curtain around the work area.
    - e. Construction of the T-pier extension.
    - f. Construction of concrete floating docks.
    - g. Construction of finger maintenance floats.
    - h. Construction of timber and concrete pier.



- i. Construction of floating upweller system (FLUPSY).
  - j. Installation of gangways.
  - k. Construction of fender system.
  - l. Reinstall all site features and appurtenances that are damaged or relocated by the Contractor during the performance of the Work.
7. Demobilize and promptly remove all contractor supplies, equipment, and tools from the Site after completion of the Work. Restore, repair, or replace utilities, and other features that were removed, damaged, destroyed, or disrupted during construction.
  8. Provide and perform any other equipment, work, or submittals required to facilitate items 1 through 7 above and the Work shown on the Contract Drawings.

1.2. PROJECT CONDITIONS

- A. Information regarding site conditions is intended to assist the Contractor in preparing their Bid. The Owner and GEI guarantee neither the accuracy of this information nor that this information is necessarily indicative of all conditions that may be encountered, therefore the Contractor agrees that it shall neither have nor assert against the Owner or GEI any claim for damages by reasons of inaccuracy, inadequacy, incompleteness, or other deficiency of the information provided. The Contractor shall satisfy/verify for himself all existing conditions, including understanding the site data presented in the Bid Documents, affecting his Work by personal investigation. Failure by the Contractor to understand and verify all existing site conditions shall not result in additional charges to the Owner. Also, neither the information provided by GEI, the Owner, or their agents or employees, shall act to relieve Contractor of any responsibility hereunder from fulfilling all the terms and requirements of the Contract Documents.

1.3. CONTRACT DOCUMENTS

- A. The Contract Documents include all Specifications, Contract Drawings, figures, and conditions included or referenced in the Request for Proposal package, and any subsequently approved Change Orders.
- B. The organization and division of work contained within the Contract does not make GEI or the Owner representative an arbitrator to establish contract limits between the Contractor and any Subcontractor.

1.4. ORDER OF PRECEDENCE

- A. In the event of a conflict between any of the Contract Documents, the following order of precedence will be applied to determine which document will govern (first document listed being of highest precedence):
  1. Agreement.
  2. Contract Supplemental Conditions issued by the Owner.
  3. Contract Documents.
  4. Massachusetts Standard Specifications.
- B. Any conflicts discovered within the Contract Documents should be immediately brought to the attention of the Owner.

1.5. CONTRACTOR REQUIREMENTS

- A. Perform the scope of Work contained in the Contract Documents.
- B. Comply with the requirements of the Contractor Health and Safety Plan. Take precautions as necessary to protect the public and work force personnel from potential hazards.
- C. For any Work performed in close proximity to residential or commercial properties, utilities, or any other third-party property, take appropriate precautions to protect the property, utility lines, fences, and other structures and/or related appurtenances from damage.
- D. Repair any damage caused directly or indirectly by the Contractor outside the Project limits, as directed by the Owner, at no additional cost to the Owner.
- E. Comply with all applicable OSHA safety regulations during the performance of the Work.

1.6. CONTRACT DRAWINGS AND SPECIFICATIONS

- A. Maintain at the Site, two (2) copies of all Contract Drawings, Specifications, Addenda, approved Shop Drawings, Change Orders, schedules, and instructions, in good order. Mark one set to record all changes made during construction and keep one set clean of all markings. Make both sets readily available for review by the Owner or other designated agent.
- B. The Contract Drawings include notes. Refer to the Contract Drawings in conjunction with the Specifications.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

\*\*\*END OF SECTION\*\*\*

**SECTION 01 10 60**  
**REGULATORY REQUIREMENTS**

**PART 1 GENERAL**

**1.1. SUMMARY**

- A. This Section establishes responsibility for obtaining Project permits between the Engineer, the Owner, and the Contractor.

**1.2. OWNER APPROVALS**

- A. The Owner will obtain the following Project permits. Construction may not commence until all permits are in place. The Contractor will be required to comply with all permit / approval requirements.
  - 1. Town of Chatham Conservation Commission Order of Conditions.
  - 2. MA DEP 401 Water Quality Certification.
  - 3. MA DEP Waterways Chapter 91 Permit.
  - 4. Army Corps of Engineers General 401/404 Permit.

**1.3. CONTRACTOR PERMITS**

- A. Obtain the following Project permits/acceptances:
  - 1. Coast Guard Notice to Mariners
  - 2. Local construction and land use permits/notifications, as needed.
  - 3. Permits required for any off-site parking that is negotiated between the Contractor and the Owner, and/or private parking facilities, as needed.
- B. This Section does not describe all permits required for performance of the Work. Any permits not identified in this Section, or elsewhere in the Contract Documents, are the responsibility of Contractor.
- C. Regardless of who is responsible for obtaining a permit, the Contractor is responsible for performing in accordance with the Supplemental Conditions of all permits.

**1.4. COORDINATION/ASSISTANCE**

- A. Provide all data, as may be requested, by the Owner to support permit applications. When necessary, the Owner may provide data summaries or other Project information in support of Contractor permit submittals.
- B. Any coordination and/or assistance between the Contractor and the Owner or Engineer is provided in the interest of expediting the Project. The provision of coordination and/or assistance does not relieve the Contractor of their obligations to obtain, or abide by, a permit.

**PART 2 PRODUCTS**

(Not Applicable)

**PART 3 EXECUTION**

- A. Comply fully with all requirements and conditions of all Project Permits including performance of any miscellaneous work required to ensure full compliance and not otherwise covered by individual items in the contract.
- B. Comply fully with all requirements and conditions of the US Army Corps of Engineers, US Coast Guard, Harbormaster, and other authorities including, but not limited to coordination, notification, and performance of any other miscellaneous work required to ensure full compliance not otherwise covered by individual items in the contract.
- C. Perform all other miscellaneous work obviously required to complete the project, but not covered by individual items in the contract.
- D. Obtain governing authorities written permission, when required to close or obstruct street, walks, or adjacent facilities. Provide alternate routes around closed or obstructed traffic ways, when required by governing authorities.
- E. Contractor shall perform all notifications as required within the regulatory permits and approvals.

\*\*\* END OF SECTION \*\*\*

**SECTION 01 14 00**  
**WORK RESTRICTIONS**

PART 1        GENERAL

1.1        MEASUREMENT AND PAYMENT

- A.        No separate measurement or payment shall be made for work in this Section. Measurement and Payment for this item shall be included within the work it is associated with.

1.2        USE OF PREMISES

- A.        Confine construction operations to areas indicated on Drawings as indicated within the Limits of Construction. Do not disturb portions of site beyond areas in which the Work is indicated.
- B.        Space for staging work and related operations of Contractor may be provided by the Town and will be delegated as applicable per availability on the Drawings. All areas used for staging shall be coordinated with the Town.
- C.        No work shall be done outside of standard Monday through Friday working hours; 7AM to 5PM, on holiday, or weekends, unless prior written approval has been obtained from the Town and Engineer.
- D.        Work may not be performed, and materials may not be delivered to the job site except during times when Engineer or Town representative is present on site.

1.3        PROTECTIVE BARRIERS AND FENCING

- A.        Contractor shall provide and erect before any work begins, and maintain during the progress of the Work, any and all necessary protective barriers and/or fencing, as indicated on the Drawings or else requested by the Town and approved in writing. The Contractor is responsible to ensure that work areas are secure and safe at all times.
- B.        The area inside protective barriers and fencing shall be maintained by the Contractor for the duration of construction and restored to the same or better condition at project completion.

PART 2        PRODUCTS

(Not Applicable)

PART 3        EXECUTION

(Not Applicable)

\*\*\* END OF SECTION \*\*\*

**SECTION 01 30 00**  
**ADMINISTRATIVE REQUIREMENTS**

**PART 1**    **GENERAL**

**1.1.**    **SUMMARY**

- A.    This Section describes Project administrative requirements, the minimum level of coordination and meetings required to execute the Work, and required pre-mobilization submittals.

**1.2.**    **ON-SITE CONSTRUCTION PERSONNEL**

- A.    The Contractor is to maintain a full-time on-Site Superintendent, who will be responsible for quality assurance, Contractor health and safety, and competent person(s) for the duration of the Work. The Superintendent will be responsible for the supervision and/or coordination of all Contractor employees, Subcontractors, manufacturers, fabricators, suppliers, distributors, installers, and testing agencies whose services, materials or equipment are required to ensure the completion of the Work. The Superintendent will have sufficient qualifications, experience, and authority to act as a single point of contact for the on-Site staff, and to make adjustments to the means and methods as needed and as requested by the Owner.
- B.    The Engineer will make periodic visits to the Site to observe the Work. The Engineer will not direct the Contractor with regard to their means and methods of construction but may identify areas of non-conformance with the Specifications that require redress by the Contractor.

**1.3.**    **MEETINGS**

- A.    Attend all Project meetings as deemed necessary by the Owner during the term of the Contract.
- B.    A pre-construction meeting will be held at the Site prior to the start of the Work. At a minimum, the Contractor's project manager and Superintendent for the Project will attend the meeting. It is recommended that the Contractor assemble input from primary Subcontractors prior to this meeting.
  - 1.    This meeting is intended to make certain that the Work is properly scheduled, responsibilities are coordinated among Subcontractors and suppliers, and that those responsibilities are reflected on the Contractor submittals. Questions concerning any other aspect of the Project may also be addressed.
- C.    Beginning with the mobilization to the Site, at a location designated by the Owner, the Contractor will facilitate weekly construction meetings for the duration of the Work. Present a progress update at weekly construction meetings that includes tasks completed from the prior week, currently active tasks, and tasks/activities planned for the next two weeks along with an updated Project schedule. The format of the two-week look ahead must be approved by the Owner.
- D.    The standard day and time for the weekly construction meeting will be established based on mutual agreement between all regular participants.
- E.    Individuals authorized to discuss and make decisions on behalf of the Contractor, relative to the meeting agenda, must participate in all weekly construction meetings.
- F.    All expenses associated with attending the meetings, except those that are incurred by the Owner, their representatives, or consultants, are to be borne by the Contractor.

**1.4.**    **REQUESTS FOR INFORMATION, CLARIFICATIONS, AND CHANGES**

- A.    All requests for Project information, clarifications, or changes in the requirements of the Contract Documents must be made in writing to the Owner.

- B. Written requests must be provided regardless of any preceding conversations and preliminary decisions regarding the subject matter(s).
- C. The Owner will provide written responses to each request.
- D. The Owner may also issue clarifications and/or amendments based on their own assessment of Project needs.
- E. Any potential increases or decreases in Contractor compensation due to amendments will be in accordance with the provisions of the Supplemental Conditions.
- F. If latent or unforeseen conditions require modifications to the Contract, the Contractor must propose changes in the Work by submitting a detailed request to include labor rates, equipment rates, material costs, etc. for a change to the Owner.

1.5. PROJECT RECORD DOCUMENTS

- A. Keep on file at job site one complete set of up-to-date Contract Documents, including drawings and specifications, addenda, shop drawings and manufacturer's data, testing data, change orders, field orders and other modifications. Documents shall be neatly and securely stored in files or on racks, clearly indexed by trade activity or specification section, and shall not be used for construction purposes.
- B. Legibly mark significant field changes such as the following, using red colored pencils or felt-tipped pens:
  - 1. Drawings: locations of concealed utilities, field changes of dimension and detail, changes resulting from change order or field order, and details not on original drawings.
  - 2. Specifications: manufacturer and model number of equipment actually installed.
  - 3. Shop Drawings and manufacturers' literature: changes made after the Owner's review.
- C. At completion of work, deliver completed record documents to the Owner. Final payment for project will not be made until the Owner reviews and approves these documents.

1.6. PRE-MOBILIZATION SUBMITTALS

- A. All submittals are subject to review and approval by the Owner and/or the Engineer. Provide all submittals to the Owner who will then forward them onto the appropriate party for review. Submittals will not be approved until the reviewing party has determined that they meet the minimum requirements of these specifications. Claims for lost time or requests for extensions based on rejected pre-mobilization submittals will be denied.
- B. Contractor Health and Safety Plan:
  - 1. Prepare and submit a site-specific Contractor Health and Safety Plan.
- C. Project Schedule:
  - 1. Prepare a Critical Path Method (CPM) or bar chart project schedule and provide it to the Owner at the first post-award meeting. Update and disseminate the schedule on a weekly basis.
- D. Pre-Construction Condition Documentation:
  - 1. Perform a pre-construction condition documentation of the site to 50 feet beyond the Project limits under the supervision of the Owner.

- a. Submit the findings of the pre-construction condition documentation to the Owner prior to mobilization.
- b. Include video/photographic documentation of the existing conditions of the Site and surrounding structures, including shoreline, buildings, or other structures.
- c. Claims determined to be resulting from pre-existing structural and/or cosmetic damage, not identified during the pre-construction survey, will be the sole responsibility of the Contractor to remedy to the satisfaction of the applicable owner(s).

E. Turbidity Control Plan:

- 1. Contractor shall maintain a silt curtain around the work site prior to initiation of construction activities as required by the regulatory permits.

F. Schedule of Permits:

- 1. Submit copies of all supplemental and/or recurring data required by the permits to the Owner, as needed. Include documentation that the supplemental data was provided to the entity that issued the permit, according to the schedule required by the permit.
- 2. Submit copies of any Contractor obtained permits to the Owner.

1.7. DAILY REPORT

A. Prepare a daily report summarizing the staff and equipment used and Work performed. The Contractor's internal documentation used for this purpose may fulfill this requirement, subject to approval by the Owner. At a minimum, the daily report will include the following additional items:

- 1. Summary of any safety related issues including a summary of the daily safety meeting and running total of safe hours worked.
- 2. Approximate production rate (e.g. number of timber piles per day) for the reporting period and a brief description of where the Work was being performed.
- 3. Status of the turbidity controls. Note any maintenance performed on the systems, unsatisfactory performance observed, and corrective actions taken.

B. Submit the daily report to the Owner by 10 AM of the next calendar day.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

\*\*\* END OF SECTION \*\*\*



**SECTION 01 33 00**  
**SUBMITTAL PROCEDURES**

**PART 1 GENERAL**

**1.1. SUMMARY**

- A. This section summarizes the protocol and procedures for the preparation and delivery of submittals to the Owner.

**1.2. GENERAL REQUIREMENTS**

- A. The Contractor shall review and approve all submittals prior to submittal to the Owner.
- B. Provide all submittals in electronic format directly to the Owner. The Owner may require review and recommendation by Engineer prior to approval. The Owner reserves the right to request that any submittal be provided via paper copy.
- C. Include calculations, Shop Drawings, plans, reports, records, photographs, diagrams, and details with submittals, as needed, to facilitate the review and/or approval process.
- D. For all submittals requested via paper copy, provide five (5) copies unless otherwise directed.
- E. Contractor shall submit all submittals to the Owner and Engineer in sufficient time for checking and processing. Shop Drawings shall be of sufficient clarity so that copies thereof will be legible.
- F. All submittals by subcontractors for approval shall be sent directly to the Contractor for approval. The Contractor shall be responsible for their submission to the Owner and Engineer at the proper time to prevent delays.
- G. All Submittals shall be referenced properly to indicate clearly the location, service, and function of each particular item and the specification paragraph under which it is being furnished.
- H. Submittals that are related to or affect each other shall be forwarded simultaneously as a package to facilitate coordinated review. Uncoordinated submittals will be rejected.
- I. The Engineer reserves the right to require submittals in addition to those called for in individual sections.
- J. The term "Shop Drawings" include drawings, diagrams, schematics, descriptive literature, illustrations, schedules, performance and testing data, and similar materials furnished by the Contractor to explain in detail specific portions of the work required by the contract.
- K. Provide submittals electronically in the format requested (i.e. document file, drawing file, image file, etc.). For electronic drawings, submit AutoCAD 2018 (or later) file using the e-transmit feature (i.e. include external references, image files, color table file, font file, line file, etc.). Convert all AutoCAD add on data to AutoCAD format. Use descriptive layer titles (i.e. not numbers or internal use acronyms). Use extensive layer control and use line color by layer and line type by layer management. AutoCAD files of the Contract Drawings will be made available to the Contractor selected to perform the Work, upon request.
- L. Certifications must be signed by an officer or other individual authorized to sign on behalf of the entity. Submittals requiring preparation by an engineer or surveyor must be signed and sealed by a Professional Engineer/Surveyor licensed to practice engineering in the Commonwealth of Massachusetts.
- M. Schedule submittals to expedite work. Provide the Owner a minimum of five (5) Business Days, excluding transmittal time, for review.

1.3. SUBMITTAL PROCEDURES

- A. Each Submittal shall be numbered with the project name (abbreviated), Specification section and submittal number in consecutive order (Ex NAME-013300-#). Where resubmission is required a letter shall be assigned to designate each resubmission (Ex. NAME- 013300-#A, NAME-013300-#B, etc.)
- B. Use a cover form for each submittal. Include the Project name, Project number used by the Owner, date, submittal number, submittal description/title, submittal exclusions, and deviations from the Contract Documents (if any) on each cover form. The submittal cover form must be signed by an individual authorized to sign documents on behalf of the Contractor.
- C. Use the same units of weights and measures on submittals that are used in the Contract Documents.
- D. Identify variations from the Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
- E. Resubmit submittals if requested by the Owner. When performing a submittal revision, identify all changes made since previous submission. For each re-submittal allow the same number of workdays required for review as the original submittal.
- F. Submittals not requested will not be recognized or processed.
- G. The Contractor shall distribute approved submittals to job site and record documents files and to suppliers and subcontractors as required.

1.4. SUBMITTAL REGISTER

- A. Maintain a technical submittal register at the Site. Including the submittal number, description, date submitted, status, and date of approval/rejection.

1.5. SUBMITTAL REVIEW

- A. Submittals will be reviewed solely for the purpose of determining whether the information contained in the submittal conforms to the design concept of the Contract Documents. Submittals will be returned with the following classifications:
  - 1. No Exceptions Taken: work may proceed, no exceptions taken.
  - 2. Reviewed as Noted: work may proceed subject to comments, resubmittal not required.
  - 3. Revise and Resubmit: work may not proceed, resubmittal required for indicated items. Proceed with work on other items subject to comments.
  - 4. Rejected: work may not proceed, resubmittal required, submittal unresponsive and/or not in conformance with Contract Documents.
- B. Any review performed by the Owner or Engineer is for the limited purpose of checking for conformance with the information given and the design concept expressed in the Contract Documents. Review is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions or quantities. Approval of a specific item does not constitute approval of an assembly of which the item is a component. The review and approval of the Contractor's submittals does not relieve the Contractor from complying with the requirements of the Contract Documents. The Contractor is responsible for: dimensions to be confirmed and correlated at the jobsite; fabrication processes and construction means, methods, techniques, sequences or procedures; coordination of the work of all trades; and performing all work in a safe and satisfactory manner.

1.6. CERTIFICATES OF COMPLIANCE

- A. Certificates must be signed by an official authorized to sign on behalf of the manufacturing or testing company.
- B. For each certification, include the name and address of the Subcontractor, name of the requestor, the Project name and location, relevant test data (if required), and the dates of shipment and delivery.
- C. Certifications do not relieve the Contractor from the requirement for furnishing materials that comply with the requirements of the Contract Documents.

1.7. INVOICES

- A. Submit monthly invoices in accordance with the provisions of the Supplemental Conditions.
  - 1. Submit invoices on a form approved by the Owner with an updated schedule showing contract values, approved Change Orders, work completed to date, current invoice and quantity amounts, and balance to complete for each bid item.
  - 2. No payment will be made unless all the proper supporting documentation has been submitted and accepted by the Owner.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

\*\*\*END OF SECTION\*\*\*

**SECTION 01 50 00**  
**TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS**

**PART 1** GENERAL

1.1 DESCRIPTION

- A. Work under this shall be the providing the temporary construction facilities and site controls throughout the construction phase and as required to perform the work specified within the contract documents including but not limited to:
1. Site Security
  2. Material Storage
  3. Site Safety
  4. Erosion Control and conformance to regulatory approvals and conditions
  5. Signage as required

1.2 FACILITY REQUIREMENTS

- A. Provide Site Security
1. Provide secure temporary closures to prevent unauthorized entry to the site including:
    - a. Temporary 6 foot minimum chain link fence
    - b. Locked gate
    - c. Signage indicating 24 hour emergency contact visible from outside the work area.
  2. Furnish, install, and maintain a bulletin board, protected from the elements in a prominent location at the work site, accessible to all employees and workers at the site, on which data of concern to the employees will be posted.
  3. Provide marked metal containers with tight-fitting covers for edible debris, enforce their use by employees. Provide on-site dump container for collection of waste material. Periodically remove and legally dispose of waste material off-site. Schedule cleaning operations so that dust and other contaminants resulting from cleaning will not fall on wet, newly-finished surfaces. Dispose of volatile wastes such as mineral spirits, oil or paint thinner in accordance with local and state regulations.
- B. Provide for Material Storage
1. Temporary structures shall be constructed in a structurally-sound, weatherproof manner.
  2. Confine storage of materials to within the Limit of Work and areas as may be designated.

3. Provide temporary sheds or other covered facilities for storage of materials subject to weather damage. Number and size of structures shall be subject to Owner's approval. Locate structures to avoid interference with work and relocate as required by progress of work.
  4. Remove structures and surplus stored materials at completion of work.
- C. Maintain site, temporary structures, storage areas, temporary fencing, etc., in a neat and orderly manner.
  - D. Provide staging, hoists, temporary stairs, ladders, chutes, etc., as required, complying with applicable safety codes.
  - E. The Contractor, including all subcontractors, will not be permitted to display any descriptive signs indicating their company names and names of equipment of materials installed in the work beyond the specific requirements established with the contract documents.

### 1.3 FIELD LAYOUT

- A. Contractor shall maintain a level, rod, and total station on job, and shall employ competent personnel for use thereof. The Owner shall have reasonable use of these instruments at all times.
- B. Project survey information has been located on drawings for Contractor's use. Contractor shall establish benchmarks in at least two widely separated locations, and shall establish and maintain grades, lines, levels, and other dimensional reference guides as required. Annotate project record documents to indicate all modifications of grades, utilities, etc.

### 1.4 EROSION CONTROL AND SITE DRAINAGE

- A. Prior to beginning work, Contractor shall review erosion and sedimentation control requirements as stipulated in the project regulatory approvals and shall coordinate activities to insure proper installation including meetings with regulatory agencies as may be stipulated within the regulatory approvals.
- B. Upon beginning site work, Contractor shall assume complete responsibility for Project Area site erosion and sedimentation control and drainage for duration of Contract, and shall maintain such erosion control measures in a manner which will cause no damage and/or erosion or sedimentation directly or indirectly into waterways or to adjacent areas.
- C. Maintain all erosion control barriers in good functional condition throughout the project. Erosion and sedimentation control measures shall be inspected weekly and after any major storm event.
- D. Take all necessary measures to prevent vehicles leaving site from depositing mud on public ways. Clean up after and repair damage caused by trucks. Comply with applicable ordinances regarding noise control.

### 1.5 SAFETY AND PROTECTION

- A. Comply with applicable safety regulations, including ANSI Series A10, Safety requirements for Construction and Demolition, and OSHA Part 1926, Construction Safety and Health Regulations. Provide barricades, fences and other protection measures as required.

- B. Minimize storage of flammable materials and ensure that such material is properly handled and stored. Provide fire extinguishers per code requirements and near locations of flammable products. Install prominent signs giving locations of fire alarms. Do not permit use of open fires or salamanders.
- C. Take all necessary precautions to ensure that finished or partially-completed work is properly braced and secured against wind, rain, snow and other adverse weather conditions.
- D. Remove snow and ice from roads, walks, work area, etc., which impedes access or drainage, or presents danger to workmen, public, or property.

**1.6 WORK WITHIN NAVIGABLE WATERWAY**

- A. Contractor shall keep proper lights each night between sunset and sunrise upon all floating plant and equipment and any other obstructions connected with the work in accordance with CG-169, Rules of the Road, and Code of Federal Regulations, Title 33, Chapter 1, Subchapter C and Chapter 11, Part 207. Contractor shall be required to install and maintain for the duration of the Contract, standard obstruction lights upon all stakes, piles, dolphins, or upon any other obstruction connected with the work which are located in navigable waters. The obstruction light shall consist of a quick flashing white light which shows not less than sixty flashes per minute when viewed from any direction. The light shall have a luminous intensity of not less than a two-mile range.
- B. Contractor will be required to conduct the work in such a manner as to obstruct navigation as little as possible and in case Contractor's plant so obstructs vessels, it shall be promptly moved on the approach of any vessel, to such an extent as may be necessary to afford a safe practicable passage. Upon completion of the work, Contractor shall promptly remove his plant, buoys and other markers placed by him during execution of this Contract.
- C. Should the Contractor, during the progress of the work lose, dump, throw overboard, sink or misplace any materials, plant, machinery, or appliance which in the opinion of the Owner may be dangerous to berthing vessels or obstruct navigation, the Contractor shall recover and remove the same with the utmost dispatch. Should the Contractor refuse, neglect or delay compliance with the above, such obstructions may be removed by the Owner, and the cost of such removal shall be deducted from money due the Contractor.

**1.7 TEMPORARY UTILITIES**

- A. Maintain strict supervision to enforce conformance with applicable standards and safe practices and prevent abuse of services. Obtain necessary permits, temporary easements, etc.
- B. Light and Power:
  - 1. Provide temporary light and power for construction needs, safety and security throughout construction period. Suitably protect temporary system by fused or circuit breakers. Panelboards, safety switches and electrical outlets shall be enclosed and grounded. Provide meters as required. Entire system shall comply with NEC requirements for temporary wiring.
  - 2. Make necessary arrangements with power company to install temporary service, including temporary poles and transformer.

C. Heating and Ventilation:

1. Provide temporary heat and ventilation as required to protect against dampness, cold and condensation; provide heat and humidity suitable for curing and installation of materials; provide ventilation adequate for work safety and fire protection. Temporary heaters shall be smokeless portable unit heaters acceptable to Underwriter' Laboratories, local fire department and the Owner.

D. Water and Sanitary Facilities:

1. Provide temporary water for construction purposes, sanitation, drinking, first aid, fire protection and cleaning. Furnish and install all connections, pipes, fittings, meters, etc., necessary for temporary service, and maintain same in good condition. Take necessary precautions to prevent waste of water.

**PART 2 PRODUCTS**

(Not Applicable).

**PART 3 EXECUTION**

(Not Applicable).

**PART 4 MEASUREMENT AND PAYMENT**

4.1 METHOD OF MEASUREMENT AND PAYMENT

- A. No separate measurement or payment shall be made for the work in this Section. Measurement and Payment for this item shall be included within the work it is associated with.

\*\*\* END OF SECTION \*\*\*

**SECTION 01 77 00**  
**CLOSEOUT PROCEDURES**

**PART 1 GENERAL**

1.1. SUMMARY

- A. Closeout procedures cover the administrative and technical requirements for final cleaning, inspection, Project as-built documents, warranties, bonds, final payment, and other procedures for Project closeout in accordance with the Contract Documents.

1.2. CLOSEOUT PROCEDURES AND REQUIRED SUBMITTALS

- A. For this Project, Substantial Completion will be defined as all work specified in the contract documents having been completed except for work having a contract price of less than one per cent of the then adjusted total contract price, or substantially all of the work has been completed and opened to public use except for minor incomplete or unsatisfactory work items that do not materially impair the usefulness of the work required by the contract.. The Owner has sole and final discretion for determining whether the Work has progressed to the point of Substantial Completion or not.

- 1. Substantial Completion shall, at minimum, require:
  - a. Completion of piers, floating docks, and gangways.
- 2. Submit written certification that project, or designated portion of the project, is substantially complete, and request, in writing, a final inspection. The Owner's representative will perform the final inspection.
- 3. Should the Owner's representative determine that the work is substantially complete, he will prepare a punch list of deficiencies that need to be corrected before final acceptance and issue a notice of substantial completion with the deficiencies noted.
- 4. Should the Owner's representative determine that the work is not substantially complete, he will immediately notify the Contractor, in writing, stating reasons. After the Contractor completes the work, he shall re-submit certification and request for final inspection.

B. Record Drawings:

- 1. If progress payment applications are submitted by the Contractor, the data collected to substantiate the progress payment is to be submitted to the Owner at the conclusion of the Work to be incorporated into the Record Drawings for the Project.
- 2. Submit record drawings in electronic format (.dwg AutoCAD file) and provide two (2) hard copies to the Owner that have been signed and sealed by a surveyor licensed to practice in the State of Massachusetts. At a minimum, Record Drawings are to include:
  - a. As-built conditions.
  - b. Location of utilities.
  - c. Encountered structures left in place.
  - d. Benchmark coordinates and elevation.

C. Provide copies of all Project records including, but not limited to, the following:

- 1. Health and Safety reports.
- 2. Copies of closed permits.



3. Disposal Tickets.
- D. Permit Closeout:
  1. Submit written confirmation that all permits have been closed with their governing authority and that any and all remaining fees (if applicable) have been paid in full.
- E. Other Close-out Submittals
  1. Refer to EXECUTION portion of each specification section for closeout requirement, including operating and maintenance manuals; instruction of Owner's personnel in maintenance and operation of systems; submission of certifications, test reports, etc.; provisions of spare parts and maintenance materials, all of which shall be neatly wrapped or packaged in standard sizes and clearly labeled.
  2. Submissions specified elsewhere in the Contract Documents, include consent of surety to final payment; affidavit that all bills and indebtedness from subcontractors and suppliers, or bond satisfactory to the Owner indemnifying the owner against liens or other claims.

1.3. ACCEPTANCE OF WORK

- A. After all deficiencies have been corrected, a Letter of Final Acceptance will be issued. If only designated portions of the project have been inspected, a Letter of Partial Acceptance will be issued for that portion of Work.
- B. Acceptance may be given prior to correction of deficiencies that do not preclude operations and use of the facility; however, final payment will be withheld until all deficiencies are corrected.
- C. Until receipt of Letter of Final Acceptance, the Contractor shall be responsible for the work of this Contract.

**PART 2 MATERIALS**

(Not Applicable)

**PART 3 EXECUTION**

(Not Applicable)

\*\*\* END OF SECTION \*\*\*

**SECTION 02 00 00**  
**SITE PREPARATION**

**PART 1 GENERAL**

1.1 DESCRIPTION

- A. These site preparation requirements shall apply to all project work operations within this Contract.
- B. The latest addition of following Specifications, Standards and Codes shall be made a part of these specifications:
  - 1. Massachusetts Department of Transportation, Standard Specifications for Highways and Bridges, 2024 with all updates as utilized by the MassDOT.
- C. The work of this Section consists of providing all labor, equipment, materials, incidental work, and construction methods necessary to prepare the site, complete, as indicated on the Contract Documents, as specified, and as follows:
  - 1. Mobilization and demobilization of all equipment, labor, materials, supervision, survey erosion controls, and any incidentals required to satisfactorily complete this project in accordance with these Specifications, the Contract Drawings and as directed by the Owner.
  - 2. Comply fully with all requirements and conditions of all Project Permits including performance of any miscellaneous work required to ensure full compliance and not otherwise covered by individual items in the contract.
  - 3. Perform all other miscellaneous work obviously required to complete the project, but not covered by individual items in the contract.
  - 4. Perform site work operations and the removal of debris and waste materials to assure minimum interference with navigation, streets, walks, parking facilities, buildings, and all other adjacent facilities.
  - 5. Obtain governing authorities written permission, when required, to close or obstruct street, walks and adjacent facilities. Provide alternate routes around closed or obstructed traffic ways, when required by governing authorities.
  - 6. Obtain written permission from property owners to trespass and/or transgress their properties where an easement has not been granted.
  - 7. Control dust caused by the work. Dampen surfaces as required. Comply with pollution control regulations of governing authorities.
  - 8. Provide and maintain silt fences, siltation controls, debris booms, and siltation curtains, as required, to meet regulatory agency conditions.

9. Temporary support or relocation and reestablishment of utilities to the extent required to complete the work.
10. If the Contractor, in the course of excavation, uncovers or otherwise encounters any artifacts, whether historic or prehistoric, he shall bring them to the immediate attention of the Owner, and stop all work in that vicinity of said artifacts until directed by the Owner.
11. If the Contractor, in the course of excavation, uncovers or otherwise encounters any suspected hazardous or unidentified substances, he shall bring them to the immediate attention of the Owner, and stop all work in that vicinity of said substances until directed by the Owner.

## 1.2 REFERENCES

- A. The following standards shall apply to the work of this Section.
  1. Commonwealth of Massachusetts Department of Transportation - Standard Specifications for Highways and Bridges

## 1.3 OSHA REQUIREMENTS

- A. Pursuant to M.G.L. c.30, §39S, any person signing a contract to work on a public building or public works project estimated to cost more than \$10,000, must certify under the pains and penalties of perjury that all employees employed on the worksite, or in work subject to the bid, have successfully completed at least ten hours of OSHA approved training. Proof of OSHA certification of all workers onsite will be required by the Town prior to the start of work.

## 1.4 SUBMITTALS

- A. Location and phasing plan for proposed work areas and staging areas shall be submitted for Owner's approval prior to mobilization and related work preparation operations.
- B. Construction Schedule
- C. Construction Security Fence details
- D. Erosion Controls Plan and Details.
- E. Details of Temporary Shoring.
- F. Utility Location Survey.

## 1.5 PROTECTION

- A. The Contractor shall erect a security fence around the limit of work areas as defined in the staging and phasing plan.

- B. Protect existing structures and facilities that are adjacent to the work area from damage caused by the project operations. Repair all damage caused to the satisfaction of the Owner, at the sole expense of the Contractor.
- C. Cease operations and notify Owner immediately if safety of adjacent structures, workers, or the general public appears to be endangered. Take precautions to properly support structures and protect workers and general public. Do not resume operations until safety is restored.

**1.6 EXAMINATION OF EXISTING CONDITIONS**

- A. The Contractor shall become thoroughly familiar with the existing conditions of the site, consult records and drawings of adjacent structures and of existing utilities and their connections, and note all conditions which may influence the work of this Section. The commencement of work signifies the Contractor's acceptance of existing conditions.
- B. Site information: Data on subsurface conditions is not intended as representations or warrants of continuity of such conditions between the locations of data. It is expressly understood that the Owner will not be responsible for interpretations or conclusions drawn from them by the Contractor. Data is made available for the convenience of the Contractor.
  - 1. Additional test borings and other exploratory operations may be made by the Contractor at no additional cost to the Owner, and as in compliance with permits and contaminated soils requirements.

**1.7 EXISTING SERVICES**

- A. Arrange and pay for disconnecting, removing, capping, and plugging utility services as indicated on the Contract Documents. Disconnect and stub off. Notify the affected utility company in advance and obtain approval before starting this work.
- B. Place markers to indicate location of disconnected services.

**1.8 MAINTAINING TRAFFIC**

- A. Do not close or obstruct roadways or other public access areas without authorization or permits.
- B. Conduct operations with minimum interference to public or private roadways. Coordinate with local and state officials, police, and emergency agencies regarding all operations on public roadways including requirements for Police Details.
- C. Maintain access to adjacent buildings and facilities as indicated on the Contract Drawings.

**1.9 ENVIRONMENTAL PROTECTION**

- A. Comply with all requirements of environmental regulations and Project Permits.
- B. Provide all signs as required by Project Permits.

- C. Provide measures to prevent any construction debris from falling into the water. Any material falling into the water shall be retrieved immediately.
- D. Provide suitable enclosed washdown area for concrete trucks at location approved by the Engineer. Washdown area shall confine and filter runoff containing cement and other suspended solids as detailed on the Contract Drawings.

**PART 2 PRODUCTS**

2.1 2.1 MATERIALS

- A. Materials shall be as selected by the Contractor and approved by the Owner, except as indicated on the Contract Drawings and/or in the Specifications.
- B. Construction Fence
  - 1. Unless otherwise specified on the Construction documents, Contractor shall provide chain link fencing around perimeter of work area and staging area to prevent public access and provide public safety. The Fence shall be a minimum of 6' high and constructed of galvanized steel chain link with posts at 8' on center. Fence shall be supported by concrete blocks or approved equal support to receive posts.
  - 2. Fence shall be installed around all areas dedicated for construction activities to prevent public access and provide for public safety.
- C. Floating Boom with Siltation Curtain
  - 1. The Contractor shall maintain existing siltation curtain, and shall modify as required to maintain full enclosure during the course of the work.
  - 2. Contractor shall ensure curtain does not impact abutter operations.

**PART 3 EXECUTION**

3.1 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

- A. Notify "Dig Safe" and local utilities and services as applicable prior to conducting any work in order to have all known utilities and services marked out before work begins.
- B. Existing structures and utilities shall be suitably protected from damage, including but not limited to existing pavements and curbs, bulkhead, concrete cap, fencing, concrete vault, manholes, and utility lines.

### 3.2 PROTECTION OF CONSTRUCTION SITE

- A. It is the Contractor's responsibility to secure the construction site, both for the protection of the ongoing work and the protection of the public. The location of construction fencing used for this purpose shall be approved by the Owner.

### 3.3 INSPECTION

- A. The Owner will assign inspectors and/or resident engineers to this project on either a full time or part time basis, as required to cover the work under this Contract, as justified by the Owner. The inspector or resident engineer shall be the Owner's representative for this project.
- B. The Owner must be notified at least 48 hours in advance of all material shipments in order make arrangements for shipments to be inspected as they arrive to the site.
- C. The Owner shall be permitted at all times to check the lines, grades, elevations, reference marks, batter boards, etc. set by the Contractor. Any errors or discrepancies in these items discovered by checks shall be corrected by the Contractor. Such checks shall not be construed as to be an approval of the Contractor's work and shall not relieve or diminish in any way the responsibilities of the Contractor for the accurate and satisfactory completion of the entire work. The Contractor shall be available to assist the Owner with these checks as needed.
- D. All materials that are not suitable for placement on this project and/or have been rejected by the Engineer shall be removed from the site immediately; the cost of the removal of these materials shall be the responsibility of the Contractor.
- E. Unless otherwise agreed upon with the Engineer, no work shall be done with materials that are partially or completely buried or hidden from view without the presence of the Engineer. The Engineer reserves the right to have all materials uncovered for inspection if placed without direct supervision, at the sole expense of the Contractor. No materials shall be paid for under this Contract that have not been examined and passed by the Engineer, or for any reason are placed outside the prescribed limits of the work.

### 3.4 DUST CONTROL

- A. During the construction period, the Contractor shall take special measures including, but not limited to, wetting down to control dust on site, in order to prevent annoyance/and or damage to adjacent property, whether public or private. Calcium chloride or any other chemical material may not be used on subgrades of areas to be seeded or planted.
- B. During the construction period, the Contractor shall conduct his operations and maintain the area of his activities, including sweeping and sprinkling of roads as necessary, so as to minimize the creation and dispersion of dust and to prevent annoyance/and or damage to adjacent property, whether public or private. If the Owner's Representative decides that it is necessary to use calcium chloride for more effective dust control, the Contractor shall furnish and spread the

material, as directed, and without additional compensation. Calcium chloride or any other chemical material may not be used on subgrades of areas to be seeded or planted.

- C. The Contractor shall take all necessary measures to keep streets, over which equipment and service for project travel, clean and free from dirt, dust, mud and debris resulting from construction operations. The actions taken shall meet the requirements of all authorities having jurisdiction.

**PART 4 MEASUREMENT AND PAYMENT**

**4.1 METHOD OF MEASUREMENT**

- A. Measurement for MOBILIZATION shall be made by Contract Price LUMP SUM.
- B. Measurement for SITE PREPARATION shall be made by Contract Price LUMP SUM.

**4.2 METHOD OF PAYMENT**

- A. Payment for MOBILIZATION shall be by the Unit Price Lump Sum and shall include mobilization, demobilization and all items not otherwise called out for individual price breakdown. Payment under this item shall be made in two installments, 50% at time of project startup and 50% after substantial completion and removal of all Contractors equipment and personnel.
- B. Payment for SITE PREPARATION shall be by the Unit Price Lump Sum. This price and payment shall constitute full compensation for all labor, equipment, materials, testing, transportation and supervision for the satisfactory supply and installation of all items under this section and shall include all work materials; preparation of the site all erosion control activities including materials for barriers and siltation curtains; as specified in the Order of Conditions and/or other approvals; and all safety barriers, signage, security requirements for the project site, police details and any other incidentals necessary to complete the work specified herein and as shown on the Contract Documents.

**4.3 PAYMENT ITEMS**

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
02 00 00-1	MOBILIZATION	LUMP SUM
02 00 00-2	SITE PREPARATION	LUMP SUM

\*\*\* END OF SECTION \*\*\*

**SECTION 02 41 00**  
**DEMOLITION**

**PART 1 GENERAL**

1.1 DESCRIPTION

- A. Provide all labor, materials, equipment, and supervision necessary to complete the work specified in this Section.
- B. Scope of work includes, but is not limited to the following:
  - 1. Complete removal and disposal of the following:
    - a. Railings.
    - b. T-Pier decking, curbing, blocking, fascia
    - c. T-Pier vertical rubbing strip.
    - d. Cut down T-Pier offshore piles.
    - e. Miscellaneous hardware, steel angles, pieces of timber, concrete, rubble and other materials which are encountered during the course of work which interferes with work specified to be done.
  - 2. Temporary support as required for all structures or part structures to remain.
  - 3. Phasing and sequencing demolition and construction. Sequence work and maintain stability of all existing structures and slopes during demolition.
  - 4. Removal and disposal of debris from mudline within work limits.
  - 5. Maintain and dispose of silt curtain around debris removal area.
  - 6. Removal and transportation of silt curtain anchor piles to a location within the Town. Coordinate with Harbormaster
  - 7. Control of noise and dust.

1.2 SUBMITTALS

- A. Contractor to provide certification that all materials disposal has been in accordance with all municipal, state and federal regulations.
- B. Before beginning work, submit a Demolition Plan including the following:
  - 1. Temporary support details for adjacent structures and abutting property
  - 2. Detailed schedule of demolition and removal work, with early and later starting and finishing dates for each activity.
  - 3. Proposed disposal facility for each category of demolition materials.
- C. Debris Removal Plan.



- D. Copies of all weight slips, both tare and gross, for debris weighed and disposed of at the disposal or recycling facilities.

**PART 2 PRODUCTS**

2.1 MATERIALS

- A. No materials are to be supplied under this specification.

**PART 3 EXECUTION**

3.1 GENERAL

- A. Bidders shall examine the site and make their own estimates of the types and quantities of demolition, which will be required to fulfill the Contract requirements.
- B. All work shall be done in accordance with applicable Federal, State and local laws, rules, regulations, codes and ordinances and all necessary permits required for the demolition work shall be procured by the Contractor.
- C. All materials removed during demolition designated for disposal shall become the property of the Contractor unless otherwise noted.
- D. All materials removed during demolition, except that which is to be reused, shall be disposed of off the site in conformance with all municipal, State and Federal regulations.
- E. During demolition activities which are over or in water, the area of the demolition work will be enclosed with a floating boom approved by the Owner.
- F. Contractor shall use extreme caution when demolishing structures. Damage caused to adjacent structures or a structure to remain which is caused by the Contractor shall be repaired by the Contractor as directed by the Owner at no additional cost to the Owner.
- G. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
  - 1. Strengthen or add new supports when required during progress of demolition.
  - 2. Remove temporary shoring, bracing and structural supports when no longer required.
  - 3. Post warning signs and place barricades as applicable during placement and removal of temporary shoring.
- H. Turbidity Curtain/Debris Boom: Maintain the Turbidity Curtain/Debris Boom during demolition of shoreline or waterside structures as shown on the Contract Drawings.
  - 1. Position and maintain the Turbidity Curtain so that demolition and construction are not impeded.
  - 2. If constructed in panels, connect the panels in a manner to prevent debris passing through its joints. Connect load lines to develop the full strength of the lines across the joint. Arrange flotation material to be flexible and provide continuous support.

3. The Turbidity Curtain must include a minimum of 4 inches of freeboard along the entire length so debris cannot escape over the top of the system.

I. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around demolition area(s).

1. Erect temporary protection, such as walks, and fences, where required by authorities having jurisdiction or as shown on the plans. Provide temporary barricades as required to limit access to demolition areas.

J. All piles shall be pulled in their entirety.

### 3.2 DEMOLITION

A. Demolition debris shall be separated and placed in a separate unsuitable material dumpster.

B. Suitable material for reuse shall be stockpiled.

C. Riprap shall be removed as required.

D. Furnish any special or additional equipment that may be required for removing debris and submerged obstructions as needed to complete the Work. Care must be taken when removing any debris encountered adjacent to existing structures to minimize any possible impacts.

E. Lawfully dispose of debris in accordance with all applicable laws and regulations.

### 3.3 SILT CURTAIN REMOVAL

A. The existing silt curtain including anchors shall be removed and disposed of at the completion of the project. Timber piles shall be removed and transported to a location within the Town. Coordinate with the Harbormaster on location.

## **PART 4 MEASUREMENT AND PAYMENT**

### 4.1 METHOD OF MEASUREMENT

A. Measurement for DEMOLITION shall be LUMP SUM.

B. Measurement for SILT CURTAIN REMOVAL shall be LUMP SUM.

### 4.2 METHOD OF PAYMENT

A. Payment for DEMOLITION shall be by the Contract Price LUMP SUM for the removal and disposal or temporary storage of materials indicated as such within the Contract Documents or otherwise as directed by the Owner. This price and payment shall constitute full compensation for all labor, equipment, materials, preparation, testing, transportation, survey, disposal fees, storage, handling, protection and supervision for the satisfactory completion of all demolition under this section, including, but not limited to partial removal of timber T-Pier, removal and reinstallation of rip rap, miscellaneous debris, and any other incidentals necessary to complete the work specified herein and as shown on the Contract Documents.

- B. Payment for SILT CURTAIN REMOVAL shall be by the Contract Price LUMP SUM for the removal and disposal, or temporary storage, of materials indicated as such within the Contract Documents or otherwise directed by the Owner. This price and payment shall constitute full compensation for all labor, equipment, materials, preparation, testing, transportation, survey, disposal fees, storage, handling, protection and supervision for the satisfactory completion of demolition of, but not limited to, the existing silt curtain, timber piles, and associated hardware. Timber piles shall remain property of the Town and be transported to a location identified within the Town.

4.3 PAYMENT ITEMS

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
02 41 00-1	DEMOLITION	LUMP SUM
02 41 00-2	SILT CURTAIN REMOVAL	LUMP SUM

\*\*\* END OF SECTION \*\*\*

**SECTION 03 31 30**  
**MARINE CONCRETE**

**PART 1 GENERAL**

1.1 DESCRIPTION

- A. Provide all labor, materials, equipment and supervision necessary to complete work specified in this Section.
- B. Scope of work includes, but is not necessarily limited to, furnishing and installing the following:
  - 1. Reinforced Concrete
    - a. Pile Caps
    - b. Concrete Pier Deck (Precast Panels and Cast in Place Topping)
    - c. Concrete Curb
    - d. As otherwise shown on Contract Documents or needed to complete the work
  - 2. Forms and false work for forms
  - 3. Reinforcing steel and associated accessories (Ties, Chairs, etc.) as required
  - 4. Grout for bedding
  - 5. Epoxy adhesive for setting of anchor pins or dowels
  - 6. Cutting and patching
  - 7. Expansion and/or Control Joints

1.2 QUALITY ASSURANCE

- A. Except as noted, work shall conform to the latest edition of the following code specifications and standards:
  - 1. American Society for Testing and Materials (ASTM)
  - 2. American Concrete Institute (ACI):
    - a. "Building Code Requirements for Reinforced Concrete", ACI 318.
    - b. "Specifications for Structural Concrete for Buildings", ACI 301.
    - c. "Recommended Practice for Measuring, Mixing, and Placing Concrete", ACI 304.
    - d. "Recommended Practice for Cold (Hot) Weather Concreting", ACI 305 and ACI 306.
    - e. "Guide to Formwork for Concrete ", ACI 347.
  - 3. Concrete Reinforcing Steel Institute (CRSI):
    - a. Design of Reinforced Concrete Structures - "A Manual of Standard Practice".

- b. "Placing Reinforcing Bars".
- c. "Field Handling Techniques for Epoxy-Coated Reinforcing Bar"

### 1.3 SUBMITTALS

#### A. Shop Drawings

- 1. Reinforcing steel shop drawings
  - a. Shall be of such detail and completeness that all fabrication and placement at the site can be accomplished without the use of Contract Drawings for reference.
  - b. Shall include number of pieces, sizes, and grade of reinforcing steel, accessories, and any other information required for fabrication and placement.
  - c. Shall show joint layout and design
- 2. Contractor shall check structural, site, and utility drawings for anchor bolts, anchors, inserts, conduits, sleeves, and any other items which are required to be embedded in concrete, and shall make necessary provisions as required so that reinforcing steel will not interfere with the placement of such embedded items.

B. Concrete mix designs including all additives.

C. Grout / manufacturer/design mix.

D. Name and address of Independent Testing Laboratory for approval by Owner.

### 1.4 TESTING OF CONCRETE

#### A. Quality Control

- 1. Test Specimens: The Contractor will be required to make, cure and have tested, a minimum of one set of five test specimens from the concrete of each day's pour and for each fifty cubic yards of concrete cast in accordance with ASTM Designations C172, C31 and C39. One cylinder shall be broken after seven days, three cylinders after twenty-eight day, and one shall remain in reserve.
- 2. Slump: A slump test shall be made for each truckload of concrete in accordance with ASTM Designation C143. Slumps greater than design mix limit will be grounds for rejection of the concrete.
- 3. Air Content: The Contractor shall make an air content test from each day's pour of concrete by the pressure method in accordance with ASTM Designation C231. Air contents above or below the limits specified will be grounds for rejection of the concrete.
- 4. Testing: All personnel and laboratories testing concrete shall be licensed by the Commonwealth of Massachusetts.
- 5. Test Failures: In the event the compressive strength of the cylinders, when tested, is below the specified minimum, the Owner may require test cores of the hardened structure to be taken by the Testing Laboratory in accordance with ASTM C-42. If such test indicates that the core specimen is below the required strength, the concrete in question shall be removed and replaced without cost to the Owner. Any other work damaged as a result of this concrete removal shall be replaced with

new materials to the satisfaction of the Owner at no additional cost to the Owner. The cost of coring will be deducted from the Contract amount. Where core cylinders have been taken by the Testing Laboratory and the concrete proves to be satisfactory, core holes shall be filled in a manner satisfactory to the Owner at no additional cost to the Owner.

- B. The Contractor shall coordinate the date and location of tests with the Owner before any concrete work is started.

#### 1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Reinforcing steel shall be transported to the site, stored, and covered in a manner which will ensure that no damage shall occur to it from moisture, dirt, grease, or any other cause that might impair bond to concrete or chip protective epoxy coating. A sufficient supply of approved reinforcing steel shall be stored on the site at all times to ensure that there will be no delay of the work. Identification of steel shall be maintained after bundles are broken.

### **PART 2 PRODUCTS**

#### 2.1 MATERIALS

- A. Portland Cement: ASTM C 150, Type II or V of U.S. manufacture. Only one brand of cement shall be used on the project.
- B. Aggregates:
  - 1. Fine aggregate. ASTM C 33, clean and graded from 1/4 inch to fines.
  - 2. Coarse aggregate. ASTM C 33, clean and graded from 1/4 inch to maximum sizes hereinafter specified.
- C. Air Entraining Agent: Conforming to ASTM C 260 for Air-Entraining Admixtures for Concrete.
- D. Water Reducing Agent: Conforming to ASTM C 494 Type A for Chemical Admixtures for Concrete.
- E. Shrinkage-Reducing Agent: Confirming to ASTM C 494 requirements for Type S, Specific Performance, Admixtures. Admixture shall be able to reduce shrinking by a minimum of 75% by 28 days. Shrinkage reducing agent shall be used in all concrete mixes which will be susceptible to one dimensional drying or placed over impermeable surfaces.
- F. Microsilica Admixture: Packaged in easily dispersing form.
- G. Water: Clean and potable free of impurities detrimental to concrete.
- H. Reinforcing Bars: New, deformed billet steel bars, conforming to ASTM A 615, Grade 60, hot dip galvanized after fabrication in accordance with ASTM A767 Class 1. Bend diameters shall comply with ASTM A767.

- I. Concrete Sealant: Must be on the MassDOT Qualified Construction Material
- J. Accessories: Reinforcement accessories, consisting of spacers, chairs, ties, and similar items shall be provided as required for spacing, assembling, and supporting reinforcement in place. All accessories shall be dielectric coated steel or approved plastic accessories, conforming to the applicable requirements of the CRSI Standards herein before specified.
- K. Tie wire for reinforcement shall be 16 gauge or heavier dielectric coated steel or approved plastic accessories, conforming to the applicable requirements of ASTM A-82.
- L. Form Ties and Spreaders: Standard metal form clamp assemble and plastic cone, of type acting as spreaders and leaving no metal with 1 inch of concrete face. Inner tie rod shall be left in concrete when forms are removed. No wire ties or wood spreaders will be permitted. Use 1/2" x 1" C.T. plastic cones for sinkages.
- M. Form Coatings: Non-grain raining and non-staining type that will not leave residual matter on surface of concrete or adversely affect proper bonding of subsequent application of other material applied to concrete surface, "Nox-Crete Form Coating" as manufactured by Nox-Crete Company, or approved equal. Coating containing mineral oils or the nondrying ingredients will not be permitted.
- N. Grout: A high-strength, non-shrink grout with saltwater resistance, such as Five Star Special Grout 120 or equivalent.
- O. Lifting eyes for lifting, handling means and methods shall be submitted to Engineer for approval. Lifting eyes shall be stainless steel or dielectric coated.

**2.2 CONCRETE STRENGTHS AND PROPORTIONS**

- A. All reinforced concrete shall have the following minimum compressive strength at 28 days and shall be proportioned within the following limits:

	Minimum Strength at 28 days	Maximum Size of Aggregate	Water Cement Ratio	Minimum Cement Content	Maximum Cement Replacement
A	5000 psi	3/4"	0.40	660 lbs/CY	Max fly ash 15% Max slag 25%

- B. Air-Entrainment: The air content in all concrete shall be maintained at 6 to 8 percent.

- C. The exact proportions for the mix, including amounts admixture (if any), and water, shall be determined by the concrete supplier.
- D. The proportions of aggregate to cement for any concrete shall be such as to produce a mixture which will work readily into the corners and angles of the forms and around reinforcement with the method of placing employed on the work, but without permitting the materials to segregate or excess free water to collect on the surface.

**PART 3 EXECUTION**

**3.1 CAST-IN-PLACE CONCRETE**

- A. Falsework for Forms
  - 1. The Contractor shall build and maintain necessary falsework for the forms.
- B. Construction of Forms
  - 1. Wood forms shall be constructed of sound material, shall be of the correct shape and dimensions, mortar tight, of sufficient strength, and so braced and tied together that the movement of men, equipment, materials, or placing and vibrating the concrete will not throw them out of line or position.
  - 2. Embedded Items
    - a. Provisions shall be made for pipes, sleeves, anchors, inserts, reglets, anchor slots, nailers, waterstops, and other features. No wood other than necessary nailing blocks shall be embedded in concrete. Complete cooperation shall be extended to suppliers of embedded items in their installation. Secure information for embedded items from other trades as required. All embedded items shall be securely anchored in correct location and alignment prior to placing concrete.
  - 3. Openings for Items Passing Through Concrete
    - a. Contractor shall establish exact locations, sizes, and other conditions required for openings and attachment of work specified under other sections. Contractor shall be held responsible for proper coordination of all work of this nature in order that there will be no unnecessary cutting and patching of concrete. Any cutting and repairing to concrete required as a result of failure to provide for such openings shall be paid for by the Contractor at no additional expense to the Owner.
- C. Removing Forms and Falsework
  - 1. Wood forms shall not be removed for at least 48 hours after concrete has been placed.
  - 2. Forms shall not be removed until the concrete has attained sufficient strength to insure stability.
- D. Reinforcing Steel
  - 1. Reinforcing steel shall be placed in accordance with the drawings and approved shop drawings and the applicable requirements of the "Codes and Standards" herein before specified. Install



reinforcement accurately and secured against movement, particularly under the weight of workmen and the placement of concrete.

2. Reinforcing Steel Supports: Bars shall be supported on approved plastic, epoxy coated or dielectric-coated metal chairs or spacers, accurately placed, and securely fastened to forms or steel reinforcement in place. Additional bars shall be supplied, whether specifically shown on the drawings or not, where necessary to securely fasten reinforcement in place. Support legs of accessories in forms without embedding in form surface. Spacing of chairs and accessories shall conform with CRSI's "Recommended Practice for Placing Bar Support". Hooping and stirrups shall be accurately spaced and wired to the reinforcement. No wood will be permitted inside forms. Lifting of welded wire fabric into proper position while concrete is being poured rather than supporting fabric on chairs will not be permitted.
3. Placing and Tying: All reinforcement shall be set in place, spaced, and rigidly and securely tied or wired with tie wire at all splices and at all crossing points and intersections in the positions shown, or as directed. Rebending of bars on the job to accommodate existing conditions will not be permitted without the written approval of the Owner. Point ends of wire ties away from forms.
4. Spacing: Minimum center to center distance between parallel bars shall be in accordance with the details on the drawings, or, where not shown, the clear spacing shall be 2 times the bar diameter but in no case less than 1-1/2 inches or less than 1-1/2 times the maximum size aggregate.
5. Splices shall be in accordance with the following:
  - a. Maximum 50% of steel spliced occurring within lap length.
  - b. Top bars shall be 1.4 times values indicated in Splice Lengths.
  - c. Splice lengths

#6 bars and smaller	30 bar diameter
#7	36 bar diameter
#8	40 bar diameter
6. Protective Concrete covering
  - a. Except where shown otherwise on drawings, the minimum concrete coverage for steel reinforcement shall conform with the applicable revisions of the "Codes and Standards" herein before specified.

**E. Mixing of Concrete**

1. All concrete shall be ready-mixed concrete, and shall be mixed and delivered in accordance with the "Specification for Ready-Mixed Concrete", ASTM C-94. The batch plant of the concrete producer shall be certified for compliance with the standards established by the National Ready-Mixed Concrete Association.
2. In the event concrete is mixed at a central batching plant, the delivery shall be arranged so that intervals between batches are kept to a minimum, and in any event not more than thirty (30) minutes. Trucks shall be in first class condition and kept in constant rotation during delivery.
3. Concrete shall be placed within 90 minutes after cement has been mixed with aggregate or 45 minutes after addition of water and admixtures.
4. No admixtures, except those mentioned in paragraph 2.1 shall be used. Calcium chloride will not be permitted.

5. Truck delivery slips of all concrete delivered to the job shall indicate the quantity and quality of concrete, additives, date and time of batching and delivery, and the location of placement. Delivery slips shall be forwarded to the Owner at the end of each week.

F. Cold Weather Requirements:

1. Concrete shall not be mixed or placed when the temperature is below 40 degrees F., or when conditions indicate that the temperature will fall below 40 degrees F. within 72 hours unless precautions are taken to protect the concrete.
2. Concrete temperature shall be maintained, when deposited, at not less than 60 degrees F. Reinforcement, forms, and ground which concrete will contact must be completely free of frost.
3. Concrete and formwork must be kept at a temperature of not less than 50 degrees F. for not less than 96 hours after placing.
4. Calcium chloride shall not be used.
5. Placement of concrete on Frozen ground will not be permitted
6. Heating of concrete shall be performed in such a way to not dry out the poured concrete in any way.

G. Hot Weather Requirements:

1. The maximum temperature of the concrete, when deposited, shall be 85 degrees F. If the weather causes the placing temperature to exceed 85 degrees F., the mix shall be cooled by appropriate methods if approved by the Engineer.
2. No concrete shall be deposited when the air temperature is greater than 90 degrees F.
3. Contractor shall take all appropriate precautions to protect the concrete from drying. Contractor shall use fog spray and or plastic covers until burlap can be placed.
4. Burlap shall be submerged in water for at least 8 hours prior to placement of concrete. Burlap shall be drained of excess water prior to placement. Burlap shall be kept wet and protected from displacement for the entire curing period.
5. Contractor shall include slow curing additives to the concrete mix to reduce shrinkage cracking and concrete setting quickly due to temperatures.

H. Conveying and Placing Concrete

1. Notification: Contractor shall notify Owner's Representative at least 48 hours in advance of any placement of concrete.
2. Form Preparation: Before placing concrete, forms shall be thoroughly inspected. All chips, dirt, etc., shall be removed, all temporary bracing and cleats taken out, all openings for pipes, etc., properly boxed, all forms properly secured in their correct position and made tight, all reinforcement, anchors, and embedded items secured in their proper places. Concrete which may be on the forms or reinforcement, and which is set and dry, shall be cleaned off, and the forms and steel washed off before proceeding. Remove all foreign matter from forms and excavations.
3. Excess Water: Water shall be removed from place of deposit before concrete is placed unless otherwise permitted by the Owner. Any flow of water into an excavation shall be diverted through proper side drains into a sump, or shall be removed by other approved methods which will avoid washing away the freshly deposited concrete.

4. Soil on which concrete will be poured shall be thoroughly wetted (except in freezing weather).
5. Anchors and Embedded Items: Anchors, bolts, sleeves, inserts, wood blocking, and any other items to be embedded in concrete shall be accurately secured in position before the concrete is placed. Aluminum shall not be embedded in concrete.
6. Handling and Depositing of Concrete
  - a. Before any concrete is placed, the Contractor shall notify all whose work is in any way connected with or influenced by the concrete work, and give them reasonable time to complete all portions of their work that must be completed before concrete is deposited.
  - b. Immediately before concrete is placed, the Contractor shall inspect all forms to be sure that they are in proper position, sufficiently rigid, thoroughly clean, properly oiled and free from foreign materials, and that all reinforcement is in proper position.
  - c. Concreting, once started, shall be carried on as a continuous operation until the section of approved size and shape is completed.
  - d. Concrete shall be conveyed as rapidly as practicable from the mixer to the place of final deposit by methods, which prevent the separation or loss of ingredients. It shall be deposited, as nearly as practicable, in its final position to avoid rehandling or flowing.
  - e. Concrete shall not be dropped freely where reinforcement will cause segregation, nor shall it be dropped freely more than three (3) feet. Concrete shall be deposited to maintain a plastic surface approximately horizontal.
  - f. Concrete that has partially hardened shall not be deposited in the work.
7. Pumping
  - a. Concrete may be placed by pumping if first approved in writing by the Owner for the location proposed.
  - b. Equipment for pumping shall be of such size and design as to ensure a practically continuous flow of concrete at the delivery end without separation of materials.
  - c. The concrete mix shall be designed to the same requirements as herein before specified, and may be richer in lubricating components in order to allow proper pumping.
  - d. Concrete shall not be pumped through aluminum pipes.
  - e. All pumping operations must have full-time inspection by a recognized testing laboratory approved by the Owner and paid for by the Contractor. The cost of this full-time inspection shall be included in the Contractor's bid proposal if the option of pumping is elected.
8. Vibrating and Compacting
  - a. All concrete shall be thoroughly consolidated and compacted by suitable means during the operation of placing, and shall be thoroughly worked around reinforcement, embedded items, and into the corners of the forms. All concrete against forms shall be thoroughly spaded. Internal vibrators shall be used under experienced supervision, and shall be kept out of contact with reinforcement and wood forms. Vibrators shall not be used in a manner that forces mortar between individual form members.
  - b. Vibrators shall be flexible electric type or approved compressed air type, adequately powered and capable of transmitting to the concrete not less than seven thousand (7,000) impulses per minute. Vibration shall be sufficiently intense to cause the concrete to flow or settle readily into place without separation of the ingredients. A sufficient number of vibrators shall be employed so that complete compaction is secured throughout the entire volume of each layer

- of concrete. At least one (1) vibrator shall be kept in readiness as a spare for emergency use. Vibrators shall be such that the concrete becomes uniformly plastic with their use.
- c. Vibration shall be close to the forms but shall not be continued at one spot to the extent that large areas of grout are formed or the heavier aggregates are caused to settle. Care shall be taken not disturb concrete which has its initial set.
  - d. Where conditions make compacting difficult, or where the reinforcement is congested, batches of mortar containing the same proportions of cement to sand as used in the concrete shall first be deposited in the forms, to a depth of at least on inch.
  - e. The responsibility for providing fully filled out, smooth, clean, and properly aligned surfaces free from objectionable pockets shall rest entirely with the Contractor.
- I. Construction Joints: Construction joints shall be located a maximum of 40 feet apart. If, for any reason, the Contractor feels a change is necessary, he shall prepare a placing plan and submit it to the Owner for approval. Where a joint is to be made, the surface of the concrete shall be sandblasted or thoroughly picked, thoroughly cleaned, and all laitance removed. In addition to the foregoing, joints shall be thoroughly wetted, but not saturated, and slushed with a coat of grout immediately before the placing of new concrete. Approved keys shall be used at all joints, unless detailed otherwise. Forms shall be retightened before placing of concrete is continued. There shall be an interval of at least 48 hours between adjacent pours.
- J. Expansion Joints: Expansion joints shall be located at a maximum spacing of 40' or as otherwise shown on Contract Drawings. The joint shall include a joint filler, a bond breaker and joint sealant and installed as indicated on Contract Drawings.
- K. Patching: Immediately after stripping forms, patch minor defects, form-tie holes, honeycombed areas, etc., before concrete is thoroughly dry. Repair gravel pockets by cutting out to solid surface, form key, and thoroughly wet before placing patching mortar consisting of 1 part cement to 2 parts fine sand; compact into place and neatly finish. Honeycombed areas or gravel pockets which, in the Owner's opinion are too large and unsatisfactory for mortar patching as described above, shall be cut out to solid surface, keyed, and packed solids with matching concrete to produce firm bond and surface.
1. The Contractor shall do the entire cutting as required by himself or other trades. All such work shall be of the minimum size required. No excessive cutting will be permitted, nor shall any structural members or reinforcement be cut.
  2. The Contractor shall do all patching after work by other trades has been installed, where required, using Portland Cement Mortar 1:2 mix.
- L. Protection and Curing
1. Protect concrete from injurious action of the elements and defacement of any nature during construction operations.
  2. Keep concrete in a thoroughly moist condition from the time it is placed until it has cured, for at least (7) days.
  3. Carefully protect exposed concrete corners from damage.
  4. Allow no concrete to become dry at any time until curing operations are complete. In general, slabs shall be cured with non-staining curing paper, hosing or fog spray; vertical surfaces shall be curing with Burlene or fog spray or an approved curing compound. Protect fresh concrete from drying

winds, rain, damage, or spoiling. Curing paper shall be lapped 4 inches minimum at joints and sealed with waterproof tape.

M. Concrete Finishes

1. Unexposed Surfaces

a. All unexposed surfaces shall have any form finish, at the Contractor's option.

2. Wearing Surface Finish

a. The wear surface shall receive a monolithic steel trowel finish. Surfaces shall be finished with a screed, float, or steel trowel. Trowel shall be vigorously used at an angle under pressure by the finisher until troweling gives evidence of shine or gloss as required to make a smooth, hard, dense, impervious surface, free of defects. Finishers shall work from kneeboards laid flat upon the surface. Mechanical troweling machines may be used if the desired finish and level tolerances can be obtained by their use, but finishing shall be by hand troweling.

b. For sidewalks, pier decks and where directed, finish surfaces by scoring in parallel lines with a fine hair stable broom, perpendicular to the direction of traffic or as indicated on the drawings.

c. All curbs shall have a sweeping trowel finish similar to adjacent concrete, or as directed by the owner.

d. All wearing surfaces shall be coated with a MassDOT approved Concrete Sealant sufficient to seal any and all cracking within all concrete wear surfaces. Sealant shall be able to withstand a marine environment.

3. Exposed Surfaces

a. Surfaces exposed to view shall be finished. Within 48 hours after the forms have been removed and form ties cut back from the face of the concrete, all voids and cavities shall be filled with a stiff mortar of the same composition and air-entrainment as the mortar in the original concrete mix. The same brand and color of cement, and the same kind and color of aggregate as was used in the original concrete mix shall be used in this mortar. The mortar for filling shall have been mixed and let set for 30 minutes and then remixed before placing in the work. The surface film of all such pointed surfaces shall be carefully removed before setting of the mortar occurs.

b. If the Owner determines these surfaces as prepared do not present a uniformly smooth, clean surface of even texture and appearance, the surface shall be treated and rubbed to obtain a satisfactory finish. The Owner shall be the sole judge of the amount of rubbing which will be required.

c. If rubbing is required, the rubbing will start within 48 hours of notification that the rubbing is required, the surface should be wetted with clean water and rubbed with a No. 16 carborundum brick or other abrasive of equal quality until even and smooth and of uniform appearance, without applying any cement or other coating. If additional finishing is necessary it shall be obtained by a thorough rubbing with a No. 10 carborundum brick or other abrasive of equal quality. Subject to approval by the Owner, rubbing may be performed by use of satisfactory power equipment and tools, providing that the operational procedures shall be the same as those outlined above for hand rubbing.

- d. Rubbing will be kept to a minimum found necessary to produce smooth, even surfaces of uniform appearance. Rubbing will not be required to fill very small surface air bubble holes.
  - e. Patches required for form ties, if carefully and properly done, may not necessitate rubbing. If, however, the work is done in such a way that the patches are conspicuous; the entire exposed face on which they occur shall be rubbed.
  - f. After the final rubbing is completed, and the mortar has set up, the surface shall be thoroughly drenched and kept wet with clean water for a period of five days, unless otherwise directed.
  - g. No rubbing will be permitted when the air temperature is below 40 °F.
  - h. Pile Caps and any formed surfaces not exposed to view, including the underside of concrete decking, shall be finished. Immediately after forms have been removed and form ties cut back from the face of the concrete, all voids and cavities shall be fixed with a stiff mortar of the same composition and air-entrainment as the mortar in the original concrete mix. The mortar for filling shall have been mixed and let set for 30 minutes and then remixed before placing in the work. In case the operation of filling is delayed, the surface of the concrete shall be thoroughly cleaned and washed with water, if necessary, before the mortar is applied.
4. Addition of Material
- a. The addition of cement, sand, water, or mortar to any surface while finishing concrete is strictly prohibited.

N. Defective Work

- 1. The following concrete work shall be considered defective and may be ordered by the Owner to be removed and replaced at Contractor's expense:
  - a. Incorrectly formed.
  - b. Not plumb or level.
  - c. Not specified strength.
  - d. Containing rock pockets, voids, honeycomb, or cold joints.
  - e. Containing wood or foreign matter.
  - f. Contains cracking greater than .006 inches in width.
  - g. Otherwise not in accordance with the intent of the Drawings and Specifications.

3.2 PRECAST CONCRETE

- A. Precast Concrete shall comply with the requirements of 3.1 CAST IN PLACE CONCRETE and the following:
- B. Use of Precast Concrete slabs as shown on the Contract Drawings is at the Contractors option. Cast In Place Concrete may be used as an alternative. All dimensions and reinforcing details shall remain the same as the Precast Concrete Option. If the Contractor chooses to use Cast in Place concrete instead of the Precast Concrete shown on the Contract Drawings, it shall be at no additional cost to the Owner.

- C. Contractor shall submit proposed lifting and handling means and methods to Engineer for approval prior to commencing work.
- D. If precast concrete is to be lifted or moved prior to 7 day cylinder strength test, additional cylinders shall be taken to prove required strength of concrete. Minimum strength shall be twice calculated stress on concrete or 1500 psi, whichever is the greater.
- E. Contractor shall provide suitable temporary supports for the precast concrete adequately designed to take all dead and live construction loads.
- F. Contractor shall submit details of falsework supports for precast concrete to Engineer for approval prior to placing any panels on site.
- G. All precast panels shall be placed to correct line and level as shown on the drawings. Joints between panels shall be sealed by approved method to prevent loss of grout from subsequent cast in place concrete.

**PART 4 MEASURE AND PAYMENT**

**4.1 METHOD OF MEASUREMENT**

- A. Measurement of CONCRETE PILE CAPS shall be measured by the Contract Unit Price LUMP SUM
- B. Measurement of PRECAST CONCRETE DECKING shall be measured by the Contract Unit Price LUMP SUM
- C. Measurement of CAST-IN-PLACE CONCRETE DECKING shall be measured by the Contract Unit Price LUMP SUM
- D. Measurement of CONCRETE CURB shall be measured by the Contract Unit Price LUMP SUM

**4.2 METHOD OF PAYMENT**

- A. Payment for CONCRETE PILE CAPS shall be made by the unit price LUMP SUM, complete in place. This price and payment shall constitute full compensation for all supervision, survey, transportation, testing, labor, materials and equipment for the satisfactory installation of the complete concrete pile caps, connection to the piles, falsework, temporary supports, lifting, forming, finishing, dowels, reinforcing steel, mortars, grouts, epoxy adhesives, inserts, anchors, steel plates, surface preparation, curing, attachments, disposal, hot and cold weather requirements and any incidentals necessary to complete the work specified herein and as shown on the Contract Drawings.
- B. Payment for PRECAST CONCRETE DECKING shall be made by the unit price LUMP SUM, complete in place. This price and payment shall constitute full compensation for all supervision, survey, transportation, testing, labor, materials and equipment for the satisfactory installation of the complete precast panels, connection to the piles and bulkhead, falsework, temporary supports, lifting, forming, finishing, dowels, reinforcing steel, mortars, grouts, epoxy adhesives, inserts, anchors, steel plates, surface

preparation, curing, attachments, disposal, hot and cold weather requirements and any incidentals necessary to complete the work specified herein and as shown on the Contract Drawings.

- C. Payment for CAST-IN-PLACE CONCRETE DECKING shall be made by the unit price LUMP SUM, complete in place. This price and payment shall constitute full compensation for all supervision, survey, transportation, testing, labor, materials and equipment for the satisfactory installation of the complete concrete pier deck including cast in place concrete deck, connection to the precast concrete panels, drainage trough, falsework, temporary supports, lifting, forming, finishing, dowels, reinforcing steel, mortars, grouts, epoxy adhesives, inserts, anchors, steel plates, surface preparation, curing, attachments, disposal, hot and cold weather requirements and any incidentals necessary to complete the work specified herein and as shown on the Contract Drawings.
  
- D. Payment for CONCRETE CURB shall be made by the unit price LUMP SUM, complete in place. This price and payment shall constitute full compensation for all supervision, survey, transportation, testing, labor, materials and equipment for the satisfactory installation of the complete concrete curb falsework, temporary supports, lifting, forming, finishing, dowels, reinforcing steel, mortars, grouts, epoxy adhesives, inserts, anchors, steel plates, surface preparation, curing, attachments, disposal, hot and cold weather requirements and any incidentals necessary to complete the work specified herein and as shown on the Contract Drawings.

4.3 PAYMENT ITEM

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
03 31 30-1	CONCRETE PILE CAP	LUMP SUM
03 31 30-2	PRECAST CONCRETE DECKING	LUMP SUM
03 31 30-3	CAST-IN-PLACE CONCRETE DECKING	LUMP SUM
03 31 30-4	CONCRETE CURB	LUMP SUM

\*\*\*END OF SECTION\*\*\*



**SECTION 05 50 00**  
**MISCELLANEOUS METALS**

**PART 1 GENERAL**

1.1 DESCRIPTION

- A. Provide all labor, materials, equipment, and supervision necessary to complete the work specified in this Section.
  - 1. Machine bolts and washers.
  - 2. Anchor and expansion bolts.
  - 3. Steel reinforcement.
  - 4. Nails and screws.
  - 5. Plates.
  - 6. Brackets.
  - 7. Fabricated steel elements.
  - 8. All other hardware not specified elsewhere.

1.2 QUALITY ASSURANCE

- A. Except as noted elsewhere, work shall conform to the following codes and standards:
  - 1. American Society for Testing and Materials (ASTM).
  - 2. American Welding Society (AWS).
  - 3. American Institute of Steel Construction (AISC).

1.3 SUBMITTALS

- A. Shop drawings for all shop fabricated items shall be submitted to the Engineer for approval before beginning fabrication.
- B. Certificate of compliance with applicable ASTM specifications for all galvanized items shall be submitted to the Engineer with all materials delivered to the fabricator or site.
- C. Manufacturer's literature and specifications for all fasteners, wire rope, anchor bolts, expansion bolts, and other connection items identified within the contract drawings.
- D. List of all other hardware with quantities and material specifications.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. All materials shall be delivered, stored and handled with care to prevent damage to any material or material coating. Material damaged or with damaged coating will be rejected and replaced at no additional cost to the Owner.

**PART 2 PRODUCTS**

**2.1 MATERIALS**

- A. Steel bolts for steel connections shall be stainless steel and shall conform to ASTM F593 Alloy group 2.
- B. All plates, bars, washers, nuts, and other steel components shall be ASTM A240, unless otherwise approved by the engineer.
- C. All hardware connecting fender system and ladders shall be type 316 stainless steel. Anchor bolts up to and including 5/8" diameter shall conform to ASTM F593 Alloy group 2, Condition CW1. Anchor bolts larger than 5/8" diameter shall conform to ASTM F593 Alloy group 2, Condition CW2.
- D. All timber elements shall utilize O-Gee washers unless otherwise approved by engineer.
- E. All non stainless steel items under this section shall be galvanized. Galvanizing shall be by the hot dip method according to ASTM Specifications A-123 and A-153.
- F. Welding rods shall conform to AWS E70XX grade. Sizes shall be as indicated on the drawings.
- G. All concrete reinforcement shall be new deformed steel bars, Grade 60 conforming to ASTM A615, hot dip galvanized conforming to ASTM A123, A153, A767.
- H. Timber floating docks galvanized steel plates and all bolts and related hardware shall be fashioned from steel and galvanized after fabrication and in accordance with requirements of ASTM A123, and/or A153. bolts and nuts shall conform to ASTM A307.
- I. Timber floats connection hardware shall be fabricated from ASTM A36 Grade steel with minimum thickness of 1/4-inch.

**PART 3 EXECUTION**

**3.1 FABRICATION**

- A. Fabrication shall conform to AISC Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings.
- B. Workmanship shall be equal to standard commercial practice.
- C. All materials shall be clean and straight. Each assembly shall be accurately fabricated to the lines and dimensions called for and shall be free from undue twists, bends, warping, distortion, and other irregularities.
- D. Assemblies shall be fabricated to within 1/8" ± of their theoretical dimensions.

**3.2 INSTALLATION**

- A. Installation shall conform to AISC Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings.
- B. Parts covered by this specification shall be installed in the work as shown on the drawings.

- C. No cutting or burning of steel shall be done to install fasteners without approval of the Engineer.

**3.3 DEFECTIVE WORK**

- A. The following shall be grounds for rejection and replaced at no additional cost to the Owner:
  - 1. Any damaged parts.
  - 2. Any parts improperly installed in the work.
  - 3. Any items found not to have the proper coating.
  - 4. Otherwise not according to Contract Documents.

**PART 4 MEASUREMENT AND PAYMENT**

**4.1 METHOD OF MEASUREMENT AND PAYMENT**

- A. No separate measurement or payment shall be made for the work in this Section. Measurement and Payment for this item shall be included within the work it is associated with.

\*\*\* END OF SECTION \*\*\*

**SECTION 05 52 13.16**  
**MISCELLANEOUS METAL FABRICATIONS**

**PART 1 GENERAL**

1.1 DESCRIPTION

- A. Provide all labor, materials, equipment, and supervision necessary to complete work specified in this Section.
- B. Scope of work includes, but is not necessarily limited to, manufacturing or shop-fabricating metal elements, including:
  - 1. Ladders.
  - 2. Brackets for gangways.
  - 3. Cleats.
  - 4. Pile guide steel frames.
  - 5. Miscellaneous angles and plates.

1.2 QUALITY ASSURANCE

- A. Except as noted, work shall conform to the following codes and standards:
  - 1. American Society for Testing and Materials (ASTM), latest edition.
  - 2. American Institute of Steel Construction (AISC) Specification for the Design, Fabrication and Erection of Structural Steel for Buildings, latest editions.
  - 3. American Welding Society (AWS).

1.3 SUBMITTALS

- A. Shop drawings
  - 1. Submit for approval prior to fabrication all information necessary for the fabrication of the component parts. Indicate size and weight of members, type and location of shop and field connections, the type, size and extent of all welds, and welding sequences. Use American Welding Society welding symbols. Approval of shop drawings will be for size and arrangement of principal and auxiliary members and strength of connections. Any errors in dimensions shown on shop drawing shall be the responsibility of the Contractor.
- B. The Contractor shall use only certified welders and the shielded arc process for all welding performed in connection with the work of this Section. Each welder shall be certified for the particular work, prior to commencing the work, which must be accomplished.
- C. Upon completion of this portion of the work, and as a condition of its acceptance, the Contractor shall deliver to the Engineer a letter signed by an official of the miscellaneous metal fabricating firm or firms certifying that all fabricated metal has been fabricated in complete accordance with this Section of these specifications.

1.4 PRODUCT HANDLING

- A. All materials shall be delivered, stored and handled with care to prevent damage to any material or material coating. Material damaged or with damaged coating will be rejected and replaced at no additional cost to the Owner.

**PART 2 MATERIALS**

2.1 STRUCTURAL STEEL AND MISCELLANEOUS ITEMS

- A. All structural steel, including rolled shapes, angles and plates, shall conform to ASTM A276 unless otherwise noted.
- B. Timber floats connection hardware shall be fabricated from ASTM A36 Grade steel with minimum thickness of ¼-inch.

2.2 WELD ELECTRODES

- A. Weld rod shall conform to AWS E70XX grade.

**PART 3 EXECUTION**

3.1 FABRICATION

- A. Fabricate products in a fully-equipped facility capable of producing high grade of metal fabrication work. All work shall be straight and true, free from warpage and other defects. Joints, covers, copes and miters shall be accurately and neatly cut, machined, filed and fitted.
- B. Carry out bolting and welding in accordance with latest approved methods, with due consideration for strength and appearance of finished product. All welding shall be done by certified welders.
- C. All steel will be free from imperfections, dirt, loose scale, paint, oil or other foreign substances.
- D. All welds shall be made watertight.
- E. All material shall be fabricated to within 1/8 inch ± of their theoretical dimensions as shown on the drawings.
- F. Holes for bolts shall be located as shown on the drawings.
- G. If galvanized bolts are required, holes in steel components and shall be drilled 1/8" in diameter larger than the galvanized bolt. All other bolt holes shall be drilled for standard clearances.

3.2 INSTALLATION

- A. Store materials on skids, not on ground, in such a fashion as to prevent bending, twisting or similar damage. Do not dump steel off truck.
- B. Clean installed work from weld spatter, dirt and other foreign materials. Protect installed work as required from damage by subsequent building operations.

3.3 DEFECTIVE WORK

- A. Any parts damaged or improperly fabricated shall be removed and replaced or corrected as directed by the Engineer and at no additional cost to the Owner.

**PART 4 MEASUREMENT AND PAYMENT**

4.1 METHOD OF MEASUREMENT

- A. Measurement for LADDER shall be the number of ladders installed, complete in place.

4.2 METHOD OF PAYMENT

- A. Payment for LADDER shall be made by the unit price EACH, complete in place. This price and payment shall constitute full compensation for all supervision, survey, transportation, testing, labor, materials and equipment for the satisfactory procurement and installation of steel ladders complete in place, including, anchoring, temporary supports, lifting, epoxy adhesives, inserts, anchors, steel plates, disposal, attachments, timber bracing and lower supports, and any incidentals necessary to complete the work specified herein and as shown on the Contract Drawings.

4.3 PAYMENT ITEMS

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
05 52 13.16-1	LADDER	EA

\*\*\* END OF SECTION \*\*\*

**SECTION 06 13 00**  
**HEAVY TIMBER CONSTRUCTION**

**PART 1 GENERAL**

1.1 DESCRIPTION

- A. Work under this Section, without limiting the generality thereof, consists of the furnishing and installation of all materials, equipment, labor, testing, transportation facilities, and all operations and adjustments required for the complete and operating installation as indicated on the Drawings, stipulated in the Specifications and as reasonably implied by either or both. This includes, but is not limited to the following:
  - 1. Timber Cross Bracing
  - 2. Timber Stringers
  - 3. Timber Pile Cap
  - 4. Timber Fender System
  - 5. Timber Decking
- B. Should drawings not agree within themselves or the specifications, the greater quantity, or superior quality of work or materials shall be included.

1.2 QUALITY ASSURANCE

- A. Except as noted all work shall conform to the latest editions of the following codes, specifications and standards:
  - 1. West Coast Lumber Inspection Bureau (WCLIB)
  - 2. Western Wood Products Association (WWPA)
  - 3. American Forest and Paper Association (AFPA)
  - 4. American Society for Testing and Materials (ASTM)
  - 5. Commonwealth of Massachusetts State Building Code (CMSBC)
  - 6. American Institute of Timber Construction (AITC)
  - 7. American Wood-Preservers' Association (AWPA)
  - 8. American Lumber Standard Committee (ALSC)

1.3 SUBMITTALS

- A. AWPA quality certification on all treated timber.
- B. Certification of timber species.
- C. Material list with shop product data, treatment, sizes and quantities

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. All timber shall be stored in stacks such that there is an air space beneath the material and situated to prevent the timber from being exposed to standing water.
- B. The material shall be stored on site in an area which will be designated by the Owner.
- C. Timber shall be handled in an approved manner such that the material will not be damaged.

**PART 2 PRODUCTS**

2.1 MATERIALS

- A. Unless otherwise specified on the Contract Drawings, all timber to be used shall be Tropical Hardwood, Greenheart.
- B. Greenheart timber shall be supplied by a company that operates in the Guiana Shield countries and in conformity with the International Conventions and National Forestry Regulations relating to the management of forestry concessions. Company shall enforce the protection of the endangered species listed by CITES (Convention on Trade in Endangered Species) and the biodiversity of the ecosystems. It respects the Intellectual Property Rights of the Indigenous Peoples, whose communities are the beneficiaries of the Company's field operation.
- C. Greenheart timber shall be supplied by a company that stresses the need for low impact forestry operations, ensuring that its forestry extraction is state of the art while constantly monitoring the effect of its logistics systems on watershed management and its use of biodegradable wood preservatives.
- D. All timber shall be new and supplied S4S unless otherwise noted.
- E. All bolts, steel plates, and related hardware used in timber connections or construction shall conform to ASTM series F563 Alloy Group 2 stainless steel, unless otherwise noted.
- F. All washers shall be O-Gee washers unless otherwise approved by the engineer.

**PART 3 EXECUTION**

3.1 PREPARATION

- A. Prior to installation, all demolition affecting the new work shall be completed.

3.2 INSTALLATION

- A. Coat ends of field cut members as specified under TIMBER TREATMENT, SECTION 06 31 00.
- B. Joints are to be square, tight and well-fastened with all members assembled in accordance with the Contract Drawings.
- C. Holes
  - 1. Holes for bolts shall be drilled the same size as the bolt.
  - 2. All tropical hardwood shall be pre-drilled.



- 3. Holes for treated timber shall be swabbed with 2 coats of sealing compound as specified herein before installing the bolts.
- D. Bolts shall be tightened to provide a solid connection. No more than 1 washer shall be installed under the bolt head or nut. Bolt threads shall project no more than one bolt diameter beyond the nut.
- E. All bolts on exposed face of fender system shall be counterbored.
- F. All timber shall be cut and fit in such a manner as to have full bearing over the entire contact surface.

**PART 4 MEASUREMENT AND PAYMENT**

4.1 METHOD OF MEASUREMENT

- A. Measurement for TIMBER UPWELLER PIER APRON shall be made by Unit Price LUMP SUM.
- B. Measurement for TIMBER FENDER SYSTEM shall be made by Unit Price LUMP SUM.
- C. Measurement for TIMBER T-PIER EXTENSION shall be made by Unit Price LUMP SUM.

4.2 METHOD OF PAYMENT

- A. Payment for TIMBER UPWELLER PIER APRON shall be by the Contract Price Lump Sum. This price and payment shall constitute full compensation for all labor, equipment, materials, preparation, testing, transportation, survey, and supervision for the satisfactory supply and installation of the timber, cutting, shimming, spacer blocks, fasteners, hardware, disposal of surplus material and any other incidentals necessary to complete the work specified herein and as shown on the Contract Documents.
- B. Payment for TIMBER FENDER SYSTEM shall be by the Contract Price Lump Sum. This price and payment shall constitute full compensation for all labor, equipment, materials, preparation, testing, transportation, survey, and supervision for the satisfactory supply and installation of the timber wales chocks, blocks, fasteners, treatment, disposal of surplus material and any other incidentals necessary to complete the work specified herein and as shown on the Contract Documents.
- C. Payment for TIMBER T-PIER EXTENSION shall be by the Contract Price Lump Sum. This price and payment shall constitute full compensation for all labor, equipment, materials, preparation, testing, transportation, survey, and supervision for the satisfactory supply and installation of the timber stringers, pile caps, bullrail, cutting, shimming, spacer blocks, fasteners, hardware, epoxy anchors, treatment, disposal of surplus material and any other incidentals necessary to complete the work specified herein and as shown on the Contract Documents.

4.3 PAYMENT ITEM

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
06 13 00-1	TIMBER UPWELLER PIER APRON	LUMP SUM
06 13 00-2	TIMBER FENDER SYSTEM	LUMP SUM
06 13 00-3	TIMBER T-PIER EXTENSION	LUMP SUM
	**** END OF SECTION ****	

**SECTION 06 15 19**  
**TIMBER DECKING**

**PART 1 GENERAL**

1.1 DESCRIPTION

- A. Work under this Section, without limiting the generality thereof, consists of the furnishing and installation of all materials, equipment, labor, testing, transportation facilities, and all operations and adjustments required for the complete and operating installation as indicated on the Drawings, stipulated in the Specifications and as reasonably implied by either or both. This includes, but is not limited to the following:
  - 1. Decking of T-Pier
- B. Should drawings not agree within themselves or the specifications, the greater quantity, or superior quality of work or materials shall be included.

1.2 QUALITY ASSURANCE

- A. Except as noted all work shall conform to the latest editions of the following codes, specifications, and standards:
  - 1. West Coast Lumber Inspection Bureau (WCLIB)
  - 2. Western Wood Products Association (WWPA)
  - 3. National Forest Products Association (NFPA)
  - 4. American Society for Testing and Materials (ASTM)
  - 5. Commonwealth of Massachusetts State Building Code (CMSBC)
  - 6. American Institute of Timber Construction (AITC)

1.3 SUBMITTALS

- A. Certification of timber species.
- B. Certification of timber treatment

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. All timber shall be stored in stacks such that there is an air space beneath the material and situated to prevent the timber from being exposed to standing water.
- B. The material shall be stored on site in an area which will be designated by the Owner.
- C. Timber shall be handled in an approved manner such that the material will not be damaged.
- D. All timber shall be covered to maintain consistent coloring and fading between pieces.

**PART 2 PRODUCTS**

2.1 MATERIALS

- A. Unless otherwise specified on the Contract Drawings, all timber to be used shall be Tropical Hardwood.

- B. Greenheart timber shall be supplied by a company that operates in the Guiana Shield countries and in conformity with the International Conventions and National Forestry Regulations relating to the management of forestry concessions. Company shall enforce the protection of the endangered species listed by CITES (Convention on International Trade in Endangered Species) and the biodiversity of the ecosystems. It respects the Intellectual Property Rights of the Indigenous Peoples, whose communities are the beneficiaries of the Company's field operation.
- C. Greenheart timber shall be supplied by a company that stresses the need for low impact forestry operations, ensuring that its forestry extraction is state of the art while constantly monitoring the effect of its logistics systems on watershed management and its use of biodegradable wood preservatives.
- D. All timber shall be new and supplied with nominal dimensions unless otherwise noted.
- E. All timber fasteners shall meet ASTM F593, alloy group 2, stainless steel.

**PART 3 EXECUTION**

3.1 PREPARATION

- A. Prior to installation all demolition affecting the new work shall be completed.

3.2 INSTALLATION

- A. Joints are to be square, tight, and well-fastened with all members assembled in accordance with the Contract Drawings.
- B. Bolts shall be tightened to provide a solid connection. No more than 1 washer shall be installed under the bolt head or nut. Bolt threads shall project no more than one bolt diameter beyond the nut.
- C. All timber shall be cut and fit in such a manner as to have full bearing over the entire contact surface.

**PART 4 MEASUREMENT AND PAYMENT**

4.1 METHOD OF MEASUREMENT

- D. Measurement for TIMBER DECKING for timber reconnection shall be made by SQUARE FOOT.

4.2 METHOD OF PAYMENT

- A. Payment for TIMBER DECKING shall be made SQUARE FOOT of completed in place. This price and payment shall constitute full compensation for supply and satisfactory installation of all new lumber, and hardware as identified on the contract drawings complete in place, including all labor, equipment, testing, transportation, survey, supervision, materials, drilling, all hardware, disposal of any surplus materials, and all other items necessary for the satisfactory installation of connection hardware of the Timber Decking, including any incidentals necessary to complete the work specified herein and as shown on the Contract Drawings.

4.3 PAYMENT ITEMS

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
06 15 19-1	TIMBER DECKING	SQUARE FOOT

\*\*\*END OF SECTION\*\*\*

**SECTION 06 31 00**  
**TIMBER TREATMENT**

**PART 1 GENERAL**

1.1 DESCRIPTION

- A. Provide all labor, materials, equipment, and supervision necessary to complete the work specified in this Section associated with treated timber for fender system and floating docks.
  - 1. The treatment of timber members with a wood preservative.
  - 2. The field application of all timber subject to field cutting.

1.3 QUALITY ASSURANCE

- A. Except as noted all work shall conform to the latest editions of the following codes, specifications, and standards.
  - 1. American Society for Testing and Materials (ASTM) D-25.
  - 2. American Wood Preservatives Association (AWPA).

**PART 2 PRODUCTS**

2.1 MATERIALS

- A. All new Southern Yellow Pine and Western Douglas Fir timber members to which the public may be exposed shall be treated with alkaline copper quaternary (ACQ) in accordance with AWPA Standards for material subject to saltwater use, with minimum retention of 0.40 lbs. per cubic foot, and shall obtain a green tint due to the treatment.
- B. All new Southern Yellow Pine and Western Douglas Fir timber members to which the public shall not be exposed and shall be treated with chromated copper arsenate (CCA) in accordance with AWPA Standard P5 and C2 for material subject to saltwater use, with minimum retention of 2.50 lbs. per cubic foot, and shall obtain a green tint due to the treatment.

**PART 3 EXECUTION**

- 3.1 Prior to treatment all dimension lumber shall be kiln-dried. Conditioning by heating is not permitted.
- 3.2 All timber accessible to the public to be treated with alkaline copper quaternary (ACQ) shall be treated to a retention of 0.40 pounds per cubic foot.
- 3.3 All timber piles to be treated with chromated copper arsenate (CCA) shall be treated to a retention of 2.50 pounds per cubic foot.
- 3.4 Sealing compound for treatment of field cuts and drilled holes shall be two (2) coats of copper naphthenate meeting AWPA standard P8.

**PART 4 MEASUREMENT AND PAYMENT**

4.1 METHOD OF MEASUREMENT AND PAYMENT

- A. No separate measurement or payment shall be made for the work in this Section. Measurement and Payment for this item shall be included within the work it is associated with.

\*\*\* END OF SECTION \*\*\*

**SECTION 06 73 00**  
**COMPOSITE DECKING**

**PART 1 GENERAL**

1.1 DESCRIPTION

- A. Work under this Section, without limiting the generality thereof, consists of the furnishing and installation of all materials, equipment, labor, testing, transportation facilities, and all operations and adjustments required for the complete and operating installation as indicated on the Drawings, stipulated in the Specifications and as reasonably implied by either or both. This includes, but is not limited to the following:
  - 1. Composite Decking on Upweller Pier
  - 2. Composite Deckign on Timber Floating Docks
- B. Should drawings not agree within themselves or the specifications, the greater quantity, or superior quality of work or materials shall be included.

1.2 QUALITY ASSURANCE

- A. Except as noted all work shall conform to the latest editions of the following codes, specifications, and standards:
  - 1. ASTM D7032: Standard Specification for Establishing Performance Ratings for Wood-Plastic Composite Deck Boards and Guardrail Systems (Guards or Handrails), ASTM International.
  - 2. ASTM D7031: Standard Guide for Evaluating Mechanical and Physical Properties of Wood-Plastic Composite Products, ASTM International
  - 3. ASTM E84: Test Method for Surface Burning Characteristics of Building Materials, ASTM International.
  - 4. ASTM D570: Water Absorption of Plastics
  - 5. ASTM D1761: Mechanical Fasteners in Wood
  - 6. ASTM D1413: Test method for Wood Preservatives by Laboratory Soil-block Cultures
  - 7. ASTM C177: Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties

1.3 SUBMITTALS

- A. Manufacturer shall submit most recent product brochure for the composite decking product.
- B. Samples for each product specified. One sample representing actual product color, size, and finish.
- C. Certificates

1. Certify that materials are new and meet or exceed specification requirements by submitting a notarized copy of chemical and physical tests results.

**1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING**

- A. Store products on a flat and level surface. Support bundles on dunnage. Provide for air circulation around stacks and under coverings.
- B. Material should be stored on site in an area designated by the Owner.
- C. Composite decking shall be handled in an approved manner such that the material will not be damaged.
- D. Keep product covered and protected until time of installation.

**1.5 DESIGN/PERFORMANCE REQUIREMENTS**

- A. A. Structural Performance
  1. Deck: Uniform Load – An allowable span of 16 in. on-center and 100 lbf/sq.ft.
- B. Fire-Test Response Characteristics per ASTM E84.
  1. Flame Spread Index– Class B.

**PART 2 PRODUCTS**

**2.1 MATERIALS**

- A. Composite Decking consisting of recycled Linear Low-Density Polyethylene (LLDPE) and recycled wood.
- B. All composite decking shall be supplied with nominal dimensions unless otherwise noted.
- C. Color shall be (brown) as selected by Owner.
- D. All fasteners shall meet ASTM F593 Group 2 stainless steel.

**PART 3 EXECUTION**

**3.1 PREPARATION**

- A. Prior to installation all demolition affecting the new work shall be completed.

**3.2 INSTALLATION**

- A. Joints are to be square, tight, and well-fastened with all members assembled in accordance with the Contract Drawings.



- B. Deck boards shall have an End-to-End and End-to-Width gap of ¼” if installed with an ambient temperature of 40°F or higher. Deck boards shall have an End-to-End and End-to-Width gap of ½” if installed with an ambient temperature less than 40°F.
- C. Deck boards shall have a Width-to-Width gap of 3/16”.
- D. Decking shall not overhang more than 1”.
- E. Decking screws shall be installed flush with the decking. Screws shall not be countersunk.

**PART 4 MEASUREMENT AND PAYMENT**

**4.1 METHOD OF MEASUREMENT**

- A. Measurement for COMPOSITE DECKING for installation of the composite deck on the Upweller Pier shall be made by SQUARE FOOT.

**4.2 METHOD OF PAYMENT**

- A. Payment for COMPOSITE DECKING shall be made SQUARE FOOT of completed in place. This price and payment shall constitute full compensation for supply and satisfactory installation of all new composite lumber, and hardware as identified on the contract drawings complete in place, including all labor, equipment, testing, transportation, survey, supervision, materials, drilling, all hardware, disposal of any surplus materials, and all other items necessary for the satisfactory installation of connection hardware of the Composite Decking, including any incidentals necessary to complete the work specified herein and as shown on the Contract Drawings.

**4.3 PAYMENT ITEMS**

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
06 73 00-1	COMPOSITE DECKING	SF

\*\*\*END OF SECTION\*\*\*

**SECTION 31 62 00**  
**STEEL PIPE PILES**

**PART 1 GENERAL**

1.1 DESCRIPTION

- A. Provide all labor, materials, equipment and supervision necessary to complete work specified in this Section.
- B. Scope of work includes, but is not necessarily limited to, furnishing and installing the following:
  - 1. Steel pipe mooring piles, concrete filled.
  - 2. HDPE Pile Sleeves.
  - 3. Fiberglass cone caps.

1.2 QUALITY ASSURANCE

- A. Except as noted, work shall conform to the latest editions of the following codes specifications and standards
  - 1. American Society for Testing and Materials (ASTM)
  - 2. American Welding Society (AWS)
  - 3. American Institute of Steel Construction (AISC)

1.3 SUBMITTALS

- A. Submit for approval by the Engineer proposals for the following items:
  - 1. Driving plan and schedule for installation of the pipe piles.
  - 2. Method of installation of piles including size and type of pile hammer.
  - 3. Templates and falsework to be used for support and layout of piles during driving.
- B. Certificates:
  - 1. Material specifications and certification that materials are new and meet or exceed specification requirements.
  - 2. Material List

1.4 PRODUCT HANDLING

- A. Piles shall be handled with care to prevent damage to pile and coating. Damaged piles will be rejected and replaced at no additional cost to the Owner. Piles shall be stored with a space beneath the piles and situated to prevent being exposed to standing water.

2. PRODUCTS

2.1 MATERIALS

- A. Mooring Piles: Pipe piles shall be as designated on the Drawings. Pipe shall be seamless or fusion-welded and conform to ASTM A252, Grade 3 for Welded and Seamless Steel Pipe Piles.

- B. Pile Points: All piles shall be provided with conical pile points. Pile points shall be 60 degree configuration inside flange fitting by Associated Pile and Fitting LLC, Clifton, NJ or equal approved.
- C. Concrete Fill for Piles specified under Section 03 31 30, Marine Concrete.
- D. Piles shall be encased in HDPE pipe sleeve with minimum thickness of 0.2" and fusion welded (Lee Composite LC200 or equivalent). Sleeves shall extend from top of pile to 2 feet below mudline. Temporary mudline removal shall be replaced following install.
- E. Fiberglass cone cap shall be constructed of a high gloss gel coat, marine grade fiberglass resin construction, with a minimum 1/8" wall thickness. Color shall be black. Shall be secured per manufacturers recommendation.

3. EXECUTION

3.1 DRIVING EQUIPMENT

- A. Pile Hammers: Vibratory hammer of a type approved by the Engineer.
  - 1. Vibratory Hammers: Vibratory hammers will be allowed for this project when bearing capacity determination by blow count or driving energy is not required.
- B. Driving Helmets: The driving helmet or cap shall be capable of protecting the head of the pile, minimizing energy absorption, and transmitting hammer energy uniformly and consistently during the entire driving period. The driving helmet or cap shall fit snugly on the top of the pile so that the energy transmitted to the pile is uniformly distributed over the entire surface of the pile head. Demonstrate to the Engineer that the equipment to be used on the project performs the above functions.

3.2 HANDLING

- A. Inspect piles in the leads, and where the protective shell is impaired the piles shall be repaired unless the pile is damaged to such extent that it is rejected. Rejected piles will be replaced at no additional cost to the Owner. Support pile laterally during driving, but not unduly restrained from rotation in the leads. Where pile orientation is essential, take special care to maintain the orientation during driving.

3.3 DRIVING PILES

- A. Comply with all requirements of the Project Permits including, but not limited to:
  - a. Use of a vibratory hammer
  - b. Soft start for use of vibratory hammer each day or after a break in pile driving of one hour or longer.
- B. Steel Pipe Piles:
  - 1. Drive without interruption to the required depth
  - 2. Mooring Piles:
    - a. Tip Elevation: - 30 ft MLLW
    - b. Cut-off Elevations: +17 ft MLLW
- C. Tolerances in Driving: Heads of piles shall be within 2 inches of the location indicated. Manipulation of piles to force them into position will not be permitted. Check all piles for heave. Re-drive heaved piles to the required elevation.

3.4 INSTALLATION

- A. All piles shall be driven without interruption.
- B. All piles shall be marked at a given distance from the bottom, which will show above the waterline after driving, so that the bottom elevation of each pile and its relation with adjacent piles can be recorded.
- C. Only one pile splice per pile will be permitted.
- D. Contractor shall notify Engineer 48 hours prior to pile driving and no piles shall be driven to final position without the presence of the Engineer's Representative.
- E. Pile coatings shall be protected from falsework or driving templates to prevent coating damage or loss.

3.5 RECORDS

- A. A complete and accurate record of each pile shall be furnished by the Contractor. The record shall indicate the pile location, diameter, length, hammer (make and model), number of blows for final 6 inches of penetration, and all other pertinent information.

3.6 DEFECTIVE WORK

- A. Piles damaged, mis-located or driven out of alignment shall be replaced as directed at no additional cost to the Owner.

4. MEASUREMENT AND PAYMENT

4.1 METHOD OF MEASUREMENT

- A. Measurement for MOORING PILES shall be measured per Unit Price EACH and shall be the number of mooring piles installed complete in place.

4.2 METHOD OF PAYMENT

- A. Payment for MOORING PILES shall be made at the Contract Unit Price Each. This price and payment shall constitute full compensation for all labor, equipment, materials, preparation, testing, transportation, survey, and supervision for the satisfactory supply and installation of mooring piles, complete in place, including, all cutting, coating, concrete filling, horizontal pile movements, fiberglass caps, pile points, new or modified top metal brackets, fasteners, welding, disposal of surplus materials and any other incidentals necessary to complete the work specified herein and as shown on the Contract Documents.

4.3 PAYMENT ITEM

ITEM	DESCRIPTION	UNIT
31 62 00-1	Mooring Piles	EACH

\*\*\* END OF SECTION \*\*\*

**SECTION 31 62 19.13**  
**TIMBER MARINE PILES**

**PART 1 GENERAL**

1.1 DESCRIPTION

- A. Provide all labor, materials, equipment, and supervision necessary to complete work specified in this Section.
- B. Scope of work includes, but is not necessarily limited to, furnishing and installing the following:
  - 1. Timber Bearing Piles
  - 2. Timber Fender Piles
  - 3. HDPE Pile Sleeves
  - 4. Fiberglass Caps for Fender Piles
  - 5. Connectors, fasteners, and other accessories as required.

1.2 QUALITY ASSURANCE

- A. Except as noted, work shall conform to the latest editions of the following codes, specifications and standards.
  - 1. American Society for Testing and Materials (ASTM), Specifications: D25 Round Timber Piles.
  - 2. American Institute of Timber Construction (AITC).

1.3 SUBMITTALS

- A. Submit for approval by Town proposals for following items:
  - 1. Driving plan and schedule for installation of piles.
  - 2. Method of installation of piles including size and type of pile hammer.
  - 3. Templates and falsework to be used for support and layout of piles during driving.
  - 4. Pile point and method of attachment.
  - 5. HDPE Pile Sleeves
  - 6. Pile Products
- B. AWWA quality stamp on each new treated pile.
- C. Certification of timber pile species.

1.4 PRODUCT HANDLING

- A. Piles shall be handled with care to prevent damage. Damaged piles will be rejected and replaced at no additional cost to the Town. Piles shall be stored with a space beneath them and situated to prevent being exposed to standing water. Cant hooks or pike poles shall not be used.

**PART 2 MATERIALS**

- A. All timber piles:
  - 1. Piles shall be free from any defects, which will impair their strength, or usefulness for the purpose intended or that will prevent proper driving.
  - 2. All piling shall be cut from sound and live trees, preferably during the winter season.
  - 3. All pier bearing piles shall be Tropical Greenheart in conformance with ASTM D25.
  - 4. All fender piles shall be West Coast Douglas Fir or Southern Yellow Pine in conformance with ASTM D25.
  - 5. Estimated length of piles is as shown on the Contract Drawings.
  - 6. Minimum circumference three (3) feet from the butt shall be 38" and minimum tip circumference shall be 22" for piles over 30' in length.
  - 7. Piles shall be supplied by a company that stresses the need for low impact forestry operations, ensuring that its forestry extraction is state of the art while constantly monitoring the effect of its logistics systems on watershed management and its use of biodegradable wood preservatives
  - 8. Piles shall be encased in HDPE Sleeve from top of pile to 2 feet below mudline. HDPE Pile Sleeve shall be minimum 0.2" thick with fusion weld. Lee Composite LC200 or equivalent.
  
- B. Greenheart Piles
  - 1. Greenheart piles shall be supplied by a company that operations in the Guiana Shield countries are in conformity with the International Conventions and National Forestry Regulations relating to the management of forestry concessions. Company shall enforce the protection of the endangered species listed by CITES (Convention on Trade in Endangered Species) and the bio-diversity of the ecosystems. It respects the Intellectual Property Rights of the Indigenous Peoples, whose communities are the beneficiaries of the Company's field operation.
  - 2. Greenheart piles shall be banded at 12" below final cutoff elevation. Bands shall be 1¼" wide stainless steel 19 gauge. Each pile shall be double wrapped with the band.
  - 3. Banding of greenheart piles shall occur prior to any cutting.
  
- C. Treated Timber Piles:
  - 1. All CCA Treated Piles shall be clean-peeled and treated Western Douglas Fir or Southern Yellow Pine, meeting ASTM D25-86.
  - 2. Timber Treatment shall comply with Specification Section 06 13 00.01.
  - 3. Piles shall be free from any defects, which will impair their strength, or usefulness for the purpose intended or that will prevent proper driving.

**PART 3 EXECUTION**

**3.1 DRIVING EQUIPMENT**

- A. Pile hammers: Vibratory, air, steam or diesel-powered, of a type approved by the Town.
  - 1. Impact Hammers: The hammer furnished shall have a capacity at least equal to the hammer manufacturer's recommendation for the total weight of pile and character of subsurface material to be encountered. The minimum driving energy of the hammer shall be 8,000 foot-pounds. For piles of any length, the maximum driving energy of the hammer shall be 12,000 foot-pounds. Diesel-powered hammers shall be operated at the rate recommended by the manufacturer throughout the entire driving period. Sufficient pressure shall be maintained at the hammer so that: (1) for double-acting hammer, the number of blows per minute during and at the completion of driving of a pile is equal approximately to that at which the hammer is rated; (2) for single-acting hammer, there is

a full upward stroke of the ram; and (3) for differential-type hammer, there is a slight rise of the hammer base during each upward stroke.

2. Vibratory Hammers: Vibratory hammers will only be allowed when bearing capacity determination by blow count or driving energy is not required. Driving helmets and cushion blocks:
  - a. Use a driving helmet or cap including a cushion block or cap block of a design approved by the Owner between the top of the pile and the ram to prevent impact damage to the pile.
  - b. The driving helmet or cap and cushion block combination shall be capable of protecting the head of the pile, minimizing energy absorption, and transmitting hammer energy uniformly and consistently during the entire driving period.
  - c. The driving helmet or cap shall fit snugly on the top of the pile so that the energy transmitted to the pile is uniformly distributed over the entire surface of the pile head.
  - d. Demonstrate to the Owner that the equipment to be used on the project performs the above functions.
  - e. The cushion block may be a solid or laminated softwood block with the grain parallel to the pile axis and enclosed in a close-fitting steel housing. The thickness of block shall be suitable for the length of pile to be driven and the character of subsurface material to be encountered. Generally, thicker blocks are required for longer piles and softer subsurface material.
  - f. Replace cushion block if it has been damaged, split, highly compressed, charred or burned or has become spongy or deteriorated in any manner.
  - g. Under no circumstances will the use of small wood blocks, wood chips, rope or other material permitting excessive loss of hammer energy be permitted.

### 3.2 HANDLING

- A. Inspect piles in the leads, and where the protective shell or treated wood is impaired, between cutoff and a point which will be not less than 10 feet below the ground, the piles shall be repaired as specified under Timber Treatment unless the pile is damaged to such an extent that it is rejected. Rejected piles will be replaced at no additional cost to the Town.
- B. Support pile laterally during driving, but not unduly restrained from rotation in the leads. Where pile orientation is essential, take special care to maintain the orientation during driving. Take special care in supporting battered piles to prevent excess bending stresses in the pile.
- C. When necessary, place collars around the pile head to prevent brooming. Cant hooks shall not be used in handling treated piles. Cut piles by sawing or other means approved by the Town. Holes for rebar shall be of a size that will ensure a driving fit.

### 3.3 DRIVING PILES:

- A. All piles shall be driven in the presence of the Town or his representative unless approved otherwise.
- B. Timber Bearing Piles (All pier support piles):
  1. All Bearing Piles shall be driven using an impact hammer
  2. Drive without interruption using an impact hammer to the specified capacity.
  3. Minimum installed pile tip elevation shall be 10 feet below finished mudline or as otherwise shown on the Contract Documents. If this tip elevation is not reached prior to reaching the required bearing capacity, continue driving until this tip elevation is reached unless approved otherwise by the Engineer.
  4. **All bearing piles shall be driven to a minimum working load capacity of 25 tons**

5. **ALL** bearing piles shall be subjected to a pile load test **OR** for bearing piles with specified minimum working loads of 30 tons or less, bearing piles shall be driven for at least the last 12 inches using an impact hammer and the allowable working pile load shall be computed by means of the following pile driving formula using actual recorded blow counts for each pile:

$$R = 2E / (S + C)$$

where:

- R = Allowable pile load in pounds  
E = Energy per blow in foot-pounds  
S = Penetration of last blow or average penetration of last few blows experienced in inches  
C = Constant equal to 1.0 for drop hammer and 0.1 for steam or air hammer

- a. The value of "S" must be determined with the hammer operated at one hundred (100) percent of the rated number of blows per minute for which the hammer is designed.
- b. Any driving resistance developed in strata overlying the bearing material shall be discounted.
- c. If the driving of the pile has been interrupted for more than one (1) hour, the value of "S" shall not be determined until the pile is driven at least an additional twelve (12) inches, except when it encounters refusal.
- C. Tolerances in Driving: Butts shall be within 3 inches horizontally of the plan location indicated. Manipulation of piles to force them into position will not be permitted. Check all piles for heave. Re-drive heaved piles to the required elevation. Piles damaged, mislocated, or driven out of alignment shall be replaced or additional piles driven as directed at no additional cost to the Owner.
- D. Pile heads shall be capped with a round cone cap and secured to the pile with stainless steel screws.
- E. Tolerances in Driving: Butts shall be within 3 inches horizontally of the plan location indicated. Manipulation of piles to force them into position will not be permitted. Check all piles for heave. Re-drive heaved piles to the required elevation. Piles damaged, mislocated, or driven out of alignment shall be replaced or additional piles driven as directed at no additional cost to the Town.

### 3.4 INSTALLATION

- A. All piles shall be marked at a given distance from the pile tip and every foot interval to the pile butt end. Markings should indicate length from the pile tip and should be visible above the waterline or ground level after driving.
- B. If obstructions are encountered, contractor shall make reasonable effort to remove obstruction. Reasonable efforts shall include excavation to 5 feet below the surface if obstruction is shallow or probing with steel pile to remove or bypass the obstruction. This work shall be considered as part of the work associated with pile installation
- C. Pile Cut-Offs: After completion of driving, tops of piles shall be cut off to remove damage caused by driving hammer. All cut offs shall be the property of the contractor for removal and disposal from the project site.
- D. Piles that split under driving or prove otherwise unsatisfactory shall be removed and replaced from the site at the sole expense of the Contractor and to the satisfaction of the Engineer.
- E. The driving of piles with followers shall not be permitted.



- F. Spudding, jetting, auguring or pre-drilling of piles to achieve the required penetration will not be permitted unless approved in writing by the design engineer.
- G. Any pile, which may be driven in the wrong position, shall be removed and driven in the correct position. Contractor will not be paid for the pile driven in a wrong position.
- H. Any pile which may prove too short after driving, or which has been split, broomed, upset, or otherwise damaged during driving, shall be rejected and another satisfactory pile shall be substituted and properly driven. The Contractor shall not be paid for pile work associated with the replacement of piles in the above category.
- I. Tops of piles shall be trimmed and shaped as required to connect to other work as shown on the Contract Drawings.

### 3.5 INSPECTIONS

- A. All piles will be subject to inspection before or after shipment to the site, or both, at the option of the Engineer. Any pile that does not conform to all the requirements will be rejected.
- B. A line drawn from the center of the butt to the center of the tip must lie wholly within the body of the pile. Any pile that does not meet this requirement shall be rejected.
- C. Inspection of pile driving operations will be provided by the Engineer. No piles shall be driven except in the presence of an authorized inspector.
- D. Approval given by the Engineer or by his agent shall not relieve the Contractor of his responsibility for performing the work in accordance with the plans and specifications.
- E. Contractor shall not cut off top pile until verification by the Town.

### 3.6 RECORDS

- A. A complete and accurate record of each pile shall be made and furnished by the Contractor. The presence of the Town or the Town's representative will not exempt the Contractor from the requirement to keep and furnish his own records. The record shall indicate the pile location, diameter, length, hammer (make and model), number of blows per 6" for the final 36 inches of penetration, all other pertinent information. Where a vibratory hammer is used for friction piles, the time of driving shall be recorded per 6 inches for the final 36 inches of penetration.

## **PART 4 MEASUREMENT AND PAYMENT**

### 4.1 METHOD OF MEASUREMENT

- 1. Measurement of **TIMBER BEARING PILES** shall be measured per **EACH** as the actual number of piles of each type installed complete in place. No payment shall be made for timber cut offs.
- 2. Measurement of **TIMBER FENDER PILES** shall be measured per **EACH** as the actual number of piles of each type installed complete in place. No payment shall be made for timber cut offs.
- 3. **OBSTRUCTION REMOVAL DURING TIMBER PILE INSTALLATION** shall be measured by **HOUR**.
  - a. Obstruction removal will be paid per **HOUR** for the time required to remove obstructions beyond the first 30 minutes of time spent on obstruction removal. Obstruction removal time will be measured to the nearest 0.25 hours.

4.2 METHOD OF PAYMENT

1. Payment shall be made for TIMBER BEARING PILES at the Contract Unit Price Per EACH for each type of pile. This price and payment shall constitute full compensation for all labor, equipment, materials, preparation, testing, transportation, survey, and supervision for the satisfactory supply and installation of timber piles including cutting to final elevation, disposal of excess material, trimming, shaping, capping, banding, connection to other work as required, fasteners, timber treatment and any other incidentals necessary to complete the work specified herein and as shown on the Contract Documents.
2. Payment shall be made for TIMBER FENDER PILES at the Contract Unit Price Per EACH for each type of pile. This price and payment shall constitute full compensation for all labor, equipment, materials, preparation, testing, transportation, survey, and supervision for the satisfactory supply and installation of timber piles including cutting to final elevation, disposal of excess material, trimming, shaping, capping, banding, connection to other work as required, fasteners, timber treatment and any other incidentals necessary to complete the work specified herein and as shown on the Contract Documents.
3. Payment for OBSTRUCTION REMOVAL DURING TIMBER PILE INSTALLATION shall be by Contract Unit Price HOUR and shall be full compensation for furnishing all necessary labor, equipment, materials, preparation, testing, transportation, survey, and supervision for the satisfactory labor and equipment to successfully remove and dispose of obstructions found during installation. Items including but not limited to: debris removal and disposal and all other items that interfere with installation of proposed pile any incidentals necessary to complete the work specified herein and as shown on the Contract Drawings.

4.3 PAYMENT ITEMS

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
31 62 19.13-1	TIMBER BEARING PILES	EACH
31 62 19.13-2	TIMBER FENDER PILES	EACH
31 62 19.13-3	OBSTRUCTION REMOVAL DURING TIMBER PILE INSTALLATION	HOUR

\*\*\*END OF SECTION\*\*\*

**SECTION 31 62 23**  
**COMPOSITE PILES**

**PART 1 GENERAL**

1.1 DESCRIPTION

- A. Provide all labor, materials, equipment, and supervision necessary to complete work specified in this Section.
- B. Scope of work includes, but is not necessarily limited to, furnishing and installing the following:
  - 1. Composite Guide Piles
  - 2. Installation of composite fender piles including but not limited to, trimming, cutting, drilling and shimming.
  - 3. Pile Caps

1.2 QUALITY ASSURANCE

- A. Except as noted, work shall conform to the latest editions of the following codes specifications and standards:
  - 1. American Society for Testing and Materials (ASTM)
  - 2. American Welding Society (AWS)
  - 3. American Institute of Steel Construction (AISC)
- B. All notices required by the Contractor to the Owner for inspection shall be at least 7 days in advance. Any deviation of this shall result in the element to be inspected being rejected.

1.3 SUBMITTALS

- A. Submit for approval by the Engineer proposals for the following items:
  - 1. Manufacturer shall submit most recent product brochure for the pile product to be provided and recommendations for method of installation based on the actual site conditions.
  - 2. Driving plan and schedule for installation of the pipe piles.
  - 3. Method of installation of piles including size and type of pile hammer.
  - 4. Templates and falsework to be used for support and layout of piles during driving.

1.4 PRODUCT HANDLING

- A. Piles shall be handled with care to prevent damage to pile. Damaged piles will be rejected and replaced at no additional cost to the Owner. Piles shall be stored with a space beneath the piles and situated to prevent being exposed to standing water.

**PART 2 PRODUCTS**

2.1 MATERIALS

A. Composite Piles:

1. Composite guide piles shall be FRP or equivalent cylindrical piles meeting the following minimum properties.
2. Piles shall be reinforced as determined by the manufacturer.
3. Piles shall be monolithic
4. Piles shall be suitable for use as floating dock guide piles.
5. Piles shall have the following minimum properties:
  - Min Moment Capacity 144 Kip-Ft
  - Min Yield Strength 8,180 lb/in<sup>2</sup>
  - Min Modulus of Elasticity 481,000 lb/in<sup>2</sup>
  - Min Diameter 12 inch
  - Min wall thickness ½ inch

**PART 3 EXECUTION**

3.1 DRIVING EQUIPMENT

A. Pile Hammers: Vibratory hammer or air hammer of a type approved by the Engineer.

1. Air Hammers: The hammer furnished shall have a capacity at least equal to the hammer manufacturer's recommendation for the total weight of pile and character of subsurface material to be encountered. The driving energy of the hammer shall be between 6,500 foot-pounds and 15,000 foot-pounds. Sufficient pressure shall be maintained at the hammer so that: (1) for double-acting hammer, the number of blows per minute during and at the completion of driving of a pile is equal to at least 90% of that at which the hammer is rated; (2) for single-acting hammer, there is a full upward stroke of the ram; and (3) for differential-type hammer, there is a slight rise of the hammer base during each upward stroke.
2. Vibratory Hammers: Vibratory hammers shall comply with the composite pile manufacturers recommendations and the following:
  - Maximum drive force 55 tons
  - Maximum eccentric moment 1,300 inch-pounds
  - Maximum frequency 1,700 cycles per minute
3. Contractor shall provide details of attachment of hammer grip to the pile prior to commencing work. Grip shall not extend more than 12 inches measured from top of pile along the longitudinal pile axis.

B. Driving Helmets: The driving helmet or cap shall be capable of protecting the head of the pile, minimizing energy absorption, and transmitting hammer energy uniformly and consistently during the entire driving period. The driving helmet or cap shall fit snugly on the top of the pile so that the energy transmitted to the

pile is uniformly distributed over the entire surface of the pile head. Demonstrate to the Engineer that the equipment to be used on the project performs the above functions.

### 3.2 HANDLING

- A. Support pile laterally during driving, but not unduly restrained from rotation in the leads. Where pile orientation is essential, take special care to maintain the orientation during driving.

### 3.3 DRIVING PILES

#### A. Composite Piles:

- 1. Drive without interruption to the required depth
- 2. Piles:
  - a. Tip Elevation: - 30.0 ft (MLLW)
  - b. Cut-off Elevations: +17 ft (MLLW)

- B. Pile Cut-Off: It is anticipated that that the top  $\pm 2'$  of the pile may be cosmetically damaged during driving by the pile clamp. The contractor shall leave enough of the pile above the cutoff elevations so that any damaged pile can be removed above the required cutoff elevation.

- C. Pile Batter: Composite piles shall be installed plumb as shown on the Contract Drawings.

- D. Pile Support: All piles shall be supported by using either a two-level driving template with the top level close to the pile cut-off elevation and the lower level approximately 15 feet below or by the use of fixed lead or by a method approved by the Engineer.

#### E. Tolerances in Driving:

Heads of piles shall be within 2 inches of the location indicated. Manipulation of piles to force them into position will not be permitted. Check all piles for heave. Re-drive heaved piles to the required elevation.

### 3.4 INSTALLATION

- A. All piles shall be driven without interruption. Cut off shall be as indicated on drawings.
- B. All piles shall be marked at a given distance from the bottom, which will show above the waterline after driving, so that the bottom elevation of each pile and its relation with adjacent piles can be recorded.
- C. Contractor shall notify Engineer 48 hours prior to pile driving and no piles shall be driven to final position without the presence of the Owner or his Representative.
- D. Pile exterior shall be protected from falsework or driving templates to prevent damage to piles.
- E. No piles shall be cut or drilled without prior approval by the Owner. The Contractor shall replace any piles which have been cut or drilled incorrectly at no additional cost to the Owner.

#### F. RECORDS

- G. A complete and accurate record of each pile shall be furnished by the Contractor. The record shall indicate the pile location, diameter, length, hammer (make and model), initial pile elevation, final pile tip elevation, and all other pertinent information.

3.5 DEFECTIVE WORK

- A. Piles damaged, mis-located or driven out of alignment shall be replaced as directed at no additional cost to the Owner.

**PART 4 MEASUREMENT AND PAYMENT**

4.1 METHOD OF MEASUREMENT

- A. Measurement for COMPOSITE GUIDE PILES shall be made on a unit price basis EACH, complete in place.

4.2 METHOD OF PAYMENT

- A. Payment for COMPOSITE GUIDE PILES shall be Contract Unit Price Per EACH. This price and payment shall constitute full compensation for all labor, equipment, materials, preparation, testing, transportation, survey, and supervision for the satisfactory supply of materials and installation of Composite Guide Piles, complete in place cutting, pile handling, pile sorting, hardware, UHMW wear strip, connection fabrications and hardware, finishing, coating, disposal of excess materials and any other incidentals necessary to complete the work specified herein and as shown on the Contract Documents.

4.3 PAYMENT ITEMS

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
31 62 23-1	COMPOSITE GUIDE PILES	EACH

\*\*\*END OF SECTION\*\*\*

**SECTION 35 51 00**  
**CONCRETE FLOATING DOCK**

**PART 1 GENERAL**

1.1 DESCRIPTION

- A. Provide all labor, materials, equipment, and supervision necessary to complete work specified in this Section.
- B. Scope of work includes, but is not necessarily limited to, design, manufacture, furnishing and installation of Concrete Floating Dock. The floating system is schematically indicated on the drawings and specified herein. Proposed floating dock systems shall be designed to provide equivalent service to and meet all pertinent requirements of these specifications. All material shall be compatible and intended for the saltwater environment. The approved floating dock system shall be furnished and installed complete, including attenuator, decking, bridging plates, mooring cleats, rub strip, bumper strip, pile guides, and all associated fasteners, connectors and fittings so that the system is complete and ready for use including, but not limited to, the following:
  - 1. Concrete Float
  - 2. All associated float connection and attachment hardware
  - 3. Pile mooring brackets and associated hardware
  - 4. Connection to aluminum gangway
  - 5. Attachments for aluminum components
  - 6. Assembly and installation at the project site

1.2 INTEGRATION OF FLOATING SYSTEM

- A. Guide Piles: The floating concrete system shall be designed to be restrained by the system of guide piles. The pile guides and structural system of the docks shall be designed to transfer the pile loads between the individual components of the dock system, and the dock system and guide piles.

1.3 QUALITY ASSURANCE

- A. Except as noted, work shall conform to the latest editions of the following codes specifications and standards:
  - 1. American Society for Testing and Materials (ASTM)
  - 2. American Welding Society (AWS)
  - 3. American Institute of Steel Construction (AISC)
  - 4. American Institute of Timber Construction (AITC)
  - 5. American Concrete Institute (ACI)
  - 6. American Wood-Preservers Association (AWPA)
  - 7. Concrete Reinforcing Steel Institute (CRSI)
  - 8. Massachusetts State Building Code (MSBC)
  - 9. Prestressed Concrete Institute (PCI)

B. Manufacturer's Qualifications:

1. Manufacturer shall have a minimum of 10 years' experience in the design, production, and installation of concrete floating dock systems for the following:
  - a. Projects of equivalent or larger size with successful performance in saltwater environment.
  - b. Projects in ice and extreme cold seasonal conditions in saltwater environment.
2. Design engineer shall have at least 5 years' experience in the design of concrete floating docks in equivalent exposure and shall be a Licensed Professional Engineer in the Commonwealth of Massachusetts and required to stamp all submittals including shop drawings and calculations.
3. Manufacturer shall provide five (5) references for projects with the above conditions including contact information and detailed facility information.
4. Manufacturer shall warrant the product for a minimum of two years.
5. Manufacturer's product to have a minimum of 25 years life with minor maintenance.

1.4 SUBMITTALS

A. Proof of Manufacturer's Qualifications including:

1. Example projects illustrating 10 years of experience of similar projects both in size and environmental conditions
2. Five (5) references for projects with the above conditions including contact information and detailed facility information.
3. Design Engineer qualifications and license information

B. Design calculations of all structural components and connections in a clear organized and readable form acceptable to the Owner, complete with the signature and seal of a Registered Professional Engineer, licensed in the Commonwealth of Massachusetts, responsible for the work. Design calculations shall be comprehensive package including all design assumptions and shall include concrete floats, connections, guides, pile capacity verification.

C. Manufacture and Assembly Drawings:

1. Precast Concrete Units
  - a. Plan, cross-section, and details of the unit to be manufactured
  - b. Material specifications including sizes and corrosion protection systems
  - c. Utility Raceways location and sizes
2. Connection Hardware
  - a. Material Specifications includes sizes and corrosion protection systems
3. Manufacturer Quality Control
  - a. Material Certifications
  - b. Concrete mix design with all admixtures
  - c. Concrete testing reports for air, slump and strength
4. Complete Material list and specifications



5. Assembly Plans and detail drawings
    - a. Sufficiently detailed to allow assembly with minimal manufacturer input
  6. Pre-assembly material handling and protection requirements
  7. Post assembly handling and protection requirements
  8. Manual for system recommended inspection and maintenance program
- D. Test Reports and Certificates:
1. Concrete test reports taken daily during manufacture.
  2. Concrete cylinder test results
  3. Material specifications and certifications
  4. Certify that materials are new and meet or exceed specification requirements.
  5. Certify that the system meets or exceeds the specified performance requirements.
  6. Certification that system was installed in accordance with the manufacturer's recommendations.
- E. Operations and Maintenance Manual: The Contractor shall furnish and deliver to the Owner, three copies of complete data prepared by the manufacturer, covering details of operating and maintenance procedures. The manual shall include instructions, recommended frequencies of maintenance procedures, winterization procedures, and materials by brand name and specification. All maintenance data shall be on 8 1/2" by 11" sheets of paper bound together in a book with a protective cover. The binder external cover shall be identified as "90 Bridge Street Concrete Floating Dock System Maintenance Procedures".

#### 1.5 WORKMANSHIP

- A. All work shall conform to reviewed shop drawings and project drawings and this specification. Construction details, finishing details and colors of the completed floating dock system shall be consistent throughout. Wood rub strips shall be neatly finished so that joints match and edges are flush with adjacent surfaces. Work shall be accurately set to established lines and elevations and securely fastened in place. Concrete deck shall be set level and with even spacing. Cutting, drilling and punching shall produce clean true lines and surfaces. Exposed surfaces of work shall have a smooth finish. Fixtures shall be installed in a neat and workmanlike manner

#### 1.6 PRODUCT HANDLING

- A. Contractor shall be responsible for the shipment and associated handling of the concrete floatation units and associated assembly elements include the supervision of off-loading for all elements at a designated location on site. Contractor shall note that there is no on-site location for heavy lift equipment to be staged upland.

**PART 2 PRODUCTS**

**2.1 FLOAT LAYOUT**

- A. The proposed dock and anchoring system are shown on the accompanying drawing(s). Noted are locations and sizes of the gangway(s), aluminum platforms, aluminum ramps, connections and floating dock(s).
- B. To the maximum extent possible, the float manufacturer shall pre-assemble float system prior to shipping.

**2.2 PERFORMANCE**

- A. The float system shall function as a unified structure resisting twist and pitch, providing a suppressed conformance to wave forms. The float shall be unsinkable even if structurally damaged. The Contractor shall be responsible for the float meeting the following minimum performance requirements to the approval of the Owner.
  - 1. The Contractor shall warranty float materials, accessories, workmanship and performance for one full year from date of final acceptance of float installation.
  - 2. The pile guides shall be designed to allow removal of the floats from the piles without removal of the piles.

**2.3 FLOATING DOCK DESIGN AND LOADING REQUIREMENTS**

- A. Float Requirements:
  - 1. The float shall be a single monolithic concrete unit with a minimum length of 40' and shall have no external structural waler system and shall have the following characteristics:
    - a. Freeboard approximately 20 inches (+/- 1 inch) under dead loads including ramps, gangways, utilities, pile guides, fenders, and other permanently attached components.
    - b. Float shall be designed for year-round use and exposure. Winter conditions shall assume all commercial slips will be open,
    - c. Widths shall be a minimum width as shown on Contract Drawings.
    - d. Provision shall be made for internal attachment of all utilities as shown on the Contract Documents.
    - e. All piles shall be as shown on the Contract Drawings. Design of complete system shall be based on pile locations shown on the Contract Drawings. The safe mooring loads on floats shall be based on design loads defined in Section 2.2.
    - f. Locations for power/utility pedestals shall be as illustrated in the plans.
    - g. All walking surfaces shall have non-skid design. Surfaces capable of having a slope of 1:33 or greater shall have a static coefficient of friction of 0.8 or greater when wet. Surfaces where the slope will always be less than 1:22 shall have a static coefficient of friction of 0.5 or greater when wet.

- h. Contractor shall be responsible for coordination of all attachments including, but not limited to, aluminum gangways and wear plates.
- B. Site Environmental Conditions
  - 1. Site Exposure: Site exposure is predominately from the South. Float Manufacturer shall perform their own assessment of exposure conditions including fetch, water depth and wave refraction and reflection conditions as may be required for design. Assumptions shall be included with calculations.
  - 2. Wind Conditions: Float Manufacturer shall make their own assessment of wind conditions for design of their float system but minimum wind criteria shall be 70mph, 8 minute duration.
  - 3. Wave Conditions: Float Manufacturer shall make their own assessment of wave conditions for design of their float system but minimum wave criteria shall be as defined in this Section.
- C. Float System shall also be designed to withstand fatigue/torsional loads from wave action.
  - 1. All wave design shall be for  $H_{10}$  wave height
- D. Floats shall be designed for “Survival” Load condition and “Normal” Load condition.
  - 1. Design for Survival Condition shall at minimum meet the following:
    - a. Stress in any component of the system shall not exceed yield stress under survival load condition.
    - b. Floating docks shall be able to withstand survival conditions with repairable damage.
    - c. Survive, without failure, one million cycles of a 1-foot displacement over a 30-foot length. Direction of wave shall be applied in the direction that provides the worst case loading to the system.
  - 2. Design for Normal Condition shall at minimum meet the following:
    - a. Stress in any component of the system shall not exceed design allowable stress under normal unfactored load condition.
    - b. LRFD Design may be used with appropriate load factors.
- E. The following design loads shall be considered the minimum loads to which the floating docks will be submitted. The floats shall be able to resist these loads in any combination throughout the life of the structure. It is intended that the floats will remain in service year round.
  - 1. Vertical loads
    - a. Dead Loads: Include actual weights of all permanent components including ramps, gangways, utilities, lights and all other placed and attached parts.
    - b. Uniformly distributed live loads:
    - c. All docks shall be designed structurally for 100 psf live load distributed uniformly over the entire timber deck surface
  - 2. Horizontal Loads
    - a. Wind loads: shall be based on a minimum design 70 mph wind, applied to full profile height of moored vessels and floats.

- b. Minimum vessel profile height shall be 7.5 feet
  - c. Wake/Wave loads: The design shall include the wave and wake loading criteria as defined below. Wave/wake loads shall include load on floats and vessels. The system must also be designed to withstand fatigue/torsional loads from wake/wave action.
  - d. Design Wave– Normal Condition– 25 year return period
    - 1) Wave Height:  $H_s = 2.8$  feet
    - 2) Wave Period: 3.3 sec
3. Impact Loads
- a. The installed and connected floating system shall be designed to resist impact berthing-energy of the vessel sizes indicated on the Contract Documents or as normally designed for the slip sizes based on finger length plus 5 feet, applied at an angle of ten degrees to the longitudinal axis of the finger or walkway, at any location that energy might be applied.
    - 1) Min vessel criteria shall be:
      4. 1. 30' in Length
      5. 2. Berthing speed 1 foot per second
      6. 3. Min weight of 50,000 pounds
    - 2) The installed and connected floating system shall be designed to resist minimum impact berthing-energy of 500 foot pounds, applied at an angle of 45 degrees to the longitudinal axis, at any edge of float location.
  7. Current loads: 1 knot.
  8. All horizontal loadings will be transmitted through the docking system to the anchor system. The anchor system will consist of timber piles and the connection to the concrete floats. These connection points represent a "hard point" in the dock system and must be accounted for in the design.
  9. Pile guide and its support shall be designed to the maximum design load, but not less than a working load of 16,200 pounds.
- F. Flotation Requirements
1. Dead Loads: Include actual weights of all permanent components including ramps, gangways, utilities, lights and all other placed and attached parts. All floating docks shall have 20 inches of freeboard under dead loads and shall have a level floating dock surface.
  2. Uniformly distributed live loads:
    - a. Entire area of float deck including areas shadowed by gangways: 100 psf
    - b. Gangway uniformly distributed live load: 100 psf
    - c. All floating docks shall have a minimum of eight inches of freeboard under above 50psf live loads.
  3. Concentrated live load of 400 pounds:
    - a. Concentrated load shall be applied anywhere on the deck including along the edge while maintaining a minimum freeboard of 6 inches at any point.

**2.4 MATERIALS**

- A. Concrete for float shall be designed for the marine environment and shall have the following properties:
  - 1. Cement Type: Type II ASTM C-150
  - 2. Water / Cement Ratio: 0.40 max
  - 3. Max cement replacement: Fly Ash 15% or Slag 25%
  - 4. Compressive Strength: 6,000 psi at 28 days ASTM C-94
  - 5. Air Entrainment: 5-7 percent ASTM C-173
  - 6. Lightweight Aggregate ASTM C-330
- B. Reinforcing Steel shall conform to ASTM A-615 Grade 60 and shall be galvanized in accordance with ASTM A-767 or epoxy coated in accordance with ASTM A-775. Steel mesh shall conform to ASTM A-185 and coated the same as the reinforcement steel. Steel mesh shall be flat sheets, rolled mesh is not allowed.
- C. Foam Core: Shall be closed cell expanded polystyrene (EPS) core and shall conform to ASTM C578. Type 1 C-578. The core shall have a density between .95 and 1.10 lbs/ft<sup>3</sup> and shall be made from material containing a maximum of 10 percent reground EPS. The EPS core will have maximum water absorption of 5% by volume in accordance with ASTM C-272. EPS foam billets shall have a maximum dimension tolerance of plus or minus 1/8". Exposed portions of the EPS and leveling billets (if required) shall be coated with a Poly Urea coat with a minimum thickness of 1.5 MM.
- D. Steel shall conform to ASTM A-36 unless otherwise noted. Steel shall be hot-dipped galvanized in accordance with ASTM A-123 and A-153 unless otherwise noted.
- E. Aluminum utilized within the system shall be suitable for use in the marine environment and be in the 6061-T6 alloys.
- F. Stainless Steel shall conform to Type 18-8 (300 Series), 316. Where 316 stainless is not readily available, 304 stainless steel may be used.

**2.5 CONCRETE PRECAST UNITS**

- A. Concrete Testing
  - 1. All concrete testing shall be done in conformance to American Concrete Institute standards for structural concrete and shall include unit weight, slump tests, air entrainment tests and the taking and testing of concrete cylinders.
  - 2. The manufacturer will maintain an ongoing daily concrete testing program and its associated records. All concrete testing shall be done under the direct supervision of ACI (American Concrete Institute) certified testing technicians. All concrete testing shall be done in accordance with the respective ASTM specifications.
  - 3. A minimum of three (3) compressive test cylinders shall be taken daily per mix design being used that day. The cylinders will be cured in a temperature controlled water bath and tested by either an independent testing laboratory or by an on-site, Owner approved, certified testing facility. Test results will be submitted on one (1) each, seven (7) day; one (1) each, twenty-eight (28) day; and one (1) hold cylinder. Hold cylinders will be maintained at the casting facility for a period of five years.

4. All tests will be taken daily from the same material sample used for the compressive test cylinders.
  5. All concrete testing shall be done at the Manufacturer's expense.
- B. Fabrication
1. Concrete float shall be cast without bonded sections of mechanical connections, to form a single monolithic unit completely encasing a solid floatation core on a min of 5 sides; and with raceways and connection block-outs cased in concrete. Wall thickness shall be no less than 1 1/4". Final float dimensions shall be within 1/8" of design size.
  2. No cold joints are permitted.
  3. Floats will be fabricated according to methodology promulgated by the American Concrete Institute (ACI). The facility to provide adequate workspace, handling equipment, level casting surface and portable shelters for protection from adverse environmental conditions such as direct sunlight, wind, moisture, and freezing conditions
  4. Casting Forms to have structural members and shoring systems adequate to insure floats are cast without distortion or deviations from design exceeding  $\pm 1/8"$ . Form surfaces to be smooth true and of sufficient load carrying ability to ensure dimensions will not deviate more than  $\pm 1/8"$  from design dimensions. Any rough edges, form marks, or defects such as protruding fins shall be cleaned, ground smooth or patched.
  5. During the casting process the concrete shall be vibrated internally or externally in accordance with ACI -309 to ensure a smooth, dense finish.
  6. Reinforcement shall extend through all concrete faces and have continuous steel at the corners of each face with adequate lap into each face.
- C. Concrete Finish
1. The float deck surface shall be trowel finished with a steel trowel and a slip-resistant finish applied transversely to the walking surface. Manufacturer shall establish finishing methods and procedures to insure an even and consistent broom or screed finish on all deck surfaces.
  2. All top edges shall have a chamfer or tooled edge 3/8" tooled radius with a minimum 1-1/2" wide smooth hard steel finished face around the perimeter. Outside top edges and corners shall be filed smooth.
  3. All work shall be performed by persons experienced (minimum 5 years) and skilled in their trade.
- D. Cracking and Surface Defects
1. All precast concrete float segments shall be free of structural cracks
  2. Contractor to provide adequate curing time to prevent cracking of weak concrete during product shipping. Lifting points shall be clearly identified.
  3. Chips and cracks that exceed .02" wide will be patched with a non-shrink patching compound.
  4. Rock pockets and or honeycombing exceeding 1" in diameter and or 3/4" deep will be patched with a non-shrink grout of a color similar to the cured concrete.
  5. Any pocket that exposes the reinforcing steel will be chipped out, cleaned, and filled with a non-shrink patching compound.

2.6 FLOAT SYSTEM HARDWARE

- A. Pile guides: Float shall use pile guides having the following properties:
1. Minimum 1" clearance around actual pile.
  2. Guides shall be made of steel and meet ASTM A36 and be hot dip galvanized after fabrication
  3. Ultra-High Molecular Weight (UHMW) Polyethylene shall provide wearing surface between guide and pile.
  4. All hardware shall be heavy duty, min ½" thickness, suitable for the intended service and appropriate for a waterfront environment.
  5. All hardware and fasteners shall be hot-dipped galvanized or stainless steel.
  6. Pile Guide shall be sized for the anticipated pile size required.
- B. Mooring Cleats
1. All cleats and other vessel tie-up hardware shall be as indicated on the contract drawings.
  2. All tie-downs attached to timber shall be through-bolted to the float structure and have sufficient bolting and dock structure to withstand 1.5 times the rated strength capacity of the hardware.
  3. All tie-downs and hardware shall be of non-corrosive metal.
- C. Float Fenders
1. Heavy Duty Fender
    - a. Complete Perimeters of float system shall have fender protection
    - b. Fendering shall be DURAMAX 100 Series DB-115 or equal with a 3-3/4" high type fender and weigh a minimum of 4.5 pounds per lineal foot and made from a fungus and UV resistant PVC compound.
    - c. Color shall be light gray or white.
    - d. Fendering shall be attached with lag or expansion bolts with washers spaced as required to prevent tearing separation from float by vessel movements and berthing maneuvers.
    - e. Corner bumpers shall be mounted at all corners with stainless steel screws. Corners shall mate with the fendering as much as practical and made from a fungus and UV resistant PVC compound.

2.7 SPARE PARTS AND SYSTEM MANUALS

- A. Manufacturer shall provide two (2) sets of system assembly and installation manuals for the float system(s).

**PART 3 EXECUTION**

**3.1 SYSTEM COMPONENTS**

- A. The minimum dimensions and layout of the floating dock system are shown on the Contract Drawings. The Contractor shall be responsible for a system, which conforms to the dimensions and layout indicated on the drawings, is serviceable for the intended use, and conforms to all pertinent provisions of these Specifications.

**3.2 TRANSPORT AND DELIVERY**

- A. Transportation and handling shall be done in accordance with manufacturer's predetermined methods. Damage as a result of transportation and handling shall be the responsibility of the Manufacturer to repair and/or replace.
- B. Float System Component Identification
  - 1. Manufacturer shall develop and provide a full system of component identification system
  - 2. System shall be established within shop drawings for fabrication and for assembly drawings.
  - 3. Each delivery shall have all items clearly identified and easily related to assembly documents. Where similar parts can be mistaken, warnings should be provided.
  - 4. Whenever possible, every part identification should include the element with which it is associated.
- C. Delivery and Storage
  - 1. System components shall be stored off the ground and in a manner to prevent damage by weather. All hardware and packaging of parts shall be in weather protected containers.

**3.3 CONSTRUCTION PHASE SUPPORT AND CERTIFICATION**

- A. Manufacturer shall provide support to Owner and Installation Contractor as required to:
  - 1. Insure system assembly and installation is in conformance with Manufacturer's recommended procedure.
  - 2. Insure no damage has occurred during assembly and installation
  - 3. Provide certification that system is fully installed to manufacturer's requirements.
  - 4. Provide assistance to Installation Contractor in a manner to prevent delays.
  - 5. Coordinate with Owner in regard to installation issues not in conformance for assembly installation requirements.
  - 6. Resolve related installation issues.

**3.4 INSTALLATION**

- A. The system shall be installed in accordance with the approved shop drawings and manufacturer recommendations.



- B. No part of the docks shall slope more than 1 inch in 10 feet over length or width at the time of installation and shall not slope more than 1.5 inches in 10 feet over the length or width at the end of the warranty period.

3.5 DEFECTIVE WORK

- A. Float damaged or constructed in a manner not meeting specifications or site conditions shall be modified or replaced as directed at no additional cost to the Owner.

**PART 4 MEASUREMENT AND PAYMENT**

4.1 METHOD OF MEASUREMENT

- A. Measurement of CONCRETE FLOATING DOCK shall be measured by the Contract Unit Price LUMP SUM.

4.2 METHOD OF PAYMENT

- A. Payment for CONCRETE FLOATING DOCK shall be made by the Contract Unit Price LUMP SUM, complete in place. This price and payment shall constitute full compensation for all design, labor, equipment, materials, preparation, testing, transportation, survey, and supervision for the satisfactory supply and installation of all items under this section, complete in place, including, but not limited to, precast reinforced concrete float units, connections, utility trenches, ducts, fendering, pile guides, connections to timber floats, transition plates, gangway wear/guide plates, fasteners, utility supports and connections, and other attachments, disposal of surplus materials and any other incidentals necessary to complete the work specified herein and as shown on the Contract Documents.

4.3 PAYMENT ITEMS

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
35 51 13.01-1	CONCRETE FLOATING DOCK	LS

\*\*\*END OF SECTION\*\*\*

**SECTION 35 51 13.23**  
**TIMBER FLOATING DOCKS**

**PART 1 GENERAL**

1.1 DESCRIPTION

- A. Scope of work includes, but is not necessarily limited to design, manufacture, supply and installation of the following:
  - 1. Dock Components including
    - a. New Timber Floating Docks
    - b. Cleats
    - c. Dock Fenders
    - d. Connecting Brackets
    - e. Pile Guides
    - f. Floating Upweller System components including but not limited to trough, baskets, and silos
    - g. Associated Hardware
- B. The Contractor shall supply any and all labor, materials, tools, equipment, trucking, disposal, permits, survey, supervision and any incidentals necessary to complete the work under this Section.

1.2 QUALITY ASSURANCE

- A. Except as noted, work shall conform to the latest editions of the following codes specifications and standards.
  - 1. American Society for Testing and Materials (ASTM)
  - 2. American Welding Society (AWS)
  - 3. American Institute of Steel Construction (AISC)
  - 4. American Institute of Timber Construction (AITC)
  - 5. American Concrete Institute (ACI)
  - 6. American Wood-Preservers Association (AWPA)
  - 7. Commonwealth of Massachusetts, Highway Department, Standard Specifications Highways and Bridges.
- B. Manufacturers of the float system must meet the following requirements
  - 1. Have a minimum of 5 years' experience in the design, production, and installation of commercial timber floating dock systems
  - 2. Warrant the product for a minimum of two years
  - 3. Life of the product is to be a minimum of 15 years with minor maintenance

1.3 SUBMITTALS

- A. Submit for approval by the Engineer the following items

1. Examples of previous design/installments of similar systems
  2. Overall plan, cross-section, and details of the proposed system
  3. Material list and specifications
  4. Schedule and method for installation of the system.
  5. Design calculations of all structural components and connections in a clear organized and readable form acceptable to the Engineer, complete with the signature and seal of a Registered Professional Engineer, licensed in the Commonwealth of Massachusetts, responsible for the work. Design calculations shall be comprehensive package including timber floats, concrete floats, connections, guides, pile capacity verification.
  6. Shop drawings: Detailed shop drawings illustrating all structural members, connections, upweller baskets troughs, and hatches for review and acceptance and shall indicate all material thicknesses, dimensions and show in detail all connections for approval prior to fabrication.
- B. Certificates
1. Certify that all materials are new and meet or exceed specification requirements
  2. Certify that the system meets or exceeds the specified performance requirements
- 1.4 PRODUCT HANDLING
- A. System components shall be handled and stored with care to prevent damage. Damaged members will be rejected and replaced at no additional cost to the Engineer.
- 2.1 FLOAT LAYOUT
- B. When combined with the concrete floats and system connections, the timber floats shall provide a complete safe coordinated system.
- C. The proposed dock and anchoring system are shown on the accompanying drawing(s). Noted are locations and sizes of the connections, timber floating dock(s), and upweller units.
- 2.2 MATERIALS
- A. Floating Docks: Unless otherwise specified, all timber to be used shall be treated No.1 Dense Southern Pine as graded by SPIB and with design values per NFPA National Design Specification or the equivalent for Douglas Fir as graded by WCLIB and WWPA.
1. All new southern pine timber members to which the public may be exposed shall be treated with alkaline copper quaternary (ACQ) in accordance with AWPA standards for material subject to saltwater use and shall obtain a green tint due to the treatment.
  2. All other timber members to which the public will not be exposed shall be new and treated with Chromated Copper Arsenate (CCA) in accordance with AWPA standard P5 and U1-UC5A for materials subject to saltwater use and shall obtain a green tint due to the treatment.
  3. Decking shall be composite
  4. All timber shall be new.
  5. No glued laminated timber products will be accepted.
- B. Flotation Units

1. Encasements: All units shall be rotationally molded for seamless, one-piece construction. Nominal wall thickness of 0.15”.
  2. Encasements shall be filled with polystyrene (EPS) beads. The EPS beads are steamed together to provide less water absorption and a solid core for structural strength. Contents shall have a 1.0 to 1.5 pcf density with water absorption not to exceed 3.0 pcf.
- C. Upweller Units
1. Baskets: (8) eight 6-Liter Silo/Basket Combination, Hooper island or equivalent.
  2. Troughs Troughs shall extend full length of baskets. Hooper island or equivalent
- D. Pile guides: New and Existing timber floats shall use hoop-type pile guides having the following properties:
1. Minimum 1" clearance around actual pile.
  2. Guides shall be made of steel and meet ASTM A36 and be hot dip galvanized after fabrication
  3. Ultra-High Molecular Weight (UHMW) Polyethylene shall provide wearing surface between guide and pile.
  4. All hardware shall be heavy duty, min ½” thickness, suitable for the intended service and appropriate for a waterfront environment.
- E. High Density Polyethylene – UHMW Polyethylene used in any of the float or pile guide appurtenances shall conform to the following
- |                 |            |                            |
|-----------------|------------|----------------------------|
| Izod Impact     | ASTM D256  | 27 ft.-lb/inch (min.)      |
| Ult. Tensile    | ASTM D638  | 4.5 ksi (min.)             |
| Coeff. Friction | ASTM D1894 | 0.20 static/kinetic (max.) |
- F. Normal Fender
1. All berthing faces of float system shall have fender protection or as depicted on project drawings.
  2. Fendering shall be 2 7/8” polyvinyl fender secured with stainless steel screws as indicated on the Contract Drawings.
  3. Color shall be gray.
  4. Fendering shall be attached with lag or expansion bolts with washers spaced as required to prevent tearing separation from float by vessel movements and berthing maneuvers.
- G. All steel utilized within the system shall either be hot-dip galvanized according to ASTM A-123 and A-153 or stainless steel unless specified otherwise.
1. All structural steel components and plates shall be fabricated from ASTM A-36 grade steel or better and shall be hot dip galvanized unless otherwise noted. Minimum steel thickness shall be 3/8”.
  2. All corner brackets shall be Heavy Duty with min ½” thick steel.
  3. All bolts, nuts and washers with a nominal diameter greater than ½” shall conform to ASTM 307 and shall be hot dip galvanized unless noted otherwise.
- H. All fasteners with a nominal diameter of ½” or less and used in ACQ treated timber shall be stainless steel

I. Stainless Steel

1. All stainless steel shall conform to type 18-8 (300 Series), 304 or 316.

2.3 PERFORMANCE

A. Each timber float shall be of non-articulated design and shall function as a unified structure resisting twist and pitch, providing a suppressed conformance to wave forms. The connection between units shall be subject to approval of the Engineer. Modules shall be unsinkable even if structurally damaged. The Contractor shall be responsible for the float meeting the following minimum performance requirements to the approval of the Engineer.

1. Walking surfaces of adjacent floats shall align. A difference in elevation of ¼ inch or more is unacceptable. Assembled floats shall be separated one from the other at least ¼ inch such that they do not rub together. Floats shall be +/- 1/8 inch of design dimensions and shall assemble into a unified structure without field trimming or modification.
2. The contractor shall warranty float materials, accessories, workmanship and performance for one full year from date of final acceptance of float installation.
3. The pile guides shall be designed to allow removal of the floats from the piles without removal of the piles.

2.4 FLOATING DOCK DESIGN AND LOADING REQUIREMENTS

B. All floats shall have the following characteristics:

1. Freeboard shall be approximately 20 inches under all dead loads including pile guides, fenders, and other permanently attached components.
2. Length shall be as required to meet layout shown on Contract Drawings.
3. Widths shall be as defined on project drawings.
4. Provision shall be made for internal attachment of all utilities.

C. Site Environmental Conditions

1. Site Exposure: Site exposure is predominately from the South. Float Manufacturer shall perform their own assessment of exposure conditions including fetch, water depth and wave refraction and reflection conditions as may be required for design. Assumptions shall be included with calculations.
2. Wind Conditions: Float Manufacturer shall make their own assessment of wind conditions for design of their float system but minimum wind criteria shall be 70mph, 5 sec gust.
3. Wave Conditions: Float Manufacturer shall make their own assessment of wave conditions for design of their float system but minimum wave criteria shall be as listed below.

D. Float System shall also be designed to withstand fatigue/torsional loads from wave action.

1. All wave design shall be for H<sub>10</sub> wave height

E. The following design loads shall be considered the minimum loads to which the floating docks will be submitted. The floats shall be able to resist these loads in any combination throughout the life of the structure. It is intended that the floats will remain in service year round.

1. Vertical loads

- a. Dead Loads: Include actual weights of all permanent components including all other placed and attached parts.
  - b. Uniformly distributed live loads:
  - c. All docks shall be designed structurally for 85psf live load distributed uniformly over the entire timber deck surface
2. Horizontal Loads
- a. Wind loads: shall be based on a minimum design 70 mph wind, applied to full profile height of moored vessels and floats.
  - b. Minimum vessel profile height shall be 7.5 feet
  - c. Wake/Wave loads: The design shall include the wave and wake loading criteria as defined below. The system must also be designed to withstand fatigue/torsional loads from wake/wave action.
  - d. Design wave –Normal Condition – 25 year return period  
Wave Height:  $H_s = 2.8$  feet  
Wave Period: 3.3 sec.
3. Impact Loads
- a. The installed and connected floating system shall be designed to resist impact berthing-energy of the vessel sizes indicated on the Contract Documents or as normally designed for the slip sizes based on finger length plus 5 feet, applied at an angle of ten degrees to the longitudinal axis of the finger or walkway, at any location that energy might be applied.
  - b. Min vessel criteria shall be:
  - c. 30' in length
  - d. Berthing speed 1 foot per second
- F. Min weight of 50,000 pounds
- G. The installed and connected floating system shall be designed to resist minimum impact berthing-energy of 500 foot pounds, applied at an angle of 45 degrees to the longitudinal axis, at any edge of float location.
1. Current loads: 1 knot.
  2. All horizontal loadings will be transmitted through the docking system to the anchor system. The anchor system will consist of timber piles and the connection to the timber floats. These connection points represent a "hard point" in the dock system and must be accounted for in the design.
  3. Pile guide and its support shall be designed to the maximum design load, but not less than a working load of 10,000 pounds.
- H. Flotation Requirements
1. Dead Loads: Include actual weights of all permanent components including all other placed and attached parts. All floating docks shall have 20 inches of freeboard under dead loads and shall have a level floating dock surface.
  2. Uniformly distributed live loads (Condition 1):

- a. Entire area of decking including areas: 40 psf
- b. All floating docks shall have a minimum of 6 inches of freeboard under above live loads.
3. Uniformly distributed live loads (Condition 2):
  - a. Entire area of decking including areas: 20 psf
  - b. All floating docks shall have a minimum of 15 inches of freeboard under above live loads.
4. Concentrated live load of 400 pounds:
  - a. Concentrated load shall be applied anywhere on the deck including along the edge while maintaining a minimum freeboard of 10 inches at any point.

3.1 INSPECTION

- A. Prior to installing the system, the Engineer shall be contacted by the Contractor for inspection of all components.

3.2 INSTALLATION

- A. The system shall be installed and connected to the concrete floats and the anchoring system as shown on submitted shop drawings.
- B. All holes and cuts in treated timbers made after the pressure-treated process shall be given 2 brush coats of CCA preservative; the second application to be made after the first has been fully absorbed.

3.3 DEFECTIVE WORK

- A. Any damaged portions shall be replaced as directed by the Engineer at no additional cost to the Owner.
- B. Any improperly installed components shall be removed and replaced or corrected as directed by the Engineer at no additional cost to the Owner.
- C. Failure of system to float level and be stable shall be considered a defect. Contractor shall make the necessary changes to correct the defect at no additional cost to the Owner.

4.1 METHOD OF MEASUREMENT

- D. Measurement of TIMBER FLOATING DOCKS shall be measured by the Contract Unit Price LUMP SUM.

4.2 METHOD OF PAYMENT

- E. Payment shall be made for TIMBER FLOATING DOCKS at the Contract Unit Price per LUMP SUM. This price and payment shall constitute full compensation for all labor, equipment, materials, preparation, testing, design, submissions, manufacture, forming, finishing, fendering, pre-assembly, transportation, survey, and supervision for the satisfactory supply and installation of new timber float including but not limited to all connections, cleats, dock fenders, transition plates, hinges, hardware, fasteners, utility supports, utility raceways, dowels, UHMW and any other incidentals necessary to complete the work specified herein and as shown on the Contract Documents.

4.3 PAYMENT ITEMS

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
35 51 12.23-1	TIMBER FLOATING DOCKS	LUMP SUM

\*\*\*END OF SECTION\*\*\*



**SECTION 35 51 20**  
**STRUCTURAL ALUMINUM**

**PART 1 GENERAL**

1.1 DESCRIPTION

- A. Provide all labor, materials, tools, equipment, trucking, disposal, permits, survey, supervision and any incidentals necessary to complete the specified work in this section.
- B. The work in this section includes but is not necessarily limited to the following:
  - 1. Supply, fabrication, and installation of aluminum gangway, platform, ramp and associated aluminum transition and wear plates.

1.2 QUALITY ASSURANCE

- A. Except as noted, work shall conform to the latest editions of the following codes specifications and standards:
  - 1. Aluminum Association Specifications for Aluminum Structures – Load Resistance Factor Design.
  - 2. Americans with Disabilities Act Accessibility Guidelines (ADAAG).
  - 3. Massachusetts Architectural Access Board (MAAB)
  - 4. American Welding Society AWS D1.2 Structural Welding Code - Aluminum.
  - 5. Massachusetts State Building Code
  - 6. Massachusetts Architectural Access Board (MAAB)
  - 7. Architectural Barriers Act Accessibility Standard (ABAAS)
- B. The aluminum gangway shall be fabricated by a company specializing in the fabrication of these items with a minimum of 5 years documented experience.
- C. The Contractor shall warrant the product for a minimum of two years.
- D. Life of the product is to be a minimum of 15 years with minor maintenance.
- E. The Contractor shall ensure the gangway provided works over the extreme tide range; Elevation -0.9 to Elevation +5.1 (MLLW).
- F. Welders shall have current certifications to weld the various materials and positions to be incorporated in the work.
- G. Welding procedures shall be in accordance with AWS D1.2 - Structure Welding Code, Aluminum and Aluminum Construction Manual, Section 5 as applicable.
- H. Independent Weld Inspection: Contractor shall obtain the services of an independent testing laboratory, satisfactory to the Owner, to perform weld inspection utilizing visual, ultrasonic, or other techniques applicable to aluminum welding.

1.3 SUBMITTALS

- A. Submit for approval by Owner the following items:
  - 1. Aluminum manufacturers qualifications

- a. Prior to fabrication, submit for approval documentation providing proof that the Contractor has a minimum of five (5) years of experience in the design/installation/fabrication of similar systems.
  2. Independent Weld Inspector qualifications
  3. Design Calculations including:
    - a. Design calculations of all structural components and connections in a clear organized and readable form acceptable to the Owner, complete with the signature and seal of a Registered Professional Engineer, licensed in the Commonwealth of Massachusetts, responsible for the work.
  4. Material Data: Submit material dimensional and engineering property data of all shapes incorporated into the work.
  5. Detailed Shop Drawings illustrating all structural shapes and connections for review and acceptance shall be submitted to and approved by the Engineer before beginning fabrication:
    - a. Submittal shall include overall plan, cross-section, and details of the proposed structures.
    - b. Indicate size, thickness and weight of members, type, details all material thicknesses, dimensions and show in detail all connections and welds and field connections; and the type, size and extent of all welds, and welding sequences. Use American Welding Society welding symbols.
  6. Approval of shop drawings will be for size and arrangement of principal and auxiliary members and strength of connections. Any errors in dimensions shown on shop drawings shall be the responsibility of the Contractor.
  7. Shop drawings shall be submitted in accordance with requirements as specified in this section and elsewhere in the Contract Documents. Corrections or comments will be made on the shop drawings during the review, but it does not relieve the Contractor from compliance with requirements of the drawings and specifications. The checking procedure is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The Contractor is responsible for confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; performing his work in a safe and satisfactory manner.
  8. Submit field AWS D1.2 welder qualifications to the Owner for verification of current certification.
  9. Submit field and fabrication shop AWS D1.2 welding procedures to the Owner for review prior to the start of welding.
  10. Submit field in-process and final welding inspection reports performed by an American Welding Society (AWS) Certified Welding Inspector (CWI).
  11. Submit deficiency correction reports to address any deficiencies identified by inspection.
- B. Certificates
1. Certify that all materials are new and meet or exceed specification requirements
  2. Certify that the system meets or exceeds the specified performance requirements

1.4 DESIGN REQUIREMENTS

- A. Design shall be in accordance with the latest edition of the following codes, regulations and specifications:
  - 1. Massachusetts Building Code
  - 2. Massachusetts Architectural Access Board (MAAB)
  - 3. Architectural Barriers Act Accessibility Standard (ABAAS)
- B. Designed to meet the load requirements in accordance with AASHTO “Guide Specifications for Design of Pedestrian Bridges” (latest edition) including:
  - 1. Dead load of structure and hanging utilities.
  - 2. Pedestrian live load of 100 pounds per square foot across the clear distance between handrails for the length of the element.
  - 3. Wind load for 100 mph wind per Section 1.2.2 of the AASHTO Guide.
  - 4. Allowable deflection equal or less than the length divided by 360 (L/360).
  - 5. Railings shall be designed to comply with State Building Code load requirements for guards.
  - 6. AASHTO Guide Section 1.3.4 Minimum Thickness of Metal is not applicable to aluminum design.
- C. Splices:
  - 1. For gangways 60 feet and less in nominal length, no field splices will be allowed.
  - 2. For gangways over 60 feet in nominal length:
    - a. No field welded splice in gangway will be allowed.
    - b. Bolted splice shall be designed with internal splice plates and shall provide smooth surface with no sharp edges.
    - c. Splice shall be located outside the middle third of the gangway length.
- D. Gangways deck surfaces shall be continuous, nonslip and without tripping hazard or gaps in excess of 1/8 inch.
- E. Provide drain holes at lowest end in all welded hollow sections.

2.1 MATERIALS

- F. Material and components used shall be new and shall be free from defects which would adversely affect the performance or maintainability of individual components or of the overall assembly or structure. Materials not specified herein shall be of the same or higher quality used for the intended purpose in commercial practice.
- G. All aluminum assemblies shall be fabricated from marine grade aluminum alloy 6061-T6.
- H. All welded connections shall be Gas Metal Arc Welded (GMAW, also known as “MIG” welding) in accordance with AWS standards.
- I. The decking for the gangways, ramps, and platforms shall be non-skid with either a raised rib profile with the ribs no higher than 1/4” and perpendicular to the flow of traffic, or covered with a uniform carborundum surface. Surfaces capable of having a slope of 1:33 or greater shall have a

static coefficient of friction of 0.8 or greater when wet. Surfaces where the slope will always be less than 1:22 shall have a static coefficient of friction of 0.5 or greater when wet.

## 2.2 CONNECTION HARDWARE

- A. All nuts, bolts and washers shall be stainless steel ASTM Series 300, type 316. All nuts shall be self-locking or provide double nuts on each bolt.
- B. The gangway connection pins and sleeves shall be type 316 stainless steel.
- C. All dissimilar metals shall be separated by plastic separation sheets or bushings not less than 1/16 inch thick. The separation sheets shall be Nylatron-GS, plastic sheet conforming to Military Specification MIL-P-15035 or other suitable material for precluding galvanic corrosion.

## 3.1 WELDING

- D. Surfaces of parts to be welded shall be free from scale, paint, grease or other foreign matter. Welds shall be sufficient size and shape to develop the full strength of the parts connected by the welds. Welds shall transmit stress without permanent deformation or failure when the parts connected by the weld are subject to proof and service loading.
- E. Deficiencies revealed by inspection shall be repaired at Contractor's expense. Inspection reports and deficiency correction reports shall be submitted to the Owner.

## 3.2 PREPARATION/INSTALLATION

- A. Fabricate and install in accordance with the Aluminum Association Specifications for Aluminum Structures and American Welding Society Standards.
- B. Inspection of all field and shop fabrication welding shall be performed by an AWS CWI. CWI shall perform in process and final inspections and testing as required to certify that all work has been completed in accordance with these specifications and referenced codes. This shall include final inspection on 100% of complete welds.
- C. Field in process and final welding inspection reports shall be provided to the Owner.
- D. Where a vertical drop of more than 2'-6" exists, the railing system shall be designed as a guard compliant with the State Building Code and shall have no gaps in the railing systems greater than 4". This includes between platforms, ramps and/or gangways.
- E. Test assembly of components should be performed to the degree necessary to ensure satisfactory fit and operation of all components including hoist system.
- F. The Contractor shall supply layout and assembly plans as required for field assembly and installation. Components shall each be tagged with durable but removable identifying mark to indicate location and orientation in assembled system.
- G. Aluminum fabrications shall be supplied with all necessary fasteners, connectors and hardware to make a complete, secure and fully operable system.

## 3.3 DEFECTIVE WORK

- A. Any damaged portions of the aluminum shall be replaced as directed by the Owner at no additional cost to the Owner.
- B. Any improperly installed components shall be removed and replaced or corrected as directed by the Owner at no additional cost to the Owner.

4.1 METHOD OF MEASUREMENT

- C. Measurement for ALUMINUM GANGWAY shall be made by the Contract Unit Price of LUMP SUM, complete in-place, for the items indicated under the Payment Item portion of this Section.

4.2 METHOD OF PAYMENT

- A. Payment for ALUMINUM GANGWAY shall be by the Unit Price LUMP SUM and shall include all materials, labor, supervision, and fabrication for the proper installation of all gangways, ramps, platforms, railings, transitions and wear surfaces, miscellaneous aluminum items to provide an ADA compliant access system to the marina. Costs shall include all coordination and all activities required to comply with the Contract Documents.

4.3 PAYMENT ITEMS

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
35 51 20-1	ALUMINUM GANGWAY	LUMP SUM

\*\*\*END OF SECTION\*\*\*

**SECTION 35 59 33**  
**MARINE CLEATS**

**PART 1 GENERAL**

1.1 DESCRIPTION

- A. Work under this Section, without limiting the generality thereof, manufacturing or shop-fabricating metal elements, itemized under MATERIALS in this Section and installation of all materials, equipment, labor, transportation facilities, and all operations and adjustments required for the complete and operating installation as indicated on the Drawings, stipulated in the Specifications and as reasonably implied by either or both. This includes, but is not limited to the following:
  - 1. Cleats
  - 2. All other marine hardware not specified elsewhere
  - 3. Should drawings not agree within themselves or the specifications, the greater quantity, or superior quality of work or materials shall be included.

1.2 QUALITY ASSURANCE

- A. Except as noted elsewhere, work shall conform to the following codes and standards:
  - 1. American Society for Testing and Materials (ASTM).
  - 2. American Welding Society (AWS).
  - 3. American Institute of Steel Construction (AISC).
  - 4. The Commonwealth of Massachusetts, Department of Public Works "Standard Specifications for Highways and Bridges" (latest edition). (MHD)

1.3 SUBMITTALS

- A. Shop drawings for all items shall be submitted to the Engineer for approval before beginning fabrication.
- B. Certificate of compliance with applicable ASTM specifications for all galvanized items shall be submitted to the Engineer with all materials delivered to the fabricator or site.
- C. Manufacturer's literature, certificate of compliance with applicable ASTM, and specifications for all fasteners, expansion bolts, and other connection items identified within the contract drawings and/or recommended by manufacturer.
- D. List of all other hardware with quantities and material specifications.

1.4 PRODUCT HANDLING

- A. All materials shall be delivered, stored, and handled with care to prevent damage to any material or material coating. Material damaged or with damaged coating will be rejected and replaced at no additional cost to the Owner.

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Cleats shall be galvanized heavy duty cleats
- B. All bolts for steel connections shall conform to ASTM F3125, Grade 325 for Steel Bolts with manufacturer markings that indicate such unless otherwise noted.
- C. All steel items that are not otherwise coated under this section shall be hot dipped galvanized unless noted otherwise. Galvanizing shall be by the hot dip method according to ASTM Specifications A-123 and A-153.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Parts covered by this specification shall be installed in the work as shown on the drawings.
- B. No cutting or burning of steel shall be done to install fasteners without approval of the Engineer.
- C. All epoxy anchors shall be installed fully in accordance with manufacturer's recommendations including hole drilling, cleaning and anchor installation.
- D. Bollards shall be recessed into concrete and installed on grout bed. Anchor bolts recesses shall be filled with grout or as otherwise directed by manufacturers recommendations.

### **3.02 DEFECTIVE WORK**

- A. The following shall be grounds for rejection and replaced at no additional cost to the Authority:
  - 1. Any damaged parts.
  - 2. Any parts improperly installed in the work.
  - 3. Any items found not to have the proper coating.
  - 4. Otherwise not according to Contract Documents.

## **PART 4 MEASUREMENT AND PAYMENT**

### **4.01 METHOD OF MEASUREMENT**

- A. Measurement of MOORING CLEATS shall be made by the Unit Price LUMP SUM, complete in place.

### **4.02 METHOD OF PAYMENT**

- A. Payment for MOORING CLEATS shall be made by the Contract Unit Price LUMP SUM, complete in place. This price and payment shall constitute full compensation for all labor, equipment, materials, preparation, supervision, fixture, coating, anchor bolts, and bolt sealant (corrosion protection) for the satisfactory supply and installation of the Cleats and associated hardware, and any incidentals necessary to complete the work specified herein and as shown on the Contract Drawings.

4.03 PAYMENT ITEM

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
35 59 33-1	MOORING CLEATS	LS

\*\*\*END OF SECTION\*\*\*



## PREVAILING WAGE RATES



MAURA HEALEY  
Governor

KIM DRISCOLL  
Lt. Governor

THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT  
DEPARTMENT OF LABOR STANDARDS

Prevailing Wage Rates

As determined by the Director under the provisions of the  
Massachusetts General Laws, Chapter 149, Sections 26 to 27H

LAUREN JONES  
Secretary

MICHAEL FLANAGAN  
Director

**Awarding Authority:** Town of Chatham

**Contract Number:** **City/Town:** CHATHAM

**Description of Work:** The project generally consists of constructing a timber pier extension, timber and concrete pier, three concrete floating docks, and timber floating upweller floats, along with associated misc. work.

**Job Location:** 90 Bridge Street, Chatham MA 02633

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Information about Prevailing Wage Schedules for Awarding Authorities and Contractors

- The wage rates will remain in effect for the duration of the project, except in the case of multi-year public construction projects. For construction projects lasting longer than one year, awarding authorities must request an updated wage schedule no later than two weeks before the anniversary of the date the contract was executed by the awarding authority and the general contractor. For multi-year CM AT RISK projects, the awarding authority must request an annual update no later than two weeks before the anniversary date, determined as the earlier of: (a) the execution date of the GMP Amendment, or (b) the execution date of the first amendment to permit procurement of construction services. The updated wage schedule must be provided to all contractors, including general and sub-contractors, working on the construction project.
- This annual update requirement is generally not applicable to 27F "rental of equipment" contracts. For such contracts, the prevailing wage rates issued by DLS shall remain in effect for the duration of the contract term. However, if the prevailing wage rate sheet issued does not contain wage rates for each year covered by the contract term, the Awarding Authority must request updated rate sheets from DLS and provide them to the contractor to ensure the correct rates are being paid throughout the duration of the contract. Additionally, if an Awarding Authority exercises an option to renew or extend the contract term, they must request updated rate sheets from DLS and provide them to the contractor.
- This wage schedule applies only to the specific project referenced at the top of this page and uniquely identified by the "Wage Request Number" on all pages of this schedule.
- An Awarding Authority must request an updated wage schedule if it has not opened bids or selected a contractor within 90 days of the date of issuance of the wage schedule. For CM AT RISK projects (bid pursuant to G.L. c.149A), the earlier of: (a) the execution date of the GMP Amendment, or (b) the bid for the first construction scope of work must be within 90-days of the wage schedule issuance date.
- The wage schedule shall be incorporated in any advertisement or call for bids for the project as required by M.G.L. c. 149, § 27. The wage schedule shall be made a part of the contract awarded for the project. The wage schedule must be posted in a conspicuous place at the work site for the life of the project in accordance with M.G.L. c. 149 § 27. The wages listed on the wage schedule must be paid to employees performing construction work on the project whether they are employed by the prime contractor, a filed sub-bidder, or a sub-contractor.
- Apprentices working on the project are required to be registered with the Massachusetts Division of Apprentice Standards (DAS). Apprentices must keep their apprentice identification card on their persons during all work hours on the project. An apprentice registered with DAS may be paid the lower apprentice wage rate at the applicable step as provided on the prevailing wage schedule. **Any apprentice not registered with DAS regardless of whether they are registered with another federal, state, local, or private agency must be paid the journeyworker's rate.**
- Every contractor or subcontractor working on the construction project must submit weekly payroll reports and a Statement of Compliance directly to the awarding authority by mail or email and keep them on file for three years. Each weekly payroll report must contain: the employee's name, address, occupational classification, hours worked, and wages paid. Do not submit weekly payroll reports to DLS. For a sample payroll reporting form go to <http://www.mass.gov/dols/pw>.
- Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at (617) 626-6953.
- Contractors must obtain the wage schedules from awarding authorities. Failure of a contractor or subcontractor to pay the prevailing wage rates listed on the wage schedule to all employees who perform construction work on the project is a violation of the law and subjects the contractor or subcontractor to civil and criminal penalties.
- Employees not receiving the prevailing wage rate set forth on the wage schedule may file a complaint with the Fair Labor Division of the office of the Attorney General at (617) 727-3465.

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Construction</b>						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2025	\$39.95	\$15.57	\$20.17	\$0.00	\$75.69
	06/01/2025	\$40.95	\$15.57	\$20.17	\$0.00	\$76.69
	12/01/2025	\$40.95	\$15.57	\$21.78	\$0.00	\$78.30
	01/01/2026	\$40.95	\$16.17	\$21.78	\$0.00	\$78.90
	06/01/2026	\$41.95	\$16.17	\$21.78	\$0.00	\$79.90
	12/01/2026	\$41.95	\$16.17	\$23.52	\$0.00	\$81.64
	01/01/2027	\$41.95	\$16.77	\$23.52	\$0.00	\$82.24
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2025	\$40.02	\$15.57	\$20.17	\$0.00	\$75.76
	06/01/2025	\$41.02	\$15.57	\$20.17	\$0.00	\$76.76
	12/01/2025	\$41.02	\$15.57	\$21.78	\$0.00	\$78.37
	01/01/2026	\$41.02	\$16.17	\$21.78	\$0.00	\$78.97
	06/01/2026	\$42.02	\$16.17	\$21.78	\$0.00	\$79.97
	12/01/2026	\$42.02	\$16.17	\$23.52	\$0.00	\$81.71
	01/01/2027	\$42.02	\$16.77	\$23.52	\$0.00	\$82.31
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2025	\$40.14	\$15.57	\$20.17	\$0.00	\$75.88
	06/01/2025	\$41.14	\$15.57	\$20.17	\$0.00	\$76.88
	12/01/2025	\$41.14	\$15.57	\$21.78	\$0.00	\$78.49
	01/01/2026	\$41.14	\$16.17	\$21.78	\$0.00	\$79.09
	06/01/2026	\$42.14	\$16.17	\$21.78	\$0.00	\$80.09
	12/01/2026	\$42.14	\$16.17	\$23.52	\$0.00	\$81.83
	01/01/2027	\$42.14	\$16.77	\$23.52	\$0.00	\$82.43
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2024	\$117.16	\$10.08	\$24.29	\$0.00	\$151.53
For apprentice rates see "Apprentice- PILE DRIVER"						
AIR TRACK OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.61	\$9.65	\$17.70	\$0.00	\$67.96
	06/01/2025	\$42.00	\$9.65	\$17.70	\$0.00	\$69.35
	12/01/2025	\$43.38	\$9.65	\$17.70	\$0.00	\$70.73
	06/01/2026	\$44.82	\$9.65	\$17.70	\$0.00	\$72.17
	12/01/2026	\$46.26	\$9.65	\$17.70	\$0.00	\$73.61
	06/01/2027	\$47.71	\$9.65	\$17.70	\$0.00	\$75.06
	12/01/2027	\$49.16	\$9.65	\$17.70	\$0.00	\$76.51
	06/01/2028	\$50.66	\$9.65	\$17.70	\$0.00	\$78.01
	12/01/2028	\$52.16	\$9.65	\$17.70	\$0.00	\$79.51
For apprentice rates see "Apprentice- LABORER"						
AIR TRACK OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$40.61	\$9.65	\$17.80	\$0.00	\$68.06
	06/01/2025	\$42.00	\$9.65	\$17.80	\$0.00	\$69.45
	12/01/2025	\$43.38	\$9.65	\$17.80	\$0.00	\$70.83
	06/01/2026	\$44.82	\$9.65	\$17.80	\$0.00	\$72.27
	12/01/2026	\$46.26	\$9.65	\$17.80	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
ASBESTOS REMOVER - PIPE / MECH. EQUIPT. <i>HEAT &amp; FROST INSULATORS LOCAL 6 (BOSTON)</i>	12/01/2024	\$42.80	\$14.50	\$11.05	\$0.00	\$68.35
	06/01/2025	\$43.80	\$14.50	\$11.05	\$0.00	\$69.35
	12/01/2025	\$44.80	\$14.50	\$11.05	\$0.00	\$70.35

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ASPHALT RAKER <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.11	\$9.65	\$17.70	\$0.00	\$67.46
	06/01/2025	\$41.50	\$9.65	\$17.70	\$0.00	\$68.85
	12/01/2025	\$42.88	\$9.65	\$17.70	\$0.00	\$70.23
	06/01/2026	\$44.32	\$9.65	\$17.70	\$0.00	\$71.67
	12/01/2026	\$45.76	\$9.65	\$17.70	\$0.00	\$73.11
	06/01/2027	\$47.21	\$9.65	\$17.70	\$0.00	\$74.56
	12/01/2027	\$48.66	\$9.65	\$17.70	\$0.00	\$76.01
	06/01/2028	\$50.16	\$9.65	\$17.70	\$0.00	\$77.51
	12/01/2028	\$51.66	\$9.65	\$17.70	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						
ASPHALT RAKER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$40.11	\$9.65	\$17.80	\$0.00	\$67.56
	06/01/2025	\$41.50	\$9.65	\$17.80	\$0.00	\$68.95
	12/01/2025	\$42.88	\$9.65	\$17.80	\$0.00	\$70.33
	06/01/2026	\$44.32	\$9.65	\$17.80	\$0.00	\$71.77
	12/01/2026	\$45.76	\$9.65	\$17.80	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.11	\$9.65	\$17.70	\$0.00	\$67.46
	06/01/2025	\$41.50	\$9.65	\$17.70	\$0.00	\$68.85
	12/01/2025	\$42.88	\$9.65	\$17.70	\$0.00	\$70.23
	06/01/2026	\$44.32	\$9.65	\$17.70	\$0.00	\$71.67
	12/01/2026	\$45.76	\$9.65	\$17.70	\$0.00	\$73.11
	06/01/2027	\$47.21	\$9.65	\$17.70	\$0.00	\$74.56
	12/01/2027	\$48.66	\$9.65	\$17.70	\$0.00	\$76.01
	06/01/2028	\$50.16	\$9.65	\$17.70	\$0.00	\$77.51
	12/01/2028	\$51.66	\$9.65	\$17.70	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.61	\$9.65	\$17.70	\$0.00	\$67.96
	06/01/2025	\$42.00	\$9.65	\$17.70	\$0.00	\$69.35
	12/01/2025	\$43.38	\$9.65	\$17.70	\$0.00	\$70.73
	06/01/2026	\$44.82	\$9.65	\$17.70	\$0.00	\$72.17
	12/01/2026	\$46.26	\$9.65	\$17.70	\$0.00	\$73.61
	06/01/2027	\$47.71	\$9.65	\$17.70	\$0.00	\$75.06
	12/01/2027	\$49.16	\$9.65	\$17.70	\$0.00	\$76.51
	06/01/2028	\$50.66	\$9.65	\$17.70	\$0.00	\$78.01
	12/01/2028	\$52.16	\$9.65	\$17.70	\$0.00	\$79.51
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$40.61	\$9.65	\$17.80	\$0.00	\$68.06
	06/01/2025	\$42.00	\$9.65	\$17.80	\$0.00	\$69.45
	12/01/2025	\$43.38	\$9.65	\$17.80	\$0.00	\$70.83
	06/01/2026	\$44.82	\$9.65	\$17.80	\$0.00	\$72.27
	12/01/2026	\$46.26	\$9.65	\$17.80	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	01/01/2024	\$48.12	\$7.07	\$20.60	\$0.00	\$75.79

**Apprentice - BOILERMAKER - Local 29**

**Effective Date - 01/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$31.28	\$7.07	\$13.22	\$0.00	\$51.57
2	65	\$31.28	\$7.07	\$13.22	\$0.00	\$51.57
3	70	\$33.68	\$7.07	\$14.23	\$0.00	\$54.98
4	75	\$36.09	\$7.07	\$15.24	\$0.00	\$58.40
5	80	\$38.50	\$7.07	\$16.25	\$0.00	\$61.82
6	85	\$40.90	\$7.07	\$17.28	\$0.00	\$65.25
7	90	\$43.31	\$7.07	\$18.28	\$0.00	\$68.66
8	95	\$45.71	\$7.07	\$19.32	\$0.00	\$72.10

**Notes:**

**Apprentice to Journeyworker Ratio:1:4**

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING) <i>BRICKLAYERS LOCAL 3 (NEW BEDFORD)</i>	08/01/2024	\$64.50	\$11.49	\$23.59	\$0.00	\$99.58
	02/01/2025	\$65.80	\$11.49	\$23.59	\$0.00	\$100.88
	08/01/2025	\$67.95	\$11.49	\$23.59	\$0.00	\$103.03
	02/01/2026	\$69.30	\$11.49	\$23.59	\$0.00	\$104.38
	08/01/2026	\$71.50	\$11.49	\$23.59	\$0.00	\$106.58
	02/01/2027	\$72.90	\$11.49	\$23.59	\$0.00	\$107.98

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - BRICK/PLASTER/CEMENT MASON - Local 3 New Bedford**

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.25	\$11.49	\$23.59	\$0.00	\$67.33
2	60	\$38.70	\$11.49	\$23.59	\$0.00	\$73.78
3	70	\$45.15	\$11.49	\$23.59	\$0.00	\$80.23
4	80	\$51.60	\$11.49	\$23.59	\$0.00	\$86.68
5	90	\$58.05	\$11.49	\$23.59	\$0.00	\$93.13

**Effective Date - 02/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.90	\$11.49	\$23.59	\$0.00	\$67.98
2	60	\$39.48	\$11.49	\$23.59	\$0.00	\$74.56
3	70	\$46.06	\$11.49	\$23.59	\$0.00	\$81.14
4	80	\$52.64	\$11.49	\$23.59	\$0.00	\$87.72
5	90	\$59.22	\$11.49	\$23.59	\$0.00	\$94.30

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

<b>BULLDOZER/GRADER/SCRAPER</b>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
<i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>CAISSON &amp; UNDERPINNING BOTTOM MAN</b>	12/01/2024	\$48.10	\$9.65	\$18.22	\$0.00	\$75.97
<i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2025	\$49.60	\$9.65	\$18.22	\$0.00	\$77.47
	12/01/2025	\$51.10	\$9.65	\$18.22	\$0.00	\$78.97
	06/01/2026	\$52.65	\$9.65	\$18.22	\$0.00	\$80.52
	12/01/2026	\$54.15	\$9.65	\$18.22	\$0.00	\$82.02

For apprentice rates see "Apprentice- LABORER"

<b>CAISSON &amp; UNDERPINNING LABORER</b>	12/01/2024	\$46.95	\$9.65	\$18.22	\$0.00	\$74.82
<i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2025	\$48.45	\$9.65	\$18.22	\$0.00	\$76.32
	12/01/2025	\$49.95	\$9.65	\$18.22	\$0.00	\$77.82
	06/01/2026	\$51.50	\$9.65	\$18.22	\$0.00	\$79.37
	12/01/2026	\$53.00	\$9.65	\$18.22	\$0.00	\$80.87

For apprentice rates see "Apprentice- LABORER"

<b>CAISSON &amp; UNDERPINNING TOP MAN</b>	12/01/2024	\$47.28	\$9.65	\$18.22	\$0.00	\$75.15
<i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2025	\$48.78	\$9.65	\$18.22	\$0.00	\$76.65
	12/01/2025	\$50.28	\$9.65	\$18.22	\$0.00	\$78.15
	06/01/2026	\$51.83	\$9.65	\$18.22	\$0.00	\$79.70
	12/01/2026	\$53.33	\$9.65	\$18.22	\$0.00	\$81.20

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CARBIDE CORE DRILL OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.11	\$9.65	\$17.70	\$0.00	\$67.46
	06/01/2025	\$41.50	\$9.65	\$17.70	\$0.00	\$68.85
	12/01/2025	\$42.88	\$9.65	\$17.70	\$0.00	\$70.23
	06/01/2026	\$44.32	\$9.65	\$17.70	\$0.00	\$71.67
	12/01/2026	\$45.76	\$9.65	\$17.70	\$0.00	\$73.11
	06/01/2027	\$47.21	\$9.65	\$17.70	\$0.00	\$74.56
	12/01/2027	\$48.66	\$9.65	\$17.70	\$0.00	\$76.01
	06/01/2028	\$50.16	\$9.65	\$17.70	\$0.00	\$77.51
	12/01/2028	\$51.66	\$9.65	\$17.70	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

CARPENTER <i>CARPENTERS -ZONE 2 (Eastern Massachusetts)</i>	09/01/2024	\$48.37	\$9.83	\$19.97	\$0.00	\$78.17
	03/01/2025	\$49.62	\$9.83	\$19.97	\$0.00	\$79.42
	09/01/2025	\$50.87	\$9.83	\$19.97	\$0.00	\$80.67
	03/01/2026	\$52.12	\$9.83	\$19.97	\$0.00	\$81.92
	09/01/2026	\$53.37	\$9.83	\$19.97	\$0.00	\$83.17
	03/01/2027	\$54.62	\$9.83	\$19.97	\$0.00	\$84.42

**Apprentice - CARPENTER - Zone 2 Eastern MA**

**Effective Date - 09/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$21.77	\$9.83	\$1.73	\$0.00	\$33.33
2	45	\$21.77	\$9.83	\$1.73	\$0.00	\$33.33
3	55	\$26.60	\$9.83	\$3.40	\$0.00	\$39.83
4	55	\$26.60	\$9.83	\$3.40	\$0.00	\$39.83
5	70	\$33.86	\$9.83	\$16.51	\$0.00	\$60.20
6	70	\$33.86	\$9.83	\$16.51	\$0.00	\$60.20
7	80	\$38.70	\$9.83	\$18.24	\$0.00	\$66.77
8	80	\$38.70	\$9.83	\$18.24	\$0.00	\$66.77

**Effective Date - 03/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$22.33	\$9.83	\$1.73	\$0.00	\$33.89
2	45	\$22.33	\$9.83	\$1.73	\$0.00	\$33.89
3	55	\$27.29	\$9.83	\$3.40	\$0.00	\$40.52
4	55	\$27.29	\$9.83	\$3.40	\$0.00	\$40.52
5	70	\$34.73	\$9.83	\$16.51	\$0.00	\$61.07
6	70	\$34.73	\$9.83	\$16.51	\$0.00	\$61.07
7	80	\$39.70	\$9.83	\$18.24	\$0.00	\$67.77
8	80	\$39.70	\$9.83	\$18.24	\$0.00	\$67.77

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CARPENTER WOOD FRAME <i>CARPENTERS-ZONE 3 (Wood Frame)</i>	10/01/2024	\$26.65	\$7.02	\$4.80	\$0.00	\$38.47
	10/01/2025	\$27.75	\$7.02	\$4.80	\$0.00	\$39.57
	10/01/2026	\$28.85	\$7.02	\$4.80	\$0.00	\$40.67

All Aspects of New Wood Frame Work

**Apprentice - CARPENTER (Wood Frame) - Zone 3**

**Effective Date - 10/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$15.99	\$7.02	\$0.00	\$0.00	\$23.01
2	60	\$15.99	\$7.02	\$0.00	\$0.00	\$23.01
3	65	\$17.32	\$7.02	\$1.00	\$0.00	\$25.34
4	70	\$18.66	\$7.02	\$1.00	\$0.00	\$26.68
5	75	\$19.99	\$7.02	\$4.80	\$0.00	\$31.81
6	80	\$21.32	\$7.02	\$4.80	\$0.00	\$33.14
7	85	\$22.65	\$7.02	\$4.80	\$0.00	\$34.47
8	90	\$23.99	\$7.02	\$4.80	\$0.00	\$35.81

**Effective Date - 10/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$16.65	\$7.02	\$0.00	\$0.00	\$23.67
2	60	\$16.65	\$7.02	\$0.00	\$0.00	\$23.67
3	65	\$18.04	\$7.02	\$1.00	\$0.00	\$26.06
4	70	\$19.43	\$7.02	\$1.00	\$0.00	\$27.45
5	75	\$20.81	\$7.02	\$4.80	\$0.00	\$32.63
6	80	\$22.20	\$7.02	\$4.80	\$0.00	\$34.02
7	85	\$23.59	\$7.02	\$4.80	\$0.00	\$35.41
8	90	\$24.98	\$7.02	\$4.80	\$0.00	\$36.80

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

CEMENT MASONRY/PLASTERING <i>BRICKLAYERS LOCAL 3 (NEW BEDFORD)</i>	01/01/2024	\$49.33	\$13.00	\$23.57	\$1.30	\$87.20
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**Apprentice - CEMENT MASONRY/PLASTERING - Eastern Mass (New Bedford)**

**Effective Date - 01/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.67	\$13.00	\$15.93	\$0.00	\$53.60
2	60	\$29.60	\$13.00	\$18.57	\$1.30	\$62.47
3	65	\$32.06	\$13.00	\$19.57	\$1.30	\$65.93
4	70	\$34.53	\$13.00	\$20.57	\$1.30	\$69.40
5	75	\$37.00	\$13.00	\$21.57	\$1.30	\$72.87
6	80	\$39.46	\$13.00	\$22.57	\$1.30	\$76.33
7	90	\$44.40	\$13.00	\$23.57	\$1.30	\$82.27

**Notes:**  
Steps 3,4 are 500 hrs. All other steps are 1,000 hrs.

**Apprentice to Journeyworker Ratio:1:3**

<b>CHAIN SAW OPERATOR</b> <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.11	\$9.65	\$17.70	\$0.00	\$67.46
	06/01/2025	\$41.50	\$9.65	\$17.70	\$0.00	\$68.85
	12/01/2025	\$42.88	\$9.65	\$17.70	\$0.00	\$70.23
	06/01/2026	\$44.32	\$9.65	\$17.70	\$0.00	\$71.67
	12/01/2026	\$45.76	\$9.65	\$17.70	\$0.00	\$73.11
	06/01/2027	\$47.21	\$9.65	\$17.70	\$0.00	\$74.56
	12/01/2027	\$48.66	\$9.65	\$17.70	\$0.00	\$76.01
	06/01/2028	\$50.16	\$9.65	\$17.70	\$0.00	\$77.51
	12/01/2028	\$51.66	\$9.65	\$17.70	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

<b>CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES</b> <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$58.18	\$15.55	\$16.50	\$0.00	\$90.23
	06/01/2025	\$59.51	\$15.55	\$16.50	\$0.00	\$91.56
	12/01/2025	\$60.98	\$15.55	\$16.50	\$0.00	\$93.03
	06/01/2026	\$62.31	\$15.55	\$16.50	\$0.00	\$94.36
	12/01/2026	\$63.79	\$15.55	\$16.50	\$0.00	\$95.84

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>COMPRESSOR OPERATOR</b> <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$36.67	\$15.55	\$16.50	\$0.00	\$68.72
	06/01/2025	\$37.52	\$15.55	\$16.50	\$0.00	\$69.57
	12/01/2025	\$38.47	\$15.55	\$16.50	\$0.00	\$70.52
	06/01/2026	\$39.33	\$15.55	\$16.50	\$0.00	\$71.38
	12/01/2026	\$40.28	\$15.55	\$16.50	\$0.00	\$72.33

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>DELEADER (BRIDGE)</b> <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2025	\$58.46	\$9.95	\$23.95	\$0.00	\$92.36
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**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - PAINTER Local 35 - BRIDGES/TANKS**

**Effective Date - 01/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$29.23	\$9.95	\$0.00	\$0.00	\$39.18
2	55	\$32.15	\$9.95	\$6.66	\$0.00	\$48.76
3	60	\$35.08	\$9.95	\$7.26	\$0.00	\$52.29
4	65	\$38.00	\$9.95	\$7.87	\$0.00	\$55.82
5	70	\$40.92	\$9.95	\$20.32	\$0.00	\$71.19
6	75	\$43.85	\$9.95	\$20.93	\$0.00	\$74.73
7	80	\$46.77	\$9.95	\$21.53	\$0.00	\$78.25
8	90	\$52.61	\$9.95	\$22.74	\$0.00	\$85.30

**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

DEMO: ADZEMAN LABORERS - ZONE 2	12/02/2024	\$47.00	\$9.65	\$18.40	\$0.00	\$75.05
	06/02/2025	\$48.50	\$9.65	\$18.40	\$0.00	\$76.55
	12/01/2025	\$50.00	\$9.65	\$18.40	\$0.00	\$78.05
	06/01/2026	\$51.55	\$9.65	\$18.40	\$0.00	\$79.60
	12/07/2026	\$53.05	\$9.65	\$18.40	\$0.00	\$81.10
	06/07/2027	\$54.65	\$9.65	\$18.40	\$0.00	\$82.70
	12/06/2027	\$56.25	\$9.65	\$18.40	\$0.00	\$84.30
	06/05/2028	\$57.93	\$9.65	\$18.40	\$0.00	\$85.98
	12/04/2028	\$59.60	\$9.65	\$18.40	\$0.00	\$87.65

For apprentice rates see "Apprentice- LABORER"

DEMO: BACKHOE/LOADER/HAMMER OPERATOR LABORERS - ZONE 2	12/02/2024	\$48.00	\$9.65	\$18.40	\$0.00	\$76.05
	06/02/2025	\$49.50	\$9.65	\$18.40	\$0.00	\$77.55
	12/01/2025	\$51.00	\$9.65	\$18.40	\$0.00	\$79.05
	06/01/2026	\$52.55	\$9.65	\$18.40	\$0.00	\$80.60
	12/07/2026	\$54.05	\$9.65	\$18.40	\$0.00	\$82.10
	06/07/2027	\$55.65	\$9.65	\$18.40	\$0.00	\$83.70
	12/06/2027	\$57.25	\$9.65	\$18.40	\$0.00	\$85.30
	06/05/2028	\$58.93	\$9.65	\$18.40	\$0.00	\$86.98
	12/04/2028	\$60.60	\$9.65	\$18.40	\$0.00	\$88.65

For apprentice rates see "Apprentice- LABORER"

DEMO: BURNERS LABORERS - ZONE 2	12/02/2024	\$47.75	\$9.65	\$18.40	\$0.00	\$75.80
	06/02/2025	\$49.25	\$9.65	\$18.40	\$0.00	\$77.30
	12/01/2025	\$50.75	\$9.65	\$18.40	\$0.00	\$78.80
	06/01/2026	\$52.30	\$9.65	\$18.40	\$0.00	\$80.35
	12/07/2026	\$53.80	\$9.65	\$18.40	\$0.00	\$81.85
	06/07/2027	\$55.40	\$9.65	\$18.40	\$0.00	\$83.45
	12/06/2027	\$57.00	\$9.65	\$18.40	\$0.00	\$85.05
	06/05/2028	\$58.68	\$9.65	\$18.40	\$0.00	\$86.73
	12/04/2028	\$60.35	\$9.65	\$18.40	\$0.00	\$88.40

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER"						
DEMO: CONCRETE CUTTER/SAWYER LABORERS - ZONE 2	12/02/2024	\$48.00	\$9.65	\$18.40	\$0.00	\$76.05
	06/02/2025	\$49.50	\$9.65	\$18.40	\$0.00	\$77.55
	12/01/2025	\$51.00	\$9.65	\$18.40	\$0.00	\$79.05
	06/01/2026	\$52.55	\$9.65	\$18.40	\$0.00	\$80.60
	12/07/2026	\$54.05	\$9.65	\$18.40	\$0.00	\$82.10
	06/07/2027	\$55.65	\$9.65	\$18.40	\$0.00	\$83.70
	12/06/2027	\$57.25	\$9.65	\$18.40	\$0.00	\$85.30
	06/05/2028	\$58.93	\$9.65	\$18.40	\$0.00	\$86.98
	12/04/2028	\$60.60	\$9.65	\$18.40	\$0.00	\$88.65
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR LABORERS - ZONE 2	12/02/2024	\$47.75	\$9.65	\$18.40	\$0.00	\$75.80
	06/02/2025	\$49.25	\$9.65	\$18.40	\$0.00	\$77.30
	12/01/2025	\$50.75	\$9.65	\$18.40	\$0.00	\$78.80
	06/01/2026	\$52.30	\$9.65	\$18.40	\$0.00	\$80.35
	12/07/2026	\$53.80	\$9.65	\$18.40	\$0.00	\$81.85
	06/07/2027	\$55.40	\$9.65	\$18.40	\$0.00	\$83.45
	12/06/2027	\$57.00	\$9.65	\$18.40	\$0.00	\$85.05
	06/05/2028	\$58.68	\$9.65	\$18.40	\$0.00	\$86.73
	12/04/2028	\$60.35	\$9.65	\$18.40	\$0.00	\$88.40
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER LABORERS - ZONE 2	12/02/2024	\$47.00	\$9.65	\$18.40	\$0.00	\$75.05
	06/02/2025	\$48.50	\$9.65	\$18.40	\$0.00	\$76.55
	12/01/2025	\$50.00	\$9.65	\$18.40	\$0.00	\$78.05
	06/01/2026	\$51.55	\$9.65	\$18.40	\$0.00	\$79.60
	12/07/2026	\$53.05	\$9.65	\$18.40	\$0.00	\$81.10
	06/07/2027	\$54.65	\$9.65	\$18.40	\$0.00	\$82.70
	12/06/2027	\$56.25	\$9.65	\$18.40	\$0.00	\$84.30
	06/05/2028	\$57.93	\$9.65	\$18.40	\$0.00	\$85.98
	12/04/2028	\$59.60	\$9.65	\$18.40	\$0.00	\$87.65
For apprentice rates see "Apprentice- LABORER"						
DIRECTIONAL DRILL MACHINE OPERATOR OPERATING ENGINEERS LOCAL 4	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER PILE DRIVER LOCAL 56 (ZONE 2)	08/01/2024	\$78.11	\$10.08	\$24.29	\$0.00	\$112.48
as of 8-1-24, Apprentices with diving licenses begin at second year. % of Diver wage 70/80/90 2A \$69.83, 3A \$91.79,4A \$102.14 Total Rate						
DIVER TENDER PILE DRIVER LOCAL 56 (ZONE 2)	08/01/2024	\$51.97	\$10.08	\$24.29	\$0.00	\$86.34
as of 8-1-24, Apprentices with diving licenses begin at second year. % of Piledriver wage 70/80/90 2A \$54.20, 3A \$73.93,4A \$82.05 Total Rate						
DIVER TENDER (EFFLUENT) PILE DRIVER LOCAL 56 (ZONE 2)	08/01/2024	\$83.69	\$10.08	\$24.29	\$0.00	\$118.06
For apprentice rates see "Apprentice- PILE DRIVER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2024	\$117.16	\$10.08	\$24.29	\$0.00	\$151.53
For apprentice rates see "Apprentice- PILE DRIVER"						
DRAWBRIDGE OPERATOR (Construction) <i>DRAWBRIDGE - SEIU LOCAL 888</i>	07/01/2020	\$26.77	\$6.67	\$3.93	\$0.16	\$37.53
ELECTRICIAN <i>ELECTRICIANS LOCAL 223</i>	09/01/2024	\$50.02	\$12.00	\$17.72	\$0.00	\$79.74
	09/01/2025	\$52.25	\$12.25	\$18.61	\$0.00	\$83.11
	09/01/2026	\$54.72	\$12.50	\$19.56	\$0.00	\$86.78

**Apprentice - *ELECTRICIAN - Local 223***

**Effective Date - 09/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$20.01	\$12.00	\$0.60	\$0.00	\$32.61
2	45	\$22.51	\$12.00	\$0.68	\$0.00	\$35.19
3	50	\$25.01	\$12.00	\$0.75	\$0.00	\$37.76
4	55	\$27.51	\$12.00	\$0.85	\$0.00	\$40.36
5	60	\$30.01	\$12.00	\$0.95	\$0.00	\$42.96
6	65	\$32.51	\$12.00	\$1.05	\$0.00	\$45.56
7	70	\$35.01	\$12.00	\$1.15	\$0.00	\$48.16
8	75	\$37.52	\$12.00	\$1.25	\$0.00	\$50.77

**Effective Date - 09/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$20.90	\$12.25	\$0.63	\$0.00	\$33.78
2	45	\$23.51	\$12.25	\$0.71	\$0.00	\$36.47
3	50	\$26.13	\$12.25	\$0.78	\$0.00	\$39.16
4	55	\$28.74	\$12.25	\$0.86	\$0.00	\$41.85
5	60	\$31.35	\$12.25	\$0.94	\$0.00	\$44.54
6	65	\$33.96	\$12.25	\$1.02	\$0.00	\$47.23
7	70	\$36.58	\$12.25	\$1.10	\$0.00	\$49.93
8	75	\$39.19	\$12.25	\$1.18	\$0.00	\$52.62

**Notes:**

**Apprentice to Journeyworker Ratio:2:3\*\*\***

ELEVATOR CONSTRUCTOR <i>ELEVATOR CONSTRUCTORS LOCAL 4</i>	01/01/2022	\$65.62	\$16.03	\$20.21	\$0.00	\$101.86
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**Apprentice - ELEVATOR CONSTRUCTOR - Local 4**

**Effective Date - 01/01/2022**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.81	\$16.03	\$0.00	\$0.00	\$48.84
2	55	\$36.09	\$16.03	\$20.21	\$0.00	\$72.33
3	65	\$42.65	\$16.03	\$20.21	\$0.00	\$78.89
4	70	\$45.93	\$16.03	\$20.21	\$0.00	\$82.17
5	80	\$52.50	\$16.03	\$20.21	\$0.00	\$88.74

**Notes:**  
Steps 1-2 are 6 mos.; Steps 3-5 are 1 year

**Apprentice to Journeyworker Ratio:1:1**

ELEVATOR CONSTRUCTOR HELPER <i>ELEVATOR CONSTRUCTORS LOCAL 4</i>	01/01/2022	\$45.93	\$16.03	\$20.21	\$0.00	\$82.17
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For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

FENCE & GUARD RAIL ERECTOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$40.11	\$9.65	\$17.80	\$0.00	\$67.56
	06/01/2025	\$41.50	\$9.65	\$17.80	\$0.00	\$68.95
	12/01/2025	\$42.88	\$9.65	\$17.80	\$0.00	\$70.33
	06/01/2026	\$44.32	\$9.65	\$17.80	\$0.00	\$71.77
	12/01/2026	\$45.76	\$9.65	\$17.80	\$0.00	\$73.21

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2024	\$51.78	\$15.30	\$16.40	\$0.00	\$83.48
	05/01/2025	\$53.22	\$15.30	\$16.40	\$0.00	\$84.92
	11/01/2025	\$54.51	\$15.30	\$16.40	\$0.00	\$86.21
	05/01/2026	\$55.95	\$15.30	\$16.40	\$0.00	\$87.65
	11/01/2026	\$57.24	\$15.30	\$16.40	\$0.00	\$88.94
	05/01/2027	\$58.67	\$15.30	\$16.40	\$0.00	\$90.37

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2024	\$53.37	\$15.30	\$16.40	\$0.00	\$85.07
	05/01/2025	\$54.82	\$15.30	\$16.40	\$0.00	\$86.52
	11/01/2025	\$56.12	\$15.30	\$16.40	\$0.00	\$87.82
	05/01/2026	\$57.57	\$15.30	\$16.40	\$0.00	\$89.27
	11/01/2026	\$58.87	\$15.30	\$16.40	\$0.00	\$90.57
	05/01/2027	\$60.32	\$15.30	\$16.40	\$0.00	\$92.02

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2024	\$25.37	\$15.30	\$16.40	\$0.00	\$57.07
	05/01/2025	\$26.22	\$15.30	\$16.40	\$0.00	\$57.92
	11/01/2025	\$26.98	\$15.30	\$16.40	\$0.00	\$58.68
	05/01/2026	\$27.83	\$15.30	\$16.40	\$0.00	\$59.53
	11/01/2026	\$28.59	\$15.30	\$16.40	\$0.00	\$60.29
	05/01/2027	\$29.44	\$15.30	\$16.40	\$0.00	\$61.14

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 223</i>	09/01/2024	\$50.02	\$12.00	\$17.72	\$0.00	\$79.74
	09/01/2025	\$52.25	\$12.25	\$18.61	\$0.00	\$83.11
	09/01/2026	\$54.72	\$12.50	\$19.56	\$0.00	\$86.78

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIRE ALARM REPAIR / MAINTENANCE / COMMISSIONING <i>ELECTRICIANS</i>	09/01/2024	\$42.52	\$12.00	\$15.30	\$0.00	\$69.82
<i>LOCAL 223</i>	09/01/2025	\$44.41	\$12.25	\$16.09	\$0.00	\$72.75
	09/01/2026	\$46.51	\$12.50	\$16.93	\$0.00	\$75.94
For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"						
FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$45.96	\$15.55	\$16.50	\$0.00	\$78.01
	06/01/2025	\$47.02	\$15.55	\$16.50	\$0.00	\$79.07
	12/01/2025	\$48.19	\$15.55	\$16.50	\$0.00	\$80.24
	06/01/2026	\$49.25	\$15.55	\$16.50	\$0.00	\$81.30
	12/01/2026	\$50.43	\$15.55	\$16.50	\$0.00	\$82.48
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$27.01	\$9.65	\$17.80	\$0.00	\$54.46
	06/01/2025	\$28.09	\$9.65	\$17.80	\$0.00	\$55.54
	12/01/2025	\$28.09	\$9.65	\$17.80	\$0.00	\$55.54
	06/01/2026	\$29.21	\$9.65	\$17.80	\$0.00	\$56.66
	12/01/2026	\$29.21	\$9.65	\$17.80	\$0.00	\$56.66
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE II</i>	03/01/2024	\$49.47	\$8.83	\$20.27	\$0.00	\$78.57

**Apprentice - FLOORCOVERER - Local 2168 Zone II**

**Effective Date - 03/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.74	\$8.83	\$1.76	\$0.00	\$35.33
2	55	\$27.21	\$8.83	\$1.76	\$0.00	\$37.80
3	60	\$29.68	\$8.83	\$3.52	\$0.00	\$42.03
4	65	\$32.16	\$8.83	\$3.52	\$0.00	\$44.51
5	70	\$34.63	\$8.83	\$16.75	\$0.00	\$60.21
6	75	\$37.10	\$8.83	\$16.75	\$0.00	\$62.68
7	80	\$39.58	\$8.83	\$18.51	\$0.00	\$66.92
8	85	\$42.05	\$8.83	\$18.51	\$0.00	\$69.39

**Notes:** Steps are 750 hrs.  
% After 10/1/17; 45/45/55/55/70/70/80/80 (1500hr Steps)  
Step 1&2 \$32.63/ 3&4 \$39.28/ 5&6 \$59.86/ 7&8 \$66.52

**Apprentice to Journeyworker Ratio:1:1**

FORK LIFT/CHERRY PICKER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
GENERATOR/LIGHTING PLANT/HEATERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$36.67	\$15.55	\$16.50	\$0.00	\$68.72
	06/01/2025	\$37.52	\$15.55	\$16.50	\$0.00	\$69.57
	12/01/2025	\$38.47	\$15.55	\$16.50	\$0.00	\$70.52
	06/01/2026	\$39.33	\$15.55	\$16.50	\$0.00	\$71.38
	12/01/2026	\$40.28	\$15.55	\$16.50	\$0.00	\$72.33

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) <i>GLAZIERS LOCAL 1333</i>	06/01/2020	\$39.18	\$10.80	\$10.45	\$0.00	\$60.43
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**Apprentice - GLAZIER - Local 1333**

**Effective Date - 06/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.59	\$10.80	\$1.80	\$0.00	\$32.19
2	56	\$22.04	\$10.80	\$1.80	\$0.00	\$34.64
3	63	\$24.49	\$10.80	\$2.45	\$0.00	\$37.74
4	69	\$26.94	\$10.80	\$2.45	\$0.00	\$40.19
5	75	\$29.39	\$10.80	\$3.15	\$0.00	\$43.34
6	81	\$31.83	\$10.80	\$3.15	\$0.00	\$45.78
7	88	\$34.28	\$10.80	\$10.45	\$0.00	\$55.53
8	94	\$36.73	\$10.80	\$10.45	\$0.00	\$57.98

Notes:

**Apprentice to Journeyworker Ratio:1:3**

HOISTING ENGINEER/CRANES/GRADALLS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - OPERATING ENGINEERS - Local 4**

**Effective Date - 12/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$31.37	\$0.00	\$0.00	\$0.00	\$31.37
2	60	\$34.22	\$15.55	\$16.50	\$0.00	\$66.27
3	65	\$37.07	\$15.55	\$16.50	\$0.00	\$69.12
4	70	\$39.92	\$15.55	\$16.50	\$0.00	\$71.97
5	75	\$42.77	\$15.55	\$16.50	\$0.00	\$74.82
6	80	\$45.62	\$15.55	\$16.50	\$0.00	\$77.67
7	85	\$48.48	\$15.55	\$16.50	\$0.00	\$80.53
8	90	\$51.33	\$15.55	\$16.50	\$0.00	\$83.38

**Effective Date - 06/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$32.08	\$0.00	\$0.00	\$0.00	\$32.08
2	60	\$35.00	\$15.55	\$16.50	\$0.00	\$67.05
3	65	\$37.91	\$15.55	\$16.50	\$0.00	\$69.96
4	70	\$40.83	\$15.55	\$16.50	\$0.00	\$72.88
5	75	\$43.75	\$15.55	\$16.50	\$0.00	\$75.80
6	80	\$46.66	\$15.55	\$16.50	\$0.00	\$78.71
7	85	\$49.58	\$15.55	\$16.50	\$0.00	\$81.63
8	90	\$52.50	\$15.55	\$16.50	\$0.00	\$84.55

**Notes:**

**Apprentice to Journeyworker Ratio:1:6**

HVAC (DUCTWORK) SHEETMETAL WORKERS LOCAL 17 - B	10/01/2024	\$42.33	\$14.59	\$19.04	\$2.24	\$78.20
	04/01/2025	\$43.83	\$14.59	\$19.04	\$2.24	\$79.70
	10/01/2025	\$45.08	\$14.59	\$19.04	\$2.24	\$80.95
	04/01/2026	\$46.58	\$14.59	\$19.04	\$2.24	\$82.45

For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (ELECTRICAL CONTROLS) ELECTRICIANS LOCAL 223	09/01/2024	\$50.02	\$12.00	\$17.72	\$0.00	\$79.74
	09/01/2025	\$52.25	\$12.25	\$18.61	\$0.00	\$83.11
	09/01/2026	\$54.72	\$12.50	\$19.56	\$0.00	\$86.78

For apprentice rates see "Apprentice- ELECTRICIAN"

HVAC (TESTING AND BALANCING - AIR) SHEETMETAL WORKERS LOCAL 17 - B	10/01/2024	\$42.33	\$30.43	\$19.04	\$2.24	\$94.04
	04/01/2025	\$43.83	\$30.43	\$19.04	\$2.24	\$95.54
	10/01/2025	\$45.08	\$30.43	\$19.04	\$2.24	\$96.79
	04/01/2026	\$46.58	\$30.43	\$19.04	\$2.24	\$98.29

For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (TESTING AND BALANCING - WATER) PLUMBERS & PIPEFITTERS LOCAL 51	08/26/2024	\$54.74	\$10.15	\$19.95	\$0.00	\$84.84
	08/25/2025	\$57.49	\$10.15	\$19.95	\$0.00	\$87.59

For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"



Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HVAC MECHANIC <i>PLUMBERS &amp; PIPEFITTERS LOCAL 51</i>	08/26/2024	\$54.74	\$10.15	\$19.95	\$0.00	\$84.84
	08/25/2025	\$57.49	\$10.15	\$19.95	\$0.00	\$87.59
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HYDRAULIC DRILLS <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.61	\$9.65	\$17.70	\$0.00	\$67.96
	06/01/2025	\$42.00	\$9.65	\$17.70	\$0.00	\$69.35
	12/01/2025	\$43.38	\$9.65	\$17.70	\$0.00	\$70.73
	06/01/2026	\$44.82	\$9.65	\$17.70	\$0.00	\$72.17
	12/01/2026	\$46.26	\$9.65	\$17.70	\$0.00	\$73.61
	06/01/2027	\$47.71	\$9.65	\$17.70	\$0.00	\$75.06
	12/01/2027	\$49.16	\$9.65	\$17.70	\$0.00	\$76.51
	06/01/2028	\$50.66	\$9.65	\$17.70	\$0.00	\$78.01
For apprentice rates see "Apprentice- LABORER"						
HYDRAULIC DRILLS (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$40.61	\$9.65	\$17.80	\$0.00	\$68.06
	06/01/2025	\$42.00	\$9.65	\$17.80	\$0.00	\$69.45
	12/01/2025	\$43.38	\$9.65	\$17.80	\$0.00	\$70.83
	06/01/2026	\$44.82	\$9.65	\$17.80	\$0.00	\$72.27
	12/01/2026	\$46.26	\$9.65	\$17.80	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
INSULATOR (PIPES & TANKS) <i>HEAT &amp; FROST INSULATORS LOCAL 6 (BOSTON)</i>	09/01/2024	\$56.92	\$14.75	\$19.61	\$0.00	\$91.28
	09/01/2025	\$60.34	\$14.75	\$19.61	\$0.00	\$94.70
	09/01/2026	\$63.76	\$14.75	\$19.61	\$0.00	\$98.12

**Apprentice - ASBESTOS INSULATOR (Pipes & Tanks) - Local 6 Boston**

**Effective Date - 09/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.46	\$14.75	\$14.32	\$0.00	\$57.53
2	60	\$34.15	\$14.75	\$15.37	\$0.00	\$64.27
3	70	\$39.84	\$14.75	\$16.43	\$0.00	\$71.02
4	80	\$45.54	\$14.75	\$17.49	\$0.00	\$77.78

**Effective Date - 09/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$30.17	\$14.75	\$14.32	\$0.00	\$59.24
2	60	\$36.20	\$14.75	\$15.37	\$0.00	\$66.32
3	70	\$42.24	\$14.75	\$16.43	\$0.00	\$73.42
4	80	\$48.27	\$14.75	\$17.49	\$0.00	\$80.51

**Notes:**

Steps are 1 year

**Apprentice to Journeyworker Ratio:1:4**

IRONWORKER/WELDER <i>IRONWORKERS LOCAL 37</i>	03/16/2021	\$42.46	\$7.70	\$17.10	\$0.00	\$67.26
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**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - IRONWORKER - Local 37**

**Effective Date - 03/16/2021**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	70	\$29.72	\$7.70	\$17.10	\$0.00	\$54.52
2	75	\$31.85	\$7.70	\$17.10	\$0.00	\$56.65
3	80	\$33.97	\$7.70	\$17.10	\$0.00	\$58.77
4	85	\$36.09	\$7.70	\$17.10	\$0.00	\$60.89
5	90	\$38.21	\$7.70	\$17.10	\$0.00	\$63.01
6	95	\$40.34	\$7.70	\$17.10	\$0.00	\$65.14

**Notes:**

**Apprentice to Journeyworker Ratio:1:4**

JACKHAMMER & PAVING BREAKER OPERATOR LABORERS - ZONE 2	12/01/2024	\$40.11	\$9.65	\$17.70	\$0.00	\$67.46
	06/01/2025	\$41.50	\$9.65	\$17.70	\$0.00	\$68.85
	12/01/2025	\$42.88	\$9.65	\$17.70	\$0.00	\$70.23
	06/01/2026	\$44.32	\$9.65	\$17.70	\$0.00	\$71.67
	12/01/2026	\$45.76	\$9.65	\$17.70	\$0.00	\$73.11
	06/01/2027	\$47.21	\$9.65	\$17.70	\$0.00	\$74.56
	12/01/2027	\$48.66	\$9.65	\$17.70	\$0.00	\$76.01
	06/01/2028	\$50.16	\$9.65	\$17.70	\$0.00	\$77.51
	12/01/2028	\$51.66	\$9.65	\$17.70	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

LABORER LABORERS - ZONE 2	12/01/2024	\$39.86	\$9.65	\$17.70	\$0.00	\$67.21
	06/01/2025	\$41.25	\$9.65	\$17.70	\$0.00	\$68.60
	12/01/2025	\$42.63	\$9.65	\$17.70	\$0.00	\$69.98
	06/01/2026	\$44.07	\$9.65	\$17.70	\$0.00	\$71.42
	12/01/2026	\$45.51	\$9.65	\$17.70	\$0.00	\$72.86
	06/01/2027	\$46.96	\$9.65	\$17.70	\$0.00	\$74.31
	12/01/2027	\$48.41	\$9.65	\$17.70	\$0.00	\$75.76
	06/01/2028	\$49.91	\$9.65	\$17.70	\$0.00	\$77.26
	12/01/2028	\$51.41	\$9.65	\$17.70	\$0.00	\$78.76

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - LABORER - Zone 2**

**Effective Date - 12/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$23.92	\$9.65	\$17.70	\$0.00	\$51.27
2	70	\$27.90	\$9.65	\$17.70	\$0.00	\$55.25
3	80	\$31.89	\$9.65	\$17.70	\$0.00	\$59.24
4	90	\$35.87	\$9.65	\$17.70	\$0.00	\$63.22

**Effective Date - 06/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$24.75	\$9.65	\$17.70	\$0.00	\$52.10
2	70	\$28.88	\$9.65	\$17.70	\$0.00	\$56.23
3	80	\$33.00	\$9.65	\$17.70	\$0.00	\$60.35
4	90	\$37.13	\$9.65	\$17.70	\$0.00	\$64.48

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

LABORER (HEAVY & HIGHWAY)	12/01/2024	\$39.86	\$9.65	\$17.80	\$0.00	\$67.31
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	06/01/2025	\$41.25	\$9.65	\$17.80	\$0.00	\$68.70
	12/01/2025	\$42.63	\$9.65	\$17.80	\$0.00	\$70.08
	06/01/2026	\$44.07	\$9.65	\$17.80	\$0.00	\$71.52
	12/01/2026	\$45.51	\$9.65	\$17.80	\$0.00	\$72.96

**Apprentice - LABORER (Heavy & Highway) - Zone 2**

**Effective Date - 12/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$23.92	\$9.65	\$17.80	\$0.00	\$51.37
2	70	\$27.90	\$9.65	\$17.80	\$0.00	\$55.35
3	80	\$31.89	\$9.65	\$17.80	\$0.00	\$59.34
4	90	\$35.87	\$9.65	\$17.80	\$0.00	\$63.32

**Effective Date - 06/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$24.75	\$9.65	\$17.80	\$0.00	\$52.20
2	70	\$28.88	\$9.65	\$17.80	\$0.00	\$56.33
3	80	\$33.00	\$9.65	\$17.80	\$0.00	\$60.45
4	90	\$37.13	\$9.65	\$17.80	\$0.00	\$64.58

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: CARPENTER TENDER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.86	\$9.65	\$17.70	\$0.00	\$67.21
	06/01/2025	\$41.25	\$9.65	\$17.70	\$0.00	\$68.60
	12/01/2025	\$42.63	\$9.65	\$17.70	\$0.00	\$69.98
	06/01/2026	\$44.07	\$9.65	\$17.70	\$0.00	\$71.42
	12/01/2026	\$45.51	\$9.65	\$17.70	\$0.00	\$72.86
	06/01/2027	\$46.96	\$9.65	\$17.70	\$0.00	\$74.31
	12/01/2027	\$48.41	\$9.65	\$17.70	\$0.00	\$75.76
	06/01/2028	\$49.91	\$9.65	\$17.70	\$0.00	\$77.26
	12/01/2028	\$51.41	\$9.65	\$17.70	\$0.00	\$78.76
For apprentice rates see "Apprentice- LABORER"						
LABORER: CEMENT FINISHER TENDER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.86	\$9.65	\$17.70	\$0.00	\$67.21
	06/01/2025	\$41.25	\$9.65	\$17.70	\$0.00	\$68.60
	12/01/2025	\$42.63	\$9.65	\$17.70	\$0.00	\$69.98
	06/01/2026	\$44.07	\$9.65	\$17.70	\$0.00	\$71.42
	12/01/2026	\$45.51	\$9.65	\$17.70	\$0.00	\$72.86
	06/01/2027	\$46.96	\$9.65	\$17.70	\$0.00	\$74.31
	12/01/2027	\$48.41	\$9.65	\$17.70	\$0.00	\$75.76
	06/01/2028	\$49.91	\$9.65	\$17.70	\$0.00	\$77.26
	12/01/2028	\$51.41	\$9.65	\$17.70	\$0.00	\$78.76
For apprentice rates see "Apprentice- LABORER"						
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER <i>LABORERS - ZONE 2</i>	12/02/2024	\$39.95	\$9.65	\$17.76	\$0.00	\$67.36
	06/02/2025	\$41.34	\$9.65	\$17.76	\$0.00	\$68.75
	12/01/2025	\$42.72	\$9.65	\$17.76	\$0.00	\$70.13
	06/01/2026	\$44.16	\$9.65	\$17.76	\$0.00	\$71.57
	12/07/2026	\$45.60	\$9.65	\$17.76	\$0.00	\$73.01
	06/07/2027	\$47.05	\$9.65	\$17.76	\$0.00	\$74.46
	12/06/2027	\$48.50	\$9.65	\$17.76	\$0.00	\$75.91
	06/05/2028	\$50.00	\$9.65	\$17.76	\$0.00	\$77.41
	12/04/2028	\$51.50	\$9.65	\$17.76	\$0.00	\$78.91
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.11	\$9.65	\$17.70	\$0.00	\$67.46
	06/01/2025	\$41.50	\$9.65	\$17.70	\$0.00	\$68.85
	12/01/2025	\$42.88	\$9.65	\$17.70	\$0.00	\$70.23
	06/01/2026	\$44.32	\$9.65	\$17.70	\$0.00	\$71.67
	12/01/2026	\$45.76	\$9.65	\$17.70	\$0.00	\$73.11
	06/01/2027	\$47.21	\$9.65	\$17.70	\$0.00	\$74.56
	12/01/2027	\$48.66	\$9.65	\$17.70	\$0.00	\$76.01
	06/01/2028	\$50.16	\$9.65	\$17.70	\$0.00	\$77.51
	12/01/2028	\$51.66	\$9.65	\$17.70	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$40.11	\$9.65	\$17.80	\$0.00	\$67.56
	06/01/2025	\$41.50	\$9.65	\$17.80	\$0.00	\$68.95
	12/01/2025	\$42.88	\$9.65	\$17.80	\$0.00	\$70.33
	06/01/2026	\$44.32	\$9.65	\$17.80	\$0.00	\$71.77
	12/01/2026	\$45.76	\$9.65	\$17.80	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: MULTI-TRADE TENDER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.86	\$9.65	\$17.70	\$0.00	\$67.21
	06/01/2025	\$41.25	\$9.65	\$17.70	\$0.00	\$68.60
	12/01/2025	\$42.63	\$9.65	\$17.70	\$0.00	\$69.98
	06/01/2026	\$44.07	\$9.65	\$17.70	\$0.00	\$71.42
	12/01/2026	\$45.51	\$9.65	\$17.70	\$0.00	\$72.86
	06/01/2027	\$46.96	\$9.65	\$17.70	\$0.00	\$74.31
	12/01/2027	\$48.41	\$9.65	\$17.70	\$0.00	\$75.76
	06/01/2028	\$49.91	\$9.65	\$17.70	\$0.00	\$77.26
	12/01/2028	\$51.41	\$9.65	\$17.70	\$0.00	\$78.76
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.86	\$9.65	\$17.70	\$0.00	\$67.21
	06/01/2025	\$41.25	\$9.65	\$17.70	\$0.00	\$68.60
	12/01/2025	\$42.63	\$9.65	\$17.70	\$0.00	\$69.98
	06/01/2026	\$44.07	\$9.65	\$17.70	\$0.00	\$71.42
	12/01/2026	\$45.51	\$9.65	\$17.70	\$0.00	\$72.86
	06/01/2027	\$46.96	\$9.65	\$17.70	\$0.00	\$74.31
	12/01/2027	\$48.41	\$9.65	\$17.70	\$0.00	\$75.76
	06/01/2028	\$49.91	\$9.65	\$17.70	\$0.00	\$77.26
	12/01/2028	\$51.41	\$9.65	\$17.70	\$0.00	\$78.76
This classification applies to the removal of standing trees, and the trimming and removal of branches and limbs when related to public works construction or site clearance incidental to construction . For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.11	\$9.65	\$17.70	\$0.00	\$67.46
	06/01/2025	\$41.50	\$9.65	\$17.70	\$0.00	\$68.85
	12/01/2025	\$42.88	\$9.65	\$17.70	\$0.00	\$70.23
	06/01/2026	\$44.32	\$9.65	\$17.70	\$0.00	\$71.67
	12/01/2026	\$45.76	\$9.65	\$17.70	\$0.00	\$73.11
	06/01/2027	\$47.21	\$9.65	\$17.70	\$0.00	\$74.56
	12/01/2027	\$48.66	\$9.65	\$17.70	\$0.00	\$76.01
	06/01/2028	\$50.16	\$9.65	\$17.70	\$0.00	\$77.51
	12/01/2028	\$51.66	\$9.65	\$17.70	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$40.11	\$9.65	\$17.80	\$0.00	\$67.56
	06/01/2025	\$41.50	\$9.65	\$17.80	\$0.00	\$68.95
	12/01/2025	\$42.88	\$9.65	\$17.80	\$0.00	\$70.33
	06/01/2026	\$44.32	\$9.65	\$17.80	\$0.00	\$71.77
	12/01/2026	\$45.76	\$9.65	\$17.80	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	08/01/2024	\$49.32	\$11.49	\$21.62	\$0.00	\$82.43
	02/01/2025	\$50.36	\$11.49	\$21.62	\$0.00	\$83.47
	08/01/2025	\$52.08	\$11.49	\$21.62	\$0.00	\$85.19
	02/01/2026	\$53.16	\$11.49	\$21.62	\$0.00	\$86.27
	08/01/2026	\$54.92	\$11.49	\$21.62	\$0.00	\$88.03
	02/01/2027	\$56.04	\$11.49	\$21.62	\$0.00	\$89.15

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - MARBLE & TILE FINISHER - Local 3 Marble & Tile**

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.66	\$11.49	\$21.62	\$0.00	\$57.77
2	60	\$29.59	\$11.49	\$21.62	\$0.00	\$62.70
3	70	\$34.52	\$11.49	\$21.62	\$0.00	\$67.63
4	80	\$39.46	\$11.49	\$21.62	\$0.00	\$72.57
5	90	\$44.39	\$11.49	\$21.62	\$0.00	\$77.50

**Effective Date - 02/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.18	\$11.49	\$21.62	\$0.00	\$58.29
2	60	\$30.22	\$11.49	\$21.62	\$0.00	\$63.33
3	70	\$35.25	\$11.49	\$21.62	\$0.00	\$68.36
4	80	\$40.29	\$11.49	\$21.62	\$0.00	\$73.40
5	90	\$45.32	\$11.49	\$21.62	\$0.00	\$78.43

**Notes:**

**Apprentice to Journeyworker Ratio:1:3**

MARBLE MASONS, TILELAYERS & TERRAZZO MECH BRICKLAYERS LOCAL 3 - MARBLE & TILE	08/01/2024	\$64.52	\$11.49	\$23.56	\$0.00	\$99.57
	02/01/2025	\$65.82	\$11.49	\$23.56	\$0.00	\$100.87
	08/01/2025	\$67.97	\$11.49	\$23.56	\$0.00	\$103.02
	02/01/2026	\$69.32	\$11.49	\$23.56	\$0.00	\$104.37
	08/01/2026	\$71.52	\$11.49	\$23.56	\$0.00	\$106.57
	02/01/2027	\$72.92	\$11.49	\$23.56	\$0.00	\$107.97

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - MARBLE-TILE-TERRAZZO MECHANIC - Local 3 Marble & Tile**

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.26	\$11.49	\$23.56	\$0.00	\$67.31
2	60	\$38.71	\$11.49	\$23.56	\$0.00	\$73.76
3	70	\$45.16	\$11.49	\$23.56	\$0.00	\$80.21
4	80	\$51.62	\$11.49	\$23.56	\$0.00	\$86.67
5	90	\$58.07	\$11.49	\$23.56	\$0.00	\$93.12

**Effective Date - 02/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.91	\$11.49	\$23.56	\$0.00	\$67.96
2	60	\$39.49	\$11.49	\$23.56	\$0.00	\$74.54
3	70	\$46.07	\$11.49	\$23.56	\$0.00	\$81.12
4	80	\$52.66	\$11.49	\$23.56	\$0.00	\$87.71
5	90	\$59.24	\$11.49	\$23.56	\$0.00	\$94.29

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

<b>MECH. SWEEPER OPERATOR (ON CONST. SITES)</b>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
<i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>MECHANICS MAINTENANCE</b>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
<i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>MILLWRIGHT (Zone 2)</b>	01/01/2024	\$42.76	\$10.08	\$21.47	\$0.00	\$74.31
<i>MILLWRIGHTS LOCAL 1121 - Zone 2</i>	01/06/2025	\$45.09	\$10.08	\$21.47	\$0.00	\$76.64
	01/05/2026	\$47.42	\$10.08	\$21.47	\$0.00	\$78.97

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - MILLWRIGHT - Local 1121 Zone 2**

**Effective Date - 01/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$23.52	\$10.08	\$5.50	\$0.00	\$39.10
2	65	\$27.79	\$10.08	\$6.50	\$0.00	\$44.37
3	75	\$32.07	\$10.08	\$18.97	\$0.00	\$61.12
4	85	\$36.35	\$10.08	\$19.97	\$0.00	\$66.40

**Effective Date - 01/06/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$24.80	\$10.08	\$5.50	\$0.00	\$40.38
2	65	\$29.31	\$10.08	\$6.50	\$0.00	\$45.89
3	75	\$33.82	\$10.08	\$18.97	\$0.00	\$62.87
4	85	\$38.33	\$10.08	\$19.97	\$0.00	\$68.38

**Notes:** Step 1&2 Appr. indentured after 1/6/2020 receive no pension, but do receive annuity. (Step 1 \$5.72, Step 2 \$6.66)  
Steps are 2,000 hours

**Apprentice to Journeyworker Ratio:1:4**

<b>MORTAR MIXER</b> <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.11	\$9.65	\$17.70	\$0.00	\$67.46
	06/01/2025	\$41.50	\$9.65	\$17.70	\$0.00	\$68.85
	12/01/2025	\$42.88	\$9.65	\$17.70	\$0.00	\$70.23
	06/01/2026	\$44.32	\$9.65	\$17.70	\$0.00	\$71.67
	12/01/2026	\$45.76	\$9.65	\$17.70	\$0.00	\$73.11
	06/01/2027	\$47.21	\$9.65	\$17.70	\$0.00	\$74.56
	12/01/2027	\$48.66	\$9.65	\$17.70	\$0.00	\$76.01
	06/01/2028	\$50.16	\$9.65	\$17.70	\$0.00	\$77.51
	12/01/2028	\$51.66	\$9.65	\$17.70	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

<b>OILER (OTHER THAN TRUCK CRANES,GRADALLS)</b> <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$25.37	\$15.30	\$16.40	\$0.00	\$57.07
	06/01/2025	\$25.97	\$15.30	\$16.40	\$0.00	\$57.67
	12/01/2025	\$26.63	\$15.30	\$16.40	\$0.00	\$58.33
	06/01/2026	\$27.22	\$15.30	\$16.40	\$0.00	\$58.92
	12/01/2026	\$27.89	\$15.30	\$16.40	\$0.00	\$59.59

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>OILER (TRUCK CRANES, GRADALLS)</b> <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$31.08	\$15.30	\$16.40	\$0.00	\$62.78
	06/01/2025	\$31.80	\$15.30	\$16.40	\$0.00	\$63.50
	12/01/2025	\$32.60	\$15.30	\$16.40	\$0.00	\$64.30
	06/01/2026	\$33.32	\$15.30	\$16.40	\$0.00	\$65.02
	12/01/2026	\$34.12	\$15.30	\$16.40	\$0.00	\$65.82

For apprentice rates see "Apprentice- OPERATING ENGINEERS"



Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
OTHER POWER DRIVEN EQUIPMENT - CLASS II <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

PAINTER (BRIDGES/TANKS) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2025	\$58.46	\$9.95	\$23.95	\$0.00	\$92.36
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**Apprentice - PAINTER Local 35 - BRIDGES/TANKS**

**Effective Date - 01/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$29.23	\$9.95	\$0.00	\$0.00	\$39.18
2	55	\$32.15	\$9.95	\$6.66	\$0.00	\$48.76
3	60	\$35.08	\$9.95	\$7.26	\$0.00	\$52.29
4	65	\$38.00	\$9.95	\$7.87	\$0.00	\$55.82
5	70	\$40.92	\$9.95	\$20.32	\$0.00	\$71.19
6	75	\$43.85	\$9.95	\$20.93	\$0.00	\$74.73
7	80	\$46.77	\$9.95	\$21.53	\$0.00	\$78.25
8	90	\$52.61	\$9.95	\$22.74	\$0.00	\$85.30

**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

PAINTER (SPRAY OR SANDBLAST, NEW) *	01/01/2025	\$49.36	\$9.95	\$23.95	\$0.00	\$83.26
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\* If 30% or more of surfaces to be painted are new construction,  
NEW paint rate shall be used.*PAINTERS LOCAL 35 - ZONE 2*

**Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - New**

**Effective Date - 01/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.68	\$9.95	\$0.00	\$0.00	\$34.63
2	55	\$27.15	\$9.95	\$6.66	\$0.00	\$43.76
3	60	\$29.62	\$9.95	\$7.26	\$0.00	\$46.83
4	65	\$32.08	\$9.95	\$7.87	\$0.00	\$49.90
5	70	\$34.55	\$9.95	\$20.32	\$0.00	\$64.82
6	75	\$37.02	\$9.95	\$20.93	\$0.00	\$67.90
7	80	\$39.49	\$9.95	\$21.53	\$0.00	\$70.97
8	90	\$44.42	\$9.95	\$22.74	\$0.00	\$77.11

**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Painter (Spray or Sandblast, Repaint) <i>Painters Local 35 - Zone 2</i>	01/01/2025	\$47.42	\$9.95	\$23.95	\$0.00	\$81.32

**Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - Repaint**

**Effective Date - 01/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.71	\$9.95	\$0.00	\$0.00	\$33.66
2	55	\$26.08	\$9.95	\$6.66	\$0.00	\$42.69
3	60	\$28.45	\$9.95	\$7.26	\$0.00	\$45.66
4	65	\$30.82	\$9.95	\$7.87	\$0.00	\$48.64
5	70	\$33.19	\$9.95	\$20.32	\$0.00	\$63.46
6	75	\$35.57	\$9.95	\$20.93	\$0.00	\$66.45
7	80	\$37.94	\$9.95	\$21.53	\$0.00	\$69.42
8	90	\$42.68	\$9.95	\$22.74	\$0.00	\$75.37

**Notes:**  
Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

Painter / Taper (Brush, New) * <i>Painters Local 35 - Zone 2</i>	01/01/2025	\$47.96	\$9.95	\$23.95	\$0.00	\$81.86
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\* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used.

**Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW**

**Effective Date - 01/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.98	\$9.95	\$0.00	\$0.00	\$33.93
2	55	\$26.38	\$9.95	\$6.66	\$0.00	\$42.99
3	60	\$28.78	\$9.95	\$7.26	\$0.00	\$45.99
4	65	\$31.17	\$9.95	\$7.87	\$0.00	\$48.99
5	70	\$33.57	\$9.95	\$20.32	\$0.00	\$63.84
6	75	\$35.97	\$9.95	\$20.93	\$0.00	\$66.85
7	80	\$38.37	\$9.95	\$21.53	\$0.00	\$69.85
8	90	\$43.16	\$9.95	\$22.74	\$0.00	\$75.85

**Notes:**  
Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

Painter / Taper (Brush, Repaint) <i>Painters Local 35 - Zone 2</i>	01/01/2025	\$46.02	\$9.95	\$23.95	\$0.00	\$79.92
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**Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT**

**Effective Date - 01/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.01	\$9.95	\$0.00	\$0.00	\$32.96
2	55	\$25.31	\$9.95	\$6.66	\$0.00	\$41.92
3	60	\$27.61	\$9.95	\$7.26	\$0.00	\$44.82
4	65	\$29.91	\$9.95	\$7.87	\$0.00	\$47.73
5	70	\$32.21	\$9.95	\$20.32	\$0.00	\$62.48
6	75	\$34.52	\$9.95	\$20.93	\$0.00	\$65.40
7	80	\$36.82	\$9.95	\$21.53	\$0.00	\$68.30
8	90	\$41.42	\$9.95	\$22.74	\$0.00	\$74.11

**Notes:**  
Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

PAINTER TRAFFIC MARKINGS (HEAVY/HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$39.86	\$9.65	\$17.80	\$0.00	\$67.31
	06/01/2025	\$41.25	\$9.65	\$17.80	\$0.00	\$68.70
	12/01/2025	\$42.63	\$9.65	\$17.80	\$0.00	\$70.08
	06/01/2026	\$44.07	\$9.65	\$17.80	\$0.00	\$71.52
	12/01/2026	\$45.51	\$9.65	\$17.80	\$0.00	\$72.96

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)

PANEL & PICKUP TRUCKS DRIVER <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2025	\$39.78	\$15.57	\$20.17	\$0.00	\$75.52
	06/01/2025	\$40.78	\$15.57	\$20.17	\$0.00	\$76.52
	12/01/2025	\$40.78	\$15.57	\$21.78	\$0.00	\$78.13
	01/01/2026	\$40.78	\$16.17	\$21.78	\$0.00	\$78.73
	06/01/2026	\$41.78	\$16.17	\$21.78	\$0.00	\$79.73
	12/01/2026	\$41.78	\$16.17	\$23.52	\$0.00	\$81.47
	01/01/2027	\$41.78	\$16.77	\$23.52	\$0.00	\$82.07

PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK) <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2024	\$51.97	\$10.08	\$24.29	\$0.00	\$86.34
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For apprentice rates see "Apprentice- PILE DRIVER"

PILE DRIVER <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2024	\$51.97	\$10.08	\$24.29	\$0.00	\$86.34
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**Apprentice - PILE DRIVER - Local 56 Zone 2**

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$23.39	\$10.08	\$2.53	\$0.00	\$36.00
2	55	\$28.58	\$10.08	\$5.07	\$0.00	\$43.73
3	70	\$36.38	\$10.08	\$19.22	\$0.00	\$65.68
4	80	\$41.58	\$10.08	\$21.76	\$0.00	\$73.42

**Notes:**  
 % Indentured BEFORE 8/1/2020, 50/60/70/75/80/80/90/90  
 Step 1 \$60.36/2 \$65.75/3 \$70.75/4 \$73.35/5&6 \$75.95/7&8 81.14

**Apprentice to Journeyworker Ratio:1:5**

PIPELAYER <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.11	\$9.65	\$17.70	\$0.00	\$67.46
	06/01/2025	\$41.50	\$9.65	\$17.70	\$0.00	\$68.85
	12/01/2025	\$42.88	\$9.65	\$17.70	\$0.00	\$70.23
	06/01/2026	\$44.32	\$9.65	\$17.70	\$0.00	\$71.67
	12/01/2026	\$45.76	\$9.65	\$17.70	\$0.00	\$73.11
	06/01/2027	\$47.21	\$9.65	\$17.70	\$0.00	\$74.56
	12/01/2027	\$48.66	\$9.65	\$17.70	\$0.00	\$76.01
	06/01/2028	\$50.16	\$9.65	\$17.70	\$0.00	\$77.51
	12/01/2028	\$51.66	\$9.65	\$17.70	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

PIPELAYER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$40.11	\$9.65	\$17.80	\$0.00	\$67.56
	06/01/2025	\$41.50	\$9.65	\$17.80	\$0.00	\$68.95
	12/01/2025	\$42.88	\$9.65	\$17.80	\$0.00	\$70.33
	06/01/2026	\$44.32	\$9.65	\$17.80	\$0.00	\$71.77
	12/01/2026	\$45.76	\$9.65	\$17.80	\$0.00	\$73.21

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

PLUMBER & PIPEFITTER <i>PLUMBERS &amp; PIPEFITTERS LOCAL 51</i>	08/26/2024	\$54.74	\$10.15	\$19.95	\$0.00	\$84.84
	08/25/2025	\$57.49	\$10.15	\$19.95	\$0.00	\$87.59

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - PLUMBER/PIPEFITTER - Local 51**

**Effective Date - 08/26/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$21.90	\$10.15	\$2.50	\$0.00	\$34.55
2	50	\$27.37	\$10.15	\$2.50	\$0.00	\$40.02
3	60	\$32.84	\$10.15	\$8.80	\$0.00	\$51.79
4	70	\$38.32	\$10.15	\$14.08	\$0.00	\$62.55
5	80	\$43.79	\$10.15	\$17.60	\$0.00	\$71.54

**Effective Date - 08/25/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$23.00	\$10.15	\$2.50	\$0.00	\$35.65
2	50	\$28.75	\$10.15	\$2.50	\$0.00	\$41.40
3	60	\$34.49	\$10.15	\$8.80	\$0.00	\$53.44
4	70	\$40.24	\$10.15	\$14.08	\$0.00	\$64.47
5	80	\$45.99	\$10.15	\$17.60	\$0.00	\$73.74

**Notes:**  
Steps 2000hrs. Prior 9/1/05; 40/40/45/50/55/60/65/75/80/85

**Apprentice to Journeyworker Ratio:1:3**

PNEUMATIC CONTROLS (TEMP.) <i>PLUMBERS &amp; PIPEFITTERS LOCAL 51</i>	08/26/2024	\$54.74	\$10.15	\$19.95	\$0.00	\$84.84
	08/25/2025	\$57.49	\$10.15	\$19.95	\$0.00	\$87.59

For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

PNEUMATIC DRILL/TOOL OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.61	\$9.65	\$17.70	\$0.00	\$67.96
	06/01/2025	\$42.00	\$9.65	\$17.70	\$0.00	\$69.35
	12/01/2025	\$43.38	\$9.65	\$17.70	\$0.00	\$70.73
	06/01/2026	\$44.82	\$9.65	\$17.70	\$0.00	\$72.17
	12/01/2026	\$46.26	\$9.65	\$17.70	\$0.00	\$73.61
	06/01/2027	\$47.71	\$9.65	\$17.70	\$0.00	\$75.06
	12/01/2027	\$49.16	\$9.65	\$17.70	\$0.00	\$76.51
	06/01/2028	\$50.66	\$9.65	\$17.70	\$0.00	\$78.01
	12/01/2028	\$52.16	\$9.65	\$17.70	\$0.00	\$79.51

For apprentice rates see "Apprentice- LABORER"

PNEUMATIC DRILL/TOOL OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$40.11	\$9.65	\$17.80	\$0.00	\$67.56
	06/01/2025	\$41.50	\$9.65	\$17.80	\$0.00	\$68.95
	12/01/2025	\$42.88	\$9.65	\$17.80	\$0.00	\$70.33
	06/01/2026	\$44.32	\$9.65	\$17.80	\$0.00	\$71.77
	12/01/2026	\$45.76	\$9.65	\$17.80	\$0.00	\$73.21

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
POWDERMAN & BLASTER <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.86	\$9.65	\$17.70	\$0.00	\$68.21
	06/01/2025	\$42.25	\$9.65	\$17.70	\$0.00	\$69.60
	12/01/2025	\$43.63	\$9.65	\$17.70	\$0.00	\$70.98
	06/01/2026	\$45.07	\$9.65	\$17.70	\$0.00	\$72.42
	12/01/2026	\$46.51	\$9.65	\$17.70	\$0.00	\$73.86
	06/01/2027	\$47.96	\$9.65	\$17.70	\$0.00	\$75.31
	12/01/2027	\$49.41	\$9.65	\$17.70	\$0.00	\$76.76
	06/01/2028	\$50.91	\$9.65	\$17.70	\$0.00	\$78.26
	12/01/2028	\$52.41	\$9.65	\$17.70	\$0.00	\$79.76
For apprentice rates see "Apprentice- LABORER"						
POWDERMAN & BLASTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$40.86	\$9.40	\$17.55	\$0.00	\$67.81
	06/01/2025	\$42.25	\$9.40	\$17.55	\$0.00	\$69.20
	12/01/2025	\$43.63	\$9.40	\$17.55	\$0.00	\$70.58
	06/01/2026	\$45.07	\$9.40	\$17.55	\$0.00	\$72.02
	12/01/2026	\$46.51	\$9.40	\$17.55	\$0.00	\$73.46
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$36.67	\$15.55	\$16.50	\$0.00	\$68.72
	06/01/2025	\$37.52	\$15.55	\$16.50	\$0.00	\$69.57
	12/01/2025	\$38.47	\$15.55	\$16.50	\$0.00	\$70.52
	06/01/2026	\$39.33	\$15.55	\$16.50	\$0.00	\$71.38
	12/01/2026	\$40.28	\$15.55	\$16.50	\$0.00	\$72.33
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY-MIX CONCRETE DRIVER <i>TEAMSTERS 653 - Southeastern Concrete (Weymouth)</i>	08/01/2023	\$25.00	\$13.91	\$6.90	\$0.00	\$45.81
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
RIDE-ON MOTORIZED BUGGY OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.11	\$9.65	\$17.70	\$0.00	\$67.46
	06/01/2025	\$41.50	\$9.65	\$17.70	\$0.00	\$68.85
	12/01/2025	\$42.88	\$9.65	\$17.70	\$0.00	\$70.23
	06/01/2026	\$44.32	\$9.65	\$17.70	\$0.00	\$71.67
	12/01/2026	\$45.76	\$9.65	\$17.70	\$0.00	\$73.11
	06/01/2027	\$47.21	\$9.65	\$17.70	\$0.00	\$74.56
	12/01/2027	\$48.66	\$9.65	\$17.70	\$0.00	\$76.01
	06/01/2028	\$50.16	\$9.65	\$17.70	\$0.00	\$77.51
	12/01/2028	\$51.66	\$9.65	\$17.70	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						

ROLLER/SPREADER/MULCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

ROOFER (Inc.Roofing Waterproofing &Roofing Damproofg) <i>ROOFERS LOCAL 33</i>	08/01/2024	\$51.03	\$13.03	\$21.70	\$0.00	\$85.76
	02/01/2025	\$52.28	\$13.03	\$21.70	\$0.00	\$87.01
	08/01/2025	\$53.78	\$13.03	\$21.70	\$0.00	\$88.51
	02/01/2026	\$55.03	\$13.03	\$21.70	\$0.00	\$89.76

**Apprentice - ROOFER - Local 33**

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.52	\$13.03	\$6.52	\$0.00	\$45.07
2	60	\$30.62	\$13.03	\$21.70	\$0.00	\$65.35
3	65	\$33.17	\$13.03	\$21.70	\$0.00	\$67.90
4	75	\$38.27	\$13.03	\$21.70	\$0.00	\$73.00
5	85	\$43.38	\$13.03	\$21.70	\$0.00	\$78.11

**Effective Date - 02/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.14	\$13.03	\$6.52	\$0.00	\$45.69
2	60	\$31.37	\$13.03	\$21.70	\$0.00	\$66.10
3	65	\$33.98	\$13.03	\$21.70	\$0.00	\$68.71
4	75	\$39.21	\$13.03	\$21.70	\$0.00	\$73.94
5	85	\$44.44	\$13.03	\$21.70	\$0.00	\$79.17

**Notes:** \*\* 1:5, 2:6-10, the 1:10; Reroofing: 1:4, then 1:1  
 Step 1 is 2000 hrs.; Steps 2-5 are 1000 hrs.  
 (Hot Pitch Mechanics' receive \$1.00 hr. above ROOFER)

**Apprentice to Journeyworker Ratio:\*\***

ROOFER SLATE / TILE / PRECAST CONCRETE <i>ROOFERS LOCAL 33</i>	08/01/2024	\$51.28	\$13.03	\$21.70	\$0.00	\$86.01
	02/01/2025	\$52.53	\$13.03	\$21.70	\$0.00	\$87.26
	08/01/2025	\$54.03	\$13.03	\$21.70	\$0.00	\$88.76
	02/01/2026	\$55.28	\$13.03	\$21.70	\$0.00	\$90.01

**Classification**

For apprentice rates see "Apprentice- ROOFER"

	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
SHEETMETAL WORKER	10/01/2024	\$42.33	\$14.59	\$19.04	\$2.24	\$78.20
<i>SHEETMETAL WORKERS LOCAL 17 - B</i>	04/01/2025	\$43.83	\$14.59	\$19.04	\$2.24	\$79.70
	10/01/2025	\$45.08	\$14.59	\$19.04	\$2.24	\$80.95
	04/01/2026	\$46.58	\$14.59	\$19.04	\$2.24	\$82.45

**Apprentice - SHEET METAL WORKER - Local 17-B**

**Effective Date - 10/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$16.93	\$14.59	\$4.18	\$1.09	\$36.79
2	45	\$19.05	\$14.59	\$4.71	\$1.17	\$39.52
3	50	\$21.17	\$14.59	\$11.84	\$1.45	\$49.05
4	55	\$23.28	\$14.59	\$11.84	\$1.52	\$51.23
5	60	\$25.40	\$14.59	\$15.53	\$1.64	\$57.16
6	65	\$27.51	\$14.59	\$15.84	\$1.71	\$59.65
7	70	\$29.63	\$14.59	\$16.15	\$1.78	\$62.15
8	75	\$31.75	\$14.59	\$16.45	\$1.86	\$64.65
9	80	\$33.86	\$14.59	\$16.76	\$1.93	\$67.14
10	85	\$35.98	\$14.59	\$17.07	\$2.00	\$69.64

**Effective Date - 04/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.53	\$14.59	\$4.18	\$1.09	\$37.39
2	45	\$19.72	\$14.59	\$4.71	\$1.17	\$40.19
3	50	\$21.92	\$14.59	\$11.84	\$1.45	\$49.80
4	55	\$24.11	\$14.59	\$11.84	\$1.52	\$52.06
5	60	\$26.30	\$14.59	\$15.53	\$1.64	\$58.06
6	65	\$28.49	\$14.59	\$15.84	\$1.71	\$60.63
7	70	\$30.68	\$14.59	\$16.15	\$1.78	\$63.20
8	75	\$32.87	\$14.59	\$16.45	\$1.86	\$65.77
9	80	\$35.06	\$14.59	\$16.76	\$1.93	\$68.34
10	85	\$37.26	\$14.59	\$17.07	\$2.00	\$70.92

**Notes:**

**Apprentice to Journeyworker Ratio:1:3**

SPECIALIZED EARTH MOVING EQUIP < 35 TONS	01/01/2025	\$40.24	\$15.57	\$20.17	\$0.00	\$75.98
<i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	06/01/2025	\$41.24	\$15.57	\$20.17	\$0.00	\$76.98
	12/01/2025	\$41.24	\$15.57	\$21.78	\$0.00	\$78.59
	01/01/2026	\$41.24	\$16.17	\$21.78	\$0.00	\$79.19
	06/01/2026	\$42.24	\$16.17	\$21.78	\$0.00	\$80.19
	12/01/2026	\$42.24	\$16.17	\$23.52	\$0.00	\$81.93
	01/01/2027	\$42.24	\$16.77	\$23.52	\$0.00	\$82.53



Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
SPECIALIZED EARTH MOVING EQUIP > 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2025	\$40.53	\$15.57	\$20.17	\$0.00	\$76.27
	06/01/2025	\$41.53	\$15.57	\$20.17	\$0.00	\$77.27
	12/01/2025	\$41.53	\$15.57	\$21.78	\$0.00	\$78.88
	01/01/2026	\$41.53	\$16.17	\$21.78	\$0.00	\$79.48
	06/01/2026	\$42.53	\$16.17	\$21.78	\$0.00	\$80.48
	12/01/2026	\$42.53	\$16.17	\$23.52	\$0.00	\$82.22
	01/01/2027	\$42.53	\$16.77	\$23.52	\$0.00	\$82.82
SPRINKLER FITTER <i>SPRINKLER FITTERS LOCAL 550 - (Section B) Zone 2</i>	10/01/2024	\$63.76	\$11.51	\$23.30	\$0.00	\$98.57
	03/01/2025	\$65.38	\$11.51	\$23.30	\$0.00	\$100.19

**Apprentice - SPRINKLER FITTER - Local 550 (Section B) Zone 2**

**Effective Date - 10/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$22.32	\$11.51	\$12.90	\$0.00	\$46.73
2	40	\$25.50	\$11.51	\$13.70	\$0.00	\$50.71
3	45	\$28.69	\$11.51	\$14.50	\$0.00	\$54.70
4	50	\$31.88	\$11.51	\$15.30	\$0.00	\$58.69
5	55	\$35.07	\$11.51	\$16.10	\$0.00	\$62.68
6	60	\$38.26	\$11.51	\$16.90	\$0.00	\$66.67
7	65	\$41.44	\$11.51	\$17.70	\$0.00	\$70.65
8	70	\$44.63	\$11.51	\$18.50	\$0.00	\$74.64
9	75	\$47.82	\$11.51	\$19.30	\$0.00	\$78.63
10	80	\$51.01	\$11.51	\$20.10	\$0.00	\$82.62

**Effective Date - 03/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$22.88	\$11.51	\$12.90	\$0.00	\$47.29
2	40	\$26.15	\$11.51	\$13.70	\$0.00	\$51.36
3	45	\$29.42	\$11.51	\$14.50	\$0.00	\$55.43
4	50	\$32.69	\$11.51	\$15.30	\$0.00	\$59.50
5	55	\$35.96	\$11.51	\$16.10	\$0.00	\$63.57
6	60	\$39.23	\$11.51	\$16.90	\$0.00	\$67.64
7	65	\$42.50	\$11.51	\$17.70	\$0.00	\$71.71
8	70	\$45.77	\$11.51	\$18.50	\$0.00	\$75.78
9	75	\$49.04	\$11.51	\$19.30	\$0.00	\$79.85
10	80	\$52.30	\$11.51	\$20.10	\$0.00	\$83.91

**Notes:** Apprentice entered prior 9/30/10:  
40/45/50/55/60/65/70/75/80/85  
Steps are 850 hours

**Apprentice to Journeyworker Ratio:1:3**

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
STEAM BOILER OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TELECOMMUNICATION TECHNICIAN <i>ELECTRICIANS LOCAL 223</i>	09/01/2024	\$40.69	\$11.75	\$14.53	\$0.00	\$66.97
	09/01/2025	\$42.52	\$12.00	\$15.30	\$0.00	\$69.82
	09/01/2026	\$44.41	\$12.25	\$16.09	\$0.00	\$72.75
	09/01/2027	\$46.51	\$12.50	\$16.93	\$0.00	\$75.94

**Apprentice - TELECOMMUNICATION TECHNICIAN - Local 223**

**Effective Date - 09/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

**Notes:** See Electrician Apprentice Wages

Telecom Apprentice Wages shall be the same as the Electrician Apprentice Wages

**Apprentice to Journeyworker Ratio:2:3\*\*\***

TERRAZZO FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	08/01/2024	\$63.44	\$11.49	\$23.59	\$0.00	\$98.52
	02/01/2025	\$64.74	\$11.49	\$23.59	\$0.00	\$99.82
	08/01/2025	\$66.89	\$11.49	\$23.59	\$0.00	\$101.97
	02/01/2026	\$68.24	\$11.49	\$23.59	\$0.00	\$103.32
	08/01/2026	\$70.44	\$11.49	\$23.59	\$0.00	\$105.52
	02/01/2027	\$71.84	\$11.49	\$23.59	\$0.00	\$106.92

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile**

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$31.72	\$11.49	\$23.59	\$0.00	\$66.80
2	60	\$38.06	\$11.49	\$23.59	\$0.00	\$73.14
3	70	\$44.41	\$11.49	\$23.59	\$0.00	\$79.49
4	80	\$50.75	\$11.49	\$23.59	\$0.00	\$85.83
5	90	\$57.10	\$11.49	\$23.59	\$0.00	\$92.18

**Effective Date - 02/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.37	\$11.49	\$23.59	\$0.00	\$67.45
2	60	\$38.84	\$11.49	\$23.59	\$0.00	\$73.92
3	70	\$45.32	\$11.49	\$23.59	\$0.00	\$80.40
4	80	\$51.79	\$11.49	\$23.59	\$0.00	\$86.87
5	90	\$58.27	\$11.49	\$23.59	\$0.00	\$93.35

**Notes:**

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**Apprentice to Journeyworker Ratio:1:3**

<b>TEST BORING DRILLER</b>	12/01/2024	\$51.28	\$9.65	\$18.22	\$0.00	\$79.15
<i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2025	\$52.78	\$9.65	\$18.22	\$0.00	\$80.65
	12/01/2025	\$54.28	\$9.65	\$18.22	\$0.00	\$82.15
	06/01/2026	\$55.83	\$9.65	\$18.22	\$0.00	\$83.70
	12/01/2026	\$57.33	\$9.65	\$18.22	\$0.00	\$85.20

For apprentice rates see "Apprentice- LABORER"

<b>TEST BORING DRILLER HELPER</b>	12/01/2024	\$47.07	\$9.65	\$18.22	\$0.00	\$74.94
<i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2025	\$48.57	\$9.65	\$18.22	\$0.00	\$76.44
	12/01/2025	\$50.07	\$9.65	\$18.22	\$0.00	\$77.94
	06/01/2026	\$51.62	\$9.65	\$18.22	\$0.00	\$79.49
	12/01/2026	\$53.12	\$9.65	\$18.22	\$0.00	\$80.99

For apprentice rates see "Apprentice- LABORER"

<b>TEST BORING LABORER</b>	12/01/2024	\$46.95	\$9.65	\$18.22	\$0.00	\$74.82
<i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2025	\$48.45	\$9.65	\$18.22	\$0.00	\$76.32
	12/01/2025	\$49.95	\$9.65	\$18.22	\$0.00	\$77.82
	06/01/2026	\$51.50	\$9.65	\$18.22	\$0.00	\$79.37
	12/01/2026	\$53.00	\$9.65	\$18.22	\$0.00	\$80.87

For apprentice rates see "Apprentice- LABORER"

<b>TRACTORS/PORTABLE STEAM GENERATORS</b>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
<i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2025	\$40.82	\$15.57	\$20.17	\$0.00	\$76.56
	06/01/2025	\$41.82	\$15.57	\$20.17	\$0.00	\$77.56
	12/01/2025	\$41.82	\$15.57	\$21.78	\$0.00	\$79.17
	01/01/2026	\$41.82	\$16.17	\$21.78	\$0.00	\$79.77
	06/01/2026	\$42.82	\$16.17	\$21.78	\$0.00	\$80.77
	12/01/2026	\$42.82	\$16.17	\$23.52	\$0.00	\$82.51
	01/01/2027	\$42.82	\$16.77	\$23.52	\$0.00	\$83.11
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	12/01/2024	\$59.18	\$9.65	\$19.00	\$0.00	\$87.83
	06/01/2025	\$60.68	\$9.65	\$19.00	\$0.00	\$89.33
	12/01/2025	\$62.18	\$9.65	\$19.00	\$0.00	\$90.83
	06/01/2026	\$63.73	\$9.65	\$19.00	\$0.00	\$92.38
	12/01/2026	\$65.23	\$9.65	\$19.00	\$0.00	\$93.88
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	12/01/2024	\$61.18	\$9.65	\$19.00	\$0.00	\$89.83
	06/01/2025	\$62.68	\$9.65	\$19.00	\$0.00	\$91.33
	12/01/2025	\$64.18	\$9.65	\$19.00	\$0.00	\$92.83
	06/01/2026	\$65.73	\$9.65	\$19.00	\$0.00	\$94.38
	12/01/2026	\$67.23	\$9.65	\$19.00	\$0.00	\$95.88
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2024	\$51.25	\$9.65	\$19.00	\$0.00	\$79.90
	06/01/2025	\$52.75	\$9.65	\$19.00	\$0.00	\$81.40
	12/01/2025	\$54.25	\$9.65	\$19.00	\$0.00	\$82.90
	06/01/2026	\$55.80	\$9.65	\$19.00	\$0.00	\$84.45
	12/01/2026	\$57.30	\$9.65	\$19.00	\$0.00	\$85.95
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2024	\$53.25	\$9.65	\$19.00	\$0.00	\$81.90
	06/01/2025	\$54.75	\$9.65	\$19.00	\$0.00	\$83.40
	12/01/2025	\$56.25	\$9.65	\$19.00	\$0.00	\$84.90
	06/01/2026	\$57.80	\$9.65	\$19.00	\$0.00	\$86.45
	12/01/2026	\$59.30	\$9.65	\$19.00	\$0.00	\$87.95
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2025	\$40.24	\$15.57	\$20.17	\$0.00	\$75.98
	06/01/2025	\$41.24	\$15.57	\$20.17	\$0.00	\$76.98
	12/01/2025	\$41.24	\$15.57	\$21.78	\$0.00	\$78.59
	01/01/2026	\$41.24	\$16.17	\$21.78	\$0.00	\$79.19
	06/01/2026	\$42.24	\$16.17	\$21.78	\$0.00	\$80.19
	12/01/2026	\$42.24	\$16.17	\$23.52	\$0.00	\$81.93
	01/01/2027	\$42.24	\$16.77	\$23.52	\$0.00	\$82.53

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
WAGON DRILL OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.61	\$9.65	\$17.70	\$0.00	\$67.96
	06/01/2025	\$42.00	\$9.65	\$17.70	\$0.00	\$69.35
	12/01/2025	\$43.38	\$9.65	\$17.70	\$0.00	\$70.73
	06/01/2026	\$44.82	\$9.65	\$17.70	\$0.00	\$72.17
	12/01/2026	\$46.26	\$9.65	\$17.70	\$0.00	\$73.61
	06/01/2027	\$47.71	\$9.65	\$17.70	\$0.00	\$75.06
	12/01/2027	\$49.16	\$9.65	\$17.70	\$0.00	\$76.51
	06/01/2028	\$50.66	\$9.65	\$17.70	\$0.00	\$78.01
	12/01/2028	\$52.16	\$9.65	\$17.70	\$0.00	\$79.51
For apprentice rates see "Apprentice- LABORER"						
WAGON DRILL OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$40.11	\$9.65	\$17.80	\$0.00	\$67.56
	06/01/2025	\$41.50	\$9.65	\$17.80	\$0.00	\$68.95
	12/01/2025	\$42.88	\$9.65	\$17.80	\$0.00	\$70.33
	06/01/2026	\$44.32	\$9.65	\$17.80	\$0.00	\$71.77
	12/01/2026	\$45.76	\$9.65	\$17.80	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
WASTE WATER PUMP OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER <i>PLUMBERS &amp; PIPEFITTERS LOCAL 51</i>	08/26/2024	\$54.74	\$10.15	\$19.95	\$0.00	\$84.84
	08/25/2025	\$57.49	\$10.15	\$19.95	\$0.00	\$87.59
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						

**Additional Apprentices Information:**

All apprentices must be registered with the Division of Apprenticeship Training (DAS) in accordance with M.G.L. c. 23, §§ 11E-11L. Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the hourly prevailing wage rate established by the Commissioner under the provisions of M.G.L. c. 149, §§ 26-27D. Apprentice ratios are established by DAS pursuant to M.G.L. c. 23, §§ 11E-11L. Ratios are expressed as the allowable number of apprentices to journeymen or fraction thereof, unless otherwise specified. The ratios listed herein have been taken from relevant private collective bargaining agreements (CBAs) and are provided for illustrative purposes only. They have not been independently verified as being accurate or continuing to be accurate. Parties having questions regarding what ratio to use should contact DAS.

## REGULATORY PERMITS



*The Commonwealth of Massachusetts*  
*Executive Office of Energy and Environmental Affairs*  
*100 Cambridge Street, Suite 900*  
*Boston, MA 02114*

Charles D. Baker  
GOVERNOR

Karyn E. Polito  
LIEUTENANT GOVERNOR

Kathleen A. Theoharides  
SECRETARY

Tel: (617) 626-1000  
Fax: (617) 626-1081  
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October 22, 2021

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS  
ON THE  
ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME : 90 Bridge Street Redevelopment  
PROJECT MUNICIPALITY : Chatham  
PROJECT WATERSHED : Cape Cod  
EEA NUMBER : 16441  
PROJECT PROPONENT : Town of Chatham  
DATE NOTICED IN MONITOR : September 22, 2021

Pursuant to the Massachusetts Environmental Policy Act (MEPA; M.G. L. c. 30, ss. 61-62I) and Section 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that this project **does not require** an Environmental Impact Report (EIR).

Project Description

As described in the Environmental Notification Form (ENF), the Town of Chatham (Town) is proposing redevelopment of an existing water-dependent facility to expand and improve commercial and recreational water-dependent uses. In addition to the continuation and enhancement of recreational boating access and commercial fish off-loading use, the site will be used for the propagation of shellfish by the Chatham Shellfish Division for seeding of shellfish beds throughout the Town and transient berthing of recreational vessels accessible via ADA-compliant facilities. The project proposes construction of a bulkhead around the perimeter of the site; a pile supported pier; a shellfish lab and propagation facility on the pier; a public restroom facility; a floating dock on the western end of the bulkhead; expansion of the existing pile supported pier; and placement of floating shellfish upwellers adjacent to the new pier. Approximately 1,300 cubic yards (cy) of improvement dredging is proposed directly seaward of the new bulkhead and along the proposed pier. Specifically, the redevelopment program includes the following elements:

**Municipal Aquaculture Facilities**

- 4,100-square foot (sf) timber pile-supported pier for the siting of aquaculture equipment (e.g., upwellers, tanks, pumps, etc.) and activities, with the perimeter accessible to the public
- 30-foot by 50-foot building (the former Coast Guard Station Chatham boathouse, a structure once located on Stage Harbor which will be returned to the Town) for the housing of the aquaculture equipment and activities to be sited on the pier
- 800 sf of floating upwellers (a.k.a. FLUPSYs<sup>1</sup>)
- 176-sf public restroom building with storage space for facility staff (water and sewer services for this structure will be secured from municipal lines in Bridge Street)
- One dedicated parking space (permeable pavers) for use by facility staff
- Two concrete floats (480 sf) for berthing of municipal and public recreational vessels along the northeast and southwest faces of the pier

**Commercial Fish Off-loading Facilities**

- Expanded T-shaped pier through addition of a 360-sf pile-supported timber deck onto the south face of the existing pier
- A 40-foot-long concrete float (400 sf) adjacent to the west face of the pier
- 20 fender piles located along the water edge west of the aquaculture facilities

**ADA-compliant Waterfront Accessibility Elements**

- 800 sf of timber floats providing for transient, temporary boat berthing (these floats will also contain the FLUPSYs)
- ADA-compliant ramp gangway providing access to the floats along the pier perimeter
- A boardwalk of variable width, surfaced with composite decking, around the periphery of the aquaculture facility pier
- Four-foot wide paved (permeable pavers) walkway along the waterfront with access to the public restroom and Bridge Street sidewalk
- One pave ADA-compliant parking space

**Additional Elements**

- 225 linear feet (lf) of bulkhead along the face of the site, installed along the toe of existing rip rap and backfilled to the top of slope to support the ADA-compliant walkway
- ±880 cy of improvement dredging over an area of ±8,900 sf beneath and around the aquaculture pier and associated floats to establish a depth of -6 feet at Mean Lower Low Water (MLLW) plus up to one foot of overdredge
- ±330 cy of improvement dredging along the water edge west of the aquaculture pier to establish a depth of -6 feet at MLLW plus up to one foot of overdredge (includes removal of existing gravel boat ramp)
- ±100 cy of improvement dredging along the water edge west of the expanded T-pier to establish a depth of -4 feet at MLLW plus up to one foot of overdredge
- 6,250 sf of surface parking (crushed shells) to promote the infiltration of stormwater

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<sup>1</sup> A FLUPSY, or Floating Upweller System, is used to grow out shellfish in open water while protecting them from predation until they are large enough to survive being out in one of the shellfish sanctuaries. FLUPSYs provide increased water flow for the shellfish to promote accelerated growth. (<https://lishellfishrestorationproject.org>).



### Project Site

The 0.72-acre ( $\pm 31,250$  sf) project site is located at 90 Bridge Street in Chatham. It consists of an 8,400-sf parcel of land purchased by the Town in 2014 and currently used by recreational boaters and as a fish off-loading facility by some of the Town's commercial fishing fleet, together with  $\pm 22,850$  sf of adjoining watershed. The site is located on the Mitchell River  $\pm 1,000$  feet north of Stage Harbor and adjacent to the Bridge Street bridge. The site currently contains a 2,820-sf, shell-surfaced parking and loading area; a  $\pm 512$ -sf T-shaped timber pier; a 14-foot by 20-foot gravel-surfaced boat ramp; and a 185-sf, single story, timber frame storage shed. The shoreline of the site consists of grouted, stone rip rap. The Massachusetts Historical Commission (MHC) determined that the storage shed, which is listed in the Inventory of Historic and Archaeological Assets of the Commonwealth as Henry Bloomer's fishing shanty, is ineligible for listing in the National Register of Historic Places in 1988.

The entire project site is located within estimated habitat of rare wildlife and substantially within filled and flowed tidelands. Coastal wetland resource areas include Land Under Ocean (LUO), Land Containing Shellfish (LCS), Intertidal Areas, and Land Subject to Coastal Storm Flowage (LSCSF). According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) (Map Number 25001C0637J, effective date of July 16, 2014), the site is mapped floodplain as Zone AE (1% annual chance of flooding) (base flood elevation (BFE) 13 feet). The project area is identified as winter flounder spawning habitat. This region of the Mitchell River provides habitat for a variety of shellfish species. Specifically, portions of the proposed project area contain mapped habitat for soft shell clam, quahog, bay scallop, American oyster, and blue mussel.

### Environmental Impacts and Mitigation

Potential environmental impacts of the project include creation of 520 sf of impervious area, and alteration of 11,450 sf of LUO, 8,750 sf of LCS, and 8,400 sf of LSCSF, which includes improvement dredging of LUO and LCS. Measures to avoid, minimize, and mitigate environmental impacts include adherence to time of year (TOY) restrictions; restoration of  $\pm 240$  sf of filled intertidal lands to the intertidal zone by removing the existing boat ramp; use of permeable pavement materials over the reconstructed parking surface and ADA-compliant walkway; collection and relocation of existing shellfish resources at the site under the direction of the Chatham shellfish warden prior to initiation of in-water work activities; relocation of the Henry Bloomer fishing shanty to a suitable location within Chatham; adaptive reuse of the Coast Guard Station Chatham boathouse; and implementation of construction period best management practices (BMPs) such as silt curtains and silt fencing, and vibratory methods and a soft-start procedure for the installation of piles and sheetpile.

### Jurisdiction and Permitting

This project is undergoing MEPA review and requires an ENF pursuant to 301 CMR 11.03 (3)(b)(6) because it requires an Agency Action and involves construction, reconstruction or expansion of a pile-supported structure of 2,000 or more sf base area, provided the structure occupies flowed tidelands or other waterways. The project requires a Section 401 Water Quality Certification (WQC) and a Chapter 91 License/Permit (c. 91) from the Massachusetts Department of Environmental Protection (MassDEP) and review by the Massachusetts Natural Heritage and Endangered Species Program (NHESP). The project is subject to federal consistency review by the Massachusetts Office of Coastal Zone Management (CZM). The Massachusetts Seaport Economic Council is providing financial

assistance for the project.

The project requires an Order of Conditions from the Chatham Conservation Commission (or in the case of an appeal, a Superseding Order of Conditions from MassDEP), and submittal of a pre-construction notification (PCN) to the U.S. Army Corps of Engineers (ACOE) seeking authorization under the General Permits for Massachusetts in accordance with Section 404 of the U.S. Clean Water Act.

Because the project is receiving Financial Assistance from the Commonwealth, MEPA jurisdiction is broad in scope and extends to all aspects of the project that may cause Damage to the Environment, as defined in the MEPA regulations.

### Review of the ENF

The ENF provides a description of existing and proposed conditions, preliminary project plans, and an analysis of alternatives. It identifies measures to avoid, minimize and mitigate project impacts.

### *Alternatives Analysis*

The ENF includes an analysis of the following alternatives: No Build; Redevelopment with Existing Uses Only; Aquaculture Building Siting; No Improvement Dredging; Reduced Improvement Dredging; and the Preferred Alternative (as described herein). The No Build Alternative would continue existing limited recreational and commercial fish off-loading uses (on approximately half of the site) with periodic maintenance activities associated with these uses (e.g., maintenance dredging). This alternative was dismissed because it represents a significant underuse of this municipal asset, which was purchased at significant cost for the stated purpose of enhanced mixed waterfront infrastructure for municipal, recreational, and commercial activities.

The Redevelopment with Existing Uses Only Alternative would restrict future uses to only current uses (i.e., limited recreational vessel access and commercial fish off-loading), though these uses could be expanded to fully occupy the site. An expansion of these uses would require improvement dredging of LUO to the east of the currently licensed dredge footprint to establish minimum operating depths of -6.0 feet (MLLW) along the entirety of the waterfront and the installation of additional piers and floats for short-term berthing of vessels. The multi-year community planning process for the future of the site emphasized increased uses and a strong priority for relocating and enhancing the Town's existing shellfish upweller and propagation facility. Environmental impacts associated with expanding existing uses and multiuse development would be similar and thus this alternative was not considered further.

Numerous alternatives for siting and/or alignment of the aquaculture building were considered during the planning process including siting of the building at the west end of the site; solely on land; partially on land and partially over the water; with the long side aligned parallel to Bridge Street at the east end of the site at a 90-degree angle to Bridge Street; and with the long side aligned to Bridge Street at the east end at a 25-degree angle to Bridge Street. Placing the building at the west end of the site was found to be ineffective because shifting fish off-loading operations to the east side would require relocation of the T-pier and additional impacts from improvement dredging. Siting of the building solely on land was dismissed because it would restrict the amount of land available for the landside activities

of the fish off-loading use, reduce the availability of land for parking, and maximize the potential for use conflicts. While the partially on land and partially over water siting alternatives would reduce the impacts associated with an on land only placement, restrictions on landside activities and the potential for use conflicts would remain greater than the proposed over-water placement. The alignment alternatives relative to Bridge Street were examined primarily in consideration of concerns over the visual impact of the building along this area of Chatham's waterfront. The review of these alternatives resulted in the selection of a Preferred Alternatives that would site the aquaculture building over the water at a 50-degree alignment relative to Bridge Street; this alignment was deemed the best alternative that balanced the visual impacts with potential impacts to commercial operations.

In the Preferred Alternative, improvement dredging is proposed to extend the existing dredged area to encompass the area of the proposed aquaculture upweller pump intake and the floats and slips that will abut the aquaculture pier and to the edge of the proposed bulkhead to the east and west of the T-pier. The No Improvement Dredging Alternative would restrict uses requiring additional water depths during periods of low tide, precluding the proposed aquaculture use and severely restricting the availability of the ADA accessible dockage; restrict use of the bulkhead face east of the T-pier by fishing vessels; and allow the concrete float to "ground-out" on the riverbed during low water. Because the No Improvement Dredging Alternative is not viable with the proposed design of the project and proposed uses, it was dismissed.

In the Preferred Alternative, improvement dredging proposed for the area includes a 6:1 transition slope beneath the pier resulting in a larger overall dredged footprint than typically produced with a more conventional 3:1 transition slope. The Reduced Improvement Dredging Alternative considers transitioning the dredged depth at a slope of 3:1. This alternative was dismissed because it would introduce a relatively abrupt and less stable bathymetric change at this location which will increase sedimentation and produce conditions necessitating more frequent maintenance dredging. Establishment of a 6:1 transition slope beneath the pier prior to its construction represents a proactive effort to address the full impacts of dredging over the long term.

According to CZM comments, the alternatives analysis describes existing site limitations and provides the rationale for the Preferred Alternative which balances environmental impacts with improvements to an existing water-dependent facility. The new shellfish propagation facility will support commercial and native shellfish resources in Chatham waters, and the new pier and commercial loading areas will support and improve commercial fishing operations.

#### *Wetlands, Waterways and Stormwater*

The project will impact LUO, LCS, and LSCSF. The Chatham Conservation Commission will review the project for its consistency with the Wetlands Protection Act (WPA), Wetlands Regulations (310 CMR 10.00) and associated performance standards including stormwater management standards (SMS). MassDEP will review the project to determine its consistency with the 401 WQC regulations (314 CMR 9.00) and c. 91 Waterways Regulations (310 CMR 9.00). The project will require submission of a c. 91 License Application and a 401 Water Quality Certification (WQC). The Town may choose to file a MassDEP BRP WW26 Combined Application for c. 91 and WQC. MassDEP has determined that the project would be classified as a water-dependent use project pursuant to 310 CMR 9.12. The Town should use best available information to establish the Historic Mean High Water elevation on the plan set for the c. 91 License Application.

The proposed bulkhead will result in a permanent impact to 420 sf of intertidal resources. CZM comments indicate that while this intertidal area is altered with an existing stone revetment, it currently provides habitat value for various marine species. The Town should work with the Chatham Conservation Commission to develop mitigation on the project site or along the adjacent Town owned property to address this permanent impact.

The project includes improvement dredging of  $\pm 0.26$  acres of LUO, including  $\pm 0.20$  acres of LCS. The dredging will establish a relatively uniform depth of -6 feet (MLLW) in the area of the aquaculture pier and along the water edge between the T-pier and aquaculture pier and -4 feet along the edge to the west of the T-pier. Improvement dredging of 1,300 cy is proposed to allow commercial vessels to access the new pier and dock structures, and to access unloading areas adjacent to the bulkhead. CZM comments indicate that the improvement dredge areas are directly adjacent to permitted dredge areas, and the proposed 6:1 side slope for the dredged area around the pier is consistent with the natural bathymetry in this area. The relocation of any shellfish resources within the dredge footprint prior to any dredging should be conducted in consultation with the Massachusetts Division of Marine Fisheries (DMF). In addition to the dredging footprint,  $\pm 30$  sf of LUO will be displaced by piles. A new 176-sf storage shed/restroom structure will replace an existing 185-sf shed on the site, all of which is located within LSCSF.

LCS is deemed significant to the interest of the WPA (310 CMR 10.34) and the protection of marine fisheries. Comments from DMF indicate support for the mitigation measures proposed to avoid or minimize impacts to marine resources which include a TOY restriction, use of silt curtains and silt fencing, use of vibratory methods and a soft-start procedure for the installation of piles and sheetpile, and relocation of existing shellfish resources at the site under the direction of the Chatham shellfish warden prior to initiation of in-water work activities. DMF recommends a TOY restriction for all in-water, silt-producing work from January 15 to May 31 to protect winter flounder spawning and juvenile development unless the proposed silt curtain containing the work area is installed prior to January 15 and maintained throughout the TOY restriction period. DMF comments identify support for the proposed restoration of  $\pm 240$  sf of filled intertidal habitat through the removal of an existing boat ramp, but request that the Town provide additional information during the permitting process regarding any other associated restoration activities for this habitat beyond ramp removal (e.g., regrading substrate). The project includes the installation of 225 linear feet of bulkheading along the project shoreline. DMF comments note that this proposed habitat alteration may require mitigation during the state or federal permitting process.

New impervious surfaces at the project site will be minimal and restricted to a paved apron at the entrance/egress curb cut at Bridge Street, one paved handicap parking space and  $\pm 300$  sf of concrete capping along the top of the proposed bulkhead wall. All runoff from these impervious surfaces will be directed to upland pervious surfaces to promote infiltration. I refer the Town to MassDEP comments regarding the potential requirement for National Pollutant Discharge Elimination System (NPDES) industrial stormwater permitting.

### *Climate Change Adaptation and Resiliency*

The project site is located within the 100-year floodplain and is susceptible to the potential effects of climate change, including sea level rise (SLR) and increased storm intensity and frequency. The ENF does not include a discussion of the project in the context of climate change adaptation and

resiliency. I refer the Town to comments from MassDEP which identify resources the Town should review further to address potential climate change impacts and consider feasible adaptation measures. New infrastructure proposed to be constructed at the water-dependent facility is anticipated to have a 20-year design life before maintenance activities must be undertaken. The pier supports a variety of water-dependent activities and was designed at an elevation that allows these operations to operate efficiently as well as to provide access. The proposed pier will be constructed at approximately the same elevation as the existing pier (9.6 MLW). According to the Massachusetts climate change projections published by the Northeast Climate Science Center at the University of Massachusetts at Amherst in March of 2018, the SLR projections for the Intermediate-High (IH) scenario for the next 20 years within Chatham (~2040) is estimated at  $\pm 1.2$  feet. Although SLR will may not cause tidal flooding of the pier by 2040, this water level increase will escalate the vulnerability to damage from storm surge and the potential for the project site to transition to a FEMA velocity zone (from a Zone AE to a Zone VE).

As noted in CZM comments, the Town should evaluate raising the pier as much as possible while still maintaining functional operations to improve resilience of the pier and associated infrastructure and accommodate future anticipated SLR and associated impacts. As noted in the comments from MassDEP, storm surge, waves, erosion, and other dynamic factors, along with changes in the frequency and magnitude of storm events should be considered in the design. Based on the sea level rise data cited about, this area may see 2+ ft of SLR by 2060 which will cause daily tidal flooding of the access road to the project site. Although the design life is stated as 20 years, the Town should evaluate how this flooding could impact future recreational and commercial activities proposed at the site. I refer the Town to MassDEP comments for additional guidance on determining climate change impacts and developing appropriate adaptation strategies that accommodate worst case scenarios for the project area.

The Massachusetts Department of Conservation and Recreation (DCR) is the coordinating agency for the National Flood Insurance Program (NFIP), Flood Hazard Mitigation Program (FHMP). DCR comments address the project's consistency with applicable standards and requirements of federal, state and local regulations related to floodplain development. The Massachusetts State Building Code (9<sup>th</sup> Edition) requires buildings newly constructed or substantially improved in A zones to have their lowest floor elevated to the BFE plus one foot (14 feet NAVD88<sup>2</sup> in this case). Both the aquaculture and restroom buildings will have floor elevations lower than 14 feet NAVD88. Deviation from the standards will require a Variance from the State Board of Building Appeals. The Town can provide justification to this Board for both proposed structures, which will then determine whether variances are warranted. I refer the Town to DCR comments regarding compliance with federal Executive Order 11988, Floodplain Management, which requires an eight-step decision-making process including analysis of alternatives to avoid and minimize impacts.

Pervious pavers and a shell-surfaced parking and loading area are incorporated into the design to minimize impervious surfaces and runoff. The Town should consider improvement to the vegetation surrounding the parking lot area depicted on existing conditions plans. Recommended mitigation to the impacts and loss of LCS and LUO include restoration of the wetland north of the project site. To improve resiliency of the area north of the project site, the riparian habitat and intertidal zone should be restored and planted with native species where feasible. After the removal of the existing boat ramp, the 240 sf to be restored should be revitalized in a way that benefits the health of the local ecosystem.

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<sup>2</sup> North American Vertical Datum of 1988

*Construction Period*

All construction and demolition (C&D) activities should be managed in accordance with applicable MassDEP's regulations regarding Air Pollution Control (310 CMR 7.01, 7.09-7.10), and Solid Waste Facilities (310 CMR 16.00 and 310 CMR 19.00, including the waste ban provision at 310 CMR 19.017). I refer the Town to comments from MassDEP regarding construction-period measures. The Town will install BMPs on the project site to control erosion and sedimentation during the construction period. The project should include measures to reduce construction period impacts (e.g., noise, dust, odor, solid waste management) and emissions of air pollutants from equipment, including anti-idling measures in accordance with the Air Quality regulations (310 CMR 7.11).

I encourage the Town to require contractors to use construction equipment with engines manufactured to Tier 4 federal emission standards, or select project contractors that have installed retrofit emissions control devices or vehicles that use alternative fuels to reduce emissions of volatile organic compounds (VOCs), carbon monoxide (CO) and particulate matter (PM) from diesel-powered equipment. Off-road vehicles are required to use ultra-low sulfur diesel fuel (ULSD). If oil and/or hazardous materials are found during construction, the Town should notify MassDEP in accordance with the Massachusetts Contingency Plan (310 CMR 40.0000). The Town should develop a spills contingency plan. All C&D activities should be undertaken in compliance with the conditions of all State and local permits. I encourage the Town to reuse/recycle C&D debris to the maximum extent.

Conclusion

The ENF has adequately described and analyzed the project and its alternatives, and assessed its potential environmental impacts and mitigation measures. Based on review of the ENF and comments received on it, and in consultation with State Agencies, I have determined that an EIR is not required.



October 22, 2021

Date

Kathleen A. Theoharides

## Comments received:

10/07/2021 Massachusetts Department of Environmental Protection (MassDEP) – Southeast Regional Office (SERO)  
 10/08/2021 Massachusetts Office of Coastal Zone Management (CZM)  
 10/13/2021 Massachusetts Department of Conservation and Recreation (DCR)  
 10/13/2021 Massachusetts Division of Marine Fisheries (DMF)

KAT/PPP/ppp



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

Charles D. Baker  
Governor

Karyn E. Polito  
Lieutenant Governor

Kathleen A. Theoharides  
Secretary

Martin Suuberg  
Commissioner

October 7, 2021

Kathleen A. Theoharides  
Secretary of Environment and Energy  
Executive Office of Energy and  
Environmental Affairs  
100 Cambridge Street, Suite 900  
ATTN: MEPA Office  
Boston, MA 02114

RE: ENF Review. EOEEA 16441  
CHATHAM. 90 Bridge Street  
Redevelopment at 90 Bridge Street

Dear Secretary Theoharides,

The Southeast Regional Office of the Department of Environmental Protection (MassDEP) has reviewed the Environmental Notification Form (ENF) for the 90 Bridge Street Redevelopment at 90 Bridge Street, Chatham, Massachusetts (EOEEA #16441). The Project Proponent provides the following information for the Project:

**The Project site is a 8,400-square foot parcel of land purchased by the Town of Chatham (Town) in 2014 and currently used by recreational boaters and as a fish off-loading facility by some of the Town's commercial fishing fleet, together with approximately 22,850 square feet of adjoining water sheet. The property is located on the Mitchell River, approximately 1,000 feet north of Stage Harbor and adjacent to the Bridge Street bridge (see Figure 1 – Project Locus). The property currently contains a 2,820-square foot, shell-surfaced parking and loading area; a 512±-square foot T-shaped timber pier; a 14-foot by 20-foot, deteriorated, gravel-surfaced boat ramp; and a 185-square foot, single story, timber frame storage shed (see Figure 2 – Existing Site Conditions). The shoreline of the property consists of grouted, stone rip rap.**

**The Town proposes to redevelop the Project site for multiple uses. In addition to the continuation and enhancement of recreational boating access and commercial fish off-loading use, the property is to be used for the propagation of shellfish by the Chatham Shellfish Division for seeding of shellfish beds throughout the Town and transient berthing of recreational vessels accessible via ADA-compliant facilities.**

### ***Bureau of Water Resources Comments***

**Wetlands.** The Project Proponent will need to submit a Notice of Intent (NOI) to DEP and the Chatham Conservation Commission. DEP notes that if the minimum submittal requirements have been met a File Number will be issued. It is anticipated that the Chatham Conservation Commission will conduct a Public Hearing and issue an Order

This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.

TTY# MassRelay Service 1-800-439-2370

MassDEP Website: [www.mass.gov/dep](http://www.mass.gov/dep)

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of Conditions. A final Order of Conditions must be obtained before any work within Areas Subject to Jurisdiction commences.

The proposed work should minimize impact to wetland resources to the maximum extent practicable and should be performed in accordance with any Time of Year Restrictions as determined by the MA Division of Marine Fisheries, to avoid impacts to marine fisheries resources.

Waterways. This Project will require the submittal of a Chapter 91 License Application and a 401 Water Quality Certification (WQC) Application. The Proponent may choose to file a MassDEP BRP WW26 Combined Application for Chapter 91 and WQC.

Based on the information contained in the ENF, the Waterways Program has determined that the proposed activities would be classified as a water-dependent use Project pursuant to the Waterways Regulations at 310 CMR 9.12.

Most of the site appears to be within filled tidelands. The Project Proponent should utilize best available information to establish the Historic Mean High Water elevation on the plan set for the Chapter 91 License Application.

#### ***Bureau of Waste Site Cleanup Comments***

Based upon the information provided, the Bureau of Waste Site Cleanup (BWSC) searched its databases for disposal sites and release notifications that have occurred at or might impact the proposed Project area. A disposal site is a location where there has been a release to the environment of oil and/or hazardous material that is regulated under M.G.L. c. 21E, and the Massachusetts Contingency Plan [MCP – 310 CMR 40.0000].

There are no listed MCP disposal sites located at or in the vicinity of the site that would appear to impact the proposed Project area. Interested parties may view a map showing the location of BWSC disposal sites using the MassGIS data viewer (Oliver)

at: [http://maps.massgis.state.ma.us/map\\_ol/oliver.php](http://maps.massgis.state.ma.us/map_ol/oliver.php) Under “Available Data Layers” select “Regulated Areas”, and then “DEP Tier Classified 21E Sites”. MCP reports and the compliance status of specific disposal sites may be viewed using the BWSC Waste Sites/Reportable Release Lookup at: <https://eeaonline.eea.state.ma.us/portal#!/search/wastesite>

*The Project Proponent is advised that if oil and/or hazardous material are identified during the implementation of this Project, notification pursuant to the Massachusetts Contingency Plan (310 CMR 40.0000) must be made to MassDEP, if necessary. A Licensed Site Professional (LSP) should be retained to determine if notification is required and, if need be, to render appropriate opinions. The LSP may evaluate whether risk reduction measures are necessary if contamination is present. The BWSC may be contacted for guidance if questions arise regarding cleanup.*

#### ***Bureau of Air and Waste (BAW) Comments***

Air Quality. Construction and operation activities shall not cause or contribute to a condition of



air pollution due to dust, odor, or noise. To determine the appropriate requirements please refer to:

310 CMR 7.09 Dust, Odor, Construction, and Demolition

310 CMR 7.10 Noise

#### *Construction-Related Measures*

MassDEP requests that all non-road diesel equipment rated 50 horsepower or greater meet EPA's Tier 4 emission limits, which are the most stringent emission standards currently available for off-road engines. If a piece of equipment is not available in the Tier 4 configuration, then the Proponent should use construction equipment that has been retrofitted with appropriate emissions reduction equipment. Emission reduction equipment includes EPA-verified, CARB-verified, or MassDEP-approved diesel oxidation catalysts (DOCs) or Diesel Particulate Filters (DPFs). The Proponent should maintain a list of the engines, their emission tiers, and, if applicable, the best available control technology installed on each piece of equipment on file for Departmental review.

#### *Massachusetts Idling Regulation*

The Project Proponent reports: "All equipment used on this Project will be operated in compliance with all applicable idling guidelines." MassDEP reminds the Proponent that unnecessary idling (*i.e.*, in excess of five minutes), with limited exception, is not permitted during the construction and operations phase of the Project (Section 7.11 of [310 CMR 7.00](#)). Regarding construction period activity, typical methods of reducing idling include driver training, periodic inspections by site supervisors, and posting signage. In addition, to ensure compliance with this regulation once the Project is occupied, MassDEP requests that the Proponent install permanent signs limiting idling to five minutes or less on-site.

Spills Prevention. A spills contingency plan addressing prevention and management of potential releases of oil and/or hazardous materials from pre- and post-construction activities should be presented to workers at the site and enforced. The plan should include but not be limited to, refueling of machinery, storage of fuels, and potential on-site activity releases.

Hazardous Waste Management. If any occupant of the Project generates hazardous waste and/or waste oil, that entity must register with the MassDEP or EPA to obtain a permanent identification number, as applicable, in accordance with 310 CMR 30.000 for legally generating and managing regulated waste. The Proponent is advised to consult at this MassDEP website <https://www.mass.gov/guides/hazardous-waste-generation-generators> to determine if the Proponent qualifies as a generator of hazardous waste and/or waste oil.

Industrial Stormwater. The Proponent appears to be operating as a Water Transportation Facility may require a Sector Q Industrial Stormwater General NPDES Permit from the U.S. EPA. More information may be found at: [https://www.epa.gov/sites/production/files/2015-10/documents/sector\\_q\\_watertransportation.pdf](https://www.epa.gov/sites/production/files/2015-10/documents/sector_q_watertransportation.pdf)

Solid Waste Management. The Proponent reports: "The Project will generate approximately 1,310 cubic yards of dredged sediments to be disposed at a suitable and licensed upland site. Minor quantities of construction wastes will be collected for recycling to the extent practicable.

The generation of solid wastes during construction will be reduced by the proposals to reuse existing buildings (e.g., relocation of the fishing shanty and adaptive reuse of the Coast Guard Station Chatham boathouse) rather than demolition and/or new construction.”

1. *Dredge Reuse at Landfills:*

a. Reuse or disposal of dredge at a lined landfill requires compliance with MassDEP’s policy entitled, “COMM-94-007: Reuse and Disposal of Dredge Sediment at Permitted Landfills, February 1995” (Dredge Policy). Submittal of a BWP SW-22 Landfill Minor Modification Permit Application for MassDEP review and approval is required for Projects that do not meet the criteria stated in the Dredge Policy. This policy can be found on-line at the MassDEP [website: http://www.mass.gov/eea/docs/dep/recycle/approvals/sw0722ap.pdf](http://www.mass.gov/eea/docs/dep/recycle/approvals/sw0722ap.pdf)

b. Reuse or disposal of dredge at an unlined landfill requires MassDEP approval.

2. *Dredge Reuse at Solid Waste Facilities:* If the proposed reuse location is located at a solid waste site assigned parcel or facility that has a solid waste management approval (*i.e.*, MassDEP solid waste management permit, registered compost site, location with a determination of need) then approval can be granted under 310 CMR 19.000 *Solid Waste Management* regulations (typically through a beneficial use determination permit application). Webpage link: (webpage link to Beneficial Use Determination guidance <http://www.mass.gov/eea/agencies/massdep/recycle/regulations/waste-and-recycling-policies-and-guidance.html#6>)

Additionally, if the dredge is going to be used in a commercial product (*e.g.*, substitute for sand, gravel, etc.) or is going to be reused in an unrestricted application (*e.g.*, soil additives/amendments) that is going to be distributed to multiple locations then a beneficial use determination is required under 310 CMR 19.000 Solid Waste Management regulations. The beneficial use determination permitting process is better designed to deal with the reuse of dredge at multiple locations.

3. *Compliance with Waste Ban Regulations:* Waste materials discovered during construction that are determined to be solid waste (*e.g.*, construction and demolition waste) and/or recyclable material (*e.g.*, metal, asphalt, brick, and concrete) shall be disposed, recycled, and/or otherwise handled in accordance with the Solid Waste Regulations including 310 CMR 19.017: *Waste Bans*. Waste Ban regulations prohibit the disposal, transfer for disposal, or contracting for disposal of certain hazardous, recyclable, or compostable items at solid waste facilities in Massachusetts, including, but not limited to, metal, wood, asphalt pavement, brick, concrete, and clean gypsum wallboard. The goals of the waste bans are to: promote reuse, waste reduction, or recycling; reduce the adverse impacts of solid waste management on the environment; conserve capacity at existing solid waste disposal facilities; minimize the need for construction of new solid waste disposal facilities; and support the recycling industry by ensuring that large volumes of material are available on a consistent basis. Further guidance can be found at: <https://www.mass.gov/guides/massdep-waste-disposal-bans>.

If you have any questions regarding the Solid Waste Management Program comments above, please contact Mark Dakers at (508) 946-2847.

### ***Climate Change***

Climate Change – Adaptation. Section 7 of the Global Warming Solutions Act of 2008 (GWSA) (Chapter 298 of the Acts of 2008), amended Section 61 of Chapter 30 of the Massachusetts General Laws by inserting, “in considering and issuing permits, licenses and other administrative approvals and decisions, the respective agency, department, board, commission or authority shall also consider reasonably foreseeable climate change impacts, including additional greenhouse gas emissions, and effects, such as predicted sea level rise.”

MassDEP recommends that the Proponent review and consider the data and recommendations identified in the 2011 Massachusetts Climate Change Adaptation Report issued by the Executive Office of Energy and Environmental Affairs (EEA) (<http://www.mass.gov/eea/docs/eea/energy/cca/eea-climate-adaptation-report.pdf>), the 2014 National Climate Assessment, specifically the Northeast region section, (<https://nca2014.globalchange.gov/>) and the 2017 U.S. Global Change Research Program Climate Science Special Report (<https://science2017.globalchange.gov/>) to address potential climate change impacts and adaptation measures feasible for implementation on the Project site. MassDEP also recommends that you check the following link for updates to the Massachusetts State Hazard Mitigation and Climate Adaptation Plan (<https://resilientma.com/updates/>) which is anticipated to be finalized in 2018. Once completed, this plan will include more usable data and information.

Climate Change – Sea Level Rise. The Project’s location will subject it to the impacts of climate change-induced sea level rise. MassDEP recommends that the Proponent consider various scenarios and future conditions that are beyond the scope of the 100-year flood elevations designated in the Flood Insurance Rate Maps (FIRMs) to evaluate impacts such as sea level rise, shoreline change, and hurricane inundation. Recognizing the vulnerability of the coastline in the vicinity of the proposed Project site, the Proponent should be prepared to address the impacts of sea level rise and damage to property, businesses, and infrastructure over the lifespan of the Project. The potential risks to the Project should be evaluated based on sea level rise scenarios developed by known authorities, including the Massachusetts Coastal Zone Management Agency or community/localized studies. One recommended resource is the Massachusetts Sea Level Rise and Coastal Flooding Viewer <https://www.mass.gov/service-details/massachusetts-sea-level-rise-and-coastal-flooding-viewer>. Please note that the viewer doesn’t include all types of wastewater treatment and drinking water infrastructure.

Adaptation strategies should be considered to accommodate the effects of sea level rise and manage risk. Adding pre-disaster adaptation and post-disaster recovery measures will improve the Project resiliency to flooding and the impacts of extreme storm events. Please be aware that the Sea Level Rise and Coastal Flooding Viewer does not account for storm surge, waves, erosion, and other dynamic factors, while FIRMs do not account for sea level rise, shoreline erosion, changes in the frequency and magnitude of storm events, etc. Therefore, it’s important to review and consider these combined with hurricane surge scenarios (which use current sea level) to plan for worst case scenarios and appropriate adaptation measures.

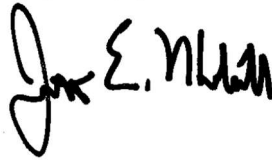
***Proposed s.61 Findings***

The “Certificate of the Secretary of Energy and Environmental Affairs on the Environmental Notification Form” may indicate that this Project requires further MEPA review and the preparation of an Environmental Impact Report. Pursuant to MEPA Regulations 301 CMR 11.12(5)(d), the Proponent will prepare Proposed Section 61 Findings to be included in the EIR in a separate chapter updating and summarizing proposed mitigation measures. In accordance with 301 CMR 11.07(6)(k), this chapter should also include separate updated draft Section 61 Findings for each State agency that will issue permits for the Project. The draft Section 61 Findings should contain clear commitments to implement mitigation measures, estimate the individual costs of each proposed measure, identify the parties responsible for implementation, and contain a schedule for implementation.

***Other Comments/Guidance***

The MassDEP Southeast Regional Office appreciates the opportunity to comment on this ENF. If you have any questions regarding these comments, please contact George Zoto at (508) 946-2820.

Very truly yours,



Jonathan E. Hobill,  
Regional Engineer,  
Bureau of Water Resources

JH/GZ

Cc: DEP/SERO

ATTN: Millie Garcia-Serrano, Regional Director  
Gerard Martin, Acting Deputy Regional Director, BWR  
John Handrahan, Acting Deputy Regional Director, BWSC  
Seth Pickering, Deputy Regional Director, BAW  
Jennifer Viveiros, Deputy Regional Director, ADMIN  
Daniel Gilmore, Wetlands and Waterways, BWR  
Nate Corcoran, Wetlands and Waterways, BWR  
Brendan Mullaney, Wetlands and Waterways, BWR  
Mark Dakers, Solid Waste, BAW  
Elza Bystrom, Solid Waste, BAW  
Allen Hemberger, Site Management, BWSC



THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS  
OFFICE OF COASTAL ZONE MANAGEMENT  
251 Causeway Street, Suite 800, Boston, MA 02114-2136  
(617) 626-1200 FAX: (617) 626-1240

## MEMORANDUM

TO: Kathleen A. Theoharides, Secretary, EEA  
ATTN: Purvi Patel, MEPA Office  
FROM: Lisa Berry Engler, Director, CZM  
DATE: October 8, 2021  
RE: EEA-16441, 90 Bridge Street Redevelopment, Chatham

The Massachusetts Office of Coastal Zone Management (CZM) has completed its review of the above-referenced Environmental Notification Form (ENF), noticed in the *Environmental Monitor* dated September 22, 2021, and offers the following comments.

### Project Description

The project involves the redevelopment of an existing water-dependent facility to expand and improve commercial and recreational water-dependent uses. The site is a town-owned parcel located on the eastern end of Stage Harbor. The property currently contains a 2,820-square foot (sf), shell-surfaced parking and loading area; a 512±sf T-shaped timber pier; a 14-foot by 20-foot gravel-surfaced boat ramp; and a 185-sf, single story, timber frame storage shed. The shoreline of the property consists of grouted, stone rip rap. The site is currently used by recreational boaters and as a loading and unloading area for commercial fishing boats.

The proposed work includes a new bulkhead around the perimeter of the site; construction of a new 4,100-sf pile supported pier; construction of a 30 by 50-foot shellfish lab and propagation facility on the pier; construction of a 176-sf public restroom facility; a 40-foot-long floating dock on the western end of the bulkhead; expanding the existing pile supported pier by 360 sf and placement of 800 sf of floating shellfish upwellers adjacent to the new pier. Approximately 1,300 cubic yards of improvement dredging is proposed directly seaward of the new bulkhead and along the proposed pier.

### Project comments

The new pier is proposed to be constructed at approximately the same elevation as the existing pier (9.6 MLW). The project is located within a FEMA AE flood zone (EI- 13). The pier supports a variety of water-dependent activities, including shellfish propagation and commercial and recreational boating activities, and must be constructed at an elevation that allows these operations to operate efficiently. The proponent should evaluate raising the pier as much as possible while still maintaining functional operations. This will improve the resilience of the pier and associated infrastructure and accommodate future anticipated sea level rise.

The proposed bulkhead will result in a permanent impact to approximately 420 sf of intertidal resources. Although this intertidal area is altered with an existing stone revetment, it currently provides habitat value for various marine species. The proponent should work with the Chatham Conservation Commission to develop mitigation efforts on this site or along the adjacent town owned property to address this permanent impact.



The proposed improvement dredging of approximately 1,300 cubic yards is necessary to allow commercial vessels to access the new pier and dock structures, and to access unloading areas adjacent to the bulkhead. The improvement dredge areas are directly adjacent to permitted dredge areas, and the proposed 6:1 side slope for the dredged area around the pier is consistent with the natural bathymetry in this area. The relocation of any shellfish resources within the dredge footprint prior to any dredging should be conducted in consultation with the Massachusetts Division of Marine Fisheries.

The alternatives analysis in the ENF evaluated six alternatives, including no-build; redevelopment with existing uses only; aquaculture building siting alternatives; no dredging alternative and a reduced improvement dredging alternative. The alternatives analysis conveyed the existing site limitations and provides the rationale for the current design. The proposed design balances environmental impacts with improvements to an existing water-dependent facility. The new shellfish propagation facility will support commercial and native shellfish resources in Chatham waters, and the new pier and commercial loading areas will support and improve commercial fishing operations.

### **Federal Consistency Review**

The proposed project is subject to CZM federal consistency review and must be found to be consistent with CZM's enforceable program policies. For further information on this process, please contact Robert Boeri, Project Review Coordinator, at [robert.boeri@mass.gov](mailto:robert.boeri@mass.gov), or visit the CZM web site at <https://www.mass.gov/federal-consistency-review-program>.

LBE/sm

cc: John Logan, MADMF  
Brad Saunders, GEI Consultants, Inc.  
Ted Keon, Chatham Coastal Resource Director  
Dan Gilmore, DEP, Southeast Regional Office  
Stephen McKenna, CZM



October 12, 2021

Secretary Kathleen A. Theoharides  
Executive Office of Energy and Environmental Affairs  
Attn: Purvi Patel, MEPA Office  
100 Cambridge Street, Suite 900  
Boston, Massachusetts 02114

Re: EOEEA #16441 90 Bridge Street Redevelopment ENF

Dear Secretary Theoharides:

The Department of Conservation and Recreation (“DCR” or “the Department”) is pleased to submit the following comments in response to the Environmental Notification Form (“ENF”) filed by the Town of Chatham (the “Proponent”) for the proposed 90 Bridge Street Redevelopment (the “Project”) in Chatham.

As described in the ENF, the Project includes redevelopment of a municipal waterfront property for multiple uses, including aquaculture facilities and improvements for recreational and commercial boating. As proposed, the Project involves activities within a 100-year floodplain as delineated on the current effective Flood Insurance Rate Map (“FIRM”) for Barnstable County, dated July 6, 2021. In its role as the state coordinating agency for the National Flood Insurance Program (“NFIP”), DCR submits the following comments.

DCR’s Flood Hazard Management Program (“FHMP”), under agreement with the Federal Emergency Management Agency (“FEMA”), is the state coordinating agency for the NFIP. As such, the FHMP provides technical assistance to communities that participate in the NFIP related directly to the program and also related to floodplain management in general. Communities that participate in the NFIP are required by FEMA, as a condition of their participation, to regulate development within the 100-year floodplain in a manner that meets or exceeds the minimum standards established by FEMA, located at 44 CFR 60.3. Participating communities such as Chatham are required to adopt the NFIP requirements through locally enforceable measures. In Massachusetts, many of the requirements contained in 44 CFR 60.3 are enforced through existing state regulations such as the State Building Code (780 CMR) and Wetlands Protection Act regulations (310 CMR 10.00). Communities typically adopt the remainder of the requirements as part of a zoning ordinance or other locally enforceable measure. Chatham has a zoning bylaw that includes a Floodplain District section which has been accepted by FEMA as meeting their requirements under the NFIP.

In our role as NFIP coordinator, the FHMP offers comments on the proposed Project’s relationship to many of the above regulations and requirements. The FHMP does not administer any of these requirements and therefore does not provide official determinations as to compliance with them; rather, our comments are provided as an overview of the requirements and the documentation that the FHMP believes may be necessary to demonstrate compliance with these requirements.



The project involves construction of a 4,100 square foot pile-supported pier, a 30' x 50' aquaculture building sited on the pier and other associated work. Based on information submitted with the ENF, all work is located within the 100-year floodplain on the current effective FIRM, specifically zone AE, with a base flood elevation of 13 feet above North American Vertical Datum ("NAVD"). Because of its location in the 100-year floodplain, compliance with the requirements of several federal, state and local measures related to floodplain development is required.

The Massachusetts State Building Code, 9<sup>th</sup> Edition, includes Flood Resistant Construction standards in Section 1612, Flood Loads, and ASCE 24-14, Flood Resistant Design and Construction. Buildings newly constructed or substantially improved in A zones are required to have their lowest floor elevated to the base flood elevation plus one foot, in this case, 14 NAVD. The aquaculture building is proposed to have its floor elevation at 9.5 feet above Mean Low Water, which converts to 7.07 NAVD, roughly seven feet lower than what is required by Code. Because of this, a variance to the Building Code is necessary. The project also includes a 176 square foot bathroom and storage facility. Unless this structure is proposed to be elevated as described above, it too will require a variance.

Construction that does not meet Building Code standards is not permissible without a variance issued by the State Building Code Appeals Board. The Town can provide justification to this Board for both proposed structures, which will then determine whether variances are warranted. FEMA publication P-993, Variances and the National Flood Insurance Program, includes guidance for issuing variances that are consistent with the minimum requirements of the NFIP. Also, FEMA P-2140, Floodplain Management Requirements for Agricultural Structures and Accessory Structures, addresses variances for agricultural/aquacultural structures.

Additionally, projects within the 100-year floodplain involving any federal action (e.g., permit, funding) must also comply with federal Executive Order 11988, Floodplain Management. This executive order requires an eight-step decision-making process which includes analysis of alternatives, avoiding impacts when possible, and minimizing impacts when avoidance is not possible. Because this project requires a Section 404 permit from the Army Corps of Engineers, compliance with this process is necessary.

DCR appreciates the opportunity to comment on the ENF. If you have any questions regarding these comments, or to request additional information or coordination with DCR, please contact Eric Carlson at [eric.carlson@mass.gov](mailto:eric.carlson@mass.gov).

Sincerely,

A handwritten signature in black ink, appearing to read 'Jim Montgomery', with a long horizontal line extending to the right.

Jim Montgomery  
Commissioner

cc: Eric Carlson, Priscilla Geigis, Patrice Kish, Tom LaRosa





# The Commonwealth of Massachusetts

## Division of Marine Fisheries

251 Causeway Street, Suite 400, Boston, MA 02114

p: (617) 626-1520 | f: (617) 626-1509

[www.mass.gov/marinefisheries](http://www.mass.gov/marinefisheries)



CHARLES D. BAKER  
Governor

KARYN E. POLITO  
Lt. Governor

KATHLEEN A. THEOHARIDES  
Secretary

RONALD S. AMIDON  
Commissioner

DANIEL J. MCKIERNAN  
Director

October 8, 2021

Secretary Kathleen Theoharides  
Executive Office of Energy and Environmental Affairs (EEA)  
Attn: MEPA Office  
Purvi Patel, EEA No. 16441  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Dear Secretary Theoharides:

The Division of Marine Fisheries (MA DMF) has reviewed the Environmental Notification Form (ENF) by the Town of Chatham for the 90 Bridge Street Redevelopment Project located at 90 Bridge Street on the Mitchell River in the Town of Chatham. The proposed redevelopment project includes a variety of additions to an existing recreational boating and commercial fishing pier and waterfront access site owned by the Town of Chatham. Redevelopment includes various infrastructure to support Town aquaculture operations including a 4,100 square foot timber pile-supported pier with a 30 foot X 50 foot building for use with aquaculture equipment and activities. Additionally, two concrete floats totaling 480 square feet in area would be installed along the northeast and southwest sides of the pier, and 800 square feet of floating upwellers would be installed off the pier. Infrastructure supporting commercial fish off-loading facilities include a 360 square foot deck to be added to an existing pier, a 400 square foot concrete float adjacent to the west side of the pier, and twenty fender piles to be installed west of the aquaculture facility. The project also includes improvement dredging, with dredging proposed to a depth of -6 feet at MLLW with a one foot overdredge bordering the aquaculture pier (880 cubic yards) and west of the aquaculture pier (330 cubic yards). An additional 100 cubic yards of improvement dredging is proposed west of the expanded pier to achieve a depth of -4 feet at MLLW plus one foot overdredge. Approximately 225 linear feet of bulkheading is also proposed along the project shoreline. Existing marine fisheries resources and habitat and potential project impacts to those resources are outlined in the following paragraphs.

MA DMF has identified the project area as winter flounder (*Pseudopleuronectes americanus*) spawning habitat. Winter flounder enter the area and spawn from January through May, laying clumps of eggs directly on the substrate. These demersal eggs hatch approximately fifteen to twenty days later. The Atlantic States Marine Fisheries Commission has designated winter flounder spawning habitat as "Habitat Areas of Particular Concern" (HAPC).

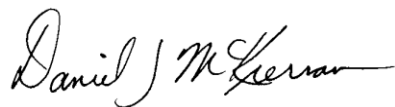
This region of the Mitchell River provides habitat for a variety of shellfish species. Specifically, portions of the proposed project area contain mapped habitat for soft shell clam (*Mya arenaria*), quahog (*Mercenaria mercenaria*), bay scallop (*Argopecten irradians*), American oyster (*Crassostrea virginica*), and blue mussel (*Mytilus edulis*). Land containing shellfish is deemed significant to the interest of the Wetlands Protection Act (310 CMR 10.34) and the protection of marine fisheries.

MA DMF offers the following comments for your consideration:

- MA DMF supports the mitigation measures proposed to avoid or minimize impacts to marine resources (ENF P. 7). As described in this mitigation measures section, MA DMF recommends a time of year (TOY) restriction for all in-water, silt-producing work from **January 15 to May 31** to protect winter flounder spawning and juvenile development [1]. As noted in the mitigation section, silt-producing work could occur within this TOY period if the proposed silt curtain containing the work area is installed prior to the start of the TOY period (i.e., prior to January 15<sup>th</sup>). MA DMF also supports proposed shellfish impact mitigation in the form of relocating shellfish from the project footprint prior to dredging in coordination with the Town shellfish constable.
- MA DMF supports the proposed restoration of approximately 240 square feet of filled intertidal habitat through the removal of an existing boat ramp, but requests additional information during the permitting process on any other associated restoration activities for this habitat beyond ramp removal (e.g., regrading substrate).
- The project includes the installation of 225 linear feet of bulkheading along the project shoreline. This proposed habitat alteration may require mitigation at the state or federal levels of the permitting process.

Questions regarding this review may be directed to John Logan in our New Bedford office at [john.logan@mass.gov](mailto:john.logan@mass.gov).

Sincerely,



Daniel J. McKiernan

Director

cc: Chatham Conservation Commission  
Brad Saunders, GEI Consultants, Inc.  
Kaitlyn Shaw, NMFS  
Robert Boeri, CZM  
Ed Reiner, EPA  
Tori LaBate, DFG  
Terry O'Neil, Tom Shields, Keri Anne Goncalves, Emma Gallagher, MA DMF

## **References**

1. Evans NT, Ford KH, Chase BC, Sheppard J. Recommended Time of Year Restrictions (TOYs) for Coastal Alteration Projects to Protect Marine Fisheries Resources in Massachusetts. Massachusetts Division of Marine Fisheries Technical Report, TR-47. <https://www.mass.gov/doc/time-of-year-recommendations-tr-47/download>. Accessed September 29, 2021. 2011.

DM/JL/sd



MASSWILDLIFE

## DIVISION OF FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581

p: (508) 389-6300 | f: (508) 389-7890

MASS.GOV/MASSWILDLIFE

March 17, 2022

Robert Duncanson  
Town of Chatham, Natural Resources  
Town Annex  
261 George Ryder Rd  
Chatham MA 02633

Chatham Conservation Commission  
549 Main Street  
Chatham MA 02633

RE:     Applicant:             Robert Duncanson  
       Project Location:       90 Bridge St  
       Project Description:    Site redevelopment  
       DEP Wetlands File No.: 010-3543  
       NHESP File No.:        **08-25151**

Dear Commissioners & Applicant:

The Natural Heritage & Endangered Species Program of the Massachusetts Division of Fisheries & Wildlife (the "Division") received a Notice of Intent with site plans (dated 2/1/2021) in compliance with the rare wildlife species section of the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.37). The Division also received the MESA Review Checklist and supporting documentation for review pursuant to the MA Endangered Species Act Regulations (321 CMR 10.18).

### **WETLANDS PROTECTION ACT (WPA)**

Based on a review of the information that was provided and the information that is currently contained in our database, the Division has determined that this project, as currently proposed, **will not adversely affect** the actual Resource Area Habitat of state-protected rare wildlife species. Therefore, it is our opinion that this project meets the state-listed species performance standard for the issuance of an Order of Conditions.

Please note that this determination addresses only the matter of **rare** wildlife habitat and does not pertain to other wildlife habitat issues that may be pertinent to the proposed project.

### **MASSACHUSETTS ENDANGERED SPECIES ACT (MESA)**

Based on a review of the information that was provided and the information that is currently contained in our database, the Division has determined that this project, as currently proposed, **will not result in a prohibited Take** of state-listed rare species. This determination is a final decision of the Division of Fisheries and Wildlife pursuant to 321 CMR 10.18. Any changes to the proposed project or any additional work beyond that shown on the site plans may require an additional filing with the Division

MASSWILDLIFE

pursuant to the MESA. This project may be subject to further review if no physical work is commenced within five years from the date of issuance of this determination, or if there is a change to the project.

Please note that this determination addresses only the matter of state-listed species and their habitats. If you have any questions regarding this letter please contact Emily Holt, Endangered Species Review Assistant, at (508) 389-6385.

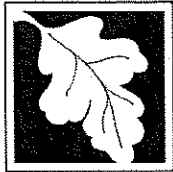
Sincerely,

A handwritten signature in black ink, reading "Everose Schlüter". The signature is written in a cursive, flowing style.

Everose Schlüter, Ph.D.  
Assistant Director

cc: Brad Saunders, GEI Consultants, Inc.  
MA DEP Southeast Region





**Massachusetts Department of Environmental Protection**  
 Bureau of Resource Protection - Wetlands  
**WPA Form 5 – Order of Conditions**  
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:  
 SE 10-3543  
 MassDEP File #

eDEP Transaction #  
 Chatham  
 City/Town

**A. General Information (cont.)**

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):

Barnstable

a. County

1280

c. Book

b. Certificate Number (if registered land)

13

d. Page

7. Dates: 2/18/2022 4/6/2022 5/5/2022  
 a. Date Notice of Intent Filed b. Date Public Hearing Closed c. Date of Issuance

8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):

Proposed Upland Site Improvements Plan

a. Plan Title

GEI Consultants & Coastal Engineering Co

b. Prepared By

2/2/2021

d. Final Revision Date

Dredging Plan

f. Additional Plan or Document Title

Russell J. Titmuss Structural No. 46514

c. Signed and Stamped by

1"=20'

e. Scale

2/1/2021

g. Date

**B. Findings**

1. Findings pursuant to the Massachusetts Wetlands Protection Act:

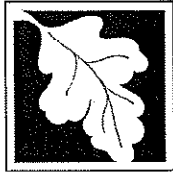
Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act (the Act). Check all that apply:

- a.  Public Water Supply
- b.  Land Containing Shellfish
- c.  Prevention of Pollution
- d.  Private Water Supply
- e.  Fisheries
- f.  Protection of Wildlife Habitat
- g.  Groundwater Supply
- h.  Storm Damage Prevention
- i.  Flood Control

2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

**Approved** subject to:

- a.  the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.



**Massachusetts Department of Environmental Protection**  
**Bureau of Resource Protection - Wetlands**  
**WPA Form 5 – Order of Conditions**  
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:  
 SE 10-3543  
 MassDEP File # \_\_\_\_\_  
 eDEP Transaction # \_\_\_\_\_  
 Chatham  
 City/Town

**B. Findings (cont.)**

Denied because:

- b.  the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**
- c.  the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**
- 3.  Buffer Zone Impacts: Shortest distance between limit of project disturbance and the wetland resource area specified in 310 CMR 10.02(1)(a) \_\_\_\_\_ a. linear feet

**Inland Resource Area Impacts: Check all that apply below. (For Approvals Only)**

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. <input type="checkbox"/> Bank	_____ a. linear feet	_____ b. linear feet	_____ c. linear feet	_____ d. linear feet
5. <input type="checkbox"/> Bordering Vegetated Wetland	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
6. <input type="checkbox"/> Land Under Waterbodies and Waterways	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
	_____ e. c/y dredged	_____ f. c/y dredged		
7. <input type="checkbox"/> Bordering Land Subject to Flooding	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
Cubic Feet Flood Storage	_____ e. cubic feet	_____ f. cubic feet	_____ g. cubic feet	_____ h. cubic feet
8. <input type="checkbox"/> Isolated Land Subject to Flooding	_____ a. square feet	_____ b. square feet		
Cubic Feet Flood Storage	_____ c. cubic feet	_____ d. cubic feet	_____ e. cubic feet	_____ f. cubic feet
9. <input type="checkbox"/> Riverfront Area	_____ a. total sq. feet	_____ b. total sq. feet		
Sq ft within 100 ft	_____ c. square feet	_____ d. square feet	_____ e. square feet	_____ f. square feet
Sq ft between 100-200 ft	_____ g. square feet	_____ h. square feet	_____ i. square feet	_____ j. square feet





**Massachusetts Department of Environmental Protection**  
**Bureau of Resource Protection - Wetlands**  
**WPA Form 5 – Order of Conditions**  
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

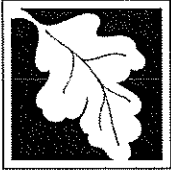
Provided by MassDEP:  
 SE 10-3543  
 MassDEP File #

eDEP Transaction #  
 Chatham  
 City/Town

**B. Findings (cont.)**

**Coastal Resource Area Impacts:** Check all that apply below. (For Approvals Only)

	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
10. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below			
11. <input checked="" type="checkbox"/> Land Under the Ocean	<u>11,450</u> a. square feet	<u>11,450</u> b. square feet		
	<u>                    </u> c. c/y dredged	<u>                    </u> d. c/y dredged		
12. <input type="checkbox"/> Barrier Beaches	Indicate size under Coastal Beaches and/or Coastal Dunes below			
13. <input checked="" type="checkbox"/> Coastal Beaches	<u>860</u> a. square feet	<u>860</u> b. square feet	<u>                    </u> c. nourishment	<u>                    </u> d. nourishment
14. <input type="checkbox"/> Coastal Dunes	<u>                    </u> a. square feet	<u>                    </u> b. square feet	<u>                    </u> c. nourishment	<u>                    </u> d. nourishment
15. <input type="checkbox"/> Coastal Banks	<u>                    </u> a. linear feet	<u>                    </u> b. linear feet		
16. <input type="checkbox"/> Rocky Intertidal Shores	<u>                    </u> a. square feet	<u>                    </u> b. square feet		
17. <input type="checkbox"/> Salt Marshes	<u>                    </u> a. square feet	<u>                    </u> b. square feet	<u>                    </u> c. square feet	<u>                    </u> d. square feet
18. <input type="checkbox"/> Land Under Salt Ponds	<u>                    </u> a. square feet	<u>                    </u> b. square feet		
	<u>                    </u> c. c/y dredged	<u>                    </u> d. c/y dredged		
19. <input checked="" type="checkbox"/> Land Containing Shellfish	<u>11,450</u> a. square feet	<u>11,450</u> b. square feet	<u>                    </u> c. square feet	<u>                    </u> d. square feet
20. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above			
	<u>                    </u> a. c/y dredged	<u>                    </u> b. c/y dredged		
21. <input checked="" type="checkbox"/> Land Subject to Coastal Storm Flowage	<u>8,400</u> a. square feet	<u>8,400</u> b. square feet		
22. <input type="checkbox"/> Riverfront Area	<u>                    </u> a. total sq. feet	<u>                    </u> b. total sq. feet		
Sq ft within 100 ft	<u>                    </u> c. square feet	<u>                    </u> d. square feet	<u>                    </u> e. square feet	<u>                    </u> f. square feet
Sq ft between 100-200 ft	<u>                    </u> g. square feet	<u>                    </u> h. square feet	<u>                    </u> i. square feet	<u>                    </u> j. square feet



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands  
**WPA Form 5 – Order of Conditions**  
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:  
SE 10-3543  
MassDEP File #

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Chatham  
City/Town

## B. Findings (cont.)

\* #23. If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.5.c (BVW) or B.17.c (Salt Marsh) above, please enter the additional amount here.

23.  Restoration/Enhancement \*:

a. square feet of BVW

b. square feet of salt marsh

24.  Stream Crossing(s):

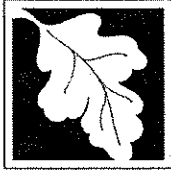
a. number of new stream crossings

b. number of replacement stream crossings

## C. General Conditions Under Massachusetts Wetlands Protection Act

The following conditions are only applicable to Approved projects.

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
  - a. The work is a maintenance dredging project as provided for in the Act; or
  - b. The time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
  - c. If the work is for a Test Project, this Order of Conditions shall be valid for no more than one year.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order. An Order of Conditions for a Test Project may be extended for one additional year only upon written application by the applicant, subject to the provisions of 310 CMR 10.05(11)(f).
6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Order will expire on 5/5/2025 unless extended in writing by the Department.
7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

## WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE 10-3543

MassDEP File #

eDEP Transaction #

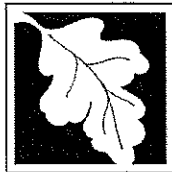
Chatham

City/Town

### C. General Conditions Under Massachusetts Wetlands Protection Act

8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
10. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,
 

"Massachusetts Department of Environmental Protection" [or, "MassDEP"]  
"File Number            SE 10-3543 "
11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.
12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
13. The work shall conform to the plans and special conditions referenced in this order.
14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

## WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:  
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### C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.
19. The work associated with this Order (the "Project")
- (1)  is subject to the Massachusetts Stormwater Standards
- (2)  is NOT subject to the Massachusetts Stormwater Standards

**If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:**

- a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.
- b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:
- i.* all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures;
  - ii.* as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;
  - iii.* any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

## WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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### C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

iv. all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;

v. any vegetation associated with post-construction BMPs is suitably established to withstand erosion.

c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following:

i.) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and

ii.) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.

d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.

e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.

f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

## WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE 10-3543

MassDEP File #

eDEP Transaction #

Chatham

City/Town

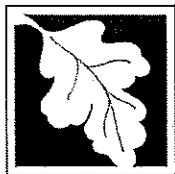
### C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- g) The responsible party shall:
1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
  2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
  3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.
- h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.
- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.
- l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (if you need more space for additional conditions, please attach a text document):

**see attached**

20. For Test Projects subject to 310 CMR 10.05(11), the applicant shall also implement the monitoring plan and the restoration plan submitted with the Notice of Intent. If the conservation commission or Department determines that the Test Project threatens the public health, safety or the environment, the applicant shall implement the removal plan submitted with the Notice of Intent or modify the project as directed by the conservation commission or the Department.



**Massachusetts Department of Environmental Protection**  
 Bureau of Resource Protection - Wetlands  
**WPA Form 5 – Order of Conditions**  
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:  
 SE 10-3543  
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 City/Town

**D. Findings Under Municipal Wetlands Bylaw or Ordinance**

1. Is a municipal wetlands bylaw or ordinance applicable?  Yes  No
2. The Chatham hereby finds (check one that applies):  
 Conservation Commission

- a.  that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw, specifically:

1. Municipal Ordinance or Bylaw \_\_\_\_\_ 2. Citation \_\_\_\_\_

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.

- b.  that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:

Chatham Wetlands Bylaw and Regulations  
 1. Municipal Ordinance or Bylaw \_\_\_\_\_ 2. Citation \_\_\_\_\_

3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.

The special conditions relating to municipal ordinance or bylaw are as follows (if you need more space for additional conditions, attach a text document):

see attached



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:  
SE 10- 3643  
MassDEP File #

eDEP Transaction #  
Chatham  
City/Town

**E. Signatures**

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

Please indicate the number of members who will sign this form.

This Order must be signed by a majority of the Conservation Commission.

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

5/5/22  
1. Date of Issuance  
5  
2. Number of Signers

90 Bridge Street

Signature Robert Bell  
Signature John S. McNeil  
Signature Karen Chatterin  
Signature [Signature]  
Signature [Signature]

Printed Name ROBERT BELL  
Printed Name Robert DeVecchio  
Printed Name KAREN CHATTIN  
Printed Name JANET WILKINSON  
Printed Name Euse L. Gordon

Signature \_\_\_\_\_  
Signature \_\_\_\_\_  
Signature \_\_\_\_\_

Printed Name \_\_\_\_\_  
Printed Name \_\_\_\_\_  
Printed Name \_\_\_\_\_

by hand delivery on  
Date 5/5/22

by certified mail, return receipt requested, on  
Date \_\_\_\_\_





Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

## WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE 10-3543

MassDEP File #

eDEP Transaction #

Chatham

City/Town

### F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.





**Massachusetts Department of Environmental Protection**  
 Bureau of Resource Protection - Wetlands  
**Request for Departmental Action Fee**  
**Transmittal Form**

DEP File Number: \_\_\_\_\_

Provided by DEP \_\_\_\_\_

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

## A. Request Information

### 1. Location of Project

a. Street Address \_\_\_\_\_

b. City/Town, Zip \_\_\_\_\_

c. Check number \_\_\_\_\_

d. Fee amount \_\_\_\_\_

### 2. Person or party making request (if appropriate, name the citizen group's representative):

Name \_\_\_\_\_

Mailing Address \_\_\_\_\_

City/Town \_\_\_\_\_

State \_\_\_\_\_

Zip Code \_\_\_\_\_

Phone Number \_\_\_\_\_

Fax Number (if applicable) \_\_\_\_\_

### 3. Applicant (as shown on Determination of Applicability (Form 2), Order of Resource Area Delineation (Form 4B), Order of Conditions (Form 5), Restoration Order of Conditions (Form 5A), or Notice of Non-Significance (Form 6)):

Name \_\_\_\_\_

Mailing Address \_\_\_\_\_

City/Town \_\_\_\_\_

State \_\_\_\_\_

Zip Code \_\_\_\_\_

Phone Number \_\_\_\_\_

Fax Number (if applicable) \_\_\_\_\_

### 4. DEP File Number:

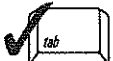
\_\_\_\_\_

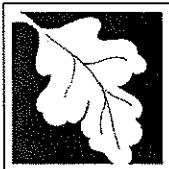
## B. Instructions

### 1. When the Departmental action request is for (check one):

- Superseding Order of Conditions – Fee: \$120.00 (single family house projects) or \$245 (all other projects)
- Superseding Determination of Applicability – Fee: \$120
- Superseding Order of Resource Area Delineation – Fee: \$120

**Important:**  
 When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.





**Massachusetts Department of Environmental Protection**  
Bureau of Resource Protection - Wetlands  
**Request for Departmental Action Fee**  
**Transmittal Form**

DEP File Number:

\_\_\_\_\_  
Provided by DEP

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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**B. Instructions (cont.)**

Send this form and check or money order, payable to the *Commonwealth of Massachusetts*, to:

Department of Environmental Protection  
Box 4062  
Boston, MA 02211

2. On a separate sheet attached to this form, state clearly and concisely the objections to the Determination or Order which is being appealed. To the extent that the Determination or Order is based on a municipal bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.
3. Send a **copy** of this form and a **copy** of the check or money order with the Request for a Superseding Determination or Order by certified mail or hand delivery to the appropriate DEP Regional Office (see <https://www.mass.gov/service-details/massdep-regional-offices-by-community>).
4. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.



SE 10- 3543  
CWP N-22- 10

File Number

TOWN OF CHATHAM CONSERVATION COMMISSION

Findings on Application filed under the  
Chatham Wetlands Protection Bylaw, Chapter 272

APPLICANT: Robert Duncanson  
Town of Chatham  
ADDRESS: 549 Main St.  
Chatham, MA 02633  
OWNER:  
(If other than applicant)  
ADDRESS:

Issuance Date

5/5/22

LOCATION of WORK: 90 Bridge Street Assessors' Map 14A Parcel 2-11

Property recorded at the Registry of Deeds or Land Court in Barnstable County:

\_\_\_\_\_ 1280 \_\_\_\_\_ 13 \_\_\_\_\_  
certificate (if registered land) plan book page

After public hearing in accordance with the Open Meeting Law (MGL Ch 39, s23B) closed on 4/6/22, the Chatham Conservation Commission, in accordance with the Town of Chatham Wetlands Protection Bylaw (Ch 272) finds:

- Permit is granted;**  
work may proceed subject to the attached Special Conditions
- Permit is denied;**  
see attached explanation

Chatham Conservation Commission:

Robert O. Bellis  
Rob X. Silveira  
Frank...  
Janet...

Wise...  
\_\_\_\_\_  
\_\_\_\_\_

signed by 5 of 7 Commissioners

**Town of Chatham – Order of Conditions**  
**Massachusetts Wetlands Protection Act, M.G.L. c. 131, § 40**  
**Town of Chatham Wetlands Bylaw C. 272 and Regulations**  
**90 Bridge Street, Map [ 14A ] Parcel [ 2-11 ]**  
**SE 10- 3543, CWP N-22-10**

**Owner/Applicant:** Robert Duncanson, Town of Chatham

**Owner's Representative:** GEI Consultants, Inc.

**Project Type:** Redevelopment of an existing recreational and commercial boating facility, including an aquaculture facility, ADA-accessible transient berthing facilities and enhanced off-loading facilities.

**SUPPORTING DOCUMENTS**

Through the Public Hearing process, plans, work protocols, and expert testimony were submitted. The following list of documents reflects the project as reviewed by the Commission and represents the project that seeks an Order of Conditions under the Massachusetts Wetlands Protection (310 CMR 10.00) and Town of Chatham Wetlands Protection Regulations. The following materials are hereby made a part of this Order:

- Wetlands Protection Act Form 3 – Notice of Intent and Wetland Fee Transmittal Form
- NOI Checklist
- Certified Abutters List and Map from the Chatham Assessor's Office
- Abutter Notification Letter and Mail Receipts
- Property description
- Wetland Delineation Information
- Project description
- Performance standards
- Construction Protocol
- Variance Request and Alternatives Analysis
- Maps: Locus Map, FEMA Flood Insurance Rate Map (FIRM)
- Proposed Upland Site Improvements Plan for property located at 90 Bridge Street, Chatham, MA, prepared for Town of Chatham, prepared by GEI Consultants & Coastal Engineering, Co., dated 2/1/2022, scale 1" =10', stamped by Russell J. Titmuss P.E.
- Dredging Plan for property located at 90 Bridge Street, Chatham, MA, prepared by GEI Consultants, dated 2/1/2022, scale 1"=20', stamped by Russell J. Titmuss P.E.
- Supplemental Information dated 4/6/2022.

**HEARING INFORMATION:**

The Applicant submitted a Notice of Intent that was received by the Conservation Division on 2/18/2022. The Conservation Commission held a public hearing on 3/9/2022 to review the

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proposed Notice of Intent. A draft Order of Conditions was reviewed at the Work Session on 4/6/2022.

**RESOURCE AREAS:**

The following Resource Areas are associated with the project site:

Resource Areas: Areas subject to protection under M.G.L. c. 131, § 40	310 CMR 10.00: DEP's Wetland Protection Regulations	Chatham Wetlands Protection Regulations
Land Under the Ocean	310 CMR 10.25 (2)	CWPR 2.01 (2)
Coastal Beaches	310 CMR 10.27 (2)	CWPR 2.02 (2)
Coastal Banks	310 CMR 10.30 (2)	CWPR 2.05 (2)
Land Containing Shellfish/Shellfish and Shellfish Habitat	310 CMR 10.34 (2)	CWPR 2.08 (2)
Land Subject to Coastal Storm Flowage (LSCSF)	310 CMR 10.04	CWPR 2.10 (2)(a)
Adjacent Upland Resource Area (AURA)		CWPR 4.01 (2)
Estimated Habitats of Rare Wildlife	310 CMR 10.37	

**PROPERTY AND PROJECT DESCRIPTION:**

*Property Description:*

The property is a 0.72-acre parcel purchased by the Town of Chatham (Town) in 2014 and used by recreational boaters and as a fish off-loading facility by the Town's commercial fishing fleet. The property is located on the Mitchell River, approximately 1,000 feet north of Stage Harbor and immediately southwest of the Bridge Street bridge. The property contains a 2,820-square foot, shell-surfaced parking and loading area; a ±512-square foot, T-shaped timber pier; a 14-foot by 20-foot, deteriorated, gravel-surfaced boat ramp; and a 185-square foot, single story, timber frame storage shed. The shoreline of the property consists of grouted stone rip rap.

The project site is located entirely within estimated habitat of rare wildlife and substantially within Chapter 91 Waterways jurisdiction. Further, the flowed tidelands at the project site are considered suitable habitat for shellfish species, including quahog (*Mercenaria*

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mercenaria) and bay scallop (*Argopecten irradians*). Existing wetland resource areas include Land Under the Ocean, Land Containing Shellfish, and Land Subject to Coastal Storm Flowage.

*Project and Mitigation Description:*

The Town proposes to redevelop the project site for multiple uses. In addition to continuation and enhancement of existing uses, the property is to be used for the propagation of shellfish by the Chatham Shellfish Division for subsequent seeding of shellfish beds throughout the Town and transient tie-up for recreational vessels with public access via ADA-compliant facilities. The following are the specific elements included in this redevelopment program.

*Municipal Aquaculture Facilities*

- A 4,100-square foot, timber pile supported pier for the siting of aquaculture equipment (e.g., upwellers, tanks, pumps, etc.) and activities, with the perimeter accessible to the public (see ADA-compliant Waterfront Accessibility Elements).
- A 30'x50' building for housing the aquaculture equipment ND ACTIVITIES TO BE SITED ON THE PIER. This building will be the former Coast Guard Station Chatham boathouse, a historic structure once located on Stage Harbor, which is being returned to the Town.
- A total of 800 square feet of floating upwellers (a.k.a. FLUPSYs).
- A 176-square foot public restroom building with storage space for shellfish staff. Water and sewer services for this structure will be secured from municipal lines in Bridge Street.
- One dedicated parking space paved with permeable pavers for use by shellfish staff.
- Two concrete floats, totaling 480 square feet, for berthing of municipal and public recreational vessels along the northeast and southwest face of the pier.

*Commercial Fish Off-loading Facilities*

- Expanded T-shaped pier through addition of a 360-square foot, pile-supported timber deck onto the south face of the existing pier.
- A 40' long concrete float, totaling 400 square feet, adjacent to the west face of the pier.
- Twenty (20) fender piles located along the water edge west of the aquaculture facilities.

*ADA-compliant Waterfront Accessibility Elements*



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- 800 square feet of timber floats providing for transient, temporary boat tie-up. Note that these floats also contain the FLUPSYs listed above aquaculture facilities.
- ADA-compliant ramp gangway providing access to the floats on the pier perimeter.
- A boardwalk of variable width, surfaced with composite decking, around the periphery of the aquaculture facility pier.
- A 4' wide paved (permeable pavers) access walkway along the waterfront with access to the public restroom and Bridge Street sidewalk.
- A paved, ADA-compliant parking space.

Miscellaneous Elements

- 225 linear feet of fiber-reinforced polymer (FRP) composite bulkheading along the face of the site, installed along the toe of the existing rip rap and backfilled to the top of slope to provide a surface for the installation of the ADA-compliant walkway. To mitigate potential impacts to fisheries during the installation of the sheet piles, piles will be installed using vibratory equipment and a “soft start procedure”, building up power slowly from a low energy start-up over a period of 20 to 40 minutes.
- Approximately 330 cubic yards of “improvement dredging” over an area of approximately 8,900 square feet beneath and around the aquaculture pier and associated floats to establish a depth of -6' at MLLW plus up to one foot of overdredge to provide sufficient water depth for the shellfish upweller pump intake.
- Approximately 330 cubic yards of “improvement dredging” along the water edge west of the aquaculture pier to establish a depth of -6' at MLLW plus up to one foot of overdredge. This dredging includes the removal of the existing gravel boat ramp.
- Approximately 100 cubic yards of “improvement dredging” along the water edge west of the expanded T-pier to establish a depth of -4' at MLLW plus up to one foot of overdredge.
- 6,250 square feet of surface parking, surfaced with crushed shells to promote the infiltration of stormwater.

**FINDINGS:**

Following review of the Application and Supporting Documents referenced above that describe the proposed Project and the information provided at the public hearings held on the application, the Conservation Commission finds that:

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1. There is an increase in disturbance in the No Disturb Zone and LSCSF. The cause for the increase has been noted in detail in the above project description. The net change totals 3,121 sf increase.
2. The potential environmental benefit stemming from the upweller and shellfish propagation offsets the increase in disturbance.
3. The proposed project includes activities in the NDZ, therefore a variance is required and/or requested. Given that the lot is constrained in size, the lot is extensively disturbed, the nature of the project requires work to be done in the NDZ and associated resource areas and the benefits of public access and shellfish propagation, the Commission finds that the increase in the NDZ is offset by an overall environmental benefit. Therefore, the Commission finds that the proposed Project qualifies for a variance from the Chatham bylaw pursuant to the Chatham Wetlands Protection Regulations, Part IV, Section 4.03, because the applicant has (a) proposed mitigation that will enhance and contribute to the protection of the resource areas; (b) demonstrated that there are no reasonable alternatives to the project within the proposed, site and (c) demonstrated, and the Commission finds, that, as conditioned herein, there will be no adverse impact from the project. Accordingly, the Commission grants the variance.
4. The Division of Fisheries and Wildlife found that the project will not adversely affect the habitat or result in a prohibited take of state listed rare species.
5. Flood plain is at EL 13 and the site is at EL6. FEMA Compliant flood vents will be installed and utilities will be elevated above the floodplain. Interior finishes will be designed to withstand flooding.
6. Raising the building above the floodplain would be prohibitive to the pump system. The Supplemental Material thoroughly addresses why it is not feasible to have the building above Base Flood Elevation.
7. The Town of Chatham voters approved the purchase of this property with the intention that it be used for multiple purposes by a variety of groups.
8. The rock revetment is failing and the bulkhead will provide stability and expand parking area. It would be more disruptive to remove the stone revetment than install the bulkhead and backfill behind it.
9. The modifications will make the site ADA compliant.
10. The parking area will be pervious.
11. Dredging currently exists but will be expanded upon.
12. A single bathroom will be installed due to large public traffic and for use by Town employees. This will replace the less favorable portable toilet.

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13. No evidence of eelgrass was found at this location.
14. Dredging was designed for minimal maintenance.
15. The Town of Chatham Shellfish Constable stated at the hearing that the project will not adversely affect the productivity of the site for shellfish.

**DECISION:** The Commission **APPROVES** the Project and finds the project as described in the Supporting Documents can be permitted subject to the following Special and General Conditions which protect the interests identified in the Chatham Wetland Bylaw c. 272 and Regulations and Massachusetts Wetland Protection Act M.G.L. c. 131 § 40 and the Regulations 310 CMR 10.00 (inclusive).

DISCLAIMER: By issuing this permit, the Conservation Commission makes no determination of property rights or the legal ability of the applicant to undertake this project. In all cases, the applicant proceeds with the project at his/her own peril in this regard.

**CONDITIONS**

The Project approval is based on compliance with the following Special and Standard Conditions. Except as otherwise specifically notes on the approved Plan(s), these Conditions apply as and to the extent they are applicable to the specific Project. The Standard Conditions supplement the Special Conditions and relate generally to steps necessary for the protection of wetland Resource Areas before, during, and after project completion, and to provide documentation necessary to confirm that the project has been completed as permitted. If there is any conflict or inconsistency between the Standard Conditions and the Special Conditions, the Special Conditions shall control.

**SPECIAL CONDITIONS:**

1. The approved Site Plan Dredging Plan, all Notes on the Approved Plans and Work Protocols contained in the Applicant's Narrative and Supplemental Narrative are hereby incorporated by reference and made a part of this Order of Conditions.
2. Applicant shall take special care to ensure that no unpermitted alteration, including temporary alteration, of the No Disturb Zone (NDZ) occurs during the project. Steps to be taken to protect the NDZ shall include, as examples and without limitation, avoiding any excavation within the NDZ, installation of Limit of Work (hay bales, silt fence or similar protective barrier) along the boundaries of the NDZ to prevent any unnecessary incursion. Any disturbance of NDZ that cannot be avoided shall be minimized as much as

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possible and the NDZ shall be restored to its pre-construction condition immediately after the project is completed.

3. The bathroom shall be served by public sewer and water.
4. The FLUPSY floats shall be removed and stored offsite December 15 1 through April 1. The concrete floats and steel piles will remain.
5. No floats, vessels or other equipment shall be allowed to bottom out at any time.
6. Contractors are required to meet current EPA emissions standards for heavy equipment being utilized for construction activities. No equipment shall be re-fueled within any resource area.
7. All project generated discharges are subject to the terms of the existing NPDES permit.
8. No hazardous materials, other than limited materials for the emergency generator shall be stored in the upwell unit. The generator shall have a pan below it to collect any chemicals.
9. In the case of an impending storm, the site shall be swept and all hazards minimized to the best extent possible and a storm report shall be submitted to the Conservation Agent outlining any measures taken and any aftermath.
10. No pesticides, fertilizers or new permanent irrigation is permitted within any Resource Areas in Conservation jurisdiction. This condition shall be recorded as an on-going condition on the Certificate of Compliance.

**STANDARD CONDITIONS:**

**A. Pre-construction Conditions**

1. All pre-construction activities shall be conducted in a manner that avoids alteration to any wetland Resource Area as defined in 310 CMR 10.00 and the Town of Chatham Wetlands Protection Regulations.
2. Project installation and maintenance shall be implemented, supervised, and monitored by a qualified consultant/contractor approved by the Conservation Commission. If, following Commission review, approval of the plans, and issuance of an Order of Conditions, there is no consultant/contractor selected or there is a change in consultant/contractor, the Applicant shall appear before the Conservation Commission at a regularly scheduled meeting to request approval of a consultant/contractor appropriately qualified to undertake the Project prior to undertaking or continuing any work.
3. Prior to the commencement of work an erosion and sediment control plan shall be prepared and submitted to the Conservation Agent.

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4. **Prior to the commencement of work a spill management plan shall be prepared and submitted to the Conservation Agent.**
5. Prior to any site disturbance and to the pre-construction meeting, all sedimentation controls shall be in place and ready for inspection by the Agent during the pre-construction meeting. The Agent may instruct the contractors to modify the sedimentation controls to protect wetland Resource Areas and for compliance with the Order of Conditions. Note: Hay is not acceptable for erosion controls.
6. Prior to any activity on the property, the Limit of Work lines, Resource Areas and associated buffer zones, and/or other structures (i.e. location of foundation) shall be staked in the field and inspected by the Conservation Agent at the Pre-Construction meeting. Such markers shall be placed by a professional Land Surveyor or Engineer and the markers shall be checked and replaced as necessary and shall be maintained until the construction is complete. The engineer or land surveyor for the project shall take responsibility for the placement of the stakes and refreshing the stakes as necessary to reflect the approved plan. The contractors shall be informed that the use of machinery, stockpiling and storage of materials, or any construction activity shall not take place beyond the limit of work line at any time.
7. Prior to any work commencing and the pre-construction meeting with the Agent, a sign shall be visibly displayed on the site showing the DEP and/or the Chatham Conservation Division file number and shall remain posted until the issuance of a Certificate of Compliance. A copy of this Order of Conditions and site plan shall be retained on the site at all times and visibly displayed in a weatherproof container.
8. Prior to any site disturbance, a pre-construction meeting will be held with the responsible contractors, engineer, and Commission/Agent to review the Order of Conditions, the work protocol and other required materials identified in this Order of Conditions. Multiple contractors may be required to attend the pre-construction meeting, at the discretion of the Conservation Agent or Conservation Commission. Notice of work start and completion shall be given to the Agent in writing before or during the Pre-Construction meeting. The notice of start of work shall also include the name(s) and telephone number(s) of the person(s) responsible on site for compliance with this Order. Work shall not begin until a pre-construction meeting is held, and the Agent determines the work can proceed.
9. The applicant shall identify a professional land surveyor, engineer, landscape designer and/or ecological restoration professional (as appropriate to the project), or other professional approved by the Commission) to act as a project site manager or “clerk of

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the works”. The “clerk of the works” shall be approved by the Conservation Agent at the pre-construction meeting. The clerk of the works shall supervise the contractor(s) and inspect the site regularly whenever work takes place in or within 100 feet of a wetland Resource Area. The clerk of the works will be onsite regularly and shall take responsibility for the proper functioning of drainage and erosion control systems for the project. The phone number for the “Clerk of the Works” shall be given to the Agent at the Pre-Construction meeting. Prior to any work commencing, the named “Clerk of the Works” shall sign and submit a form acknowledging their understanding of this Order of Conditions and asserting that they will provide all subcontractors with a copy of these Conditions as they apply to each subcontractor. Multiple clerks of the works may be required where projects involve multiple components which each need specialized oversight capability.

**B. Conditions for Demolition, Construction, Site Disturbance and Drainage**

1. All material and debris, with the exception of dredge material to be used on site, generated during demolition of existing structures shall be loaded onto waiting trucks and removed from the site daily. Stockpiling of debris shall not occur within any Resource Areas.
2. Under no condition will the operation of equipment; stockpiling of soil; or the cutting, clearing or pruning of trees, shrubs or ground cover or other site disturbance take place on the wetland side of the no-work line without prior consent of the Conservation Commission.
3. All construction materials, earth stockpiles, landscaping materials, slurry pits, waste products, refuse, debris, stumps, slash or excavate shall be stockpiled or collected in areas as shown and labelled on the approved site plan(s), or if no such areas are shown on the site plan(s) then these must be placed or stored outside all Resource Areas and associated buffer zones under cover and surrounded by a double staked row of straw bales to prevent contact with rain water. Port-o-potties shall be sited at least 100 feet from wetland Resource Areas and 200 feet from rivers or on existing driveways. Washing of equipment and tools shall be done off site or handled in a manner approved by the Conservation Agent and in no case, shall concrete or masonry debris be left on site and uncovered.
4. No material of any kind shall be buried, placed or dispersed in areas within jurisdiction of the Conservation Commission, except as expressly permitted by the Order of Conditions or the plan(s) approved herein.

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5. Disturbed areas where the grade is steep (>10%) shall not be exposed for longer than two months. If exposed for longer than 2 weeks, erosion control matting shall be installed and firmly anchored in place to prevent soil from washing out during rain or flooding events. In addition, the exposed area(s) shall be seeded with perennial rye or other native grasses for stability. All sedimentation controls shall be approved by the Agent prior to installation. All disturbed areas shall be stabilized and seeded prior to November 1<sup>st</sup> of each year and no disturbed areas shall be left unprotected or without erosion controls during the winter months (December – April).
6. Machinery and vehicle access shall be from the existing driveway and across upland areas, unless otherwise specified in the Approved Work Protocol or approved Site Plan(s). The granting of this permit does not obviate the Applicant's need to gain proper permission from any abutter whose property is to be used for access.
7. Machinery and vehicles, when not in use, shall be parked on the existing driveway, unless otherwise specified in the Order of Conditions or on the approved site plan(s).
8. There shall be no discharge or spillage of fuel, oil or other pollutants to any wetland Resource Area(s) or associated buffer zones. The Applicant shall take all reasonable precautions to prevent the release of pollutants through negligence, ignorance, accident or vandalism.
9. Runoff from hardscaped areas or roof runoff shall be allowed to percolate down through the soils from the surface using best management practices for handling stormwater, and as approved by the Commission/Agent. At no time may runoff be directed to any Resource Area. All stormwater runoff from hardscaped areas on the applicant's property, including runoff from roofs, patios, terrace, swimming pools and other hardscape features, must be captured on the applicant's property and not allowed to flow onto neighboring properties or into Resource Areas. This project shall not increase runoff, nor cause flood or storm damage to abutters, other property owners or the Resource Area. This condition shall be recorded as an on-going condition on the Certificate of Compliance.
10. Failure to follow approved and required maintenance practices for the Project, or any part of this Project is shown to cause negative impact to the Resource Areas shall be cause for the Commission to require that remedial measures must be undertaken. The Commission reserves the right to require that a hearing be held, at the applicant's expense, in order to discuss the necessary remedial measures and determine if more information from the Applicant or a Third Party Consultant is required. The Commission

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may determine that the approved project is to be modified as necessary to protect the interests of the Act.

**PROJECT SPECIFIC CONDITIONS:**

**C. Installation of Bulkhead**

1. The approved Site Plan and Planting Plans, the notes on the approved the plan(s) and any Construction Protocols and/or notes are hereby incorporated by reference and made a part of this Order of Conditions.
2. Any equipment to be used in any Resource Area shall be inspected for leaks prior to entering in the Resource Area(s) and biodegradable hydraulic fluid shall be used as much as practicable.
3. Salt Marsh within 100 feet of the proposed project shall not be permanently damaged in any way and the productivity of the salt marsh shall not be adversely impacted. In addition, the project shall not have an impact to the shellfish resource area (intertidal lands). This condition shall be recorded as an Ongoing Condition on the Certificate of Compliance.
4. There shall be no adverse impact to the shellfish habitat or intertidal area, outside of the project limits, during the construction of the bulkhead or after the bulkhead is installed. This condition shall be recorded as an ongoing condition on the Certificate of Compliance.
5. If necessary, matting shall be temporarily placed within the Limit of Work to protect the Resources Areas from the use of heavy machinery. Matting shall not be placed over salt marsh or existing shellfish habitat.
6. The Applicant shall demarcate the existing salt marsh areas and intertidal areas with silt fencing prior to construction. These demarcated areas will be reviewed by the Conservation Agent, Shellfish Constable and Director of Coastal Resources at the Pre-Construction meeting.
7. Machinery and vehicle access shall be from the existing driveway and across upland areas, unless otherwise specified in the Approved Work Protocol or approved Site Plan(s). The granting of this permit does not obviate the Applicant's need to gain proper permission from any abutter whose property is to be used for access.
8. All equipment used during construction shall be removed from tidal and sandy access routes prior to any astronomical tidal or storm event.



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9. In the event the Project is not performing as anticipated or has suffered a catastrophic failure and that, as a consequence, the Applicant and/or the Commission determines some part or all of it should be removed, the Applicant shall seek approval for a protocol to remove project components or the entire Project from the Resources Area(s). This condition shall be recorded as an ongoing condition on the Certificate of Compliance.
10. The approved shorefront protection system may not be appropriate *indefinitum* due to changes in site conditions, the Commission reserves the right in the future to require that a hearing be held, at the applicant's expense. This would be done for the purpose of determining whether conditions on the site have changed substantially, particularly in relation to the change in mean high water elevation or other. The Commission may determine that approved shorefront protection system the is to be modified as necessary to protect the interests of the Act. This condition shall be recorded as an ongoing condition on the Certificate of Compliance.
11. Failure to follow maintenance of the Project or if the any part of this Project shall be shown to cause negative impact to the resource areas shall be cause for the Commission to require that remedial measures must be undertaken. This condition shall be recorded as an ongoing condition on the Certificate of Compliance.

**D. Dredging**

1. Salt Marsh within 100 feet of the proposed project shall not be permanently damaged in any way and the productivity of the salt marsh shall not be adversely impacted. In addition, the project shall not have an impact to the shellfish resource area (intertidal lands). This condition shall be recorded as an Ongoing Condition on the Certificate of Compliance.
2. Prior to the commencement of any dredging, the proposed dredge footprint area shall be surveyed for the presence of any shellfish. **All shellfish found in the area shall be relocated outside of the dredge footprint.**
3. **All dredged material shall be hauled off-site as it is not compatible for nourishment.**
4. There shall be no adverse impact to the shellfish habitat or intertidal area (outside the project area) during the construction of the revetment or after the revetment is installed. This condition shall be recorded as an ongoing condition on the Certificate of Compliance.
5. The operator of the dredge or excavator shall be approved by the Conservation Commission or Conservation Agent prior to start of work.
6. The operator of the dredge/excavator and engineer shall be present at the Pre-Construction meeting with the Conservation Agent, Shellfish Constable and the Director

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of Coastal Resources. The Pre-Construction meeting shall take place prior to start of work. The contractor, engineer and town staff shall walk the access route during the Pre-Construction meeting.

7. Portions of the access route adjacent to vegetated areas (i.e. beach grass, etc.) shall be staked in the field. The staking shall be reviewed at the Pre-Construction meeting with the Agent and Town Staff. The approved dredge footprint shall be staked in the field with metal posts. The metal stakes shall be installed prior to the Pre-Construction meeting with the Conservation Agent.
8. A copy of the Chapter 91 license from DEP Waterways shall be submitted to the Commission prior to work commencement.
9. No equipment or material shall be driven over or placed on any adjacent salt marsh or shellfish beds.
10. There shall be no discharge or spillage of fuel, oil or other pollutants on to any part of this site. The applicant shall take all reasonable precautions to prevent the release of pollutants through ignorance, accident or vandalism.
11. No equipment shall be staged within 25 feet of an existing salt marsh. There shall be no damage to salt marsh during the proposed work. If there is single or cumulative damage to the Salt Marsh Resource Area, the Applicant shall be required to report the incident and submit a remediation plan in writing to the Conservation Commission within 30 days of the incident. This condition shall be recorded as such on the Certificate of Compliance.
12. The proposed dredging shall only occur during the allowed dredge period and in the approved dredge footprint. All in-water work shall not occur during the Time-of-Year (TOY) restriction designated by the Division of Marine Fisheries and Natural Heritage and Endangered Species Program of the MA Division of Fisheries and Wildlife (NHESP). **If work is to be done outside of the flounder window, a silt curtain must be in by January 15 and remain until the work is complete.** This condition shall be recorded as such on the Certificate of Compliance.
13. All Conditions from Massachusetts Division of Marine Fisheries and Natural Heritage and Endangered Species Program of the MA Division of Fisheries and Wildlife shall apply to the proposed work (i.e. dredging, excavating, etc.). This condition shall be recorded as such on the Certificate of Compliance.
14. If the dredging activities take place on a barge, the barge shall not be allowed to bottom out during the dredging process. This condition shall be recorded as such on the Certificate of Compliance.

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15. Unless otherwise discussed and approved by the Commission, the applicant shall secure a Massachusetts registered professional engineer to supervise the contractor and will observe the site on a daily basis during the dredging activities. Reports shall be prepared by the Engineer and shall be submitted in writing to the Conservation Agent on a weekly basis. The weekly reports shall include:
  - a. a description of work performed each day,
  - b. photographs of the site during the dredging activities,
  - c. description of how the approved dredge footprint was staked in the field
  - d. certification from an Engineer that the work was performed according the approved site plan and in the approved dredge footprint.
16. A pre and post-dredge survey shall be performed and submitted to the Conservation Agent. This condition shall be recorded as such on the Certificate of Compliance.
17. If there are minor alterations to the siting of the dewatering area or disposal sites, the Engineer shall submit an updated site plan and work protocol to Town Staff for review. The Agent has the authority to determine if the minor alterations should be reviewed by the Conservation Commission. If these minor changes occur prior to or during Construction, no work shall begin or continue until the new protocol is approved by Town Staff.
18. It shall be the responsibility of the contractor to remove the equipment from the beach prior to any storm event. The Conservation Agent shall be notified when the equipment is removed and where will be stored during the storm.
19. The equipment shall be removed from the beach immediately after the work is completed for the season.
20. The access way and any roads used for access shall be returned to pre-construction condition.
21. The granting of this permit does not obviate the applicant's need to gain proper permission from any abutter whose property is to be used for access.

**E. General Conditions**

1. The “applicant” as used in this Order of Conditions shall refer to the owner, any successor in interest or successor in control of the property referenced in the Notice of Intent, supporting documents and this Order of Conditions.
2. This Order of Conditions shall be recorded at the registry of deeds/land court and proof of the recording shall be submitted to the Conservation Commission prior to the Pre-Construction meeting with the Conservation Agent.

**Town of Chatham – Order of Conditions**  
**Massachusetts Wetlands Protection Act, M.G.L. c. 131, § 40**  
**Town of Chatham Wetlands Bylaw C. 272 and Regulations**  
**90 Bridge Street, Map [ 14A ] Parcel [ 2-11 ]**  
**SE 10- 3543, CWP N-22-10**

3. The Applicant shall provide a copy of this Order of Conditions to the person or persons supervising the activities that are the subject of this Order and will be responsible for ensuring that all persons performing the permitted activities are fully aware of the terms and conditions of this Order of Conditions.
4. Any person performing work on the activities permitted with this Order of Conditions is individually responsible for understanding and complying with the requirements of this Order, the Wetlands Protection Act (310 CMR 10.00) and the Town of Chatham Wetland Protection Regulations.
5. This Order of Conditions authorizes only the activities described on the approved plan(s) and approved documents referenced in this Order of Conditions. Any other or additional activities in areas within jurisdiction of the Conservation Commission shall require a separate review and approval by the Conservation Commission.
6. If any change is made to the approved plan(s) which may or will alter an area subject to protection under the Wetlands Protection Act (310 CMR 10.00) and the Town of Chatham Wetlands Protection Regulations, the Applicant shall inquire from the Conservation Commission and/or the Conservation Agent, prior to implementing the change in the field, whether the change is significant enough to require an additional filing. Any errors in plans or information submitted by the Applicant or their Representative shall be considered changes and the above process shall be followed. This Order of Conditions is subject to the applicant obtaining all applicable local and state permits.
7. The Commission, its employees and agents shall have the right of entry to inspect for compliance with the terms of this Order until a Certificate of Compliance has been obtained and recorded at the Barnstable Registry of Deeds. Commission members or their agent may acquire any information, measurements, photographs, observations and/or materials or may require the submittal of any data or information deemed necessary by this Commission for that evaluation.
8. This Order of Conditions is valid for three years under the local Wetlands Protection By-Law and three years under MGL Ch. 131, s 40. Application for an extension shall be submitted in writing to the Conservation Commission at least thirty days prior to the expiration date.
9. The Commission reserves the right to amend this Order of Conditions prior to completion of construction, after a legally advertised public hearing, if plans or circumstances are changed or if new conditions or information so warrant.

**Town of Chatham – Order of Conditions**  
**Massachusetts Wetlands Protection Act, M.G.L. c. 131, § 40**  
**Town of Chatham Wetlands Bylaw C. 272 and Regulations**  
**90 Bridge Street, Map [ 14A ] Parcel [ 2-11 ]**  
**SE 10- 3543, CWP N-22-10**

10. The Commission reserves the right to require additional information from the Applicant or his/her Representative prior to completion of construction, after a legally advertised public hearing, if plans or circumstances are changed or if new conditions or information so warrant. If the Applicant will not provide such information, the Commission reserves the right to hire a third party applicant at the homeowner's expense to obtain the information needed.
11. The Approved Plan for this Order of Conditions does not constitute specific acceptance of the boundaries of resource areas for work. The Commission may require new plans and/or delineation of resource areas, as it deems appropriate.
12. Upon completion of the project the applicant shall submit a written request for a Certificate of Compliance to the Commission which shall include:
  - a. A written statement from a Massachusetts registered professional engineer certifying that the work has been conducted as shown on the plan and documents referenced above, as conditioned by the Commission.
  - b. An "as-built" plan, including final contours and planted areas, prepared and signed and stamped by a Massachusetts registered professional engineer or land surveyor for the file.
13. This Order of Conditions shall be deemed not to have been complied with until the applicant has obtained a Certificate of Compliance and it has been recorded in the Barnstable County Registry of Deeds.
14. Failure to comply with the above conditions shall constitute cause to revoke this permit and/or issue fines.



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

Maura T. Healey  
Governor

Kimberley Driscoll  
Lieutenant Governor

Rebecca L. Tepper  
Secretary

Gary Moran  
Acting Commissioner

Town of Chatham  
c/o GEI Consultants, Inc.  
Attn: Brad Saunders  
124 Grove Street, Suite 300  
Franklin, MA 02038

**JAN 19 2023**

Re: **COMBINED CHAPTER 91 PERMIT & 401 WATER QUALITY CERTIFICATION  
APPLICATION FOR BRP WW 26 FOR DREDGING**

At: 90 Bridge Street – Chatham  
Cape Cod Watershed

401 WQC Transmittal No: X288738  
Chapter 91 Permit No: 15573  
Wetlands File No: SE 10-3543  
ACoE Application No:

Dear Mr. Saunders:

The Department of Environmental Protection (“MassDEP”) has reviewed your client’s application for a Combined Permit for Waterways & 401 Water Quality Certification (“Combined Permit”), as referenced above. In accordance with the provisions of Section 401 of the Federal Clean Water Act as amended (33 U.S.C. §1251 *et seq.*), MGL c.21, §§ 26-53, and 314 CMR 9.00, MassDEP has determined there is reasonable assurance the project or activity will be conducted in a manner which will not violate applicable water quality standards (314 CMR 4.00) and other applicable requirements of state law. Additionally, the MassDEP has approved the proposed dredging pursuant to M.G.L. Chapter 91 and Regulations (310 CMR 9.00). The Chapter 91 License associated with this project will be issued as a separate document.

The waters of the Mitchell River are designated in the Massachusetts Surface Water Quality Standards as Class SA. Such waters are designated “as excellent habitat for fish, other aquatic life and wildlife and for primary and secondary contact recreation.” Anti-degradation provisions of these Standards require that “existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.”

**Background:** The property at 90 Bridge Street is a 0.72-acre parcel purchased by the Town of Chatham in 2014 and used by recreational boaters and as a fish off-loading facility by the Town’s commercial fishing fleet. The property is located on the Mitchell River, approximately 1,000 feet north of Stage Harbor and

immediately southwest of the Bridge Street bridge. The property contains a 2,820-square foot, shell-surfaced parking and loading area; a ±512-square foot, T-shaped timber pier; a 14-foot by 20-foot, deteriorated, gravel-surfaced boat ramp; and a 185-square foot, single story, timber frame storage shed. The shoreline of the property consists of grouted stone rip rap.

Proposed Project: The Town proposes to redevelop the project site for multiple uses. In addition to continuation and enhancement of existing uses, the property is to be used for the propagation of shellfish by the Chatham Shellfish Division for subsequent seeding of shellfish beds throughout the Town and transient tie-up for recreational vessels with public access via ADA-compliant facilities. The redevelopment will include reconstruction and expansion of the existing bulkhead and docking facilities. Three areas of improvement dredging are proposed to provide sufficient water depths to accommodate these proposed upgrades. Proposed improvement dredging consists of:

- Approximately 860 cubic yards of improvement dredging over an area of approximately 8,800 square feet beneath and around the aquaculture pier and associated floats to establish a depth of -6' at MLW with an allowable one foot overdredge to provide sufficient water depth for the shellfish upweller pump intake.
- Approximately 350 cubic yards of improvement dredging over an area of approximately 1,811 square feet along the water edge west of the aquaculture pier to establish a depth of -6' at MLW with an allowable one foot overdredge. This dredging includes the removal of the existing gravel boat ramp.
- Approximately 120 cubic yards of improvement dredging over an area of approximately 850 square feet along the water edge west of the expanded T-pier to establish a depth of -4' at MLW with an allowable one foot overdredge.

Sediment sampling data: A total of four (4) sediment core samples were collected from within the proposed improvement dredging areas on December 10, 2021. Each core sample was taken to the proposed depth of dredging, measured, photographed, and visually analyzed. Samples were collected and provided to Alpha Analytical for analysis of grain size distribution, moisture content, and general chemistry consistent with the requirements specified at 314 CMR 9.07(2)(b). The findings of the grain size analyses indicate that the sediments to be dredged consist of silty sand or sandy silt, with fine material (silts and/or clay) making up at least 16 percent of the sample.

All samples were analyzed for the presence of Metals (Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel and Zinc), Polynuclear Aromatic Hydrocarbons (PAHs), Polychlorinated Biphenyls (PCBs), Extractable Petroleum Hydrocarbons, and Total Organic Carbon, none of which exceeded the Reportable Concentration (RC) S-1 criteria of the Massachusetts Contingency Plan (MCP) or the threshold levels set by MA-DEP Policy #COMM-97-001.

Dredged material dewatering and beneficial reuse of sediments: All proposed dredging will be conducted mechanically and all dredged material will be dewatered on-site within a confined dewatering basin as shown on Permit Plan No. 15573. The basin will be lined with geotextile fabric and contained by a combination of Jersey barriers and hay bales. Once dewatered, the dredged material will be trucked for disposal as ordinary fill material to an upland location.

Time-of-year (TOY) restriction: According to a letter dated September 1, 2022, the Division of Marine Fisheries (DMF) recommends a time-of-year (TOY) restriction from January 15<sup>th</sup> through May 31<sup>st</sup> in order to protect winter flounder spawning and juvenile development. DMF recommends that the proposed silt curtain that is to be deployed around the dredging sites is installed prior to this TOY restriction. (See Special Condition 10 below)

Rare Species and Rare Wildlife Habitat: The project site is both located within the Priority Habitats of Rare Species and Estimated Habitats of Rare Wildlife in accordance with the Massachusetts Natural Heritage Atlas, 14<sup>th</sup> Edition. According to a letter dated March 17, 2022, the Natural Heritage & Endangered Species Program (NHESP) has determined that the project will not adversely affect the habitat of state-protected rare wildlife species and will nor result in a prohibited Take of state-listed rare species.

Public Notice: The Combined Permit Application public notice was published in the Cape Cod Chronicle with a Notification Date of August 24, 2022. No comments were received by MassDEP during the 21-day public comment period pursuant to 314 CMR 9.05(3)(e) and the 30-day public comment period pursuant to 310 CMR 9.13(1)(c)5, which ended on September 14, 2022 and September 23, 2022, respectively.

Section 61 Findings: Pursuant to M.G.L. Chapter 30, Sections 61 to 62H inclusive [the Massachusetts Environmental Policy Act (“MEPA”)], the project, as referenced in Combined Permit Application, was reviewed as EOEEA No. 16441 and the Secretary’s Certificate, issued on October 22, 2021 determined that no further MEPA review is required.

**Therefore, based on information currently in the record, the Department grants a Combined Permit for this project subject to the following conditions to maintain water quality, to minimize impact on waters and wetlands, and to ensure compliance with appropriate state law. The Department further certifies in accordance with 314 CMR 9.00 that there is reasonable assurance the project or activity will be conducted in a manner which will not violate applicable water quality standards (314 CMR 4.00) and other applicable requirements of state law. Finally, the Department has determined that upon satisfying the conditions and mitigation requirements of this approval, the project provides a level of water quality necessary to protect existing uses and accordingly finds that the project to be implemented satisfies the Surface Water Quality Standards at 314 CMR 4.00**

STANDARD COMBINED PERMIT CONDITIONS:

1. Acceptance of this Combined Permit shall constitute an agreement by the Applicant to conform to all terms and conditions stated herein.
2. This Combined Permit is issued upon the express condition that any and all other applicable authorizations necessitated due to the provisions hereof shall be secured by the Applicant prior to the commencement of any activity hereby authorized.
3. This Combined Permit shall be revocable by the Department for noncompliance with the terms and conditions set forth herein. This Combined Permit may be revoked after the Department has given written notice of the alleged noncompliance to the Applicant, or his agent, and those persons who have filed a written request, with the Department, for such notice and have afforded the Applicant a reasonable opportunity to correct said noncompliance.
4. This Combined Permit is issued subject to all applicable federal, state, county, and municipal laws, ordinances, by-laws, and regulations, including but not limited to, a valid Order of Conditions issued pursuant to the Wetlands Protection Act, M.G.L. Chapter 131, s.40.
5. This Combined Permit is issued upon the express condition that dredging and transportation and disposal of dredge material shall be in strict conformance with all applicable requirements and authorizations of the Department.



6. The Applicant shall assume and pay all claims and demands arising in any manner from the work authorized herein, and shall hold harmless and indemnify the Commonwealth of Massachusetts, its officers, employees, and agents from all claims, audits, damages, costs and expenses incurred by reason thereof.
7. Dredging under this Combined Permit shall be conducted in a manner not to cause unnecessary obstruction of the free passage of vessels. When conducting authorized dredging, care shall be taken not to cause any shoaling. If, however, any shoaling is caused, the Applicant shall, at his/her expense remove the shoal areas. If at any time the Department deems necessary a survey or surveys of the dredged area, the Applicant shall pay all costs associated with the work and the supervision of such work.
8. Nothing in this Combined Permit shall be construed as to impair the legal rights of any persons, or authorize dredging on land not owned by the Applicant without consent of the owner(s) of such property.

#### SPECIAL COMBINED PERMIT CONDITIONS

1. The Contractor shall take all steps necessary to assure that the proposed activities will be conducted in a manner that will avoid violations of the anti-degradation provisions of the Massachusetts Surface Water Quality Standards, 314 CMR 4.00, that protect all waters, including wetlands.
2. Prior to the start of work, or any other portion of the work thereafter, the Department shall be notified of any change(s) in the proposed project or plans that may affect waters or wetlands. The Department will determine whether the change(s) require a revision to this Combined Permit.
3. Dredging in accordance with this Combined Permit may begin following the 21-day appeal period and once all other Permits have been received.
4. All work shall be performed in accordance with the following documents and plans:
  - Application for Combined Permit, Transmittal Form # X288738, received June 24, 2022;
  - Plan entitled “Plans Accompanying Petition of Town of Chatham for Pier, Bulkhead, and Float Construction, 90 Bridge Street, Mitchell River, Chatham, MA” consisting of nine (9) sheets, various scales, dated November 30, 2022, prepared by GEI Consultants;
  - Order of Conditions SE 10-3543, issued by the Chatham Conservation Commission on May 5, 2022.
5. The Department shall be notified, attention Brendan Mullaney 508-946-2707, one week prior to the start of in-water work so that Department staff may inspect the work for compliance with the terms and conditions of this Combined Permit.
6. The applicant and its contractor shall allow agents of the Department to enter the project site to verify compliance with the conditions of this Combined Permit.
7. The term of the Chapter 91 dredge permit of this Combined Permit is five years in accordance with 310 CMR 9.15(2). The term of the 401 WQC dredging of the Combined Permit remains in effect for the same duration as the federal permit that requires it or five years from the date of issuance of this Combined Permit whichever comes first.

8. The applicant may request an extension of the 401 dredging of the Combined Permit in accordance with 314 CMR 9.09(3). If the Department grants an extension, the Chapter 91 dredge permit of the Combined Permit will also be extended for the same term.
9. If any unexpected or unsuitable material is discovered during dredging, the Department shall be notified immediately to determine if additional sampling, chemical analysis, and/or alternative disposal options are required.
10. A silt curtain is proposed to be deployed around the dredging sites prior to the initiation of dredging and maintained throughout the period of dredging activity. The silt curtain shall be installed prior to the start of the January 15<sup>th</sup> – May 31<sup>st</sup> time-of-year (TOY) restriction for winter flounder to protect winter flounder spawning and juvenile development.
11. Dredge material shall be dewatered on-site and then transported to an approved upland site or Massachusetts landfill for beneficial reuse or disposal. Dewatering shall be performed in accordance with the location and details as specified on Permit Plan No. 15573.
12. No later than four weeks after issuance of the Combined Permit, the applicant shall submit a notification procedure outlining the reporting process to the Department for incidents, relating to the dredging activities, impacting surrounding resource areas and habitats such as, but not limited to, observed dead or distressed fish, or other aquatic organisms, observed oily sheen on surface water, sediment spill, turbidity plume beyond the deployed BMP's, and barging or equipment accident/spill. If at any time during implementation of the project any incident environment impacts such as those listed the water shall cease until the source of the problem is identified and adequate mitigating measures employed to the satisfaction of the Department.

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This Combined Permit does not relieve the applicant of the obligation to comply with other applicable state or federal statutes or regulations. Any changes made to the project as described in the previously submitted Notice of Intent, Combined Permit application, or supplemental documents will require further notification to the Department.

#### **NOTICE OF APPEAL RIGHTS**

##### Chapter 91 Appeal Process (310 CMR 9.17)

Pursuant to 310 CMR 9.17(1)(a) and 9.17(2), the applicant may appeal this decision within twenty-one (21) days of the date of Combined Permit issuance, by submitting a written request, by certified mail, for an adjudicatory hearing. Any notice of claim for an adjudicatory hearing must include the following information: the DEP Combined Application license/permit Number; the complete name, address and telephone number of the party filing the request; if represented by counsel, the name, address and telephone number of the attorney; a clear statement that a formal adjudicatory hearing is being requested; and a clear and concise statement of the specific objections to the Department's license decision, and the relief sought through the adjudicatory hearing, including, specifically, the changes desired in the final Combined Permit.

The following persons shall have the right to an adjudicatory hearing concerning this decision by MassDEP to grant or deny a license or Combined Permit, in accordance with 310 CMR 9.17(1):

- a. an applicant who has demonstrated property rights in the lands in question, or which is a public agency;
- b. any person aggrieved by the decision of MassDEP to grant a Combined Permit who has submitted written comments within the public comment period;
- c. ten (10) residents of the Commonwealth who, pursuant to M.G.L. c. 30A, § 10A, have submitted comments within the public comment period with at least 5 of the 10 residents residing in the municipality(s) in which the Combined Permit activity is located. The appeal shall clearly and specifically state the facts and grounds for the appeal and the relief sought, and each appealing resident shall file an affidavit stating the intent to be part of the group and to be represented by its authorized representative;
- d. the municipal official in the affected municipality who has submitted written comments within the public comment period; and
- e. CZM, for any project identified in 310 CMR 9.13(2) (a) for CZM participation or, in an Ocean Sanctuary, if it has filed a notice of participation within the public comment period.

A person requesting an adjudicatory hearing must submit a "Notice of Claim" to the Department, with a copy of the MassDEP Transmittal Form and including the detail specified below, within twenty-one (21) days of the date of issuance of this decision. The MassDEP Fee Transmittal Form is available at the following website: <http://www.mass.gov/eea/docs/dep/service/adr/adjherfm.doc>. The Notice of Claim must be made in writing and sent by certified mail or hand delivery to:

OADR Case Administrator  
MassDEP  
100 Cambridge Street, Suite 900  
Boston, MA 02114

A copy of the complete Notice of Claim must be sent at the same time by certified mail or hand delivery to: (1) the applicant, (2) the municipal official of the city or town where the project is located, and (3) the issuing office of the MassDEP, which in this case is located at:

MassDEP Waterways Regulation Program  
Southeast Regional Office (SERO)  
20 Riverside Drive  
Lakeville, MA 02347

The MassDEP Fee Transmittal Form and a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100) must be mailed to:

Mass. Department of Environmental Protection  
Commonwealth Master Lockbox  
P.O. Box 4062  
Boston, Massachusetts 02211

Information must be included in the hearing request

Pursuant to 310 CMR 9.17(3), any Notice of Claim requesting an adjudicatory hearing must include the following information:

- a. the 401 Combined Permit Transmittal Number and MassDEP Waterways Application File Number;
- b. the complete name, address, fax number and telephone number of the applicant;
- c. the address of the project;
- d. the complete name, address, fax number, and telephone number of the party filing the request and, if represented by counsel, the name, address, fax number, and phone number of the attorney;
- e. if claiming to be a person aggrieved, the specific facts that demonstrate that the party satisfies the definition of "aggrieved person" found in 310 CMR 9.02;
- f. a clear statement that a formal adjudicatory hearing is being requested;
- g. a clear statement of the facts which are the grounds for the proceedings, the specific objections to the MassDEP's written decision, and the relief sought through the adjudicatory hearing, including specifically the changes desired in the final written decision; and
- h. a statement that a copy of the request has been sent to: the applicant and the municipal official of the city or town where the project is located.

Dismissal of request

The request for appeal will be dismissed if the filing fee is not paid, unless the appellant is exempt or is granted a waiver. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority. The

Department may waive the adjudicatory hearing filing fee pursuant to 310 CMR 4.06(2) for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file an affidavit setting forth the facts believed to support the claim of undue financial hardship together with the hearing request as provided above.

Please note that the Department may revoke this Combined Permit for non-compliance with the terms and conditions set forth. Therefore, it is recommended that you contact the Department prior to performing any alterations or use modifications for review and, if necessary, approval pursuant to M.G.L. Chapter 91.

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401 WQC Appeal Process (314 CMR 9.10):

Certain persons shall have a right to request an adjudicatory hearing concerning Combined Permits by the Department when an application is required:

- a. the applicant or property owner;
- b. any person aggrieved by the decision who has submitted written comments during the public comment period;
- c. any ten (10) persons of the Commonwealth pursuant to M.G.L. c.30A where a group member has submitted written comments during the public comment period; or
- d. any governmental body or private organization with a mandate to protect the environment, which has submitted written comments during the public comment period.

Any person aggrieved, any ten (10) persons of the Commonwealth, or a governmental body or private organization with a mandate to protect the environment may appeal without having submitted written comments during the public comment period only when the claim is based on new substantive issues arising from material changes to the scope or impact of the activity and not apparent at the time of public notice. To request an adjudicatory hearing pursuant to M.G.L. c.30A, § 10, a Notice of Claim must be made in writing, provided that the request is made by certified mail or hand delivery to the Department, with the appropriate filing fee specified within 310 CMR 4.10 along with a DEP Fee Transmittal Form within twenty-one (21) days from the date of issuance of this Certificate.

Case Administrator  
Department of Environmental Protection  
100 Cambridge Street, Suite 900  
Boston, MA 02114.

A copy of the request shall at the same time be sent by certified mail or hand delivery to the issuing office of the Wetlands and Waterways Program at:

MassDEP Waterways Regulation Program  
Southeast Regional Office (SERO)  
20 Riverside Drive  
Lakeville, MA 02347

A Notice of Claim for Adjudicatory Hearing shall comply with the Department's Rules for Adjudicatory Proceedings, 310 CMR 1.01(6), and shall contain the following information pursuant to 314 CMR 9.10(3):

- a. the 401 Combined Permit Transmittal Number and DEP Wetlands Protection Act File Number;
- b. the complete name of the applicant and address of the project;
- c. the complete name, address, and fax and telephone numbers of the party filing the request, and, if represented by counsel or other representative, the name, fax and telephone numbers, and address of the attorney;
- d. if claiming to be a party aggrieved, the specific facts that demonstrate that the party satisfies the definition of "aggrieved person" found at 314 CMR 9.02;
- e. a clear and concise statement that an adjudicatory hearing is being requested;
- f. a clear and concise statement of (1) the facts which are grounds for the proceedings, (2) the objections to this Certificate, including specifically the manner in which it is alleged to be inconsistent with the Department's Water Quality Regulations, 314 CMR 9.00, and (3) the relief sought through the adjudicatory hearing, including specifically the changes desired in the final written Combined Permit; and
- g. a statement that a copy of the request has been sent by certified mail or hand delivery to the applicant, the owner (if different from the applicant), the conservation commission of the city or town where the activity will occur, the Department of Environmental Management (when the certificate concerns projects in Areas of Critical Environmental Concern), the public or private water supplier where the project is located (when the certificate concerns projects in Outstanding Resource Waters), and any other entity with responsibility for the resource where the project is located.

The hearing request along with a DEP Fee Transmittal Form and a valid check or money order payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100) must be mailed to:

Commonwealth of Massachusetts  
Department of Environmental Protection  
Commonwealth Master Lockbox  
P.O. Box 4062  
Boston, MA 02211

The request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority. The Department may waive the adjudicatory-hearing filing fee pursuant to 310 CMR 4.06(2) for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file an affidavit setting forth the facts believed to support the claim of undue financial hardship together with the hearing request as provided above.

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Failure to comply with this Combined Permit is grounds for enforcement, including civil and criminal penalties, under MGL c.21 §42, 314 CMR 9.00, MGL c. 21A §16, 310 CMR 5.00, or other possible actions/penalties as authorized by the General Laws of the Commonwealth.

If you have questions about this decision, please contact Brendan Mullaney at 508-946-2707 or [brendan.mullaney@mass.gov](mailto:brendan.mullaney@mass.gov).

Sincerely,



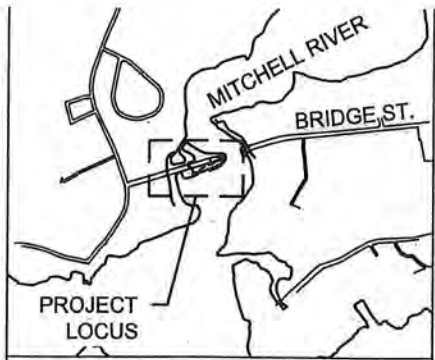
Daniel F. Gilmore, Chief  
Wetlands & Waterways Program  
Bureau of Water Resources

enclosure: MassDEP Communication for Non-English-Speaking Parties  
Chapter 91 Plan Set

ecc: Daniel Padien, Waterways Program Chief, DEP Boston  
Chatham Conservation Commission  
Chatham Harbormaster  
Paul Maniccia, Regulatory/Enforcement Division, U.S. Army Corps of Engineers  
Robert Boeri, CZM  
David Wong, MassDEP-Boston Office

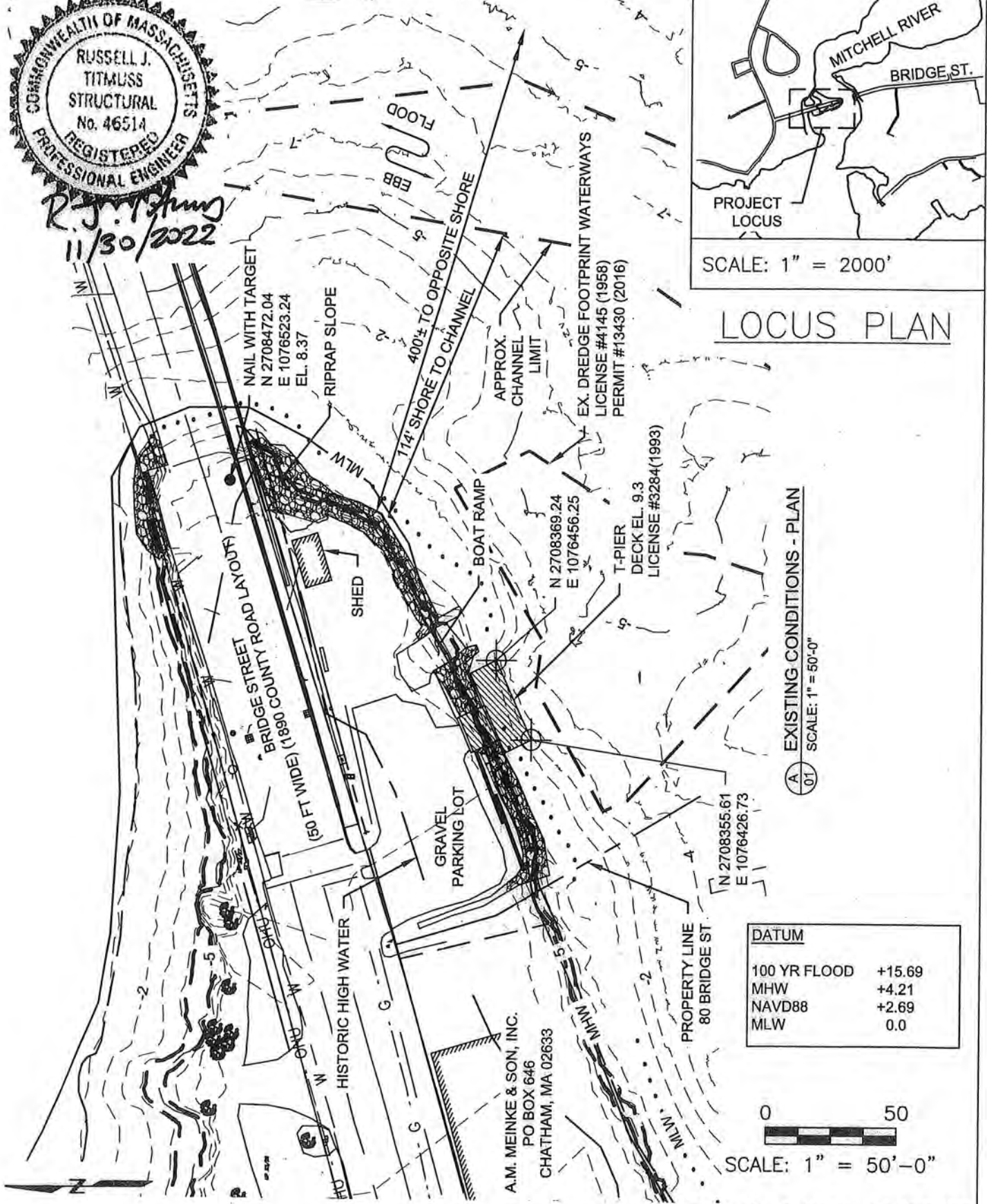


*R. J. Titmuss*  
11/30/2022



SCALE: 1" = 2000'

**LOCUS PLAN**



(A) EXISTING CONDITIONS - PLAN  
SCALE: 1" = 50'-0"

DATUM	
100 YR FLOOD	+15.69
MHW	+4.21
NAVD88	+2.69
MLW	0.0



SCALE: 1" = 50'-0"

SHEET 1 OF 10 DATE: 11/30/22

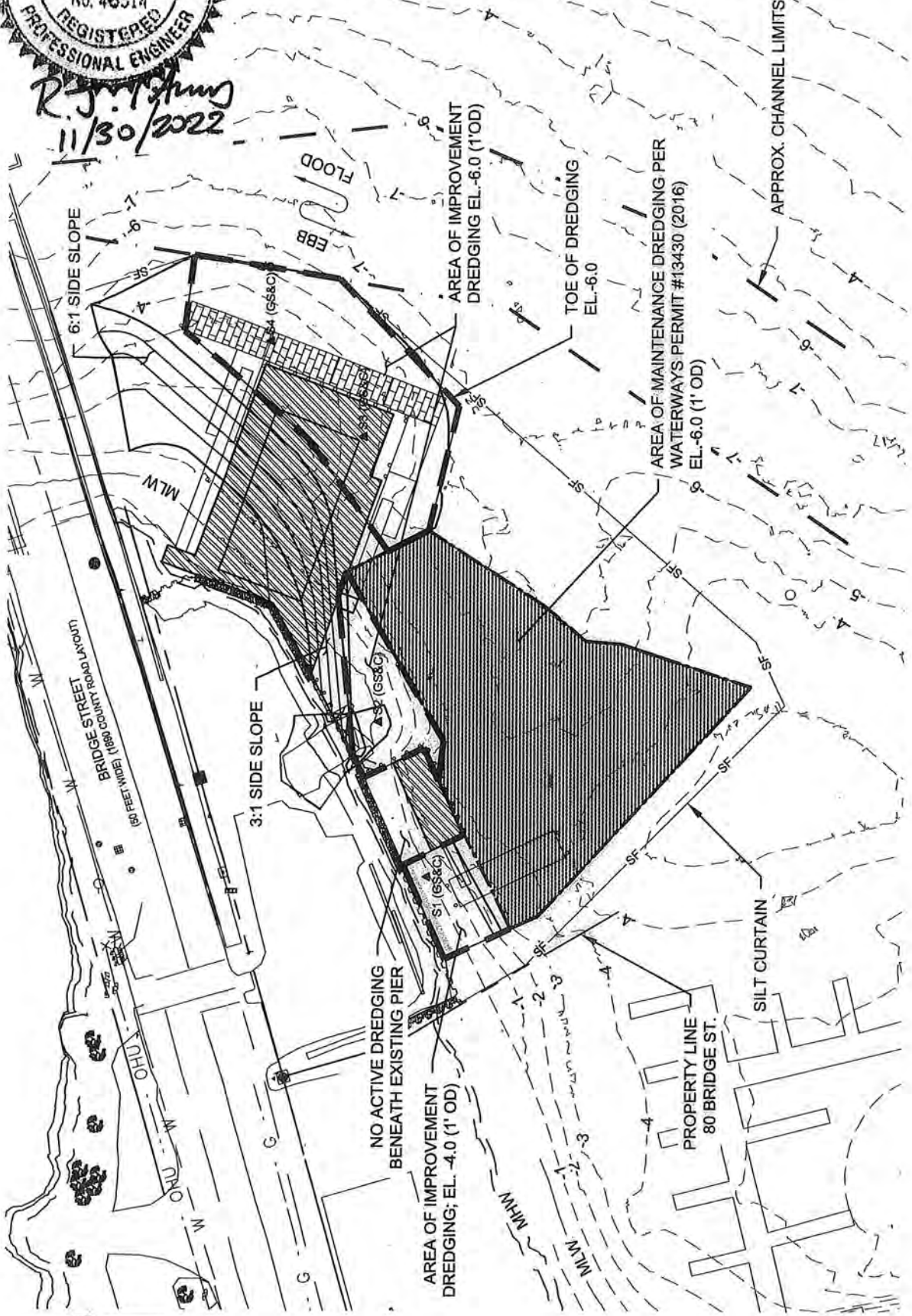
PLANS ACCOMPANYING PETITION OF TOWN OF CHATHAM FOR PIER, BULKHEAD, AND FLOAT CONSTRUCTION  
90 BRIDGE STREET, MITCHELL RIVER, CHATHAM, MA

PREPARED BY GEI CONSULTANTS INC, FRANKLIN, MA

**PERMIT NO. 15573**  
Approved by: Department of Environmental Protection  
Date: **JAN 19 2023**



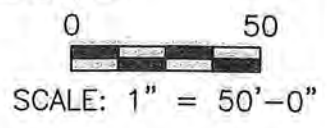
R.J. Titliss  
11/30/2022



IMPROVEMENT DREDGING  
11,420 SF  
1,300 CY

A DREDGING PLAN  
02 SCALE: 1" = 50'-0"

PERMIT NO. 15573  
Approved by: Department of Environmental Protection  
Date: JAN 19 2023







*R.J. Titmuss*  
11/30/2022

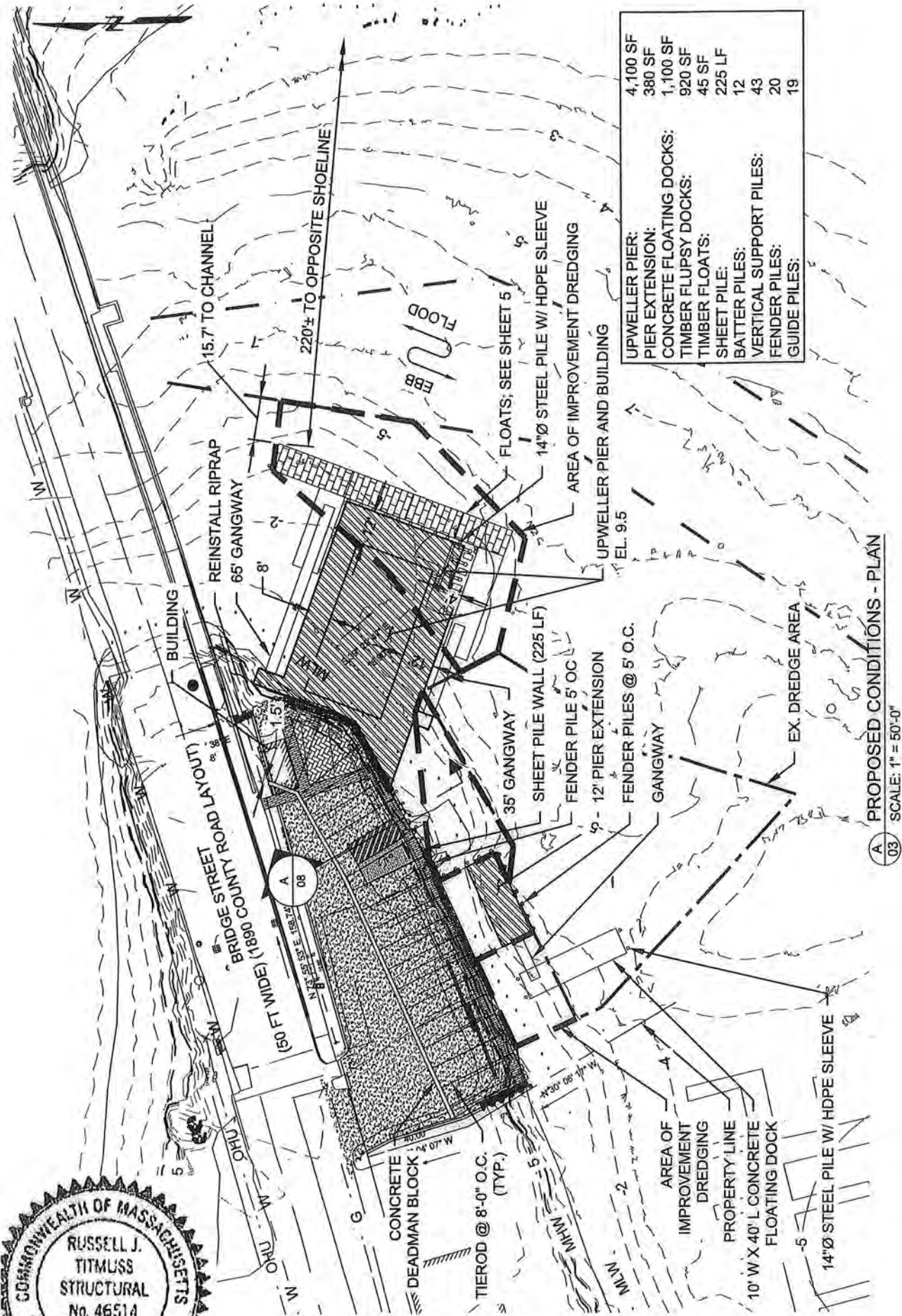
PERMIT NO. 15573

Approved by: Department of Environmental Protection

Date: JAN 19 2023

DATE: 11/30/22

SHEET 3 OF 10



UPWELLER PIER:	4,100 SF
PIER EXTENSION:	380 SF
CONCRETE FLOATING DOCKS:	1,100 SF
TIMBER FLUPS DOCKS:	920 SF
TIMBER FLOATS:	45 SF
SHEET PILE:	225 LF
BATTER PILES:	12
VERTICAL SUPPORT PILES:	43
FENDER PILES:	20
GUIDE PILES:	19

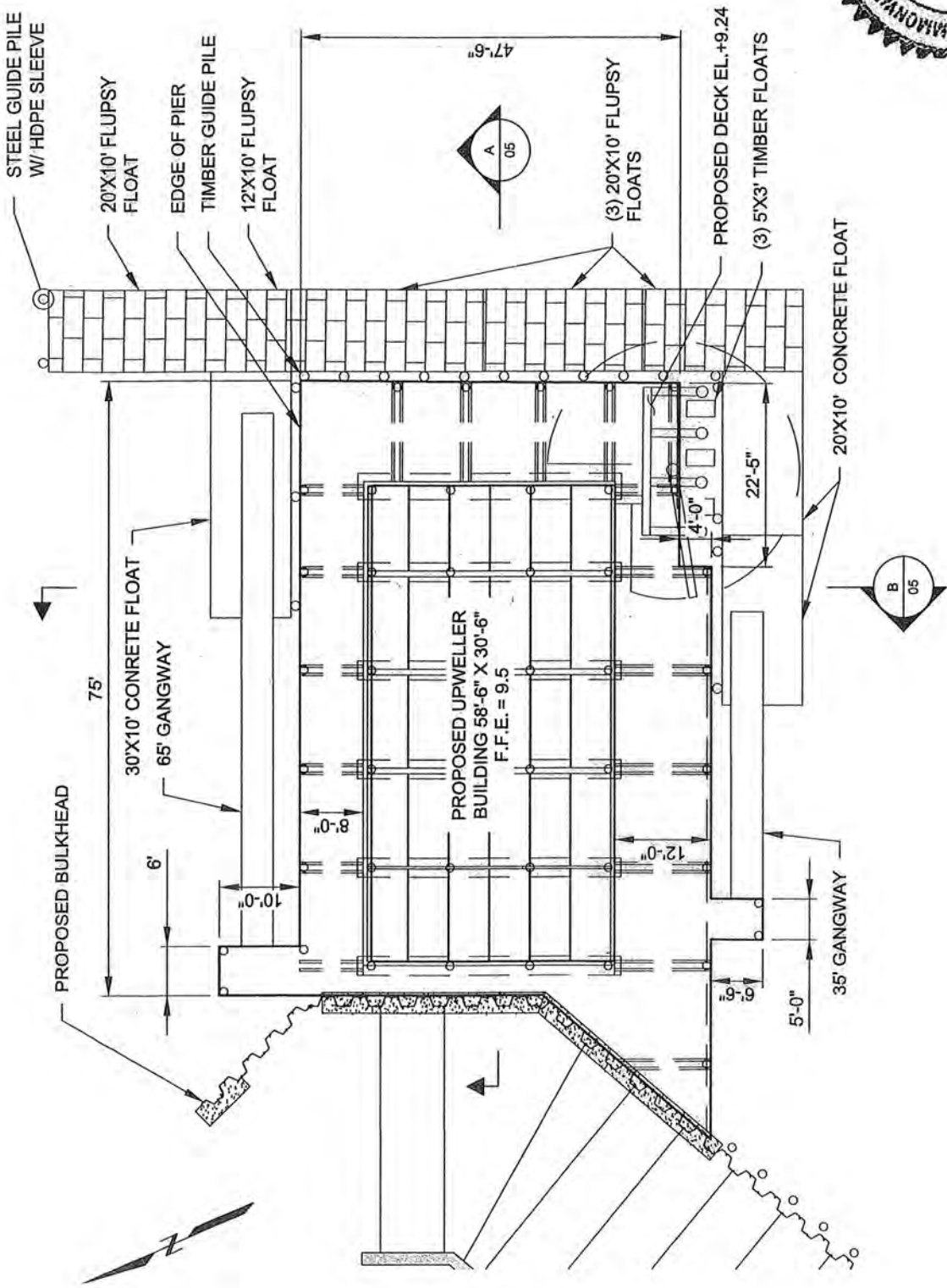
PROPOSED CONDITIONS - PLAN  
SCALE: 1" = 50'-0"



SCALE: 1" = 50'-0"

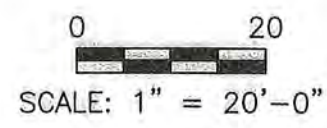


2202/05/11  
Campbell, C. J.

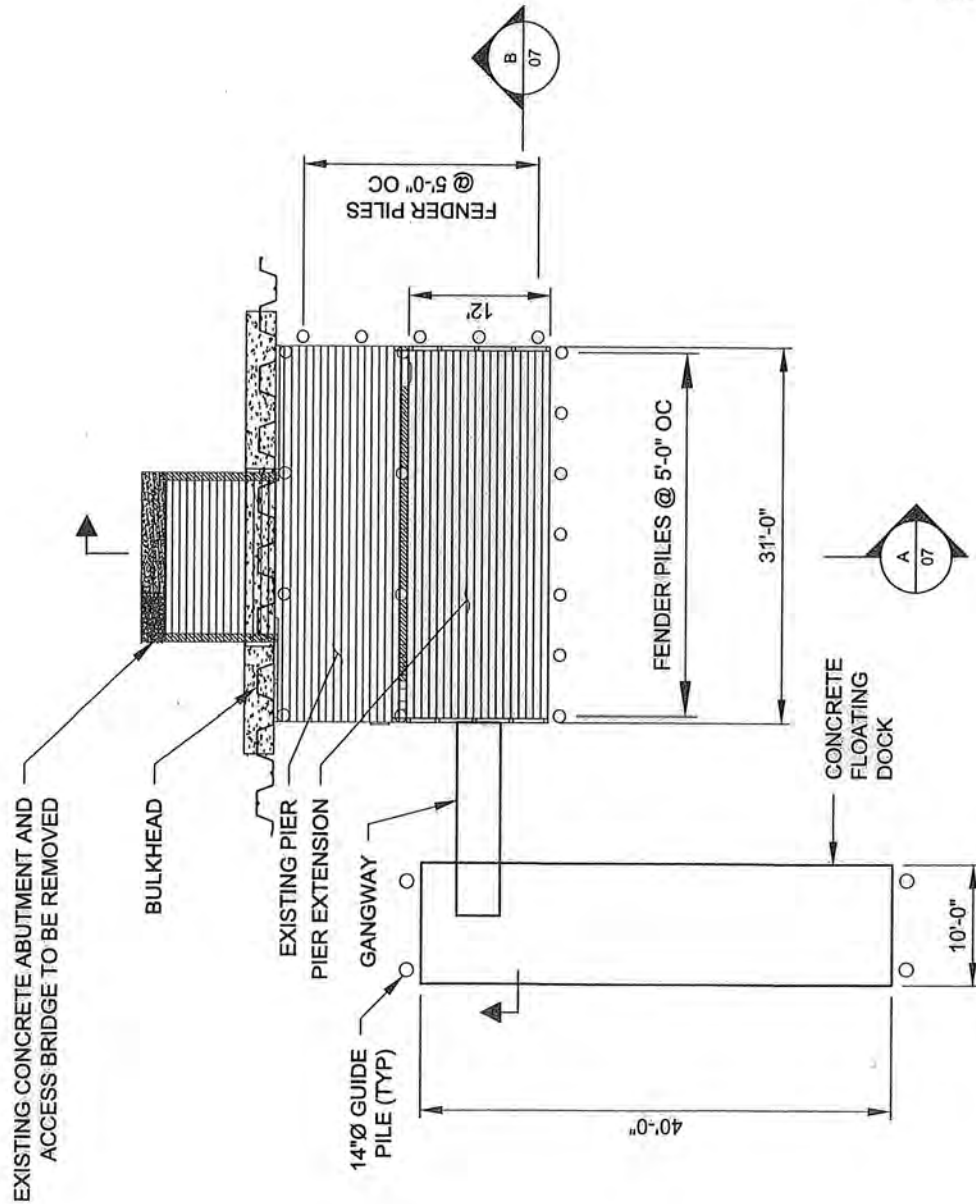
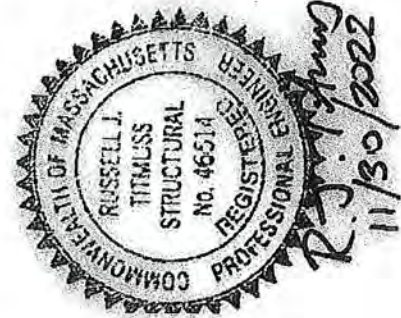


PROPOSED UPWELLER PIER PLAN  
SCALE: 1" = 20'-0"

PERMIT NO. 15573  
Approved by: Department of Environmental Protection  
Date: JAN 19 2023

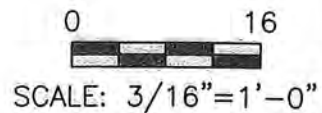






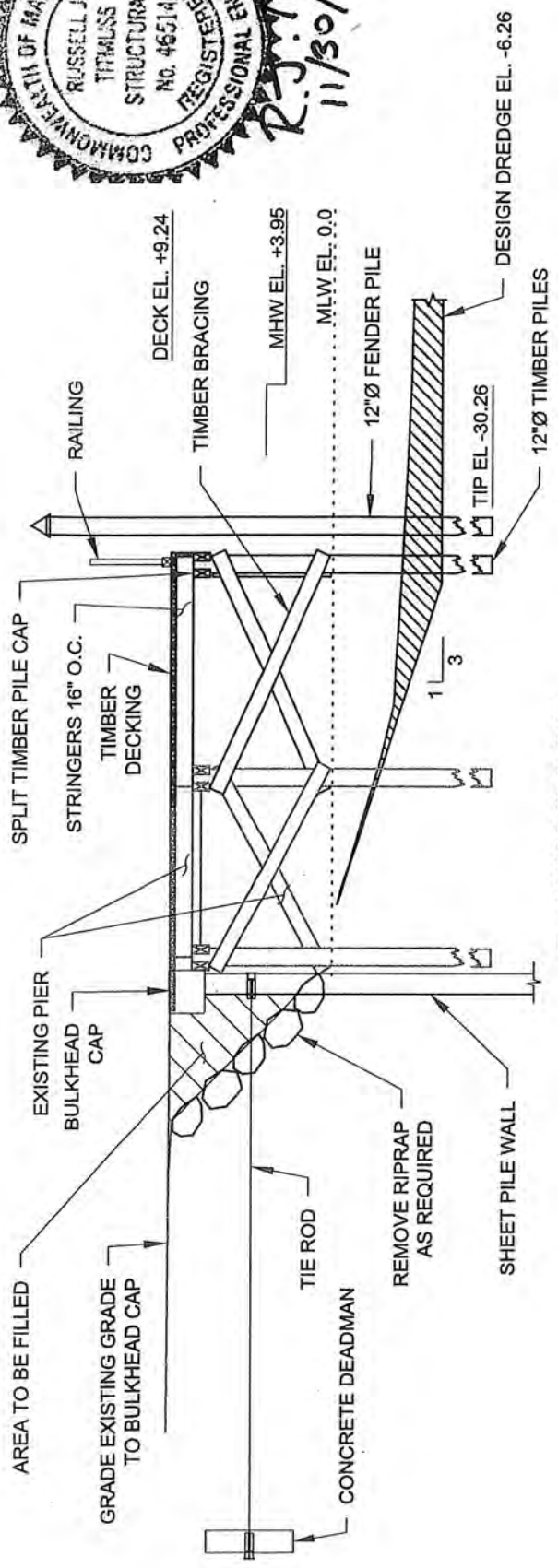
PROPOSED T-PIER EXTENSION PLAN  
SCALE: 3/16"=1'-0"

PERMIT NO. 15573  
 Approved by: Department of Environmental Protection  
 Date: JAN 19 2023

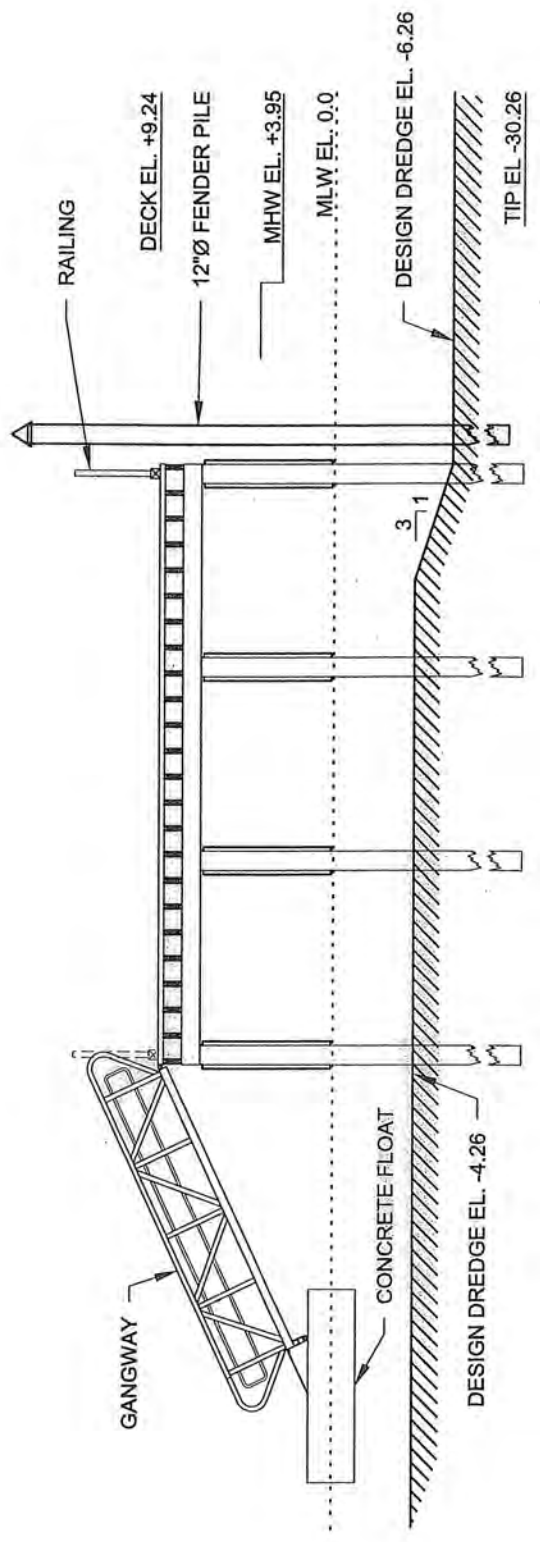




*R. J. Titliss*  
11/30/2022

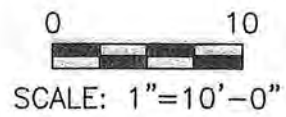


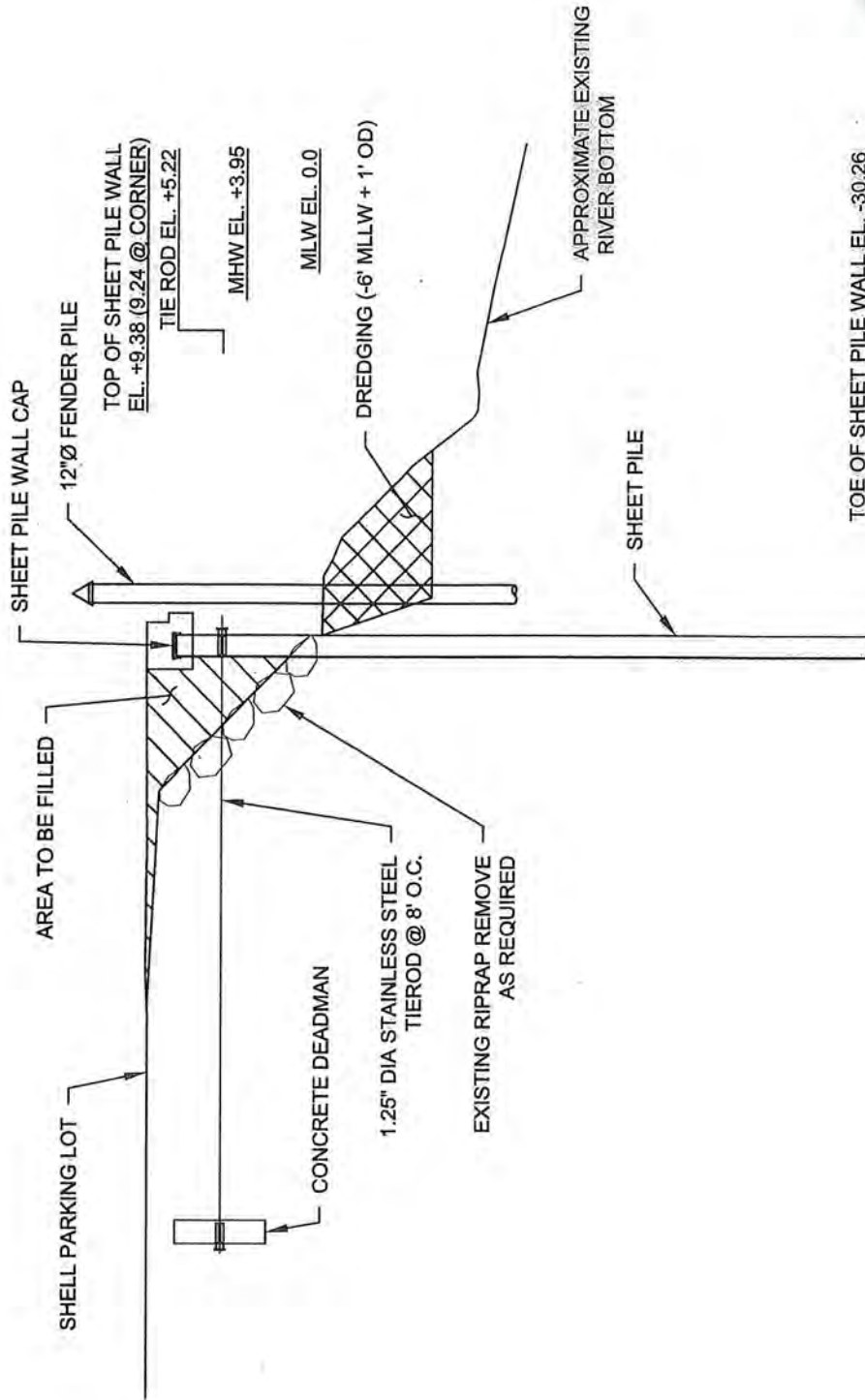
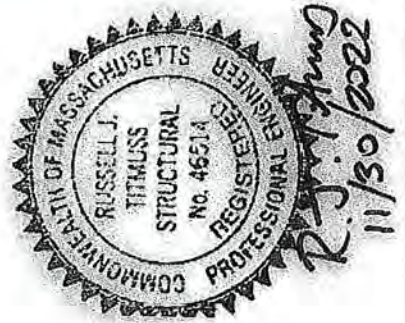
**A**  
07 CROSS SECTION  
SCALE: 1"=10'-0"



**B**  
07 CROSS SECTION  
SCALE: 1"=10'-0"

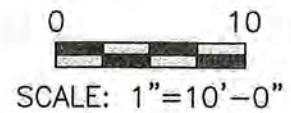
PERMIT NO. 15573  
Approved by: Department of Environmental Protection  
Date: **JAN 19 2023**





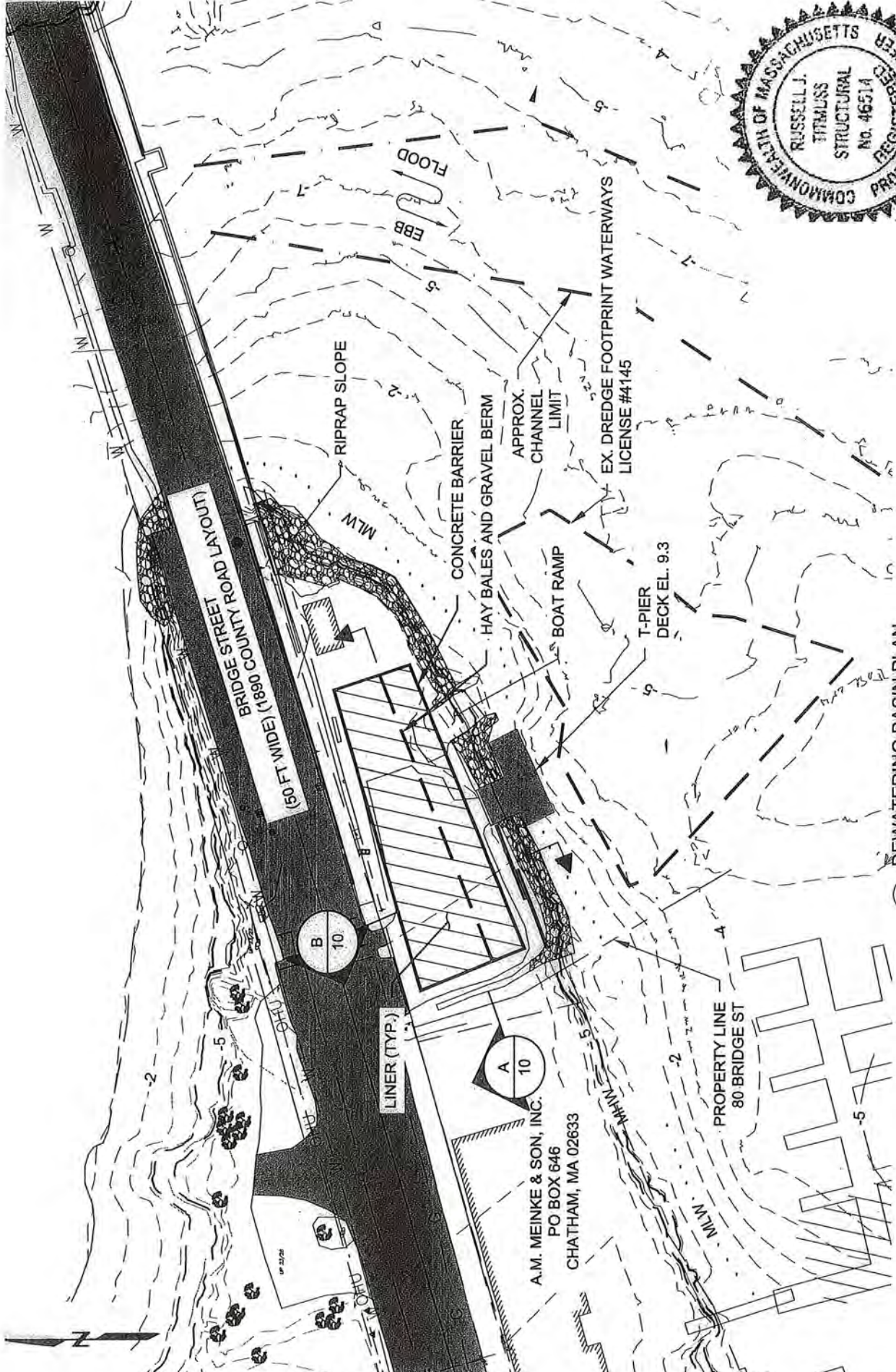
A PROPOSED BULKHEAD SECTION  
 08 SCALE: 1"=10'-0"

PERMIT NO. 15573  
 Approved by: Department of Environmental Protection  
 Date: JAN 19 2023





R. J. Titmuss  
11/30/2022



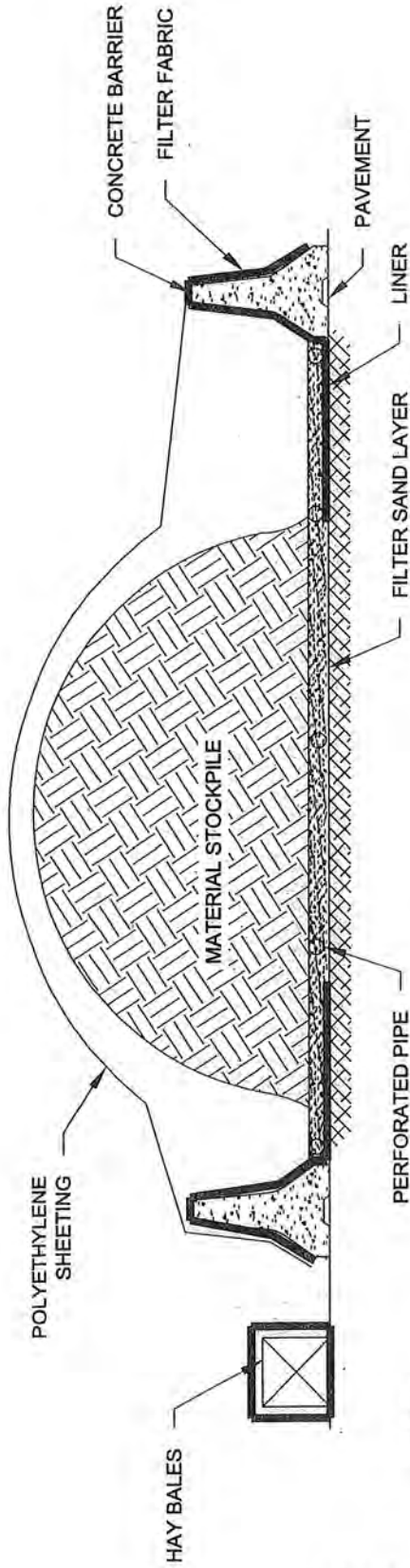
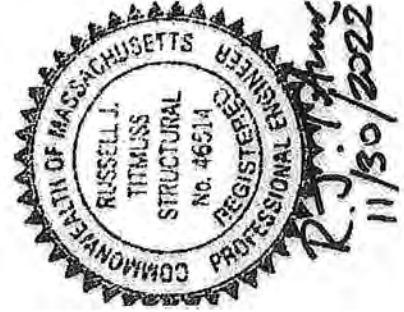
A DEWATERING BASIN PLAN  
09 SCALE: 1"=50'-0"

A.M. MEINKE & SON, INC.  
PO BOX 646  
CHATHAM, MA 02633



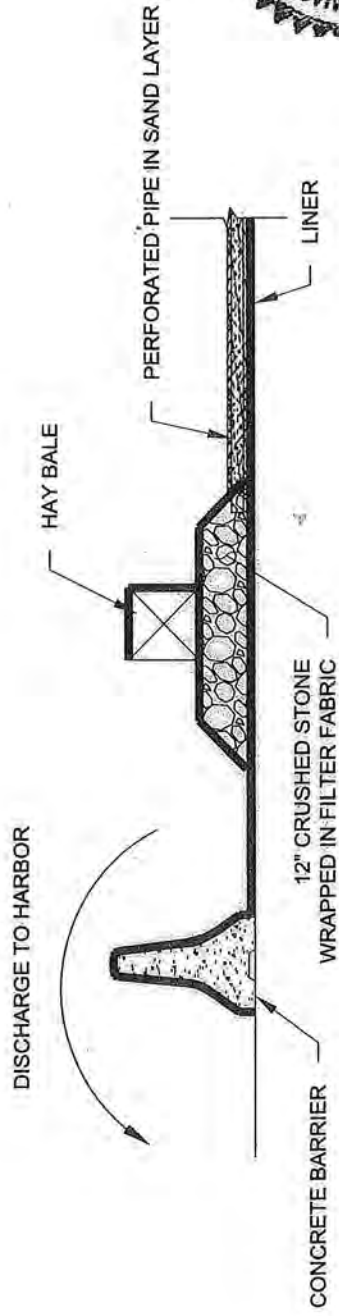
SCALE: 1"=50'-0"

PERMIT NO. 15573  
Approved by: Department of Environmental Protection  
Date: JAN 19 2023



NOTES:  
 1. BARRIERS SHALL FULLY ENCLOSE STOCKPILE  
 2. STOCKPILE SHALL BE COVERED AS REQUIRED BY SPECIFICATION OR AS DIRECTED BY TOWN

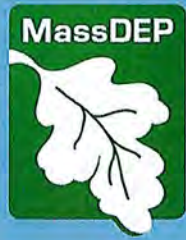
**A** CROSS SECTION - CONTAINMENT AREA  
 SCALE: NTS



**B** CROSS SECTION - CONTAINMENT AREA  
 SCALE: NTS

PERMIT NO. 15573  
 Approved by: Department of Environmental Protection  
 Date: JAN 19 2023





重要 महत्वपूर्ण σημαντικός  
Important  
կարևոր quan trọng مهم



## Communication for Non-English-Speaking Parties

***This document is important and should be translated immediately.***

If you need this document translated, please contact MassDEP's Diversity Director at the telephone number listed below.

### **Español Spanish**

Este documento es importante y debe ser traducido de inmediato. Si necesita este documento traducido, comuníquese con la Directora de Diversidad de MassDEP al número de teléfono que aparece más abajo.

### **Português Portuguese**

Este é um documento importante e deve ser traduzido imediatamente. Se precisar de uma tradução deste documento, entre em contato com o Diretor de Diversidade da MassDEP nos números de telefone listados abaixo.

### **繁體中文 Chinese Traditional**

本文件非常重要，應立即翻譯。如果您需要翻譯這份文件，請用下面列出的電話號碼聯絡 MassDEP 多元化負責人。

### **簡體中文 Chinese Simplified**

本文件非常重要，應立即翻譯。如果您需要翻譯這份文件，請用下面列出的電話號碼與 MassDEP 的多元化主任聯繫。

### **Ayisyen Kreyòl Haitian Creole**

Dokiman sa-a se yon bagay enpòtan epi yo ta dwe tradwi l imedyatman. Si ou bezwen dokimar sa a tradwi, tanpri kontakte Direktè Divèsite MassDEP la nan nimewo telefòn endike anba.

### **Việt Vietnamese**

Tài liệu này rất quan trọng và cần được dịch ngay lập tức. Nếu quý vị cần dịch tài liệu này, xin liên lạc với Giám đốc Đa dạng của MassDEP theo các số điện thoại ghi dưới đây.

### **ប្រទេសកម្ពុជា Khmer/Cambodian**

ឯកសារនេះគឺសំខាន់ហើយគួរត្រូវបានបកប្រែភ្លាមៗ។ ប្រសិនបើអ្នកត្រូវការឱ្យគេបកប្រែឯកសារនេះ:

សូមទាក់ទងមកនាយកផ្នែកពិពិធកម្មរបស់ MassDEP តាមលេខទូរស័ព្ទខាងក្រោម។

### **Kriolu Kabuverdianu Cape Verdean**

*Kel dokumentu li é inportáti y debe ser traduzidu imediatamenti. Se bu meste di kel dokumentu traduzidu, pur favor kontakta Diretor di Diversidádi di MassDEP na numeru abaxu indikadu.*



**Contact Glynis L. Bugg, Acting Diversity Director/Civil Rights 857-262-0606**  
**Massachusetts Department of Environmental Protection**  
**100 Cambridge Street 9<sup>th</sup> Floor Boston, MA 02114**  
 TTY# MassRelay Service 1-800-439-2370 • <https://www.mass.gov/environmental-justice>  
 (Version revised 1.5.2023) 310 CMR 1.03(5)(a)

## Русский Russian

Это важный документ, и он должен быть безотлагательно переведен. Если вам нужен перевод данного документа, пожалуйста, свяжитесь с директором по вопросам многообразия (Diversity Director) компании MassDEP по указанному ниже телефону.

## العربية Arabic

هذه الوثيقة مهمة ويجب ترجمتها على الفور. إذا كنت بحاجة إلى هذه الوثيقة مترجمة، يرجى الاتصال بمدير التنوع PMassDE على أرقام الهواتف المدرجة أدناه.

## 한국어 Korean

이 문서는 중요하고 즉시 번역해야 합니다. 이 문서의 번역이 필요하시다면, 아래의 전화 번호로 MassDEP의 다양성 담당 이사에 문의하시기 바랍니다.

## հայերէն Armenian

Այս փաստաթուղթը կարևոր է և պետք է անմիջապես թարգմանվի:  
Եթե Ձեզ անհրաժեշտ է այս փաստաթուղթը թարգմանել, դիմեք MassDEP-ի բազմազանության տնօրենին ստորև նշված հեռախոսահամարով:

## فارسی Farsi Persian

این سند مهم است و باید فوراً ترجمه شود.  
اگر به ترجمه این سند نیاز دارید، لطفاً با مدیر بخش تنوع نژادی MassDEP به شماره تلفن ذکر شده در زیر تماس بگیرید.

## Français French

Ce document est important et devrait être traduit immédiatement. Si vous avez besoin de ce document traduit, veuillez communiquer avec le directeur de la diversité MassDEP aux numéros de téléphone indiqués ci-dessous.

## Deutsch German

Dieses Dokument ist wichtig und sollte sofort übersetzt werden. Sofern Sie eine Übersetzung dieses Dokuments benötigen, wenden Sie sich bitte an den Diversity Director MassDEP unter der unten aufgeführten Telefonnummer.

## Ελληνική Greek

Το παρόν έγγραφο είναι σημαντικό και θα πρέπει να μεταφραστεί αμέσως. Αν χρειάζεστε μετάφραση του παρόντος εγγράφου, παρακαλούμε επικοινωνήστε με τον Διευθυντή Διαφορετικότητας του MassDEP στους αριθμούς τηλεφώνου που αναγράφονται παρακάτω.

## Italiano Italian

Comunicazione per parti che non parlano inglese. Questo documento è importante e dovrebbe essere tradotto immediatamente. Se avete bisogno di questo documento tradotto, potete contattare il Direttore di Diversità di MassDEP al numero di telefono elencato di seguito.

## Język Polski Polish

Dokument ten jest ważny i powinien zostać natychmiast przetłumaczony. Jeśli potrzebujesz przetłumaczonej wersji dokumentu, prosimy o kontakt z dyrektorem ds. różnorodności MassDEP pod jednym z numerów telefonu wymienionych poniżej.

## हिन्दी Hindi

यह दस्तावेज महत्वपूर्ण है और इसका तुरंत अनुवाद किया जाना चाहिए. यदि आपको इस दस्तावेज का अनुवाद करने की आवश्यकता है, तो कृपया नीचे सूचीबद्ध टेलीफोन नंबरों पर मासडेप डायवर्सिटी के निदेशक से संपर्क करें.

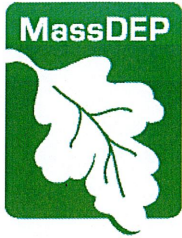
Contact Glynis L. Bugg, Acting Diversity Director/Civil Rights 857-262-0606

Massachusetts Department of Environmental Protection

100 Cambridge Street 9<sup>th</sup> Floor Boston, MA 02114

TTY# MassRelay Service 1-800-439-2370 • <https://www.mass.gov/environmental-justice>

(Version revised 1.5.2023) 310 CMR 1.03(5)(a)



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

Maura T. Healey  
Governor

Kimberley Driscoll  
Lieutenant Governor

Rebecca L. Tepper  
Secretary

Bonnie Heiple  
Commissioner

JUN 08 2023

Town of Chatham  
c/o GEI Consultants, Inc.  
Attn: Brad Saunders  
124 Grove Street, Suite 300  
Franklin, MA 02038

**RE: ISSUANCE OF CHAPTER 91 WATERWAYS LICENSE**  
**Waterways License Application No. W22-6114, License No. 15573**  
**Town of Chatham, Mitchell River, 90 Bridge Street, Chatham**

Dear Sir or Madam,

The Department of Environmental Protection hereby issues the above-referenced Waterways License, enclosed, authorizing you to perform certain activities pursuant to M.G.L. c. 91, the Public Waterfront Act and its regulations 310 CMR 9.00. Any change in use or alteration of any structure or fill not authorized by this license may render this license void.

This License is not final until all administrative appeal periods from this License have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed. The appeal period is for twenty-one (21) days. No work shall be undertaken until the License has become final and has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property.

### **RECORDING OF THE LICENSE**

This License must be recorded at the Registry of Deeds or, if registered land, with the Land Registration Office within sixty (60) days from the date of license issuance. In the case of recorded land, the License shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the project is located. In the case of the registered land, the License shall be noted on the Land Court Certificate of Title of the owner of the land upon which the project is located. **Failure to record this license within sixty (60) days of the date of issuance will render this license void pursuant to 310 CMR 9.18.**

A Waterways License Recordation Notice Form has been enclosed for your use in notifying the Department of the recording information for this License. **Failure to notify the Department of the recording of this license is a violation of 310 CMR 9.00 and is subject to enforcement action by the Department.**

**REQUEST CERTIFICATE OF COMPLIANCE**

Pursuant to 310 CMR 9.19, once the proposed project is completed you must file a Request for a Certificate of Compliance form, BRP WW05, within sixty (60) days of completion but in no event later than five (5) years from the License's issuance date. The license for any project for which such a request is not filed and certificate issued may be revoked pursuant to 310 CMR 9.26.

**NOTICE OF APPEAL RIGHTS**

Who has the right to appeal?

The following persons shall have the right to an adjudicatory hearing concerning this decision by the Department to grant or deny a license or permit, in accordance with 310 CMR 9.17(1): (a) an applicant who has demonstrated property rights in the lands in question, or which is a public agency; (b) any person aggrieved by the decision of the Department to grant a license or permit who has submitted written comments within the public comment period; (c) ten (10) residents of the Commonwealth who, pursuant to M.G.L. c. 30A, § 10A, have submitted comments within the public comment period with at least 5 of the 10 residents residing in the municipality(s) in which the license or permitted activity is located. The appeal shall clearly and specifically state the facts and grounds for the appeal and the relief sought, and each appealing resident shall file an affidavit stating the intent to be part of the group and to be represented by its authorized representative; (d) the municipal official in the affected municipality who has submitted written comments within the public comment period; and (e) CZM, for any project identified in 310 CMR 9.13(2) (a) for CZM participation or, in an Ocean Sanctuary, if it has filed a notice of participation within the public comment period.

How can I request an adjudicatory hearing?

A person requesting an adjudicatory hearing must submit a "Notice of Claim" to the Department, with a copy of the MassDEP Transmittal Form and including the detail specified below, within twenty-one (21) days of the date of issuance of this decision. The MassDEP Fee Transmittal Form is available at the following website: <https://www.mass.gov/doc/adjudicatory-hearing-fee-transmittal-form/download>. The Notice of Claim must be made in writing and sent by certified mail or hand delivery to:

Case Administrator  
MassDEP  
One Winter Street, 2<sup>nd</sup> Floor  
Boston, MA 02108

A copy of the complete Notice of Claim must be sent at the same time by certified mail or hand delivery to: (1) the applicant, (2) the municipal official of the city or town where the project is located, and (3) the issuing office of the MassDEP, which in this case is located at:

MassDEP Waterways Regulation Program  
20 Riverside Drive  
Lakeville, MA 02347

The MassDEP Fee Transmittal Form and a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100) must be mailed to:

**ISSUANCE OF CHAPTER 91 WATERWAYS LICENSE  
Waterways License Application No. W22-6114, License No. 15573  
Town of Chatham, Mitchell River, 90 Bridge Street, Chatham**

Page 3

Mass. Department of Environmental Protection  
Commonwealth Master Lockbox  
P.O. Box 4062  
Boston, Massachusetts 02211

What information must be included in the hearing request?

Pursuant to 310 CMR 9.17(3), any Notice of Claim requesting an adjudicatory hearing must include the following information:

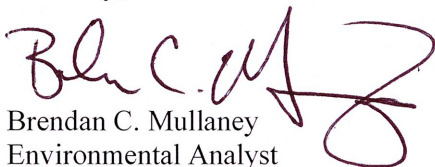
- (a) the MassDEP Waterways Application File Number;
- (b) the complete name, address, fax number and telephone number of the applicant;
- (c) the address of the project;
- (d) the complete name, address, fax number, and telephone number of the party filing the request and, if represented by counsel, the name, address, fax number, and phone number of the attorney;
- (e) if claiming to be a person aggrieved, the specific facts that demonstrate that the party satisfies the definition of "aggrieved person" found in 310 CMR 9.02;
- (f) a clear statement that a formal adjudicatory hearing is being requested;
- (g) a clear statement of the facts which are the grounds for the proceedings, the specific objections to the MassDEP's written decision, and the relief sought through the adjudicatory hearing, including specifically the changes desired in the final written decision; and
- (h) a statement that a copy of the request has been sent to: the applicant and the municipal official of the city or town where the project is located.

Dismissal of request

The request for appeal will be dismissed if the filing fee is not paid, unless the appellant is exempt or is granted a waiver. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority. The Department may waive the adjudicatory hearing filing fee pursuant to 310 CMR 4.06(2) for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file an affidavit setting forth the facts believed to support the claim of undue financial hardship together with the hearing request as provided above.

Please feel free to contact me at (508) 946-2707 or [brendan.mullaney@mass.gov](mailto:brendan.mullaney@mass.gov) if you have any questions pertaining to the Waterways License.

Sincerely,



Brendan C. Mullaney  
Environmental Analyst  
Wetlands and Waterways Program

ecc: Daniel J. Padien, Waterways Program Chief, DEP Boston  
Office of Coastal Zone Management  
Chatham Harbormaster  
Chatham Conservation Commission  
Town of Chatham c/o Robert Duncanson

Brendan Mullaney  
Department of Environmental Protection  
Wetlands & Waterways Program  
20 Riverside Drive  
Lakeville, MA 02347

RE: Waterways Application No. W22-6114, License No. 15573  
Mitchell River, Chatham, Barnstable County

Dear Mr. Mullaney:

This is to notify you that the above referenced Waterways license was recorded with the appropriate Registry of Deeds / Land Court for this project location and to provide your office with the following recordation information.

Date of Recordation: \_\_\_\_\_

County Registry of Deeds: \_\_\_\_\_

Book number \_\_\_\_\_ and page number(s) \_\_\_\_\_

Land Court: \_\_\_\_\_

Land Court Lot # \_\_\_\_\_ Plan # \_\_\_\_\_

Certificate Document Number \_\_\_\_\_

We will notify your office in writing of the date the authorized work or change in use is completed.

Sincerely,

\_\_\_\_\_, Chapter 91 Waterways Licensee

**LICENSE VOID  
IF NOT RECORDED  
WITHIN 60 DAYS  
OF ISSUANCE**

# *The Commonwealth of Massachusetts*



No. 15573

*Whereas*, Town of Chatham

of -- Chatham -- in the County of -- Barnstable -- and Commonwealth aforesaid, has applied to the Department of Environmental Protection for license to -- construct and maintain a timber pile-supported pier, floating upwellers, concrete floats, bulkhead, extension to an existing pier and aquaculture and maintenance building --

and has submitted plans of the same; and whereas due notice of said application, ~~and of the time and place fixed for a hearing thereon~~, has been given, as required by law, to the -- Board of Selectmen -- of the -- Town of Chatham. --

NOW, said Department, having heard all parties desiring to be heard, and having fully considered said application, hereby, subject to the approval of the Governor, authorizes and licenses the said

-- Town of Chatham --, subject to the provisions of the ninety-first chapter of the General Laws, and of all laws which are or may be in force applicable thereto, to -- construct and maintain a timber pile-supported pier, floating upwellers, concrete floats, bulkhead, extension to an existing pier and aquaculture and maintenance building --

in and over the waters of -- Mitchell River -- at -- 90 Bridge Street -- in the -- Town of Chatham -- and in accordance with the locations shown and details indicated on the accompanying DEP License Plan No. 15573 (10 sheets).

The structures hereby authorized shall be limited to the following use(s): to provide public and commercial docking and boating access to navigable waters, public access to waterfront open space for passive recreational purposes, a facility for the growing and processing of shellfish and other aquaculture purposes, and shoreline stabilization for the protection of existing structures.

This license is issued for an unlimited term in accordance with 310 CMR 9.15(1)(c).

Existing structures and fill previously authorized under Department of Public Works License No. 4145 and Department of Environmental Protection License No. 3284 shall be maintained in accordance with the terms and conditions of said licenses and plans, or as modified herein.

Special Waterways Conditions:

1. In accordance with any license condition, easement, or other public right of lateral passage that exists in the area of the subject property lying between the high and low water marks, the Licensee shall allow the public in the exercise of such rights to pass freely around all structures within such intertidal area. Nothing in this condition shall be construed as preventing the Licensee from excluding the public from portions of said structure(s) or property not intended for lateral passage.
2. All work authorized herein shall be completed within five (5) years of the date of license issuance. Said construction period may be extended by the Department for one or more one year periods without public notice, provided that the Applicant submits to the Department, thirty (30) days prior to the expiration of said construction period, a written request to extend the period and provides an adequate justification for said extension.
3. Within sixty (60) days of completion of the licensed project, the Licensee shall request, in writing, that the Department issue a Certificate of Compliance in accordance with 310 CMR 9.19. The request shall be accompanied by a certification by a registered professional engineer licensed in the Commonwealth that the project was completed in accordance with the License.

Please see page 3 for additional conditions to this license.

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Duplicate of said plan, number 15573 is on file in the office of said Department, and original of said plan accompanies this License, and is to be referred to as a part hereof.



## STANDARD WATERWAYS LICENSE CONDITIONS

1. Acceptance of this Waterways License shall constitute an agreement by the Licensee to conform with all terms and conditions stated herein.
2. This License is granted upon the express condition that any and all other applicable authorizations necessitated due to the provisions hereof shall be secured by the Licensee prior to the commencement of any activity or use authorized pursuant to this License.
3. Any change in use or any substantial structural alteration of any structure or fill authorized herein shall require the issuance by the Department of a new Waterways License in accordance with the provisions and procedures established in Chapter 91 of the Massachusetts General Laws. Any unauthorized substantial change in use or unauthorized substantial structural alteration of any structure or fill authorized herein shall render this Waterways License void.
4. This Waterways License shall be revocable by the Department for noncompliance with the terms and conditions set forth herein. This license may be revoked after the Department has given written notice of the alleged noncompliance to the Licensee and those persons who have filed a written request for such notice with the Department and afforded them a reasonable opportunity to correct said noncompliance. Failure to correct said noncompliance after the issuance of a written notice by the Department shall render this Waterways License void and the Commonwealth may proceed to remove or cause removal of any structure or fill authorized herein at the expense of the Licensee, its successors and assigns as an unauthorized and unlawful structure and/or fill.
5. The structures and/or fill authorized herein shall be maintained in good repair and in accordance with the terms and conditions stated herein and the details indicated on the accompanying license plans.
6. Nothing in this Waterways License shall be construed as authorizing encroachment in, on or over property not owned or controlled by the Licensee, except with the written consent of the owner or owners thereof.
7. This Waterways License is granted subject to all applicable Federal, State, County, and Municipal laws, ordinances and regulations including but not limited to a valid final Order of Conditions issued pursuant to the Wetlands Protection Act, G.L. Chapter 131, s.40.
8. This Waterways License is granted upon the express condition that the use of the structures and/or fill authorized hereby shall be in strict conformance with all applicable requirements and authorizations of the DEP, Division of Water Pollution Control.
9. This License authorizes structure(s) and/or fill on:

Private Tidelands. In accordance with the public easement that exists by law on private tidelands, the licensee shall allow the public to use and to pass freely upon the area of the subject property lying between the high and low water marks, for the purposes of fishing, fowling, navigation, and the natural derivatives thereof.

Commonwealth Tidelands. The Licensee shall not restrict the public's right to use and to pass freely, for any lawful purpose, upon lands lying seaward of the low water mark. Said lands are held in trust by the Commonwealth for the benefit of the public.

a Great Pond of the Commonwealth. The Licensee shall not restrict the public's right to use and to pass freely upon lands lying seaward of the high water mark for any lawful purpose.

Navigable River and Streams. The Licensee shall not restrict the public's right to use and to pass freely, for any lawful purpose, in the waterway.

No restriction on the exercise of these public rights shall be imposed unless otherwise expressly provided in this license.

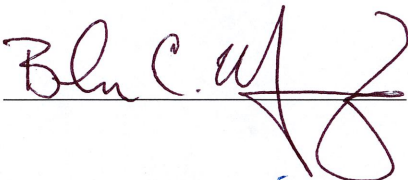
10. Unless otherwise expressly provided by this license, the licensee shall not limit the hours of availability of any areas of the subject property designated for public passage, nor place any gates, fences, or other structures on such areas in a manner that would impede or discourage the free flow of pedestrian movement thereon.

The amount of tide-water displaced by the work hereby authorized has been ascertained by said Department, and compensation thereof has been made by the said -- Town of Chatham -- by paying into the Treasury of the Commonwealth -- zero dollars and zero cents (\$0.00) -- for each cubic yard so displaced, being the amount hereby assessed by said Department.

Nothing in this License shall be so construed as to impair the legal rights of any person.

This License shall be void unless the same and the accompanying plan are recorded within 60 days from the date hereof, in the Registry of Deeds for the County of Barnstable.

IN WITNESS WHEREAS, said Department of Environmental Protection have hereunto set their hands this 8<sup>th</sup> day of June in the year two thousand twenty-three.

for Program Chief 

Department of Environmental Protection

Commissioner 

THE COMMONWEALTH OF MASSACHUSETTS

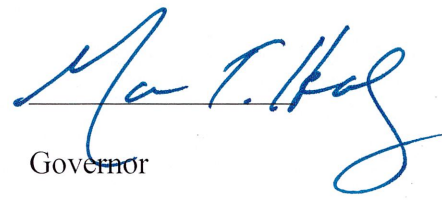
This license is approved in consideration of the payment into the treasury of the Commonwealth by the said -- Town of Chatham --

of the further sum of -- zero dollars and zero cents (\$ 0.00) --

the amount determined by the Governor as a just and equitable charge for rights and privileges hereby granted in the land of the Commonwealth.

BOSTON,

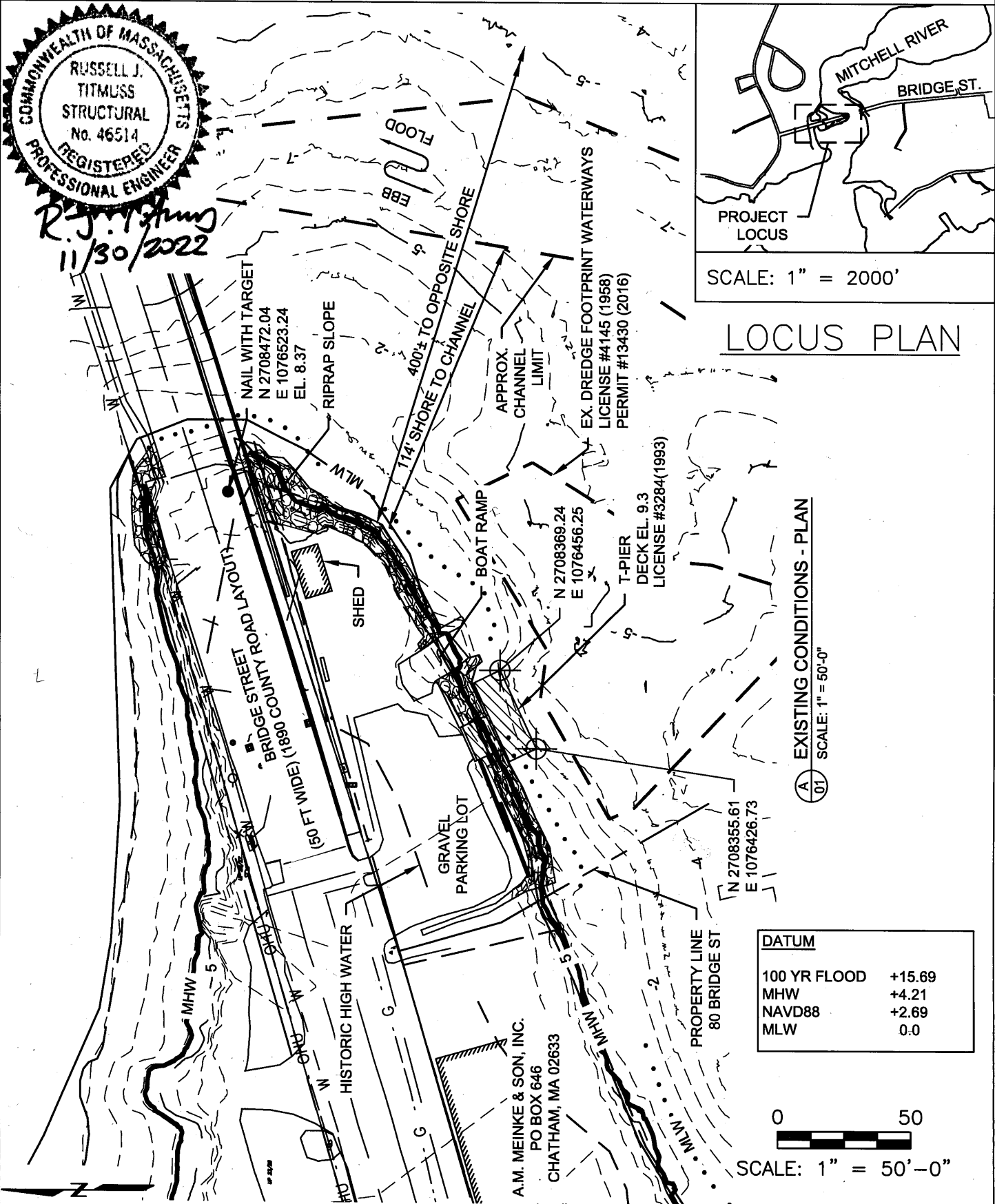
Approved by the Governor.

  
Governor

B:\Working\CHATHAM, TOWN of\2003247 90 Bridge Street Redevelopment\00\_CAD\Design\Working\REGULATORY\USACE\SHT-02 EXISTING CONDITIONS REV 2022-11-30.dwg

I CERTIFY THAT THIS PLAN AS PREPARED CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

*R.J. Titmuss* 11/30/2022



SHEET 1 OF 10 DATE: 11/30/22

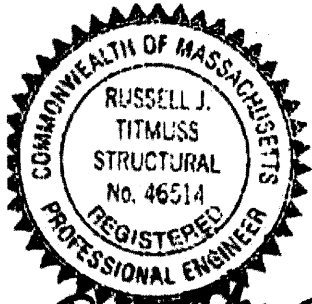
PLANS ACCOMPANYING PETITION OF TOWN OF CHATHAM FOR PIER, BULKHEAD, AND FLOAT CONSTRUCTION  
90 BRIDGE STREET, MITCHELL RIVER, CHATHAM, MA

PREPARED BY GEI CONSULTANTS INC, FRANKLIN, MA

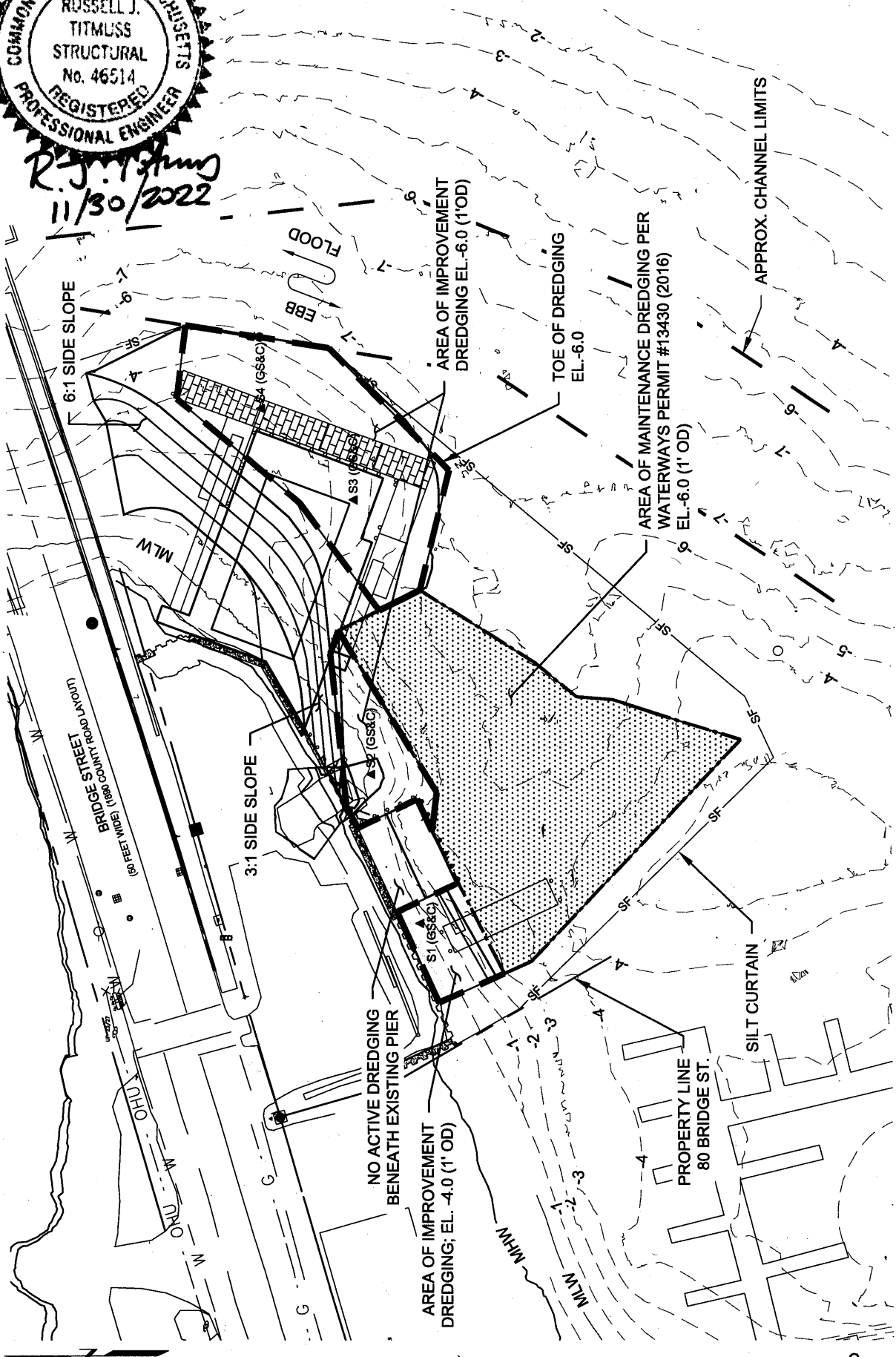
**LICENSE PLAN NO. 15573**  
Approved by Department of Environmental Protection of Massachusetts  
*[Signature]* JUN 08 2023

I CERTIFY THAT THIS PLAN AS PREPARED CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

R.J. Titmuss 11/30/2022



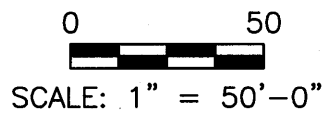
R.J. Titmuss 11/30/22



IMPROVEMENT DREDGING  
11,420 SF  
1,300 CY

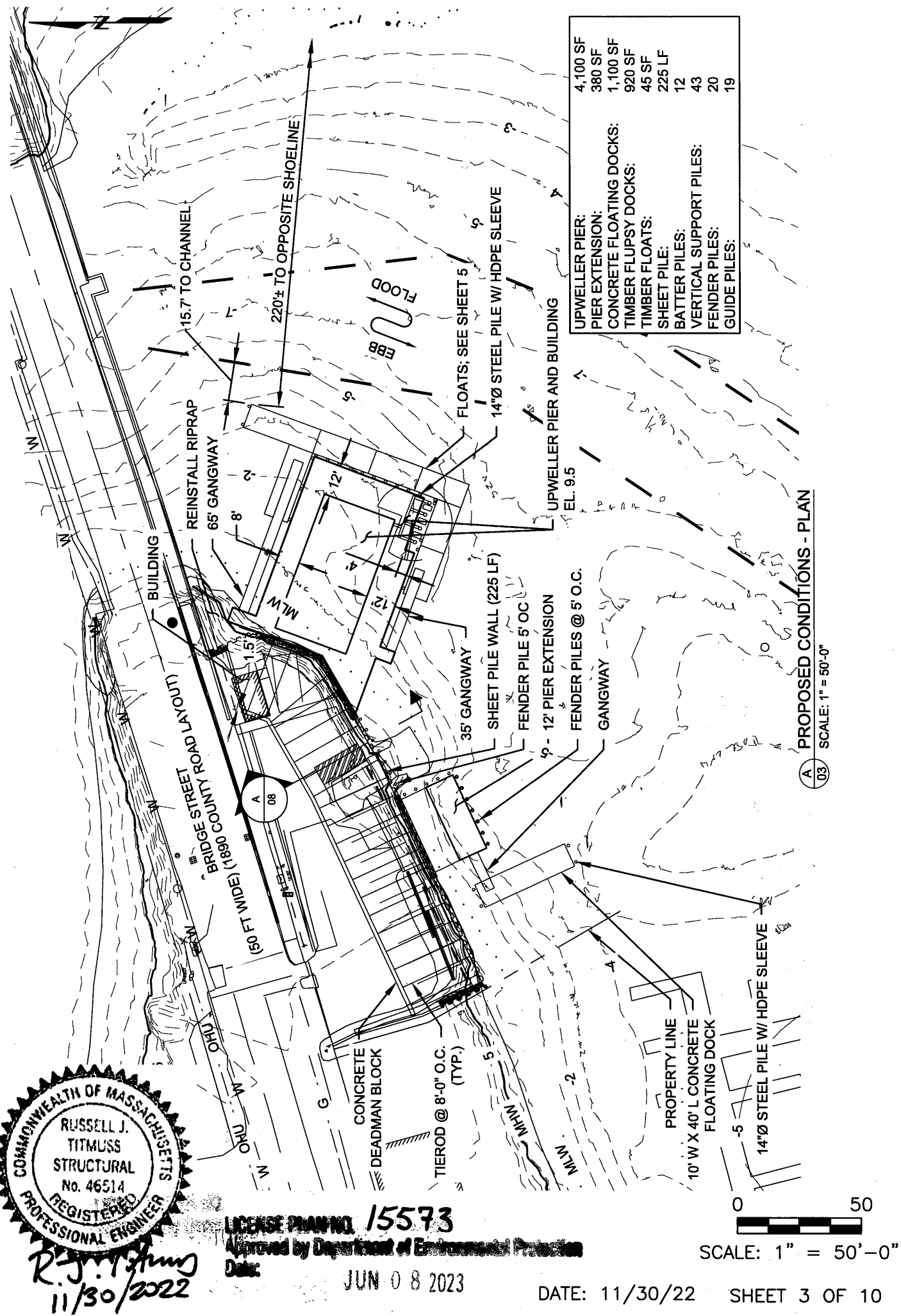
A DREDGING PLAN  
02 SCALE: 1" = 50'-0"

LICENSE PLAN NO. 15573  
Approved by Department of Environmental Protection  
Date: JUN 08 2023



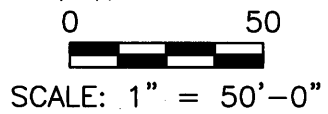
I CERTIFY THAT THIS PLAN AS PREPARED CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

*R.J. Titmuss 11/30/2022*



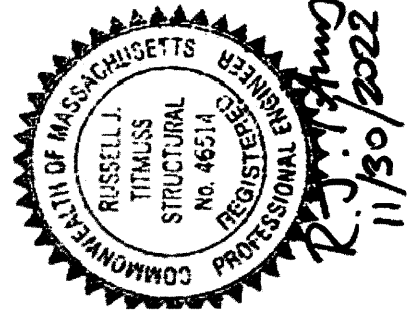
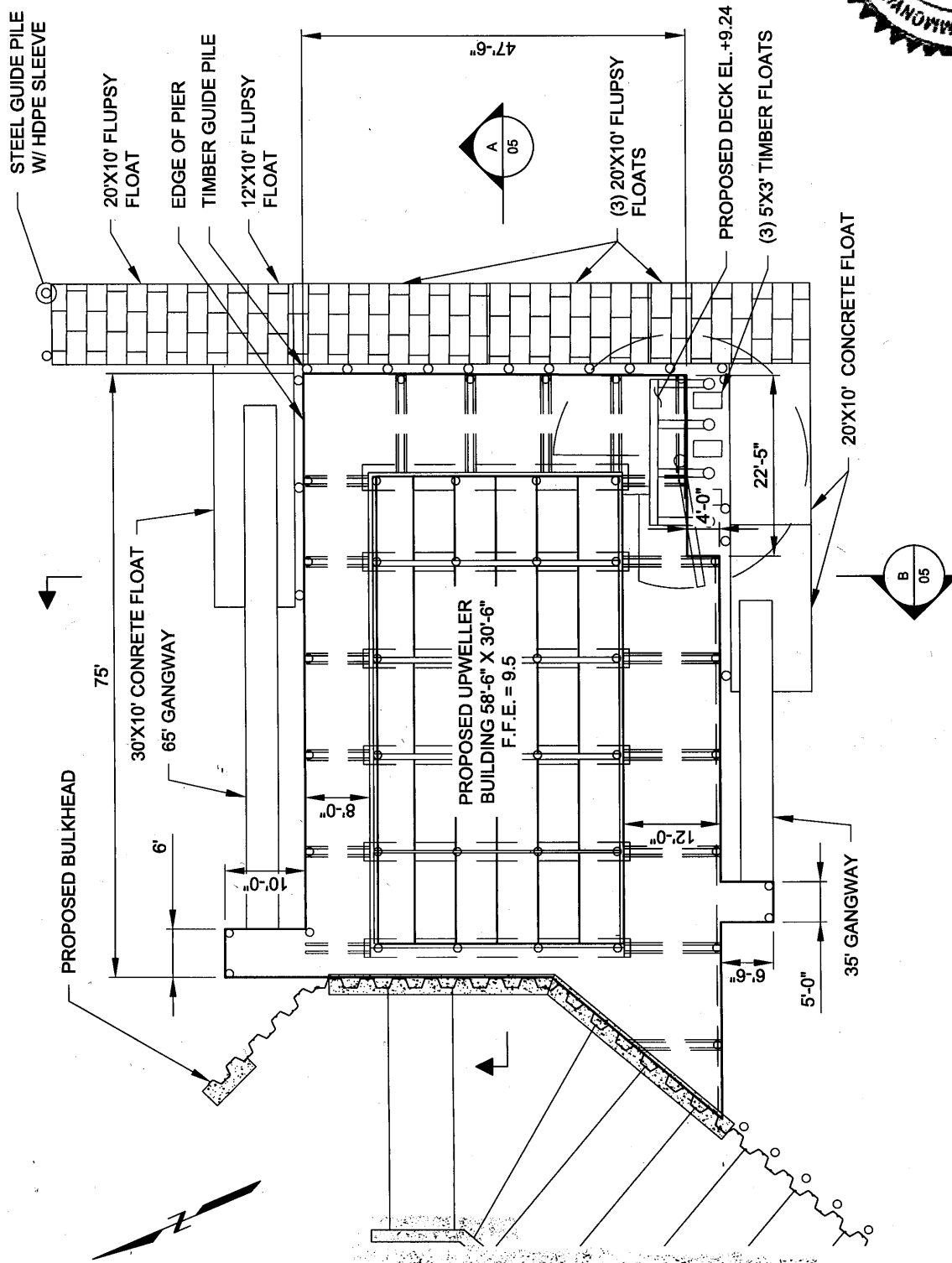
*R.J. Titmuss*  
*11/30/2022*

LICENSE PLAN NO. 15573  
Approved by Department of Environmental Protection  
Date: JUN 08 2023



I CERTIFY THAT THIS PLAN AS PREPARED CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

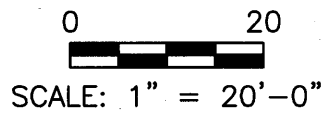
*R.J. Titmus 11/30/2022*



(A) PROPOSED UPWELLER PIER PLAN  
SCALE: 1" = 20'-0"

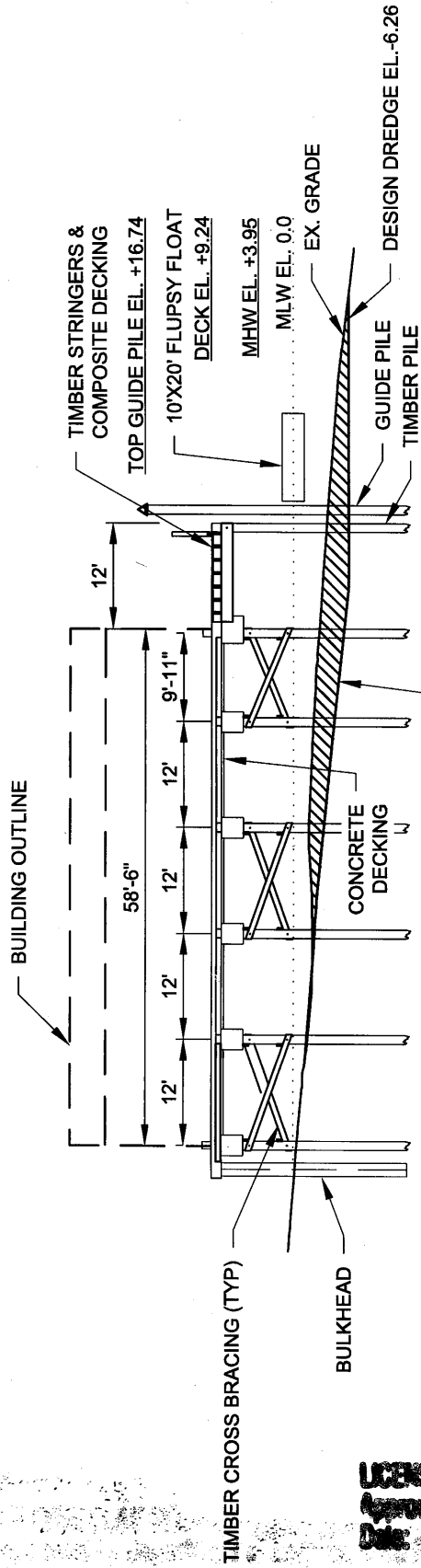
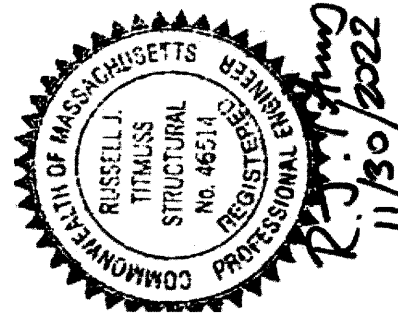
**LICENSE PLAN NO. 15573**  
Approved by Department of Environmental Protection  
Date:

JUN 08 2023

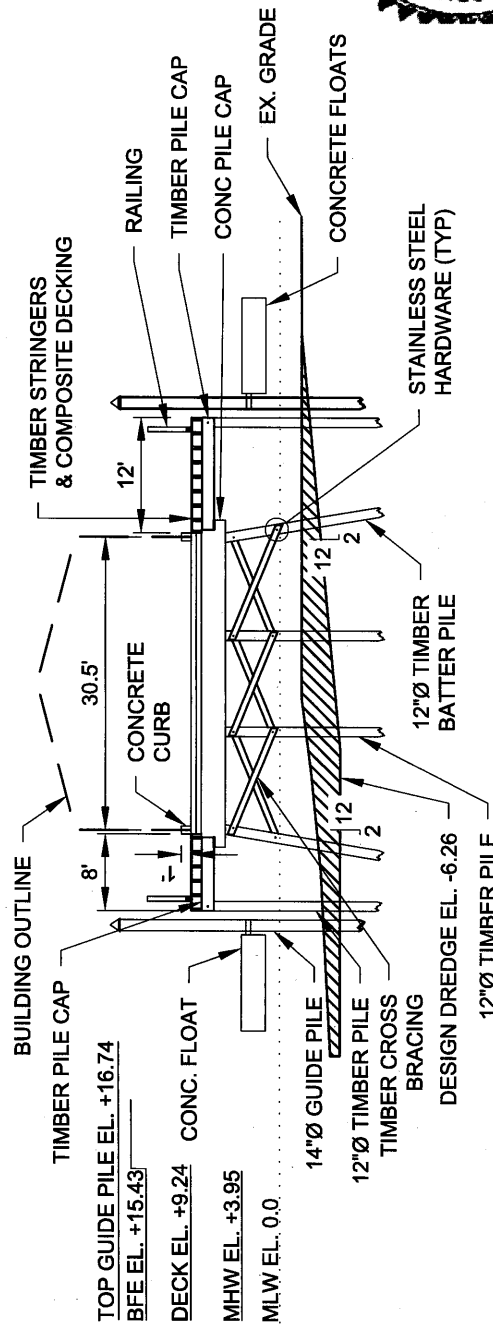


I CERTIFY THAT THIS PLAN AS PREPARED CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

*R.J. Titmus* 11/30/2022



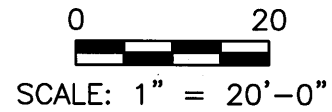
(A) PIER LONGITUDINAL SECTION  
SCALE: 1" = 20'-0"



(B) PIER TRANSVERSE SECTION  
SCALE: 1" = 20'-0"

**LICENSE PLAN NO. 15573**  
Approved by Department of Environmental Protection  
Date:

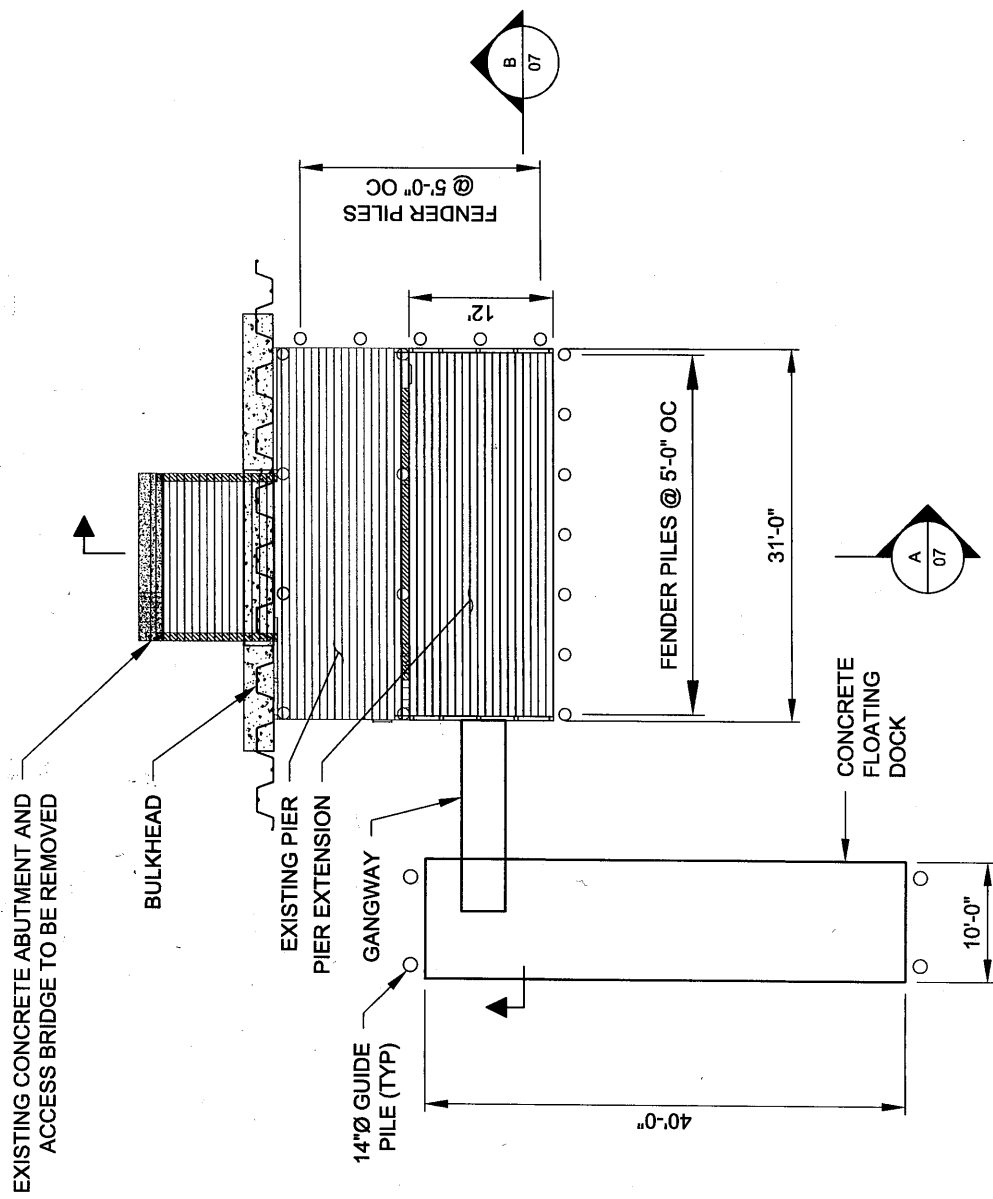
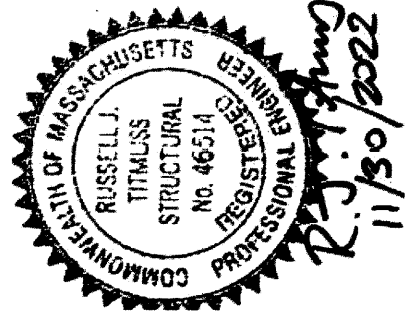
JUN 08 2023



B:\Working\CHATHAM, TOWN of\2003247 90 Bridge Street Redevelopment\00\_CAD\Design\Working\REGULATORY\USACE\SHT-05 PIER DETAILS REV 2022-11-30.dwg

I CERTIFY THAT THIS PLAN AS PREPARED CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

*R.J. Titmuss 11/30/2022*



PROPOSED T-PIER EXTENSION PLAN  
SCALE: 3/16"=1'-0"

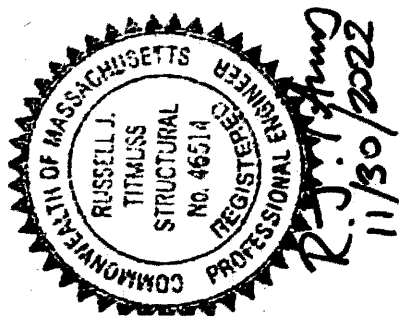
**LICENSE PLUMBER 15573**  
Approved by Department of Environmental Protection



SCALE: 3/16"=1'-0"

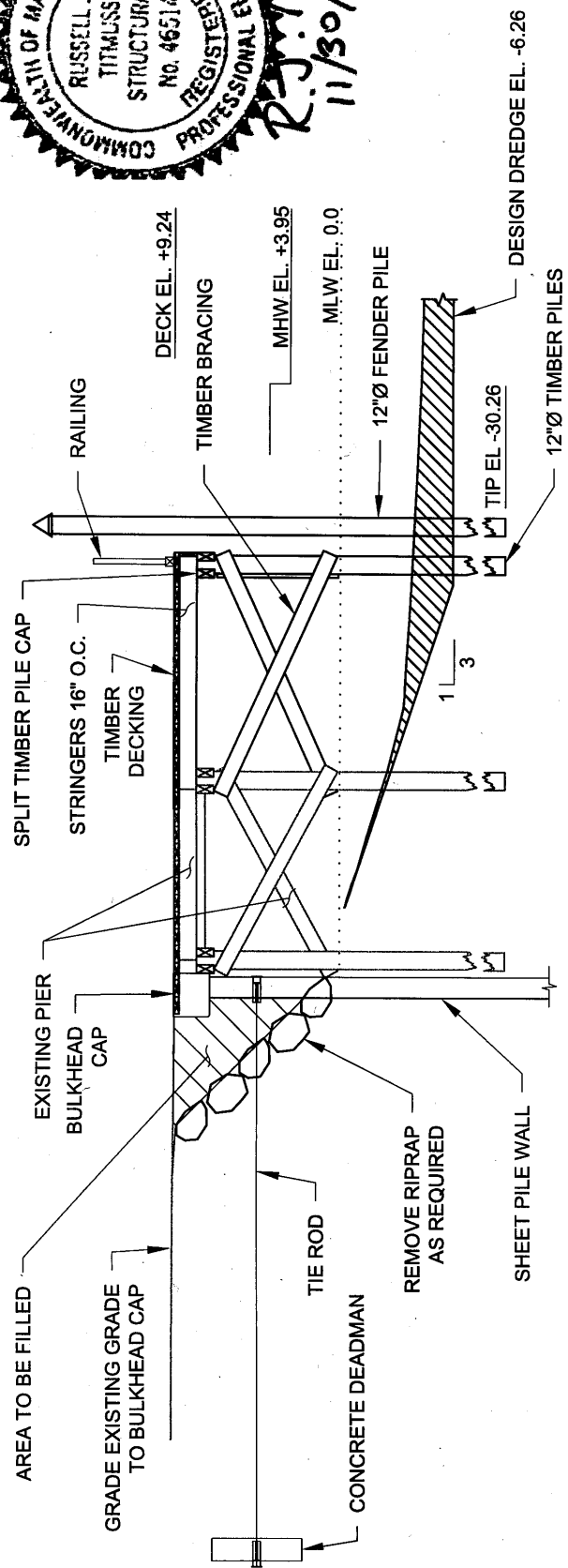
DATE: 11/30/22 SHEET 6 OF 10



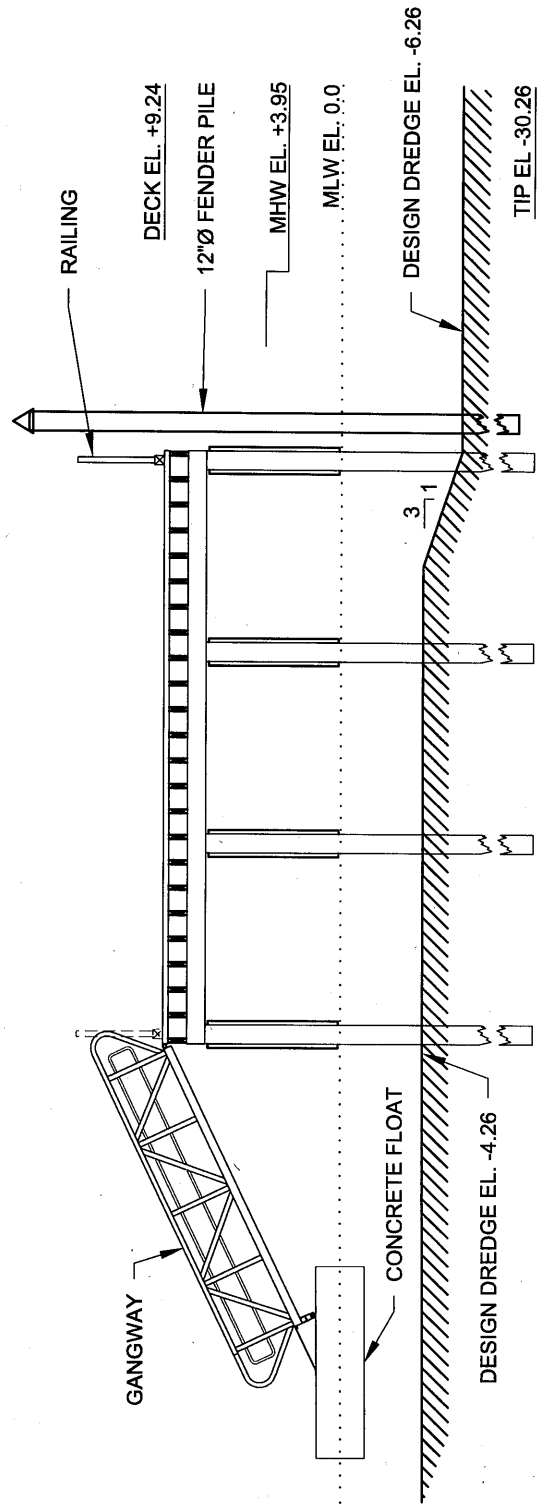


I CERTIFY THAT THIS PLAN AS PREPARED CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

*R.J. Titmuss 11/30/2022*



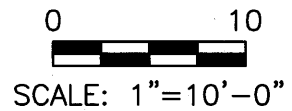
**A** CROSS SECTION  
SCALE: 1"=10'-0"



**B** CROSS SECTION  
SCALE: 1"=10'-0"

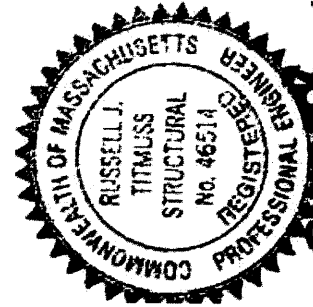
**15573**

JUN 08 2023

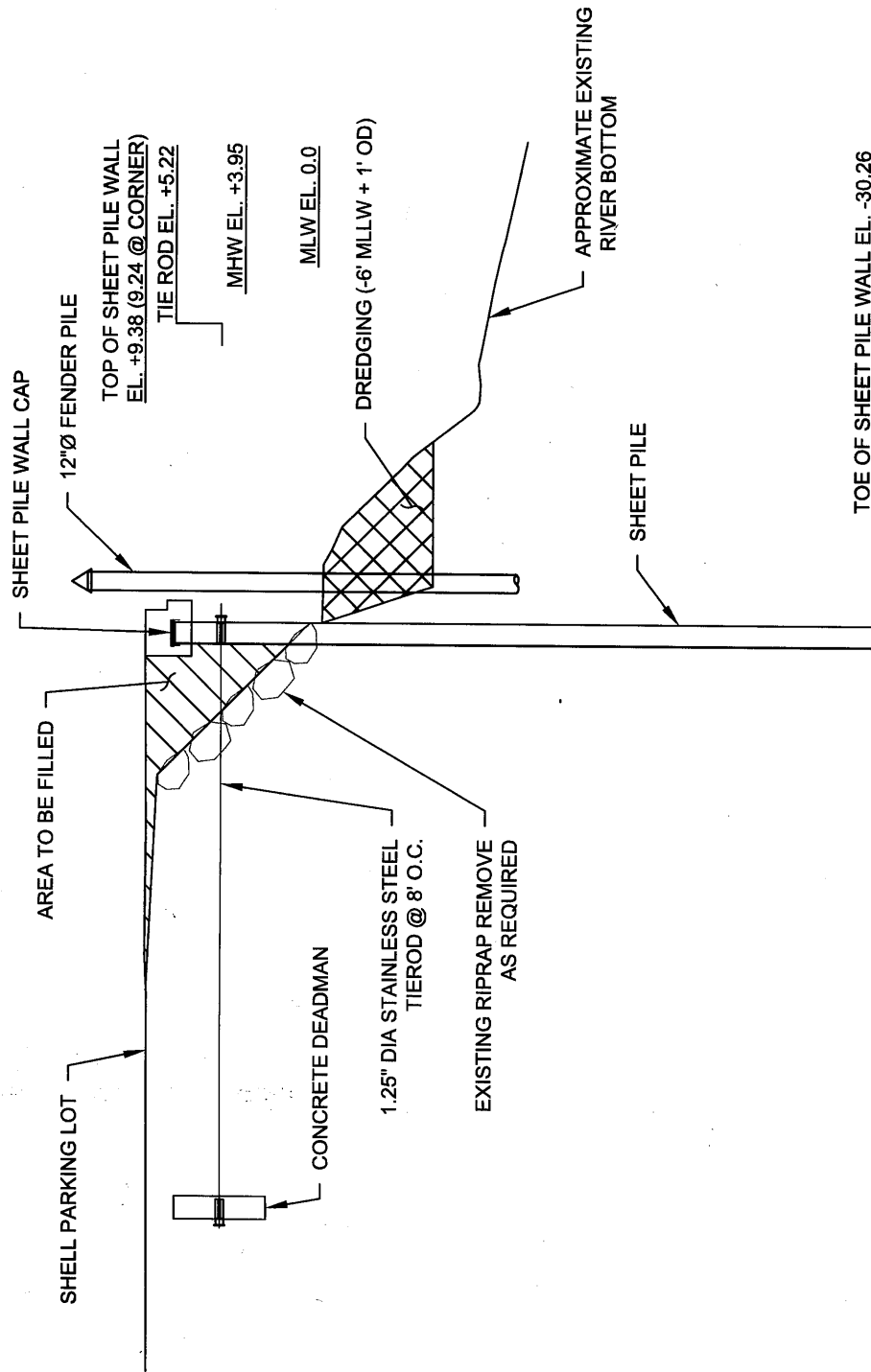


I CERTIFY THAT THIS PLAN AS PREPARED CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

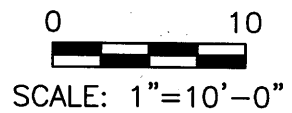
*R.J. Titmus* 11/30/2022



*R.J. Titmus*  
11/30/2022



PROPOSED BULKHEAD SECTION  
SCALE: 1"=10'-0"



SCALE: 1"=10'-0"

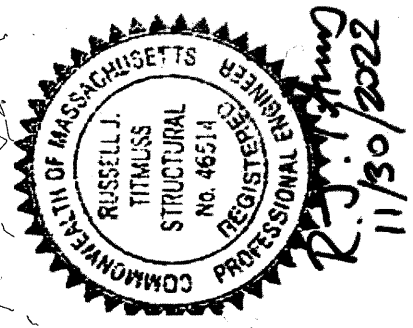
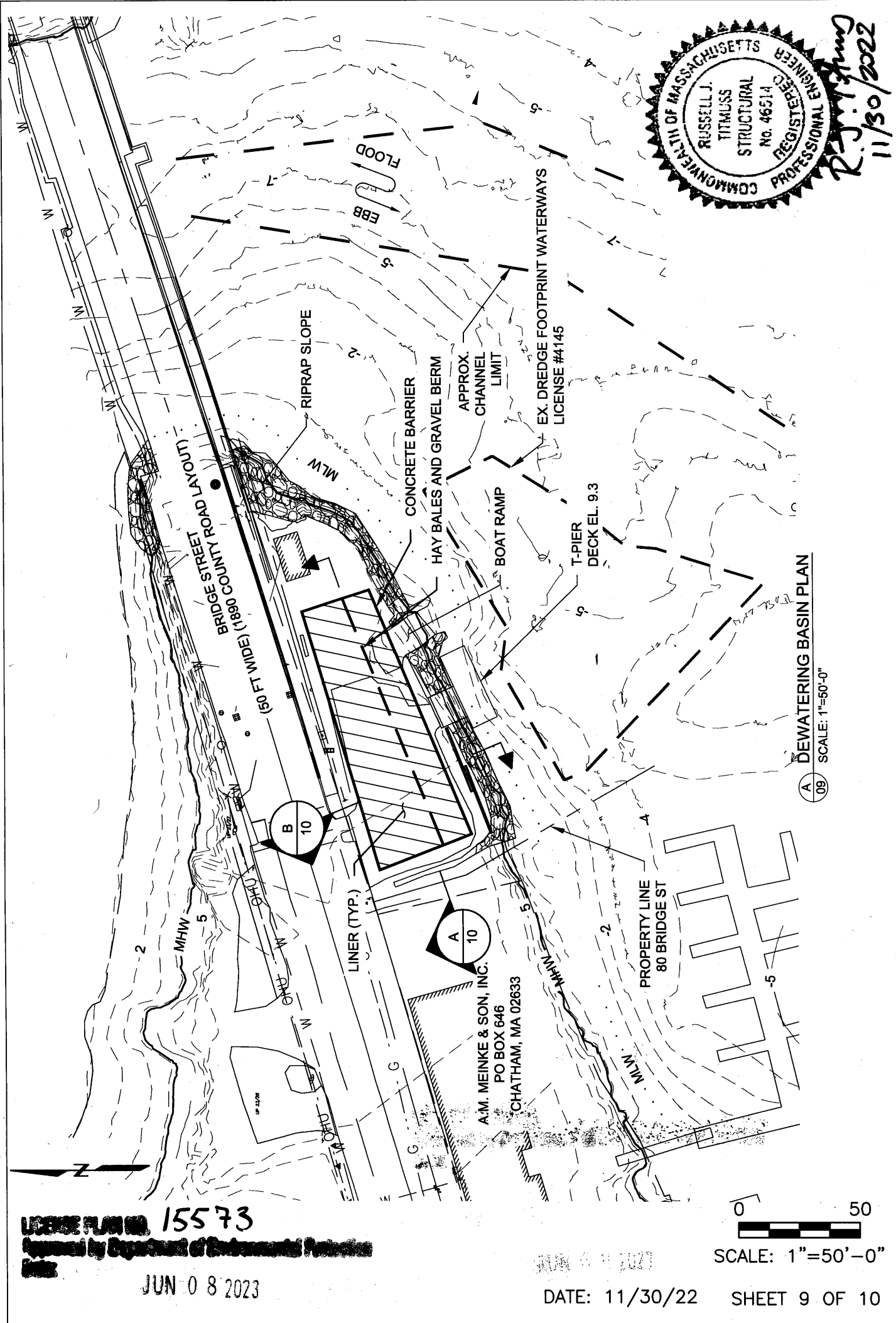
DATE: 11/30/22

SHEET 8 OF 10

15573  
JUN 0 8 2023

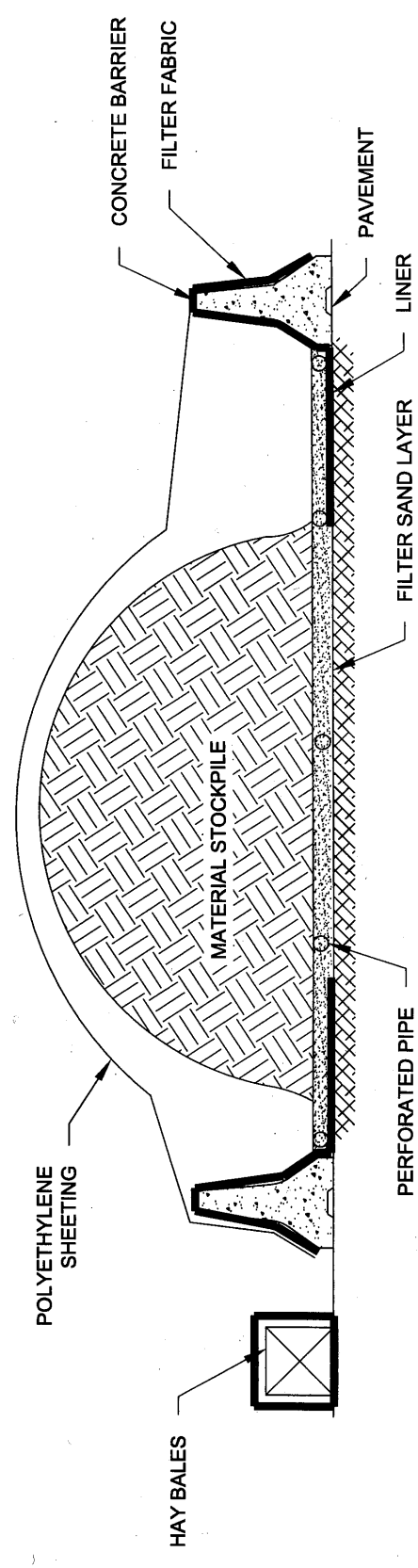
I CERTIFY THAT THIS PLAN AS PREPARED CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

*R.J. Titmus* 11/30/2022



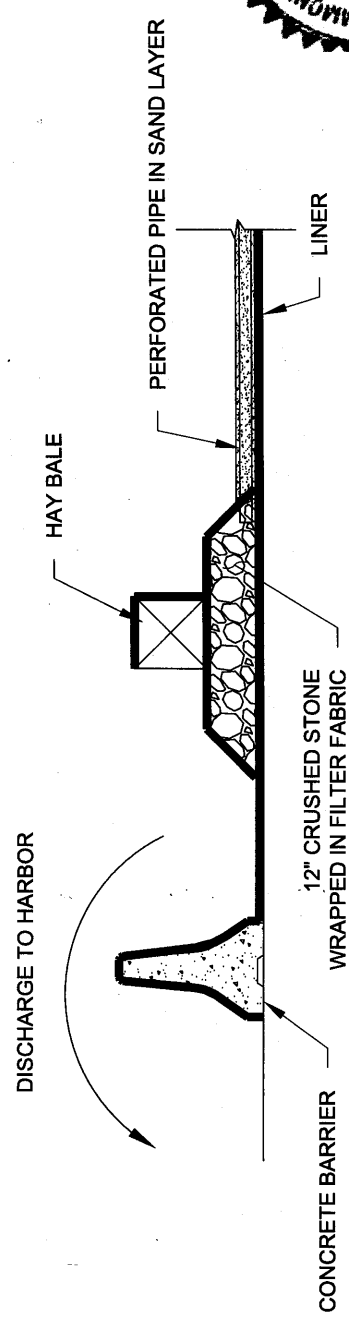
**USE PLAN NO. 15573**  
 Approved by Department of Environmental Resources  
**JUN 08 2023**

**SCALE: 1"=50'-0"**  
**DATE: 11/30/22** **SHEET 9 OF 10**

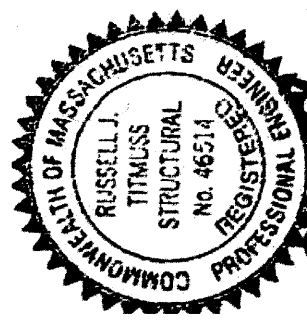


NOTES:  
 1. BARRIERS SHALL FULLY ENCLOSE STOCKPILE  
 2. STOCKPILE SHALL BE COVERED AS REQUIRED BY SPECIFICATION OR AS DIRECTED BY TOWN

(A) CROSS SECTION - CONTAINMENT AREA  
 SCALE: NTS



(B) CROSS SECTION - CONTAINMENT AREA  
 SCALE: NTS



*R.J. Titmuss*  
 11/30/2022

I CERTIFY THAT THIS PLAN AS PREPARED CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

*R.J. Titmuss 11/30/2022*

15573  
 JUN 08 2023



DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NEW ENGLAND DISTRICT  
696 VIRGINIA ROAD  
CONCORD MA 01742-2751

July 27, 2023

Regulatory Division  
File Number: NAE-2015-00338

Robert Duncanson  
Town of Chatham  
261 George Ryder Road  
Chatham, Massachusetts 02633  
Sent by email: [rduncanson@chatham-ma.gov](mailto:rduncanson@chatham-ma.gov)

Dear Mr. Duncanson:

The U.S. Army Corps of Engineers (USACE) has reviewed your application to perform work, place structures and dredge below the mean high water mark and discharge water below the high tide line of waters of the United States in order to re-develop a 0.72-acre town owned parcel. Specifically, this would include: 1). Installation of a new Aquaculture Facility consisting of a 4,100- square foot timber pier supported by (50) 12-inch timber support piles and (12) 12-inch timber fender piles, a total of 920-square foot floating upwellers (FLUPSYs) supported by (16) 14-inch steel guide piles, two concrete floats totaling 500 square-feet, and two gangways totaling 530- square feet. Atop of the Aquaculture pier would sit a 30 x 50-foot building, the former Coast Guard Station Chatham boat house once located at Stage Harbor, to house the aquaculture equipment. 2). Extending the existing 512-square foot T-pier through the addition of a 372-square foot timber deck, installing (4) 12-inch timber support piles, (7) timber fender piles, and (4) 14-inch timber guide piles, a 400-square foot concrete float, and 140-square foot gangway. 3). Removal of the existing 280 square foot deteriorated gravel ramp. 4). Installation of a new 225 linear foot fiber-reinforced polymer (FRP) composite bulkhead would be installed approximately 18-inches in front of the existing riprap shorefront. The void would be backfilled with approximately 20 cubic yards of clean structural fill. In addition, (20) 14-inch timber fender piles would be installed. 5). Conducting improvement dredging of a total approximately 1,330 cubic yards (cy) of sediment within 11,461- square feet of the Mitchell River to provide sufficient depth for the shellfish upweller pump intake and ensure safe navigation. Dredging would establish a depth of -6.0-feet at MLLW plus one foot over dredge beneath and around the new aquaculture facility and -4.0 feet at MLLW around the expanded T-pier. Dredging would be conducted mechanically using a barge mounted clamshell dredge with an environmental bucket. Dredging occurring near-shore would be completed using an excavator stationed landward of MHW. Dredging spoils would be placed in confined dewatering basins, staged within the on-site parking lot. The return-water would be filtered back into the waterbody. The dredge spoils would be disposed of at an upland site located at 141 Great Western Road, South Dennis, MA 02660. The proposed project will result in 11,461 sq. ft. of direct effects to subtidal areas associated with

dredging, 6,962 sq. ft. of direct effects associated with the construction of various structures, and 338 sq. ft. of direct effects associated with the loss of waters through the placement and backfilling of the sheet pile bulkhead. The project also proposes the removal of 280 sq. ft. of gravel fill associated with an existing boat ramp, which will result in restoration of an intertidal area. This project is located in the Mitchell River at 90 Bridge Street, Chatham, Massachusetts. The work is shown on the enclosed plans titled "LOCUS MAP", "EXISTING CONDITIONS", "PROPOSED DREDGE – PLAN", "PROPOSED CONDITIONS – PLAN", "PROPOSED UPWELLER PIER PLAN", "PROPOSED UPWELLER PIER SECTION", "PROPOSED T-PIER EXTENSION PLAN", "PROPOSED T PIER EXTENSION SECTION", "PROPOSED BULKHEAD SECTION", "DEWATERING BASIN PLAN", and "DEWATERING BASIN DETAILS" on eleven sheets, with sheets 1-9 dated "06/09/2022" and sheets 10-11 dated "06/15/2022."

Based on the information that you have provided, we verify that the activity is authorized under General Permits # 4, 7 and 9 of the enclosed June 2, 2023, federal permit known as the Massachusetts General Permits (GPs). The GPs are also available at <https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit>.

Please review the enclosed GPs carefully, in particular the general conditions beginning on page 35, and ensure that you and all personnel performing work authorized by the GPs are fully aware of and comply with its terms and conditions. A copy of the GPs and this verification letter shall be available at the work site as required by General Condition 17. You must perform this work in compliance with the following special condition:

*The work authorized herein shall not be conducted during the time of year (TOY) restriction of 15 January to 30 June of any year in order to minimize adverse impacts to winter flounder sensitive life stages and migrating diadromous fish.*

This authorization expires on June 2, 2028. You must commence or have under contract to commence the work authorized herein by June 1, 2028, and complete the work by June 1, 2029. If not, you must contact this office to determine the need for further authorization and we recommend you contact us *before* the work authorized herein expires. Please contact us immediately if you change the plans or construction methods for work within our jurisdiction as we must approve any changes before you undertake them. Performing work within our jurisdiction that is not specifically authorized by this determination or failing to comply with the special condition(s) provided above or all the terms and conditions of the GPs may subject you to the enforcement provisions of our regulations.

This authorization does not obviate the need to obtain other federal, state, or local authorizations required by law. Applicants are responsible for applying for and obtaining any other approvals.

Your project is located within, or may affect resources within, the coastal zone. The Massachusetts Office of Coastal Zone Management (CZM) has already determined that no further Federal Consistency Review is required.

We continually strive to improve our customer service. To better serve you, we would appreciate your completing our Customer Service Survey located at <https://regulatory.ops.usace.army.mil/customer-service-survey>.

Please contact Christine Jacek of my staff at (978) 318-8026 or [Christine.M.Jacek@usace.army.mil](mailto:Christine.M.Jacek@usace.army.mil) if you have any questions.

Sincerely,

*Paul Maniccia*

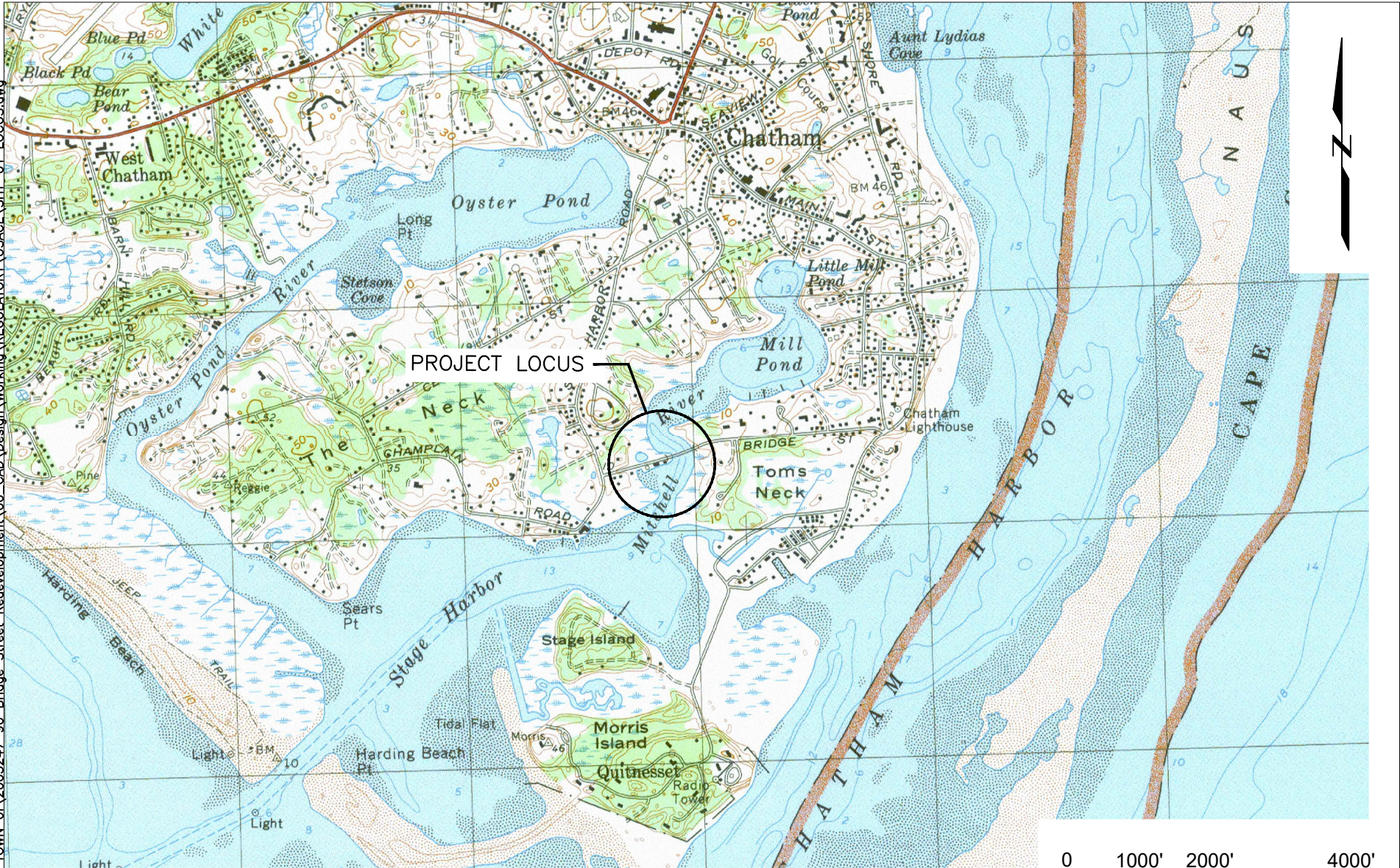
Paul M. Maniccia  
Chief, Permits & Enforcement Branch  
Regulatory Division

Enclosures

cc:

Brad Saunders, GEI Consultants, Inc., [bsaunders@geiconsultants.com](mailto:bsaunders@geiconsultants.com)  
Ed Reiner, U.S. EPA, Region 1, Boston, MA, [reiner.ed@epa.gov](mailto:reiner.ed@epa.gov)  
Rachel Croy, U.S. EPA, Region 1, Boston, MA, [croy.rachel@epa.gov](mailto:croy.rachel@epa.gov)  
Sabrina Pereira, NMFS, Gloucester, MA; [sabrina.pereira@noaa.gov](mailto:sabrina.pereira@noaa.gov)  
Robert Boeri, Coastal Zone Management, Boston, MA, [robert.boeri@mass.gov](mailto:robert.boeri@mass.gov)  
Maissoun Reda, Chief, DEP SERO, Wetlands and Waterways, Lakeville, MA;  
[maissoun.reda@mass.gov](mailto:maissoun.reda@mass.gov)  
David Wong, MassDEP, [david.w.wong@mass.gov](mailto:david.w.wong@mass.gov)  
MassDEP-WRP, Boston, MA; [dep.waterways@mass.gov](mailto:dep.waterways@mass.gov)  
David Robinson, MA Board of Underwater Archaeological Resources (BUAR);  
[david.s.robinson@mass.gov](mailto:david.s.robinson@mass.gov)  
Town of Chatham Conservation Commission, [ckeon@chatham-ma.gov](mailto:ckeon@chatham-ma.gov)

File: B:\Working\CHATHAM\_TOWN of 2003247 90 Bridge Street Redevelopment\00\_CAD\Design\Working\_REGULATORY\USACE\SHT-01\_LOCUS.dwg



NOTE:  
USGS LOCUS MAP  
VERTICAL DATUM: NAVD88

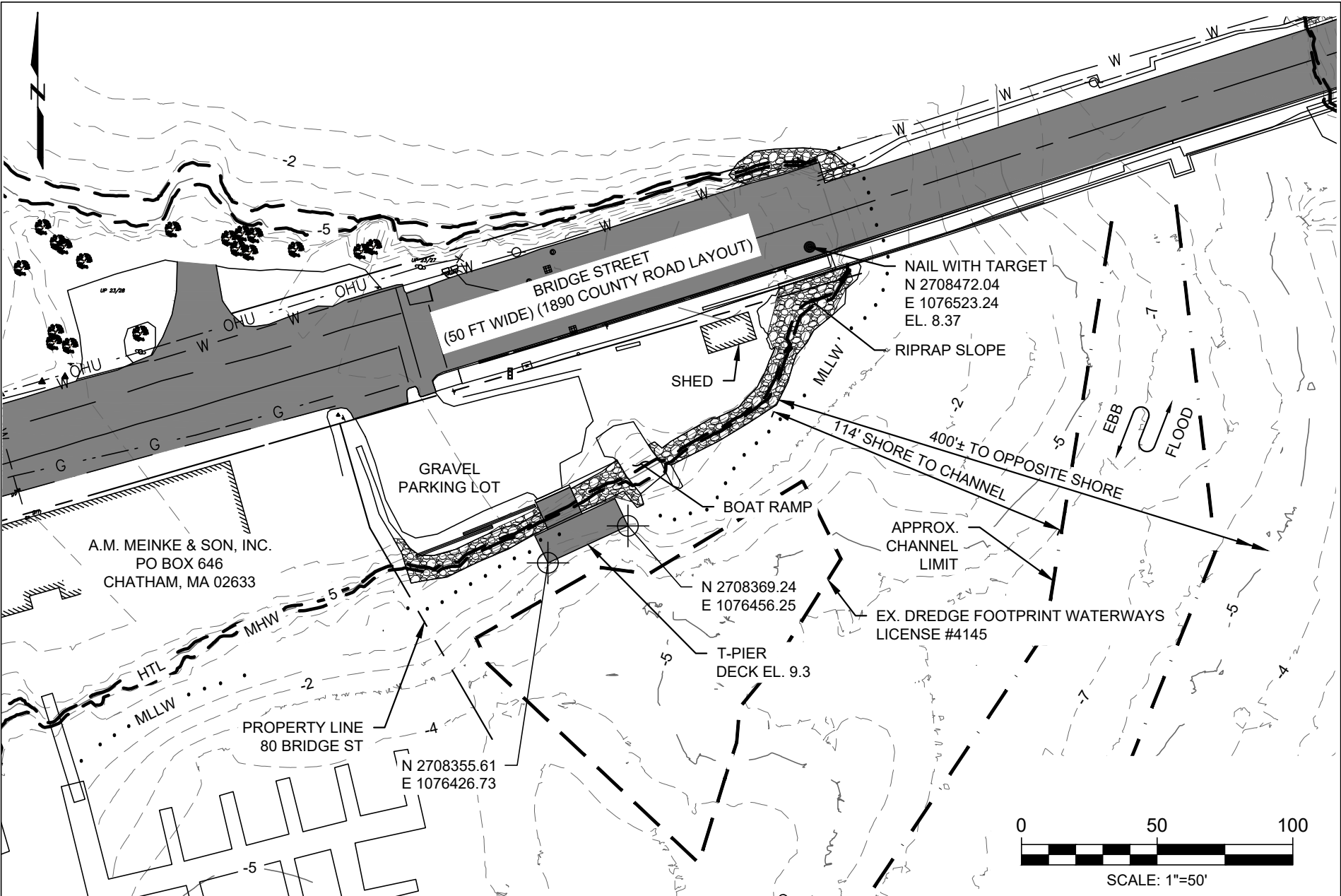
TITLE: LOCUS MAP

PURPOSE:  
90 BRIDGE ST SITE REDEVELOPMENT

APPLICATION BY:  
TOWN OF CHATHAM

IN: MITCHELL RIVER  
AT: CHATHAM  
COUNTY: BARNSTABLE STATE: MA  
SHEET: 01 OF 09  
DATE: 06/09/2022





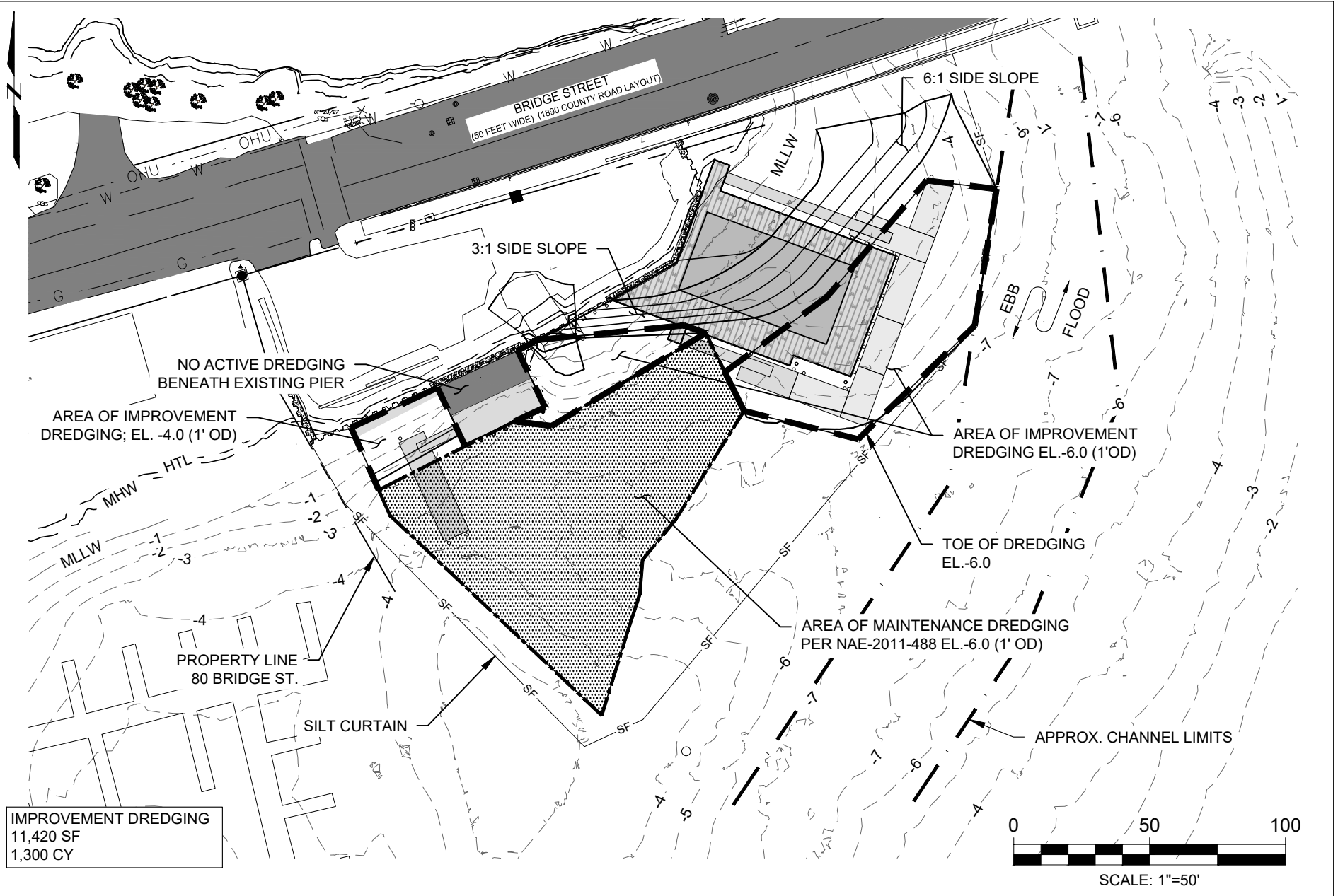
100 YR FLOOD	+15.69
HTL	+5.40
MHW	+4.21
NAVD88	+2.69
MLW	+0.26
MLLW	0.0

TITLE: EXISTING CONDITIONS

PURPOSE:  
90 BRIDGE ST SITE REDEVELOPMENT

APPLICATION BY:  
TOWN OF CHATHAM

IN: MITCHELL RIVER  
AT: CHATHAM  
COUNTY: BARNSTABLE STATE: MA  
SHEET: 02 OF 09  
DATE: 06/09/2022



IMPROVEMENT DREDGING  
11,420 SF  
1,300 CY



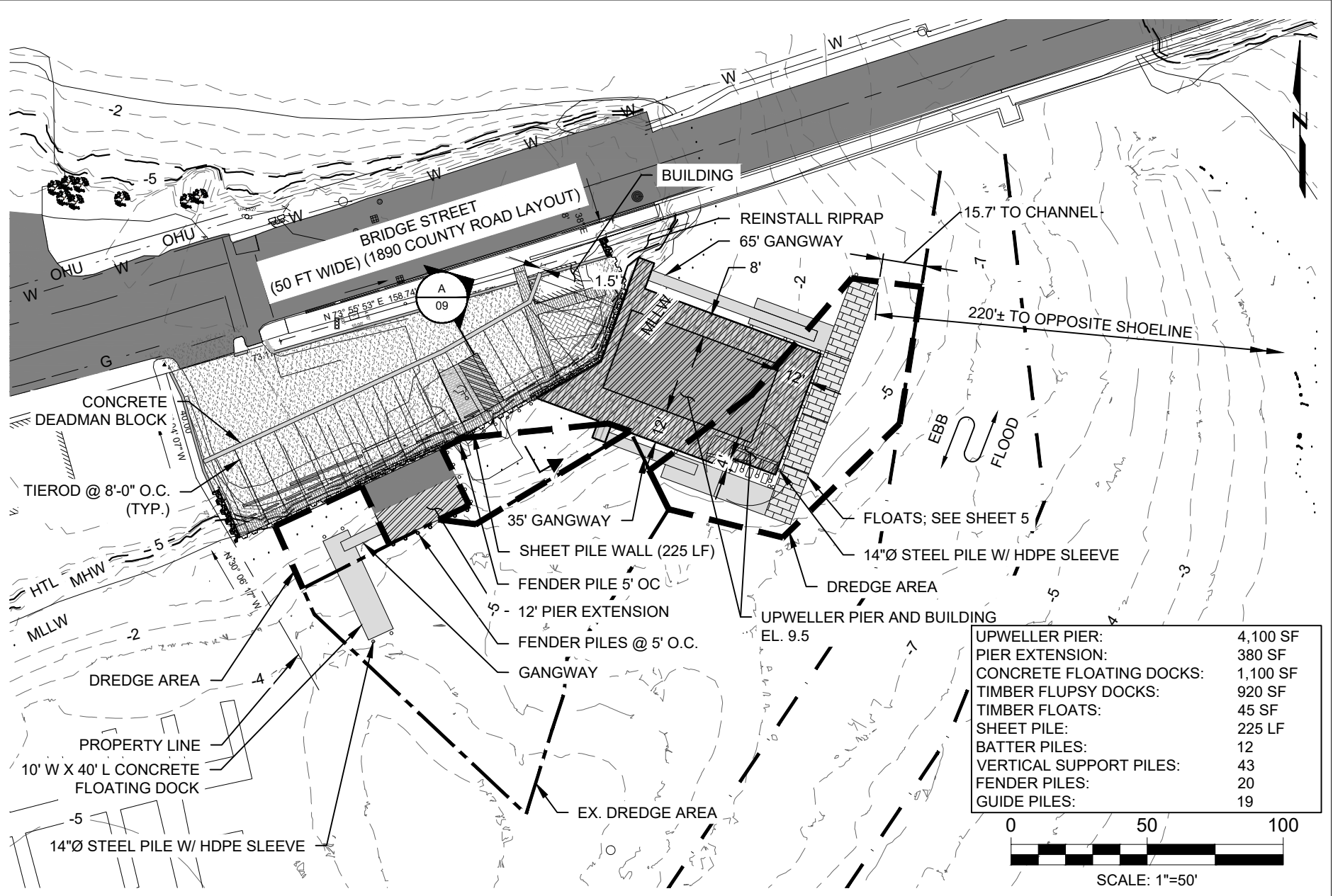
100 YR FLOOD	+15.69
HTL	+5.40
MHW	+4.21
NAVD88	+2.69
MLW	+0.26
MLLW	0.0

TITLE: PROPOSED DREDGE - PLAN

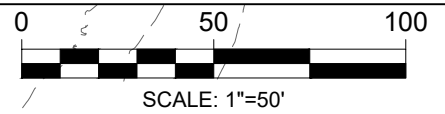
PURPOSE:  
90 BRIDGE ST SITE REDEVELOPMENT

APPLICATION BY:  
TOWN OF CHATHAM

IN: MITCHELL RIVER  
AT: CHATHAM  
COUNTY: BARNSTABLE STATE: MA  
SHEET: 03 OF 09  
DATE: 06/09/2022



UPWELLER PIER:	4,100 SF
PIER EXTENSION:	380 SF
CONCRETE FLOATING DOCKS:	1,100 SF
TIMBER FLUPS DOCKS:	920 SF
TIMBER FLOATS:	45 SF
SHEET PILE:	225 LF
BATTER PILES:	12
VERTICAL SUPPORT PILES:	43
FENDER PILES:	20
GUIDE PILES:	19



100 YR FLOOD	+15.69
HTL	+5.40
MHW	+4.21
NAVD88	+2.69
MLW	+0.26
MLLW	0.00

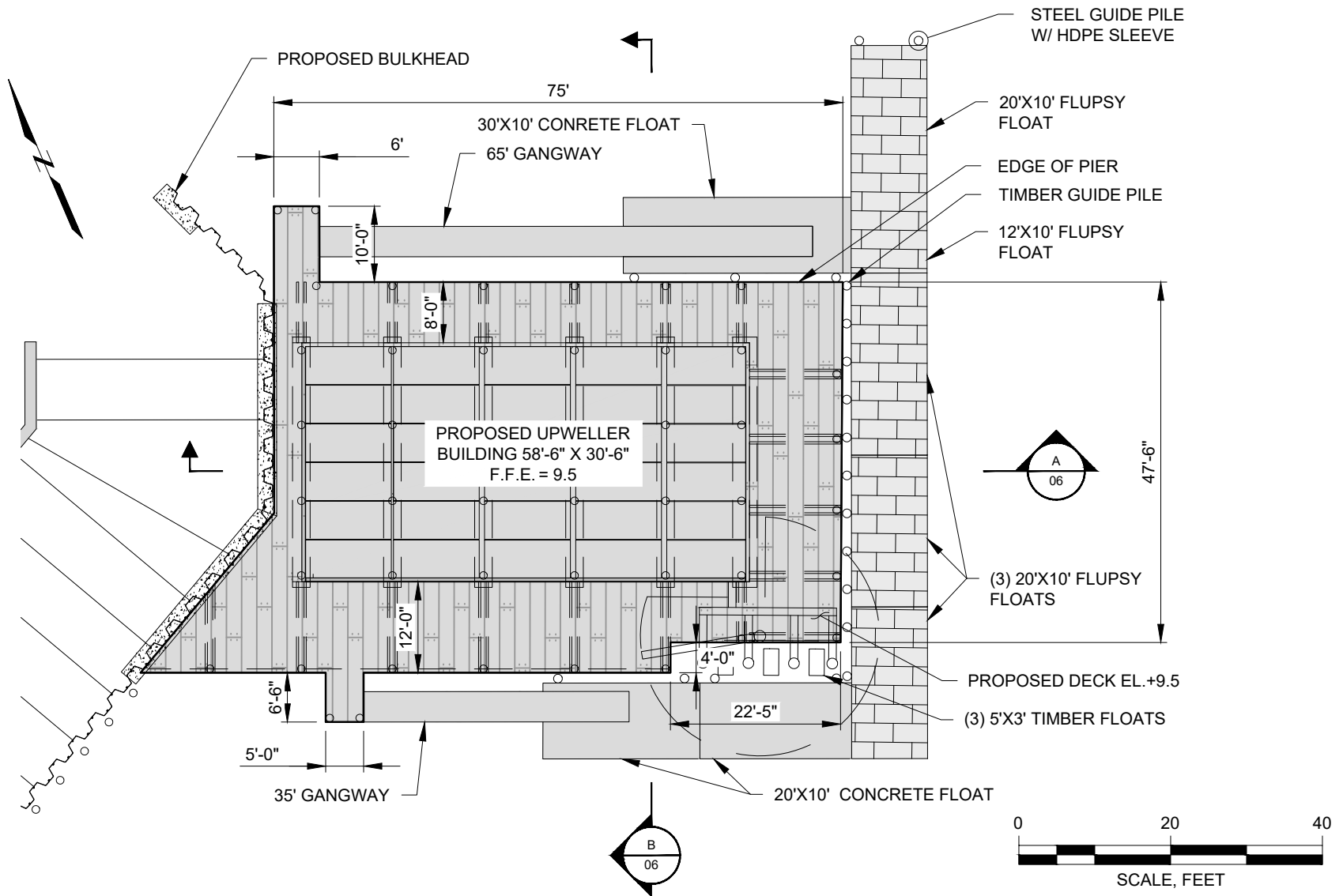
TITLE: PROPOSED CONDITIONS – PLAN

PURPOSE: 90 BRIDGE ST SITE REDEVELOPMENT

APPLICATION BY: TOWN OF CHATHAM

IN: MITCHELL RIVER  
 AT: CHATHAM  
 COUNTY: BARNSTABLE STATE: MA  
 SHEET: 04 OF 09  
 DATE: 06/09/2022

File: B:\Working\CHATHAM\_TOWN of\2003247\_90 Bridge Street Redevelopment\00\_CAD\Design\Working\REGULATORY\USACE\SHT-05\_PIER\_DETAILS.dwg



100 YR FLOOD	+15.69
HTL	+4.58
MHW	+4.21
NAVD88	+2.69
MLW	+0.26
MLLW	0.0

TITLE: PROPOSED UPWELLER PIER PLAN

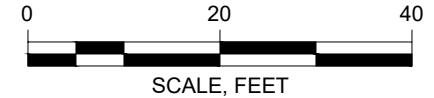
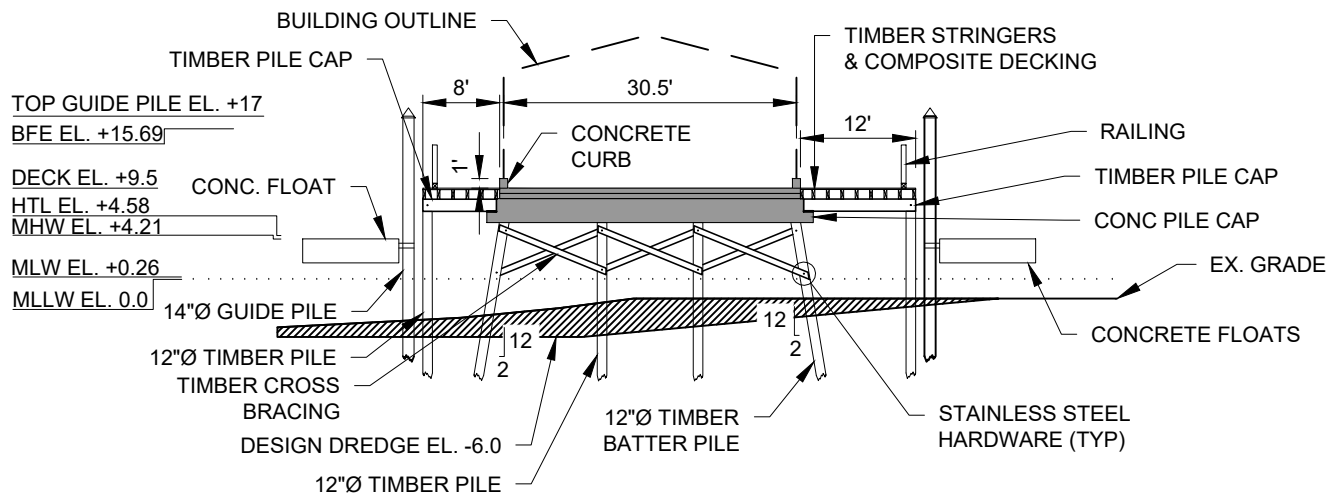
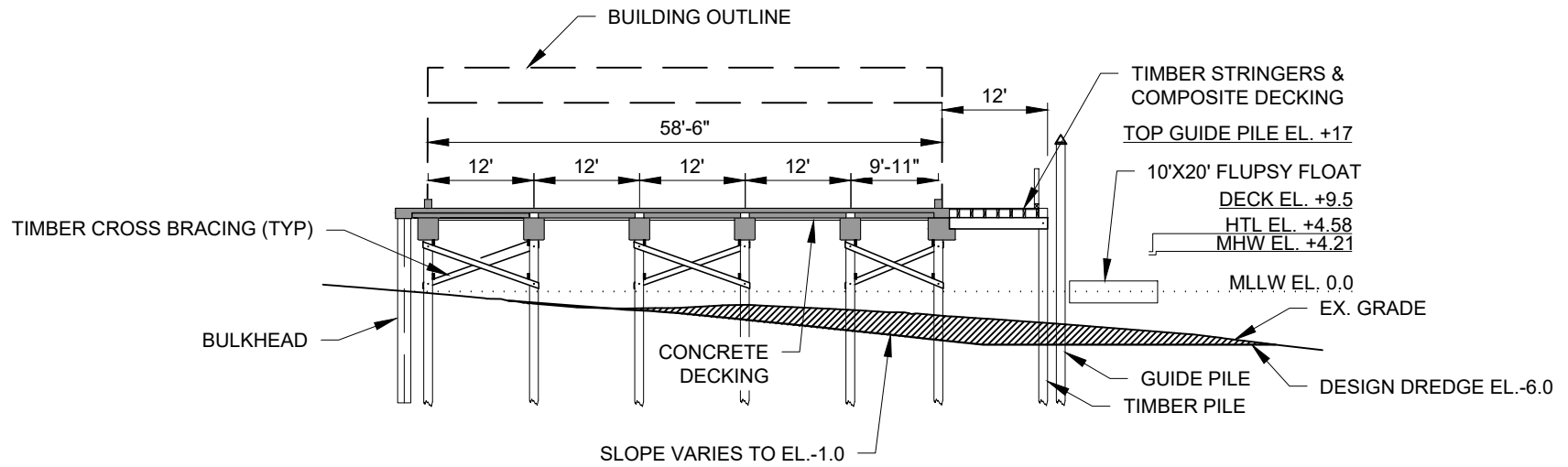
IN: MITCHELL RIVER  
 AT: CHATHAM  
 COUNTY: BARNSTABLE STATE: MA

PURPOSE:  
 90 BRIDGE ST PIER REDEVELOPMENT

APPLICATION BY:  
 TOWN OF CHATHAM

SHEET: 05 OF 09  
 DATE: 06/09/2022

File: B:\Working\CHATHAM\_TOWN of 2003247\_90 Bridge Street Redevelopment\00\_CAD\Design\Working\REGULATORY\USACE\SHT-05\_PIER\_DETAILS.dwg



100 YR FLOOD	+15.69
HTL	+4.58
MHW	+4.21
NAVD88	+2.69
MLW	+0.26
MLLW	0.0

TITLE: PROPOSED UPWELLER PIER SECTION

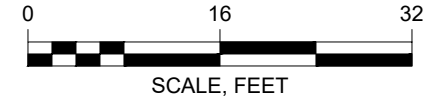
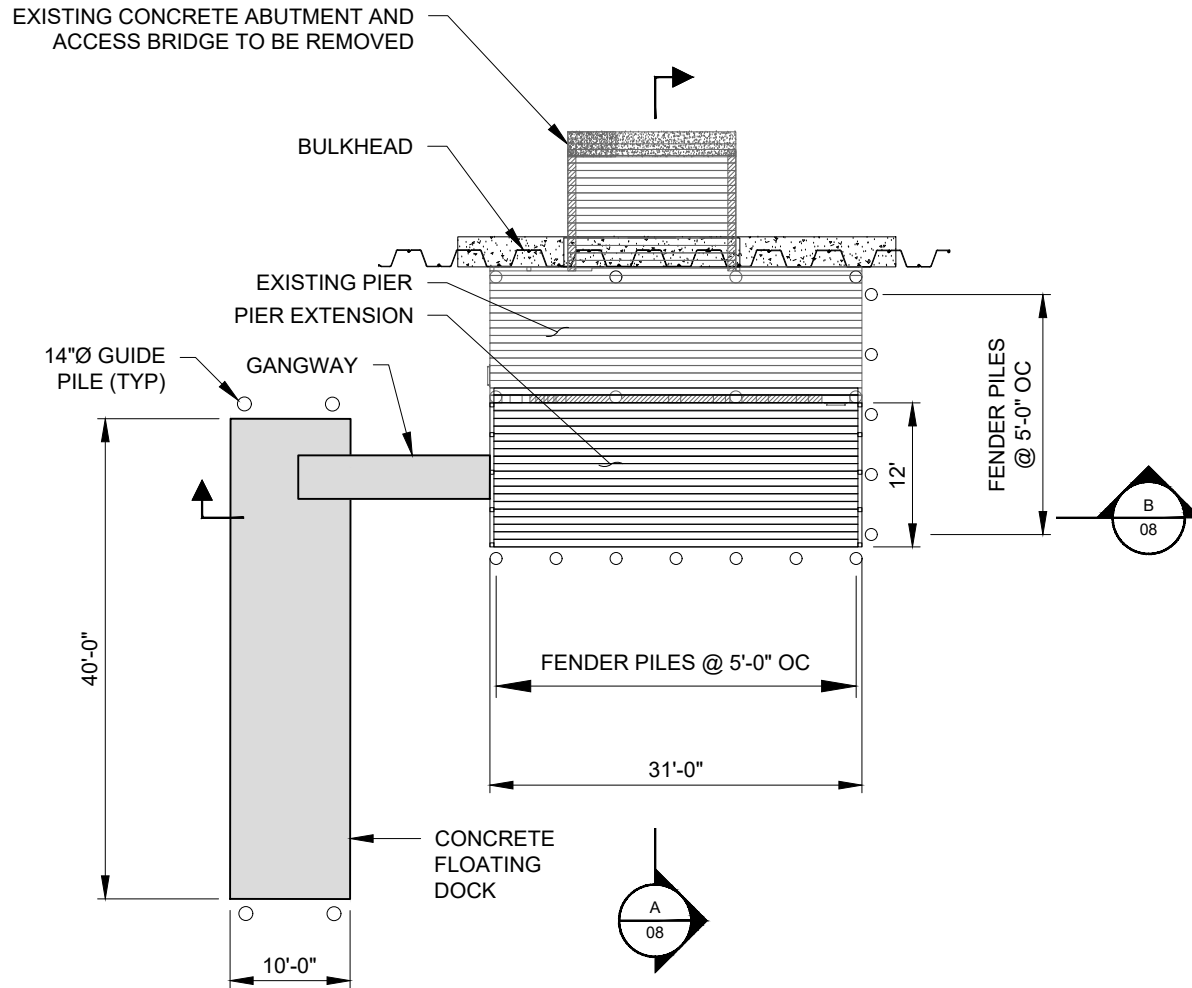
IN: MITCHELL RIVER  
AT: CHATHAM  
COUNTY: BARNSTABLE STATE: MA

PURPOSE:  
90 BRIDGE ST PIER REDEVELOPMENT

APPLICATION BY:  
TOWN OF CHATHAM

SHEET: 06 OF 09  
DATE: 06/09/2022

File: B:\Working\CHATHAM\_TOWN of\2003247\_90\_Bridge\_Street\_Redevelopment\00\_CAD\Design\Working\REGULATORY\USACE\SHT-05\_PIER\_DETAILS.dwg



100 YR FLOOD	+15.69
HTL	+4.58
MHW	+4.21
NAVD88	+2.69
MLW	+0.26
MLLW	0.0

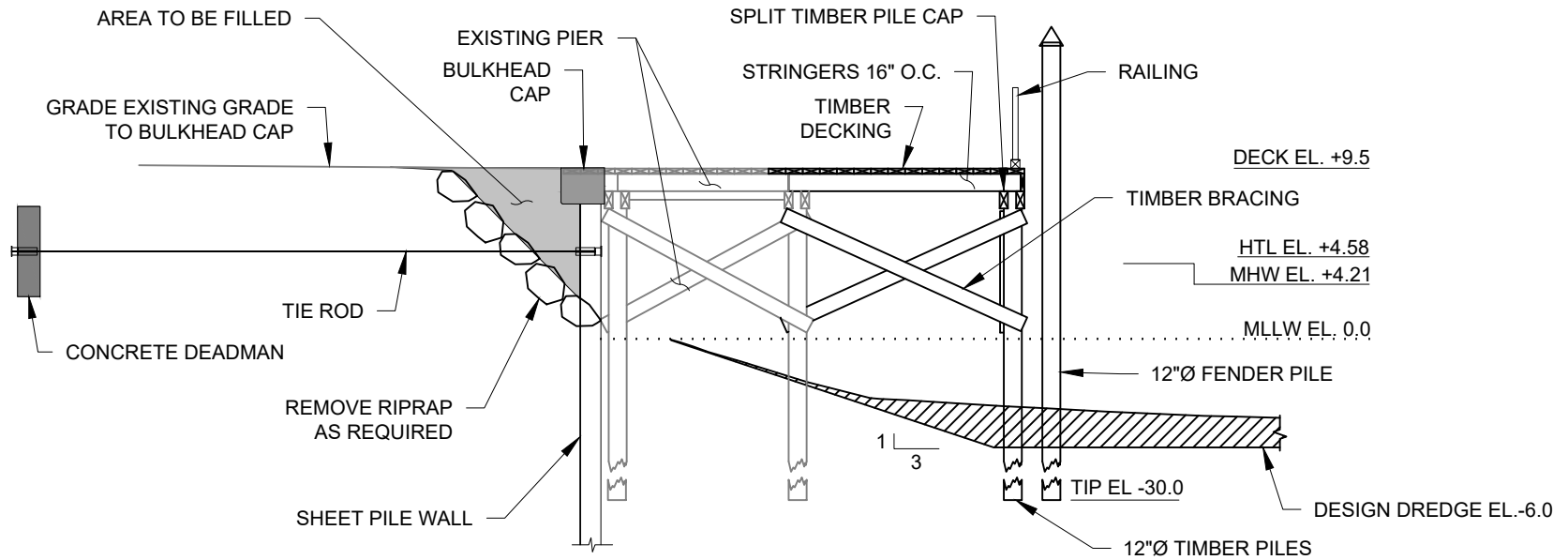
TITLE: PROPOSED T-PIER EXTENSION PLAN

PURPOSE:  
90 BRIDGE ST PIER REDEVELOPMENT

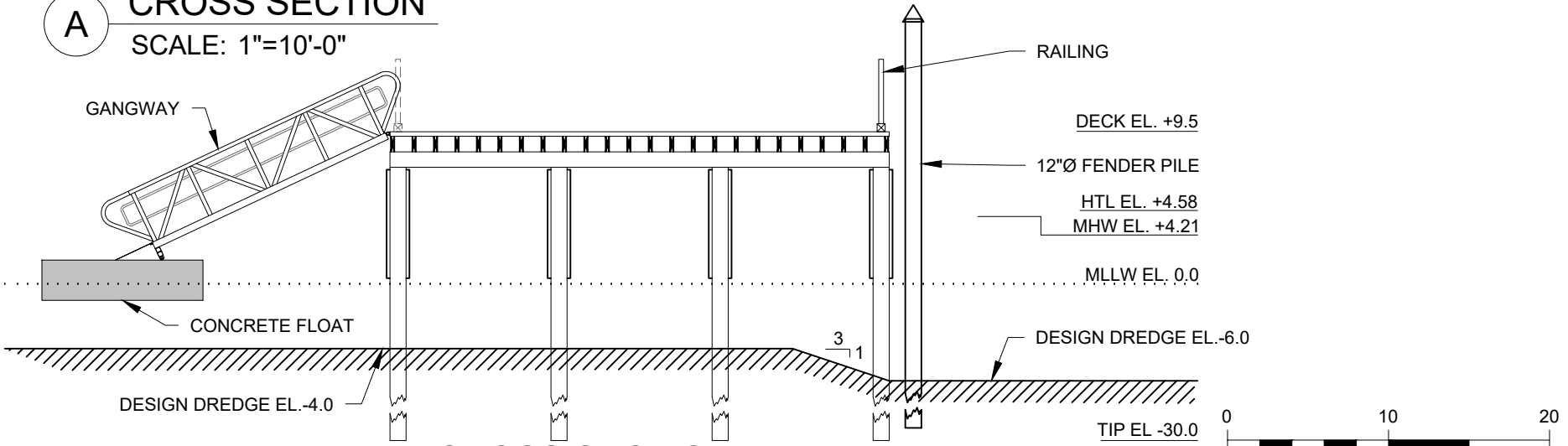
APPLICATION BY:  
TOWN OF CHATHAM

IN: MITCHELL RIVER  
AT: CHATHAM  
COUNTY: BARNSTABLE STATE: MA  
SHEET: 07 OF 09  
DATE: 06/09/2022

File: B:\Working\CHATHAM\_TOWN of 2003247\_90 Bridge Street Redevelopment\00\_CAD\Design\Working\REGULATORY\USACE\SHT-05\_PIER\_DETAILS.dwg



**A** CROSS SECTION  
 SCALE: 1"=10'-0"



**B** CROSS SECTION  
 SCALE: 1"=10'-0"



100 YR FLOOD	+15.69
HTL	+4.58
MHW	+4.21
NAVD88	+2.69
MLW	+0.26
MLLW	0.0

TITLE: PROPOSED T PIER EXTENSION SECTION

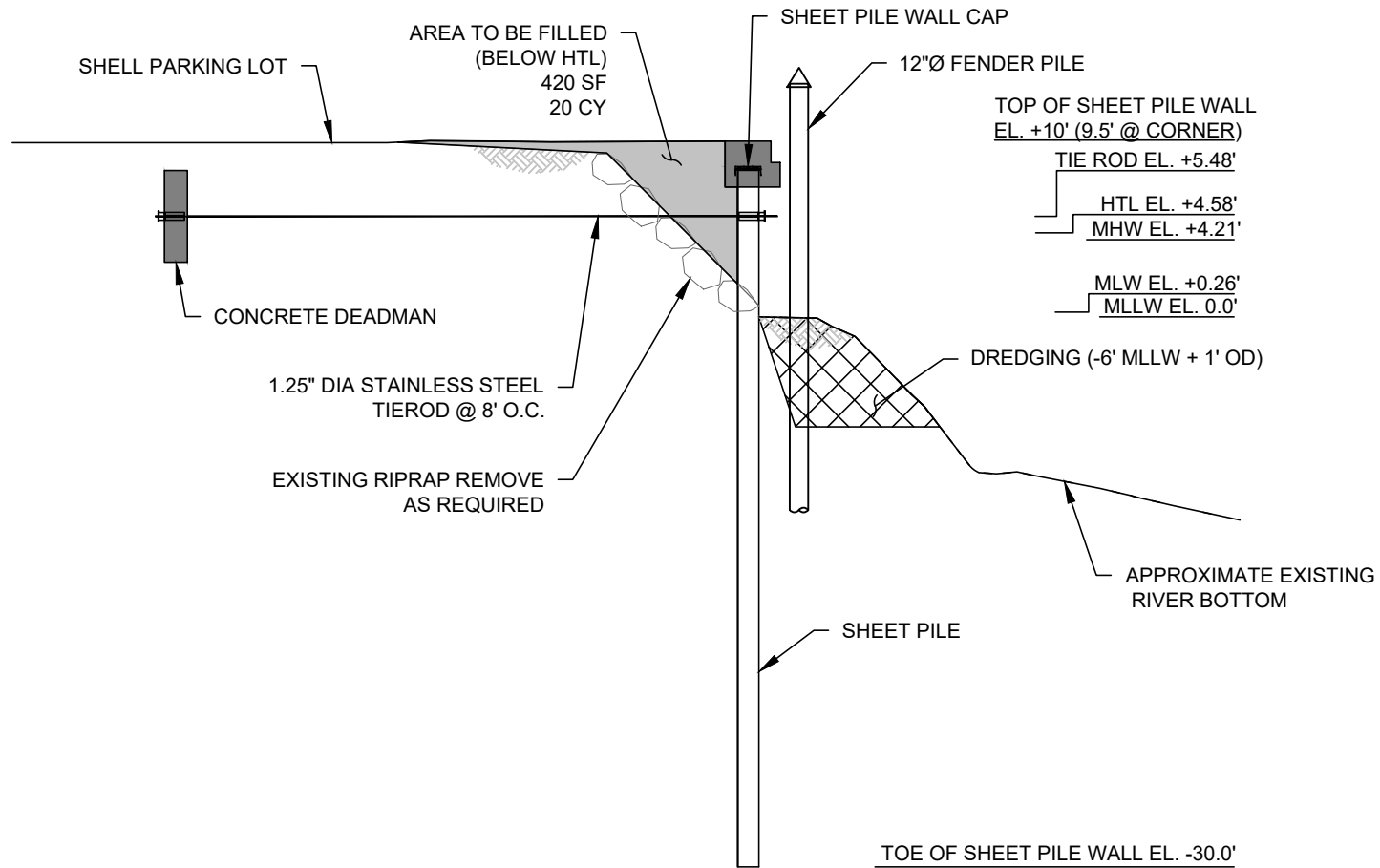
IN: MITCHELL RIVER  
 AT: CHATHAM  
 COUNTY: BARNSTABLE STATE: MA

PURPOSE:  
 90 BRIDGE ST PIER REDEVELOPMENT

APPLICATION BY:  
 TOWN OF CHATHAM

SHEET: 08 OF 09  
 DATE: 06/09/2022

File: B:\Working\CHATHAM\_TOWN of\2003247\_90\_Bridge\_Street\_Redevelopment\00\_CAD\Design\Working\REGULATORY\USACE\SHT-05\_PIER\_DETAILS.dwg



**A** **CROSS SECTION**  
SCALE: 1"=10'-0"



100 YR FLOOD	+15.69
HTL	+4.58
MHW	+4.21
NAVD88	+2.69
MLW	+0.26
MLLW	0.0

TITLE: PROPOSED BULKHEAD SECTION

IN: MITCHELL RIVER  
AT: CHATHAM  
COUNTY: BARNSTABLE STATE: MA

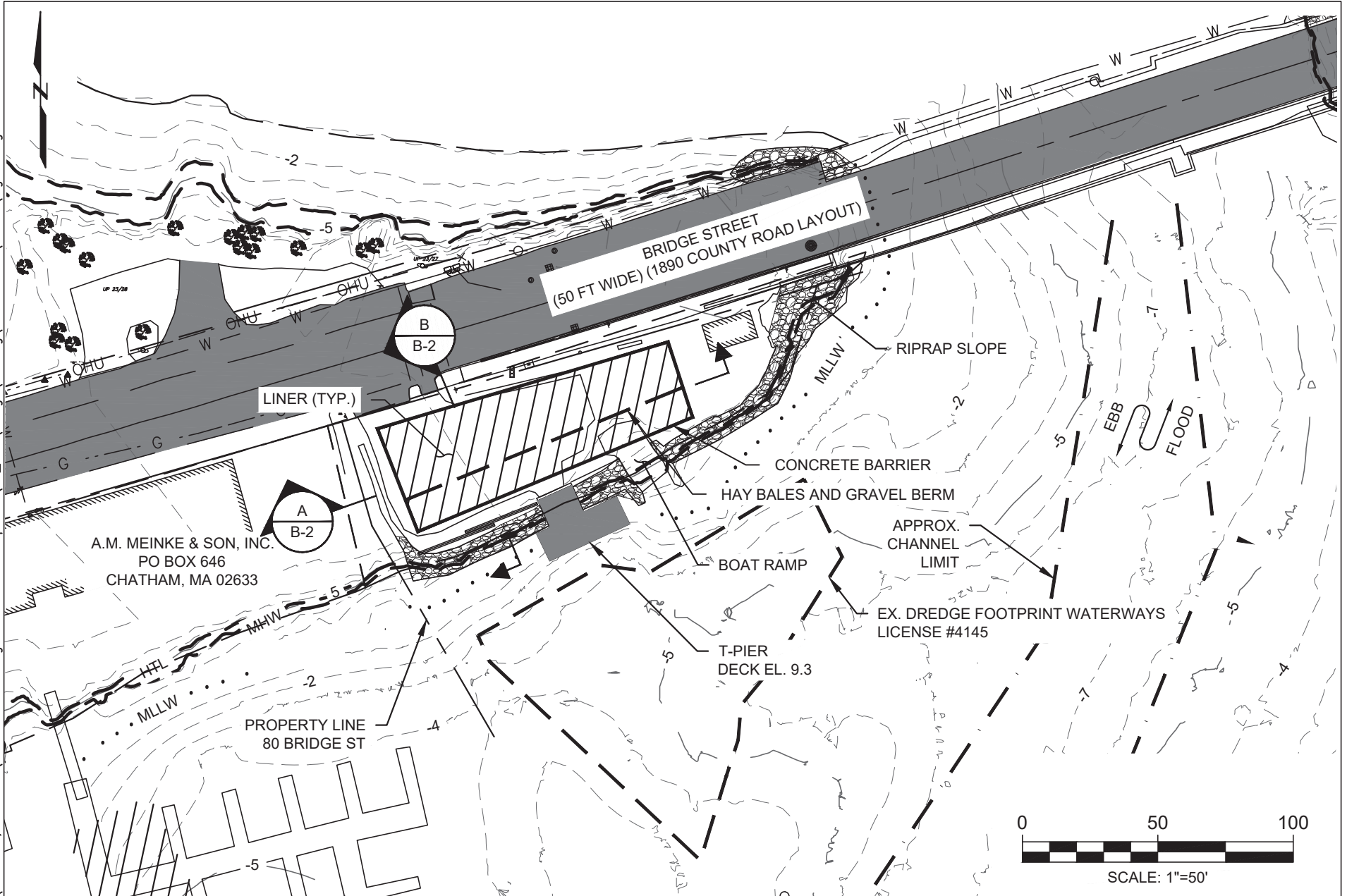
PURPOSE:  
90 BRIDGE ST PIER REDEVELOPMENT

APPLICATION BY:  
TOWN OF CHATHAM

SHEET: 09 OF 09  
DATE: 06/09/2022



File: B:\Working\CHATHAM, TOWN of\2003247 90 Bridge Street Redevelopment\00\_CAD\Design\Working\REGULATORY\USACE\Fig.B1.dwg



100 YR FLOOD	+15.69
HTL	+5.40
MHW	+4.21
NAVD88	+2.69
MLW	+0.26
MLLW	0.0

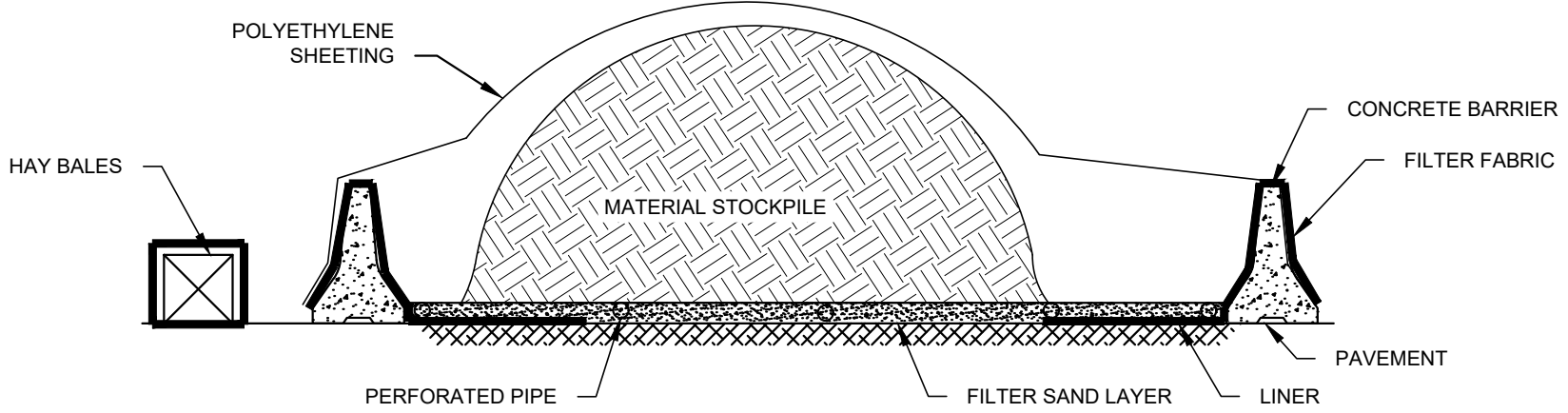
TITLE: DEWATERING BASIN PLAN

PURPOSE: 90 BRIDGE ST SITE REDEVELOPMENT

APPLICATION BY: TOWN OF CHATHAM

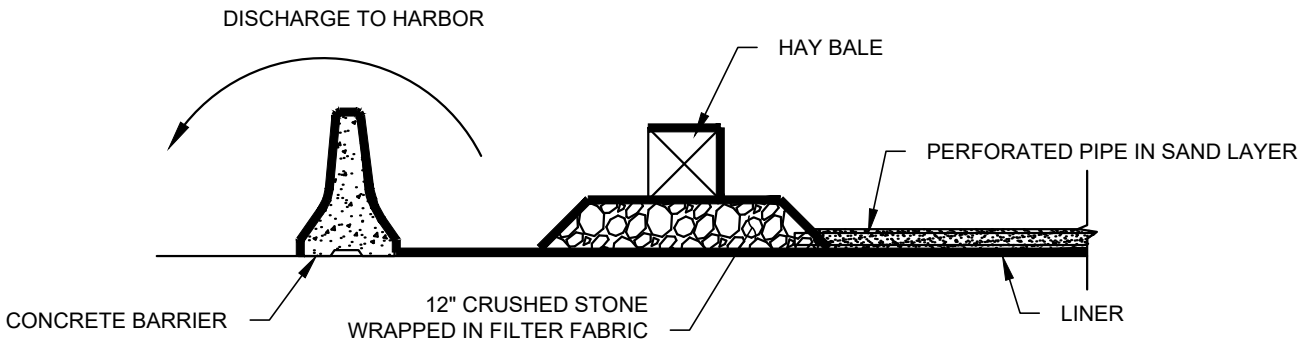
IN: MITCHELL RIVER  
AT: CHATHAM  
COUNTY: BARNSTABLE STATE: MA  
FIGURE: B1  
DATE: 06/15/2022

File: B:\Working\CHATHAM\_TOWN\_of\_2003247\_90\_Bridge\_Street\_Redevelopment\00\_CAD\Design\_Working\REGULATORY\USACE\Fig.B2.dwg



- NOTES:
1. BARRIERS SHALL FULLY ENCLOSE STOCKPILE
  2. STOCKPILE SHALL BE COVERED AS REQUIRED BY SPECIFICATION OR AS DIRECTED BY TOWN

**A** CROSS SECTION - CONTAINMENT AREA  
**B2** SCALE: N.T.S.



**B** CROSS SECTION - CONTAINMENT AREA  
**B2** SCALE: N.T.S.



100 YR FLOOD	+15.69
HTL	+5.40
MHW	+4.21
NAVD88	+2.69
MLW	+0.26
MLLW	0.0

TITLE: DEWATERING BASIN DETAILS	
PURPOSE: 90 BRIDGE ST SITE DEVELOPMENT	APPLICATION BY: TOWN OF CHATHAM

IN: MITCHELL RIVER
AT: CHATHAM
COUNTY: BARNSTABLE STATE: MA
FIGURE B2
DATE: 06/15/2022



DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NEW ENGLAND DISTRICT  
696 VIRGINIA ROAD  
CONCORD MA 01742-2751

September 6, 2023

Regulatory Division  
File No. NAE-2015-00338

Robert Duncanson  
Town of Chatham  
261 George Ryder Road  
Chatham, Massachusetts 02633  
Sent by email: [rduncanson@chatham-ma.gov](mailto:rduncanson@chatham-ma.gov)

Dear Mr. Duncanson:

This is in response to a recent request dated August 9, 2023 to modify a project authorized by the Department of the Army permit number NAE-2015-00338. The authorization was for work, structures, and dredging below the mean high water mark of waters of the United States in order to re-develop a 0.72-acre town owned parcel. Specifically, the project includes installation of a new Aquaculture Facility consisting of a 4,100- square foot timber pier supported by (50) 12-inch timber support piles and (12) 12-inch timber fender piles, a total of 920- square foot floating upwellers (FLUPSYs) supported by (16) 14-inch steel guide piles, two concrete floats totaling 500 square-feet, and two gangways totaling 530- square feet. Atop of the Aquaculture pier would sit a 30 x 50-foot building, the former Coast Guard Station Chatham boat house once located at Stage Harbor, to house the aquaculture equipment. 2). Extending the existing 512- square foot T-pier through the addition of a 372-square foot timber deck, installing (4) 12-inch timber support piles, (7) timber fender piles, and (4) 14-inch timber guide piles, a 400-square foot concrete float, and 140-square foot gangway. 3). Removal of the existing 280 square foot deteriorated gravel ramp.4). Installation of a new 225 linear foot fiber-reinforced polymer (FRP) composite bulkhead would be installed approximately 18-inches in front of the existing riprap shorefront. The void would be backfilled with approximately 20 cubic yards of clean structural fill. In addition, (20) 14-inch timber fender piles would be installed. 5). Conducting improvement dredging of a total approximately 1,330 cubic yards (cy) of sediment within 11,461- square feet of the Mitchell River to provide sufficient depth for the shellfish upweller pump intake and ensure safe navigation. Dredging would establish a depth of -6.0-feet at MLLW plus one foot over dredge beneath and around the new aquaculture facility and -4.0 feet at MLLW around the expanded T-pier. Dredging would be conducted mechanically using a barge mounted clamshell dredge with an environmental bucket. Dredging occurring near-shore would be completed using an excavator stationed landward of MHW. Dredging spoils would be placed in confined dewatering basins, staged within the on-site parking lot. The return-water would be filtered back into the waterbody. The dredge spoils would be disposed of at an upland site located at 141 Great Western Road, South Dennis, MA 02660. The proposed project will result in 11,461 sq. ft. of direct

effects to subtidal areas associated with dredging, 6,962 sq. ft. of direct effects associated with the construction of various structures, and 338 sq. ft. of direct effects associated with the loss of waters through the placement and backfilling of the sheet pile bulkhead. The project also proposes the removal of 280 sq. ft. of gravel fill associated with an existing boat ramp, which will result in restoration of an intertidal area. This project is located in the Mitchell River at 90 Bridge Street, Chatham, Massachusetts.

The special condition on the original authorization is hereby modified to the following:

*The work authorized herein shall not be conducted during the time of year (TOY) restriction of 15 January to 30 June of any year in order to minimize adverse impacts to winter flounder sensitive life stages and migrating diadromous fish. Work may occur within the TOY if a silt curtain is installed prior to the start of the TOY and is removed after the TOY ends. The silt curtain shall not block diadromous fish passage to upstream areas.*

All other terms and conditions of the original permit remain in full force and effect.

We continually strive to improve our customer service. In order to better serve you, please complete our Customer Service Survey located at [http://corpsmapu.usace.army.mil/cm\\_apex/f?p=regulatory\\_survey](http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey).

Please contact Christine Jacek of my staff at [Christine.M.Jacek@usace.army.mil](mailto:Christine.M.Jacek@usace.army.mil), (978) 318-8026 or (978) 318-8338 if you have any questions.

Sincerely,

*Paul Maniccia*

Paul Maniccia  
Chief, Permits and Enforcement Branch  
Regulatory Division

Enclosure

cc:

Brad Saunders, GEI Consultants, [bsaunders@geiconsultants.com](mailto:bsaunders@geiconsultants.com)

PRE-DREDGE CHARACTERIZATION



*CERTIFICATE OF ANALYSIS*

Steve Sarandis  
GEI Consultants, Inc.  
400 Unicorn Park Drive  
Woburn, MA 01801

**RE: 90 Bridge Street (2003247)**  
**ESS Laboratory Work Order Number: 20H0711**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard  
Laboratory Director

**REVIEWED**

*By ESS Laboratory at 3:20 pm, Aug 28, 2020*

**Analytical Summary**

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street

ESS Laboratory Work Order: 20H0711

**SAMPLE RECEIPT**

The following samples were received on August 20, 2020 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Low Level VOA vials were frozen by ESS Laboratory on August 20, 2020 at 20:09.

**Question I: All samples for EPH and Metals were analyzed for a subset of the required MCP list per the client's request.**

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
20H0711-01	2003247-V2V3Comp	Soil	1010A, 6010C, 7.3.3.2, 7.3.4.1, 7471B, 8082A, 8100M, 8260B Low, 8270D, 9045, 9050A



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
 Client Project ID: 90 Bridge Street

ESS Laboratory Work Order: 20H0711

**PROJECT NARRATIVE**

**5035/8260B Volatile Organic Compounds / Low Level**

D0H0391-CCV1 [Continuing Calibration %Diff/Drift is above control limit \(CD+\).](#)

2-Butanone (27% @ 20%)

D0H0391-CCV1 [Continuing Calibration %Diff/Drift is below control limit \(CD-\).](#)

1,2,4-Trichlorobenzene (24% @ 20%)

DH02143-BSD1 [Blank Spike recovery is above upper control limit \(B+\).](#)

2-Butanone (134% @ 70-130%)

**8100M Total Petroleum Hydrocarbons**

D0H0369-CCV5 [Continuing Calibration %Diff/Drift is above control limit \(CD+\).](#)

Nonadecane (C19) (28% @ 25%)

D0H0369-CCV7 [Continuing Calibration %Diff/Drift is above control limit \(CD+\).](#)

Nonadecane (C19) (27% @ 25%)

**8270D Semi-Volatile Organic Compounds**

D0H0373-CCV1 [Calibration required quadratic regression \(Q\).](#)

2,4-Dinitrophenol (115% @ 80-120%), Pentachlorophenol (107% @ 80-120%)

**No other observations noted.**

**End of Project Narrative.**

**DATA USABILITY LINKS**

*To ensure you are viewing the most current version of the documents below, please clear your internet cookies for [www.ESSLaboratory.com](http://www.ESSLaboratory.com). Consult your IT Support personnel for information on how to clear your internet cookies.*

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)





*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street

ESS Laboratory Work Order: 20H0711

**CURRENT SW-846 METHODOLOGY VERSIONS**

**Analytical Methods**

- 1010A - Flashpoint
- 6010C - ICP
- 6020A - ICP MS
- 7010 - Graphite Furnace
- 7196A - Hexavalent Chromium
- 7470A - Aqueous Mercury
- 7471B - Solid Mercury
- 8011 - EDB/DBCP/TCP
- 8015C - GRO/DRO
- 8081B - Pesticides
- 8082A - PCB
- 8100M - TPH
- 8151A - Herbicides
- 8260B - VOA
- 8270D - SVOA
- 8270D SIM - SVOA Low Level
- 9014 - Cyanide
- 9038 - Sulfate
- 9040C - Aqueous pH
- 9045D - Solid pH (Corrosivity)
- 9050A - Specific Conductance
- 9056A - Anions (IC)
- 9060A - TOC
- 9095B - Paint Filter
- MADEP 04-1.1 - EPH
- MADEP 18-2.1 - VPH

**Prep Methods**

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / ICP MS Digestion
- 3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
- 3060A - Solid Hexavalent Chromium Digestion
- 3510C - Separatory Funnel Extraction
- 3520C - Liquid / Liquid Extraction
- 3540C - Manual Soxhlet Extraction
- 3541 - Automated Soxhlet Extraction
- 3546 - Microwave Extraction
- 3580A - Waste Dilution
- 5030B - Aqueous Purge and Trap
- 5030C - Aqueous Purge and Trap
- 5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street

ESS Laboratory Work Order: 20H0711

**MassDEP Analytical Protocol Certification Form**

MADEP RTN: \_\_\_\_\_

This form provides certification for the following data set: **20H0711-01**

Matrices: ( ) Ground Water/Surface Water       Soil/Sediment      ( ) Drinking Water      ( ) Air      ( ) Other: \_\_\_\_\_

**CAM Protocol** (check all that apply below):

- |  |   |   |   |   |                                    |
|--|---|---|---|---|------------------------------------|
| <input checked="" type="checkbox"/> 8260 VOC<br>CAM II A     | <input checked="" type="checkbox"/> 7470/7471 Hg<br>CAM III B | ( ) MassDEP VPH<br>(GC/PID/FID)<br>CAM IV A                 | <input checked="" type="checkbox"/> 8082 PCB<br>CAM V A | ( ) 9014 Total<br>Cyanide/PAC<br>CAM VI A | ( ) 6860 Perchlorate<br>CAM VIII B |
| <input checked="" type="checkbox"/> 8270 SVOC<br>CAM II B    | ( ) 7010 Metals<br>CAM III C                                  | ( ) MassDEP VPH<br>(GC/MS)<br>CAM IV C                      | ( ) 8081 Pesticides<br>CAM V B                          | ( ) 7196 Hex Cr<br>CAM VI B               | ( ) MassDEP APH<br>CAM IX A        |
| <input checked="" type="checkbox"/> 6010 Metals<br>CAM III A | ( ) 6020 Metals<br>CAM III D                                  | <input checked="" type="checkbox"/> MassDEP EPH<br>CAM IV B | ( ) 8151 Herbicides<br>CAM V C                          | ( ) Explosives<br>CAM VIII A              | ( ) TO-15 VOC<br>CAM IX B          |

**Affirmative responses to questions A through F are required for "Presumptive Certainty" status**

- A Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? Yes  No ( )
- B Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? Yes  No ( )
- C Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? Yes  No ( )
- D Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? Yes  No ( )
- E VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). Yes  No ( )  
b. APH and TO-15 Methods only: Was the complete analyte list reported for each method? Yes ( ) No ( )
- F Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)? Yes  No ( )

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

- G Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? Yes  No ( )\*
- Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40.1056 (2)(k) and WSC-07-350.**
- H Were all QC performance standards specified in the CAM protocol(s) achieved? Yes ( ) No \*
- I Were results reported for the complete analyte list specified in the selected CAM protocol(s)? Yes ( ) No \*

**\*All negative responses must be addressed in an attached laboratory narrative.**

**I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.**

Signature: Laurel Stoddard  
Printed Name: Laurel Stoddard

Date: August 28, 2020  
Position: Laboratory Director



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street  
Client Sample ID: 2003247-V2V3Comp  
Date Sampled: 08/19/20 09:32  
Percent Solids: 86

ESS Laboratory Work Order: 20H0711  
ESS Laboratory Sample ID: 20H0711-01  
Sample Matrix: Soil  
Units: mg/kg dry

Extraction Method: 3050B

**Total Metals**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	ND (2.66)		6010C		1	KJK	08/22/20 3:26	2.2	100	DH02131
<b>Barium</b>	<b>3.15</b> (2.66)		6010C		1	KJK	08/22/20 3:26	2.2	100	DH02131
Cadmium	ND (0.53)		6010C		1	KJK	08/22/20 3:26	2.2	100	DH02131
<b>Chromium</b>	<b>4.41</b> (1.06)		6010C		1	KJK	08/22/20 3:26	2.2	100	DH02131
Lead	ND (5.31)		6010C		1	KJK	08/22/20 3:26	2.2	100	DH02131
Mercury	ND (0.038)		7471B		1	MKS	08/26/20 9:30	0.61	40	DH02132
Selenium	ND (5.31)		6010C		1	KJK	08/22/20 3:26	2.2	100	DH02131
Silver	ND (0.53)		6010C		1	KJK	08/22/20 3:26	2.2	100	DH02131



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street  
Client Sample ID: 2003247-V2V3Comp  
Date Sampled: 08/19/20 09:32  
Percent Solids: 86  
Initial Volume: 13.5  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 20H0711  
ESS Laboratory Sample ID: 20H0711-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MEK

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
1,1,1-Trichloroethane	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
1,1,2,2-Tetrachloroethane	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
1,1,2-Trichloroethane	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
1,1-Dichloroethane	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
1,1-Dichloroethene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
1,1-Dichloropropene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
1,2,3-Trichlorobenzene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
1,2,3-Trichloropropane	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
1,2,4-Trichlorobenzene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
1,2,4-Trimethylbenzene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
1,2-Dibromo-3-Chloropropane	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
1,2-Dibromoethane	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
1,2-Dichlorobenzene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
1,2-Dichloroethane	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
1,2-Dichloropropane	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
1,3,5-Trimethylbenzene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
1,3-Dichlorobenzene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
1,3-Dichloropropane	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
1,4-Dichlorobenzene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
1,4-Dioxane	ND (0.0346)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
2,2-Dichloropropane	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
2-Butanone	ND (0.0216)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
2-Chlorotoluene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
2-Hexanone	ND (0.0216)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
4-Chlorotoluene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
4-Isopropyltoluene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
4-Methyl-2-Pentanone	ND (0.0216)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Acetone	ND (0.0216)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Benzene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Bromobenzene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Bromochloromethane	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street  
Client Sample ID: 2003247-V2V3Comp  
Date Sampled: 08/19/20 09:32  
Percent Solids: 86  
Initial Volume: 13.5  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 20H0711  
ESS Laboratory Sample ID: 20H0711-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MEK

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromodichloromethane	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Bromoform	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Bromomethane	ND (0.0043)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Carbon Disulfide	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Carbon Tetrachloride	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Chlorobenzene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Chloroethane	ND (0.0043)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Chloroform	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Chloromethane	ND (0.0043)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
cis-1,2-Dichloroethene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
cis-1,3-Dichloropropene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Dibromochloromethane	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Dibromomethane	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Dichlorodifluoromethane	ND (0.0043)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Diethyl Ether	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Di-isopropyl ether	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Ethyl tertiary-butyl ether	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Ethylbenzene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Hexachlorobutadiene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Isopropylbenzene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Methyl tert-Butyl Ether	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Methylene Chloride	ND (0.0108)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Naphthalene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
n-Butylbenzene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
n-Propylbenzene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
sec-Butylbenzene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Styrene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
tert-Butylbenzene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Tertiary-amyl methyl ether	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Tetrachloroethene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Tetrahydrofuran	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Toluene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street  
Client Sample ID: 2003247-V2V3Comp  
Date Sampled: 08/19/20 09:32  
Percent Solids: 86  
Initial Volume: 13.5  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 20H0711  
ESS Laboratory Sample ID: 20H0711-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MEK

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
trans-1,2-Dichloroethene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
trans-1,3-Dichloropropene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Trichloroethene	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Trichlorofluoromethane	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Vinyl Chloride	ND (0.0043)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Xylene O	ND (0.0022)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Xylene P,M	ND (0.0043)		8260B Low		1	08/21/20 19:06	D0H0391	DH02143
Xylenes (Total)	ND (0.00433)		8260B Low		1	08/21/20 19:06		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>117 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>110 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>100 %</i>		<i>70-130</i>



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street  
Client Sample ID: 2003247-V2V3Comp  
Date Sampled: 08/19/20 09:32  
Percent Solids: 86  
Initial Volume: 20.1  
Final Volume: 10  
Extraction Method: 3540C

ESS Laboratory Work Order: 20H0711  
ESS Laboratory Sample ID: 20H0711-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: DMC  
Prepared: 8/21/20 13:30

**8082A Polychlorinated Biphenyls (PCB)**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.06)		8082A		1	08/24/20 17:50		DH02126
Aroclor 1221	ND (0.06)		8082A		1	08/24/20 17:50		DH02126
Aroclor 1232	ND (0.06)		8082A		1	08/24/20 17:50		DH02126
Aroclor 1242	ND (0.06)		8082A		1	08/24/20 17:50		DH02126
Aroclor 1248	ND (0.06)		8082A		1	08/24/20 17:50		DH02126
Aroclor 1254	ND (0.06)		8082A		1	08/24/20 17:50		DH02126
Aroclor 1260	ND (0.06)		8082A		1	08/24/20 17:50		DH02126
Aroclor 1262	ND (0.06)		8082A		1	08/24/20 17:50		DH02126
Aroclor 1268	ND (0.06)		8082A		1	08/24/20 17:50		DH02126

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	70 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	72 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	84 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	83 %		30-150



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street  
Client Sample ID: 2003247-V2V3Comp  
Date Sampled: 08/19/20 09:32  
Percent Solids: 86  
Initial Volume: 19.2  
Final Volume: 1  
Extraction Method: 3546

ESS Laboratory Work Order: 20H0711  
ESS Laboratory Sample ID: 20H0711-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MJV  
Prepared: 8/20/20 21:30

**8100M Total Petroleum Hydrocarbons**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	26.7 (12.2)		8100M		1	08/22/20 0:38	D0H0369	DH02048
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>98 %</i>		<i>40-140</i>				





*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street  
Client Sample ID: 2003247-V2V3Comp  
Date Sampled: 08/19/20 09:32  
Percent Solids: 86  
Initial Volume: 14.3  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 20H0711  
ESS Laboratory Sample ID: 20H0711-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: TJ  
Prepared: 8/20/20 22:00

**8270D Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,2,4-Trichlorobenzene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
1,2-Dichlorobenzene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
1,3-Dichlorobenzene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
1,4-Dichlorobenzene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
2,4,5-Trichlorophenol	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
2,4,6-Trichlorophenol	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
2,4-Dichlorophenol	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
2,4-Dimethylphenol	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
2,4-Dinitrophenol	ND (2.05)		8270D		1	08/21/20 21:25	D0H0373	DH02052
2,4-Dinitrotoluene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
2,6-Dinitrotoluene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
2-Chloronaphthalene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
2-Chlorophenol	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
2-Methylnaphthalene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
2-Methylphenol	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
2-Nitrophenol	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
3,3'-Dichlorobenzidine	ND (0.818)		8270D		1	08/21/20 21:25	D0H0373	DH02052
3+4-Methylphenol	ND (0.818)		8270D		1	08/21/20 21:25	D0H0373	DH02052
4-Bromophenyl-phenylether	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
4-Chloroaniline	ND (0.818)		8270D		1	08/21/20 21:25	D0H0373	DH02052
4-Nitrophenol	ND (2.05)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Acenaphthene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Acenaphthylene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Acetophenone	ND (0.818)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Aniline	ND (2.05)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Anthracene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Azobenzene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Benzo(a)anthracene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Benzo(a)pyrene	ND (0.205)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Benzo(b)fluoranthene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Benzo(g,h,i)perylene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Benzo(k)fluoranthene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street  
Client Sample ID: 2003247-V2V3Comp  
Date Sampled: 08/19/20 09:32  
Percent Solids: 86  
Initial Volume: 14.3  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 20H0711  
ESS Laboratory Sample ID: 20H0711-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: TJ  
Prepared: 8/20/20 22:00

**8270D Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
bis(2-Chloroethoxy)methane	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
bis(2-Chloroethyl)ether	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
bis(2-chloroisopropyl)Ether	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
bis(2-Ethylhexyl)phthalate	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Butylbenzylphthalate	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Chrysene	ND (0.205)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Dibenzo(a,h)Anthracene	ND (0.205)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Dibenzofuran	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Diethylphthalate	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Dimethylphthalate	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Di-n-butylphthalate	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Di-n-octylphthalate	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Fluoranthene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Fluorene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Hexachlorobenzene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Hexachlorobutadiene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Hexachloroethane	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Indeno(1,2,3-cd)Pyrene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Isophorone	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Naphthalene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Nitrobenzene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
N-Nitrosodimethylamine	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Pentachlorophenol	ND (2.05)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Phenanthrene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Phenol	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Pyrene	ND (0.408)		8270D		1	08/21/20 21:25	D0H0373	DH02052
Pyridine	ND (2.05)		8270D		1	08/21/20 21:25	D0H0373	DH02052

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	54 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	89 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	62 %		30-130



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street  
Client Sample ID: 2003247-V2V3Comp  
Date Sampled: 08/19/20 09:32  
Percent Solids: 86  
Initial Volume: 14.3  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 20H0711  
ESS Laboratory Sample ID: 20H0711-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: TJ  
Prepared: 8/20/20 22:00

**8270D Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
<i>Surrogate: 2-Fluorobiphenyl</i>		63 %		30-130				
<i>Surrogate: 2-Fluorophenol</i>		61 %		30-130				
<i>Surrogate: Nitrobenzene-d5</i>		57 %		30-130				
<i>Surrogate: Phenol-d6</i>		66 %		30-130				
<i>Surrogate: p-Terphenyl-d14</i>		97 %		30-130				



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street  
Client Sample ID: 2003247-V2V3Comp  
Date Sampled: 08/19/20 09:32  
Percent Solids: 86

ESS Laboratory Work Order: 20H0711  
ESS Laboratory Sample ID: 20H0711-01  
Sample Matrix: Soil

**Classical Chemistry**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Conductivity	WL 6380 (5)		9050A		1	EEM	08/21/20 14:30	umhos/cm	DH02119
Corrosivity (pH)	6.89 (N/A)		9045		1	CCP	08/20/20 21:40	S.U.	DH02056
Corrosivity (pH) Sample Temp	Soil pH measured in water at 20.8 °C.								
Flashpoint	> 200 (N/A)		1010A		1	CCP	08/25/20 15:30	°F	DH02523
Reactive Cyanide	ND (2.0)		7.3.3.2		1	EEM	08/24/20 12:05	mg/kg	DH02424
Reactive Sulfide	ND (2.0)		7.3.4.1		1	EEM	08/24/20 12:05	mg/kg	DH02424



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street

ESS Laboratory Work Order: 20H0711

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**Total Metals**

**Batch DH02131 - 3050B**

**Blank**

Arsenic	ND	2.50	mg/kg wet
Barium	ND	2.50	mg/kg wet
Cadmium	ND	0.50	mg/kg wet
Chromium	ND	1.00	mg/kg wet
Lead	ND	5.00	mg/kg wet
Selenium	ND	5.00	mg/kg wet
Silver	ND	0.50	mg/kg wet

**LCS**

Arsenic	37.6	8.33	mg/kg wet	43.10	87	80-120
Barium	542	8.33	mg/kg wet	597.0	91	80-120
Cadmium	104	1.67	mg/kg wet	118.0	88	80-120
Chromium	271	3.33	mg/kg wet	299.0	91	80-120
Lead	132	16.7	mg/kg wet	144.0	92	80-120
Selenium	136	16.7	mg/kg wet	154.0	88	80-120
Silver	65.9	1.67	mg/kg wet	73.50	90	80-120

**LCS Dup**

Arsenic	38.0	7.69	mg/kg wet	43.10	88	80-120	1	20
Barium	544	7.69	mg/kg wet	597.0	91	80-120	0.5	20
Cadmium	104	1.54	mg/kg wet	118.0	88	80-120	0.1	20
Chromium	269	3.08	mg/kg wet	299.0	90	80-120	0.5	20
Lead	136	15.4	mg/kg wet	144.0	95	80-120	3	20
Selenium	139	15.4	mg/kg wet	154.0	90	80-120	2	20
Silver	65.6	1.54	mg/kg wet	73.50	89	80-120	0.5	20

**Batch DH02132 - 7471B**

**Blank**

Mercury	ND	0.033	mg/kg wet
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**LCS**

Mercury	23.1	3.14	mg/kg wet	26.60	87	80-120
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**LCS Dup**

Mercury	24.4	3.25	mg/kg wet	26.60	92	80-120	5	20
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**5035/8260B Volatile Organic Compounds / Low Level**

**Batch DH02143 - 5035**

**Blank**

1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet
1,1,2,2-Tetrachloroethane	ND	0.0050	mg/kg wet
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet
1,1-Dichloroethane	ND	0.0050	mg/kg wet
1,1-Dichloroethene	ND	0.0050	mg/kg wet
1,1-Dichloropropene	ND	0.0050	mg/kg wet
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street

ESS Laboratory Work Order: 20H0711

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

**Batch DH02143 - 5035**

1,2,3-Trichloropropane	ND	0.0050	mg/kg wet
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet
1,2-Dibromoethane	ND	0.0050	mg/kg wet
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet
1,2-Dichloroethane	ND	0.0050	mg/kg wet
1,2-Dichloropropane	ND	0.0050	mg/kg wet
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet
1,3-Dichloropropane	ND	0.0050	mg/kg wet
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet
1,4-Dioxane	ND	0.0800	mg/kg wet
2,2-Dichloropropane	ND	0.0050	mg/kg wet
2-Butanone	ND	0.0500	mg/kg wet
2-Chlorotoluene	ND	0.0050	mg/kg wet
2-Hexanone	ND	0.0500	mg/kg wet
4-Chlorotoluene	ND	0.0050	mg/kg wet
4-Isopropyltoluene	ND	0.0050	mg/kg wet
4-Methyl-2-Pentanone	ND	0.0500	mg/kg wet
Acetone	ND	0.0500	mg/kg wet
Benzene	ND	0.0050	mg/kg wet
Bromobenzene	ND	0.0050	mg/kg wet
Bromochloromethane	ND	0.0050	mg/kg wet
Bromodichloromethane	ND	0.0050	mg/kg wet
Bromoform	ND	0.0050	mg/kg wet
Bromomethane	ND	0.0100	mg/kg wet
Carbon Disulfide	ND	0.0050	mg/kg wet
Carbon Tetrachloride	ND	0.0050	mg/kg wet
Chlorobenzene	ND	0.0050	mg/kg wet
Chloroethane	ND	0.0100	mg/kg wet
Chloroform	ND	0.0050	mg/kg wet
Chloromethane	ND	0.0100	mg/kg wet
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet
Dibromochloromethane	ND	0.0050	mg/kg wet
Dibromomethane	ND	0.0050	mg/kg wet
Dichlorodifluoromethane	ND	0.0100	mg/kg wet
Diethyl Ether	ND	0.0050	mg/kg wet
Di-isopropyl ether	ND	0.0050	mg/kg wet
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet
Ethylbenzene	ND	0.0050	mg/kg wet
Hexachlorobutadiene	ND	0.0050	mg/kg wet
Isopropylbenzene	ND	0.0050	mg/kg wet
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street

ESS Laboratory Work Order: 20H0711

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

**Batch DH02143 - 5035**

Methylene Chloride	ND	0.0250	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0619		mg/kg wet	0.05000		124	70-130			
Surrogate: 4-Bromofluorobenzene	0.0455		mg/kg wet	0.05000		91	70-130			
Surrogate: Dibromofluoromethane	0.0543		mg/kg wet	0.05000		109	70-130			
Surrogate: Toluene-d8	0.0494		mg/kg wet	0.05000		99	70-130			

**LCS**

1,1,1,2-Tetrachloroethane	0.0533	0.0050	mg/kg wet	0.05000		107	70-130			
1,1,1-Trichloroethane	0.0572	0.0050	mg/kg wet	0.05000		114	70-130			
1,1,2,2-Tetrachloroethane	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
1,1,2-Trichloroethane	0.0545	0.0050	mg/kg wet	0.05000		109	70-130			
1,1-Dichloroethane	0.0535	0.0050	mg/kg wet	0.05000		107	70-130			
1,1-Dichloroethene	0.0550	0.0050	mg/kg wet	0.05000		110	70-130			
1,1-Dichloropropene	0.0590	0.0050	mg/kg wet	0.05000		118	70-130			
1,2,3-Trichlorobenzene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
1,2,3-Trichloropropane	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,4-Trichlorobenzene	0.0442	0.0050	mg/kg wet	0.05000		88	70-130			
1,2,4-Trimethylbenzene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
1,2-Dibromo-3-Chloropropane	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
1,2-Dibromoethane	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
1,2-Dichlorobenzene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
1,2-Dichloroethane	0.0575	0.0050	mg/kg wet	0.05000		115	70-130			
1,2-Dichloropropane	0.0543	0.0050	mg/kg wet	0.05000		109	70-130			
1,3,5-Trimethylbenzene	0.0536	0.0050	mg/kg wet	0.05000		107	70-130			
1,3-Dichlorobenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
1,3-Dichloropropane	0.0543	0.0050	mg/kg wet	0.05000		109	70-130			
1,4-Dichlorobenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
1,4-Dioxane	1.02	0.0800	mg/kg wet	1.000		102	70-130			
2,2-Dichloropropane	0.0566	0.0050	mg/kg wet	0.05000		113	70-130			



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street

ESS Laboratory Work Order: 20H0711

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

**Batch DH02143 - 5035**

2-Butanone	0.326	0.0500	mg/kg wet	0.2500		130	70-130			
2-Chlorotoluene	0.0548	0.0050	mg/kg wet	0.05000		110	70-130			
2-Hexanone	0.258	0.0500	mg/kg wet	0.2500		103	70-130			
4-Chlorotoluene	0.0535	0.0050	mg/kg wet	0.05000		107	70-130			
4-Isopropyltoluene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
4-Methyl-2-Pentanone	0.265	0.0500	mg/kg wet	0.2500		106	70-130			
Acetone	0.275	0.0500	mg/kg wet	0.2500		110	70-130			
Benzene	0.0562	0.0050	mg/kg wet	0.05000		112	70-130			
Bromobenzene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
Bromochloromethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
Bromodichloromethane	0.0580	0.0050	mg/kg wet	0.05000		116	70-130			
Bromoform	0.0431	0.0050	mg/kg wet	0.05000		86	70-130			
Bromomethane	0.0522	0.0100	mg/kg wet	0.05000		104	70-130			
Carbon Disulfide	0.0587	0.0050	mg/kg wet	0.05000		117	70-130			
Carbon Tetrachloride	0.0590	0.0050	mg/kg wet	0.05000		118	70-130			
Chlorobenzene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
Chloroethane	0.0557	0.0100	mg/kg wet	0.05000		111	70-130			
Chloroform	0.0556	0.0050	mg/kg wet	0.05000		111	70-130			
Chloromethane	0.0575	0.0100	mg/kg wet	0.05000		115	70-130			
cis-1,2-Dichloroethene	0.0543	0.0050	mg/kg wet	0.05000		109	70-130			
cis-1,3-Dichloropropene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
Dibromochloromethane	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
Dibromomethane	0.0545	0.0050	mg/kg wet	0.05000		109	70-130			
Dichlorodifluoromethane	0.0527	0.0100	mg/kg wet	0.05000		105	70-130			
Diethyl Ether	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
Di-isopropyl ether	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
Ethyl tertiary-butyl ether	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
Ethylbenzene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
Hexachlorobutadiene	0.0560	0.0050	mg/kg wet	0.05000		112	70-130			
Isopropylbenzene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
Methyl tert-Butyl Ether	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
Methylene Chloride	0.0554	0.0250	mg/kg wet	0.05000		111	70-130			
Naphthalene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
n-Butylbenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
n-Propylbenzene	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
sec-Butylbenzene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
Styrene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
tert-Butylbenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
Tertiary-amyl methyl ether	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Tetrachloroethene	0.0549	0.0050	mg/kg wet	0.05000		110	70-130			
Tetrahydrofuran	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Toluene	0.0561	0.0050	mg/kg wet	0.05000		112	70-130			
trans-1,2-Dichloroethene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
trans-1,3-Dichloropropene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
Trichloroethene	0.0566	0.0050	mg/kg wet	0.05000		113	70-130			





*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street

ESS Laboratory Work Order: 20H0711

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

**Batch DH02143 - 5035**

Trichlorofluoromethane	0.0598	0.0050	mg/kg wet	0.05000		120	70-130			
Vinyl Chloride	0.0594	0.0100	mg/kg wet	0.05000		119	70-130			
Xylene O	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
Xylene P,M	0.105	0.0100	mg/kg wet	0.1000		105	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0552		mg/kg wet	0.05000		110	70-130			
Surrogate: 4-Bromofluorobenzene	0.0501		mg/kg wet	0.05000		100	70-130			
Surrogate: Dibromofluoromethane	0.0514		mg/kg wet	0.05000		103	70-130			
Surrogate: Toluene-d8	0.0485		mg/kg wet	0.05000		97	70-130			

**LCS Dup**

1,1,1,2-Tetrachloroethane	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	2	20	
1,1,1-Trichloroethane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130	3	20	
1,1,2,2-Tetrachloroethane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	3	20	
1,1,2-Trichloroethane	0.0560	0.0050	mg/kg wet	0.05000		112	70-130	3	20	
1,1-Dichloroethane	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	0.4	20	
1,1-Dichloroethene	0.0543	0.0050	mg/kg wet	0.05000		109	70-130	1	20	
1,1-Dichloropropene	0.0582	0.0050	mg/kg wet	0.05000		116	70-130	1	20	
1,2,3-Trichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	3	20	
1,2,3-Trichloropropane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	3	20	
1,2,4-Trichlorobenzene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	2	20	
1,2,4-Trimethylbenzene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	0.08	20	
1,2-Dibromo-3-Chloropropane	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	4	20	
1,2-Dibromoethane	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	2	20	
1,2-Dichlorobenzene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	2	20	
1,2-Dichloroethane	0.0585	0.0050	mg/kg wet	0.05000		117	70-130	2	20	
1,2-Dichloropropane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130	2	20	
1,3,5-Trimethylbenzene	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	0	20	
1,3-Dichlorobenzene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	3	20	
1,3-Dichloropropane	0.0553	0.0050	mg/kg wet	0.05000		111	70-130	2	20	
1,4-Dichlorobenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	2	20	
1,4-Dioxane	1.01	0.0800	mg/kg wet	1.000		101	70-130	0.3	20	
2,2-Dichloropropane	0.0555	0.0050	mg/kg wet	0.05000		111	70-130	2	20	
2-Butanone	0.335	0.0500	mg/kg wet	0.2500		134	70-130	3	20	B+
2-Chlorotoluene	0.0542	0.0050	mg/kg wet	0.05000		108	70-130	1	20	
2-Hexanone	0.268	0.0500	mg/kg wet	0.2500		107	70-130	4	20	
4-Chlorotoluene	0.0540	0.0050	mg/kg wet	0.05000		108	70-130	1	20	
4-Isopropyltoluene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	0.5	20	
4-Methyl-2-Pentanone	0.274	0.0500	mg/kg wet	0.2500		110	70-130	3	20	
Acetone	0.280	0.0500	mg/kg wet	0.2500		112	70-130	2	20	
Benzene	0.0559	0.0050	mg/kg wet	0.05000		112	70-130	0.6	20	
Bromobenzene	0.0537	0.0050	mg/kg wet	0.05000		107	70-130	3	20	
Bromochloromethane	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	3	20	
Bromodichloromethane	0.0584	0.0050	mg/kg wet	0.05000		117	70-130	0.6	20	
Bromoform	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	5	20	
Bromomethane	0.0518	0.0100	mg/kg wet	0.05000		104	70-130	0.8	20	
Carbon Disulfide	0.0571	0.0050	mg/kg wet	0.05000		114	70-130	3	20	



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street

ESS Laboratory Work Order: 20H0711

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

**Batch DH02143 - 5035**

Carbon Tetrachloride	0.0571	0.0050	mg/kg wet	0.05000		114	70-130	3	20	
Chlorobenzene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	0.9	20	
Chloroethane	0.0543	0.0100	mg/kg wet	0.05000		109	70-130	3	20	
Chloroform	0.0554	0.0050	mg/kg wet	0.05000		111	70-130	0.5	20	
Chloromethane	0.0562	0.0100	mg/kg wet	0.05000		112	70-130	2	20	
cis-1,2-Dichloroethene	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	0.3	20	
cis-1,3-Dichloropropene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	2	20	
Dibromochloromethane	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	2	20	
Dibromomethane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130	2	20	
Dichlorodifluoromethane	0.0504	0.0100	mg/kg wet	0.05000		101	70-130	4	20	
Diethyl Ether	0.0541	0.0050	mg/kg wet	0.05000		108	70-130	7	20	
Di-isopropyl ether	0.0548	0.0050	mg/kg wet	0.05000		110	70-130	4	20	
Ethyl tertiary-butyl ether	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	5	20	
Ethylbenzene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	0.1	20	
Hexachlorobutadiene	0.0558	0.0050	mg/kg wet	0.05000		112	70-130	0.3	20	
Isopropylbenzene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	0.4	20	
Methyl tert-Butyl Ether	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	7	20	
Methylene Chloride	0.0534	0.0250	mg/kg wet	0.05000		107	70-130	4	20	
Naphthalene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130	6	20	
n-Butylbenzene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	2	20	
n-Propylbenzene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130	1	20	
sec-Butylbenzene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	1	20	
Styrene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	2	20	
tert-Butylbenzene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	0.3	20	
Tertiary-amyl methyl ether	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	5	20	
Tetrachloroethene	0.0535	0.0050	mg/kg wet	0.05000		107	70-130	2	20	
Tetrahydrofuran	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	5	20	
Toluene	0.0546	0.0050	mg/kg wet	0.05000		109	70-130	3	20	
trans-1,2-Dichloroethene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	1	20	
trans-1,3-Dichloropropene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	6	20	
Trichloroethene	0.0561	0.0050	mg/kg wet	0.05000		112	70-130	0.8	20	
Trichlorofluoromethane	0.0572	0.0050	mg/kg wet	0.05000		114	70-130	5	20	
Vinyl Chloride	0.0570	0.0100	mg/kg wet	0.05000		114	70-130	4	20	
Xylene O	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	1	20	
Xylene P,M	0.104	0.0100	mg/kg wet	0.1000		104	70-130	0.8	20	
Surrogate: 1,2-Dichloroethane-d4	0.0547		mg/kg wet	0.05000		109	70-130			
Surrogate: 4-Bromofluorobenzene	0.0506		mg/kg wet	0.05000		101	70-130			
Surrogate: Dibromofluoromethane	0.0513		mg/kg wet	0.05000		103	70-130			
Surrogate: Toluene-d8	0.0482		mg/kg wet	0.05000		96	70-130			

8082A Polychlorinated Biphenyls (PCB)

**Batch DH02126 - 3540C**

**Blank**

Aroclor 1016	ND	0.05	mg/kg wet							
Aroclor 1016 [2C]	ND	0.05	mg/kg wet							



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street

ESS Laboratory Work Order: 20H0711

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082A Polychlorinated Biphenyls (PCB)

**Batch DH02126 - 3540C**

Aroclor 1221	ND	0.05	mg/kg wet							
Aroclor 1221 [2C]	ND	0.05	mg/kg wet							
Aroclor 1232	ND	0.05	mg/kg wet							
Aroclor 1232 [2C]	ND	0.05	mg/kg wet							
Aroclor 1242	ND	0.05	mg/kg wet							
Aroclor 1242 [2C]	ND	0.05	mg/kg wet							
Aroclor 1248	ND	0.05	mg/kg wet							
Aroclor 1248 [2C]	ND	0.05	mg/kg wet							
Aroclor 1254	ND	0.05	mg/kg wet							
Aroclor 1254 [2C]	ND	0.05	mg/kg wet							
Aroclor 1260	ND	0.05	mg/kg wet							
Aroclor 1260 [2C]	ND	0.05	mg/kg wet							
Aroclor 1262	ND	0.05	mg/kg wet							
Aroclor 1262 [2C]	ND	0.05	mg/kg wet							
Aroclor 1268	ND	0.05	mg/kg wet							
Aroclor 1268 [2C]	ND	0.05	mg/kg wet							

Surrogate: Decachlorobiphenyl	0.0162		mg/kg wet	0.02500		65	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0182		mg/kg wet	0.02500		73	30-150			
Surrogate: Tetrachloro-m-xylene	0.0182		mg/kg wet	0.02500		73	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0190		mg/kg wet	0.02500		76	30-150			

**LCS**

Aroclor 1016	0.4	0.05	mg/kg wet	0.5000		89	40-140			
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		90	40-140			
Aroclor 1260	0.4	0.05	mg/kg wet	0.5000		85	40-140			
Aroclor 1260 [2C]	0.4	0.05	mg/kg wet	0.5000		87	40-140			

Surrogate: Decachlorobiphenyl	0.0183		mg/kg wet	0.02500		73	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0203		mg/kg wet	0.02500		81	30-150			
Surrogate: Tetrachloro-m-xylene	0.0201		mg/kg wet	0.02500		80	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0198		mg/kg wet	0.02500		79	30-150			

**LCS Dup**

Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		91	40-140	2	30	
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		91	40-140	0.8	30	
Aroclor 1260	0.4	0.05	mg/kg wet	0.5000		88	40-140	4	30	
Aroclor 1260 [2C]	0.4	0.05	mg/kg wet	0.5000		88	40-140	1	30	

Surrogate: Decachlorobiphenyl	0.0201		mg/kg wet	0.02500		80	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0220		mg/kg wet	0.02500		88	30-150			
Surrogate: Tetrachloro-m-xylene	0.0202		mg/kg wet	0.02500		81	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0195		mg/kg wet	0.02500		78	30-150			

8100M Total Petroleum Hydrocarbons

**Batch DH02048 - 3546**

Blank



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
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ESS Laboratory Work Order: 20H0711

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**8100M Total Petroleum Hydrocarbons**

**Batch DH02048 - 3546**

Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Hexatriacontane (C36)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	10.0	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							

<i>Surrogate: O-Terphenyl</i>	<i>4.94</i>		mg/kg wet	<i>5.000</i>		<i>99</i>	<i>40-140</i>			
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**LCS**

Decane (C10)	1.9	0.2	mg/kg wet	2.500		74	40-140			
Docosane (C22)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Dodecane (C12)	2.0	0.2	mg/kg wet	2.500		82	40-140			
Eicosane (C20)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Hexacosane (C26)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Hexadecane (C16)	2.2	0.2	mg/kg wet	2.500		89	40-140			
Hexatriacontane (C36)	2.3	0.2	mg/kg wet	2.500		90	40-140			
Nonadecane (C19)	3.0	0.2	mg/kg wet	2.500		119	40-140			
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		68	30-140			
Octacosane (C28)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Octadecane (C18)	2.3	0.2	mg/kg wet	2.500		92	40-140			
Tetracosane (C24)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		87	40-140			
Total Petroleum Hydrocarbons	31.9	10.0	mg/kg wet	35.00		91	40-140			
Triacontane (C30)	2.4	0.2	mg/kg wet	2.500		94	40-140			

<i>Surrogate: O-Terphenyl</i>	<i>4.46</i>		mg/kg wet	<i>5.000</i>		<i>89</i>	<i>40-140</i>			
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**LCS Dup**

Decane (C10)	1.8	0.2	mg/kg wet	2.500		71	40-140	5	25	
Docosane (C22)	2.4	0.2	mg/kg wet	2.500		97	40-140	0.2	25	
Dodecane (C12)	2.0	0.2	mg/kg wet	2.500		81	40-140	0.3	25	
Eicosane (C20)	2.4	0.2	mg/kg wet	2.500		96	40-140	0.1	25	
Hexacosane (C26)	2.4	0.2	mg/kg wet	2.500		97	40-140	0.5	25	
Hexadecane (C16)	2.2	0.2	mg/kg wet	2.500		89	40-140	0.04	25	
Hexatriacontane (C36)	2.2	0.2	mg/kg wet	2.500		87	40-140	4	25	
Nonadecane (C19)	2.9	0.2	mg/kg wet	2.500		117	40-140	2	25	
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		65	30-140	5	25	



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**8100M Total Petroleum Hydrocarbons**

**Batch DH02048 - 3546**

Octacosane (C28)	2.4	0.2	mg/kg wet	2.500		97	40-140	0.2	25	
Octadecane (C18)	2.3	0.2	mg/kg wet	2.500		92	40-140	0.8	25	
Tetracosane (C24)	2.4	0.2	mg/kg wet	2.500		96	40-140	0.4	25	
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		87	40-140	0.4	25	
Total Petroleum Hydrocarbons	31.1	10.0	mg/kg wet	35.00		89	40-140	2	25	
Triacotane (C30)	2.3	0.2	mg/kg wet	2.500		93	40-140	0.9	25	

*Surrogate: O-Terphenyl* 4.43 mg/kg wet 5.000 89 40-140

**8270D Semi-Volatile Organic Compounds**

**Batch DH02052 - 3546**

<b>Blank</b>										
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3'-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	1.67	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							



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**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

**Batch DH02052 - 3546**

bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.333	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.48		mg/kg wet	3.333		74	30-130			
Surrogate: 2,4,6-Tribromophenol	4.47		mg/kg wet	5.000		89	30-130			
Surrogate: 2-Chlorophenol-d4	4.20		mg/kg wet	5.000		84	30-130			
Surrogate: 2-Fluorobiphenyl	2.55		mg/kg wet	3.333		77	30-130			
Surrogate: 2-Fluorophenol	4.27		mg/kg wet	5.000		85	30-130			
Surrogate: Nitrobenzene-d5	2.61		mg/kg wet	3.333		78	30-130			
Surrogate: Phenol-d6	4.36		mg/kg wet	5.000		87	30-130			
Surrogate: p-Terphenyl-d14	3.62		mg/kg wet	3.333		109	30-130			

**LCS**

1,2,4-Trichlorobenzene	2.00	0.333	mg/kg wet	3.333	60	40-140
1,2-Dichlorobenzene	1.93	0.333	mg/kg wet	3.333	58	40-140
1,3-Dichlorobenzene	1.91	0.333	mg/kg wet	3.333	57	40-140
1,4-Dichlorobenzene	1.90	0.333	mg/kg wet	3.333	57	40-140
2,4,5-Trichlorophenol	2.23	0.333	mg/kg wet	3.333	67	30-130
2,4,6-Trichlorophenol	2.24	0.333	mg/kg wet	3.333	67	30-130
2,4-Dichlorophenol	2.26	0.333	mg/kg wet	3.333	68	30-130
2,4-Dimethylphenol	2.29	0.333	mg/kg wet	3.333	69	30-130
2,4-Dinitrophenol	2.88	1.67	mg/kg wet	3.333	86	30-130
2,4-Dinitrotoluene	2.57	0.333	mg/kg wet	3.333	77	40-140



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Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

**Batch DH02052 - 3546**

2,6-Dinitrotoluene	2.30	0.333	mg/kg wet	3.333		69	40-140			
2-Chloronaphthalene	1.94	0.333	mg/kg wet	3.333		58	40-140			
2-Chlorophenol	2.06	0.333	mg/kg wet	3.333		62	30-130			
2-Methylnaphthalene	2.07	0.333	mg/kg wet	3.333		62	40-140			
2-Methylphenol	2.15	0.333	mg/kg wet	3.333		65	30-130			
2-Nitrophenol	2.08	0.333	mg/kg wet	3.333		63	30-130			
3,3'-Dichlorobenzidine	2.49	0.667	mg/kg wet	3.333		75	40-140			
3+4-Methylphenol	4.38	0.667	mg/kg wet	6.667		66	30-130			
4-Bromophenyl-phenylether	2.52	0.333	mg/kg wet	3.333		76	40-140			
4-Chloroaniline	1.77	0.667	mg/kg wet	3.333		53	40-140			
4-Nitrophenol	2.51	1.67	mg/kg wet	3.333		75	30-130			
Acenaphthene	2.03	0.333	mg/kg wet	3.333		61	40-140			
Acenaphthylene	2.07	0.333	mg/kg wet	3.333		62	40-140			
Acetophenone	2.00	0.667	mg/kg wet	3.333		60	40-140			
Aniline	1.43	1.67	mg/kg wet	3.333		43	40-140			
Anthracene	2.60	0.333	mg/kg wet	3.333		78	40-140			
Azobenzene	2.41	0.333	mg/kg wet	3.333		72	40-140			
Benzo(a)anthracene	2.78	0.333	mg/kg wet	3.333		83	40-140			
Benzo(a)pyrene	2.88	0.167	mg/kg wet	3.333		87	40-140			
Benzo(b)fluoranthene	3.24	0.333	mg/kg wet	3.333		97	40-140			
Benzo(g,h,i)perylene	2.88	0.333	mg/kg wet	3.333		86	40-140			
Benzo(k)fluoranthene	2.45	0.333	mg/kg wet	3.333		74	40-140			
bis(2-Chloroethoxy)methane	2.13	0.333	mg/kg wet	3.333		64	40-140			
bis(2-Chloroethyl)ether	2.11	0.333	mg/kg wet	3.333		63	40-140			
bis(2-chloroisopropyl)Ether	2.01	0.333	mg/kg wet	3.333		60	40-140			
bis(2-Ethylhexyl)phthalate	2.68	0.333	mg/kg wet	3.333		80	40-140			
Butylbenzylphthalate	2.67	0.333	mg/kg wet	3.333		80	40-140			
Chrysene	2.68	0.167	mg/kg wet	3.333		80	40-140			
Dibenzo(a,h)Anthracene	2.95	0.167	mg/kg wet	3.333		88	40-140			
Dibenzofuran	2.14	0.333	mg/kg wet	3.333		64	40-140			
Diethylphthalate	2.57	0.333	mg/kg wet	3.333		77	40-140			
Dimethylphthalate	2.40	0.333	mg/kg wet	3.333		72	40-140			
Di-n-butylphthalate	2.69	0.333	mg/kg wet	3.333		81	40-140			
Di-n-octylphthalate	2.70	0.333	mg/kg wet	3.333		81	40-140			
Fluoranthene	2.72	0.333	mg/kg wet	3.333		82	40-140			
Fluorene	2.41	0.333	mg/kg wet	3.333		72	40-140			
Hexachlorobenzene	2.45	0.333	mg/kg wet	3.333		73	40-140			
Hexachlorobutadiene	1.93	0.333	mg/kg wet	3.333		58	40-140			
Hexachloroethane	1.79	0.333	mg/kg wet	3.333		54	40-140			
Indeno(1,2,3-cd)Pyrene	2.84	0.333	mg/kg wet	3.333		85	40-140			
Isophorone	1.95	0.333	mg/kg wet	3.333		58	40-140			
Naphthalene	2.05	0.333	mg/kg wet	3.333		61	40-140			
Nitrobenzene	2.05	0.333	mg/kg wet	3.333		62	40-140			
N-Nitrosodimethylamine	1.80	0.333	mg/kg wet	3.333		54	40-140			
Pentachlorophenol	3.07	1.67	mg/kg wet	3.333		92	30-130			



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street

ESS Laboratory Work Order: 20H0711

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**8270D Semi-Volatile Organic Compounds**

**Batch DH02052 - 3546**

Phenanthrene	2.53	0.333	mg/kg wet	3.333		76	40-140			
Phenol	2.34	0.333	mg/kg wet	3.333		70	30-130			
Pyrene	2.67	0.333	mg/kg wet	3.333		80	40-140			
Pyridine	1.82	1.67	mg/kg wet	3.333		55	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.09		mg/kg wet	3.333		63	30-130			
Surrogate: 2,4,6-Tribromophenol	4.60		mg/kg wet	5.000		92	30-130			
Surrogate: 2-Chlorophenol-d4	3.68		mg/kg wet	5.000		74	30-130			
Surrogate: 2-Fluorobiphenyl	2.39		mg/kg wet	3.333		72	30-130			
Surrogate: 2-Fluorophenol	3.65		mg/kg wet	5.000		73	30-130			
Surrogate: Nitrobenzene-d5	2.34		mg/kg wet	3.333		70	30-130			
Surrogate: Phenol-d6	3.74		mg/kg wet	5.000		75	30-130			
Surrogate: p-Terphenyl-d14	3.53		mg/kg wet	3.333		106	30-130			

**LCS Dup**

1,2,4-Trichlorobenzene	1.98	0.333	mg/kg wet	3.333		59	40-140	1	30	
1,2-Dichlorobenzene	1.90	0.333	mg/kg wet	3.333		57	40-140	2	30	
1,3-Dichlorobenzene	1.87	0.333	mg/kg wet	3.333		56	40-140	2	30	
1,4-Dichlorobenzene	1.87	0.333	mg/kg wet	3.333		56	40-140	2	30	
2,4,5-Trichlorophenol	2.26	0.333	mg/kg wet	3.333		68	30-130	1	30	
2,4,6-Trichlorophenol	2.24	0.333	mg/kg wet	3.333		67	30-130	0.1	30	
2,4-Dichlorophenol	2.27	0.333	mg/kg wet	3.333		68	30-130	0.8	30	
2,4-Dimethylphenol	2.32	0.333	mg/kg wet	3.333		70	30-130	1	30	
2,4-Dinitrophenol	3.03	1.67	mg/kg wet	3.333		91	30-130	5	30	
2,4-Dinitrotoluene	2.61	0.333	mg/kg wet	3.333		78	40-140	2	30	
2,6-Dinitrotoluene	2.26	0.333	mg/kg wet	3.333		68	40-140	2	30	
2-Chloronaphthalene	1.92	0.333	mg/kg wet	3.333		58	40-140	1	30	
2-Chlorophenol	2.03	0.333	mg/kg wet	3.333		61	30-130	1	30	
2-Methylnaphthalene	2.10	0.333	mg/kg wet	3.333		63	40-140	1	30	
2-Methylphenol	2.16	0.333	mg/kg wet	3.333		65	30-130	0.5	30	
2-Nitrophenol	2.12	0.333	mg/kg wet	3.333		64	30-130	2	30	
3,3'-Dichlorobenzidine	2.50	0.667	mg/kg wet	3.333		75	40-140	0.5	30	
3+4-Methylphenol	4.43	0.667	mg/kg wet	6.667		66	30-130	1	30	
4-Bromophenyl-phenylether	2.42	0.333	mg/kg wet	3.333		73	40-140	4	30	
4-Chloroaniline	1.87	0.667	mg/kg wet	3.333		56	40-140	6	30	
4-Nitrophenol	2.69	1.67	mg/kg wet	3.333		81	30-130	7	30	
Acenaphthene	2.03	0.333	mg/kg wet	3.333		61	40-140	0.1	30	
Acenaphthylene	2.08	0.333	mg/kg wet	3.333		62	40-140	0.8	30	
Acetophenone	2.01	0.667	mg/kg wet	3.333		60	40-140	0.4	30	
Aniline	1.47	1.67	mg/kg wet	3.333		44	40-140	2	30	
Anthracene	2.52	0.333	mg/kg wet	3.333		76	40-140	3	30	
Azobenzene	2.34	0.333	mg/kg wet	3.333		70	40-140	3	30	
Benzo(a)anthracene	2.72	0.333	mg/kg wet	3.333		82	40-140	2	30	
Benzo(a)pyrene	2.83	0.167	mg/kg wet	3.333		85	40-140	2	30	
Benzo(b)fluoranthene	2.96	0.333	mg/kg wet	3.333		89	40-140	9	30	
Benzo(g,h,i)perylene	2.87	0.333	mg/kg wet	3.333		86	40-140	0.2	30	
Benzo(k)fluoranthene	2.59	0.333	mg/kg wet	3.333		78	40-140	5	30	





*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street

ESS Laboratory Work Order: 20H0711

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

**Batch DH02052 - 3546**

bis(2-Chloroethoxy)methane	2.16	0.333	mg/kg wet	3.333		65	40-140	2	30	
bis(2-Chloroethyl)ether	2.09	0.333	mg/kg wet	3.333		63	40-140	0.8	30	
bis(2-chloroisopropyl)Ether	1.94	0.333	mg/kg wet	3.333		58	40-140	3	30	
bis(2-Ethylhexyl)phthalate	2.58	0.333	mg/kg wet	3.333		78	40-140	4	30	
Butylbenzylphthalate	2.58	0.333	mg/kg wet	3.333		77	40-140	3	30	
Chrysene	2.62	0.167	mg/kg wet	3.333		79	40-140	2	30	
Dibenzo(a,h)Anthracene	2.99	0.167	mg/kg wet	3.333		90	40-140	1	30	
Dibenzofuran	2.16	0.333	mg/kg wet	3.333		65	40-140	0.9	30	
Diethylphthalate	2.57	0.333	mg/kg wet	3.333		77	40-140	0.3	30	
Dimethylphthalate	2.40	0.333	mg/kg wet	3.333		72	40-140	0.03	30	
Di-n-butylphthalate	2.63	0.333	mg/kg wet	3.333		79	40-140	2	30	
Di-n-octylphthalate	2.58	0.333	mg/kg wet	3.333		77	40-140	4	30	
Fluoranthene	2.80	0.333	mg/kg wet	3.333		84	40-140	3	30	
Fluorene	2.43	0.333	mg/kg wet	3.333		73	40-140	1	30	
Hexachlorobenzene	2.37	0.333	mg/kg wet	3.333		71	40-140	3	30	
Hexachlorobutadiene	1.89	0.333	mg/kg wet	3.333		57	40-140	2	30	
Hexachloroethane	1.78	0.333	mg/kg wet	3.333		53	40-140	0.8	30	
Indeno(1,2,3-cd)Pyrene	2.87	0.333	mg/kg wet	3.333		86	40-140	0.9	30	
Isophorone	1.97	0.333	mg/kg wet	3.333		59	40-140	1	30	
Naphthalene	2.07	0.333	mg/kg wet	3.333		62	40-140	1	30	
Nitrobenzene	2.05	0.333	mg/kg wet	3.333		62	40-140	0.02	30	
N-Nitrosodimethylamine	1.74	0.333	mg/kg wet	3.333		52	40-140	4	30	
Pentachlorophenol	3.06	1.67	mg/kg wet	3.333		92	30-130	0.09	30	
Phenanthrene	2.47	0.333	mg/kg wet	3.333		74	40-140	3	30	
Phenol	2.32	0.333	mg/kg wet	3.333		70	30-130	0.6	30	
Pyrene	2.53	0.333	mg/kg wet	3.333		76	40-140	5	30	
Pyridine	1.88	1.67	mg/kg wet	3.333		56	40-140	3	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.02		mg/kg wet	3.333		61	30-130			
Surrogate: 2,4,6-Tribromophenol	4.28		mg/kg wet	5.000		86	30-130			
Surrogate: 2-Chlorophenol-d4	3.44		mg/kg wet	5.000		69	30-130			
Surrogate: 2-Fluorobiphenyl	2.28		mg/kg wet	3.333		68	30-130			
Surrogate: 2-Fluorophenol	3.46		mg/kg wet	5.000		69	30-130			
Surrogate: Nitrobenzene-d5	2.25		mg/kg wet	3.333		68	30-130			
Surrogate: Phenol-d6	3.60		mg/kg wet	5.000		72	30-130			
Surrogate: p-Terphenyl-d14	3.21		mg/kg wet	3.333		96	30-130			

Classical Chemistry

**Batch DH02119 - General Preparation**

**Blank**

Conductivity	ND	5	umhos/cm							
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**LCS**

Conductivity	1390		umhos/cm	1411	98	90-110				
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**Batch DH02424 - General Preparation**

**Blank**



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street

ESS Laboratory Work Order: 20H0711

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
<b>Classical Chemistry</b>										
<b>Batch DH02424 - General Preparation</b>										
Reactive Cyanide	ND	2.0	mg/kg							
Reactive Sulfide	ND	2.0	mg/kg							
<b>LCS</b>										
Reactive Cyanide	4.1	2.0	mg/kg	100.3		4	0.68-5.41			
Reactive Sulfide	ND	2.0	mg/kg	10.00		0	0-44			
<b>Batch DH02523 - General Preparation</b>										
<b>Reference</b>										
Flashpoint	81		°F	81.00		100	97.9-102.1			



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street

ESS Laboratory Work Order: 20H0711

**Notes and Definitions**

- Z-10 Soil pH measured in water at 20.8 °C.
- WL Results obtained from a deionized water leach of the sample.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- CD- Continuing Calibration %Diff/Drift is below control limit (CD-).
- B+ Blank Spike recovery is above upper control limit (B+).
- > Greater than.
- ND Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- MDL Method Detection Limit
- MRL Method Reporting Limit
- LOD Limit of Detection
- LOQ Limit of Quantitation
- DL Detection Limit
- I/V Initial Volume
- F/V Final Volume
- § Subcontracted analysis; see attached report
- 1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
- 2 Range result excludes concentrations of target analytes eluting in that range.
- 3 Range result excludes the concentration of the C9-C10 aromatic range.
- Avg Results reported as a mathematical average.
- NR No Recovery
- [CALC] Calculated Analyte
- SUB Subcontracted analysis; see attached report
- RL Reporting Limit
- EDL Estimated Detection Limit
- MF Membrane Filtration
- MPN Most Probably Number
- TNTC Too numerous to Count
- CFU Colony Forming Units



*CERTIFICATE OF ANALYSIS*

Client Name: GEI Consultants, Inc.  
Client Project ID: 90 Bridge Street

ESS Laboratory Work Order: 20H0711

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179

<http://www.health.ri.gov/find/labs/analytical/ESS.pdf>

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750

[http://www.ct.gov/dph/lib/dph/environmental\\_health/environmental\\_laboratories/pdf/OutOfStateCommercialLaboratories.pdf](http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutOfStateCommercialLaboratories.pdf)

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002

<http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

[http://datamine2.state.nj.us/DEP\\_OPRA/OpraMain/pi\\_main?mode=pi\\_by\\_site&sort\\_order=PI\\_NAMEA&Select+a+Site:=58715](http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715)

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752

<http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx>

## ESS Laboratory Sample and Cooler Receipt Checklist

Client: GEI Consultants, Inc. - TB  
 Shipped/Delivered Via: ESS Courier

ESS Project ID: 20H0711  
 Date Received: 8/20/2020  
 Project Due Date: 8/27/2020  
 Days for Project: 5 Day

- 1. Air bill manifest present?  No  
Air No.: NA
- 2. Were custody seals present?  No
- 3. Is radiation count <100 CPM?  Yes
- 4. Is a Cooler Present?  Yes  
Temp: 3.8 Iced with: Ice
- 5. Was COC signed and dated by client?  Yes

- 6. Does COC match bottles?  Yes
- 7. Is COC complete and correct?  Yes
- 8. Were samples received intact?  Yes
- 9. Were labs informed about **short holds & rushes**?  Yes /  No /  NA
- 10. Were any analyses received outside of hold time?  Yes /  No

11. Any Subcontracting needed? Yes  No   
 ESS Sample IDs: \_\_\_\_\_  
 Analysis: \_\_\_\_\_  
 TAT: \_\_\_\_\_

12. Were VOAs received?  Yes /  No  
 a. Air bubbles in aqueous VOAs?  Yes /  No  
 b. Does methanol cover soil completely?  Yes /  No /  NA

13. Are the samples properly preserved?  Yes /  No  
 a. If metals preserved upon receipt: Date: 8/20/20 Time: \_\_\_\_\_ By: \_\_\_\_\_  
 b. Low Level VOA vials frozen: Date: 8/20/20 Time: 2009 By: W

Sample Receiving Notes:

14. Was there a need to contact Project Manager?  Yes /  No  
 a. Was there a need to contact the client?  Yes /  No  
 Who was contacted? \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ By: \_\_\_\_\_

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
1	77984	Yes	N/A	Yes	8 oz jar	NP	
1	77985	Yes	N/A	Yes	8 oz jar	NP	
1	77987	Yes	N/A	Yes	VOA Vial	MeOH	
1	77988	Yes	N/A	Yes	VOA Vial	DI Water	
1	77989	Yes	N/A	Yes	VOA Vial	DI Water	

**2nd Review**


- Were all containers scanned into storage/lab? Initials: [Signature]  
 Are barcode labels on correct containers?  Yes /  No /  NA  
 Are all Flashpoint stickers attached/container ID # circled?  Yes /  No /  NA  
 Are all Hex Chrome stickers attached?  Yes /  No /  NA  
 Are all QC stickers attached?  Yes /  No /  NA  
 Are VOA stickers attached if bubbles noted?  Yes /  No /  NA

Completed By: [Signature] Date & Time: 8/20/20 1849  
 Reviewed By: [Signature] Date & Time: 8/20/20 2009  
 Delivered

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: GEI Consultants, Inc. - TB

ESS Project ID: 20H0711

By: 

Date Received: 8/20/2020

8/20/20 2020

# Chain-of-Custody Record

Laboratory: **ESS**

Laboratory Job # **2010711**  
(Lab use only)



**400 Unicorn Park Drive  
Woburn, MA 01801  
PH: 781.721.4000  
FX: 781.721.4073**

**Project Information**

Project Name: 90 Bridge Street      Project Location: Chatham, Massachusetts  
Project Number: 2003247      Project Manager: Steve Sarandis

Send Report to: ssarandis@geiconsultants.com,  
bfongmurdock@geiconsultants.com  
Send EDD to: labdata@geiconsultants.com,  
efarrington@geiconsultants.com

Page 1 of 1

**MCP PRESUMPTIVE CERTAINTY REQUIRED**      YES       NO

If Yes, Are MCP Analytical Methods Required?      YES       NO       NA   
Are Drinking Water Samples Submitted?      YES       NO       NA   
If Yes, Have Drinking Water Sampling Requirements Been Met?      YES       NO       NA

Preservative					
MeOH/H2O	None	None	None	None	None
Analysis					
VOC (high/Low)	SVOC (with pyridine)	TPH	PCB	RCRA-8 total metals	reactivity (cyanide, sulfide), flashpoint, % solids, pH, conductivity
X	X	X	X	X	X

**Sample Handling**

Samples Field Filtered  
YES  NO  NA   
Sampled Shipped With Ice  
YES  NO

Lab Sample Number	GEI Sample ID	Collection		Matrix	No. of Bottles	Sampler(s) Initials	VOC (high/Low)	SVOC (with pyridine)	TPH	PCB	RCRA-8 total metals	reactivity (cyanide, sulfide), flashpoint, % solids, pH, conductivity		
		Date	Time											
	2003247-V2V3COMP	8/19/2020	0932	Soil	5	BFM	X	X	X	X	X	X		

**Sample Specific Remarks**

**MCP Level Needed:** GEI requires that, within the specified method; the most stringent Method 1 MCP standard be met for all analytes whenever possible.

**Turnaround Time (Business days):**

Normal       Other   
10-Day       7-Day   
5-Day       3-Day

Before submitting rush turnaround samples, you **must** notify the laboratory to confirm that the TAT can be achieved.

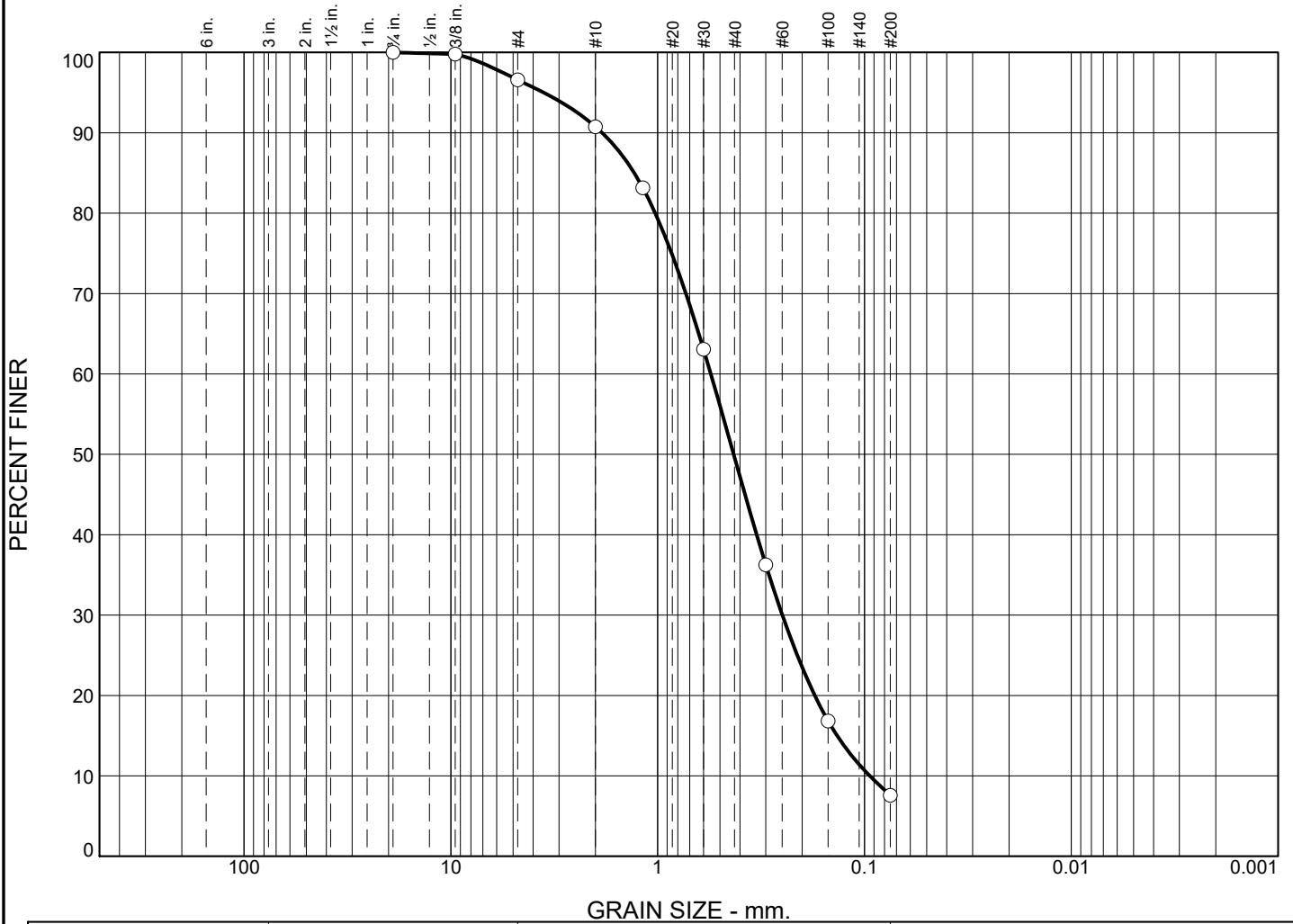
Relinquished by: (signature) 	Date: 8/19/20	Time: 1516	Received by: (signature) 1. GEI Refrigerator
Relinquished by: (signature) 2. GEI Refrigerator	Date: 8/20/20	Time: 1419	Received by: (signature) 
Relinquished by: (signature) 	Date: 8/20/20	Time: 1419	Received by: (signature) 3.
Relinquished by: (signature) 4.	Date: 8/20/20	Time: 1802	Received by: (signature) 4.

**Additional Requirements/Comments/Remarks:**

Run TCLP if 20x rule is exceeded  
Run Cr VI if total Cr is over 100 mg/kg

temp 13.8

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines			
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
0.0	0.0	3.4	5.8	41.2	42.0	7.6			
LL	PL	D85	D60	D50	D30	D15	D10	Cc	Cu
-	-	1.2976	0.5532	0.4291	0.2495	0.1356	0.0942	1.19	5.87

Material Description	USCS	AASHTO
○ Narrowly Graded SAND with silt	SP-SM	

<p><b>Project No.</b> 2003247      <b>Client:</b> Town of Chatham</p> <p><b>Project:</b> 90 Bridge Street Redevelopment</p> <p>○ <b>Source of Sample:</b> V2      <b>Depth:</b> 0-13.5 in      <b>Sample Number:</b> S1</p>	<p><b>Remarks:</b></p> <p>○ As Received WC=18.5%</p> <p>Fines classified visually</p>
<p>GEI Consultants, Inc. 400 Unicorn Park Drive Woburn, MA 01801</p>	

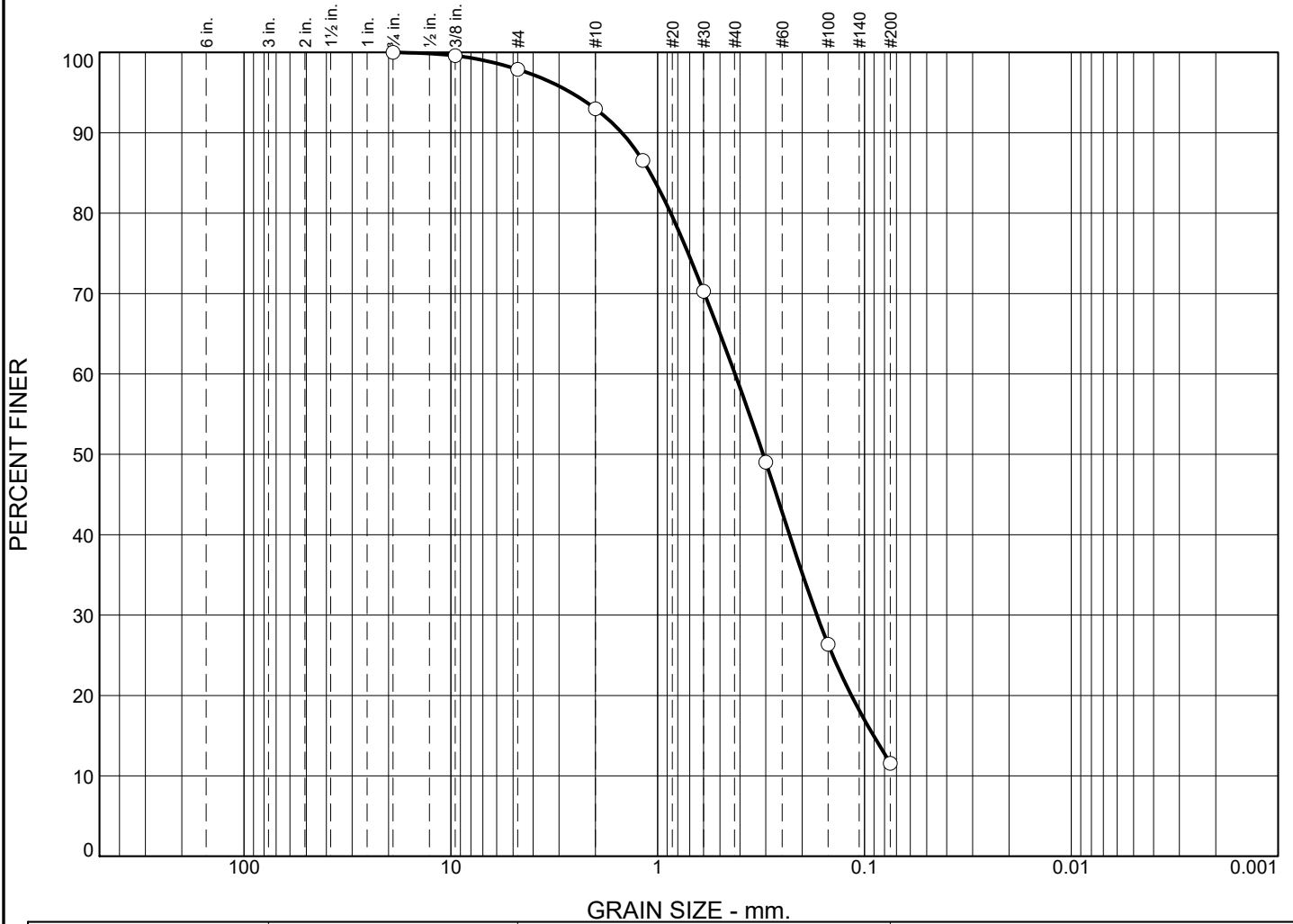
**Figure**

**Tested By:** MA

**Checked By:** EF



# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines			
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
0.0	0.0	2.1	4.9	32.8	48.6	11.6			
LL	PL	D85	D60	D50	D30	D15	D10	Cc	Cu
-	-	1.0850	0.4227	0.3089	0.1699	0.0903			
Material Description							USCS	AASHTO	
○ Narrowly Graded SAND with silt							SP-SM		

<b>Project No.</b> 2003247 <b>Client:</b> Town of Chatham <b>Project:</b> 90 Bridge Street Redevelopment  ○ <b>Source of Sample:</b> V3 <b>Depth:</b> 0-11 in <b>Sample Number:</b> S1	<b>Remarks:</b> ○ As Received WC=19.9% Fines classified visually
GEI Consultants, Inc. 400 Unicorn Park Drive Woburn, MA 01801	
<b>Figure</b>	

Tested By: MA

Checked By: EF

## BORING LOGS

<b>BORING INFORMATION</b>		<b>BORING B1  PAGE 1 of 2</b>
LOCATION: Grassy area by structure	DATE START/END: 7/17/2020 - 7/17/2020	
GROUND SURFACE EL. (ft): 9.4	DRILLING COMPANY: Northern Drill Service, Inc.	
VERTICAL DATUM: MLLW	DRILLER NAME: T. Tucker	
TOTAL DEPTH (ft): 51.0	RIG TYPE: Mobile B-59 Truck Rig	
LOGGED BY: A. Juliano		

<b>DRILLING INFORMATION</b>		
HAMMER TYPE: Automatic	CASING I.D./O.D.: 4 inch / 4.5 inch	CORE BARREL TYPE: NA
AUGER I.D./O.D.: NA / NA	DRILL ROD O.D.: 2.625 inch	CORE BARREL I.D./O.D. NA / NA
DRILLING METHOD: Driven casing and washed with rotary tooling.		
WATER LEVEL DEPTHS (ft): 8.0 7/17/2020 9:44 am		

<b>ABBREVIATIONS:</b>	Pen. = Penetration Length Rec. = Recovery Length RQD = Rock Quality Designation = Length of Sound Cores > 4 in / Pen., % WOR = Weight of Rods WOH = Weight of Hammer	S = Split Spoon Sample C = Core Sample U = Undisturbed Sample SC = Sonic Core DP = Direct Push Sample HSA = Hollow-Stem Auger	Qp = Pocket Penetrometer Strength Sv = Pocket Torvane Shear Strength LL = Liquid Limit PI = Plasticity Index PID = Photoionization Detector I.D./O.D. = Inside Diameter/Outside Diameter	NA, NM = Not Applicable, Not Measured Blows per 6 in.: 140-lb hammer falling 30 inches to drive a 2-inch-O.D. split spoon sampler.
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Elev. (ft)	Depth (ft)	Sample Information				Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD			
5	5	S1	0 to 2	24/7	8-7-4-8	Advance 4" dia. casing while drilling/sampling to a depth of 51 ft.	FILL	S1 (0-3"): GRASS AND TOPSOIL. S1 (3-7"): WIDELY GRADED SAND (SW); ~90% fine to coarse sand, ~5% fine to coarse subangular gravel, ~5% nonplastic fines, tan. S2 (0-13"): WIDELY GRADED SAND (SW); ~90% fine to coarse sand, ~5% fine to coarse subangular gravel, ~5% nonplastic fines, gray.
		S2	2 to 4	24/20	15-15-10-12			
		S3	4 to 6	24/13	8-11-10-13			
10	10	S4	9 to 11	24/0	17-14-13-11	Redrive with 3" spoon.	SAND AND SILT (POSSIBLE FILL)	S4: No Recovery. S4 [Redrive]: No Recovery.
15	15	S5	14 to 16	24/16	4-5-8-9		SAND AND SILT AND CLAY	S5 (0-3"): LEAN CLAY (CL); ~85% low to medium plasticity fines, ~15% fine to coarse sand, light gray. S5 (3-13"): WIDELY GRADED SAND WITH CLAY (SW-SC); ~90% fine to coarse sand, ~10% nonplastic fines, orange. S5 (13-16"): SILT (ML); ~90% low to medium plasticity fines, ~15% fine sand, gray.
20	20	S6	19 to 21	24/12	7-10-12-11		SAND AND SILT AND CLAY	S6: SILTY SAND (SM); ~85% fine to medium sand, ~15% nonplastic fines, light brown. Lenses of reddish-brown fine sand.
25	25	S7	24 to 26	24/17	8-10-16-17	Qp = 3.5 tsf Sv = 0.4 tsf	SAND AND SILT AND CLAY	S7: LEAN CLAY (CL); ~95% low to medium plasticity fines, ~5% fine sand, gray.

**NOTES:** 1. Elevation estimated from existing conditions plan in Stantec's Public Meeting No. 8 presentation. 9.17 M.L.W in shell drive. M.L.W datum - 2.42' = NAVD 88 datum.

**PROJECT NAME:** 90 Bridge Street Redevelopment

**CITY/STATE:** Chatham, Massachusetts

**GEI PROJECT NUMBER:** 2003247

**GEI** Consultants 

GEI WOBURN STD 1-LOCATION-LAYER NAME 2003247 BORING LOGS.GPJ 10/30/20

# BORING

# B1

PAGE 2 of 2

LOCATION: Grassy area by structure

GROUND SURFACE EL. (ft): 9.4

DATE START/END: 7/17/2020 - 7/17/2020

VERTICAL DATUM: MLLW

DRILLING COMPANY: Northern Drill Service, Inc.

Elev. (ft)	Depth (ft)	Sample Information				Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD			
-20	30	S8	29 to 31	24/7	10-13-14-24	SAND	S8: WIDELY GRADED SAND (SW); ~95% fine to coarse sand, ~5% nonplastic fines, brown and gray.	
-25	35	S9	34 to 36	24/5	12-6-5-8		S9: LEAN CLAY (CL); ~90% low to medium plasticity fines, ~10% fine sand, gray.	
-30	40	S10	39 to 41	24/18	8-7-8-8	CLAY	S10: LEAN CLAY (CL); ~95% low to medium plasticity fines, ~5% fine sand, gray.	
-35	45	S11	44 to 46	24/24	3-7-9-12		S11: Similar to S10.	
-40	50	S12	49 to 51	24/14	6-9-4-4	SAND	S12 (0-2"): LEAN CLAY (CL); ~90% low to medium plasticity fines, ~10% fine sand, gray. S12 (2-14"): NARROWLY GRADED SAND (SP); ~85% fine to coarse sand, ~10% fine subrounded gravel, ~5% nonplastic fines, gray.	
-45	55						Bottom of boring at depth 51 ft. Backfilled with cuttings.	
-50	60							
-55								

Qp = 3.0 tsf  
Sv = 0.3 tsf

Qp = 2.5 tsf  
Sv = 0.5 tsf

Qp = 3.5 tsf  
Sv = 0.45 tsf

GEI WOBURN STD 1-LOCATION-LAYER NAME\_2003247 BORING LOGS.GPJ 10/30/20

**NOTES:** 1. Elevation estimated from existing conditions plan in Stantec's Public Meeting No. 8 presentation. 9.17 M.L.W in shell drive. M.L.W datum - 2.42' = NAVD 88 datum.

**PROJECT NAME:** 90 Bridge Street Redevelopment

**CITY/STATE:** Chatham, Massachusetts

**GEI PROJECT NUMBER:** 2003247



<b>BORING INFORMATION</b>		<b>BORING B2 PAGE 1 of 2</b>
LOCATION: Shell parking lot near dock		
GROUND SURFACE EL. (ft): 9.4	DATE START/END: 7/17/2020 - 7/17/2020	
VERTICAL DATUM: MLLW	DRILLING COMPANY: Northern Drill Service, Inc.	
TOTAL DEPTH (ft): 53.0	DRILLER NAME: T. Tucker	
LOGGED BY: A. Juliano	RIG TYPE: Mobile B-59 Truck Rig	


<b>DRILLING INFORMATION</b>		
HAMMER TYPE: Automatic	CASING I.D./O.D.: 4 inch / 4.5 inch	CORE BARREL TYPE: NA
AUGER I.D./O.D.: NA / NA	DRILL ROD O.D.: 2.625 inch	CORE BARREL I.D./O.D. NA / NA
DRILLING METHOD: Driven casing and washed with rotary tooling.		
WATER LEVEL DEPTHS (ft): 9.0 7/17/2020 1:42 pm		

<b>ABBREVIATIONS:</b>			
Pen. = Penetration Length	S = Split Spoon Sample	Qp = Pocket Penetrometer Strength	NA, NM = Not Applicable, Not Measured
Rec. = Recovery Length	C = Core Sample	Sv = Pocket Torvane Shear Strength	Blows per 6 in.: 140-lb hammer falling
RQD = Rock Quality Designation	U = Undisturbed Sample	LL = Liquid Limit	30 inches to drive a 2-inch-O.D.
= Length of Sound Cores > 4 in / Pen., %	SC = Sonic Core	PI = Plasticity Index	split spoon sampler.
WOR = Weight of Rods	DP = Direct Push Sample	PID = Photoionization Detector	
WOH = Weight of Hammer	HSA = Hollow-Stem Auger	I.D./O.D. = Inside Diameter/Outside Diameter	

Elev. (ft)	Depth (ft)	Sample Information				Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		Sample No.	Depth (ft)	Pen./Rec. (in)	Blows per 6 in. or RQD			
		S1	0 to 2	24/22	5-6-5-18	Advance 4" dia. casing while drilling/sampling to a depth of 53 ft.  Drill rig chatter.    Qp = 3.0 tsf Sv = 0.3 tsf	FILL	S1 (0-8"): CRUSHED SHELLS AND SILTY SAND (SM); ~85% fine to coarse sand, ~15% nonplastic fines, gray. S1 (8-22"): SILTY SAND (SM); ~80% fine to coarse sand, ~15% nonplastic fines, ~5% fine to coarse subrounded to subangular gravel, brown.
5	5	S2	4 to 6	24/14	8-10-13-13		SAND AND SILT (POSS. FILL)	S2: WIDELY GRADED SAND WITH SILT (SW-SM); ~70% fine to coarse sand, ~10% fine subrounded to subangular gravel up to 1.5", ~10% nonplastic fines, gray. Shells observed.
0	10	S3	9 to 11	24/20	12-8-15-13		SAND AND SILT (POSS. FILL)	S3: SILT WITH SAND (ML); ~80% low plasticity fines, ~20% fine sand, gray.
-5	15	S4	14 to 16	24/17	8-6-10-10		SILT AND CLAY	S4 (0-6"): LEAN CLAY (CL); ~85% low to medium plasticity fines, ~15% fine sand, brown. S4 (6-17"): LEAN CLAY (CL); ~90% low to medium plasticity fines, ~5% fine sand, gray.
-10	20	S5	19 to 21	24/13	5-9-9-10		SAND AND GRAVEL	S5: WIDELY GRADED SAND (SW); ~95% fine to coarse sand, ~5% nonplastic fines, brown.
-15	25	S6	24 to 26	24/15	5-5-13-10		SAND AND GRAVEL	S6: WIDELY GRADED SAND WITH GRAVEL (SW); ~80% fine to coarse sand, ~15% fine to coarse subrounded to subangular gravel up to 0.5", ~5% nonplastic fines, dark brown.

**NOTES:** 1. Elevation estimated from existing conditions plan in Stantec's Public Meeting No. 8 presentation. 9.17 M.L.W in shell drive. M.L.W datum - 2.42' = NAVD 88 datum.

**PROJECT NAME:** 90 Bridge Street Redevelopment  
**CITY/STATE:** Chatham, Massachusetts  
**GEI PROJECT NUMBER:** 2003247



GEI WOBURN STD 1-LOCATION-LAYER NAME 2003247 BORING LOGS.GPJ 10/30/20

# BORING

# B2

PAGE 2 of 2

LOCATION: Shell parking lot near dock

GROUND SURFACE EL. (ft): 9.4

DATE START/END: 7/17/2020 - 7/17/2020

VERTICAL DATUM: MLLW

DRILLING COMPANY: Northern Drill Service, Inc.

Elev. (ft)	Depth (ft)	Sample Information				Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD			
-20	30	S7	29 to 31	24/15	8-13-14-13	SAND AND GRAVEL	S7: WIDELY GRADED GRAVEL WITH SAND (GW); ~60% fine to coarse subrounded to subangular gravel up to 1", ~35% fine to coarse sand, ~5% nonplastic fines, brown.	
-25	35	S8	34 to 36	24/10	14-11-9-9		S8: WIDELY GRADED SAND WITH GRAVEL (SW); ~60% fine to coarse sand, ~35% fine to coarse subrounded to subangular gravel up to 1.5", ~5% nonplastic fines, brown.	
-30	40	S9	39 to 41	24/10	8-7-4-5		S9: WIDELY GRADED SAND WITH GRAVEL (SW); ~65% fine to coarse sand, ~30% fine to coarse subangular gravel, ~5% nonplastic fines, gray.	
-35	45	S10	44 to 46	24/8	2-2-3-3		S10: NARROWLY GRADED SAND (SP); ~90% fine to coarse sand, mostly medium to coarse sand, ~5% fine gravel, ~5% nonplastic fines, gray.	
-40	50	S11	49 to 51	24/0	4-6-8-9		S11: No Recovery. S11 [Redrive]: No Recovery.	
-40	50	S12	51 to 53	24/1	5-6-5-8		S12: Similar to S10.	
-45	55						Bottom of boring at depth 53 ft. Backfilled with cuttings.	
-50	60							
-55								

Drill rig chatter.

Drill rig chatter.

Redrive with 3" spoon. No recovery sand blow-in.

GEI WOBURN STD 1-LOCATION-LAYER NAME\_2003247 BORING LOGS.GPJ\_10/30/20

**NOTES:** 1. Elevation estimated from existing conditions plan in Stantec's Public Meeting No. 8 presentation. 9.17 M.L.W in shell drive. M.L.W datum - 2.42' = NAVD 88 datum.

**PROJECT NAME:** 90 Bridge Street Redevelopment

**CITY/STATE:** Chatham, Massachusetts

**GEI PROJECT NUMBER:** 2003247



<b>BORING INFORMATION</b>	<b>BORING</b>
NORTHING (ft): 42	EASTING (ft): -70
GROUND SURFACE EL. (ft): 0.05	DATE START/END: 8/19/2020 - 8/19/2020
VERT./HORIZ. DATUMS: MLLW/MA State Plane	DRILLING COMPANY: Steele Associates
TOTAL DEPTH (ft): 4.6	DRILLER NAME: K. Steek
LOGGED BY: B. Fong-Murdock	RIG TYPE: Carolina Skiff 24 DLX
<b>V1</b>	
PAGE 1 of 1	

<b>DRILLING INFORMATION</b>		
HAMMER TYPE: NA	CASING I.D./O.D.: 4 inch/ NA	CORE BARREL TYPE:
AUGER I.D./O.D.: NA / NA	DRILL ROD O.D.: NM	CORE BARREL I.D./O.D.: NA / NA
DRILLING METHOD: Vibracore		
WATER LEVEL DEPTHS (ft): 8/19/2020 12:10 pm Depth to bottom: 4.4', Tide: 4.45' (MLLW)		

**ABBREVIATIONS:**

Pen. = Penetration Length	S = Split Spoon Sample	Qp = Pocket Penetrometer Strength	NA, NM = Not Applicable, Not Measured
Rec. = Recovery Length	C = Core Sample	Sv = Pocket Torvane Shear Strength	Blows per 6 in.: 140-lb hammer falling
RQD = Rock Quality Designation	U = Undisturbed Sample	LL = Liquid Limit	30 inches to drive a 2-inch-O.D.
= Length of Sound Cores > 4 in / Pen., %	SC = Sonic Core	PI = Plasticity Index	split spoon sampler.
WOR = Weight of Rods	DP = Direct Push Sample	PID = Photoionization Detector	
WOH = Weight of Hammer	HSA = Hollow-Stem Auger	I.D./O.D. = Inside Diameter/Outside Diameter	

Elev. (ft)	Depth (ft)	Sample Information				Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		Sample No.	Depth (ft)	Pen./Rec. (in)	Blows per 6 in. or RQD			
0		D1	0 to 4.6	55/47		Soft from 0-37"	(0-18") SILTY SAND (SM): ~80% fine to coarse sand, ~20% nonplastic fines, brown, wet. Contains shells.	
1								
2							(18"-46.8") SILTY SAND (SM): ~60% fine sand, ~40% low plasticity fines, gray, moist.	
3								
4								
							End of core: 4.6 feet, refusal. Backfilled with cuttings.	

<b>NOTES:</b>	<b>PROJECT NAME:</b> 90 Bridge Street Redevelopment <b>CITY/STATE:</b> Chatham, Massachusetts <b>GEI PROJECT NUMBER:</b> 2003247
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GEI WOBURN STD 5-NORTH-EAST-LAYER NAME SEDIMENT CORE LOGS.GPJ 11/4/20



<b>BORING INFORMATION</b> NORTHING (ft): 42 GROUND SURFACE EL. (ft): -3.2 VERT./HORIZ. DATUMS: MLLW/MA State Plane TOTAL DEPTH (ft): 3.0 LOGGED BY: B. Fong-Murdock	EASTING (ft): -70 DATE START/END: 8/19/2020 - 8/19/2020 DRILLING COMPANY: Steele Associates DRILLER NAME: K. Steek RIG TYPE: Carolina Skiff 24 DLX	<b>BORING</b>  <b>V2</b>  PAGE 1 of 1
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<b>DRILLING INFORMATION</b>		
HAMMER TYPE: NA	CASING I.D./O.D.: 4 inch/ NA	CORE BARREL TYPE:
AUGER I.D./O.D.: NA / NA	DRILL ROD O.D.: NM	CORE BARREL I.D./O.D.: NA / NA
DRILLING METHOD: Vibracore		
WATER LEVEL DEPTHS (ft): 8/19/2020 9:18 am Depth to bottom: 3.2', Tide: 0.0' (MLLW)		

**ABBREVIATIONS:**

Pen. = Penetration Length Rec. = Recovery Length RQD = Rock Quality Designation = Length of Sound Cores > 4 in / Pen., % WOR = Weight of Rods WOH = Weight of Hammer	S = Split Spoon Sample C = Core Sample U = Undisturbed Sample SC = Sonic Core DP = Direct Push Sample HSA = Hollow-Stem Auger	Qp = Pocket Penetrometer Strength Sv = Pocket Torvane Shear Strength LL = Liquid Limit PI = Plasticity Index PID = Photoionization Detector I.D./O.D. = Inside Diameter/Outside Diameter
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NA, NM = Not Applicable, Not Measured  
Blows per 6 in.: 140-lb hammer falling 30 inches to drive a 2-inch-O.D. split spoon sampler.

Elev. (ft)	Depth (ft)	Sample Information				Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		Sample No.	Depth (ft)	Pen./Rec. (in)	Blows per 6 in. or RQD			
	1	D1	0 to 3	36/26		SAND	(0-13.5") WELL GRADED SAND WITH SILT (SW-SM): ~80% fine to coarse sand, ~20% nonplastic fines, dark gray, wet. Contains shells.  (13.5"-26.4") SILTY SAND (SM): ~60% fine to medium sand, ~40% low plastic fines, tan, moist. Contains shell fragments.	
	2							
	3						End of core: 3 feet, refusal. Backfilled with cuttings.	
	4							

<b>NOTES:</b> Environmental sample collected: S1(0-13.5")	<b>PROJECT NAME:</b> 90 Bridge Street Redevelopment  <b>CITY/STATE:</b> Chatham, Massachusetts <b>GEI PROJECT NUMBER:</b> 2003247
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GEI WOBURN STD 5-NORTH-EAST-LAYER NAME SEDIMENT CORE LOGS.GPJ 11/4/20



<b>BORING INFORMATION</b>	<b>BORING</b>
NORTHING (ft): 42	EASTING (ft): -70
GROUND SURFACE EL. (ft): -5.11	DATE START/END: 8/19/2020 - 8/19/2020
VERT./HORIZ. DATUMS: MLLW/MA State Plane	DRILLING COMPANY: Steele Associates
TOTAL DEPTH (ft): 3.5	DRILLER NAME: K. Steek
LOGGED BY: B. Fong-Murdock	RIG TYPE: Carolina Skiff 24 DLX
<b>V3</b>	
PAGE 1 of 1	

<b>DRILLING INFORMATION</b>		
HAMMER TYPE: NA	CASING I.D./O.D.: 4 inch/ NA	CORE BARREL TYPE: _____
AUGER I.D./O.D.: NA / NA	DRILL ROD O.D.: NM	CORE BARREL I.D./O.D.: NA / NA
DRILLING METHOD: Vibracore		
WATER LEVEL DEPTHS (ft): 8/19/2020 9:06 am Depth to bottom: 5.9', Tide: 0.79' (MLLW)		

**ABBREVIATIONS:**

Pen. = Penetration Length	S = Split Spoon Sample	Qp = Pocket Penetrometer Strength	NA, NM = Not Applicable, Not Measured
Rec. = Recovery Length	C = Core Sample	Sv = Pocket Torvane Shear Strength	Blows per 6 in.: 140-lb hammer falling
RQD = Rock Quality Designation	U = Undisturbed Sample	LL = Liquid Limit	30 inches to drive a 2-inch-O.D.
= Length of Sound Cores > 4 in / Pen., %	SC = Sonic Core	PI = Plasticity Index	split spoon sampler.
WOR = Weight of Rods	DP = Direct Push Sample	PID = Photoionization Detector	
WOH = Weight of Hammer	HSA = Hollow-Stem Auger	I.D./O.D. = Inside Diameter/Outside Diameter	

Elev. (ft)	Depth (ft)	Sample Information				Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		Sample No.	Depth (ft)	Pen./Rec. (in)	Blows per 6 in. or RQD			
	0 to 3.5	D1	0 to 3.5	42/30		Soft from 0-11", PID = 0.1 ppm	SAND	(0-11") WIDELY GRADED SAND WITH SILT (SW-SM): ~80% fine to coarse sand, ~20% non plastic fines, dark gray, wet. Contains shells.
1								(11"-30") SILTY SAND (SM): ~60% fine sand, ~40% low plastic fines, gray, moist. Contains shell fragments.
2								
3								
4								End of core: 3.5 feet, refusal.
-10								

<b>NOTES:</b>	<b>PROJECT NAME:</b> 90 Bridge Street Redevelopment  <b>CITY/STATE:</b> Chatham, Massachusetts <b>GEI PROJECT NUMBER:</b> 2003247
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GEI WOBURN STD 5-NORTH-EAST-LAYER NAME SEDIMENT CORE LOGS.GPJ 11/4/20



<b>BORING INFORMATION</b>	<b>BORING</b>
NORTHING (ft): 42	EASTING (ft): -70
GROUND SURFACE EL. (ft): -0.5	DATE START/END: 8/19/2020 - 8/19/2020
VERT./HORIZ. DATUMS: MLLW/MA State Plane	DRILLING COMPANY: Steele Associates
TOTAL DEPTH (ft): 2.9	DRILLER NAME: K. Steek
LOGGED BY: B. Fong-Murdock	RIG TYPE: Carolina Skiff 24 DLX
<b>V4</b>	
PAGE 1 of 1	

<b>DRILLING INFORMATION</b>		
HAMMER TYPE: NA	CASING I.D./O.D.: 4 inch/ NA	CORE BARREL TYPE: _____
AUGER I.D./O.D.: NA / NA	DRILL ROD O.D.: NM	CORE BARREL I.D./O.D.: NA / NA
DRILLING METHOD: Vibracore		
WATER LEVEL DEPTHS (ft): 8/19/2020 12:29 pm Depth to bottom: 5.1', Tide: 4.6' (MLLW)		

**ABBREVIATIONS:**

Pen. = Penetration Length	S = Split Spoon Sample	Qp = Pocket Penetrometer Strength	NA, NM = Not Applicable, Not Measured
Rec. = Recovery Length	C = Core Sample	Sv = Pocket Torvane Shear Strength	Blows per 6 in.: 140-lb hammer falling
RQD = Rock Quality Designation	U = Undisturbed Sample	LL = Liquid Limit	30 inches to drive a 2-inch-O.D.
= Length of Sound Cores > 4 in / Pen., %	SC = Sonic Core	PI = Plasticity Index	split spoon sampler.
WOR = Weight of Rods	DP = Direct Push Sample	PID = Photoionization Detector	
WOH = Weight of Hammer	HSA = Hollow-Stem Auger	I.D./O.D. = Inside Diameter/Outside Diameter	

Elev. (ft)	Depth (ft)	Sample Information				Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		Sample No.	Depth (ft)	Pen./Rec. (in)	Blows per 6 in. or RQD			
		D1	0 to 2.9	35/28		Soft from 0-18"	SAND	(0-18") SILTY SAND (SM): ~65% fine to coarse sand, ~35% non plastic fines, dark brown, wet.
								(18"-28.6") SILTY SAND (SM): ~55% fine sand, ~45% low plastic fines, tan to brown to gray, moist.
								End of core: 2.9 feet, refusal.

<b>NOTES:</b>	<b>PROJECT NAME:</b> 90 Bridge Street Redevelopment <b>CITY/STATE:</b> Chatham, Massachusetts <b>GEI PROJECT NUMBER:</b> 2003247
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GEI WOBURN STD 5-NORTH-EAST-LAYER NAME SEDIMENT CORE LOGS.GPJ 11/4/20



<b>BORING INFORMATION</b>	<b>BORING</b>
NORTHING (ft): 42	<b>V5</b>
GROUND SURFACE EL. (ft): -5.05	PAGE 1 of 1
VERT./HORIZ. DATUMS: MLLW/MA State Plane	
TOTAL DEPTH (ft): 4.2	
LOGGED BY: B. Fong-Murdock	
EASTING (ft): -70	
DATE START/END: 8/19/2020 - 8/19/2020	
DRILLING COMPANY: Steele Associates	
DRILLER NAME: K. Steek	
RIG TYPE: Carolina Skiff 24 DLX	

<b>DRILLING INFORMATION</b>		
HAMMER TYPE: NA	CASING I.D./O.D.: 4 inch/ NA	CORE BARREL TYPE:
AUGER I.D./O.D.: NA / NA	DRILL ROD O.D.: NM	CORE BARREL I.D./O.D.: NA / NA
DRILLING METHOD: Vibracore		
WATER LEVEL DEPTHS (ft): 8/19/2020 9:45 am Depth to bottom: 6.8', Tide: 1.75' (MLLW)		

**ABBREVIATIONS:**

Pen. = Penetration Length	S = Split Spoon Sample	Qp = Pocket Penetrometer Strength
Rec. = Recovery Length	C = Core Sample	Sv = Pocket Torvane Shear Strength
RQD = Rock Quality Designation	U = Undisturbed Sample	LL = Liquid Limit
= Length of Sound Cores > 4 in / Pen., %	SC = Sonic Core	PI = Plasticity Index
WOR = Weight of Rods	DP = Direct Push Sample	PID = Photoionization Detector
WOH = Weight of Hammer	HSA = Hollow-Stem Auger	I.D./O.D. = Inside Diameter/Outside Diameter

NA, NM = Not Applicable, Not Measured  
Blows per 6 in.: 140-lb hammer falling  
30 inches to drive a 2-inch-O.D.  
split spoon sampler.

Elev. (ft)	Depth (ft)	Sample Information				Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		Sample No.	Depth (ft)	Pen./Rec. (in)	Blows per 6 in. or RQD			
	0 to 4.2	D1	0 to 4.2	50/38		Soft from 0-16"	(0-15.6") SILTY SAND (SM): ~60% fine to coarse sand, ~40% non plastic fines, dark brown to dark gray, wet. ~1" of subrounded gravel up to 2" at surface.	
1								
2							(15.6"-32.4") SANDY SILT (ML): ~65% low plastic fines, ~45% fine sand, gray, moist.	
3							(32.4"-38.4") SILTY SAND (SM): ~80% fine to medium sand, ~20% non plastic fines, mottled reddish brown and tan, moist.	
4								
							End of core: 4.2 feet, refusal.	
-10								

<b>NOTES:</b>	<b>PROJECT NAME:</b> 90 Bridge Street Redevelopment <b>CITY/STATE:</b> Chatham, Massachusetts <b>GEI PROJECT NUMBER:</b> 2003247
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GEI WOBURN STD 5-NORTH-EAST-LAYER NAME SEDIMENT CORE LOGS.GPJ 11/4/20



<b>BORING INFORMATION</b> NORTHING (ft): <u>42</u> GROUND SURFACE EL. (ft): <u>0.06</u> VERT./HORIZ. DATUMS: <u>MLLW/MA State Plane</u> TOTAL DEPTH (ft): <u>3.8</u> LOGGED BY: <u>B. Fong-Murdock</u>	EASTING (ft): <u>-70</u> DATE START/END: <u>8/19/2020 - 8/19/2020</u> DRILLING COMPANY: <u>Steele Associates</u> DRILLER NAME: <u>K. Steek</u> RIG TYPE: <u>Carolina Skiff 24 DLX</u>	<b>BORING</b>  <b>V6</b>  PAGE 1 of 1
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<b>DRILLING INFORMATION</b>		
HAMMER TYPE: <u>NA</u>	CASING I.D./O.D.: <u>4 inch/ NA</u>	CORE BARREL TYPE: _____
AUGER I.D./O.D.: <u>NA / NA</u>	DRILL ROD O.D.: <u>NM</u>	CORE BARREL I.D./O.D.: <u>NA / NA</u>
DRILLING METHOD: <u>Vibracore</u>		
WATER LEVEL DEPTHS (ft): <u>8/19/2020 10:49 am Depth to bottom: 4.1', Tide: 4.16' (MLLW)</u>		

**ABBREVIATIONS:**

Pen. = Penetration Length Rec. = Recovery Length RQD = Rock Quality Designation = Length of Sound Cores > 4 in / Pen., % WOR = Weight of Rods WOH = Weight of Hammer	S = Split Spoon Sample C = Core Sample U = Undisturbed Sample SC = Sonic Core DP = Direct Push Sample HSA = Hollow-Stem Auger	Qp = Pocket Penetrometer Strength Sv = Pocket Torvane Shear Strength LL = Liquid Limit PI = Plasticity Index PID = Photoionization Detector I.D./O.D. = Inside Diameter/Outside Diameter
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NA, NM = Not Applicable, Not Measured  
Blows per 6 in.: 140-lb hammer falling  
30 inches to drive a 2-inch-O.D. split spoon sampler.

Elev. (ft)	Depth (ft)	Sample Information				Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		Sample No.	Depth (ft)	Pen./Rec. (in)	Blows per 6 in. or RQD			
0		D1	0 to 3.8	46/44		Soft from 0-16.8"	SAND	(0-38.4") SILTY SAND (SM): ~80% fine to coarse sand, ~20% non plastic fines, brown, wet.
1								
2								
3								
4								End of core: 3.8 feet, refusal.

<b>NOTES:</b>	<b>PROJECT NAME:</b> 90 Bridge Street Redevelopment  <b>CITY/STATE:</b> Chatham, Massachusetts <b>GEI PROJECT NUMBER:</b> 2003247
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GEI WOBURN STD 5-NORTH-EAST-LAYER NAME SEDIMENT CORE LOGS.GPJ 11/4/20

<b>BORING INFORMATION</b>	<b>BORING</b>
NORTHING (ft): 42	EASTING (ft): -70
GROUND SURFACE EL. (ft): 0.29	DATE START/END: 8/19/2020 - 8/19/2020
VERT./HORIZ. DATUMS: MLLW/MA State Plane	DRILLING COMPANY: Steele Associates
TOTAL DEPTH (ft): 3.2	DRILLER NAME: K. Steek
LOGGED BY: B. Fong-Murdock	RIG TYPE: Carolina Skiff 24 DLX
<b>V7</b>	
PAGE 1 of 1	

<b>DRILLING INFORMATION</b>		
HAMMER TYPE: NA	CASING I.D./O.D.: 4 inch/ NA	CORE BARREL TYPE:
AUGER I.D./O.D.: NA / NA	DRILL ROD O.D.: NM	CORE BARREL I.D./O.D.: NA / NA
DRILLING METHOD: Vibracore		
WATER LEVEL DEPTHS (ft): 8/19/2020 10:40 am Depth to bottom: 2.7', Tide: 2.99' (MLLW)		

**ABBREVIATIONS:**

Pen. = Penetration Length	S = Split Spoon Sample	Qp = Pocket Penetrometer Strength	NA, NM = Not Applicable, Not Measured
Rec. = Recovery Length	C = Core Sample	Sv = Pocket Torvane Shear Strength	Blows per 6 in.: 140-lb hammer falling
RQD = Rock Quality Designation	U = Undisturbed Sample	LL = Liquid Limit	30 inches to drive a 2-inch-O.D.
= Length of Sound Cores > 4 in / Pen., %	SC = Sonic Core	PI = Plasticity Index	split spoon sampler.
WOR = Weight of Rods	DP = Direct Push Sample	PID = Photoionization Detector	
WOH = Weight of Hammer	HSA = Hollow-Stem Auger	I.D./O.D. = Inside Diameter/Outside Diameter	

Elev. (ft)	Depth (ft)	Sample Information				Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		Sample No.	Depth (ft)	Pen./Rec. (in)	Blows per 6 in. or RQD			
0		D1	0 to 3.2	38/36		Soft from 0-20"		(0-8.4") SILTY SAND WITH GRAVEL (SM): ~70% fines to coarse sand, ~15% subrounded gravel up to 1/4", ~15% non plastic fines. dark brown, wet. Contains shells.
1							SAND	(8.4"-20.4") SILTY SAND (SM): ~80% fine to medium sand, ~20% nonplastic fines, dark brown, wet. Contains shells.
2								(20.4"-36") SILTY SAND (SM): ~60% fine sand, ~40% non plastic fines, tan, moist.
3								End of core: 3.2 feet, refusal.
4								

<b>NOTES:</b>	<b>PROJECT NAME:</b> 90 Bridge Street Redevelopment <b>CITY/STATE:</b> Chatham, Massachusetts <b>GEI PROJECT NUMBER:</b> 2003247
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GEI WOBURN STD 5-NORTH-EAST-LAYER NAME SEDIMENT CORE LOGS.GPJ 11/4/20



<b>BORING INFORMATION</b> NORTHING (ft): 42 GROUND SURFACE EL. (ft): -4.91 VERT./HORIZ. DATUMS: MLLW/MA State Plane TOTAL DEPTH (ft): 4.6 LOGGED BY: B. Fong-Murdock	EASTING (ft): -70 DATE START/END: 8/19/2020 - 8/19/2020 DRILLING COMPANY: Steele Associates DRILLER NAME: K. Steek RIG TYPE: Carolina Skiff 24 DLX	<b>BORING</b>  <b>V8</b>  PAGE 1 of 1
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<b>DRILLING INFORMATION</b>		
HAMMER TYPE: NA	CASING I.D./O.D.: 4 inch/ NA	CORE BARREL TYPE:
AUGER I.D./O.D.: NA / NA	DRILL ROD O.D.: NM	CORE BARREL I.D./O.D.: NA / NA
DRILLING METHOD: Vibracore		
WATER LEVEL DEPTHS (ft): 8/16/2020 9:23 am Depth to bottom: 6.1', Tide: 1.19' (MLLW)		

**ABBREVIATIONS:**

Pen. = Penetration Length Rec. = Recovery Length RQD = Rock Quality Designation = Length of Sound Cores > 4 in / Pen., % WOR = Weight of Rods WOH = Weight of Hammer	S = Split Spoon Sample C = Core Sample U = Undisturbed Sample SC = Sonic Core DP = Direct Push Sample HSA = Hollow-Stem Auger	Qp = Pocket Penetrometer Strength Sv = Pocket Torvane Shear Strength LL = Liquid Limit PI = Plasticity Index PID = Photoionization Detector I.D./O.D. = Inside Diameter/Outside Diameter
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NA, NM = Not Applicable, Not Measured  
Blows per 6 in.: 140-lb hammer falling  
30 inches to drive a 2-inch-O.D.  
split spoon sampler.

Elev. (ft)	Depth (ft)	Sample Information				Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		Sample No.	Depth (ft)	Pen./Rec. (in)	Blows per 6 in. or RQD			
1	0 to 4.6	D1	55/49		Soft from 0-24"	SILT	(0-24") SANDY SILT (ML): ~70% low plastic fines, ~30% fine sand, dark brown, wet.	
2						SAND	(24"-49") POORLY GRADED SAND (SP): ~95% medium to coarse sand, ~5% non plastic fines, brown to tan, moist.	
3								
4								
								End of core: 4.6 feet, refusal.

<b>NOTES:</b>	<b>PROJECT NAME:</b> 90 Bridge Street Redevelopment  <b>CITY/STATE:</b> Chatham, Massachusetts <b>GEI PROJECT NUMBER:</b> 2003247
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GEI WOBURN STD 5-NORTH-EAST-LAYER NAME SEDIMENT CORE LOGS.GPJ 11/4/20



<b>BORING INFORMATION</b> NORTHING (ft): <u>42</u> GROUND SURFACE EL. (ft): <u>-1.83</u> VERT./HORIZ. DATUMS: <u>MLLW/MA State Plane</u> TOTAL DEPTH (ft): <u>2.1</u> LOGGED BY: <u>B. Fong-Murdock</u>	EASTING (ft): <u>-70</u> DATE START/END: <u>8/19/2020 - 8/19/2020</u> DRILLING COMPANY: <u>Steele Associates</u> DRILLER NAME: <u>K. Steek</u> RIG TYPE: <u>Carolina Skiff 24 DLX</u>	<b>BORING</b>  <b>V9</b>  PAGE 1 of 1
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<b>DRILLING INFORMATION</b>		
HAMMER TYPE: <u>NA</u>	CASING I.D./O.D.: <u>4 inch/ NA</u>	CORE BARREL TYPE: _____
AUGER I.D./O.D.: <u>NA / NA</u>	DRILL ROD O.D.: <u>NM</u>	CORE BARREL I.D./O.D.: <u>NA / NA</u>
DRILLING METHOD: <u>Vibracore</u>		
WATER LEVEL DEPTHS (ft): <u>8/16/2020 11:07 am Depth to bottom: 5.3', Tide: 3.47' (MLLW)</u>		

**ABBREVIATIONS:**

Pen. = Penetration Length Rec. = Recovery Length RQD = Rock Quality Designation = Length of Sound Cores > 4 in / Pen., % WOR = Weight of Rods WOH = Weight of Hammer	S = Split Spoon Sample C = Core Sample U = Undisturbed Sample SC = Sonic Core DP = Direct Push Sample HSA = Hollow-Stem Auger	Qp = Pocket Penetrometer Strength Sv = Pocket Torvane Shear Strength LL = Liquid Limit PI = Plasticity Index PID = Photoionization Detector I.D./O.D. = Inside Diameter/Outside Diameter
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NA, NM = Not Applicable, Not Measured  
Blows per 6 in.: 140-lb hammer falling 30 inches to drive a 2-inch-O.D. split spoon sampler.

Elev. (ft)	Depth (ft)	Sample Information				Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		Sample No.	Depth (ft)	Pen./Rec. (in)	Blows per 6 in. or RQD			
1	0 to 2.1	D1	25/22		Soft from 0-12"	SAND	(0-12") SILTY SAND (SM): ~85% fine to coarse sand, ~15% non plastic fines, dark brown, wet. Contains shells.  (12"-21.6") SILTY SAND (SM): ~70% fine to medium sand, ~30% low plastic fines, tan, moist.	
2							End of core: 2.1 feet, refusal.	
3								
4								

<b>NOTES:</b>	<b>PROJECT NAME:</b> 90 Bridge Street Redevelopment  <b>CITY/STATE:</b> Chatham, Massachusetts <b>GEI PROJECT NUMBER:</b> 2003247
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GEI WOBURN STD 5-NORTH-EAST-LAYER NAME SEDIMENT CORE LOGS.GPJ 11/4/20

