

CONTRACT DOCUMENTS

FOR

**CHATHAM FISH PIER
OBSERVATION DECK RECONSTRUCTION
CHATHAM, MA**



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

Design Engineer
Foth-CLE Engineering Group, Inc.
15 Creek Road
Marion, MA 02738
(508) 748-0937



ISSUED FOR CONSTRUCTION

TOWN OF CHATHAM, MA
CHATHAM FISH PIER
OBSERVATION DECK REPLACEMENT

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REQUEST FOR WRITTEN BIDS

The Town of Chatham is soliciting written bids pursuant to the provisions of G.L. c. 30, §39M(b) for the Chatham Fish Pier – Observation Deck Reconstruction, located at the Chatham Fish Pier, 45 Barcliff Avenue Ext, Chatham, MA 02633. The project generally consists of reconstruction of the existing Observation Deck, Fire Suppression System Expansion and Fuel Line Relocation.

Those submitting written bids (hereinafter “Bidders”). Bidders may obtain complete set(s) of Contract Documents at the office of the Project Engineer, Foth-CLE Engineering Group, located at 15 Creek Road, Marion, MA 02738 (tel: 508-748-0937; fax: 508-748-1363) between the hours of 10 a.m. and 4 p.m., Monday through Friday, on or after 10:00 a.m. on **December 21, 2018**. No partial sets will be issued. Cost: \$10.00 per set made payable to *Foth Infrastructure & Environment, LLC*, non-refundable. If Drawings and Specifications are requested to be mailed, submit a check (non-refundable) payable to *Foth Infrastructure & Environment, LLC*, in the amount of \$10.00 for standard delivery. Federal Express delivery will be available, to be charged to Bidder’s account. Requests for electronic delivery of the Contract Documents should be addressed to Jennifer.green@foth.com. There is no charge for electronic delivery of the contract documents.

The Town will receive bids at the Office of the Town Manger, 549 Main Street, Chatham, MA 02633, no later than **2:00 pm on Wednesday, November 28, 2018**, at which time all bids will be publicly opened and read aloud.

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) . A Performance Bond in the sum of one hundred percent (100%) of the Contract Price and a Labor and Materials Payment Bond in an amount equal to at least fifty percent (50%) of the contract price, each of a surety company qualified to do business under the laws of the Commonwealth of Massachusetts, satisfactory to the Owner, will be required of the successful general bidder.

Every bid shall be accompanied by a bid deposit in the form of: (1) a bid bond, (2) cash, or (3) a certified check on, or a treasurer's or cashier's check issued by, a responsible bank or trust company, payable to the awarding authority. The amount of the bid deposit shall be five per cent (5%) of the value of the bid.

The award of a contract is subject to the Owner’s receipt of all regulatory approvals from local, state or federal agencies. The award is also subject to availability of sufficient funding.

Non-mandatory Pre-Bid Conference/Site Inspection: **10 a.m. Wednesday, November 7, 2018** at project site, 45 Barcliff Avenue Ext, Chatham, MA.

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NOTICE TO BIDDERS

TOWN OF CHATHAM

Notice is hereby given that the **Town of Chatham** will receive bids for furnishing all labor, materials, transportation and services for the project known as:

**CHATHAM FISH PIER
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located on **45 Barcliff Avenue Ext.** in **Chatham, Massachusetts**. Each bid to be in accordance with the plans, specifications and other contract documents now on file at the office of the Project Engineer, Foth-CLE Engineering Group, located at **15 Creek Road, Marion, MA 02738**, where they may be examined and copies obtained.

- A.** Notice is also hereby given that all Bidders may be required to furnish a sworn statement of their financial responsibility, technical ability and experience before award is made to any particular Bidder.
- B.** The project generally consists of reconstruction of the existing Observation Deck, Fire Suppression System Expansion and Fuel Line Relocation.
- C.** A non-mandatory site walk through will be performed by the Project Engineer on **Wednesday, November 7, 2018 at 10:00 am on site**, which will overview and acquaint the Contractor with the work set forth hereunder. **All prospective bidders are highly encouraged to attend. If the bidder chooses not to attend this meeting, they shall waive any information provided at this meeting.**
- D.** Each bid shall be made out on a form to be obtained at the office of the Project Engineer, , Foth-CLE Engineering Group, located at **15 Creek Road, Marion, MA 02738 (tel: 508-748-0937; fax: 508-748-1363)** and submitted to the Town of Chatham at the Office of the Town Manger, 549 Main Street, Chatham, MA 02633, on or before **2:00 pm on Wednesday, November 28, 2018**, local time (**CASH WILL NOT BE ACCEPTED**). Each bid shall be in a separate sealed envelope, addressed to the Town of Chatham.
- E.** Bids will be award based on the Base Bid only.
- F.** The Owner reserves the right to reject any or all bids or waive any informality in a bid.
- G.** No bidder may withdraw his/her bid for a period of sixty (60) days after the date set for the opening thereof.
- H.** Bidders should be aware that all contractors performing work for the Owners are required to present evidence of Workers' Compensation and Employers' Liability Insurance coverages; a certificate of insurance and copies of the information or declaration page(s) for Broad Form Comprehensive General Liability or Commercial General Liability, and Business Automobile Liability Insurance policies of not less than **\$1,000,000** for bodily injury or death arising out of any one occurrence and property damage limits of not less than **\$3,000,000** arising out of any occurrence for each type of coverage; as well as excess liability coverage in an amount to be no less than **\$3,000,000**; as well as copies for said General Liability and Business Auto Liability Insurance Policies or an endorsement naming the Owners, its Board, and its officers, agents and employees as additional insureds, a standard cross-liability endorsement, an endorsement precluding cancellation or reduction in coverage before the expiration of thirty (30) days after Owners has received

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- written notification by first class mail from the insurance carrier of such cancellation or reduction, and an endorsement stating that the insurance afforded thereby to Owners and its officers, agents and employees shall be primary insurance to the full limits of the policy, and that if Owners and its officers and employees have other insurance against a loss covered by such a policy, such other insurance shall be excess insurance only. Contractor shall further procure for the Owners' benefit, course of construction insurance coverage for all risks of loss in an amount equal to the completed value of the project. The certificates of insurance and copies of information or declaration page(s) and of endorsements are to be reviewed and approved as to form by the Owners before work commences. The award of a contract is subject to the Owner's receipt of all regulatory approvals from local, state and federal agencies.
- I.** The "Contract Documents" consist of this Notice to Bidders; the Bid; the list of subcontractors; the non-collision affidavit; Section 00100 (Bidding Requirements); the Agreement;; the Agreement; the Faithful Performance Bond; the Payment Bond; the General Conditions; the Special Conditions; the plans and specifications, and any and all exhibits attached to any of the above listed documents. Bidders may obtain one complete set of Contract Documents at the office of the Project Engineer, Foth-CLE Engineering Group, located at 15 Creek Road, Marion, MA 02738 (tel: 508-748-0937; fax: 508-748-1363) **between the hours of 10 a.m. and 4 p.m., Monday through Friday on or after 10 a.m., December 21, 2018.** No partial sets will be issued. Additional sets may be purchased at the same office for **ten dollars (\$10)** per set, non-refundable. Electronic copies of the Contract Documents will be available to registered bidders without charge. Copies of BID FORMS are available at no cost.
- J.** Bidders shall address inquiries regarding availability of Documents, delivery time and other similar matters to the Project Engineer's office. Arrangements for delivery or mailing may be made directly with the Project Engineer's office (Telephone: 508-748-0937). A ten dollar (\$10) mailing and handling charge must accompany all requests for mailed Contract Documents. No documents will be mailed before receiving the mailing charge payable to *Foth Infrastructure & Environment, LLC*. **Electronic copies of the Contract Documents will be available to registered bidders without charge.** Copies of Addenda will be provided to registered bidders without charge.
- K.** **Any question pertaining to the plans, specifications, or any of the Contract Documents shall be submitted in writing, addressed to the attention of Jennifer Green, P.E., and delivered either in person to Jennifer Green, P.E.) or, if by mail, addressed to Jennifer Green, P.E. at Foth-CLE Engineering Group, 15 Creek Road, Marion, MA 02738, or, by email sent to Jennifer.green@foth.com.** To be given consideration, every question must be received at least **seven (7) calendar days** prior to the date fixed for the opening of Bids. 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.
- L.** A successful bidder shall provide proof of a current business license issued by the jurisdiction where the work of improvement is to be conducted upon award of the Contract.
- M.** The Contract will be awarded to the responsible contractor offering to perform the work at the lowest price. Under G.L. c, 30, §39M, "lowest responsible and eligible bidder" shall

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- mean the bidder: (1) whose bid is the lowest of those bidders possessing the skill, ability and integrity necessary for the faithful performance of the work; (2) who shall certify, that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work; (3) who shall certify 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; (4) who, where the provisions of section 8B of chapter 29 apply, shall have been determined to be qualified thereunder; and (5) who obtains within 10 days of the notification of contract award the security by bond required under section 29 of chapter 149.
- N.** A successful bidder shall, within ten (10) days from the date of a request by the Owners, enter into a contract with the Owners, which contract shall be accompanied by a payment bond and a faithful performance bond, each in a sum equal to 100% of the amount of the bid, and all documents evidencing insurance coverage requested by the Owners.
- O.** The date of completion for the Project shall be **May 10, 2019**. If the Owner accepts a bid, it anticipates issuing a “Notice to Proceed” on or about **December 19, 2018**. After the “Notice to Proceed” is issued, the Contractor may begin procuring materials. It is therefore estimated that the Contractor will have **one hundred and forty-two (142)** calendar days from the date of issuance of a Notice to Proceed to the completion date.
- P.** 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.

The bidding documents may be examined at, but not removed or taken from, the office of Project Engineer at the address stated above or the Office of the Town Manager, 549 Main St, Chatham, MA 02633, during normal business hours.

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.

END OF SECTION

SECTION 00100

BIDDING REQUIREMENTS

1.01 SECURING DOCUMENTS

Bidders may obtain one complete set of Contract Documents at the office of the Project Engineer, Foth-CLE Engineering Group, located at 15 Creek Road, Marion, MA 02738 (tel: 508-748-0937; fax: 508-748-1363) between the hours of 10 a.m. and 4 p.m., Monday through Friday, upon deposit of **ten dollars (\$10)** per set in the form of a check made payable to *Foth Infrastructure & Environment, LLC*, on or after 10 a.m., **December 21, 2018**. No partial sets will be issued. Additional sets may be purchased at the same office for **ten dollars (\$10)** per set, non-refundable. Copies of FORM FOR BID are available at no cost. A ten dollar (\$10) mailing and handling charge must accompany all requests for mailed Contract Documents. No documents will be mailed before receiving the mailing charge payable to the *Foth Infrastructure & Environment, LLC*. Electronic copies of the Contract Documents will be available to registered bidders without charge. Copies of Addenda will be provided to registered bidders without charge.

1.02 BID REQUIREMENTS

In order to receive consideration, bids shall be prepared and submitted in conformance with the 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.

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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, (2) cash, or (3) a certified check on, or a treasurer's or cashier's check issued by, a responsible bank or trust company, payable to the awarding authority. The amount of the bid deposit shall be five percent (5%) of the value of the bid.

1.03 BID QUANTITIES

See Section 01100 Measurement and Payment

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 general 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.

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1.08 OPENING OF BIDS

Written Bids for the Contract will be received by the Office of the Town Manger, 549 Main Street, Chatham, MA 02633, no later than **2:00 pm EST on Wednesday, November 28, 2018, and at that time and place will be publicly opened and read aloud.**

1.09 AWARD OF CONTRACT OR REJECTION OF BIDS

Bids will be award based on the Base Bid only.

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 him/her to undertake and successfully complete the work to be performed, including past performance which shall include past performance on projects performed for the Owner.

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 said bonds to be secured from a corporate surety admitted in the [Commonwealth of Massachusetts](#) and shall be 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 after the receipt of the Notice to Proceed.

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.

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1.14 SUBCONTRACTORS

Each bidder must state in his/her bid the subcontractors he/she intends to employ to perform any work or labor, or render 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

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SECTION 00110

BID

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 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

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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 above described work, for the following price, to wit:

(\$) _____
_____ U.S. Dollars

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 list. The price of the contract 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

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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.

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EXHIBIT "A"
BID ITEMS

ITEM No.	DESCRIPTION AND UNIT PRICES WRITTEN	ESTIMATED QUANTITY	UNIT PRICE IN FIGURES	ITEM AMOUNT
1	Mobilization, Site Preparation & Demobilization Unit Price in Words: _____ _____	Lump Sum	\$ _____	\$ _____
2	Selective Demolition Including but not limited to removal of existing deck including support posts and utilities, saw cut slab as required for fuel line relocation, modifications to existing concrete sheet and sheet pile cap for NOAA tide gage installation, demolition for installation of new doors, windows and louvers, removal of existing davits, and any other miscellaneous demolition. Unit Price in Words: _____ _____	Lump Sum	\$ _____	\$ _____
3	Furnish & Install Observation Deck Including but not limited to, excavation and all materials and construction related to deck foundations, all materials and construction related to installation of new impact resistant windows and doors, louvers, all materials and construction related to reconstruction of the covered pump shut-off shed including re-installation of the shut-off switch, all materials and construction related to re-shingling the north and east sides of the building, all materials and construction related to re-installation of Observation Deck utilities including but not limited to, electrical, light fixtures, all concrete, steel and timber materials related to construction of the new Observation deck, including all superstructure and substructure and north and south stairs, handrail, stainless connections, concrete and concrete reinforcement for slabs, pads, fuel dispenser pedestals, and sonotube foundations, Admiral Spacemaker Decking, furnish and install gutters, downspouts., re-grading at the south stair, general regrading, re-paving and re-striping as required, all materials and construction related to installation of polymer protection bollards, all materials and construction related to installation of the stainless steel security gates, all materials and construction related to installation of new fuel and emergency access signage. Unit Price in Words: _____ _____	Lump Sum	\$ _____	\$ _____

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4	<p>Furnish and Install Stainless Steel North and South Davits</p> <p>Including but not limited to and all calculations, materials and construction related to davit foundations and stainless steel davits.</p> <p>Unit Price in Words: _____ _____</p>	Lump Sum	\$ _____	\$ _____
5	<p>Furnish and Install Vertical Platform Lift</p> <p>Including all site preparation and utilities, power, and vertical height variances as required for the Vertical Platform Lift.</p> <p>Unit Price in Words: _____ _____</p>	Lump Sum	\$ _____	\$ _____
6	<p>Furnish and Install Expanded Fire Suppression System</p> <p>Including but not limited to all stainless steel piping, tees, elbows, fittings, connections, hangers in addition to all labor, materials, transportation, equipment, and disposal of waste and excess materials, testing and permits.</p> <p>Unit Price in Words: _____ _____</p>	Lump Sum	\$ _____	\$ _____
7	<p>Furnish and Install Electrical and Lighting</p> <p>Including but not limited to all labor, materials, transportation, equipment, disposal of waste and excess materials, testing, permits and all other work incidental to installation of new electrical including installation of new lighting fixtures and reinstallation of existing light fixtures, upgrade to 3-phase (208 volt power) at the north side davit and installation of electrical conduit associated with the installation of NOAA tide gauge (conduit only, tide gage by others).</p> <p>Unit Price in Words: _____ _____</p>	Lump Sum	\$ _____	\$ _____

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<p>8</p>	<p>Furnish and Install Fuel Line Relocation – Sump #1 to Fish Packing Building</p> <p>Including but not limited to demolition as required, excavation, trenching, removal of existing fuel lines in compliance with regulatory provisions, all materials and construction installation of sumps, fuel lines, piping, sensors, connections, valves, elbows and tees and electrical work related to fuel line relocation. Bid item to include piping sump #1 and all labor and materials required to tie-in sump #1 to existing fuel line piping, if Alternate #1 is not awarded), all labor, materials, transportation, equipment, and disposal of waste and excess materials, testing, permits and all other work incidental to the fuel line relocation from the lower parking lot sump to the fuel dispensers. Payment item shall also include re-installation of the existing fuel dispensers.</p> <p>Unit Price in Words: _____ _____</p>	<p>Lump Sum</p>	<p>\$ _____</p>	<p>\$ _____</p>
<p>9</p>	<p>Fish Packing Building – Building Column Replacement</p> <p>Furnish and Install four (4) interior building columns including but not limited to all demolition, materials, construction and restoration as related to this scope of work. Bid item shall include purchase of materials, bracing, miscellaneous timber, temporary installation and removal of falsework, trimming, splicing, transitions, bracing, staging, water control, manpower, fueling, maintenance, operation, field engineering, environmental protection, , disposal of waste and excess materials, and all other work incidental to the replacement of building support columns as shown on plans and within the contract documents.</p> <p>Unit Price in Words: _____ _____</p>	<p>Lump Sum</p>	<p>\$ _____</p>	<p>\$ _____</p>
	<p>Total Bid Items 1 to 9</p> <p>Unit Price in Words: _____ _____</p>	<p>\$ _____</p>		

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ALTERNATE #1

<p>A-1</p>	<p>Furnish and Install Fuel Tank Replacement – Sump #1 to Upper Parking Lot Fuel Tanks</p> <p>Payment for this item shall include all labor, materials, transportation, equipment, disposal of waste and excess materials, testing, permits and all other work incidental to the fuel line replacement from, but not including replacement of the lower parking lot sump up to the upper parking lot area. Bid Item shall include Including but not limited to demolition as required, excavation, trenching, all materials and construction installation of sumps, fuel lines, piping, sensors, connections, valves, elbows and tees, pumps and all electrical work related to fuel line and deiseal and gasoline fuel tank replacement, testing and compliance. Alternate #1 Bid item includes replacement of all fuel line piping and other associated work starting from the new tanks over to Sump #1.</p> <p>Unit Price in Words: _____ _____</p>	<p>Lump Sum</p>	<p>\$ _____</p>	<p>\$ _____</p>
	<p>Total Alternate #1 - Bid Items Unit Price in Words: _____ _____</p>	<p>\$ _____</p>		

LIST OF SUB-CONTRACTORS

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 1 percent 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
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

(Prime Contractor)

Signed by: _____

Title: _____

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**NON-COLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER AND
SUBMITTED WITH BID**

Commonwealth of Massachusetts

County of _____

_____, being first duly sworn, deposes and says that he or she is _____ of _____, the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation, that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the Owner awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Signature _____

(NOTARY) I, _____ as a notary public certify under the pains and penalties of perjury that I witnessed the signature of the aforementioned signatory on behalf of the Bidder, and the individual's identity was verified, on this date: _____, 20 _____. My commission expires on:

OR

(CORPORATE CLERK) I, _____ as corporate clerk of the Bidder/Contractor certify under the pains and penalties of perjury that I witnessed the signature of the aforementioned signatory and the signatory is authorized to execute contracts and other instruments and legally bind the Bidder/Contractor. This date: _____, 20 _____.

AFFIX NOTARY SEAL OR CORPORATE SEAL HERE:

BIDDER CERTIFICATIONS

1.01 GENERAL

A. The undersigned Bidder certifies to the Owner, as set forth in sections 1 through 12 below.

1. Certificate of Non-Discrimination

By my signature hereunder, on behalf of the Bidder making this Bid, the undersigned certifies that there will be no discrimination in employment with regard to race, color, religion, gender, sexual orientation, or national origin; that all federal, state, and local directives and executive orders regarding non-discrimination in employment will be complied with; and that the principle of equal opportunity in employment will be demonstrated positively and aggressively.

2. State of Convictions

By my signature hereunder, I hereby swear, under penalty of perjury, that no more than one final, unappealable finding of contempt of court by a Federal Court has been issued against Bidder within the past two years because of failure to comply with an order of a Federal Court or to comply with an order of the National Labor Relations Board.

3. Previous Disqualifications

By my signature hereunder, I hereby swear, under penalty of perjury, that the below indicated Bidder, any officer of such Bidder, or any employee of such Bidder who has a proprietary interest in such Bidder, has never been disqualified, removed or otherwise prevented from bidding on, or completing a Federal, State, or local government project because of a violation of law or a safety regulation except as indicated on the separate sheet attached hereto entitled "Previous Disqualifications." If such exceptions are attached, please explain the circumstances.

4. Certification of Workers Compensation Insurance

By my signature hereunder, as the Contractor, I certify that I am aware of the provisions of [Title 28-29 Labor and Labor Relations of the General Laws of Massachusetts](#) which require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that law, and I will comply with such provisions before commencing the performance of the Work of this Contract.

5. Certificate of Non-Collusion:

In accordance with Massachusetts General Law Chapter 30, Section 39M: Undersigned certifies under penalties of perjury that this bid or bid is in all respects bona fide and fair and has been made and submitted in good faith without collusion or fraud with any other person. As used in this certification, the work "person" shall mean any natural person, joint venture, business, partnership, corporation, union, committee, club, organization, group of individuals, or other business or legal entity.

6. Conflict of Interest:

The bidder must certify that no official or employee of the Town of Chatham has a financial interest in the bidder's bid or executed Contract, or in the expected profit to arise therefrom, unless there has been compliance with the provisions of MGL C 43, Section 27 (Interest in Public Contracts by Public Employees) and of provisions of MGL C 268A, Section 20 (Conflict of Interest Law).

7. Indemnification Agreement:

The contracted Bidder 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

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without limitation 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 contracted Bidder, or any of its agents or employees.

8. Taxes Paid:

Pursuant to Massachusetts General Laws, Chapter 62C, Section 49A, the undersigned certifies under the penalties of perjury that, to the best of my knowledge and belief, all Massachusetts State Tax returns and all Massachusetts State Taxes required under law have been paid, and I have complied with the reporting of employees and contractors, and withholding and remitting of child support.

9. Right to Know Law:

Bidder agrees to submit a Material Safety Data Sheet (MSDS) for each toxic or hazardous substance or mixture containing such substance, pursuant to MGL Chapter 111F, Sections 8, 9, 10 and the regulations contained in 454 CMR 21.06 when deliveries are made; and agrees to deliver all containers properly labeled pursuant to MGL Chapter 111F, Section 7 and 454 CMR 21.05. Failure to submit an MSDS and/or label on each container will place the vendor in non-compliance with the Purchase Order and/or Contract. Failure to furnish MSDS and/or labels on each container may result in civil or criminal penalties. All vendors furnishing substances or mixtures subject to MGL Chapter 111F or 454 CMR are cautioned to obtain and read the Law and Rules and Regulations. Failure to comply with these requirements could result in cancellation of Contract.

10. Foreign Corporation:

In Accordance with Massachusetts General Laws Chapter 30, Section 39L, any foreign contractor or subcontractor is required to provide a certificate from the Secretary of State stating that such corporation has complied with Massachusetts General Laws Chapter 181, Section 3 and 5, including the date of compliance. Further, bidder's attention is called to Massachusetts General Laws Chapter 268A, in connection with which the bidder is requested to submit the information requested in the signature section of this document.

11. Compliance:

The undersigned is in compliance with all of the provisions, and shall remain in full compliance with the provisions for the life of any Contract resulting from this solicitation. Bidder is qualified to perform any such Contract and possesses, or shall obtain, all requisite licenses and/or permits to complete performance; shall maintain all unemployment, workers' compensation, and personal liability insurance policies sufficient to cover its performance under any such Contract; and shall comply with relevant prevailing wage rates and employment laws. To the best of its knowledge and belief has paid all local taxes, tax titles, utilities, motor vehicle excise taxes, water and wastewater bills in Massachusetts as required by Law.

12. Affirmative Action Plan:

In witness whereof, the bidder certifies under the pains and penalties of perjury, that as an employer, it is committed to non-discrimination in employment and if selected to execute contracts with the Commonwealth of Massachusetts and/or the Town of Chatham shall also be committed to procure commodities, services and supplies from certified minority and women-owned business enterprises, businesses owned by individuals with disabilities and businesses owned and controlled by socially or economically disadvantaged individuals, both in the performance of contracts with the Commonwealth of Massachusetts and/or the Town of Chatham and in the performance

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of its business generally, as certified by the execution of this certification by an authorized signatory of the bidder as of the last date indicated below.

1.02 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: _____

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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: _____

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A.M. Best Rating: _____

1.03 RELEVANT EXPERIENCE

- A. List Bidder's comparable projects completed by Bidder in the last three 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:

1.04 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.

2015: _____
2016: _____
2017: _____

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

1.05 CONTRACTOR EXPLANATION OR NOTES ON ANY OF THE ABOVE:

1.06 LIST OF ALL EQUIPMENT TO BE USED ON THIS PROJECT (include year, type, size and condition):

1.07 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 will be requested upon the award of the Contract).

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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.

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CERTIFICATE OF VOTE OF AUTHORIZATION

I, Clerk of _____
(Name of Corporation)

the principal office of which is located at:

(Address of Principal Office)

do hereby certify that a duly authorized meeting of the Board of Directors of the above-named corporation held on: _____, at which all Directors were
(Date)

present or waived notice, it was VOTED that:

(Name)

_____ of this corporation be and hereby is authorized to
(Office)

execute contracts, bonds, and other instruments in the name and behalf of said corporation and affix its corporate seal thereto, and such execution of any contract or other instrument or obligation in this corporation's name on its behalf by the above-named officer shall be valid and binding on this corporation.

I hereby certify that I am the Clerk of this corporation and that the above-named officer was duly elected to the above-stated office and that the above-stated VOTE has not been amended or rescinded and remains in full force and effect as of the date of this contract executed with the Town of Chatham.

A true copy,

Attest: _____
, Clerk

(Corporate Seal)

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NOTICE OF AWARD

Dated: _____

TO: _____

ADDRESS: _____

RE:

**TOWN OF CHATHAM, MASSACHUSETTS
CHATHAM FISH PIER
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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

AGREEMENT

Town of Chatham (the "Owner") and **Sciaba Construction Corporation**, 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, and tools to perform, within **one hundred and forty-two (142)** calendar days after the NOTICE TO PROCEED (the "Contract Completion Date"), which NOTICE is anticipated to be given no later than **January 3, 2019** for the following work:

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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 construction activities must be achieved no later than **May 25, 2019**.

2. CONTRACT AMOUNT. Owner shall pay to Contractor, as full consideration for the faithful performance by Contractor of the aforementioned work, the amount of **One Million, Four Hundred and Seventy Eight Thousand, and Four Hundred Dollars (\$1,478,400.00)** and includes the Base Bid (\$1,072,200) plus Alternate #1 (\$406,000) computed in accordance with Contractor's accepted Bid dated December 3, 2018, which accepted Bid is incorporated herein by reference thereto as if herein fully set forth.
3. EARLY COMPLETION BONUS. Time is of the essence with respect to completion of the Project. If final completion of all Project Work is achieved prior to the Contract Completion Date set forth in Paragraph 1, as such date may be amended hereunder, and certified as complete by the Project Engineer, the Owner shall pay the Contractor at the time of Final Payment an early completion bonus in the amount of \$500 per day for each day subsequent to final completion up to, and including, said Contract Completion Date. In no event shall the early completion bonus exceed \$5,000.
4. 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.
5. 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.

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-

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- 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 for complete and accepted performance of the Work, subject to additions and deductions by Change Orders. The Contractor agrees to provide with each payment application (invoice), lien waivers sufficient to discharge any liability from the Owner to Contractor. Partial payments shall cover work completed through the 25th calendar day of each month for contracts where the number of working days exceeds twenty (20). No partial payments will be made for contracts having a time limit of twenty (20) days or less, unless completion has been significantly delayed by causes which are clearly not the fault of the Contractor. When partial 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 a retention which shall be 10% of the value of the work accomplished. No partial payments will be made for materials stored on the job but not yet installed, unless otherwise provided in the Contract Documents. Each request for 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 qualities 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 thirty (30) 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.

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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. Subject to all authorized modifications, It is hereby agreed by the parties to the Agreement that in case all work called for under the Agreement is not finished or completed on or before the time set forth in this Agreement, damage will be sustained by Owner, and that it is and will be impracticable and extremely difficult to ascertain and determine the actual damage which the Owner will sustain in event of and by reason of such delay; Liquidated damages have been read, negotiated and agreed to by both parties as set forth in the project specifications. Time is of the essence in all respects on this Contract. 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 shall be cumulative and may, at Owner' option, be 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. The liquidated damages shall cease once the Contractor has fully and completely 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 four hundred and eighty hours (480) hours 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

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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.

As security for the faithful performance by the Contractor for maintenance for the period herein required, the Contractor shall, upon acceptance of the work performed under the Contract, in addition to the Performance and Material and Labor Bonds required, 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
--------------------	----------------

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Workers' Compensation	Statutory minimum and endorsement for United States Longshoremen's & Harbor Workers Act, the Jones Act Coverages
Employer's Liability	\$1,000,000.00 per accident for bodily injury or disease.
Commercial General Liability	\$3,000,000.00 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, it's 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 insured's; 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

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- 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 Counsel's office.
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 Counsel's office.
 19. **TIME DELAYS.** 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 performance of work.](#) 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 act, or omission to act, or anyone acting on the Owner' behalf; and Contractor agrees that any claim for delays by the Owner shall be fully compensated for by an extension of time to complete performance of the Contract Work.
 20. **PAYMENT OF MATERIALMAN AND LABORERS.** 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' 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.
 21. **FINAL PAYMENT.** Upon completion of all the Work included under the Contract, the Contractor shall submit its final invoice. The Owner will, at the expiration of thirty (30) days after delivery of the approved payment application and acceptance, pay, and hereby binds itself to pay the Contractor for accepted work, except such sum or sums of money as may have been already paid, and as may be lawfully retained under any of the provisions of the Agreement herein set forth. Prior to the final payment, Contractor will deliver to the Owner waivers of lien from all those who supplied labor, material, or services in completion of the Contract, together with satisfactory proof of full payment to such suppliers.
 22. **PAYMENTS AND COMPLETION.** Any payment not made when duly due and owing to the Contractor shall bear interest at the rate of seven percent (7%) per annum from the date on which said amount is found to be due and payable until the date, which it is paid. Payments may be withheld on account of (1) Work defects not remedied, (2) claims filed, (3) failure of the Contractor to make payments properly to sub-Contractor's or for labor, materials or equipment, (4) damage of the Owner' property or neighboring property, or (5)

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failure to carry out the Work in accordance with this Agreement or any other breach of this Agreement.

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,

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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 CLE Engineering, Inc. as Construction Manager, Project Engineer and Project Consultant. Contractor agrees to fully cooperate with the Licensed Site Professional (LSP), CLE Engineering, Inc. 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 provided for in the Agreement;
 - b. Contractor's failure to perform the Work described in the Agreement 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; and
 - g. Contractor's failure to comply with any of the Agreement terms as set forth in the 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 Agreement without further notice. In such event, the Owner shall be entitled to contract for the completion of the Work to be performed under the Agreement 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.

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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 subparagraph 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

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- G. Agreement
- H. Faithful Performance and Payment Bonds
- I. General and Special Conditions
- J. Measurement and Payment
- K. Submittals
- L. Temporary Facilities
- M. Environmental Protection
- N. General Safety Requirements
- O. Selective Demolition
- P. Regulatory Permits:
 - 1. Not Applicable
- Q. Attachment A: Prevailing Wage Rates

- 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

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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 _____, 20_____.

TOWN OF CHATHAM

ATTEST:

BY: _____
(Name) (Title)

THE CONTRACTOR

ATTEST:

BY: _____
(Name) (Title)

Sciaba Construction Corporation

***END OF SECTION*

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SECTION 02010

FAITHFUL PERFORMANCE BOND

KNOW ALL MEN 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:

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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, 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 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.

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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 _____, 20_____, 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:

Address

Surety

ATTEST:

Witness to Surety

Attorney-in-Fact

(Seal)

If **Contractor** is partnership, all partners must execute **BOND**.

END OF SECTION

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SECTION 00202

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 100% 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:

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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, 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, 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 _____, 20____ 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.

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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 01000

GENERAL AND SPECIAL CONDITIONS

PART 1: GENERAL

1.01 SCOPE OF WORK

- A.** The work to be done under this contract consists of furnishing all labor, tools, materials and equipment required to construct the entire project, along with any and all necessary restoration. All work shall be performed as shown on the drawings, specified herein and/or is evidently required to complete the work and the specifications set forth herein. Performance Bond shall equal 100% of contract price. Payment Bond shall equal 100% of contract price.
- B.** The Owner may select a Contractor based upon bids received. The Owner will require an executed contract, which it will prepare, bonds and insurance certificates as set forth herein prior to any activities being commenced by the selected Contractor.
- C.** Owner reserves the right to reject any and all Bids if it is deemed to be in his/her best interest.
- D.** The bid and schedule of value(s) as proposed by the Contractor in its offer shall be firm and include any and all labor, materials, equipment, supplies, overhead and profit to perform and deliver a complete project as set forth herein and on the project plans.
- E.** The Contractor must include any and all materials, labor, equipment or other items in each bid item. If an item includes ancillary work or apparatuses, then the item must be priced by the Contractor to include such other work.
- F.** Measurements and calculations shall be reviewed for accuracy by the Project Engineer and prepared for submission to the Owner. The Contractor shall coordinate any and all construction activities to allow the Project Engineer to verify quantities such that verification activities are minimal and the processing of payment application is effectuated in a timely and organized manner.
- G.** Any requests for information (RFI's) shall be submitted to the Project Engineer in writing. The Project Engineer shall endeavor to have all responses from Contractor's request for information within seven (7) working days, thereby the Contractor is to plan construction activities accordingly.
- H.** The Contractor is an independent entity and shall act as an independent Contractor and not as an agent or employee of Owner or Engineer. Nothing herein creates a relationship of partnership, joint venture, or principal and agent between the parties. Contractor shall have complete professional, managerial, technical and supervisory responsibility for the work provided hereunder including the direction and control of all personnel providing goods, equipment, materials and/or services pursuant to or in furtherance of the work whether directly or indirectly employed or working for the Owner or the Engineer. The Owner and the Engineer shall retain the right to stop and start the work, adjust the schedule of work, coordinate the Contractor's work with other work and receive reports, however, such rights shall not be construed as controlling the details of the work.

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1.02 PROJECT SITE

- A. The work to be performed is at Chatham Fish Pier – Observation Deck, located at 45 Barcliff Avenue Ext, Chatham, MA. The Project exact location is denoted as shown on the plans/drawings associated with this project.

1.03 DRAWINGS AND SPECIFICATIONS

- A. All work shall conform and be in accordance with these specifications and/or the accompanying drawings entitled:

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Project plans are dated October 22, 2018 consisting of 19 Sheets prepared by Foth-CLE Engineering Group, 15 Creek Road, Marion, MA 02738, 2 Sheets Pare Cooperation, 8 Blackstone Valley Place, Lincoln, RI 02865, 1 Sheet prepared by Encore Fire Protection, 70 Bacon Street, Pawtucket, RI 02861 and 7 Sheets prepared by Web Engineering Associates, Inc. , 11 Summer Street, Scituate, MA 02066 and on file with the Owner and the Project Engineer, Foth-CLE Engineering Group, 15 Creek Road, Marion, MA 02738 and any changes, drawings and direction(s) that may from time to time be furnished by the Project Engineer.

1.04 WORK SEQUENCE

- A. General: There are certain essential criteria relative to the preparation of a work sequence and time schedule that the Contractor will be required to implement and follow during the performance of all work. The Contractor shall begin work locating the project limits and mobilization of all necessary equipment on to the project site.
- B. The Contractor's work methods shall be planned and carried out such that there is no damage to any existing structures. Any and all existing structures are to be carefully and adequately protected, such that they are not in any way damaged or compromised. Any damage to adjacent structures or any property which is in any way damaged as a result of (directly or consequently) to any activities undertaken by the Contractor shall remain at all times at the Contractor's expense and peril
- C. Contractor's schedule for progress and completion of work will be reviewed and approved by Project Engineer. The Contractor's work methods shall be planned and carried out such that there is no damage to any existing structures. Any and all existing structures are to be carefully and adequately protected, such that they are not in any way damaged or compromised. Any damage to adjacent structures or any property which is in any way damaged as a result of (directly or consequently) to any activities undertaken by the Contractor shall remain at all times at the Contractor's expense and peril.
- D. The Contractor shall be required to commence work under this contract within fourteen (14) days after the date of receipt by him/her of Notice to Proceed. All work shall be completed by **May 10, 2019**.
- E. The Order of Work shall be developed by the Contractor and submitted in his/her construction schedule. The Contractor will be responsible for coordinating construction activities with the Owner's facility schedules. As this is an active fish packing operation,

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the Contractor may be required to move equipment to allow building lessors access to site for vessels for fish packing operations. No additional payment will be made for these moves.

- F.** Hours of Operation: Allowable hours of operation shall be coordinated with the Town of Chatham and local and Town Regulations.
- G.** The Contractor is advised that completion of this project is essential to the Owner' facility operations. Failure to complete this project in the time frame stated herein will have a follow-on delay for facility operations. Therefore, an assessment in the form of liquidated damages in the amount of \$500 (five hundred dollars) per calendar day will be assessed.

It is understood that since time is of the essence, the Contractor will be responsible for liquidated damages to the Owner. Moreover, the amount of damage and loss to the Owner which will result from the Contractor's failure to start and complete performance within the time specified in this contract will be difficult or impractical to ascertain, if the work has not been started and completed in accordance with the provisions for the contract by the date specified, the Contractor shall pay to the Owner the sum agreed upon and designated for each and every calendar day that he is in default in starting and/or completing the work. Such moneys shall be paid as damages, not as a penalty, to liquidate losses and expenses of the Owner.

The Owner will recover such liquidated damages by deducting the amount thereof, out of any moneys due or that might become due the Contractor, and if such moneys are insufficient to cover the liquidated damages, the Contractor or its surety shall pay the amount due to the Owner.

The assessment of liquidated damages or a portion thereof may be waived by the Owner if the Contractor submits evidence satisfactory to the Owner or its representative, that the work has not been completed by the time herein appointed because of delays caused solely by conditions beyond the control of the Contractor and that the Owner has not suffered any damages as a result of said delay.

The Contractor shall be fully responsible and shall indemnify to the fullest extent of the law the Owner for any fines, levy penalty charges incurred in prosecuting any portion of the work set forth herein.

1.05 CONTRACTOR'S LIABILITY INSURANCE

- A.** The Contractor shall purchase and maintain such insurance as will protect him from the Contractor's operations under the Contract, whether such operations be by himself or herself or by any Sub-Contractor or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.
- B.** Insurance similar to that required of the Contractor shall be provided by or on behalf of all Sub-Contractors to cover their operations performed under the Contract Documents. The Contractor shall be held responsible for compliance with and enforcement of the insurance requirements and for any modifications of these insurance requirements as they apply to Sub-Contractors. The Contractor shall not permit any Sub-Contractor commence work until such Sub-Contractor has furnished evidence that insurance has been procured and certificates of insurance have been obtained by the Contractor providing that, in the event of restrictions in or cancellation of Sub-Contractor policies, thirty (30) days advance written notice be given to Contractor by U.S. first class mail.

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- C.** The Contractor shall purchase and maintain during the life of this Contract:
1. Insurance sufficient to discharge its obligations under all applicable workers' or workmen's compensation laws of the territories and States of the United States.
 2. Employer's liability insurance with minimum limit per accident or disease of **\$1,000,000**.
 3. Statutory disability and other employee benefit insurance.
- D.** The Contractor shall purchase and maintain during the term of this Contract, at a minimum, comprehensive liability insurance including a comprehensive broad form endorsement and covering the full scope of this contract with limits not less than \$3,000,000 per occurrence and \$3,000,000 aggregate or personal or bodily injuries, and \$3,000,000 per occurrence and aggregate for property damage. A combined single limit per occurrence of \$3,000,000 is acceptable. All policies issued shall include permission for partial or total occupancy of the premises by the Owner within the scope of this Contract. Such insurance shall include at least the following:
1. Comprehensive general liability insurance, including all products, premises-operations, and completed operations liability, independent Contractors, additional interests of employees, incidental medical malpractice liability, including notice of occurrence and knowledge of occurrence endorsements satisfactory to the Owner.
 2. Comprehensive business automobile liability insurance covering use of any motor vehicle to be used in conjunction with this contract with a minimum coverage of \$1,000,000. A compulsory Massachusetts automobile policy is acceptable for vehicles registered in Massachusetts only.
 3. Coverage for loading and unloading of any motor vehicle must be covered by endorsement to the comprehensive (or compulsory) automobile liability policy.
 4. Blanket contractual liability insurance covering all liabilities assumed under the Contract Documents, including, but not limited to, Contractor's obligations under Article 5 of the General Conditions.
 5. Personal injury coverage endorsement (coverage's A, B, and C), with no exclusions for liability assumed contractually or injury sustained by employees of Contractor.
 6. Excess Liability coverage in an amount which is to be no less \$3,000,000.
 7. Broad form coverage for damage to property of the Owner, as well as other third parties, while in the care, custody, or control of Contractor.
 8. Insurance sufficient to discharge its obligations under all applicable workers' or workmen's compensation laws of the territories and states of the United States., the United States Longshoremen's & Harbor Workers Act, the Jones Act and Admiralty or Maritime Law. If any operations performed within the scope of this Contract by Contractor or its Sub-Contractors require the use of any aircraft or watercraft (owned or un-owned), Contractor shall maintain liability insurance satisfactory to, and naming as an additional insured, the Owner.
 9. Insurance similar to that required of the Contractor shall be provided by or on behalf of all Sub-Contractors to cover their operations performed under the

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Contract Documents. The Contractor shall be held responsible for compliance with and enforcement of the insurance requirements and for any modifications of these insurance requirements as they apply to Sub-Contractors. The Contractor shall not permit any Sub-Contractor commence work until such time as the Sub-Contractor has furnished evidence that insurance has been procured and certificates of insurance have been obtained by the Contractor, forwarded to the Owner and provide that, in the event of restrictions in or cancellation of Sub-Contractor policies, thirty (30) days advance written notice be given to Contractor and Owner by registered mail.

10. Insurance certificates acceptable to the Owner evidencing the above coverages are to be furnished to the Owner prior to execution of any Contract. Any and all such certificates and all insurance policies required by these Insurance Requirements shall contain provisions requiring at least 30 (thirty) days prior written notice to the Owner of any cancellations of, or material change in the policies. Certificates shall indicate effective dates of expiration of policies and shall refer to the corresponding subparagraphs listed above. An additional certificate evidencing continuation of all insurance coverages is required to remain in force after final payment, and neither final payment nor any remaining retainage under this contract shall be due until such certificate has been submitted to the Owner.
11. All insurance policies provided pursuant to the foregoing provisions of these Insurance Requirements shall be in the form and written by companies satisfactory to the Owner, and the Owner shall be named as an additional insured. All such policies shall contain provisions or endorsements necessary to assure coverage of claims by one insured against another. All required insurance policies are to be endorsed to state that the Contractor's policies shall be primary to all other insurance available to the Owner for liability arising out or resulting from the Contractor's operations under the Contract, whether such operations be by Contractor or by a Sub-Contractor or by anyone directly to indirectly employed by any of them or by anyone for whose acts any of them may be liable.
12. The purchase of insurance to satisfy the above requirements, or the furnishing of certificates evidencing same, shall not be a satisfaction of Contractor's liability under this Contract or in any way modify Contractor's indemnification of the Owner.
13. Without limitation of any other provisions of the Contract Documents, if (a) the Contractor's agreement herein to insure or to name as an insured the Owner with respect to contractual liability assumed by the Contractor under the terms of the Contract Documents or otherwise, or (b) any contract of insurance between the Contractor or any Sub-Contractor and its or their insurance company, shall to the extent be or be determined to be void and unenforceable, it is the intent of the Owner that such circumstances shall not otherwise affect the validity or enforceability or the Contractor's agreements and obligations under the Contract documents nor the validity or enforceability of such contract or insurance, each of which shall be enforced to the fullest extent permitted by law. Insurance sufficient to discharge its obligations under all applicable workers' or workmen's compensation laws of the territories and states of the United States, the United States Longshoremen's & Harbor Workers Act, the Jones Act and Admiralty or Maritime Law.

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14. Without limitation of any other provisions of the Contract Documents, if (a) the Contractor's agreement herein to insure or to name as an insured the Owner with respect to contractual liability assumed by the Contractor under the terms of the Contract Documents or otherwise, or (b) any contract of insurance between the Contractor or any Sub-Contractor and its or their insurance company, shall to the extent be or be determined to be void and unenforceable, it is the intention of the parties that such circumstances shall not otherwise affect the validity or enforceability of the Contractor's agreements and obligations under the Contract documents nor the validity or enforceability of such contract or insurance, each of which shall be enforced to the fullest extent permitted by law.
15. The Contractor shall purchase and maintain during the term of this contract property insurance in the amount of the contract value plus any subsequent revisions of the contract. Such insurance shall name the Owner as an additional insured and shall insure against all perils normally covered in an "all risk" form, including flood and earthquake. This insurance shall include coverage of owned and rented tools, equipment, temporary facilities and other items, whether or not the capital value of which has been included in the contract amount, and shall also include coverage for portions of the work stored off the site or in transit which are included in any application for payment. Deductibles in the Contractor's coverage shall be the responsibility of the Contractor. Certificates or binders of insurance indicating that the Contractor has obtained the aforesaid property insurance coverage shall be filed with the Owner prior to execution of the Contract. If binders are filed, certificates shall then be filed for the coverage prior to the expiration date of the binder. The policy shall be written with an insurance company with a Best's insurance rating classification of "A" or better. Such certificates and binders shall be in form and substance reasonably acceptable to the Owner and shall contain a provision that such property insurance coverage shall not be materially changed or canceled until at least 30 (thirty) days prior to written notice has been given to the Owner.
16. In the event that the Contractor or the Contractor's insurance company fails to provide the Owner with documentation sufficient in the Owner's sole discretion to remedy all damage and loss to any property referred to in the above section.

1.06 SURETY BONDS

- A. The Contractor shall obtain a payment and performance bond for one hundred percent of the bid value naming the Owner and project and present the bond to the Owner prior to the commencement of any work on the project. The surety shall be "AAA" rated admitted in the Commonwealth of Massachusetts with duly granted authority to produce bonds and shall be approved by the Project Engineer as an acceptable security for the project. Any modifications, additions or deletions to the Contractor's bid during the contract performance shall be the Contractor's expressed responsibility to notify the surety where the bond(s) are procured. A failure to notify the surety of a material addition, deletion or modification to the project shall be at the Contractor's peril and shall be deemed as accepted by the Contractor's surety as ratified. The Contractor hereby warrants to the Owner that the Contractor's surety has had ample opportunity to review the plans, specifications and agreements and by issuing a payment and performance bond ratifies and agrees to be bound to the conditions and terms set forth herein and the Contractor's surety agrees to the same.

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- B.** The Contractor and Owner agree that any and all costs for procuring, securing or otherwise obtaining any of the aforementioned insurance and/or bonds is the expressed responsibility of the Contractor and has been included in the Contractor's bid to the Owner.

1.07 PRE-BID MEETING

- A.** A non-mandatory, but highly recommended, site walk through will be performed by the Engineer on **November 7, 2018, at 10:00 A.M.** at the project site, which will overview and acquaint the Contractor with the work set forth hereunder. The Contractor is to fully apprise himself or herself of the site conditions, access to the project site and price their bid in order to take any and all constraints into account such that the Contractor is prepared to provide whatever means and at whatever costs necessary to ensure that measures are in place to ensure that the project is executed according to the plans and specification set forth herein. Questions regarding the site or to coordinate any access that the Contractor wants to undertake prior to the submission of a bid may be addressed to the Project Engineer. As such the Contractor shall examine the existing conditions and thoroughly acquaint himself or herself with the obstacles and advantages of performing the work. The Contractor shall also study the drawings and compare the same with the information gathered during his examination of the site, as no extra compensation will be authorized for work resulting from the Contractor's unfamiliarity with the site and/or the drawings, or the conditions peculiar to this job. [If the Contractor chooses not to attend this meeting, he shall waive the right to raise their non-attendance as a defense or claim for of any cause whatsoever for any information provided at this meeting.](#)

1.08 SUBMITTALS

- A.** Shop drawings and brochures shall be submitted in accordance with the requirements of the General Conditions. Submittals are required for the items whether named or not. Additional submittals may be required by the Engineer which the Contractor will comply with at no additional cost(s) to be charged to the Owner(s).

1.09 PROJECT SCHEDULE

- A.** A progress schedule will be required for this project and is to be forwarded in writing to the Project Engineer five (5) days after the Notice to Proceed prior to the start of any work. No work may begin under the contract until the progress schedule, has been approved by the Owner and the Project Engineer. Failure to submit a project schedule shall be adequate grounds for the Owner to suspend any and all Contractor operations at no cost or liability to the Owner whatsoever.
- B.** Time required for review and approval of these items shall not constitute a basis for time extension. Full compensation for supplying the "Progress Schedule" and all required updates shall be considered as included in the contract prices paid for the various bid items and no separate payment will be made.

1.10 DIFFERING SITE CONDITIONS

- A.** The Contractor shall promptly, and before such conditions are disturbed, notify the Project Engineer in writing of: subsurface or latent physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in this contract. The Project Engineer shall promptly investigate the conditions, and if he finds that such conditions do materially so differ and cause an increase or decrease in the contractor's cost of, or the time required for,

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performance of any part of the work under this contract, whether or not changed as a result of such conditions, an equitable adjustment shall be made and the contract modified in writing accordingly. The decision of the Project Engineer is final and binding on the parties, but subject to the claim resolution procedures set forth in Section 01100 (Measurement and Payment) of the Contract Documents provided that the notice of claim as required by said Section 01100 is made within 30 days after receiving the final decision of the Project Engineer.

- B.** No claim of the Contractor under this clause shall be allowed unless the Contractor has given the notice required in A. above; provided, however, the time prescribed therefore may be extended by the Owner.
- C.** No claim by the Contractor for an equitable adjustment hereunder shall be allowed if asserted after final payment under this contract.

1.11 CLEANING AND EQUIPMENT

- A.** During the progress of the work, the site shall be cleaned daily of all rubbish, packing materials or other debris. No debris capable of being windblown or washed away by rainfall shall be left unsecured on the site overnight.
- B.** All roadways that have been used as access routes shall be swept on a regular basis, and kept in reasonably clean condition. "Reasonably clean" shall be defined as a condition acceptable to the local Department of Public Safety, and/or Department of Public Works having jurisdiction over the specific roadways. All equipment shall be located as authorized by the Project Engineer to provide that at the end of work day or shift the site or roadways are left in a passable condition and all equipment is safe and secure.

1.12 CONTRACT DOCUMENTS IN THE FIELD

- A.** The Contractor must keep a copy of the contract documents including but not limited to plans, specifications, schedule, materials list, daily reports, materials safety data sheets, and safety reports at the site of the work at all times while work is being performed and said copy is to be available to those in charge of the work, including Owner and Project Engineer.

1.13 CONSTRUCTION SEQUENCE

- A.** For the protection of life and property any and all construction operations shall be phased such that the site is safe and secure. The Contractor shall insure that no-equipment or materials are left unattended.
- B.** The Contractor is responsible for the requisition and logistics of onsite local law enforcement detail where required by state or local law. Contractor's responsibilities include all contract and Sub-Contractor sites associated with the project and are inclusive of any and all pricing set forth herein.

1.14 UTILITIES

- A.** Prior to commencing work, the Contractor is responsible for obtaining the location, size and depth of all existing underground or underwater utilities and structures. Dig Safe Systems, Inc. (DIG SAFE) may assist in this task, but should not be considered comprehensive.

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- B.** The Contractor shall assume that there are existing utility lines in the vicinity of the work, whether they appear on the drawings or not and should be independently verified by the Contractor using commercially reasonable methods that are normal and customary in the business of marine construction work.
- C.** Existing utilities may not be known by the Owner or Project Engineer. The Contractor assumes any and all risks associated with the damage, disruption or repair of any utilities that are disturbed by any action(s) of the Contractor in the prosecution of the work set forth herein. As such, the Contractor will assure the Owner that any and all repairs to utilities that are damages by Contractor's operations will be made expeditiously, in a professional, workman like manner and must be satisfactory to both the Owner and Project Engineer at no additional cost to the Owner.
- D.** It is not the intent of the plans to show the exact location of existing or relocated utilities, and the Owner assume no responsibility therefore. Whenever any such utilities are indicated thereon, the Contractor shall be responsible for verifying their actual location and depth in the field. The Contractor shall notify DIG SAFE (1-800-272-4480) prior to excavation.
- E.** The Contractor has reviewed the project site and areas surrounding the project and shall take full responsibility for existing utilities or apparatuses which may in any way impede, hamper or delay the Contractors performance of the work set forth herein. The Owner(s) shall bear nor responsibility for the removal of or temporary relocation of any existing utilities or apparatuses.
- F.** Where excavations are performed in the vicinity of underground utility mains and/or services the Contractor shall, as necessary, perform initial exploratory excavations to determine their exact depth and location. Extreme care shall be exercised to avoid damage, and it will be the Contractor's responsibility to have repairs made to existing facilities at his/her expense in the event of damage.
- G.** Construction work for each site shall be coordinated with any work by other Contractors and utility entities to avoid conflicts. It is anticipated that any necessary work by others will be identified and performed prior to operations by the Contractor.
- H.** Schedule constraints will be discussed at the pre-construction conference and the Contractor shall consider such adjustments in contract scheduling as necessary.
- I.** Full compensation for complying with the above provisions shall be considered as included in the contract price for the various bid items and no separate payment will be made.

1.15 BARRICADES, GUARD LIGHTS AND TRAFFIC

- A.** Barricades, signs, fences, and similar safety and warning devices shall be provided as required in order to insure the protection of the public at large as well as employees of the Contractor and all Sub-Contractor employees.
- B.** Barricades, signs, fences, and similar safety and warning devices shall be provided as required in order to insure the protection of the public as well as employees.
- C.** All signs and other warning devices (including construction and warning signs placed beyond the limits of work), shall be provided by the Contractor, and shall remain his/her property after the completion of the contract. All flaggers shall be provided by the Contractor at his/her expense.

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- D. Barricades, Guard Lights and Traffic Control shall include furnishing all labor (including flaggers and detours, when necessary), materials and equipment necessary to provide for the convenience and safety of the public and to facilitate the performance of the contract work as shown on the plans and specified herein. Full compensation for complying with the above provisions shall be considered as included in the contract price for the various bid items and no separate payment will be made.

1.16 PROTECTION OF WORK AND PROPERTY

- A. The Contractor shall be responsible for the preservation of all public and private property or their prosecution of the work and shall carefully protect the property from disturbance or damage.
- B. The Contractor shall be responsible for all damage or injury to public or private property resulting from any act, omission, neglect, or misconduct in, or either the Contractor's or its Subcontractors' manner or method of executing the work, or in consequence of the non-execution thereof. Furthermore, the Contractor shall be responsible for all such damage due to defective materials or acts. The Contractor shall restore, at its own expense such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, rebuilding, or otherwise restoring as directed by the Project Engineer.
- C. All work is to be carefully protected so that no injury will come to it from water, frost, accident or other cause, and any injury, which will come to the work, is to be repaired by the Contractor at his expense. The Contractor shall protect the Owner's property, equipment and fixtures from injury, or loss. The Contractor shall protect the Owner's property from injury or loss arising in connection with this contract and he shall make good any damage, injury, or loss. The Contractor shall also adequately protect adjacent property as provided by statute and the contract documents.
- D. The Contractor shall take all necessary precautions for the safety of employees on the work. The Contractor shall comply with all applicable provisions of federal, state and municipal safety laws and building codes to prevent accidents or injury to persons on, about, or adjacent to the premises where the work is being performed. The Contractor shall erect, properly maintain, at all times, as required by the conditions and progress of the work, all necessary fences, barriers, warning signs and lights that may be necessary to adequately protect the general public.
- E. The Contractor shall provide temporary containment for all fuel tanks, pumps and appurtenances as a precaution against accidental spills or leaks. The Contractor shall maintain no greater than a two (2) day supply of fuel to any piece of equipment located on the site. The containment structures shall be capable of preventing releases of any fuel or other hazardous liquids to the environment, shall have volumes greater than that of the fuel tanks to be contained and shall be covered if necessary to eliminate the intrusion of rain water. In accordance with State or local laws and permit requirements, the Contractor shall furnish and maintain all other necessary containment materials to insure zero release of hazardous materials to the environment.

1.17 RESTORATION

- A. The Contractor shall be solely responsible for performing any necessary acts and providing any materials required to restore areas disturbed during construction to their pre-construction condition. During the Pre-Bid time period prior to submitting a Bid, the

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Contractor shall note the condition of all areas within the project and include costs in their Bid for full and complete restoration.

1.18 PERMITS, FEES AND BONDS

- A. The Contractor shall obtain and comply with all required permits, pay all fees and provide all bonds necessary to complete the work as specified. The Contractor shall be advised that permit fees required by the City shall be waived for this project. The Contractor shall be solely responsible for performing any necessary acts and providing any materials required in order to comply with any and all terms and conditions set forth in any permits and licenses.

1.19 GENERAL CLAUSES AND CONDITIONS

- A. Suspension of work: The Owner may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Project Engineer determines appropriate for the convenience of the Owner.
- B. If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted by an act of the Owner in the administration of this project, or by the Owner's failure to act within the time specified in this contract (or within a reasonable time if not specified), an adjustment shall be made for any increase in the cost of performance of this project (excluding profit) necessarily caused by the unreasonable suspension, delay, or interruption, and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor.
- C. A submittal shall not be allowed for any costs incurred more than twenty (20) days before the Contractor shall have notified the Owner in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension or work notice), and unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

1.20 SUSPENSION OF WORK

- A. The Owners may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Project Engineer determines appropriate for the convenience of the Owner.
- B. If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted by an act of the Owner in the administration of this project, or by the Owners' failure to act within the time specified in this contract (or within a commercially reasonable time if not specified), an adjustment shall be made for any increase in the cost of performance of this project (excluding profit) necessarily caused by the unreasonable suspension, delay, or interruption, and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the partial fault or partial negligence of the Contractor.
- C. The Engineer reserves the right to suspend all or any portion of the work for any reasons during the execution of the work. If the work is suspended for a period of time and the

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Contractor believes the period is unreasonable and additional compensation and/or contract time is due, the Contractor shall submit to the Engineer in writing a request for adjustment within seven (7) calendar days of receipt of the notice to resume work. The request shall include the justification for adjustment.

- D.** Upon receipt, the Engineer will consider the Contractor's request. If the Engineer agrees that the cost and/or time required for the performance of the contract has increased as a result of such suspension and was caused by conditions beyond the control of and not the fault of the Contractor, suppliers, subcontractors, the Engineer will make an equitable adjustment (excluding profit) and modify the contract in writing accordingly. No contract adjustment will be allowed unless the Contractor has submitted a request for adjustment within the time prescribed.
- E.** The Owner may terminate for their convenience, performance of work under in whole or, from time to time, in part if the Owner determines that a termination is in the Owners' interest. The Owner shall terminate by delivering to the Contractor a Notice of Termination specifying the extent of termination and the effective date. After receipt of a Notice of Termination, and except as directed by the Owner or Project Engineer, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due under this provision. Stop work as specified in the notice. Place no further subcontracts or orders (referred to as subcontracts in this clause) for materials, services, or facilities, except as necessary to complete the continued portion of the contract. Terminate all subcontracts to the extent they relate to the work terminated. With approval or ratification to the extent required by the Project Engineer, settle all outstanding liabilities and termination settlement bids arising from the termination of subcontracts; the approval or ratification will be final for purposes of this clause. The Owner shall be obligated to pay the Contractor for work in place and Contractor agrees that Owners' responsibility regarding the subject contract shall be limited only to work in place and the Contractor waives any rights or claims against the Owners for consequential damages should this project be terminated by the Owner for its Convenience.

1.21 STAND-BY AND IDLE EQUIPMENT TIME

- A.** Equipment that is in operational condition and is standing by with the Engineer's approval will be paid for at 50 percent of the appropriate hourly rate as determined by the provisions set forth by the United States Army Corp of Engineers, Construction Equipment Ownership Schedule (EP 1110-1-8) less operating costs. Payment for such "stand-by" will be limited to not more than 8 hours in a 24-hour day or 40 hours in a normal work week.
- B.** No compensation will be allowed for equipment that is inoperable due to breakdown.
- C.** No payment will be allowed for equipment that is not operating because the work has been suspended in accordance with the specifications unless the suspension is for the convenience of the Town. No payment will be allowed for equipment that is not operating because the work has been suspended by the Contractor for the Contractor's own reasons.
- D.** The hourly rate of compensation for idle equipment will be the monthly rate times a factor of 0.50 divided by 176 hours per month, regardless of the duration of the delay or stand-by
- E.** The time for which such compensation will be paid will be the actual normal working time during which such delay condition exists, but will in no case exceed 8 hours in any one day.

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- F. The days for which compensation will be paid will be the number of working days charged during the existence of such delay. No compensation will be made for days that are considered lost due to weather as determined by the Engineer.
- G. Compensation will only be made for equipment physically located at the work site that would be used to prosecute the delayed work during the existence of such delay
 - 1. Significant Changes in Scope of Work:
 - a. The Engineer reserves the right to make, at any time during the work, such increases or decreases in quantities and such alteration in the work as necessary to satisfactorily complete the project. Such increases or decreases and alterations shall not invalidate the contract nor release the Surety, and the Contractor agrees to perform the work as altered.
 - b. If the increase on any item of work for which a unit price exists in the contract does not exceed the lesser of \$100,000.00 or five percent of the total contract price, then such increase shall be regarded as covered by the unit bid price for such items as contained in the original contract.
 - c. If the decrease on any item of work for which a unit price exists in the contract does not exceed 25 percent of the contract quantity, then such decrease shall be regarded as covered by the unit bid price for such item as contained in the original contract.
 - d. If the alteration or decrease in an item of work significantly changes the scope or the character of the work, then an adjustment may be made to the unit price. The basis for the adjustment shall be agreed upon prior to the performance of the work. If a basis cannot be agreed upon, an adjustment will be made either for or against the Contractor in an amount as the Engineer may determine to be fair and equitable.
 - 2. Eliminated Items:
 - a. Should any items contained in the bid be found unnecessary for the proper completion of the work, the Engineer may, upon written order to the Contractor, eliminate such items from the contract, and such action shall in no way invalidate the Contract.
 - b. If the Contractor is notified of the decrease or elimination of an item, reimbursement will be made for the reasonable cost of material incurred, in connection with such item or portions, prior to the date of such decrease or elimination made by order of the Engineer but in no case shall such compensation exceed the contract bid price for the item.
 - c. No claim shall be made by the Contractor for any loss of anticipated profits because of any alteration or variation between the approximate quantities and the quantities of work as done.

1.22 CONTRACTOR ABANDONMENT

- A. The Contractor may not remove any mobilized equipment that is material to this project at the Fish Packing Building without the expressed written consent of the Project Engineer.

PART 2: PRODUCTS

2.01 GENERAL

- A.** A statement indicating the source of each proposed import material shall be submitted by the Contractor. The statement shall indicate that the proposed import does not include any contamination or hazardous material and the results of analytical testing. If the source of import material is questionable or if the preliminary analytical test results indicate the presence of contamination or hazardous material, the Owner may require performance of additional analytical testing at no cost to the Owner prior to approval of proposed import materials.
- B.** Any and all products, materials and workmanship shall be warranted by the Contractor for a period of not less than two (2) years from the date of completion of the project. Completion shall be deemed as acceptance by the Owner of the final payment application prepared by the Contractor.

2.02 APPROVAL OF MATERIALS

- A.** As soon as practicable but not to exceed five (5) calendar days after award of the contract and before any materials or equipment are purchased, the Contractor shall submit to the Project Engineer a complete list, in triplicate, of material and equipment to be incorporated in the work, together with the names and addresses of the manufacturer and their catalog numbers and trade names. Approval of materials will be based on manufacturer's published ratings. Materials that are incorporated into the project that have not been expressly approved by the Project Engineer will be subject to removal, replacement and or verification by the Project Engineer on behalf of the Owner and shall be solely at the Contractor's expense and peril.

2.03 SUBSTITUTIONS

- A.** If a specific means, method, technique, sequence, or procedure of construction is indicated in or required by the Contract Sections, the Contractor may furnish or utilize a substitute means, method, sequence, technique, or procedure of construction acceptable to the Owner, if the Contractor submits sufficient information to allow the Owner to determine that the substitute proposed is equivalent to that indicated or required by the Contract Sections, in quality, warranty, life-cycle costs, design cost, construction time, warranty, and efficiency considerations. Contractor may submit requests for substitution up to 35 days following Notice of Award after which time the Owner will consider substitutions in its sole discretion.
- B.** The Owner will respond in writing to the Contractor within ten (10) days indicating the time necessary to evaluate each proposed substitute. The Owner will be the sole judge of acceptability, and no substitute will be ordered, installed, or utilized without the Owner's prior written acceptance, which will be evidenced by either a change order or an approved shop drawing. The Owner may require the Contractor to furnish at the Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- C.** The Owner will record time required by the Owner and the Owner's consultants in evaluating substitutions proposed by the Contractor and in making changes in the Contract Sections occasioned thereby. Regardless of whether or not the Owner accepts a proposed substitute, the Contractor shall reimburse the Owner for the charges of the Owner and Owner's consultants for evaluating each proposed substitute.

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- D.** Cost or time impacts to other items of Contract work, which are caused by any Contractor initiated request for substitution, whether anticipated or unforeseen, shall be the responsibility of the Contractor.

2.04 TRADE NAMES

- A.** Whenever the Trade Name of a product, or the name of a Manufacturer appears in these Contract Documents or on the Plans, it shall be understood to specify the product so identified or its approved equal. The words "or equal" or "approved equal" shall mean equal in the opinion of and approved by the Project Engineer in writing. For convenience in designation, certain equipment or parts or materials may be designated under trade name or the name of a manufacturer or product and his catalogue information. The use of alternative equipment or a Part or material which is of equal quality and of the required characteristics for the purpose intended will be permitted, subject to the written approval of the Project Engineer, in accordance with the following requirements:
1. The burden of proof as to the comparative quality and suitability of alternative equipment or Parts or materials shall be upon the Contractor and he shall furnish, at his own expense, all information necessary or related thereto as required by the Project Engineer. The Project Engineer shall be the sole judge as to the comparative quality and suitability of alternative equipment or Parts or materials and the decision of the Project Engineer shall be final.
 2. The above provisions shall not be construed as permitting the use of alternative equipment or Parts or materials for equipment or Parts or materials which are not designated under a Trade Name or the name of a manufacturer or producer and his catalogue information, and for which detail specifications are set forth.

PART 3: EXECUTION

NOT USED

END OF SECTION

SECTION 01100

MEASUREMENT & PAYMENT

PART 1: GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Specification sections, apply to work of this section.

1.02 RESOLUTION OF CONSTRUCTION CLAIMS

- A. For Construction claims the Owner and Contractor expressly agree to utilize informal conferences, non-binding judicially supervised mediation, and if necessary judicial arbitration to resolve disputes on construction claims.
- B. "Claim" means a demand or assertion by one of the parties seeking, as a matter of right, adjustment, or interpretation of contract terms, payment of money, extension of times or other relied with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. Claims must be initiated by written notice. The responsibility to substantiate Claims shall rest with the party making the Claim.
- C. For any claim subject to this section, the following requirements apply:
 - 1. Claims, including those alleging an error or omission by the Owner, shall be referred initially to the Owner for decision. An initial decision by the Owner shall be required as a condition precedent to mediation, arbitration, or litigation of all claims between the Contractor and Owner arising prior to the date final payment is due, unless 15 days have passed with the Owner failing to respond within the time prescribed. The Owner will not decide disputes between the Contractor and persons or entities other than the Owner
 - 2. The claim shall be in writing and include the documents necessary to substantiate the claim. Claims must be filed on or before the date of final payment but in no event shall be filed later than 30 days after the occurrence of the event giving rise to such claim or within 30 days after the claimant first recognizes the condition giving rise to the claim, whichever is later. Nothing in this subsection is intended to extend the time limit or supersede notice requirements otherwise provided by contract for the filing of claims.
 - 3. For claims of less than \$50,000 (fifty thousand dollars)
 - a. The Owner shall respond in writing to any written claim within forty-five (45) days of receipt of the claim, or may request in writing within thirty (30) days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the Owner may have against the Contractor.
 - b. If additional information is thereafter required, it shall be requested and provided upon mutual agreement of the Owner and the Contractor.

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- c. The Owner' written response to the claim, as further documented, shall be submitted to the Contractor within fifteen (15) days after receipt of the further documentation or within a period of time no greater than that taken by the Contractor in producing the additional information or requested documentation, whichever is greater.
4. For claims of over fifty thousand dollars (\$50,000).
 - a. The Owner shall respond in writing to all written claims within sixty (60) days of receipt of the claim, or may request, in writing, within thirty (30) days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the Owner may have against the Contractor.
 - b. If additional information is thereafter required, it shall be requested and provided upon mutual agreement of the Owner and the Contractor.
 - c. The Owner' written response to the claim, as further documented, shall be submitted to the Contractor within thirty (30) days after receipt of the further documentation or within a period of time no greater than that taken by the Contractor in producing the additional information, whichever is greater.
5. The decision of the Owner is final and binding on the parties, unless the Contractor notifies the Owner, in writing, either within 15 days of receipt of the Owner's response or within 15 days of the Owner's failure to respond within the time prescribed, respectively, and demands an informal conference to meet and confer for settlement the issues in dispute. Upon a demand, the Owner shall schedule a meet and confer process, including any period of time utilized by the meet and confer process.
6. If following the meet and confer conference, the claim or any portion remains in dispute, the Contractor may file a claim. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time the Contractor submits his or her written claim pursuant to the aforementioned parameters until the time the claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.
7. This section does not apply to tort claims and nothing in this section is intended nor shall be construed to change the statutory time period for filing tort claims or actions specified by Massachusetts State Law or any applicable Federal Statute.
8. The following procedures are established for all civil actions filed to resolve claims subject to this section:
 - a. Within sixty (60) days, but no earlier than thirty (30) days, following the filing or responsive pleadings, the court shall submit the matter to non-binding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within fifteen (15) days by both parties of a disinterested third person as mediator, shall be commenced within thirty (30) days of the submittal, and shall be concluded within fifteen (15) days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court or by stipulation of parties. If the parties fail to select a mediator within the fifteen (15) day period, any party may petition the

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court to appoint a mediator.

- b. If the matter remains in dispute, the case shall be submitted to judicial arbitration. Notwithstanding any other provision of the law, upon stipulation of the parties, arbitrators appointed for purposes of this article shall be experienced in construction law, and, upon stipulation of the parties, mediators and arbitrators shall be paid, necessary and reasonable hourly rates of pay not to exceed their customary rate, and such fees and expenses shall be paid equally by the parties, except in the case of arbitration where the arbitrator, for good cause, determines a different division. In no event shall these fees or expenses be paid by State or County funds.

- B. The Owner shall not fail to pay money as to any portion of a claim, which is undisputed except as otherwise provided in the Contract.

1.03 WORK COVERED BY CONTRACT PRICE:

A. BID ITEM 1 – MOBILIZATION, SITE PREPARATION & DEMOBILIZATION:

1. Payment for this item shall be for all costs connection to all preparatory work for the Observation Deck Reconstruction, including materials and equipment to the project site, coordination and submittals as required, establishing survey control and layout, but not limited to obtaining any necessary permits and approvals for the work specified in accordance with the Contract; full reimbursement for the premiums actually paid for the payment and performance bonds and any other work that is necessary in advance of the actual construction operations. Complete mobilization to the project site by the Contractor and all equipment necessary to complete the scheduled work as outlined in the plans and specifications to the satisfaction of the Owner. Demobilization shall include the complete removal of all equipment, plant and excess materials, environmental restoration and clean-up of the site. It shall also include any restoration of structures damaged by the Contractor's operations to the satisfaction of the Owner.
2. There will only be one mobilization and one demobilization paid. If for any other reason, the Contractor must shut down and remove his plant from the site, then remobilize, Owner will not be responsible for payment of any additional costs associated with such work. If in the sole opinion of the Engineer, the Contractor's bid price for Mobilization appears unbalanced, the Owner may request that the Contractor provide a detailed breakdown of all mobilization costs. If the Contractor cannot justify his mobilization costs based on standard cost accounting procedures, the Owner will only be obligated to make a mobilization payment equal to the accepted detailed costs, plus an amount of 20% for the Contractor's overhead and profit, with the remaining costs being paid at the conclusion of the project. The maximum allowable payment for mobilization shall be 75% of the Contractor's accepted Bid Item for Mobilization/Demobilization or as substantiated by accounting data as set forth herein. The remaining 25% or any remaining contract fund owing under the Contractor Bid Item for Mobilization/Demobilization shall be paid for Demobilization, and shall be paid upon complete demobilization from the site, which shall include all cleanup and restoration as set forth herein and in accordance with the Contract Documents. Payment for this item shall not exceed 10% of the total base bid of this contract.

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B. BID ITEM 2 –SELECTIVE DEMOLITION,

1. Payment for this item shall be for all the work to be performed associated with the site preparation, selective demolition and disposal for the Observation Deck Reconstruction. Bid item shall include but is not limited to removal of existing deck including support posts and utilities, saw cut slab as required for fuel line relocation, modifications to existing concrete sheet and sheet pile cap for NOAA tide gage installation, demolition for installation of new doors, windows and louvers, removal of existing davits, and any other miscellaneous demolition. Bid item shall include removing all materials; removal and storage of any utilities, labor, transportation and equipment to demolish areas of as shown on the plans. Bid item shall also include all work such as disconnecting, trimming, disposal of excess, splicing, transitions, bracing, staging, water control, manpower, fueling, maintenance, operation, field engineering, environmental protection, purchase of materials, disposal of waste associated with demolition work.

C. BID ITEM 3 – FURNISH & INSTALL OBSERVATION DECK

1. Payment for this item shall include but is not limited to, excavation and all materials and construction related to deck foundations, all materials and construction related to installation of new impact resistant windows and doors, louvers, all materials and construction related to reconstruction of the covered pump shut-off shed including re-installation of the shut-off switch, all materials and construction related to re-shingling the north and east sides of the building, all materials and construction related to re-installation of Observation Deck utilities including but not limited to, electrical, light fixtures, all concrete, steel and timber materials related to construction of the new Observation deck, including all superstructure and substructure and north and south stairs, handrail, stainless connections, concrete and concrete reinforcement for slabs, pads, fuel dispenser pedestals, and sonotube foundations, Admiral Spacemaker Decking, furnish and install gutters, downspouts., re-grading at the south stair, general regrading, re-paving and re-striping as required, all materials and construction related to installation of polymer protection bollards, all materials and construction related to installation of the stainless steel security gates, all materials and construction related to installation of new fuel and emergency access signage.

D. BID ITEM 4 – FURNISH AND INSTALL NORTH AND SOUTH DAVITS

1. Payment for this item for Furnish and Install Stainless Steel North and South Davits including but not limited to and all calculations, materials and construction related to davit foundations and stainless steel davits.

E. BID ITEM 5 – FINISH AND INSTALL VERTICAL PLATFORM LIFT

1. Payment for this item shall be for all the item to Furnish and Install the Vertical Platform Lift in accordance with the Contract Documents. Bid item shall include but is not limited to all site preparation and utilities, power, and vertical

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height variances as required for the Vertical Platform Lift.

F. BID ITEM 6 – FINISH AND INSTALL FIRE SUPPRESSION SYSTEM

1. Payment for this item shall all include but is not limited to all stainless steel piping, tees, elbows, fittings, connections, hangers labor, materials, transportation, equipment, and disposal of waste and excess materials, testing, permits and all other work incidental to the installation of the fire suppression system. Payment item shall also include re-installation of the existing fire suppression system as indicated on the Contract Documents.

G. BID ITEM 7 – FINISH AND INSTALL ELECTRICAL AND LIGHTING

1. Payment for this item shall include but is not limited to all labor, materials, transportation, equipment, disposal of waste and excess materials, testing, permits and all other work incidental to installation of new electrical including installation of new lighting fixtures and reinstallation of existing light fixtures, upgrade to 3-phase (208 volt power) at the north side davit and installation of electrical conduit associated with the installation of NOAA tide gauge (conduit only, tide gage by others).

H. BID ITEM 8 – FUEL LINE RELOCATION

1. Payment for this item shall include but is not limited to demolition as required, excavation, trenching, removal of existing fuel lines in compliance with regulatory provisions, all materials and construction installation of sumps, fuel lines, piping, sensors, connections, valves, elbows and tees and electrical work related to fuel line relocation. Bid item to include piping sump #1 and all labor and materials required to tie-in sump #1 to existing fuel line piping, if Alternate #1 is not awarded), all labor, materials, transportation, equipment, and disposal of waste and excess materials, testing, permits and all other work incidental to the fuel line relocation from the lower parking lot sump to the fuel dispensers. Payment item shall also include re-installation of the existing fuel dispensers.

I. BID ITEM 9 – FISH PACKING BUILDING – BUILDING COLUMN REPLACEMENT

1. Payment for this item shall be for all the work including providing materials, labor, transportation and equipment to furnish and install four (4) new support columns in the Fish Packing Building, as shown on the plans. Bid item shall include purchase of materials, bracing, miscellaneous timber, temporary installation and removal of falsework, trimming, splicing, transitions, bracing, staging, water control, manpower, fueling, maintenance, operation, field engineering, environmental protection, , disposal of waste and excess materials, and all other work incidental to the replacement of building support columns as shown on plans and within the contract documents.

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J. ALTERNATE #1

1. Payment for this item shall include all labor, materials, transportation, equipment, disposal of waste and excess materials, testing, permits and all other work incidental to the fuel line replacement from, but not including replacement of the lower parking lot sump up to the upper parking lot area. Bid Item shall include Including but not limited to demolition as required, excavation, trenching, all materials and construction installation of sumps, fuel lines, piping, sensors, connections, valves, elbows and tees, pumps and all electrical work related to fuel line and deiseal and gasoline fuel tank replacement, testing and compliance. Alternate #1 Bid item includes replacement of all fuel line piping and other associated work starting from the new tanks over to Sump #1.

1.04 PAYMENT

- A.** The unit or lump sum prices for all items in the bid schedule shall be full compensation for the work specified and shall include the cost of furnishing all supervision, materials, labor, tools, and equipment and all work, expenses and taxes incidental to and necessary to complete the work in accordance with the drawings and specifications.
- B.** Monthly partial payments will be based on quantities determined by the Project Engineer.
- C.** The quantities to be measured under the various items in the bid will be those quantities of work completed in accordance with the contract drawings and specifications. The methods of measurement will be as stated hereinafter for the individual items.

1.05 APPLICATIONS FOR PAYMENT

- A.** Each Application for Payment shall be consistent with previous applications and payments as certified by Engineer and paid for by Owner.
 1. All applications for payment are to be accompanied by monthly submittals of updated Contractor's Construction Schedule, Schedule of Values and Submittals Schedule as required in Section 01320, "Construction Progress Documentation." Applications for payment that are not accompanied by the required materials will not be processed for payment.
 2. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B.** Payment Application Times: Monthly progress payments shall be submitted to Engineer per schedule delivered by the Owner. The period covered by each Application for Payment is one month, ending on the last day of the month.
- C.** Payment Application Forms: Included with each application for payment shall be a completed Contract Acknowledgement to Accompany Partial Payment.
- D.** Informal Submittal: Unless otherwise directed by the Owner.
 1. Make an informal submittal of request for payment by filling in, with erasable pencil, plus continuation sheet or sheets.

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2. Make this preliminary submittal to the Owner each month at least 10 days prior to making a formal request for payment.
 3. Revise the informal submittal of request for payment as agreed upon.
- E.** Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Engineer will return incomplete applications without action.
1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
 2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- F.** Partial Payments: Partial payment shall be made monthly as the work progresses.
1. All partial invoices and payments shall be subject to correction in the final quantity invoice and payment. No monthly payment shall be required to be made when, in the judgment of the Owner, the Work is not proceeding in accordance with the provisions of the Contract Documents, or when in his/her judgment the total value of the Work performed since the last payment amounts to less than \$1,000.00.
 2. Making progress payments, there shall be retained ten percent (10%) of the estimated amount until final completion and acceptance of the contract work. Whenever the work is substantially complete, the Owner, if Contractor considers the amount retained to be in excess amount adequate for the protection of the Owner, at his discretion, may release to the Contractor all or a portion of such excess amount. Furthermore, on completion and acceptance of each separate division of the contract, on which the price is stated separately in the contract, payment may, at the discretion of the Owner, be made therefore without retention of a percentage. The Contractor must obtain and submit to the Owner, Consent of Surety, prior to reduction or partial release of retainage.
 3. Acceptable materials shall be those materials that will become a part of the finished construction work. The basis for partial payments of lumps sum or other unit items will be determined by the Owner.
 4. No such estimate or payment shall be required to be made when, in judgment of the Owner, the Work is not proceeding in accordance with the provisions of the Contract, or when in the Owner's judgment, the total value of the Work done since the last estimate amounts to less than \$1,000.
 5. No such payment shall be considered to be an acceptance of any defective Work or improper materials. All progress estimates and payments shall be subject to correction/offset in the final estimate/pay application.
- G.** Transmittal: Submit three (3) signed and notarized original copies of each Application for Payment to Engineer by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

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- H.** Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from every entity who is lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.
- I.** Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
 2. Schedule of Values.
 3. Contractor's Construction Schedule (preliminary if not final).
 4. Schedule of unit prices.
 5. Submittals Schedule (preliminary if not final).
 6. List of Contractor's staff assignments.
 7. List of Contractor's principal consultants.
 8. Copies of building permits.
 9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 10. Initial progress report.
 11. Report of preconstruction conference.
 12. Certificates of insurance and insurance policies.
- J.** Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

1.06 FINAL PAYMENT

- A.** As soon as practicable after Final Completion of the Work, Contractor shall submit to Owners three (3) copies of a final request for payment for the cost of the Work, which request will show deductions for prior payments and any other amounts to be retained.
- B.** The amount determined due, less the amount retained, will be paid. This retained amount will not be due or payable until Thirty (30) days after the completion of the Work and the filing of Notice of Completion and Acceptance in the manner provided by law, and until after the Contractor has furnished the Owner a release of all claims by the Contractor or Subcontractors against the Owner arising by virtue of this Contract, except such claims in definite amounts as the Contractor may specifically exempt from the operation of the release and the furnishing of any guaranty.

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C. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. Contractor's Affidavit of Payment of Debts and Claims.
5. Contractor's Affidavit of Release of Liens.
6. Consent of Surety to Final Payment.
7. Evidence that claims have been settled.
8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
9. Final, liquidated damages settlement statement.

1.07 WORK NOT PAID FOR SEPARATELY

A. Bonds: Payment for bonds as required by the contract are to be included in the various items of work in the bid, and no separate payment will be made by the Owner for any bonds.

PART 2: PRODUCTS

NOT USED

PART 3: EXECUTION

NOT USED

***END OF SECTION**

SECTION 01300

SUBMITTALS

PART 1: GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and General Provisions of this Contract, including General and Supplementary Conditions, apply to this Section.

1.02 SUMMARY

- A. This Section specifies administrative and procedural requirements for submittals required for performance of the Work, including;

1.03 SUBMITTALS

- A. Submit the following reports directly to Project Engineer:
 - 1. Submittal Construction Schedule
 - 2. Request for Information (RFI)
 - 3. Progress Schedule
 - 4. Verification of Underground Utilities, if applicable
 - 5. Substitutions
 - 6. Project Layout Plan / Staging Area Plan
 - 7. Traffic Management Plan
 - 8. Photo Documentation of Pre-Construction Conditions
 - 9. Contractor's Equipment List
 - 10. All applicable inspections and certifications for equipment
 - 11. Field reports; quality control plan
 - 12. Project Health and Safety Plan
 - 13. Environmental Protection/ Spill Management / Contingency Plan
 - 14. Emergency Procedures Plan
 - 15. Contractor's Quality Control Plan
 - 16. Contractor's Accident Prevention Program
 - 17. Contractor's Construction Schedule
 - 18. Daily Construction Reports (to be submitted weekly)
 - 19. List of all Subcontractors
 - 20. Removal and Demolition Plan
 - 21. Solid Debris Management Plan
 - 22. Temporary false work details & plan
 - 23. Designations of steel members;

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24. Yield strength of steel used in design;
25. Types of connections (welded and bolted)
26. Erection Drawings
27. Fabrication Drawings Including Description of Connections
28. Shop Primer
29. Hot Dip Galvanizing Certifications
30. Structural Granular Fill
31. Gravel Bedding
32. Welding Electrodes and Rods Direct Tension Indicator Washers
33. Concrete Mix Design
34. Concrete Reinforcement Shop Drawings
35. Concrete Compressive Strength Testing Results
36. Timber Framing Shop Drawings
37. Glulam Installation Certification
38. Spacemaker Decking Shop Drawings and Warranties (including layout, connections, infinity joints, etc.)
39. Stainless Steel Flashing
40. Railing Shop Drawings
41. Electrical Shop Drawings
42. Fire Suppression System Shop Drawings
43. Fuel Line Relocation Shop Drawings
44. Non-Shrink Grout
45. Tension Control Bolts
46. Welder Certifications
47. Welding Procedures and Qualifications
48. Fueling Signage; Materials, Dimensions and Connections
49. Stamped Calculations for 1-Ton Davit Foundations / Connections
50. Product Submittals:
 - a. Material Certification/Strength Properties for Stainless Structural Steel (Including Connections)
 - b. Material Certifications / Strength Properties for Structural Glulam Members
 - c. Material Certifications for structural Glulam Members Treatment
 - d. Material Certifications for Timber and Timber Treatment
 - e. Material Certifications for Composite Timber Stair Nosing
 - f. Product Options, Certifications, Warranties for Space
 - g. Certification of Hardware
 - h. Certifications for Galvanizing, where applicable
 - i. Product Options, Certifications, Warranties for Gutters

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- j. Product Options, Certifications, Warranties for FRP Flush Doors(including hardware and glass specifications)
- k. Product Options, Certifications, Warranties for Impact Resistant for Vinyl Windows (including hardware and glass specifications)
- l. Product Options, Certifications, Coating Information, Warranties for Louvers (including hardware, closure panel, etc.)
- m. Product Options, Certifications, Warranties for Polymer Shingles (Pump Shed)
- n. Product Options, Certifications, Warranties for Cedar Shingles
- o. Product Options, Certifications, Warranties for Composite Exterior Sheathing (Pump Shed)
- p. Product Options, Certifications, Warranties for Interior Sheathing (Pump Shed)
- q. Product Options, Certifications, Warranties for Rubber Roofing (Pump Shed)
- r. 1-Ton Stainless Steel Davits
- s. Vertical Platform Lift Shop Drawings
- t. Polymer Protection Bollard Shop Drawings

B. Administrative submittals: Refer to other Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:

- 1. Contractor Agreement
- 2. Performance, Payment and Warrantee bonds
- 3. Insurance certificates
- 4. Surety Bonds
- 5. Easements and Permits
- 6. Applications for Payment(s)
 - a. Certified Payroll
 - b. Lien Releases
 - c. Field Quantities

PART 2: PRODUCTS

NOT USED

PART 3: EXECUTION

3.01 SUBMITTAL PROCEDURES

- A.** Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

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1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
 2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - a. The Project Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- B. Submittal Preparation:** Place a permanent label or title block on each Submittal for identification. Indicate the name of the entity that prepared each Submittal on the label or title block.
1. Provide a space approximately 4" x 5" on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
 2. Include the following information on the label for processing and recording action taken.
 - a. Project name.
 - b. Date.
 - c. Name and address of Project Engineer.
 - d. Name and address of Contractor.
 - e. Name and address of Sub-Contractor.
 - f. Name and address of supplier.
 - g. Name of manufacturer.
 - h. Number and title of appropriate Specification Section.
 - i. Drawing number and detail references, as appropriate.
- C. Submittal Transmittal:** Package each submittal appropriately for transmittal and handling. Transmit each submittal from Contractor to Project Engineer using a transmittal form. Submittals received from sources other than the Contractor will be returned without action.
1. On the transmittal, record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including minor variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.

3.02 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A.** Prepare a fully developed, bar type Contractor's construction schedule. Submit within five (5) days of the date established for "Commencement of the Work". Contractor's schedule shall be capable of electronic transmission and shall be in a format substantially similar to project management software such as Microsoft Project® or other acceptable electronic media capable of providing the Owner and Project Engineer with electronic copies of any and all submitted schedules.
1. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the Work as indicated in the "Schedule of Values".

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2. Within each time bar indicate estimated completion percentage in twenty (20) percent increments. As Work progresses, place a contrasting mark in each bar to indicate Actual Completion.
 3. Prepare the schedule on a sheet, or series of sheets, of stable transparency, or other reproducible media, of sufficient width to show data for the entire construction period.
 4. Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the Work. Show each activity in proper sequence. Indicate graphically sequences necessary for completion of related portions of the Work.
 5. Coordinate the Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests and other schedules.
 6. Indicate completion in advance of the date established for substantial Completion. Indicate substantial Completion on the schedule to allow time for the Project Engineer's procedures necessary for certification of substantial Completion.
- B.** Phasing: Provide notations on the schedule to show how the sequence of the Work is affected by requirements for phased completion to permit work by separate Contractors.
- C.** Work Stages: Indicate important stages of construction for each major portion of the Work, including testing and installation.
- D.** Cost Correlation: At the head of the schedule, provide a two item cost correlation line, indicating "pre-calculated" and "actual" costs. On the line show dollar-volume of Work performed as of the dates used for preparation of payment requests.
- E.** Distribution: Following response to the initial submittal, print and distribute copies to the Project Engineer, Owner, Sub-Contractors, and other parties required to comply with scheduled dates. Post copies in the temporary field office.
1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.
- F.** Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made or milestones are reached in the project. Issue the updated schedule within three (3) days of such event, but in no circumstance less than weekly.

3.03 SUBMITTAL SCHEDULE

- A.** After development and acceptance of the Contractor's construction schedule, prepare a complete schedule of submittals. Submit the schedule within five (5) days of the date required for establishment of the Contractor's construction schedule.
1. Prepare the schedule in chronological order; include submittals required during construction. Provide the following information:
 - a. Scheduled date for the first submittal.
 - b. Submittal category.

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- c. Name of Sub-Contractor.
 - d. Description of the part of the Work covered.
 - e. Scheduled date for re-submittal
 - f. Scheduled date the Project Engineer's final release or approval.
- B.** Distribution: Following response to initial submittal, print and distribute copies to the Project Engineer, Owner, Sub-Contractors, and other parties required to comply with submittal dates indicated. Post copies in the temporary field office.
1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the work and are no longer involved in construction activities.

3.04 DAILY CONSTRUCTION REPORTS

- A.** The Contractor shall prepare a daily construction report, recording the following information concerning events at the site; and submit duplicate copies to the Project Engineer at weekly intervals or as requested by the Project Engineer:
1. List of Sub-Contractor at the site.
 2. Approximate count of personnel at the site.
 3. High and low temperatures, general weather conditions.
 4. Accidents and unusual events.
 5. Meetings and significant decisions.
 6. Stoppages, delays, shortages, losses.
 7. Daily plan of areas worked.
 8. Emergency procedures.
 9. Any Orders and or requests of governing authorities.
 10. Change Orders received and implemented.
 11. Substantial Completions authorized.
 12. Photographs of project.

3.05 SHOP DRAWINGS

- A.** The Contractor shall submit newly prepared information, drawn to accurate scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not considered Shop Drawings.
- B.** The Contractor shall submit shop drawings, which include fabrication and installation drawings, setting diagrams, schedules, patterns, templates and similar drawings. The following information must be included:
1. Dimensions.

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2. Identification of products and materials included.
3. Compliance with specified standards.
4. Notation of coordination requirements.
5. Notation of dimensions established by field measurement.
6. Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2" x 11" but no larger than 36" x 48". Electronic submittals are permitted.
7. Initial submittal: Submit one correctable translucent reproducible print and one blue line- or black-line print for the Project Engineer's review; the reproducible print will be returned to the Contractor.
8. Do not use Shop Drawings without an appropriate final stamp indicating action taken in connection with construction.

3.06 ENGINEER'S ACTION

- A. Except for submittals for the record, information or similar purposes, where action and return is required or requested, the Project Engineer will review each submittal, mark to indicate action taken, and return promptly.
- B. Action Stamp: The Project Engineer will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:
 1. Final Unrestricted Release: Where submittals are marked "No Exception Taken," that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
 2. Final-But-Restricted Release: When submittals are marked "Approved as Noted," that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.
 3. Returned for Re-submittal: When a submittal is marked "Revise and Resubmit," do not proceed with that part of the work covered by the submittal, including purchasing, fabrication, delivery, or other activity. The Contractor is to revise or prepare a new submittal in accordance with the notations; resubmit without delay to the Project Engineer. The Contractor shall repeat if necessary to obtain a different action mark.
 - a. Do not permit submittals marked "Revise and Resubmit" to be used at the Project site, or elsewhere where Work is in progress.
 4. Other Action: When a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned to the Contractor, marked "Action Not Required".

END OF SECTION

SECTION 01500

TEMPORARY FACILITIES

PART 1: GENERAL

1.01 RELATED DOCUMENTS

- A.** Drawings and general provisions of Contract, including General and Supplementary Conditions and other Specification Sections, apply to this Section.

1.02 SUMMARY

- A.** This Section specifies requirements for temporary services and facilities, including utilities, construction and support facilities, security and protection.
- B.** Temporary utilities may be required and include but are not limited to:
 - 1. Portable electric power and light.
 - 2. Cellular Telephone service.
- C.** Temporary construction and support facilities may be required and the Contractor is notified that there are only limited Staging Areas and/or Temporary Support Facilities available on the project site. The Contractor shall perform all activities from water based equipment.
 - 1. Sanitary facilities, including drinking water.
 - 2. Temporary enclosures.
 - 3. Construction aids and miscellaneous services and facilities.
- D.** Security and protection facilities required include but are not limited to:
 - 1. Environmental protection.
 - 2. Emergency Spill Response Kit.

1.03 QUALITY ASSURANCE

- A.** Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction, including but not limited to:
 - 1. Building Code requirements.
 - 2. Health and safety regulations.
 - 3. Utility company regulations.
 - 4. Police, Fire Department and Rescue Squad rules.
 - 5. Environmental protection regulations.

1.04 PROJECT CONDITIONS

- A.** Conditions of Use: The Contractor shall keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities, or permit them to interfere with progress. Do not allow hazardous, dangerous or unsanitary conditions, or public nuisances to develop or persist on the site.

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PART 2: PRODUCTS

NOT USED

PART 3: EXECUTION

3.01 INSTALLATION

- A.** The Contractor shall use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. The Contractor shall relocate and modify facilities as required.
- B.** The Contractor shall provide each facility ready for use when needed to avoid delay. The Contractor shall maintain and modify as required. The Contractor shall not remove any facility until facilities are no longer needed, or are replaced by authorized use of completed permanent facilities.

3.02 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES INSTALLATION

- A.** The Contractor shall locate field offices, storage sheds, sanitary facilities and other temporary construction and support facilities for easy access.
- B.** The Contractor shall maintain temporary construction and support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.
- C.** The Contractor shall install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted. Provide toilet tissue, paper towels, paper cups and similar disposable materials for each facility. Provide covered waste containers for used material.
- D.** The Contractor shall provide containerized tap-dispenser bottled-water type drinking water units, including paper supply.

3.03 PERMITS AND CODES

- A.** Comply with all applicable codes, ordinances, rules, regulations and laws of all local, municipal, and state authorities having jurisdiction over the work, without additional cost to the Owner.

END OF SECTION

SECTION 01600

ENVIRONMENTAL PROTECTION

PART 1: GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Specification Sections, apply to this Section.
- B. The Contractor must fully adhere to the provisions set forth in all permits and shall hold the Owner harmless for any failure to adhere to a permit condition.

1.02 SUMMARY

- A. This Section specifies requirements for environmental protection.

1.03 SUBCONTRACTORS

- A. Assurance of compliance with this specification by Sub-Contractors will be the responsibility of the Contractor.

1.04 NOTIFICATION

- A. The Owner and or Project Engineer shall notify the Contractor in writing of any observed noncompliance with the Federal, State or local laws or regulations, permits and other elements of the Contractor's environmental protection plan. The Contractor shall, after receipt of such notice, inform the Project Engineer of proposed corrective actions and take such actions as may be approved. If the Contractor fails to comply promptly, the Owner may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted, nor costs or damages allowed to the Contractor for any such suspension.

1.05 FINES AND PENALTIES

- A. The Contractor shall be solely responsible for any and all permit violations and fines levied thereto as a result of their construction or operations. The Contractor indemnifies the Owner and Project Engineer from any fines or penalties levied and shall defend said fines or penalties as its sole cost with the Owner's cost relating to any defense of said fines or penalties to be assessed to the Contractor.

PART 2: PRODUCTS

NOT USED

PART 3: EXECUTION

3.01 GENERAL

- A. The [Commonwealth of Massachusetts](#) along with other Municipal and Federal Agencies have issued permits, orders of conditions and strict regulations for construction in environmentally sensitive areas. In addition to any orders, the following restrictions apply:

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1. Under no circumstance shall any equipment be allowed to operate (including grounding of vessels and storage of materials) in or on any of the adjoining grass beds, salt marshes, or mudflats. In addition, no equipment will be operated in such a manner as to cause damage to these areas.
2. Absolutely no release is allowed into any waterway of any petroleum product, epoxies, resins, admixtures, touch-up coatings, concrete, waste water of any kind, any foreign particular which is associated with any of the activities, or the like of the Contractor. Accidental releases shall be reported to the appropriate authority, Project Engineer, and, if applicable, the Coast Guard. The Contractor assumes all responsibilities for fines or penalties levied and agrees to fully indemnify the Owner and Project Engineer for any accidental, negligent or intention discharge of any foreign material into any waterway associated with the work prescribed herein.
3. Prior to beginning any work, the Contractor shall submit, in writing, a contingency plan, subject to approval by the Project Engineer, which will set forth the procedures to be followed in the event of an accidental release. This plan will require, as a minimum, that the Contractor have on site, sufficient sorbent pads and booms to contain an accidental spill. Absolutely no work shall begin on the project until this plan has been approved by the Owner and or the Project Engineer.
4. Debris from construction operations is to be cleaned up on a regular basis and disposed of offsite at a properly designated facility at the Contractor's expense. Any floating debris and cuttings shall be contained in the work area by floating booms and shall not be allowed to drift about any waterway. Organic debris (epoxies, etc.) are considered releases and shall be cleaned up immediately in accordance with the approved plan.
5. In the event that wetland areas are destroyed in conjunction with the construction, it shall be replaced, at no cost to the Owner, by a firm experienced in restoration of such areas.
6. Any materials stored or stockpiled on the site will be assessed for its potential to create a run off problem. Such materials shall be stored and/or protected in such a way that run off from the stockpiles will not create a nuisance or damage downgradient resource areas. Any and all property located at or used in conjunction with this project shall be returned to pre-construction conditions prior to completion of project and release of demobilization retainage.

3.02 PROTECTION OF ENVIRONMENTAL RESOURCES

- A.** The environmental resources within the project boundaries and those affected outside the limits of permanent work under this contract shall be protected during the entire period of this contract. The Contractor shall confine his activities to areas defined by the drawings and specifications.
- B.** Work and Staging Area Limits: Prior to any construction the Contractor shall mark the areas that are required to accomplish all work to be performed under this contract. Monuments and markers shall be protected before construction operations commence. The Contractor shall convey to his personnel the purpose of marking and/or protection of all necessary objects.

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- C.** Disposal of Solid Waste by Removal from the Work Site: The Contractor shall transport all uncontaminated solid waste off of the work site and dispose of it in compliance with Federal, State and local requirements for solid waste disposal.
- D.** Disposal of Discarded Materials: Discarded materials other than those which can be included in the solid waste category will be handled as directed by the Project Engineer. The Contractor shall comply with Title 40 CFR, Part 260-265.
- E.** Protection of Water Resources: The Contractor shall keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters. Special management techniques shall be implemented to control water pollution resulting from the construction activities, which are included in this contract.
- F.** Protection of Fish and Wildlife Resources: The Contractor shall keep construction activities under surveillance, management and control to minimize interference with, disturbance to, and damage of fish and wildlife.
- G.** Protection of Air Resources: The Contractor shall keep construction activities under surveillance, management, and control to minimize pollution of air resources. All activities, equipment, processes, and work operated or performed by the Contractor in accomplishing the specified construction shall be in strict accordance with the Commonwealth of Massachusetts and all Federal emission and performance laws and standards. Ambient Air Quality Standards set by the Environmental Protection Agency, specifically as they apply in the Commonwealth of Massachusetts shall be maintained for all construction operations and activities.
- H.** Particulates: Dust particles, aerosols, and gaseous by-products from all construction activities, processing and preparation of materials shall be controlled at all times, including weekends, holidays and hours when work is not in progress.
- I.** Hydrocarbons and Carbon Monoxide: Hydrocarbons and carbon monoxide emissions from equipment shall be controlled to Federal and Massachusetts allowable limits at all times.
- J.** Odors: Odors shall be controlled at all times for all construction activities, processing and preparation of materials.
- K.** Protection of Sound Intrusions: The Contractor shall keep construction activities under surveillance, and control to minimize damage to the environment by noise. The Contractor shall use methods and devices to control noise emitted by equipment.
- L.** Ownership of any fuel on the project site at all times will be under the control of the Contractor. The Contractor will contact, coordinate and comply with any local, county, state or federally mandated regulations, codes or rules set forth regarding the storage, use and or disposition of any petroleum products. Under no circumstances are any permanent fuel facilities to be constructed on the project site. Any fuel spills shall be the sole responsibility of the Contractor.

3.03 POST CONSTRUCTION CLEAN UP

- A.** The Contractor shall clean up all areas affected by construction to pre-construction conditions prior to completion of project.

3.04 RESTORATION OF LANDSCAPE DAMAGE

- A. The Contractor shall restore all landscape features of staging, storing or other areas damaged or destroyed during construction operations outside the limits of the approved work areas. Such restorations shall be in accordance with the plan submitted for the approval of the Owner/Project Engineer. This work will be accomplished at the Contractor's expense.

3.05 MAINTENANCE OF POLLUTION CONTROL FACILITIES

- A. The Contractor shall maintain all constructed facilities and portable pollution control devices for the duration of the contract or for that length of time construction activities create the particular pollutants.

3.06 TRAINING OF CONTRACTOR PERSONNEL

- A. The Contractor shall train his personnel in all phases of environmental protection. The training shall include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of facilities to ensure adequate and continuous environmental pollution control.

*** END OF SECTION ***

SECTION 01700

GENERAL SAFETY REQUIREMENTS

PART 1: GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Specification sections, apply to work of this section.

1.02 SUMMARY

- A. The work covered in this section consists of furnishing all plant, labor, equipment and appliances in performing all operations in connection with safety of persons and property during construction. The safety requirements specified in this section are in addition to those contained in the sections pertaining to the specific items of work involved or indicated on the drawings. Where there is a conflict between the requirements of this section and sections pertaining to the specific items of work, the requirements of this section shall govern. Specific requirements of this section include:
 1. The Contractor shall comply with all aspects of the Owner's Safety and Environmental Policies for each facility.
 2. The Contractor shall provide safety controls for protection of persons and property in compliance with all applicable Federal, State and Municipal statutes and/or regulations.
 3. The Contractor shall maintain accurate records and report to the Owner exposure data and all accidents.
 4. The Contractor shall promptly correct noncompliance with safety provisions where they are observed or when notified.
 5. The Contractor shall develop a safety program and submit bids for effective accident prevention.
 6. The Contractor shall attend project meetings relative to administration of the overall safety program.

1.03 REFERENCES

- A. The following publications listed below form a part of this specification to the extent referenced.
 1. U.S. Army Corps of Engineers Engineer Manual (EM): Safety and Health Requirements Manual, EM 385-1-1, 2003 Edition
 2. ASME International B30.5 (2004) Mobile Crane
 3. ASME International B30.22 (2003) Articulating Boom Cranes
 4. U.S. National Archives and Records Administration (NARA) 29 CFR 1910.94 Ventilation
 5. U.S. National Archives and Records Administration (NARA) 29 CFR 1910.120 Hazardous Operations and Emergency Response

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6. U.S. National Archives and Records Administration (NARA) 29 CFR 1926.65 Hazardous Operations and Emergency Response
7. U.S. National Archives and Records Administration (NARA) 29 CFR 1926.502 (f) Warning Line Systems
8. National Fire Protection Association (NFPA) 10 (1995) Portable Fire Extinguishers
9. NFPA 241 (1996) Safeguarding Construction, Alteration, and Demolition Operations
10. Occupational Safety and Health Act (OSHA)

PART 2: PRODUCTS

NOT USED

PART 3: EXECUTION

3.01 GENERAL SAFETY REQUIREMENTS - U.S. ARMY CORPS OF ENGINEERS MANUAL

- A. The Contractor shall comply with all pertinent provisions of the Corps of Engineers Manual, EM 385-1-1, 1996 edition
- B. The Contractor shall submit crane inspection reports as required in accordance with EM 385-1-1 with Daily Reports.

3.02 HOT WORK

- A. No Hot Work (burning, welding, chipping, grinding, and electrical power tools) is allowed within 350 feet of a transfer operation.

3.03 ACCIDENT PREVENTION

- A. The Contractor shall comply with the Massachusetts Occupational Safety and Health Act, and will also take, or cause to be taken, such additional measures as may be necessary for the prevention of accidents.
- B. Prior to commencement of Work the Contractor shall (1) submit bids in writing for effectuating provisions for accident prevention, and (2) meet in conference with the Owner to discuss and develop mutual understandings relative to administration of an overall safety program.
- C. During the performance of Work under the Contract, the Contractor shall institute controls and procedures for the control and safety of persons visiting the Job-Site.
- D. The Contractor shall maintain an accurate record of, and shall report to the Owner in writing, exposure data and all accidents resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment incident to Work performed under the Contract.
- E. The Owner will notify the Contractor of any noncompliance with the foregoing provisions. The Contractor shall, after receipt of such notice, immediately take corrective action. If the Contractor fails or refuses to comply immediately, the matter will be referred to the proper authority. No part of the time lost due to any stop order issued by proper authority shall be

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made the subject or claim for extension of time or for extra costs or damages by the Contractor.

- F. Compliance with the provisions of this Part by Subcontractors will be the responsibility of the Contractor.

3.04 EXCAVATION SAFETY PLANS

- A. Excavations five (5) feet or more in depth shall not begin until the Contractor has submitted and the Owner have returned indicating "In Receipt Of" the Contractor's detailed plan for worker protection from the hazards of caving ground during such excavations. The plan may be reviewed by the Owner for completeness in accordance with federal, state and local regulations. The Owner will not be responsible for reviewing the accuracy of assumptions, data and information used, and procedures contained in the plan or the adequacy thereof. Such plans shall show the details of the design of shoring, bracing, sloping, or other provisions to be made for worker protection during such excavation. The plan shall not allow the use of shoring, sloping, or a protective system less effective than that required by the Construction Safety Orders; and if such plan varies from the shoring system standards established by the Construction Safety Orders, the plan (including calculations) shall be prepared, signed and stamped by an engineer registered as a Civil or Structural engineer and by an engineer registered as a Geotechnical Engineer, in the [Commonwealth of Massachusetts](#).
- B. Such plans shall be accompanied by all required permits.

3.05 CONTRACTOR'S SAFETY PROGRAM

- A. The Contractor shall have a written safety program in place for this project. At a minimum, it shall include a drug and alcohol policy, accident reporting criteria and example forms along with an agenda for daily safety meetings safe operations practices for all trades associated in this project.
- B. A safety officer, as appointed by an officer of the Contractor's Corporation, shall be named and charged with any and all safety activities relating the project.
- C. The Owner and the Project Engineer shall not be responsible for implementing and/or providing any safety training and/or direction regarding the Contractor's operations as they relate to the project's safety.
- D. Accident Prevention Program: Within five (5) calendar days after receipt of Notice to Proceed the Contractor shall furnish his Accident Prevention Program and three copies thereof to the Project Engineer or his authorized representative for review and approval. The program shall be prepared in the following format:
 - 1. Administrative Plan
 - 2. Job Hazard Analysis
 - 3. A copy of company policy statement of accident prevention and any other guidance statements normally provided new employees.
 - 4. When marine plant and equipment are in use the Contractor shall assure that oil transfer operations to or from his plant comply with all Federal, State, county, and Municipal laws, codes and regulations. Particular attention is invited to 33 CFR Subchapter 0, Pollution. The Contractor shall incorporate in his accident prevention program, sufficient information to demonstrate that all fuel transfers will be made

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in accordance with 33 CFR 156 and any other applicable laws, codes and regulations. (CENABEN 1984 APR)

5. The Contractor shall not commence physical work at the project site until the program has been approved by the Project Engineer or his authorized representative. As an additional measure to implementation of the Accident Prevention Program, the Contractor shall meet with representatives of the Project Engineer as soon as practicable after receipt of Notice to Proceed and before start of work to discuss and develop a mutual understanding relative to administration of the overall safety program. Minutes of the meeting shall be prepared, signed by the Contractor and the Project Engineer or his authorized representative. At the Project Engineer's discretion, the Contractor may submit his Job Hazard Analysis only for the phases of construction. All remaining phases shall be submitted and accepted prior to the beginning of work in each phase. EM 385-1-1, Section 1.

3.06 ACCIDENT INVESTIGATION AND REPORTING

- A.** Accidents shall be investigated by immediate supervisor of the employee(s) involved and reported to the Project Engineer or the Project Engineer's inspector within one working day after the accident. Paragraph 01.D, EM 385-1-1.
- B.** The Contractor shall insure that all accidents which involve loss of life, occupational disease of the employee, injury incapacitating any person for normal work beyond the day of injury, or damage to property, materials, supplies, or equipment, of \$1,000.00 or more, and which relate to the dredge, any attendant plant, the dredge working area, or the disposal area, shall be recorded, investigated, and reported to the Project Engineer or his authorized representative.
- C.** Each accident shall be verbally reported to the Project Engineer's inspector at the earliest practicable time, but within 24 hours. Each accident involving loss of life or traumatic injury to any person shall be reported to the Project Engineer's inspector verbally, telephonically, or by radio immediately.
- D.** The Contractor shall promptly investigate each accident and submit a written, signed report on ENG Form 3394 to the Project Engineer's inspector within 48 hours.
- E.** A factual record of each accident shall be entered in the Contractor's official daily log book.

3.07 DAILY INSPECTIONS

- A.** The Contractor shall institute a daily inspection program to assure all safety requirements are being fulfilled. Reports of daily inspections shall be maintained in the Contractor's official daily log book. The reports shall be records of the daily inspections and resulting actions. Each report shall include, as a minimum, the following:
 1. Phase(s) of construction underway during the inspection.
 2. Locations of areas inspections were made.
 3. Results of inspection, including nature of deficiencies observed and corrective actions taken, or to be taken, date, and signature of the person responsible for its contents.

3.08 CERTIFICATE OF COMPLIANCE

- A.** The Contractor shall provide a Certificate of Compliance for each crane entering the work site under this contract. Certificate shall state that crane and rigging gear meet applicable OSHA regulations (with Contractor citing which OSHA regulations are applicable). Certify on the Certificate of Compliance that the crane operator(s) is qualified and trained in the operation of the crane to be used. The Contractor shall also certify that all of its crane operators working on this project have been trained not to bypass safety device during lifting operations. These certifications shall be posted on the crane.
- B.** Contractor shall submit copies of all applicable inspections and certifications for all floating plant and equipment.

3.09 EMERGENCY ALARMS AND SIGNALS

- A.** Alarms. Emergency alarms shall be installed and maintained on all floating plant requiring a crew where it is possible for either a passenger or crewman to be out of sight or hearing from any other person. The alarm system shall be operated from the primary electrical system with standby batteries on trickle charge that will automatically furnish the required energy during an electrical-system failure.
- B.** Signals
 - 1. Fire Alarm Signals: The general fire alarm signal shall be in accordance with paragraph 97.13-15b of the Coast Guard Rules and Regulations for Cargo and Miscellaneous Vessels, Subchapter I, 1 Sep 77 (CG 257)
 - 2. Abandon Ship Signals: The signal for abandon ship shall be in accordance with paragraph 97.13-15c of referenced cited in (a) above.
 - 3. Man-Overboard Signal: Hail and pass the word to the bridge. All personnel and vessels capable of rendering assistance shall respond.
 - 4. Mooring Lines: Eye loops on mooring lines shall be equipped with brackets or handling ropes to protect the hands of deckhands.

*** END OF SECTION ***

SECTION 01010

SUMMARY OF WORK

PART 1. GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

A. The Works comprise the reconstruction of the Observation Deck at the Chatham Fish Pier located at 45 Barcliff Avenue Extension in Chatham, MA. The scope of work includes but is not necessarily limited to the following:

1. The **BASE BID** work includes but is not limited to: concrete and timber demolition as necessary, all material and construction related to related reconstruction of the new Observation Deck, all materials and construction related to relocation of the fuel lines, all materials and construction related to installation of NOAA tide gage including modifications to existing concrete sheet pile cap, all materials and construction related to installation of new impact resistant windows and doors, louvers, all materials and construction related to reconstruction of the covered pump shut-off shed including re-installation of the shut-off switch, all materials and construction related to replacement of the south and north davits including upgrade to 3-phase (208 volt power) at the north side davit, all materials and construction related to installation of the vertical access platform lift including variance for lift height and all related utilities, all materials and construction related to re-shingling the north and east sides of the building, all materials and construction related to re-installation of Observation Deck utilities including but not limited to, electrical, light fixtures and fire suppression system expansion, fuel line relocation, all concrete and timber materials related to construction of the new Observation deck, including all superstructure and substructure and north and south stairs, stainless connections, concrete and concrete reinforcement for slabs, pads, fuel dispenser pedestals, and sonotube foundations , handrail, decking, gutters, downspouts etc., re-grading at the north stair, general regrading, re-paving and re-striping as required, all materials and construction related to installation of polymer protection bollards, all materials and construction related to installation of the stainless steel security gates, all materials and construction related to installation of new fuel and emergency access signage, all materials and construction related to replacement of the building columns located inside the Fish Packing Building and any miscellaneous items as indicated in the Contract Drawings.
2. The **BID ALTERNATE # 1** work (if awarded) includes but is not limited to: all labor, materials, transportation, equipment, disposal of waste and excess materials, testing, permits and all other work incidental to the fuel line replacement from, but not including replacement of the lower parking lot sump up to the upper parking lot area. Bid Item shall include Including but not limited to demolition as required, excavation, trenching, all materials and construction installation of sumps, fuel lines, piping, sensors, connections, valves, elbows and tees, pumps and all electrical work related to fuel line and deisæl and gasoline

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fuel tank replacement, testing and compliance. Alternate #1 Bid item includes replacement of all fuel line piping and other associated work starting from the new tanks over to Sump #1.

3. Compliance with all permit requirements.

1.02 CONTRACT METHOD

- A. Construct the Work as specified within the Bid Proposal and Contract Documents. All work detailed on the drawings and in these Technical Specifications shall be covered completely by the items submitted with the Tender. Individual lump sum items are all-inclusive and include all labour, equipment and materials to complete each task. If a specific task is not identified separately in the Bid Form, the Contractor shall assume that it is included as part of another related listed item or items, and shall base his amounts on this assumption.

1.03 WORK SEQUENCE

- A. Contractor shall schedule the works, coordinating all tasks and elements with the TOWN OF CHATHAM.
- B. All construction activities for the Base Bid Work and any Alternates awarded, shall be completed on or before **May 10, 2019.**
- C. The Contractor will be allowed to perform construction activities from 7 AM to 7 PM, weekdays only, for the entire performance period.

1.04 CONTRACTOR USE OF SITE

- A. Ascertain boundaries of Site within which work must be confined and agree limits with Owner prior to starting any work.
- B. Contractor shall maintain a Fire Lane at all times.
- C. Contractor shall provide all necessary utilities including own electricity and water as required to complete the work.
- D. Provide containment to protect environmental resource areas as outlined in these Contract Documents and maintain in good order until all work is completed.

1.05 DRAWINGS AND SPECIFICATIONS FURNISHED

- A. Owner Responsibilities:
 1. Provide 2 copies of drawings and specifications to Contractor.
- B. Contractor Responsibilities:
 1. Pay for additional copies of drawings and specifications, if required.

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2. Maintain at Site one complete set of up to date drawings and specifications. Make available to Engineer at any time.

1.06 SUPPLEMENTARY DRAWINGS

- A. Engineer may furnish supplementary drawings to assist proper execution of work. Such drawings will be issued for clarification only and will have same meaning and intent as if included with plans referred to in Contract Documents.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

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

SECTION 01050

RECORD DOCUMENTS and FIELD ENGINEERING

PART 1. GENERAL

1.01 RELATED DOCUMENTS

- A. THE GENERAL CONDITIONS DIVISION I are hereby made part of this Section.
- B. Examine all Drawings and all Sections of the Specifications for requirements and provisions affecting the work of this Section.

1.02 QUALITY CONTROL

- A. The Contractor shall employ a Professional Civil Engineer or Professional Land Surveyor registered in the Commonwealth of Massachusetts and acceptable to the Authority to establish the construction baseline. A minimum of three intervisible horizontal control points with locations based on the Massachusetts State Plane Coordinate System Mainland Zone (NAD 83, FEET) shall be established for all projects which include site work, utility installation or modifications, and structures with foundation systems. A minimum of three vertical control points (Benchmarks) will be established based on NAVD 88.
- B. The Contractor's Professional Civil Engineer or Professional Land Surveyor shall provide copies of all working baseline established for construction.

1.03 SUBMITTALS

- A. Submit the resume of the Professional Civil Engineer or Professional Land Surveyor which includes the name, address, telephone number, professional registration number and employment history to the Authority for approval prior to starting survey work.
- B. On request by the Authority, submit documentation verifying accuracy of survey work for this project. Documentation shall include electronic files of data collection, AutoCAD drawing files, field books, sketches, drawings and layouts.
- C. Submit two copies of final As-Built drawings at project close-out.
- D. Submit final AutoCAD 2000 files at project close-out.
- E. Submit record copy of Specifications, field test records, Contractor's daily reports, construction photographs, written interpretations and clarifications to the Contract Documents. These documents shall be submitted prior to submission of the final requisition.

1.04 PROJECT RECORD DOCUMENTS

- A. Maintain a complete and accurate log of control and survey work as it progresses.
- B. Throughout the Project Duration maintain, on site, one set of the following record documents;

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record actual revisions to the work:

1. Contract Drawings.
 2. Electronic AutoCAD drawing files for Contract Drawing and Shop Drawings.
 3. Addenda
 4. Change Orders and other modifications to the Contract Drawings.
 5. Reviewed and approved shop drawings, product data, and samples.
 6. Written interpretations and clarifications.
 7. Field orders or directives.
 8. Field test reports.
 9. Construction photographs.
- C. Store Record Documents separate from documents used for construction.
- D. Specifications: Legibly mark and record at each product section description of the actual products installed, including the following:
1. Manufacturer's name, address, telephone number and product model and serial number.
 2. Product substitutions or alternates utilized.
 3. Changes made by Addenda, clarifications or interpretations, field orders and directives.
- E. Record Documents and Shop Drawings:
1. SITE/CIVIL
 - a. All site and civil work shall be located by survey based on the Massachusetts State Plane Coordinate System Mainland Zone for Northings and Eastings. All site and civil work shall be located vertically with elevations based on project datum as shown on the Contract Plans
 - b. All site utilities coordinates and elevations shall be recorded at the point of origin, building penetrations, building perimeter, all changes in direction (vertically or horizontally), all changes in sizes, valve locations, Tee locations, duct bank profile changes, and minimally every 50' of all buried/concealed utility work. Notations describing the size and type of material shall be included.
 - c. Gravity systems (sewer and drain) shall show centerline invert elevations at 50' intervals, at every bend in the pipe (vertically or horizontally), and at structures (manholes, buildings, bulkheads, etc.). Include top and bottom elevations and

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locations of corners of rectangular structures, centerline top and bottom elevations, centerline location and diameter of circular structures (chamber, manholes, tanks, etc.). Indicate the size and type of materials.

- d. All existing underground utilities encountered during the execution of work shall be located within the excavation horizontally and vertically with same requirements specified for new construction.
- e. Forced systems (water, steam, high temperature hot water, chilled water, condensate, forced sanitary, forced drainage, fuel and gas) shall show centerline top of pipe at 50' intervals, at every bend or joint (vertically or horizontally), end points, valves, Tees and fittings, and at structures. Include bottom and top elevations and locations of corners for rectangular structures, centerline bottom and top locations of circular structures (chambers, tanks, valve pits, metering pits, etc.). Indicate the size and type of materials.
- f. Electrical and Communication systems shall show centerline top of cable, conduit or duct bank at 50' intervals, at every bend or change in section of duct bank and at all end points. Include bottom and top elevations and locations of corners for rectangular structures, centerline bottom and top locations of circular structures (chambers, tanks, manholes, vaults, etc.). Include duct bank configuration and typical section at every change in shape, orientation or size.
- g. Sonotubes, Piles, Caissons and deep foundations shall include top centerline location, elevation, orientation, pile type, depth of structure from top elevation and typical section and type of material. Indicate either battered or straight pile. If battered, the direction and slope of batter shall be indicated.
- h. Underground structural elements (bulkheads, seawalls, retaining walls, building foundation, etc.) shall include locations, sizes and elevations of anchoring slabs, pile caps, grade beams, footings and other structural elements which project beyond the exterior face of foundation wall.
- i. Underground Tanks shall show the location and elevation of anchoring slabs with corner locations, bottom and top elevations and locations of corners of rectangular structures, centerline bottom and top locations and elevations of circular structures. Indicate the size and types of materials.
- j. Earth Retention systems which are abandoned in place, by design, shall show location and elevations of all structural elements of the system, including dead man, anchors and tiebacks.

2. ARCHITECTURAL

- a. Field changes of dimension or detail.
- b. Details not originally included on the original Contract Drawings.

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3. STRUCTURAL
 - a. NAD 83 coordinate locations (FEET) and NAVD 88 elevations (FEET) of foundation elements at all corners.
 - b. Field changes of dimension or detail.
 - c. Details not originally included on original contract documents.
4. PLUMBING
 - a. Vents, sanitary and water lines referenced to permanent surface features. Include piping sizes and materials. Measurements are required at 50' intervals and at all bends (vertically and horizontally), joints and fittings.
 - b. Measured locations of all internal drains, vents, waste, waterlines and appurtenances, referenced to visible and accessible features of the work.
 - c. Provide original permits and record of inspections.

PART 2. PRODUCTS

(Not Applicable)

PART 3. EXECUTION

3.01 EXAMINATION

- A. Verify location of survey control points prior to starting work.
- B. Verify horizontal and vertical position of temporary benchmarks by field traverse to at least two known reference monuments

3.02 SURVEY REQUIREMENTS

- A. Utilize procedures and practices defined in 250 CMR to establish horizontal and vertical control of the work.
- B. Establish coordinates based on the Massachusetts State Plane Coordinate System Mainland Zone (FEET), and elevations based on NAVD 88 (FEET). Locate and layout by instrumentation:
 1. Site improvements including pavements; stakes for grading, fill and topsoil replacement.
 2. Utility installation, slopes and invert elevations.
 3. Grid or axis for structures.

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4. Building foundation, column locations, floor elevations, and equipment location and elevations.
 5. Verify layout control periodically, in accordance with accepted survey practices.
- C. Where the dimensions and locations of existing structures are of critical importance in the installation or connection of any part of the work, verify such dimensions and locations in the field before the fabrication and installation of any material or equipment which is dependent on the correctness of such information.

PART 4. MEASUREMENT AND PAYMENT

4.01 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 01500

TEMPORARY FACILITIES AND CONTROLS

PART 1. GENERAL

1.01 RELATED DOCUMENTS

- A. THE GENERAL CONDITIONS DIVISION I are hereby made part of this Section.
- B. Examine all Drawings and all Sections of the Specifications for requirements and provisions affecting the work of this Section.

1.02 GENERAL DESCRIPTION

- A. Confine storage of materials to within Owner property limits.
- B. Provide temporary sheds or other covered facilities for storage of materials subject to weather damage. Locate structures to avoid interference with work and relocate as required by progress of work. Provide temporary office space or other facilities as required.
- C. Remove structures and surplus stored materials at completion of work unless otherwise noted by the Owner.
- D. Temporary structures shall be constructed in a structurally-sound, weatherproof manner. Maintain site, temporary structures, storage areas, temporary fencing, etc., in a neat and orderly manner. 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.
- E. Provide secure temporary closures to prevent unauthorized entry to the site.
- F. Provide staging, hoists, temporary stairs, ladders, chutes, etc., as required, complying with applicable safety codes.
- G. 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.
- H. The Contractor shall 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.
- I. 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.

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1.03 SITE DRAINAGE

- A. Upon beginning site work, the Contractor shall assume complete responsibility for Project Area site drainage for duration of Contract, and shall maintain such drainage in a manner which will cause no damage or erosion to existing structure or adjacent areas.

1.04 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.
- 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.

1.05 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. Panel boards, 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. No power will be available from buildings on site. The Contractor shall provide generators as required unless other arrangements are made.
- 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 Authority.
- D. Water and Sanitary Facilities:

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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.
2. No water will be available from buildings on site. The Contractor shall provide tankers as required unless other arrangements are made.

PART 2. PRODUCTS

(Not Applicable)

PART 3. EXECUTION

(Not Applicable)

PART 4. MEASUREMENT AND PAYMENT

4.01 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 01600

PRODUCTS

PART 1. GENERAL

1.01 RELATED DOCUMENTS

- A. THE GENERAL CONDITIONS DIVISION I are hereby made part of this Section.
- B. Examine all Drawings and all Sections of the Specifications for requirements and provisions affecting the work of this Section.

1.02 GENERAL DESCRIPTION

- A. Standards (ANSI, ASTM, Federal Specifications, etc.) referenced in specifications are latest edition as of date Contract Documents are issued for bidding. To the extent that more than one standard is referenced, the more stringent (in judgment of the Engineer) shall govern. Where compliance with a standard is required, Contractor shall provide affidavit from subcontractor or manufacturer certifying compliance, if requested by the Engineer.

1.03 ABBREVIATIONS

- A. Organizations and standards referenced in abbreviated form include the following:

AA	Aluminum Association
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AGC	Associated General Contractors of America
AISC	American Institute of Steel Construction
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers' Association
AWS	American Welding Society
MHD	Massachusetts Highway Department
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration
SS	Standard Specifications for Highways and Bridges
UL	Underwriters' Laboratories
WWPA	Western Wood Products Association

1.04 SUBSTITUTIONS

- A. Products of a particular manufacturer are generally specified either on an "or equal" basis or with a list of acceptable alternative manufacturers. Contractor shall submit proposals to

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substitute products other than those specified in ample time before product is to be incorporated in Work, in order to allow for full investigation of proposal. Proposal shall be thoroughly documented with manufacturers' literature, shop drawings, and samples, as appropriate.

- B. Contractor warrants as part of his request that proposed substitution is comparable in size, operation, material and finish, to product specified. He shall be responsible for coordination of accepted substitution into Work and waives all claims for additional costs related to substitution which subsequently become apparent.
- C. The Engineer retains absolute right of approval of any proposed substitution, and may reject same on any ground including function, operation, and appearance.

1.05 DELIVERY, STORAGE AND INSTALLATION

- A. Products shall be properly enclosed in containers, boxes, packages, etc., to prevent damage during transportation and handling. Deliver in original unopened containers with labels indicating brand names, model numbers, quality designations, fire-resistance rates, etc.
- B. Store materials delivered to site under cover, in locations secure from vandalism and theft, in full conformance with manufacturer's recommendations. Carefully protect stored materials from mechanical damage, dampness, and extremes of temperature.
- C. Products shall be installed, finished and cleaned in strict accordance with manufacturers' instructions, unless otherwise specified, by skilled workmen under adequate supervision. Foremen of installation crews shall have minimum of five years' experience installing that product.
- D. Protect installed products until substantial completion by appropriate means including plastic or canvas sheeting, Kraft paper, masking tape, or wood barricades. Remove name plates and other identifying markings from exposed surfaces of manufactured items installed in finished spaces, if requested by the Engineer.
- E. Materials shall be stored within the areas designated by the Owner.

PART 2. PRODUCTS

(Not Applicable)

PART 3. EXECUTION

(Not Applicable)

PART 4. MEASUREMENT AND PAYMENT

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4.01 METHOD OF 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 item with which it is associated.

*** END OF SECTION ***

SECTION 01610

HEALTH AND SAFETY

PART 1. GENERAL

1.03 1.01 RELATED DOCUMENTS

- A. THE GENERAL CONDITIONS DIVISION I are hereby made part of this Section.
- B. Examine all Drawings and all Sections of the Specifications for requirements and provisions affecting the work of this Section.

1.04 1.02 SECTION INCLUDES

- A. This Section describes health and safety requirements, as well as personnel protection requirements for activities on the project. Direct contact with soil, groundwater, surface water or sediment contaminated with oil and/or hazardous materials may occur during the course of the work.

1.05 HEALTH AND SAFETY REQUIREMENTS

- A. Construction site safety is the sole responsibility of the Contractor.
- B. Employees who will be in direct contact with hazardous materials, or soil, groundwater, surface water or sediment contaminated with oil and/or hazardous materials must conduct the work in accordance with the Occupational Safety and Health Administration (OSHA) 29 CFR 1910.120, as implemented through the Contractor's Health and Safety Plan (HASP). Such employees must be Hazardous Waste Operations and Emergency Response (HAZWOPER) 40-hour trained and enrolled in a medical monitoring program.
- C. It is anticipated that work will be performed in Personnel Protection Level D. This includes hard hat, safety glasses, hearing protection, gloves, and work boots. In the event that the Contractor determines that a level of protection higher than Level D is required, the Contractor's personnel will take the necessary steps outlined in the Contractor's HASP. Notify the Owner and Engineer immediately of the need to upgrade levels of protection.
- D. Immediately correct violations of the health and safety requirements contained in the Specifications or standards referenced above. Notification of violations noted by the Owner may be verbal or written. Failure of the Owner to provide notification of health and safety violations does not relieve the Contractor from responsibility for conformance with the regulations and the safety of personnel and property.

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- E. If the Contractor fails to promptly correct violations of the health and safety standards and requirements noted by the Owner, the Owner will issue an order to stop all or part of the Work. When satisfactory corrective action is taken, an order to resume work will be issued. The Contractor shall not be entitled to any extension of time, or to any claim for damage or additional compensation by reason of either the notification of a violation or the stop-work order.
- F. Maintain an accurate record of, and report to the Owner immediately, all cases of death and, within 24 hours, all cases of occupational diseases or traumatic injury to employees or the public involved, and property damage incident to performance of work under this Contract. Report using OSHA Form 300, Log of Work-Related Injuries and Illnesses. The rights and remedies of the Owner provided in the Specifications are in addition to any other rights and remedies proved by law or under this Contract.
- G. In the event there is a conflict between the requirements contained in the OSHA Health and Safety Codes and Standards, the U.S. Department of Labor Construction Health and Safety Codes and Standards, promulgated under Section 108 of the Contract Work Hours and Safety Act (40 U.S.C. 327 et seq.), as amended, the more stringent requirement will prevail.
- H. Examine all Drawings and Sections of the Specifications for requirements and provisions of the work that this Section affects.

1.04 APPLICABLE REGULATIONS

- A. Comply with all applicable health and safety regulations, including but not limited to:
 - 1. “United States OSHA Code of Federal Regulations 29 CFR 1910.120 for Hazardous Waste operations (HAZWOPER).
 - 2. U.S. Environmental Protection Agency (EPA) Executive orders 1440.2 and 1440.3.
 - 3. OSHA Guidance Manual for Hazardous Waste Site Activities, DHHS/NIOSH Pub. No. 85-115, 10/85.
 - 4. 29 CFR 1926: Safety and Health Requirements for Construction, OSHA.
 - 5. EPA/625/9-85/006, Protection of Health and Safety at Hazardous Waste Sites: An Overview.
 - 6. 40 CFR 761: TSCA.
 - 7. 454 CMR 10, Massachusetts Division of Labor and Industry.
 - 8. 105 CMR 670.0000 and 441 CMR 21.00 (Right to Know).
 - 9. 310 CMR 40.0000 (Massachusetts Contingency Plan; MCP).
- B. Conduct the work in compliance with the above regulations and policies as well as any changes or addenda to the same as set forth prior to the completion of work.

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- C. Comply with all applicable regulations, this Specification, and recognized standards and regulatory practices. The Owner and the Engineer will not be responsible at any time for the Contractor's violation of any applicable local, state, or federal regulations, or endangerment of laborers or others.

1.05 INFORMATIONAL SUBMITTALS

- A. Within 10 days of receiving notice to proceed, submit a Contractor's HASP for encountering oil and hazardous materials (OHM) including exposure monitoring and prevention methods, and emergency response procedures. Include the name, title, and affiliation of the Contractor's designated Health and Safety Officer. The HASP will be prepared by a qualified professional and comply with the requirements of 29 CFR 1910.120 and all other applicable regulations, including, but not limited to those listed in Section 1.04A.
- B. Prior to beginning work submit one completed Safety Data Sheet (SDS) for each material as required by Federal Standards No. 313 (Preparation and Submission of Material Safety Data Sheet), as amended. Department of Labor Form OSHA-174, or GSA-approved Alternate Form A will be submitted. Follow the information on the MSDS to assure safe use, handling, storage, and environmentally acceptable disposal of hazardous materials. A complete set of SDSs will be maintained on site.
- C. Accident Reporting: Submit a copy of each accident report that the Contractor or Subcontractors submits to their insurance carriers within 7 calendar days of date of the accident.

PART 2. PRODUCTS

2.01 PERSONAL PROTECTIVE EQUIPMENT

- A. Provide Personal Protective Equipment (PPE) for all Contractor and Subcontractor personnel in accordance with the Contractor's HASP. Delays in the Work due to inability to provide PPE as site conditions require shall be at no additional cost to the Owner.

PART 3. EXECUTION

3.01 GENERAL

- A. Designate an on-site, full-time Health and Safety Officer who will be responsible for implementing and enforcing the HASP. Perform air quality monitoring as required by the HASP, and as conditions warrant.
- B. Conduct work to prevent any on-site employee or others who may be in the general vicinity from exposure to conditions that are unsanitary, hazardous, or dangerous to health and safety, as determined under Construction Safety and Health Standards promulgated by the Secretary of Labor under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327 et seq.) as amended. Construction Safety and Health Standards

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promulgated by the Secretary of Labor may be obtained from the regional or area office of the OSHA of the U.S. Department of Labor.

- C. Immediately correct violations of the health and safety requirements contained in the Specifications or Standards referenced above. Notification of violations noted by the Owner may be verbal or written. Failure of the Owner to provide notification of health and safety violations does not relieve the Contractor from responsibility for conformance with the regulations and the safety of personnel and property.
- D. If the Contractor fails to promptly correct violations of the health and safety standards and requirements noted by the Owner, the Owner will issue an order to stop all or part of the Work. When satisfactory corrective action is taken, an order to resume work will be issued. The Contractor shall not be entitled to any extension of time, or to any claim for damage or additional compensation by reason of either the notification of a violation or the stop-work order.
- E. Maintain an accurate record of, and report to the Owner immediately, all cases of death and, within 2 hours, all cases of occupational diseases or traumatic injury to employees or the public involved, and property damage incident to performance of work under this Contract. Report using OSHA Form 300, Log of Work-Related Injuries and Illnesses.

PART 4. MEASUREMENT AND PAYMENT

4.01 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 01700

PROJECT CLOSEOUT

PART 1. GENERAL

1.01 RELATED DOCUMENTS

A. THE GENERAL CONDITIONS DIVISION I are hereby made part of this Section.

Examine all Drawings and all Sections of the Specifications for requirements and provisions affecting the work of this Section.

1.02 CLEANING

A. Use cleaning materials as recommended by product manufacturers and appropriate specification sections. Employ experienced workmen or professional cleaners.

B. Before inspection for substantial completion, do all necessary cleaning, including the following:

1. Sweep and rinse with clear water exterior paved surfaces, rake clean other site surfaces.
2. Refer to specification sections for additional requirements for particular surfaces.

1.02 SUBSTANTIAL COMPLETION AND FINAL INSPECTION

A. Submit written certification that project, or designated portion of project, is substantially complete, and request, in writing, a final inspection. The Engineer will make an inspection within 10 days of receipt of request.

B. Should the Engineer 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.

C. Should the Engineer determine that the work is not substantially complete, he will immediately notify Contractor, in writing, stating reasons. After Contractor completes work, he shall re-submit certification and request for final inspection.

1.03 CLOSE-OUT SUBMITTALS

A. Refer to EXECUTION portion of each specification section for closeout requirements, including operating and maintenance manuals; instruction of Authority's personnel in maintenance and operation of systems; submission of certifications, test reports, etc.; provision of spare parts and maintenance materials, all of which shall be neatly wrapped or packaged in standard sizes and clearly labeled.

B. Completed project record "As-Built" documents specified in RECORD DOCUMENTS AND FIELD ENGINEERING, SECTION 01050.

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- C. Certificate of insurance for products and completed operations.
- D. Typed list of major subcontractors and suppliers with addresses and telephone numbers.
- E. Submissions specified elsewhere in Contract Documents, including consent of surety to final payment; affidavit that all bills and indebtedness connected with the Work have been paid; and certification of payment from subcontractors and suppliers, or bond satisfactory to the Owner indemnifying the Owner against liens or other claims.

1.04 ACCEPTANCE OF THE 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 the Work.
- B. Acceptance may be given prior to correction of deficiencies that do not preclude operation and use of the facility; however, final payment will be withheld until all deficiencies are corrected.
- C. Until receipt of Letter of Final Acceptance, Contractor shall be responsible for the work of this Contract.

1.05 POST-CONSTRUCTION INSPECTION

- A. Prior to expiration of one year from date of final acceptance, the Owner will inspect the project to determine whether corrective work is required. Contractor will be notified in writing of all deficiencies. In accordance with terms of the General Conditions, corrective work must start on noted deficiencies within 10 days of receipt of notification to Contractor.

PART 2. PRODUCTS

(Not Applicable)

PART 3. EXECUTION

(Not Applicable)

PART 4. MEASUREMENT AND PAYMENT

4.01 METHOD OF 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.

*** END OF SECTION ***

SECTION 02000

SITE PREPARATION

PART 1. GENERAL

1.01 RELATED DOCUMENTS

- A. THE GENERAL CONDITIONS DIVISION I are hereby made part of this Section.
- B. Examine all Drawings and all Sections of the Specifications for requirements and provisions affecting the work of this Section.

1.02 SCOPE OF WORK

- 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. Mobilization and demobilization of all equipment, labor, materials, supervision, survey and any incidentals required to satisfactorily complete this project in accordance with these Specifications, the Contract Drawings and as directed by the Engineer.
 - 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. Temporary support or relocation and reestablishment of utilities to the extent required to complete the work.
 - 5. Temporary removal and reinstallation of miscellaneous hardware including.
 - 6. Perform site work operations and the removal of debris and waste materials to assure minimum interference with streets, walks, parking facilities, buildings and all other adjacent facilities.
 - 7. 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
 - 8. Obtain written permission from property owners to trespass and/or transgress their properties where an easement has not been granted.

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9. Control dust caused by the work. Dampen surfaces as required. Comply with pollution control regulations of governing authorities.
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 Engineer, and stop all work in that vicinity of said artifacts until directed by the Engineer.
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 Engineer, and stop all work in that vicinity of said until directed by the Engineer.

1.03 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. The following items of related work are specified and included in other Sections of the Specifications:
 1. Demolition under DEMOLITION, SECTION 02110
 2. Temporary Facilities and Controls under TEMPORARY FACILITIES AND CONTROLS, SECTION 01500

1.04 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 Authority prior to the start of work.
- B. Refer to SECTION 01610 – HEALTH AND SAFETY for additional requirements.

1.05 SUBMITTALS

- A. Location and phasing plan of staging areas and construction areas and schedule for moving materials or equipment into those areas shall be submitted for Engineer's approval prior to mobilization and related site preparation operations.
- B. A traffic management plan must be submitted at least 2 weeks before the start of construction.
- C. Details of floating booms as required by Project Permits.
- D. Details of platforms and temporary staging as required to prevent debris and dust from falling into the water.
- E. Location of staging areas and equipment storage (Construction Materials and Equipment Staging Plan)

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- F. Spill management plan as required in Project Permits
- G. Construction schedule and phasing plan shall be submitted to the OWNER prior to mobilization and related work preparation operations
- H. Provide daily updates to schedule and phasing plan as applicable.
- I. Confirmation and copies of all notifications
- J. Provide comprehensive photo-documentation of pre-existing site and structure and condition.

1.06 PROTECTION

- A. Protection of persons and property:
 - 1. Barricade or secure equipment staging areas occurring as part of this work and post with warning lights.
 - 2. Protect structures, utilities, pavements, and other facilities from damage caused by equipment, undermining, washout, transportation, disposal and other hazards created by work operations.
- 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 Engineer, at the sole expense of the Contractor.
- C. Do not interfere with use of adjacent buildings or facilities. Maintain free and safe passage to and from adjacent buildings and facilities or both and between them and the public way.
- D. Cease operations and notify Engineer 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.
- E. The Contractor shall erect a safety barrier around the limit of work areas as defined in the staging and phasing plan.

1.07 JOB CONDITIONS

- A. Contractor shall coordinate all work at the site with the OWNER and shall not obstruct any areas, roads or gates unless otherwise approved.

1.08 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.

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1.09 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.

1.10 ENVIRONMENTAL PROTECTION

- A. Comply with all requirements of environmental regulations and Project Permits.
- B. Provide measures to prevent any construction debris from falling into the water. Any material falling into the water shall be retrieved immediately.
- C. 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 drawings.

PART 2. PRODUCTS

2.01 MATERIALS

- A. Materials shall be as selected by the Contractor and approved by the Engineer, except as indicated on the Contract Drawings and/or in the Specifications.
- B. Construction Fence
 - 1. Unless otherwise specified on the Construction documents, Construction Fence shall be heavy duty UV stabilized, orange safety fence with a minimum four (4) foot height. Weight of fence shall be 20 pounds per 100 feet or greater.
 - 2. Fence shall be installed around all areas dedicated for construction activities to prevent public access and provide for public safety.

PART 3. EXECUTION

3.01 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, lighting, fencing, concrete vault, manholes, and utility lines.

3.02 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 Engineer.

3.03 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 Engineer must be notified at least 48 hours in advance of all material shipments in order make arrangements for the shipment to be inspected as they arrive to the site.
- C. 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.
- D. 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.
- E. The Engineer 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 Engineer with these checks as needed.

PART 4. MEASUREMENT AND PAYMENT

4.01 METHOD OF MEASUREMENT AND PAYMENT

- A. Mobilization and Site Preparation shall be measured by the Contract Lump Sum Price. Only one Mobilization and Site Preparation shall be measured for the complete Contract. Payment for Mobilization, Site Preparation & Demobilization be by Lump Sum and shall be full compensation for furnishing all necessary labor and equipment to successfully complete the contract and shall include mobilization, site preparation, compliance with Project Permits, temporary support, removal, replacement or relocation of utilities, and demobilization.

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- B. Payment under this item shall be made in two installments, 75% at time of project startup and 25% after project substantial completion and the removal of all Contractors equipment and personnel.

*** END OF SECTION ***

SECTION 02110

SELECTIVE DEMOLITION

PART 1. GENERAL

1.01 RELATED DOCUMENTS

- A. THE GENERAL CONDITIONS DIVISION I are hereby made part of this Section.
- B. Examine all Drawings and all Sections of the Specifications for requirements and provisions affecting the work of this Section.

1.02 SUMMARY

- A. Work under this Section, without limiting the generality thereof, consists of providing all materials, equipment, labor, storage, transportation facilities, and all other incidentals as indicated on the Drawings, stipulated in the Specifications and as reasonably implied by either or both for the complete removal and disposal of the following:
 - 1. Removal of existing utilities. Store for re-use and re-installation as specified on the contract drawings.
 - 2. Removal of existing timber deck structure.
 - 3. Removal of existing pump room control shed.
 - 4. Removal of existing doors and windows, scheduled for removal on Contract Drawings.
 - 5. Removal of existing louvers, scheduled for removal on Contract Drawings.
 - 6. Removal of existing fuel dispenser signage. Coordinate with Owner for storage location.
 - 7. Saw cutting and partial removal of existing concrete deck as required for foundations and fuel line installation.
 - 8. Saw cutting and partial removal of existing concrete deck and modification of existing sheet pile concrete cap as required for NOAA tied gage installation.
 - 9. Remove and store south side chain hoist for reinstallation.
 - 10. Miscellaneous hardware, fasteners, pieces of timber, concrete, rubble and other material which are encountered during the course of work which interferes with work specified to be done.
 - 11. All demolition work required as specifically called for on the Drawings and additionally as required to accommodate the proposed work.
 - 12. Removal from site and legal disposal of all removed materials, trash, debris, etc., dismantled and/or removed by demolition operations, except any items specifically indicated on the drawings to be used on the project or to be stored for Authority's future use.

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- B. Incidental materials necessary for the completion of this installation, and usually furnished in connection therewith, shall be furnished and installed whether or not specifically mentioned.
- C. Should drawings not agree within themselves or not agree with the specifications, the greater quantity or superior quality of work or materials shall be included.

1.03 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. The following items of related work are specified and included in other Sections of the Specifications:
 - 1. Site preparation under SITE PREPARATION, SECTION 02000.

1.04 DEFINITIONS

- A. To Be Removed: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and reinstalled.
- B. Remove, Store and Reinstall: Detach items from existing construction, store and prepare them for reuse, and reinstall them where indicated.
- C. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.05 CODES, STANDARDS, ORDINANCES AND PERMITS

- A. Perform all work in strict accordance with all rules, regulations, standards, codes, ordinances or laws of local, state and Federal authorities having lawful jurisdiction, and be responsible for compliance therewith. Such authorities include but are not limited to the following:
 - 1. Massachusetts State Building Code.
 - 2. The Massachusetts Department of Public Safety (DPS)
 - 3. The Town of Chatham, MA

1.06 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with governing local, state and federal regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI A10.6.
- C. Pre-demolition Conference: Conduct conference at the Project site with the Owner and Project Engineer.

1.07 SUBMITTALS

- A. Submit a demolition plan and schedule of selective demolition activities.
- B. Contractor to provide certification that all materials disposed of has been completed in accordance with all municipal, state and federal regulations

1.08 PROJECT CONDITIONS

- A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- B. Notify Owner/Owner's Project Engineer of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- C. Hazardous Materials: Handle and dispose of hazardous materials offsite in accordance with State and Federal regulations. Generate all necessary chain-of-custody reports and include special trucking and disposal costs in the bid price.
- D. Storage or sale of removed items or materials on-site is not permitted.
- E. Existing Utilities to Remain: Support and protect existing adjacent utilities against damage during demolition operations.
- F. Existing Utilities to be Removed: Contractor to remove associated sewer and electrical utilities as directed on the contract drawings.

PART 2: PRODUCTS

NOT USED

PART 3: EXECUTION

3.01 EXAMINATION

- A. Verify location of existing utilities.
- B. Correlate with requirements indicated to determine extent of selective demolition required.

3.02 DEMOLITION

- A. Do not begin demolition until notified to proceed by the Owner or Project Engineer.
- B. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
- C. General: Demolish and remove existing construction only to the extent indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

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1. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools sized to minimize disturbance of adjacent surfaces.
 2. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 3. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting framing.
 4. Dispose of demolished items and materials promptly.
- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition.
- E. If the Contractor's equipment or methods result in damage to adjacent structures or elements to remain or cause demolition beyond indicated limits or acceptable limits necessary to complete successful repairs, or results in damage to other property of the Owner, then the Project Engineer will direct the Contractor to modify demolition operations. Such modification shall be performed at no additional expense to the Owner. Demolition beyond accepted limits shall be repaired by the Contractor at no additional expense to the Owner.

3.03 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be reused or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them at appropriate disposal facilities.
1. Burning: Do not burn demolished materials.
 2. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.04 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

PART 4. MEASUREMENT AND PAYMENT

4.01 METHOD OF MEASUREMENT AND PAYMENT

- A. Measurement for the work of this Section shall be at the Contract Unit Lump Sum. This price and payment shall include all labor, equipment, materials, testing,

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transportation, survey, supervision, disposal costs and any incidentals necessary to complete the work specified herein and as shown on the Contract Drawings.

*** END OF SECTION ***

SECTION 03000

CAST-IN-PLACE CONCRETE & CONCRETE REPAIR WORK

PART 1: GENERAL

1.01 RELATED DOCUMENTS

- A. THE GENERAL CONDITIONS DIVISION I are hereby made part of this Section
- B. Examine all Drawings and all Sections of the Specifications for requirements and provisions affecting the work of this Section.

1.02 SUMMARY:

- A. Extent of concrete work is shown on the drawings. The plans indicate the areas where new structural concrete is to be installed.
- B. Any temporary supports must be designed by a Professional Engineer licensed in the State of Massachusetts, calculations and details shall be submitted to the Engineer of Record for approval, 30 days prior to the start of any planned work.
- C. All concrete for this project shall be plant mixed and transported to the site in rotating drum mixer trucks, as outlined herein. No field mixes, including trucks that perform field mixed delivery will be acceptable.
- D. The finished concrete surface shall be ground or worked to match the surrounding concrete surface.

1.03 SUBMITTALS:

- A. Product Data: Submit data for proprietary materials and items, including reinforcement and forming accessories, admixtures, patching compounds, waterstops, joint systems, curing compounds, dry-shake finish materials, and others as requested by Owner.
- B. Shop Drawings; Reinforcement: Submit original shop drawings prepared by registered Professional Engineer for fabrication, bending, and placement of concrete reinforcement. Comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" showing bar schedules, stirrup spacing, diagrams of bent bars, and arrangement of concrete reinforcement. Include special reinforcement required for openings through concrete structures.
- C. Laboratory Test Reports: Submit laboratory test reports for concrete materials and mix design test.

1.04 QUALITY ASSURANCE:

- A. Codes and Standards: Comply with provisions of following codes, specifications, and standards, except where more stringent requirements are shown or specified:

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1. ACI 301 "Specifications for Structural Concrete for Buildings".
 2. ACI 318 "Building Code Requirements for Reinforced Concrete".
 3. Concrete Reinforcing Steel Institute (CRSI), "Manual of Standard Practice".
- B. Concrete Testing Service: Engage a testing laboratory acceptable to the Owner to perform material evaluation tests, and to design concrete mixes.
- C. Materials and installed work may require testing and re-testing at any time during progress of work. Tests, including re-testing of rejected materials for installed work, shall be done at Contractor's expense.

1.05 PROJECT CONDITIONS:

- A. Protect existing utilities in place.
- B. No concrete shall be placed when the temperature is below 40 degrees F (4.4 degrees C) or when the average low temperature is expected to fall below 40 degrees F for three (3) successive days.

PART 2: PRODUCTS

2.01 FORM MATERIALS

- A. Forms for Exposed Finish Concrete: Plywood, metal, metal-framed plywood faced, or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings.
- B. Forms for Unexposed Finish Concrete: Plywood, lumber, metal, or other acceptable material. Provide lumber dressed on at least two (2) edges and one side for tight fit.
- C. Form Coatings: Provide commercial formulation form-coating compounds that will not bond with, stain, nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces.
- D. Form Ties: Factory-fabricated, adjustable-length, removable or snap-off metal form ties, designed to prevent form deflection and to prevent spalling concrete upon removal. Provide units, which will leave no metal closer than 1-1/2" to surface. Where form ties are drilled and embedded into existing concrete, form-tie materials that remain in the finished concrete shall be non-corrosive such as stainless steel or plastic resin.

2.02 REINFORCING MATERIALS

- A. Reinforcing Bars: New, deformed billet steel bars, conforming to ASTM A 615, Grade 60, with galvanized in accordance with ASTM A 767.
- B. Accessories: Reinforcement accessories, consisting of spacers, chairs, ties, and similar items shall be provided as required for spacing, assembling, and supporting

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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.

- C. Embedded items, bolts, nuts, plates and reinforcing bar splicers shall be galvanized in accordance with the requirements of ASTM A-153, Zinc Coating (Hot Dip) on Iron and Steel Hardware, prior to installation.

2.03 CONCRETE MATERIALS:

- A. Portland Cement: ASTM C 150, Type I or Type II, air entrained.
- B. Use one brand of cement throughout project, unless otherwise acceptable to Owner.
- C. Normal Weight Aggregates: ASTM C 33 and as herein specified. Provide aggregates from a single source for exposed concrete.
- D. For exterior exposed surfaces, do not use fine or coarse aggregates containing spalling-causing deleterious substances.
- E. Water: Drinkable
- F. Calcium Nitrite Corrosion Inhibitors: AASHTO M-194.
- G. Silica Fume: Shall not be permitted.
- H. Fly Ash: AASHTO M-295.
- I. GGBF Slag: AASHTO M302.

2.04 RELATED MATERIALS

- A. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M 182, Class 2.
- B. Bonding Compound: Sika Armatec 110 Epochem bonding compound or equal.

2.05 PROPORTIONING AND DESIGN OF MIXES:

- A. The Contractor shall prepare design mixes for each type and strength of concrete by either laboratory trial batch or field experience methods as specified in ACI 301. If trial batch method used, use an independent testing facility acceptable to Owner for preparing and reporting proposed mix designs. The testing facility shall not be the same as used for field quality control testing.
- B. The Contractor shall submit written reports to Owner of each proposed mix for each class of concrete at least 15 days prior to start of work. Do not begin concrete production until Owner has reviewed mixes.
- C. The Contractor shall design mixes to provide normal weight concrete with the following properties, as indicated on drawings and schedules: 5000 psi 28-day compressive strength; 3/4-inch aggregate, W/C ratio, 0.40 maximum (air-entrained) and Calcium Nitrite Corrosion Inhibitor at 3 gallons per cubic yard.
- D. Minimum Cement Content shall be 685 pounds per cubic yard (5,000 PSI).

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- E. Concrete shall contain an admixture of fly ash. Fly ash shall constitute 15% (dry weight) of the cementitious content.
- F. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant; at no additional cost to Owner and as accepted by Owner. Laboratory test data for revised mix design and strength results must be submitted to and accepted by Owner before using in work.
- G. Normal Weight Aggregates:
 - 1. Fine Aggregates: Sand shall be composed of essentially clean, hard, strong, durable and impermeable particles, resistant to wear and frost, inert to cement and water, reasonably free from structurally weak grains, organic matter, loam, clay, silt, salts, mica or other fine materials that may affect bonding of cement based. Sand shall be taken from a natural deposit. The sand particles shall be relatively spherical in shape and have gritty surfaces. The sieve analysis for sand shall show it to be well graded and conforming to the following:

Sieve Designation	Minimum	Maximum
3/8 in.	100	-
No. 4	95	100
No. 16	55	80
No. 50	10	25
No. 100	2	8
No. 200	0	3

- 2. Coarse Aggregates: Coarse aggregates shall be blended from stone sizes to meet the gradation requirements for each designation below.

Percent by Weight Passing (AASHTO T-27)

Designation and Nominal Size	1½ in.		¾ in.		¾ in.	
	Min.	Max.	Min.	Max.	Min.	Max.
1½ in.	90	100				
¾ in.	35	60	90	100		
½ in.					90	100
¾ in.	10	25	20	50	30	70
No. 4	0	5	0	10	0	15
No. 8			0	5	0	5

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- H. Admixtures: Use water-reducing admixture or high range water-reducing admixture (super plasticizer) in concrete as required for placement and workability. Use high-range water-reducing admixture in pumped concrete, concrete for industrial slabs, architectural concrete, parking structure slabs, concrete required to be watertight, and concrete with water/cement ratios below 0.50.
 - 1. Use air-entraining admixture in exterior exposed concrete, unless otherwise indicated. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content of 6.0 percent with a tolerance of plus-or- minus 1-1/2 percent.
 - 2. Use admixtures for water reducing and set-control in strict compliance with manufacturer's directions.
- I. Water-Cement Ratio: Provide concrete for following conditions with maximum water-cement (W/C) ratios as follows:
 - 1. Subjected to brackish water, salt spray, or deicers; W/C 0.40.
 - 2. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement of not less than 1" and no more than 4".

2.06 CONCRETE MIXING

- A. Provide batch ticket for each batch discharged and used in work, indicating project identification name and number, date, mix type, mix time, quantity, and amount of water introduced.
- B. Ready-Mix Concrete: Comply with requirements of ASTM C 94 and as herein specified.
- C. During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C 94 may be required.

PART 3: EXECUTION

3.01 GENERAL

- A. Coordinate the installation of joint materials and vapor retarders with placement of forms and reinforcing steel.

3.02 FORMS

- A. Design, erect, support, brace, and maintain formwork to support vertical and lateral, static, and dynamic loads that might be applied until such loads can be supported by concrete structure. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation, and position. Maintain formwork construction tolerances complying with ACI 347.

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- B. Design formwork to be readily removable without impact, shock, or damage to cast-in-place concrete surfaces and adjacent materials.
- C. Construct forms to sizes, shapes, lines, and dimensions shown, and to obtain accurate alignment, location, grades, level and plumb work in finished structures. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required in work. Use selected materials to obtain required finishes. Solidly butt joints and provide backup at joints to prevent leakage of cement paste.
- D. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Kerf wood inserts for forming keyways, reglets, recesses, and the like, to prevent swelling and for easy removal.
- E. Provide temporary openings where interior area of formwork is inaccessible for cleanout, for inspection before concrete placement, and for placement of concrete. Securely brace temporary openings and set tightly to forms to prevent loss of concrete mortar. Locate temporary openings on forms at inconspicuous locations.
- F. Chamfer exposed corners and edges as indicated, using wood, metal, PVC, or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints. All exposed concrete edges shall have a 1" chamfer.
- G. Provisions for Other Trades: Provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings, recesses, and chases from trades providing such items. Accurately place and securely support items built into forms.
- H. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, or other debris just before concrete is placed. Retightening forms and bracing after concrete placement is required to eliminate mortar leaks and maintain proper alignment.

3.03 PLACING REINFORCEMENT

- A. Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports, and as herein specified. Avoiding cutting or puncturing vapor retarder during reinforcement placement and concreting operations.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials that reduce or destroy bond with concrete.
- C. Accurately position, support, and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as required.
- D. Place reinforcement to obtain at least minimum coverages for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

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3.04 CONCRETE PLACEMENT

- A. Notify the Engineer at least 24 hours prior to concrete placement.
- B. Pre-placement Inspection: before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast-in. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work. Moisten wood forms immediately before placing concrete where form coatings are not used.
- C. All reinforcing steel and embedded items shall be inspected by the Engineer.
- D. Concrete shall not be placed until the reinforcing steel and embedded items have been inspected and permission for placing concrete is granted by the Engineer.
- E. Produce standard-weight concrete consisting of specified portland cement, aggregates, admixtures, and water to produce the properties shown on the drawings. As indicated in the Contract Drawings, compressive strength shall be **5,000 psi** minimum at 28 days.
- F. Comply with ACI 304 "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete", and as herein specified.
- G. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete as nearly as practicable to its final location to avoid segregation.
- H. Placing Concrete or Epoxy Mortar in Forms: Pump concrete into forms using water-tight quick-disconnect nozzles, space nozzles uniformly along form alignment as required to preclude entrapment of air or creation of voids. Fill forms sequentially so that concrete is pumped in through one nozzle advancing toward the next, when concrete begins to extrude from the next nozzle in line, remove and plug the nozzle and begin pumping through the next in line. Continue the process until the forms are filled completely.
- I. Consolidate placed concrete by mechanical surface vibrating equipment supplemented by hand spading, rodding, or tamping where access is possible. Use equipment and procedures for consolidation of concrete in accordance with ACI 309.
- J. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine. Place vibrators to rapidly penetrate placed layer and at least 6" into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix.
- K. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.
- L. Maintain reinforcing in proper position during concrete placement operations.

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- M. Cold Weather Placing: Protect concrete work from physical damage or reduced strength, which could be caused by frost, freezing actions, or low temperatures, in compliance with ACI 306 and as herein specified.
- N. When air temperature has fallen to or is expected to fall below 40°F (4°C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50°F (10°C), and not more than 80°F (27°C) at point of placement.
- O. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
- P. Do not use calcium chloride, salt, and other materials containing antifreeze agents or chemical accelerators, unless otherwise accepted in mix designs.
- Q. Hot Weather Placing: When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified.
- R. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90°F (32°C). Mixing water may be chilled, or chopped ice may be used to control temperature provided water equivalent of ice is calculated to total amount of mixing water. Use of liquid nitrogen to cool concrete is Contractor's option.
- S. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.
- T. Fog spray forms, reinforcing steel, and subgrade just before concrete is placed.
- U. Use water-reducing retarding admixture (Type D) when required by high temperatures, low humidity, or other adverse placing conditions.

3.05 FINISH OF FORMED SURFACES

- A. Rough Form Finish: For formed concrete surfaces not exposed-to-view in the finish work or by other construction, unless otherwise indicated. This is the concrete surface having texture imparted by form facing material used, with tie holes and defective areas repaired and patched and fins and other projections exceeding 1/4" in height rubbed down or chipped off.
- B. Smooth Form Finish: For formed concrete surfaces exposed-to-view, or that are to be covered with a coating material applied directly to concrete, or a covering material applied directly to concrete, such as waterproofing, damp proofing, veneer plaster, painting, or other similar system. This is as-cast concrete surface obtained with selected form facing material, arranged orderly and symmetrically with a minimum of seams. Repair and patch defective areas with fins or other projections completely removed and smoothed.

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3.06 CONCRETE CURING AND PROTECTION

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting; keep continuously moist for not less than 3 days.
- C. Begin final curing procedures immediately following initial curing and before concrete has dried. Continue final curing for at least 3 days minimum in accordance with ACI 301 procedures. Avoid rapid drying at end of final curing period.
- D. Curing Methods: Perform curing of concrete by curing and sealing compound, by moist curing, by moisture-retaining cover curing, and by combinations thereof, as herein specified.
- E. Provide moisture curing by following methods.
 - 1. Keep concrete surface continuously wet by covering with water.
 - 2. Continuous water-fog spray.
 - 3. Covering concrete surface with specified absorptive cover, thoroughly saturating cover with water and keeping continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with 4-inch lap over adjacent absorptive covers.
- F. Provide moisture-cover curing as follows:
 - 1. Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3-inch and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
- G. Provide curing and sealing compound to exposed interior slabs and to exterior slabs, walks, and curbs, as follows:
 - 1. Apply specified curing and sealing compound to concrete slabs as soon as final finishing operations are complete (within 2 hours). Apply uniformly in continuous operation by power-spray or roller in accordance with manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.
- H. Curing Formed Surfaces: Cure formed concrete surfaces, including undersides of beams, supported slabs, and other similar surfaces by moist curing with forms in place for full curing period or until forms are removed. If forms are removed, continue curing by methods specified above, as applicable.
- I. Curing Unformed Surfaces: Cure unformed surfaces, such as slabs, floor topping, and other flat surfaces by application of appropriate curing method.

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- J. Curing Epoxy Mortar Surfaces: Cure epoxy mortar in accordance with manufactures directions.

3.07 REMOVAL OF FORMS:

- A. Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operations, and provided curing and protection operations are maintained.
- B. Form facing material may be removed 4 days after placement, only if shores and other vertical supports have been arranged to permit removal of form facing material without loosening or disturbing shores and supports.

3.08 CONCRETE SURFACE REPAIRS:

- A. Patching Defective Areas: Repair and patch defective areas with cement mortar immediately after removal of forms, when acceptable to Owner.
- B. Cut out honeycomb, rock pockets, voids over 1/4" in any dimension, and holes left by tie rods and bolts, down to solid concrete but, in no case to a depth of less than 1". Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brush-coat the area to be patched with specified bonding agent. Place patching mortar after bonding compound has dried.
- C. For exposed-to-view surfaces, blend white Portland cement and standard Portland cement so that, when dry, patching mortar will match color surrounding. Provide test areas at inconspicuous location to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.
- D. Repair of Formed Surfaces: Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Owner. Surface defects, as such, include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets; fins and other projections on surface; and stains and other discolorations that cannot be removed by cleaning. Flush out form tie holes, fill with dry pack mortar, or precast cement cone plugs secured in place with bonding agent.
- E. Repair concealed formed surfaces, where possible, that contain defects that affect the durability of concrete. If defects cannot be repaired, remove and replace concrete.
- F. Repair defective areas, except random cracks and single holes not exceeding 1" diameter, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cuts and expose reinforcing steel with at least 3/4" clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding compound. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

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- G. Perform structural repairs with prior approval of Owner for method and procedure, using specified epoxy adhesive and mortar.
- H. Repair methods not specified above may be used, subject to acceptance of Owner.

3.09 QUALITY CONTROL TESTING DURING CONSTRUCTION:

- A. The Contractor will employ a testing laboratory to perform tests and to submit test reports.
 - 1. Sampling and testing for quality control during placement of concrete may include the following, as directed by Owner.
 - 2. Sampling Fresh Concrete: ASTM C 172, except modified for slump to comply with ASTM C 94.
 - 3. Slump: ASTM C 143; one test at point of discharge for each day's pour of each type of concrete; additional tests when concrete consistency seems to have changed.
 - 4. Air Content: ASTM C 173, volumetric method for lightweight or normal weight concrete; ASTM C 231 pressure method for normal weight concrete; one for each day's pour of each type of air- entrained concrete.
 - 5. Concrete Temperature: Test hourly when air temperature is 40° F (4° C) and below, and when 80° F (27° C) and above; and each time a set of compression test specimens made.
 - 6. Compression Test Specimen: ASTM C 31; one set of 4 standard cylinders for each compressive strength test, unless otherwise directed. Mold and store cylinders for laboratory cured test specimens except when field-cure test specimens are required.
 - 7. Compressive Strength Tests: ASTM C 39; one set for each day's pour exceeding 5 cu. yds. plus additional sets for each 50 cu. yds. over and above the first 25 cu. yds. of each concrete class placed in any one day; one specimen tested at 7 days, two specimens tested at 28 days, and one specimen retained in reserve for later testing if required.
- B. When frequency of testing will provide less than 5 strength tests for a given class of concrete, conduct testing from at least 5 randomly selected batches or from each batch if fewer than 5 are used.
- C. Test results will be reported in writing to Owner and Contractor within 24 hours after tests. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials; compressive breaking strength and type of break for both 7-day tests and 28-day tests.
- D. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.

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- E. Additional Tests: The testing service will make additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by Owner. Testing service may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed. Contractor shall pay for such tests when unacceptable concrete is verified.

PART 4. MEASUREMENT AND PAYMENT

4.01 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 and constitute full compensation for all supervision, labor, materials and equipment for the satisfactory installation of cast-in-place concrete including transportation, excavation, compaction, forming, finishing, reinforcing steel, dowels, grouts, epoxy adhesives, tie wire, chairs, spacers, curing, testing, supervision and attachments per the Contract Drawings and these specifications. This item includes all embedded items, steel fabrications and hardware related to concrete installation.

*** END OF SECTION ***

SECTION 05120

STRUCTURAL STEEL

PART 1: GENERAL

1.01 RELATED DOCUMENT

- A. THE GENERAL CONDITIONS DIVISION I are hereby made part of this Section.
- B. Examine all Drawings and all Sections of the Specifications for requirements and provisions affecting the work of this Section.

1.02 SUMMARY

- A. Section includes:
 - 1. Structural Steel Shapes

1.03 REFERENCES

- A. AISC – American Institute of Steel Construction
- B. AWS – American Welding Society

D1.1	Structural Steel Welding Code
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- C. ASTM – American Society for Testing and Materials

A 123	Zinc (Hot Galvanized) Coatings on Products Fabricate from Rolled Pressed, and Forged Steel Shapes, Plates, Bars, and Strip
A 153	Zinc Coating (Hot-Dip) on Iron and Steel Hardware
A 193	Stainless Steel Bolts
A 276	Standard Specifications Stainless Steel Bars and Shapes, Type 316.
A 307	Standard Specification for Carbon Steel Bolts and Studs, 60,000 Psi Tensile Strength.
A 325	Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
A 36	Standard Specification for Carbon Structural Steel
A 490	Standard Specification for Structural Bolts, Alloy Steel, Heat Treated, 150 ksi Minimum Tensile Strength
A 500	Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
A 53	Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
A 992	Standard Specification for Structural Steel Shapes
A 1069	Standard Specification for Laser-Fused Stainless Steel Bars, Plates and Shapes

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F 1554	Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength
F 436	Hardened Steel Washers
F593	Standard Specification for Stainless Steel Bolts, Hex Cap Screws and Studs.
F594	Standard Specification for Stainless Steel Nuts.

1.04 SUBMITTALS

- A. Product Data: Submit manufacturer’s product data for paint products, grout welding electrodes and rods, washers, and bolts.
- B. Shop Drawings: Submit shop drawings detailing fabrication and erection of structural steel indicated. Include plans, elevations, section, and details of structural steel and their connections. Show anchorage and accessory items. Provide templates for anchors and bolts specified for installation under other Sections.
- C. Quality Control Submittals
 - 1. Certificates:
 - a. Welder certificates signed by Contractor certifying that welders comply with requirements specified under the “Quality Assurance” article.
 - b. Material Certifications (Mill Reports) for steel, bolts nuts and washers, galvanizing, and pins and rollers.
 - c. Welding procedures and Qualifications
 - d. ASIC Fabrication Plan Quality Certifications
 - e. AISC Erector Quality Certifications

1.05 QUALITY ASSURANCE

- A. Qualifications
 - 1. Fabricator: Firm experienced in producing structural steel similar to those indicated for this Project with a record of successful in-service performance, and with sufficient production capacity to produce required units without delaying the Work.
 - 2. Erector: Firm experienced in erecting structural steel similar to those indicated for this Project with a record of successful in-service performance, and with sufficient production capacity to produce required units without delaying the Work
- B. Welding Standards: Comply with applicable provisions of AWS D1.1.
 - 1. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.
- C. Erection and Drawing Requirements
 - 1. Submit fabrication drawings for approval prior to fabrication. Prepare in accordance with AISC 326 and AISC 325. Fabrication drawings must not be reproductions of contract drawings. Fabrication drawings shall be signed and

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sealed by a Professional Engineering, registered in the State of Massachusetts. Include complete information for the fabrication and erection of the structure's components, including the location, type, and size of bolts, welds, member sizes and lengths, connection details, blocks, copes, and cuts. Use AWS A2.4 standard welding symbols. Any shoring and temporary bracing required must be designed and sealed a Professional Engineering, registered in the State of Massachusetts and submitted for record purposes with calculations as part of the drawings. Any deviations from the details shown on the contract drawings must be clearly highlighted on the fabrication drawings. Explain reasons for any deviation from the contract drawings.

1.06 PROJECT CONDITIONS

A. Field Measurements

1. Check actual locations of all facilities and other construction to structural steel must fit by accurate field measurements prior to fabrication. Show recorded measurements on final shop drawings.
2. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

PART 2: PRODUCTS

2.01 MATERIALS

A. Structural Steel

1. Steel Plates, Shapes and Bars: ASTM A 572, Grade 50.
2. Stainless Steel Shapes: ASTM A 276 and ASTM A 1069.
3. Aluminum: Grade 6061 T-6, anodized.
4. Cold-Formed Steel Tubing: ASTM A 500, Grade B (Minimum $F_y = 46$ ksi).
5. Hot-Formed Steel Tubing: ASTM A 501.
6. Steel Pipe: ASTM A53, Type S, Grade B, Schedule 40, unless otherwise indicated, or another weight required by structural loads.
7. Stainless Steel Plate: ASTM A167, Type 316.
8. Stainless Steel Bar Stock: ASTM A276, Type 316.

B. Bolts, Nuts and Washers

1. ASTM A307 Grade A, Regular hexagon-head bolts,
2. ASTM A563 Grade A, heavy hex style and, where indicated.
3. ASTM F436 Flat Washers

C. High Strength Bolts

1. ASTM A325 Type 1 High Strength Bolts
2. ASTM A490, Type 1 or 2 High Strength Bolts
3. ASTM A563 Grade A, Heavy Hex Style

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4. ASTM F436 Plain Carbon Steel Washers
 5. ASTM F593 Standard Specification for Stainless Steel Bolts, Hex Cap Screws and Studs.
- D. Anchor Rods
1. ASTM F1554, Grade 36 Anchor Rods
 2. ASM A193 Stainless Steel Anchor Rods
- E. Anchor Nuts
1. ASTM A563, Grade A, Hex Style Anchor Nut
 2. ASTM A193 Stainless Steel Nut
- F. Anchor Washers
1. ASTM F844 Anchor Washers
 2. ASTM A276 Type 316 Stainless Steel Anchor Washer
- G. Welding Materials: AWS D1.1, Type Required For Materials Being Welded
- H. Anchor Plate Washers
1. ASTM A36 Anchor Plate Washers
 2. ASTM A276 Type 316 Stainless Steel Anchor Plate Washer

2.02 FABRICATION, GENERAL

- A. Form metal fabrications from materials of size, thickness, and shapes indicated but not less than that needed to comply with performance requirements indicated. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of each metal fabrication.
- B. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.
- C. Allow for thermal movement resulting from the following maximum change (range) in ambient temperature in the design, fabrication, and installation of installed metal assemblies to prevent buckling, opening up of joints, and overstressing of welds and fasteners. Base design calculations on actual surface temperatures of metals due to both solar heat gain and nighttime sky heat loss.
1. Temperature Change (Range): 100 degrees Fahrenheit.
- D. Shear and punch metals cleanly and accurately. Remove burrs.
- E. Ease exposed edges to a radius of approximately 1/32-inch, unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- F. Remove sharp or rough areas on exposed traffic surfaces.
- G. Weld corners and seams continuously to comply with the following:
1. Use materials and methods that minimize distortion and develop strength and

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- corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.
- H. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.
- I. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
- J. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- K. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- L. Fabricate joints that will be exposed to weather in a manner to exclude water, or provide weep holes where water may accumulate.

2.03 STEEL AND IRON FINISHES

- A. Galvanizing: For those items indicated for galvanizing, apply zinc coating by the hot-dip process complying with the following requirements:
- 1. ASTM A153 for galvanizing iron and steel hardware.
 - 2. ASTM A123 for galvanizing both fabricated and non-fabricated iron and steel products made of uncoated rolled, pressed, and forged shapes, plates, bars, and strip 0.0299-inch thick or thicker.

PART 3: EXECUTION

3.01 PREPARATION

- A. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installing anchorages, including concrete inserts, sleeves, anchor bolts and miscellaneous items having integral anchors that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.
- B. Set sleeves in concrete with tops flush with finish surface elevations. Protect sleeves from water and concrete entry.

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3.02 INSTALLATION, GENERAL

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction. Include threaded fasteners for concrete and masonry inserts, and other connectors as required.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment and elevation; with edges and surfaces level, plumb, true and free of rack; and measured from established lines and levels.
- C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete masonry or similar construction.
- D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop-welded because of shipping size limitations. Do not weld, cut, or abrade the surfaces of exterior units that have been hot-dip galvanized after fabrication and are intended for bolted or screwed field connections.
- E. Field Welding: Comply with the following requirements:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.
- F. Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.

3.03 ADJUSTING AND CLEANING

- A. For galvanized surfaces, clean welds, bolted connections, and abraded areas, apply galvanizing repair paint to comply with ASTM A 780.

PART 4. METHOD OF MEASUREMENT AND PAYMENT

4.01 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 05500

METAL FABRICATIONS

PART 1: GENERAL

1.01 RELATED DOCUMENT

- A. THE GENERAL CONDITIONS DIVISION I are hereby made part of this Section.
- B. Examine all Drawings and all Sections of the Specifications for requirements and provisions affecting the work of this Section.

1.02 SUMMARY

- A. Section includes:
 - 1. Miscellaneous channels, angles, and other shapes as required.
 - 2. Simpson Strong-Tie Wood Connectors

1.03 REFERENCES

- A. AISC – American Institute of Steel Construction
- B. ANSI – American National Standards Institute
 - 1. A14.3 – Safety Requirements for Fixed Ladders
 - 2. B18.6.3 – Machine Screws and Machine Screw Nuts (M4).
 - 3. B18.21.1 – Lock Washers (Inch Series).
 - 4. B18.22.1 – Plain Washers.
- C. ASTM – American Society for Testing and Materials
 - 1. A27 – Standard Specification for Steel Castings, Carbon, for General Application.
 - 2. A36 – Standard Specification for Structural Steel.
 - 3. A47 – Standard Specification for Ferritic Malleable Iron Castings.
 - 4. A53 – Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded, and Seamless.
 - 5. A123 – Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - 6. A153 – Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - 7. A276 – Standard Specifications Stainless Steel Bars and Shapes, Type 316.
 - 8. A307 – Standard Specification for Carbon Steel Bolts and Studs, 60,000 Psi Tensile Strength.

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9. A500 – Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
 10. A501 – Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
 11. A563 – Standard Specification for Carbon and Alloy Steel Nuts.
 12. A666 – Stainless Steel Bars and Shapes, Type 316.
 13. A780 – Practice for Repair of Damaged Hot-Dip Galvanized Coatings.
 14. C1107 – Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non-Shrink).
 15. E488 – Test Method for Strength of Anchors in Concrete and Masonry Elements.
 16. F593 – Standard Specification for Stainless Steel Bolts, Hex Cap Screws and Studs.
 17. F594 – Standard Specification for Stainless Steel Nuts.
- D. AWS – American Welding Society
1. D1.1 – Structural Welding Code – Steel.
 2. D1.3 – Structural Welding Code – Sheet Steel.
- E. FS – Federal Specification
1. FF-B-588 – Bolt, Toggle and Expansion Sleeve, Screw.
- F. NAAMM – National Association of Architectural Metal Manufacturers
1. MFM – Metal Finishes Manual for Architectural and Metal Products.

1.04 SYSTEM DESCRIPTION

- A. Design Requirements
1. Design work to support normally imposed loads and in conformity with AISC requirements.
 2. Provide for expansion and contraction.
 3. Design exterior items to exclude water.
 4. Shop drawings and calculations for metal fabrications engineered under work of this Section shall be prepared under direct supervision of Commonwealth of Massachusetts licensed Structural Engineer and shall be so stamped.

1.05 SUBMITTALS

- A. Product Data: Submit manufacturer's product data for paint products and grout. Product data should include connection type, material and capacity.
- B. Shop Drawings: Submit shop drawings detailing fabrication and erection of each metal fabrication indicated. Include plans, elevations, section, and details of metal fabrications and their connections. Show anchorage and accessory items. Provide templates for anchors and bolts specified for installation under other Sections.
- C. Quality Control Submittals

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1. Certificates: Welder certificates signed by Contractor certifying that welders comply with requirements specified under the “Quality Assurance” article.

1.06 QUALITY ASSURANCE

A. Qualifications

1. Fabricator: Firm experienced in producing metal fabrications similar to those indicated for this Project with a record of successful in-service performance, and with sufficient production capacity to produce required units without delaying the Work.

B. Welding Standards: Comply with applicable provisions of AWS D1.1 and AWS D1.3.

1. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

1.07 PROJECT CONDITIONS

A. Field Measurements

1. Check actual locations of all facilities and other construction to which metal fabrication must fit by accurate field measurements before fabrications. Show recorded measurements on final shop drawings.
2. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

PART 2: PRODUCTS

2.01 MATERIALS

A. Metal Surfaces, General: For metal fabrications exposed to view in the completed Work, provide materials selected for their surface flatness, smoothness, and freedom from surface blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.

B. Steel and Iron

1. Steel Plates, Shapes and Bars: ASTM A 572, Grade 50.
2. Stainless Steel Shapes: ASTM A 276.
3. Aluminum: Grade 6061 T-6, anodized.
4. Cold-Formed Steel Tubing: ASTM A 500.
5. Hot-Formed Steel Tubing: ASTM A 501.
6. Steel Pipe: ASTM A53, Type S, Grade B, Schedule 40, unless otherwise indicated, or another weight required by structural loads.
7. Stainless Steel
 - a. Plate: ASTM A167, Type 316.
 - b. Bar Stock: ASTM A276, Type 316.
8. Concrete Inserts: Anchors of type indicated below, fabricated from corrosion resistant materials capable of sustaining, without failure, the load imposed within a safety factor of 4.0, as determined by testing per ASTM E488, conducted by a

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- qualified independent testing agency.
- a. Threaded or wedge type; galvanized ferrous castings, either ASTM A47 malleable iron or ASTM A27 cast steel. Provide bolts, washers, and shims as required, hot-dip galvanized in accordance with ASTM A153.
- C. Wood Connectors: Wood Connectors not specified on the drawings shall be manufactured Simpson Strong-Tie or equal approved by the Engineer and shall be Type 316 Stainless Steel. Installation and Fastening requirements shall be in accordance with manufacturer's specifications.
- D. Fasteners: Provide plated fasteners complying with ASTM B633, Class Fe/Zn 25 galvanized for exterior use or where built into concrete structures. Select fasteners for the type, grade, and class required.
1. Bolts and Nuts: Regular hexagon-head bolts, ASTM A307, Grade A, with hex nuts, ASTM A563, and, where indicated, flat washers.
 2. Machine Screws: ANSI B18.6.3.
 3. Plain Washers: Round, carbon steel, ANSI B18.22.1.
 4. Lock Washers: Helical, spring type, carbon steel, ANSI B18.21.1.
 5. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E488, conducted by a qualified independent testing agency.
 - a. Material: Carbon steel components zinc-plated to comply with ASTM B633, Class Fe/Zn 5.
 - b. Material: Group 1 alloy 304 or 316 stainless steel bolts and nuts complying with ASTM F593 and ASTM F594.
- E. Welding Materials: AWS D1.1, type required for materials being welded.
- F. Coatings
1. Coatings for Protection of Dissimilar Materials
 - a. Dissimilar Metals: Bituminous type materials conforming with MIL Standard 889.
 - b. Aluminum in Contact with Concrete, Metal, Wood, or other Absorptive Material.
 2. Galvanizing Repair Paint: High zinc dust content with paint, with dry film containing not less than 94 percent zinc dust by weight, as manufactured by Parker Amchem, "Galvaprep SG"; Sherwin Williams, "Zinc Clad I".
- G. Non-Shrink, Non-Metallic Grout
1. Factory-packaged, non-staining, non-corrosive, non-gaseous grout complying with ASTM C1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.
 2. Manufacturer: Five Star Products, "Five Star Grout"; Master Builders Technologies, Inc., "Masterflow 928 and 713"; W.R. Meadows, Inc., "Sealtight

588 Grout.”

2.02 FABRICATION, GENERAL

- A. Form metal fabrications from materials of size, thickness, and shapes indicated but not less than that needed to comply with performance requirements indicated. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of each metal fabrication.
- B. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.
- C. Allow for thermal movement resulting from the following maximum change (range) in ambient temperature in the design, fabrication, and installation of installed metal assemblies to prevent buckling, opening up of joints, and overstressing of welds and fasteners. Base design calculations on actual surface temperatures of metals due to both solar heat gain and nighttime sky heat loss.
 - 1. Temperature Change (Range): 100 degrees Fahrenheit.
- D. Shear and punch metals cleanly and accurately. Remove burrs.
- E. Ease exposed edges to a radius of approximately 1/32-inch, unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- F. Remove sharp or rough areas on exposed traffic surfaces.
- G. Weld corners and seams continuously to comply with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.
- H. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.
- I. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
- J. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- K. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.

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- L. Fabricate joints that will be exposed to weather in a manner to exclude water, or provide weep holes where water may accumulate.

2.03 STEEL AND IRON FINISHES

- A. Galvanizing: For those items indicated for galvanizing, apply zinc coating by the hot-dip process complying with the following requirements:
 - 1. ASTM A153 for galvanizing iron and steel hardware.
 - 2. ASTM A123 for galvanizing both fabricated and non-fabricated iron and steel products made of uncoated rolled, pressed, and forged shapes, plates, bars, and strip 0.0299-inch thick or thicker.

PART 3: EXECUTION

3.01 PREPARATION

- A. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installing anchorages, including concrete inserts, sleeves, anchor bolts and miscellaneous items having integral anchors that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.
- B. Set sleeves in concrete with tops flush with finish surface elevations. Protect sleeves from water and concrete entry.

3.02 INSTALLATION, GENERAL

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction. Include threaded fasteners for concrete and masonry inserts, and other connectors as required.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment and elevation; with edges and surfaces level, plumb, true and free of rack; and measured from established lines and levels.
- C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete masonry or similar construction.
- D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop-welded because of shipping size limitations. Do not weld, cut, or abrade the surfaces of exterior units that have been hot-dip galvanized after fabrication and are intended for bolted or screwed field connections.
- E. Field Welding: Comply with the following requirements:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.

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- F. Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.

3.03 ADJUSTING AND CLEANING

- A. For galvanized surfaces, clean welds, bolted connections, and abraded areas, apply galvanizing repair paint to comply with ASTM A 780.

PART 4. METHOD OF MEASUREMENT AND PAYMENT

4.01 METHOD OF MEASUREMENT AND PAYMENT

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 and shall constitute full compensation for all supervision, labor, materials and equipment for the satisfactory installation of miscellaneous metals including fabrication, transportation and installation and hardware in accordance with Contract Drawings and these specifications.

*** END OF SECTION ***

SECTION 06100
ROUGH CARPENTRY

PART 1. GENERAL

1.01 RELATED DOCUMENT

- A. THE GENERAL CONDITIONS DIVISION I are hereby made part of this Section.
- B. Examine all Drawings and all Sections of the Specifications for requirements and provisions affecting the work of this Section.

1.02 SUMMARY

- A. Section Includes: Execution and completion of Rough Carpentry in accordance with the Specifications and Drawings including but not limited to;
 - 1. Dimensional lumber.
 - 2. Miscellaneous framing and blocking.

1.03 REFERENCES

- A. General:
 - 1. The following documents form part of the Specifications to the extent stated. Where differences exist between codes and standards, the one affording the greatest protection shall apply.
 - 2. Unless otherwise noted, the referenced standard edition is the current one at the time of commencement of the Work.
 - 3. Refer to Division 01 Section "General Requirements" for the list of applicable regulatory requirements.
- B. ASTM International.
- C. American Wood Preservers Association (AWPA).
- D. Structural Building Components Association (SBCA).
- E. National Fire Protection Association (NFPA).

1.04 SUBMITTALS

- A. Certificate: Provide certificate from each manufacturer stating that material is first quality, meets or exceeds the properties of specified materials as specified herein, and is suitable for intended use on this Project. Where recycled lumber materials are used for structural applications or where otherwise noted, include lumber certification and quality grading.
- B. Provide submittals on the following:
 - 1. Framing Hardware (Simpson or other)
 - 2. Pressure Treated Plywood
 - 3. Pressure Treated Framing Stock

1.05 QUALITY ASSURANCE

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- A. Inspection: Prior to work of this Section, carefully inspect the installed work of other trades and verify that such work is completed to the point where this installation may properly commence.
- B. Discrepancies: In the event of discrepancy, immediately notify the Engineer. Do not proceed with installation in areas of discrepancy until such discrepancies have been fully resolved.
- C. Lumber may be rejected by the Engineer, whether or not it has been installed, for excessive warp, twist, bow, crook, mildew, fungus, or mold, as well as for improper cutting and fitting.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Materials shall be properly packed and handled while in transit so as to arrive at the job site in undamaged condition. Manufactured materials shall be delivered in suitable containers plainly marked with brand and manufacturer's name.
- B. Storage arrangements shall be subject to Engineer/Owner's approval and shall afford every access for inspection and identification of each item. Lumber shall be piled off the ground, on skids, in a manner which prevents twisting or warping and affords proper ventilation, drainage and protection from termites and decay, rain and excessive sun. Plywood shall be protected from dampness. Material shall be protected from the elements and from damage or deterioration.
- C. Damaged or deteriorated materials or assemblies shall not be used in the work and shall be replaced at no extra cost to Town.

MATERIALS

- A. General: Material shall conform to these specifications and to the applicable current editions of the Standard Specifications of ASTM and Massachusetts State Building Code.
- B. Lumber Grading:
 - 1. Framing Stock: Spruce Pine Fir (SPF) #2 Grade or better. Framing, blocking, backing, etc., unless otherwise shown, shall be SPF #2 or better. All framing stock shall receive the preservative type pressure treatment in accordance with paragraph 2.5.A.
 - 2. Plywood: APA Rated C-D Exposure 1 Plywood (CDX).
- C. Lumber Grade Marking: Each piece of lumber shall bear the official grade mark of the appropriate inspection bureau of the American Lumber Association, etc.
- D. Lumber Size and Patterns: Surface four sides; work to sizes shown. Sizing and surfacing shall be as required and approved for the particular location. Framing shall be sized and where exposed shall be surfaced.
- E. Dimensional lumber 2 inches (50 mm) or less in thickness shall have an average moisture content of 19 percent or less but no portion of a shipment shall be over 25 percent. Air dried lumber is desired but, if necessary, lumber may be kiln dried, however, the drying process must be slow and regulated to cause only an amount of checking comparable with air-dried stock. Wood thicker than 2-1/2 inches (63 mm) shall be well seasoned stock, moisture content not to exceed 18 percent.

1.07 WALL AND ROOF SHEATHING

- A. Plywood: See Paragraph 2.01 B.

1.08 LUMBER FASTENINGS

- A. Nails and Spikes: Stainless Steel Common Wire
 - 1. Nailing of wood members shall conform to Uniform Building Code and/or as indicated. Box nails are not permitted.
 - 2. Penetration: half-length of nail into piece receiving point.

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3. To connect pieces 2 inches (25 mm) net in thickness, 16d nails may be used.
 4. Do not drive nails closer together than half their length, nor closer to edge of piece of lumber or timber than 1/4 their length.
 5. Spacing and size of nails to be such that splitting will not occur. Pre-bore holes for nails wherever necessary to prevent splitting. Bore diameter of holes smaller than diameter of nail or spike (3/4 dia.).
 6. For plywood nailing, barbed plywood nails, size and spacing as indicated. Nails shall have edge distances of not less than 3/8 inch (9.5 mm).
 7. All framing fasteners shall be stainless steel.
- B. Screws: Stainless Steel Wood Screws:
1. Screws are to be turned into place, not driven. Self-tapping where required for fastening to metal framing.
 2. Countersink where heads will interfere or as required.
 3. Screw bolt holes the same diameter and depth as shank; bore holes for threaded portion of screws with bit no larger than base of thread.
 4. All framing fasteners shall be stainless steel
- C. Bolts: Stainless Steel square or hex head machine bolts with stainless nuts and washers conforming to ASTM F593-17.
1. To be installed in drilled holes the diameter of the bolt, 1/32 inch (0.8 mm) to 1/16-inch (1.6 mm) over size.
 2. Bolting of wood members shall conform to CBC requirements and as called for on the drawings.
 3. Washers: Provide bolts bearing on wood, unless noted otherwise on the drawings, with malleable iron, or steel plate washers under heads and nuts. Do no final bolting until structure has been properly aligned.
 4. Use galvanized bolts, nuts and washers where exposed to weather or where members are built-in to roofing.

1.09 ROUGH HARDWARE

- A. Provide rough hardware related to carpentry work which is not specifically called out under other headings. This shall include, but not be limited to, the following:
1. General: Fastenings, devices, and other rough hardware not specifically indicated on drawings or specified herein shall be submitted for approval prior to installation. Conform to ASTM A36.
 2. Framing clips, hangers, etc.: Standard products of Universal Company, Simpson, or Silver.
 3. Sheet metal straps: Galvanized sheet steel of gauges and designs indicated.
 4. Powder Driven Fasteners: shall have a current ICC evaluation report and be size, number and type shown, installed as described in the evaluation report.

1.10 PRESSURE TREATMENT

1. Dimensioned Lumber (all other): AWWPA C-2, retention of 0.25 lbs/c.f. per quality standard LP-2 for above ground use.

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2. Field treatment shall be Boracol® or Impel® Rods, Chemical Specialties Inc. applied in accordance with the manufacturer's instructions.
3. Subcontractor shall furnish to the Engineer, upon delivery of the members to the job, a certificate certifying that the material has been pressure treated as specified.

PART 3. EXECUTION

3.01 WORKMANSHIP & INSTALLATION

- A. General: Rough carpentry shall produce joints true, tight, and well nailed with members assembled in accordance with the Contract Drawings and with pertinent codes and regulations.
- B. Selection of lumber pieces: Carefully select members. Select individual pieces so that knots and obvious defects will not interfere with placing bolts or proper nailing or making proper connections.

3.02 FRAMING

- A. Install framing in strict accordance with the requirements of MA State Building Code unless more stringent requirements are specified herein or shown on the Contract Drawings.

3.03 CLEANUP

- A. At the end of each shift and upon completion of the work, remove debris, rubbish and surplus materials from the site which resulted from work under this section. Do not leave wood, shavings, sawdust, etc. on the ground or buried in fill. Take positive measures to ensure that saw dust and wood shavings do not enter the storm drainage system.

PART 4. MEASUREMENT AND PAYMENT

4.01 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 06130

STRUCTURAL TIMBER

PART 1. GENERAL

1.01 RELATED DOCUMENTS

- A. THE GENERAL CONDITIONS DIVISION I are hereby made part of this Section.
- B. Examine all Drawings and all Sections of the Specifications for requirements and provisions affecting the work of this Section.

1.02 SCOPE OF WORK

- A. The work to be done under this section shall consist of furnishing all materials, labor, supervision, tools and equipment and performing all operations necessary to complete all work as shown on the Contract Drawing and as specified.
- B. Description of Work
 - 1. The work includes, but is not limited to, the following items:
 - a. Construction of timber joists, posts, hardware work incidental thereto,

1.03 SUBMITTALS:

- A. Shop Drawings: Submit framing plan showing member lengths, joist spacing and post locations, support framing, pitch, hardware, connections etc.
- B. Material Certifications: For preservative treated wood products, from manufactures. Indicate type of preservative used and net amount of preservative retained.

1.04 QUALITY ASSURANCE

- A. The Contractor shall comply with all applicable local, state and federal requirements, as well as standard industry standards and practices, regarding materials, methods of work and disposal of excess and waste materials.
- B. Quality Standard: Comply with AITC A190.1.

1.05 TECHNICAL SPECIFICATIONS/PUBLICATIONS

- A. American Society for Testing and Materials Standards (ASTM)

A 36 / A 588	Structural Steel
A 123	Zinc (Hot Galvanized) Coatings on Products Fabricate from Rolled Pressed, and Forged Steel Shapes, Plates, Bars, and Strip
A 153	Zinc Coating (Hot-Dip) on Iron and Steel Hardware

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A 276	Stainless Steel Bars and Shapes
A 307	Carbon Steel Externally and Internally Threaded Standard Fasteners
A 325	Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
E 329	Inspection and Testing Agencies for Concrete, Steel and Bituminous Materials as used in Construction

B. American Wood-Preserver's Association Standards (APW)

C1	All Timber Products-Preservative Treatment by Pressure Processes
C2	Lumber, Timbers, Bridge Ties and Mine Ties-Preservative Treatment by Pressure Processes.
C18	Pressure Treated Materials in Marine Construction
M2	Inspection of Treated Timber Products.
M4	Care of Preservative-Treated Wood Products
P5	Water-Borne Preservatives

C. National Design Specifications for Wood Construction (NDS)

D. American National Standards Institute (ANSI)

A190	Standard for Structure Wood Products – Structural Glued Laminated Timber
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E. American Institute of Timber Construction (AITC)

A190	Standard for Structure Wood Products – Structural Glued Laminated Timber
111	Recommended Practices for Protection of Structural Glued Laminated Timber During Transit, Storage and Erection

F. The Engineered Wood Associated (APA)

1.06 DELIVERY, STORAGE AND HANDLING

- A. General: Comply with provisions in AITC 111.
- B. Individually wrap members using plastic-coated paper covering with water-resistant seams.

PART 2. PRODUCTS

2.01 GENERAL

- A. Structural Timber:
 - 1. All structural timber shall be Southern Pine of the quality defined as "Dense Structural 65" or Grade No. 1 or better. Grades of southern pine refer to the latest Standard Grading Rules of the Southern Pine Inspection Bureau. All timber shall be rough sizes.

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2. Decking: Decking shall be Southern Yellow Pine, Grade No. 1 or better, S4S, Alkaline Copper Quaternary ACQ treated to a retention of 0.60 pounds per cubic foot with ACQ conforming to AWWPA standard P5 unless otherwise noted. The treatment shall be by the full cell process in accordance with AWWPA standards C1, C2 and C18.
 3. Timber: All structural timber shall be Southern Pine of the quality defined as Grade No. 1 or better, S4S. Grades of southern pine refer to the latest Standard Grading Rules of the Southern Pine Inspection Bureau. All timber shall be rough sizes and treated with Copper Chrome Arsenate (CCA) treated to a density of 2.5 pounds per cubic foot.
- C. Hardware:
1. Unless noted otherwise, rough hardware, including bolts, nuts, washers and shims shall be grade 304 Stainless Steel conforming to the respective ASTM Standards and other requirements specified below. Uncoated Steel or Aluminum shall not be allowed to come into direct contact with ACQ treated wood.
 2. Bolts and nuts: Unless noted otherwise, bolts shall be stainless steel, 1-inch diameter complying with ASTM A307, rounded "button" heads and nuts shall be square.
 3. Washers, shims and miscellaneous items shall be Grade 304 Stainless Steel.
 4. Galvanizing: ASTM A 653-G 185, in accordance with ASTM A123 as applicable.
 5. Stainless Steel Plates and Shapes – Stainless Steel plates and shapes shall conform to ASTM A ASTM A276, Grade 304.
 6. Structural Steel Plates and Shapes - Structural steel plates and shapes shall conform to ASTM A 588/A 588 M, Grade B and shall be hot dipped galvanized.

2.02 INSPECTION OF TIMBER

- A. Certificates of treatment must be submitted to the Project Engineer. The Engineer reserves the right to have timber inspected before, during and after treatment. Any material or treatment that does not meet the requirements of these Specifications will be rejected and the Contractor shall furnish other materials that will meet the Specifications, without additional charge or time extensions.

PART 3: EXECUTION

3.01 GENERAL

- A. Timber shall be closely fitted, accurately set to required lines and levels, and rigidly secured in place with galvanized through bolts, as shown on the Drawings. The following requirements shall be met:
1. Install products in accordance with manufacture's instructions, approved submittals and in proper relationship with adjacent construction.
 2. Holes for bolts of a size to insure a driving fit.
 3. Where indicated, holes shall be counter bored.
 4. All timber shall be placed with the sap wood on the top side of the piece, if

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possible.

5. Washers shall be placed under both bolt heads and nuts.
6. The care and handling of treated timber shall conform to the requirements of AWPA Standard M4. All timber shall be handled in a manner to avoid damage to the treated surfaces.
7. Countersunk holes in tops of timber shall be filled flush with epoxy after timbers have been fastened securely.
8. Where damaged or cut for fitting, or during handling, treated timber shall be given two brush coats of Wood Preservative Treatment, as approved by the Engineer.

3.02 SUBMITTALS, SAMPLES AND INSPECTIONS

A. Submittals

1. Samples of materials and/or certificates of compliance with the Specifications shall be furnished to the Owner for approval, as requested.

B. Inspections

1. The Engineer reserves the right to have timber inspected before, during and after treatment. All treatment tags shall be retained on timbers for inspection by the Owner upon request. Any material or treatment that does not meet the requirements of these Specifications will be rejected and the Contractor shall furnish other materials, which will meet the Specifications, without additional charge or time extensions.

PART 4. MEASUREMENT AND PAYMENT

4.01 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 06180

GLULAM STRUCTURAL TIMBER

PART 1. GENERAL

1.01 RELATED DOCUMENTS

- A. THE GENERAL CONDITIONS DIVISION I are hereby made part of this Section.
- B. Examine all Drawings and all Sections of the Specifications for requirements and provisions affecting the work of this Section.

1.02 SCOPE OF WORK

- A. The work to be done under this section shall consist of furnishing all materials, labor, supervision, tools and equipment and performing all operations necessary to complete all work as shown on the Contract Drawing and as specified as related to construction of Glulam Beams and Columns.

1.03 SUBMITTALS:

- A. Product Data: Submit species, design value information, adhesives information, chemical preservative treatment and manufacturer's written instructions for handling, storing, installing, and finishing treated material for glulam beams and columns in accordance with fabricator information.
- B. Shop Drawings: Submit framing plan showing member lengths, joist spacing and post locations, support framing, pitch, camber, connections etc.
- C. Certificates of Conformance: Certificates of Conformance: Issued by a qualified testing and inspecting agency indicating that structural glued-laminated timber complies with requirements in AITC A190.1.
- D. Material Certifications for Preservative Treatment: For preservative treated wood products, from manufactures. Indicate type of preservative used and net amount of preservative retained.
- E. Installer Qualifications: Installer shall have a minimum of 2 years installing similar products

1.04 QUALITY ASSURANCE

- A. The Contractor shall comply with all applicable local, state and federal requirements, as well as standard industry standards and practices, regarding materials, methods of work and disposal of excess and waste materials.
- B. Manufacturer Qualifications: Provide factory-glued structural units produced by an AITC or APA-licensed firm that is certified for chain of custody by an FSC-accredited certification body.

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- C. Factory mark each piece of structural glued-laminated timber with AITC Quality Mark or APA-EWS trademark. Place mark on surfaces that will not be exposed in the completed Work.
- D. Quality Standard: Comply with AITC A190.1.

1.05 TECHNICAL SPECIFICATIONS/PUBLICATIONS

- A. American Society for Testing and Materials Standards (ASTM)

A36 / A588	Structural Steel
A123	Zinc (Hot Galvanized) Coatings on Products Fabricate from Rolled Pressed, and Forged Steel Shapes, Plates, Bars, and Strip
A153	Zinc Coating (Hot-Dip) on Iron and Steel Hardware
A276	Stainless Steel Bars and Shapes
A307	Carbon Steel Externally and Internally Threaded Standard Fasteners
A325	Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
E329	Inspection and Testing Agencies for Concrete, Steel and Bituminous Materials as used in Construction

- B. American Wood-Preserver's Association Standards (APW)

C1	All Timber Products-Preservative Treatment by Pressure Processes
C2	Lumber, Timbers, Bridge Ties and Mine Ties-Preservative Treatment by Pressure Processes.
C18	Pressure Treated Materials in Marine Construction
M2	Inspection of Treated Timber Products.
M4	Care of Preservative-Treated Wood Products
P5	Water-Borne Preservatives

- C. National Design Specifications for Wood Construction (NDS)
- D. American National Standards Institute (ANSI)

A190	Standard for Structure Wood Products – Structural Glued Laminated Timber
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- E. American Institute of Timber Construction (AITC)

A190	Standard for Structure Wood Products – Structural Glued Laminated Timber
111	Recommended Practices for Protection of Structural Glued Laminated Timber During Transit, Storage and Erection

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F. The Engineered Wood Associated (APA)

1.06 DELIVERY, STORAGE AND HANDLING

- A. General: Comply with provisions in AITC 111.
- B. Individually wrap members using plastic-coated paper covering with water-resistant seams.

PART 2. PRODUCTS

2.01 GENERAL

A. Glulam Beams:

All glulam beams shall be Power Preserved Glulam Beams by Anthony Forest Products or equal approved by the Engineer. Glulam beams shall have or exceed the following minimum structural design parameters:

Flexural Stress (Fb)	2400 psi
Modulus of Elasticity	1.8 x 10 ⁶ psi
Horizontal Shear Stress (Fv)	300 psi
Compression Perpendicular to the Grain (Fc)	740 psi

B. Glulam Columns

All glulam columns shall be Power Preserved Columns by Anthony Forest Products or equal approved by the Engineer. Power Preserved Columns shall have or exceed the following minimum structural design parameters:

Flexural Stress (Fb ^{x-x})	2100 psi
Flexural Stress (Fby ^{y-y})	2300 psi
Modulus of Elasticity	1.9 x 10 ⁶ psi
Compression Perpendicular to the Grain (Fc)	2300 psi

C. Treatment:

Beams and Columns shall be treated with Cop-Guard (Copper Naphthenate-CuN) wood preservative to meet APWA Use Category UC3 to the minimum retentions recommended by the manufacturer for the use category specified.

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- D. Hardware:
1. Corrosion resistance fasteners are required for all connections made to water borne copper treated wood.
 2. Unless noted otherwise, rough hardware, including bolts, nuts, washers and shims shall be Grade 304 Stainless Steel, conforming to the respective ASTM Standard.
 3. Bolts and nuts: Unless noted otherwise, bolts shall be stainless steel, 1-inch diameter, rounded "button" heads and nuts shall be square.
 4. Washers, shims and miscellaneous items shall be Grade 304 Stainless Steel.
 5. Galvanizing: ASTM A 653-G 185, in accordance with ASTM A123 as applicable.
 6. Stainless Steel Plates and Shapes – Stainless Steel plates and shapes shall conform to ASTM A ASTM A276, Grade 304.
 7. Structural Steel Plates and Shapes - Structural steel plates and shapes shall conform to ASTM A 588/A 588 M, Grade B and shall be hot dipped galvanized.

PART 3: EXECUTION

3.01 GENERAL

- A. Glulam members shall be closely fitted, accurately set to required lines and levels, and rigidly secured in place with galvanized through bolts, as shown on the Drawings. The following requirements shall be met:
1. Install products in accordance with manufacture's instructions, approved submittals and in proper relationship with adjacent construction.
 2. Holes for bolts of a size to insure a driving fit.
 3. Where indicated, holes shall be counter bored.
 4. Washers shall be placed under both bolt heads and nuts.
 5. The care and handling of treated timber shall conform to the requirements of AWPA Standard M4. All timber shall be handled in a manner to avoid damage to the treated surfaces.
 6. Countersunk holes in tops of timber shall be filled flush with epoxy after timbers have been fastened securely.
 7. Where damaged or cut for fitting, or during handling, treated timber shall be given two brush coats of Wood Preservative Treatment, as approved by the Engineer.

PART 4. MEASUREMENT AND PAYMENT

4.01 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 08255

FRP FLUSH DOORS

PART 1. GENERAL

1.01 RELATED DOCUMENTS

- A. THE GENERAL CONDITIONS DIVISION I are hereby made part of this Section.
- B. Examine all Drawings and all Sections of the Specifications for requirements and provisions affecting the work of this Section.

1.02 SUMMARY

- A. This section includes:
 - 1. Fiberglass reinforced polyester (FRP) flush doors with FRP frames.

1.03 REFERENCES

- A. AAMA 920-11 – Specification for Operating Cycle Performance of Side-Hinged Exterior Door Systems.
- B. AAMA 1304 - Voluntary Specification for Forced-Entry Resistance of Side-Hinged Door Systems.
- C. ASTM C 1363-97 – Thermal Test Method for the Thermal Performance of Building Assemblies.
- D. ASTM D 1622 - Standard Test Method for Apparent Density of Rigid Cellular Plastics
- E. ASTM D 1761-06 – Standard Test Methods for Mechanical Fasteners in Wood.
- F. ASTM D 6670-01 - Standard Practice for Full-Scale Chamber Determination of Volatile Organic Emissions from Indoor Materials/Products.
- G. ASTM E 84-11 – Standard Method of Test for Surface Burning Characteristics of Building Materials.
- H. ASTM E 283-04 – Test Method for Determining Rate of Airflow Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen.
- I. ASTM E 330-02 – Test Method for Structural Performance of Exterior Windows, Curtain Walls, Doors by Uniform Static Air Pressure Difference.
- J. ASTM E 331-00 – Test Method for Water Penetration of Exterior Windows, Curtain Walls and Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
- K. ASTM E 1886-05 – Test Method for Performance of Exterior Windows, Curtain Wall, Doors and Storm Shutters Impacted by Missile(s) and Exposed to Cyclic Pressure Differential.
- L. ASTM E 1996-06 – Test Specification for Performance of Exterior Windows, Curtain Walls, Doors and Storm Shutters Impacted by Windborne Debris in Hurricanes.

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1.04 PERFORMANCE REQUIREMENTS

- A. General: Provide door assemblies that have been designed and fabricated to comply with specified performance requirements, as demonstrated by testing manufacturer's corresponding standard systems.
- B. Thermal Performance: Per ASTM C 1363-97, R-value 7.42.
- C. Indoor air quality testing per ASTM D 6670-01: GREENGUARD Environmental Institute Certified including GREENGUARD for Children and Schools Certification.
- D. Air Infiltration: For a single door 3'-0" x 7'-0", test specimen shall be tested in accordance with ASTM E 283 at pressure differential of 6.24 psf. Door shall not exceed 0.09 cfm/ft².
- E. Water Penetration: For a single door 3'-0" x 7'-0", test specimen shall be tested in accordance with ASTM E 331. Door shall not have water leakage.
- F. Uniform Load Structural: For a single door 3'-0" x 7'-0", test specimen shall be tested in accordance with ASTM E 330: Plus or minus 270 psf.
- G. Forced Entry Resistance, per AAMA 1304, Pass with No Entry.
- H. Blast Test, Doors and Frames, ASTM F 1642-04, 6 psi / 41 psi-msec: No Hazard.
- I. Large Missile Impact, Doors and Frames, ASTM E 1996, Pass.
- J. Air Pressure Cycling, Doors and Frames, ASTM E 1886, Design Pressure Plus or Minus 100 psf, Pass with no rips, tears, or penetrations.
- K. Cycle Test, AAMA 920-11, 2,000,000 Cycles.
- L. Screw Pullout, ASTM D 1761-06, Minimum 924 pounds.

1.05 SUBMITTALS

- A. Comply with Section 01330 (01 33 00) - Submittal Procedures.
- B. Product Data: Submit manufacturer's product data, including description of materials, components, fabrication, finishes, and installation.
- C. Shop Drawings: Submit manufacturer's shop drawings, including elevations, sections, and details, indicating dimensions, tolerances, materials, fabrication, doors, panels, framing, and finish.
- D. Samples:
 - 1. Door: Submit manufacturer's sample of door showing face sheets, core, framing, and finish.
 - 2. Color: Submit manufacturer's samples of standard colors of doors and frames.
- E. Test Reports: Submit test reports from qualified independent testing agency indicating doors comply with specified performance requirements.
- F. Manufacturer's Project References: Submit list of successfully completed projects including project name and location, name of architect, and type and quantity of doors manufactured.
- G. Maintenance Manual: Submit manufacturer's maintenance and cleaning instructions for doors, including maintenance and operating instructions for hardware.
- H. Warranty: Submit manufacturer's standard warranty.

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1.06 QUALITY ASSURANCE

A. Manufacturer's Qualifications:

1. Continuously engaged in manufacturing of doors of similar type to that specified, with a minimum of 25 years successful experience.
2. Door and frame components from same manufacturer.
3. Evidence of a compliant documented quality management system.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying opening door mark and manufacturer.
- B. Storage: Store materials in clean, dry area indoors in accordance with manufacturer's instructions.
- C. Handling: Protect materials and finish from damage during handling and installation.

1.08 WARRANTY

- A. Warrant doors, frames, and factory hardware against failure in materials and workmanship, including excessive deflection, faulty operation, defects in hardware installation, and deterioration of finish or construction in excess of normal weathering.
- B. Warranty Period: Ten years starting on date of shipment. In addition, a limited lifetime (while the door is in its specified application in its original installation) warranty covering failure due to corrosion

PART 2. PRODUCTS

2.01 MANUFACTURER

- A. Special-Lite, Inc., PO Box 6, Decatur, Michigan 49045. Toll Free (800) 821-6531. Phone (269) 423-7068. Fax (800) 423-7610. Web Site www.special-lite.com. E-Mail info@special-lite.com.
- B. Or Approved Equal.

2.02 FRP FLUSH DOORS

- A. Model: AF-100 Pultruded FRP Door or Approved Equal.
- B. Door Opening Size: 3'-6" Wide by 7'-0" Height, as indicated on the Contract Drawing.
- C. Construction:
 1. Door Thickness: 1-3/4 inches.
 2. Construction: Doors shall be FRP, pultruded as one monolithic panel, with integral stiles.
 3. Reinforcement: Solid FRP shapes to be chemically welded at factory. All structural members shall utilize a chemically resistant UV stabilized resin system.
 4. Stile Edge: Seamless 9/16" thick solid FRP.

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OBSERVATION DECK RECONSTRUCTION

5. Top Rail: 6" pultruded tube profile designed to fit flush and be chemically welded inside the door.
 6. Bottom Rail: Pultruded FRP inverted U channel designed to fit flush and be chemically welded inside the door, allowing doors to be field trimmed. Closed bottom rail to be supplied as an option.
- D. Face Sheet:
1. Material: Pultruded FRP, 0.125-inch thickness.
 2. Texture: Smooth.
 3. Fiberglass Content: Minimum 47% by weight.
 4. Color: By owner from manufacturer's standard high-gloss colors.
- E. Core:
1. Material: Polyurethane foam.
 2. Density: Minimum of 6 pounds per cubic foot.
 3. Per ASTM E 84 flame spread and smoke developed: Class B.
- F. Cutouts:
1. Manufacture doors with cutouts for required vision lites, louvers, and panels.
 2. Factory install vision lites, louvers, and panels.
- G. Hardware:
1. Pre-machine doors in accordance with templates from specified hardware manufacturers and hardware schedule.

2.03 MATERIALS

- A. Components: Door and frame components from same manufacturer.
- B. Fasteners:
1. Material: Aluminum or 18-8 stainless steel.
 2. Compatibility: Compatible with items to be fastened

2.04 FABRICATION

- A. Sizes and Profiles: Required sizes for door and frame units, and profile requirements shall be as indicated on the Contract Drawings.
- B. Coordination of Fabrication: Field measure before fabrication and show recorded measurements on shop drawings.
- C. Assembly:
1. Complete cutting, fitting, forming, drilling, and chemically welding of FRP before assembly.
- D. Fit:
1. Maintain continuity of line and accurate relation of planes and angles.
 2. Secure attachments and support at mechanical joints with hairline fit at contacting members.

2.05 ARCHITECTURAL PANELS

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- A. FRP Panels:
 - 1. Model: 1 3/4" standard panels.
- B. Face Sheets:
 - 1. Material: Pultruded FRP, 0.125-inch thickness.
 - 2. Texture: Smooth.
 - 3. Color: Coordinate Color with Owner and Submit Sample for Review and Approval.
- C. Insulated FRP Panels:
 - 1. Insulated Panels: Two 0.125-inch minimum thickness sheets.
 - 2. Core: Polyurethane foam core of a minimum of 6 pounds per cubic foot density.
 - 3. Form components to function as single unit.

2.06 FRP FRAMING SYSTEMS

- A. Framing:
 - 1. Size and Type: As indicated on the Contract Drawings.
 - 2. Materials: 1/4" thick solid pultruded FRP profiles having no corrosive components or reinforcement.
 - 3. Width: 2" face.
 - 4. Depth: Field Verify to Match Existing.
 - 5. Assembly: One piece chemically welded at factory.
 - 6. Door Stop: 5/8" x 2 1/4".
 - 7. Corner Construction: Mitered with 4" x 4" x 3/8" pultruded FRP angle reinforcement with interlocking pultruded FRP brackets.
 - 8. Reinforcing: 1/4" pultruded FRP chemically welded at all hinge, strike and closer locations.
 - 9. Mullions: Fixed Pultruded 2" x 2 3/4" Rim mullion.
 - 11. Anchors: Furnished with type as specified on drawings.
 - 12. Fasteners for reinforcing: 18-8 Stainless Steel.

2.07 HARDWARE

- A. Premachine doors in accordance with templates from specified hardware manufacturers and hardware schedule.
- B. Hardware
 - 1. Hinges: Coordinate with Owner and Submit on Shop Drawing
 - 2. Locking Hardware: Coordinate with Owner and Submit on Shop Drawing
 - 3. Bolts: Flush or Surface Mounted. Coordinate with Owner and Submit on Shop Drawing

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4. Door Pulls: Coordinate with Owner and Submit on Shop Drawing
5. Push Bars: Coordinate with Owner and Submit on Shop Drawing
6. Threshold: Coordinate with Owner and Submit on Shop Drawing
7. Bumper: Coordinate type with Owner and Submit on Shop Drawing

2.08 VISION LITES / GLASS

- A. 1" Oldcastle Stormglass, Color Clear
- B. Lite Size:
 1. Size: 18 inches by 18 inches

2.09 FINISH

- A. Finish For Doors and Frames: Primer and a finished color coat to be Coordinated with Owner. Submit Sample for Review and Approval.
 1. Painted Finish: Two-part aliphatic polyurethane, low VOC, Industrial Coating.
 2. Thickness: 5 mils
 3. Sheen: Gloss
 4. Impact Resistance per ASTM D 2794: 140 in lbs.

PART 3. EXECUTION

3.01 EXAMINATION

- A. Examine areas to receive doors. Notify Engineer of conditions that would adversely affect installation or subsequent use. Do not proceed with installation until unsatisfactory conditions are corrected.

3.02 PREPARATION

- A. Ensure openings to receive frames are plumb, level, square, and in tolerance.

3.03 INSTALLATION

- A. Install doors in accordance with manufacturer's instructions.
- B. Install doors plumb, level, square, true to line, and without warp or rack.
- C. Anchor frames securely in place.
- D. Set thresholds in bed of mastic and backseal.
- E. Install exterior doors to be weathertight in closed position.
- F. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.
- G. Remove and replace damaged components that cannot be successfully repaired as determined by Engineer/Owner.

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OBSERVATION DECK RECONSTRUCTION

3.04 ADJUSTING

- A. Adjust doors, hinges, and locksets for smooth operation without binding.

3.05 CLEANING

- A. Clean doors promptly after installation in accordance with manufacturer's instructions using a mild detergent and water.

3.06 PROTECTION

- A. Protect installed doors to ensure that, except for normal weathering, doors will be without damage or deterioration at time of substantial completion.

PART 4. MEASUREMENT AND PAYMENT

4.01 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 08500

IMPACT RESISTANT VINYL WINDOWS

PART 1: GENERAL

1.01 RELATED DOCUMENT

- A. THE GENERAL CONDITIONS DIVISION I are hereby made part of this Section.
- B. Examine all Drawings and all Sections of the Specifications for requirements and provisions affecting the work of this Section.

1.02 SUMMARY

- A. Impact-resistant vinyl windows of the following types:
 - 1. Double Hung
 - 2. Laminated Insulating Glass

1.03 RELATED SECTIONS

- A. Section 06100 - Rough Carpentry.

1.04 REFERENCES

- A. ASTM F 588 - Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact.

1.05 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- B. Shop Drawings: Provide elevations sections and details of construction, installation and rough opening framing requirements.
- C. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- D. Verification Samples: For each finish product specified, two samples, minimum size 6 inches square representing actual product, color, and patterns.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.

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- B. Installer Qualifications: Minimum 2 year experience installing similar products.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
- B. Handling: Handle materials to avoid damage.

1.08 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.09 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

PART 2. PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturer: PGT Windows and Doors , which is located at: 1070 Technology Drive, Nokomis FL, 34275; Toll Free Tel: 800.282.6019; Tel: 941.480.1600; Web: www.pgtindustries.com
- B. Or Approved Equal.

2.02 IMPACT-RESISTANT VINYL WINDOWS

- A. Product: WinGuard Impact-Resistant Vinyl Windows by PGT or approved equal
 - 1. Size: Refer Contract Drawings.
 - 2. Frame: Flange.
 - 3. Frame: Fin.
 - 4. Frame: Equal leg.
 - 5. Grid Style: Coordinate Grid Style with Owner
 - 6. Frame Finish: White.
 - 7. Glass: Laminated, impact resistant, insulating glass, Clear Lo-E SB 70XL.

2.03 DOUBLE HUNG WINDOWS

- A. Series: WinGuard Series 5460-5560 by PGT or approved equal.
 - 1. Performance:

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- a. Maximum Water Resistance: 10.5 PSF.
 - b. Small and Large Missile (52 1/8 inches (1324mm) x 84 inches (2134mm) +50/-50 PSF.
 - c. Small and Large Missile (52 1/8 inches (1324mm) x 84 inches (2134mm) +65/ -70 PSF.
 - d. Forced Entry Test (ASTM F 588): Passed.
2. Construction:
- a. 3-1/2 inches (89 mm) frame depth.
 - b. 5/8 inch (16 mm) flange frame.
 - c. Sloped sill.
 - d. Capture-lock sash system.
 - e. Lift Assist Constant Force Balance System.
 - f. Snap-on glazing beads.
 - g. Structural glazing.
 - h. No installation fasteners required in sill.
 - i. Aluminum reinforced sash.
 - j. Extruded screen frame with fiberglass mesh.
 - k. Extruded aluminum interlock
3. Energy Requirement:
- a. 7/8 inch (22mm) Insulated Laminated Clear SB 70 XL
4. Hardware:
- a. Sweep locks.

PART 3. EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Engineer/Owner of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

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- A. Install in accordance with manufacturer's instructions and in proper relationship with adjacent construction. Test for proper operation and adjust until satisfactory results are achieved.

3.04 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

PART 4. MEASUREMENT AND PAYMENT

4.01 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 ***

**CHATHAM FISH PIER – FISH PACKING BUILDING
COLUMN REPLACEMENT & NORTH SIDE SHINGLING
CHATHAM, MA**

ATTACHMENTS

**CHATHAM FISH PIER – FISH PACKING BUILDING
COLUMN REPLACEMENT & NORTH SIDE SHINGLING
CHATHAM, MA**

**ATTACHMENT A
MASSACHUSETTS PREVAILING WAGE RATES**



**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**

CHARLES D. BAKER
Governor

ROSALIN ACOSTA
Secretary

KARYN E. POLITO
Lt. Governor

WILLIAM D MCKINNEY
Director

Awarding Authority: Town of Chatham

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

Description of Work: Reconstruction of the existing Chatham Fish Pier Observation Deck. Work includes carpentry, structural steel, electrical, fire suppression system expansion and fuel line relocation.

Job Location: 45 Barcliff Avenue Extension, Chatham, MA

Information about Prevailing Wage Schedules for Awarding Authorities and Contractors

- 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 from the Department of Labor Standards (“DLS”) 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 any sub-contractor.
- All apprentices working on the project are required to be registered with the Massachusetts Department of Labor Standards, Division of Apprentice Standards (DLS/DAS). Apprentice must keep his/her apprentice identification card on his/her person 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 DLS/DAS regardless of whether or not they are registered with any other federal, state, local, or private agency must be paid the journeyworker's rate for the trade.**
- 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. Awarding authorities are required to request these updates 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, 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. Contractors are required to obtain the wage schedules from awarding authorities, and to pay no less than these rates to covered workers. The annual update requirement is not applicable to 27F “rental of equipment” contracts.
- Every contractor or subcontractor which performs construction work on the project is required to 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. A sample of a payroll reporting form may be obtained at <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.
- Employees not receiving the prevailing wage rate set forth on the wage schedule may report the violation to the Fair Labor Division of the office of the Attorney General at (617) 727-3465.
- 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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Construction						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2016	\$32.15	\$10.91	\$10.89	\$0.00	\$53.95
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2016	\$32.22	\$10.91	\$10.89	\$0.00	\$54.02
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2016	\$32.34	\$10.91	\$10.89	\$0.00	\$54.14
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2018	\$97.80	\$9.90	\$21.15	\$0.00	\$128.85
	08/01/2019	\$102.78	\$9.90	\$21.15	\$0.00	\$133.83
For apprentice rates see "Apprentice- PILE DRIVER"						
AIR TRACK OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2018	\$34.00	\$7.70	\$14.02	\$0.00	\$55.72
	12/01/2018	\$34.84	\$7.70	\$14.02	\$0.00	\$56.56
	06/01/2019	\$35.71	\$7.70	\$14.02	\$0.00	\$57.43
	12/01/2019	\$36.57	\$7.70	\$14.02	\$0.00	\$58.29
	06/01/2020	\$37.46	\$7.70	\$14.02	\$0.00	\$59.18
	12/01/2020	\$38.35	\$7.70	\$14.02	\$0.00	\$60.07
	06/01/2021	\$39.27	\$7.70	\$14.02	\$0.00	\$60.99
	12/01/2021	\$40.18	\$7.70	\$14.02	\$0.00	\$61.90
For apprentice rates see "Apprentice- LABORER"						
ASBESTOS REMOVER - PIPE / MECH. EQUIPT. <i>HEAT & FROST INSULATORS LOCAL 6 (BOSTON)</i>	06/01/2018	\$36.90	\$11.50	\$7.10	\$0.00	\$55.50
	12/01/2018	\$37.90	\$11.50	\$7.10	\$0.00	\$56.50
	06/01/2019	\$38.90	\$11.50	\$7.10	\$0.00	\$57.50
	12/01/2019	\$39.90	\$11.50	\$7.10	\$0.00	\$58.50
	06/01/2020	\$40.90	\$11.50	\$7.10	\$0.00	\$59.50
	12/01/2020	\$41.90	\$11.50	\$7.10	\$0.00	\$60.50
ASPHALT RAKER <i>LABORERS - ZONE 2</i>	06/01/2018	\$33.50	\$7.70	\$14.02	\$0.00	\$55.22
	12/01/2018	\$34.34	\$7.70	\$14.02	\$0.00	\$56.06
	06/01/2019	\$35.21	\$7.70	\$14.02	\$0.00	\$56.93
	12/01/2019	\$36.07	\$7.70	\$14.02	\$0.00	\$57.79
	06/01/2020	\$36.96	\$7.70	\$14.02	\$0.00	\$58.68
	12/01/2020	\$37.85	\$7.70	\$14.02	\$0.00	\$59.57
	06/01/2021	\$38.77	\$7.70	\$14.02	\$0.00	\$60.49
	12/01/2021	\$39.68	\$7.70	\$14.02	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER"						
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2018	\$47.08	\$11.00	\$15.50	\$0.00	\$73.58
	12/01/2018	\$48.23	\$11.00	\$15.50	\$0.00	\$74.73
	06/01/2019	\$49.33	\$11.00	\$15.50	\$0.00	\$75.83
	12/01/2019	\$50.48	\$11.00	\$15.50	\$0.00	\$76.98
	06/01/2020	\$51.58	\$11.00	\$15.50	\$0.00	\$78.08
	12/01/2020	\$52.73	\$11.00	\$15.50	\$0.00	\$79.23
	06/01/2021	\$53.83	\$11.00	\$15.50	\$0.00	\$80.33
	12/01/2021	\$54.98	\$11.00	\$15.50	\$0.00	\$81.48
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2018	\$47.08	\$11.00	\$15.50	\$0.00	\$73.58
	12/01/2018	\$48.23	\$11.00	\$15.50	\$0.00	\$74.73
	06/01/2019	\$49.33	\$11.00	\$15.50	\$0.00	\$75.83
	12/01/2019	\$50.48	\$11.00	\$15.50	\$0.00	\$76.98
	06/01/2020	\$51.58	\$11.00	\$15.50	\$0.00	\$78.08
	12/01/2020	\$52.73	\$11.00	\$15.50	\$0.00	\$79.23
	06/01/2021	\$53.83	\$11.00	\$15.50	\$0.00	\$80.33
	12/01/2021	\$54.98	\$11.00	\$15.50	\$0.00	\$81.48
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 2</i>	06/01/2018	\$33.50	\$7.70	\$14.02	\$0.00	\$55.22
	12/01/2018	\$34.34	\$7.70	\$14.02	\$0.00	\$56.06
	06/01/2019	\$35.21	\$7.70	\$14.02	\$0.00	\$56.93
	12/01/2019	\$36.07	\$7.70	\$14.02	\$0.00	\$57.79
	06/01/2020	\$36.96	\$7.70	\$14.02	\$0.00	\$58.68
	12/01/2020	\$37.85	\$7.70	\$14.02	\$0.00	\$59.57
	06/01/2021	\$38.77	\$7.70	\$14.02	\$0.00	\$60.49
	12/01/2021	\$39.68	\$7.70	\$14.02	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 2</i>	06/01/2018	\$34.00	\$7.70	\$14.02	\$0.00	\$55.72
	12/01/2018	\$34.84	\$7.70	\$14.02	\$0.00	\$56.56
	06/01/2019	\$35.71	\$7.70	\$14.02	\$0.00	\$57.43
	12/01/2019	\$36.57	\$7.70	\$14.02	\$0.00	\$58.29
	06/01/2020	\$37.46	\$7.70	\$14.02	\$0.00	\$59.18
	12/01/2020	\$38.35	\$7.70	\$14.02	\$0.00	\$60.07
	06/01/2021	\$39.27	\$7.70	\$14.02	\$0.00	\$60.99
	12/01/2021	\$40.18	\$7.70	\$14.02	\$0.00	\$61.90
For apprentice rates see "Apprentice- LABORER"						
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	03/01/2018	\$43.57	\$7.07	\$17.46	\$0.00	\$68.10
	01/01/2019	\$44.71	\$7.07	\$17.72	\$0.00	\$69.50
	01/01/2020	\$46.10	\$7.07	\$17.98	\$0.00	\$71.15

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - BOILERMAKER - Local 29

Effective Date - 03/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$28.32	\$7.07	\$11.37	\$0.00	\$46.76
2	65	\$28.32	\$7.07	\$11.37	\$0.00	\$46.76
3	70	\$30.50	\$7.07	\$12.23	\$0.00	\$49.80
4	75	\$32.68	\$7.07	\$13.11	\$0.00	\$52.86
5	80	\$34.86	\$7.07	\$13.97	\$0.00	\$55.90
6	85	\$37.03	\$7.07	\$14.86	\$0.00	\$58.96
7	90	\$39.21	\$7.07	\$15.72	\$0.00	\$62.00
8	95	\$41.39	\$7.07	\$16.61	\$0.00	\$65.07

Effective Date - 01/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$29.06	\$7.07	\$11.52	\$0.00	\$47.65
2	65	\$29.06	\$7.07	\$11.52	\$0.00	\$47.65
3	70	\$31.30	\$7.07	\$12.40	\$0.00	\$50.77
4	75	\$33.53	\$7.07	\$13.30	\$0.00	\$53.90
5	80	\$35.77	\$7.07	\$14.18	\$0.00	\$57.02
6	85	\$38.00	\$7.07	\$15.07	\$0.00	\$60.14
7	90	\$40.24	\$7.07	\$15.95	\$0.00	\$63.26
8	95	\$42.47	\$7.07	\$16.84	\$0.00	\$66.38

Notes:

Apprentice to Journeyworker Ratio:1:4

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)	08/01/2018	\$52.91	\$10.75	\$20.66	\$0.00	\$84.32
BRICKLAYERS LOCAL 3 (NEW BEDFORD)	02/01/2019	\$53.55	\$10.75	\$20.66	\$0.00	\$84.96
	08/01/2019	\$54.90	\$10.75	\$20.80	\$0.00	\$86.45
	02/01/2020	\$55.54	\$10.75	\$20.80	\$0.00	\$87.09
	08/01/2020	\$56.89	\$10.75	\$20.95	\$0.00	\$88.59
	02/01/2021	\$57.53	\$10.75	\$20.95	\$0.00	\$89.23
	08/01/2021	\$58.93	\$10.75	\$21.11	\$0.00	\$90.79
	02/01/2022	\$59.52	\$10.75	\$21.11	\$0.00	\$91.38

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

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

Effective Date - 08/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.46	\$10.75	\$20.66	\$0.00	\$57.87
2	60	\$31.75	\$10.75	\$20.66	\$0.00	\$63.16
3	70	\$37.04	\$10.75	\$20.66	\$0.00	\$68.45
4	80	\$42.33	\$10.75	\$20.66	\$0.00	\$73.74
5	90	\$47.62	\$10.75	\$20.66	\$0.00	\$79.03

Effective Date - 02/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.78	\$10.75	\$20.66	\$0.00	\$58.19
2	60	\$32.13	\$10.75	\$20.66	\$0.00	\$63.54
3	70	\$37.49	\$10.75	\$20.66	\$0.00	\$68.90
4	80	\$42.84	\$10.75	\$20.66	\$0.00	\$74.25
5	90	\$48.20	\$10.75	\$20.66	\$0.00	\$79.61

Notes:

Apprentice to Journeyworker Ratio:1:5

BULLDOZER/GRADER/SCRAPER	06/01/2018	\$46.61	\$11.00	\$15.50	\$0.00	\$73.11
<i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2018	\$47.75	\$11.00	\$15.50	\$0.00	\$74.25
	06/01/2019	\$48.84	\$11.00	\$15.50	\$0.00	\$75.34
	12/01/2019	\$49.98	\$11.00	\$15.50	\$0.00	\$76.48
	06/01/2020	\$51.06	\$11.00	\$15.50	\$0.00	\$77.56
	12/01/2020	\$52.20	\$11.00	\$15.50	\$0.00	\$78.70
	06/01/2021	\$53.29	\$11.00	\$15.50	\$0.00	\$79.79
	12/01/2021	\$54.43	\$11.00	\$15.50	\$0.00	\$80.93

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

CAISSON & UNDERPINNING BOTTOM MAN	06/01/2018	\$39.10	\$7.70	\$15.40	\$0.00	\$62.20
<i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2018	\$40.05	\$7.70	\$15.40	\$0.00	\$63.15
	06/01/2019	\$41.05	\$7.70	\$15.40	\$0.00	\$64.15
	12/01/2019	\$42.05	\$7.70	\$15.40	\$0.00	\$65.15
	06/01/2020	\$43.04	\$7.70	\$15.40	\$0.00	\$66.14
	12/01/2020	\$44.02	\$7.70	\$15.40	\$0.00	\$67.12
	06/01/2021	\$45.04	\$7.70	\$15.40	\$0.00	\$68.14
	12/01/2021	\$46.05	\$7.70	\$15.40	\$0.00	\$69.15

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CAISSON & UNDERPINNING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2018	\$37.95	\$7.70	\$15.40	\$0.00	\$61.05
	12/01/2018	\$38.90	\$7.70	\$15.40	\$0.00	\$62.00
	06/01/2019	\$39.90	\$7.70	\$15.40	\$0.00	\$63.00
	12/01/2019	\$40.90	\$7.70	\$15.40	\$0.00	\$64.00
	06/01/2020	\$41.89	\$7.70	\$15.40	\$0.00	\$64.99
	12/01/2020	\$42.87	\$7.70	\$15.40	\$0.00	\$65.97
	06/01/2021	\$43.89	\$7.70	\$15.40	\$0.00	\$66.99
	12/01/2021	\$44.90	\$7.70	\$15.40	\$0.00	\$68.00
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING TOP MAN <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2018	\$37.95	\$7.70	\$15.40	\$0.00	\$61.05
	12/01/2018	\$38.90	\$7.70	\$15.40	\$0.00	\$62.00
	06/01/2019	\$39.90	\$7.70	\$15.40	\$0.00	\$63.00
	12/01/2019	\$40.90	\$7.70	\$15.40	\$0.00	\$64.00
	06/01/2020	\$41.89	\$7.70	\$15.40	\$0.00	\$64.99
	12/01/2020	\$42.87	\$7.70	\$15.40	\$0.00	\$65.97
	06/01/2021	\$43.89	\$7.70	\$15.40	\$0.00	\$66.99
	12/01/2021	\$44.90	\$7.70	\$15.40	\$0.00	\$68.00
For apprentice rates see "Apprentice- LABORER"						
CARBIDE CORE DRILL OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2018	\$33.50	\$7.70	\$14.02	\$0.00	\$55.22
	12/01/2018	\$34.34	\$7.70	\$14.02	\$0.00	\$56.06
	06/01/2019	\$35.21	\$7.70	\$14.02	\$0.00	\$56.93
	12/01/2019	\$36.07	\$7.70	\$14.02	\$0.00	\$57.79
	06/01/2020	\$36.96	\$7.70	\$14.02	\$0.00	\$58.68
	12/01/2020	\$37.85	\$7.70	\$14.02	\$0.00	\$59.57
	06/01/2021	\$38.77	\$7.70	\$14.02	\$0.00	\$60.49
	12/01/2021	\$39.68	\$7.70	\$14.02	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER"						
CARPENTER <i>CARPENTERS -ZONE 2 (Eastern Massachusetts)</i>	09/01/2018	\$41.32	\$9.90	\$17.50	\$0.00	\$68.72
	03/01/2019	\$42.35	\$9.90	\$17.50	\$0.00	\$69.75

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - CARPENTER - Zone 2 Eastern MA

Effective Date - 09/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.66	\$9.90	\$1.73	\$0.00	\$32.29
2	60	\$24.79	\$9.90	\$1.73	\$0.00	\$36.42
3	70	\$28.92	\$9.90	\$12.31	\$0.00	\$51.13
4	75	\$30.99	\$9.90	\$12.31	\$0.00	\$53.20
5	80	\$33.06	\$9.90	\$14.04	\$0.00	\$57.00
6	80	\$33.06	\$9.90	\$14.04	\$0.00	\$57.00
7	90	\$37.19	\$9.90	\$15.77	\$0.00	\$62.86
8	90	\$37.19	\$9.90	\$15.77	\$0.00	\$62.86

Effective Date - 03/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.18	\$9.90	\$1.73	\$0.00	\$32.81
2	60	\$25.41	\$9.90	\$1.73	\$0.00	\$37.04
3	70	\$29.65	\$9.90	\$12.31	\$0.00	\$51.86
4	75	\$31.76	\$9.90	\$12.31	\$0.00	\$53.97
5	80	\$33.88	\$9.90	\$14.04	\$0.00	\$57.82
6	80	\$33.88	\$9.90	\$14.04	\$0.00	\$57.82
7	90	\$38.12	\$9.90	\$15.77	\$0.00	\$63.79
8	90	\$38.12	\$9.90	\$15.77	\$0.00	\$63.79

Notes:

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80
 Step 1&2 \$30.22/ 3&4 \$36.03/ 5&6 \$52.86/ 7&8 \$58.73

Apprentice to Journeyworker Ratio:1:5

CARPENTER WOOD FRAME	10/01/2018	\$27.09	\$7.07	\$7.86	\$0.00	\$42.02
CARPENTERS -ZONE 2 (Wood Frame)	04/01/2019	\$27.52	\$7.07	\$7.86	\$0.00	\$42.45
	10/01/2019	\$27.95	\$7.07	\$7.86	\$0.00	\$42.88

All Aspects of New Wood Frame Work - As of 9/1/09 Carpentry work on wood-frame WEATHERIZATION projects shall be paid the WOOD FRAME CARPENTER rate.

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - CARPENTER (Wood Frame) - Zone 2

Effective Date - 10/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$16.25	\$7.07	\$0.00	\$0.00	\$23.32
2	60	\$16.25	\$7.07	\$0.00	\$0.00	\$23.32
3	65	\$17.61	\$7.07	\$7.86	\$0.00	\$32.54
4	70	\$18.96	\$7.07	\$7.86	\$0.00	\$33.89
5	75	\$20.32	\$7.07	\$7.86	\$0.00	\$35.25
6	80	\$21.67	\$7.07	\$7.86	\$0.00	\$36.60
7	85	\$23.03	\$7.07	\$7.86	\$0.00	\$37.96
8	90	\$24.38	\$7.07	\$7.86	\$0.00	\$39.31

Effective Date - 04/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$16.51	\$7.07	\$0.00	\$0.00	\$23.58
2	60	\$16.51	\$7.07	\$0.00	\$0.00	\$23.58
3	65	\$17.89	\$7.07	\$7.86	\$0.00	\$32.82
4	70	\$19.26	\$7.07	\$7.86	\$0.00	\$34.19
5	75	\$20.64	\$7.07	\$7.86	\$0.00	\$35.57
6	80	\$22.02	\$7.07	\$7.86	\$0.00	\$36.95
7	85	\$23.39	\$7.07	\$7.86	\$0.00	\$38.32
8	90	\$24.77	\$7.07	\$7.86	\$0.00	\$39.70

Notes:

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80
 Step 1&2 \$19.26/ 3&4 \$26.72/ 5&6 \$33.89/ 7&8 \$36.60

Apprentice to Journeyworker Ratio:1:5

CEMENT MASONRY/PLASTERING	07/01/2018	\$46.20	\$12.42	\$22.41	\$0.30	\$81.33
BRICKLAYERS LOCAL 3 (NEW BEDFORD)	01/01/2019	\$47.58	\$12.42	\$22.41	\$0.30	\$82.71
	07/01/2019	\$48.32	\$12.42	\$22.41	\$0.30	\$83.45
	01/01/2020	\$49.72	\$12.42	\$22.41	\$0.30	\$84.85

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - CEMENT MASONRY/PLASTERING - Eastern Mass (New Bedford)

Effective Date - 07/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.10	\$12.42	\$15.41	\$0.00	\$50.93
2	60	\$27.72	\$12.42	\$17.41	\$0.30	\$57.85
3	65	\$30.03	\$12.42	\$18.41	\$0.30	\$61.16
4	70	\$32.34	\$12.42	\$19.41	\$0.30	\$64.47
5	75	\$34.65	\$12.42	\$20.41	\$0.30	\$67.78
6	80	\$36.96	\$12.42	\$21.41	\$0.30	\$71.09
7	90	\$41.58	\$12.42	\$22.41	\$0.30	\$76.71

Effective Date - 01/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.79	\$12.42	\$15.41	\$0.00	\$51.62
2	60	\$28.55	\$12.42	\$17.41	\$0.30	\$58.68
3	65	\$30.93	\$12.42	\$18.41	\$0.30	\$62.06
4	70	\$33.31	\$12.42	\$19.41	\$0.30	\$65.44
5	75	\$35.69	\$12.42	\$20.41	\$0.30	\$68.82
6	80	\$38.06	\$12.42	\$21.41	\$0.30	\$72.19
7	90	\$42.82	\$12.42	\$22.41	\$0.30	\$77.95

Notes:

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

Apprentice to Journeyworker Ratio:1:3

CHAIN SAW OPERATOR	06/01/2018	\$33.50	\$7.70	\$14.02	\$0.00	\$55.22
LABORERS - ZONE 2	12/01/2018	\$34.34	\$7.70	\$14.02	\$0.00	\$56.06
	06/01/2019	\$35.21	\$7.70	\$14.02	\$0.00	\$56.93
	12/01/2019	\$36.07	\$7.70	\$14.02	\$0.00	\$57.79
	06/01/2020	\$36.96	\$7.70	\$14.02	\$0.00	\$58.68
	12/01/2020	\$37.85	\$7.70	\$14.02	\$0.00	\$59.57
	06/01/2021	\$38.77	\$7.70	\$14.02	\$0.00	\$60.49
	12/01/2021	\$39.68	\$7.70	\$14.02	\$0.00	\$61.40

For apprentice rates see "Apprentice- LABORER"

CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES	06/01/2018	\$69.67	\$11.00	\$15.50	\$0.00	\$96.17
OPERATING ENGINEERS LOCAL 4	12/01/2018	\$71.30	\$11.00	\$15.50	\$0.00	\$97.80
	06/01/2019	\$72.87	\$11.00	\$15.50	\$0.00	\$99.37
	12/01/2019	\$74.50	\$11.00	\$15.50	\$0.00	\$101.00
	06/01/2020	\$76.06	\$11.00	\$15.50	\$0.00	\$102.56
	12/01/2020	\$77.69	\$11.00	\$15.50	\$0.00	\$104.19
	06/01/2021	\$79.25	\$11.00	\$15.50	\$0.00	\$105.75
	12/01/2021	\$80.88	\$11.00	\$15.50	\$0.00	\$107.38

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
COMPRESSOR OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2018	\$31.90	\$11.00	\$15.50	\$0.00	\$58.40
	12/01/2018	\$32.68	\$11.00	\$15.50	\$0.00	\$59.18
	06/01/2019	\$33.43	\$11.00	\$15.50	\$0.00	\$59.93
	12/01/2019	\$34.22	\$11.00	\$15.50	\$0.00	\$60.72
	06/01/2020	\$34.97	\$11.00	\$15.50	\$0.00	\$61.47
	12/01/2020	\$35.75	\$11.00	\$15.50	\$0.00	\$62.25
	06/01/2021	\$36.50	\$11.00	\$15.50	\$0.00	\$63.00
	12/01/2021	\$37.29	\$11.00	\$15.50	\$0.00	\$63.79

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

DELEADER (BRIDGE) <i>PAINTERS LOCAL 35 - ZONE 2</i>	07/01/2018	\$50.01	\$8.15	\$20.15	\$0.00	\$78.31
	01/01/2019	\$50.36	\$8.15	\$20.85	\$0.00	\$79.36
	07/01/2019	\$51.46	\$8.15	\$20.85	\$0.00	\$80.46
	01/01/2020	\$52.56	\$8.15	\$20.85	\$0.00	\$81.56
	07/01/2020	\$53.66	\$8.15	\$20.85	\$0.00	\$82.66
	01/01/2021	\$54.76	\$8.15	\$20.85	\$0.00	\$83.76

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 07/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.01	\$8.15	\$0.00	\$0.00	\$33.16
2	55	\$27.51	\$8.15	\$5.34	\$0.00	\$41.00
3	60	\$30.01	\$8.15	\$5.82	\$0.00	\$43.98
4	65	\$32.51	\$8.15	\$6.31	\$0.00	\$46.97
5	70	\$35.01	\$8.15	\$17.24	\$0.00	\$60.40
6	75	\$37.51	\$8.15	\$17.73	\$0.00	\$63.39
7	80	\$40.01	\$8.15	\$18.21	\$0.00	\$66.37
8	90	\$45.01	\$8.15	\$19.18	\$0.00	\$72.34

Effective Date - 01/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.18	\$8.15	\$0.00	\$0.00	\$33.33
2	55	\$27.70	\$8.15	\$5.64	\$0.00	\$41.49
3	60	\$30.22	\$8.15	\$6.15	\$0.00	\$44.52
4	65	\$32.73	\$8.15	\$6.66	\$0.00	\$47.54
5	70	\$35.25	\$8.15	\$17.78	\$0.00	\$61.18
6	75	\$37.77	\$8.15	\$18.29	\$0.00	\$64.21
7	80	\$40.29	\$8.15	\$18.80	\$0.00	\$67.24
8	90	\$45.32	\$8.15	\$19.83	\$0.00	\$73.30

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DEMO: ADZEMAN <i>LABORERS - ZONE 2</i>	06/01/2018	\$38.15	\$7.70	\$15.20	\$0.00	\$61.05
	12/01/2018	\$39.10	\$7.70	\$15.20	\$0.00	\$62.00
	06/01/2019	\$40.10	\$7.70	\$15.20	\$0.00	\$63.00
	12/01/2019	\$41.10	\$7.70	\$15.20	\$0.00	\$64.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: BACKHOE/LOADER/HAMMER OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2018	\$39.15	\$7.70	\$15.20	\$0.00	\$62.05
	12/01/2018	\$40.10	\$7.70	\$15.20	\$0.00	\$63.00
	06/01/2019	\$41.10	\$7.70	\$15.20	\$0.00	\$64.00
	12/01/2019	\$42.10	\$7.70	\$15.20	\$0.00	\$65.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: BURNERS <i>LABORERS - ZONE 2</i>	06/01/2018	\$38.90	\$7.70	\$15.20	\$0.00	\$61.80
	12/01/2018	\$39.85	\$7.70	\$15.20	\$0.00	\$62.75
	06/01/2019	\$40.85	\$7.70	\$15.20	\$0.00	\$63.75
	12/01/2019	\$41.85	\$7.70	\$15.20	\$0.00	\$64.75
For apprentice rates see "Apprentice- LABORER"						
DEMO: CONCRETE CUTTER/SAWYER <i>LABORERS - ZONE 2</i>	06/01/2018	\$39.15	\$7.70	\$15.20	\$0.00	\$62.05
	12/01/2018	\$40.10	\$7.70	\$15.20	\$0.00	\$63.00
	06/01/2019	\$41.10	\$7.70	\$15.20	\$0.00	\$64.00
	12/01/2019	\$42.10	\$7.70	\$15.20	\$0.00	\$65.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2018	\$38.90	\$7.70	\$15.20	\$0.00	\$61.80
	12/01/2018	\$39.85	\$7.70	\$15.20	\$0.00	\$62.75
	06/01/2019	\$40.85	\$7.70	\$15.20	\$0.00	\$63.75
	12/01/2019	\$41.85	\$7.70	\$15.20	\$0.00	\$64.75
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER <i>LABORERS - ZONE 2</i>	06/01/2018	\$38.15	\$7.70	\$15.20	\$0.00	\$61.05
	12/01/2018	\$39.10	\$7.70	\$15.20	\$0.00	\$62.00
	06/01/2019	\$40.10	\$7.70	\$15.20	\$0.00	\$63.00
	12/01/2019	\$41.10	\$7.70	\$15.20	\$0.00	\$64.00
For apprentice rates see "Apprentice- LABORER"						
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2018	\$46.61	\$11.00	\$15.50	\$0.00	\$73.11
	12/01/2018	\$47.75	\$11.00	\$15.50	\$0.00	\$74.25
	06/01/2019	\$48.84	\$11.00	\$15.50	\$0.00	\$75.34
	12/01/2019	\$49.98	\$11.00	\$15.50	\$0.00	\$76.48
	06/01/2020	\$51.06	\$11.00	\$15.50	\$0.00	\$77.56
	12/01/2020	\$52.20	\$11.00	\$15.50	\$0.00	\$78.70
	06/01/2021	\$53.29	\$11.00	\$15.50	\$0.00	\$79.79
	12/01/2021	\$54.43	\$11.00	\$15.50	\$0.00	\$80.93
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2018	\$65.20	\$9.90	\$21.15	\$0.00	\$96.25
	08/01/2019	\$68.52	\$9.90	\$21.15	\$0.00	\$99.57
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2018	\$46.57	\$9.90	\$21.15	\$0.00	\$77.62
	08/01/2019	\$48.94	\$9.90	\$21.15	\$0.00	\$79.99
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2018	\$69.86	\$9.90	\$21.15	\$0.00	\$100.91
	08/01/2019	\$73.41	\$9.90	\$21.15	\$0.00	\$104.46
For apprentice rates see "Apprentice- PILE DRIVER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DIVER/SLURRY (EFFLUENT) PILE DRIVER LOCAL 56 (ZONE 2)	08/01/2018	\$97.80	\$9.90	\$21.15	\$0.00	\$128.85
	08/01/2019	\$102.78	\$9.90	\$21.15	\$0.00	\$133.83

For apprentice rates see "Apprentice- PILE DRIVER"

ELECTRICIAN ELECTRICIANS LOCAL 223	09/01/2018	\$41.03	\$9.65	\$12.74	\$0.00	\$63.42
	03/01/2019	\$41.64	\$9.90	\$13.15	\$0.00	\$64.69
	09/01/2019	\$42.26	\$10.15	\$13.54	\$0.00	\$65.95
	03/01/2020	\$42.87	\$10.40	\$13.94	\$0.00	\$67.21

Apprentice - ELECTRICIAN - Local 223

Effective Date - 09/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$16.41	\$9.65	\$0.49	\$0.00	\$26.55
2	42	\$17.23	\$9.65	\$0.52	\$0.00	\$27.40
3	45	\$18.46	\$9.65	\$0.58	\$0.00	\$28.69
4	48	\$19.69	\$9.65	\$4.35	\$0.00	\$33.69
5	50	\$20.52	\$9.65	\$4.45	\$0.00	\$34.62
6	55	\$22.57	\$9.65	\$4.75	\$0.00	\$36.97
7	60	\$24.62	\$9.65	\$5.04	\$0.00	\$39.31
8	65	\$26.67	\$9.65	\$5.34	\$0.00	\$41.66
9	70	\$28.72	\$9.65	\$5.63	\$0.00	\$44.00
10	75	\$30.77	\$9.65	\$5.87	\$0.00	\$46.29

Effective Date - 03/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$16.66	\$9.90	\$0.50	\$0.00	\$27.06
2	42	\$17.49	\$9.90	\$0.52	\$0.00	\$27.91
3	45	\$18.74	\$9.90	\$0.58	\$0.00	\$29.22
4	48	\$19.99	\$9.90	\$4.64	\$0.00	\$34.53
5	50	\$20.82	\$9.90	\$4.68	\$0.00	\$35.40
6	55	\$22.90	\$9.90	\$5.04	\$0.00	\$37.84
7	60	\$24.98	\$9.90	\$5.34	\$0.00	\$40.22
8	65	\$27.07	\$9.90	\$5.64	\$0.00	\$42.61
9	70	\$29.15	\$9.90	\$5.93	\$0.00	\$44.98
10	75	\$31.23	\$9.90	\$6.18	\$0.00	\$47.31

Notes:

Steps are 750 hours

Apprentice to Journeyworker Ratio:2:3***

ELEVATOR CONSTRUCTOR ELEVATOR CONSTRUCTORS LOCAL 4	01/01/2018	\$57.62	\$15.43	\$16.61	\$0.00	\$89.66
	01/01/2019	\$59.47	\$15.58	\$17.51	\$0.00	\$92.56
	01/01/2020	\$61.42	\$15.73	\$18.41	\$0.00	\$95.56
	01/01/2021	\$63.47	\$15.88	\$19.31	\$0.00	\$98.66
	01/01/2022	\$65.62	\$16.03	\$20.21	\$0.00	\$101.86

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - ELEVATOR CONSTRUCTOR - Local 4

Effective Date - 01/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.81	\$15.43	\$0.00	\$0.00	\$44.24
2	55	\$31.69	\$15.43	\$16.61	\$0.00	\$63.73
3	65	\$37.45	\$15.43	\$16.61	\$0.00	\$69.49
4	70	\$40.33	\$15.43	\$16.61	\$0.00	\$72.37
5	80	\$46.10	\$15.43	\$16.61	\$0.00	\$78.14

Effective Date - 01/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$29.74	\$15.58	\$0.00	\$0.00	\$45.32
2	55	\$32.71	\$15.58	\$17.51	\$0.00	\$65.80
3	65	\$38.66	\$15.58	\$17.51	\$0.00	\$71.75
4	70	\$41.63	\$15.58	\$17.51	\$0.00	\$74.72
5	80	\$47.58	\$15.58	\$17.51	\$0.00	\$80.67

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>	01/01/2018	\$40.33	\$15.43	\$16.61	\$0.00	\$72.37
	01/01/2019	\$41.63	\$15.58	\$17.51	\$0.00	\$74.72
	01/01/2020	\$42.99	\$15.73	\$18.41	\$0.00	\$77.13
	01/01/2021	\$44.43	\$15.88	\$19.31	\$0.00	\$79.62
	01/01/2022	\$45.93	\$16.03	\$20.21	\$0.00	\$82.17

For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

FENCE & GUARD RAIL ERECTOR <i>LABORERS - ZONE 2</i>	06/01/2018	\$33.50	\$7.70	\$14.02	\$0.00	\$55.22
	12/01/2018	\$34.34	\$7.70	\$14.02	\$0.00	\$56.06
	06/01/2019	\$35.21	\$7.70	\$14.02	\$0.00	\$56.93
	12/01/2019	\$36.07	\$7.70	\$14.02	\$0.00	\$57.79
	06/01/2020	\$36.96	\$7.70	\$14.02	\$0.00	\$58.68
	12/01/2020	\$37.85	\$7.70	\$14.02	\$0.00	\$59.57
	06/01/2021	\$38.77	\$7.70	\$14.02	\$0.00	\$60.49
	12/01/2021	\$39.68	\$7.70	\$14.02	\$0.00	\$61.40

For apprentice rates see "Apprentice- LABORER"

FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	05/01/2018	\$42.84	\$10.50	\$15.50	\$0.00	\$68.84
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	05/01/2018	\$44.31	\$10.50	\$15.50	\$0.00	\$70.31
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	05/01/2018	\$22.51	\$10.50	\$15.50	\$0.00	\$48.51
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 223</i>	09/01/2018	\$41.03	\$9.65	\$12.74	\$0.00	\$63.42
	03/01/2019	\$41.64	\$9.90	\$13.15	\$0.00	\$64.69
	09/01/2019	\$42.26	\$10.15	\$13.54	\$0.00	\$65.95
	03/01/2020	\$42.87	\$10.40	\$13.94	\$0.00	\$67.21
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIRE ALARM REPAIR / MAINTENANCE / COMMISSIONING <i>ELECTRICIANS LOCAL 223</i>	09/01/2018	\$34.76	\$9.65	\$10.81	\$0.00	\$55.22
	03/01/2019	\$35.25	\$9.90	\$11.14	\$0.00	\$56.29
	09/01/2019	\$35.78	\$10.15	\$11.45	\$0.00	\$57.38
	03/01/2020	\$36.27	\$10.40	\$11.78	\$0.00	\$58.45
For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"						
FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2018	\$38.83	\$11.00	\$15.50	\$0.00	\$65.33
	12/01/2018	\$39.78	\$11.00	\$15.50	\$0.00	\$66.28
	06/01/2019	\$40.69	\$11.00	\$15.50	\$0.00	\$67.19
	12/01/2019	\$41.64	\$11.00	\$15.50	\$0.00	\$68.14
	06/01/2020	\$42.55	\$11.00	\$15.50	\$0.00	\$69.05
	12/01/2020	\$43.50	\$11.00	\$15.50	\$0.00	\$70.00
	06/01/2021	\$44.41	\$11.00	\$15.50	\$0.00	\$70.91
	12/01/2021	\$45.36	\$11.00	\$15.50	\$0.00	\$71.86
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER <i>LABORERS - ZONE 2</i>	06/01/2018	\$21.50	\$7.70	\$14.02	\$0.00	\$43.22
	12/01/2018	\$22.50	\$7.70	\$14.02	\$0.00	\$44.22
	06/01/2019	\$22.50	\$7.70	\$14.02	\$0.00	\$44.22
	12/01/2019	\$23.50	\$7.70	\$14.02	\$0.00	\$45.22
	06/01/2020	\$23.50	\$7.70	\$14.02	\$0.00	\$45.22
	12/01/2020	\$24.50	\$7.70	\$14.02	\$0.00	\$46.22
	06/01/2021	\$24.50	\$7.70	\$14.02	\$0.00	\$46.22
	12/01/2021	\$24.50	\$7.70	\$14.02	\$0.00	\$46.22
For apprentice rates see "Apprentice- LABORER"						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE II</i>	03/01/2016	\$39.82	\$9.80	\$17.62	\$0.00	\$67.24

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - FLOORCOVERER - Local 2168 Zone II

Effective Date - 03/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.91	\$9.80	\$1.79	\$0.00	\$31.50
2	55	\$21.90	\$9.80	\$1.79	\$0.00	\$33.49
3	60	\$23.89	\$9.80	\$12.25	\$0.00	\$45.94
4	65	\$25.88	\$9.80	\$12.25	\$0.00	\$47.93
5	70	\$27.87	\$9.80	\$14.04	\$0.00	\$51.71
6	75	\$29.87	\$9.80	\$14.04	\$0.00	\$53.71
7	80	\$31.86	\$9.80	\$15.83	\$0.00	\$57.49
8	85	\$33.85	\$9.80	\$15.83	\$0.00	\$59.48

Notes: Steps are 750 hrs.
 % After 09/1/17; 45/45/55/55/70/70/80/80 (1500hr Steps)
 Step 1&2 \$29.51/ 3&4 \$35.22/ 5&6 \$51.71/ 7&8 \$57.49

Apprentice to Journeyworker Ratio:1:1

FORK LIFT/CHERRY PICKER <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2018	\$47.08	\$11.00	\$15.50	\$0.00	\$73.58
	12/01/2018	\$48.23	\$11.00	\$15.50	\$0.00	\$74.73
	06/01/2019	\$49.33	\$11.00	\$15.50	\$0.00	\$75.83
	12/01/2019	\$50.48	\$11.00	\$15.50	\$0.00	\$76.98
	06/01/2020	\$51.58	\$11.00	\$15.50	\$0.00	\$78.08
	12/01/2020	\$52.73	\$11.00	\$15.50	\$0.00	\$79.23
	06/01/2021	\$53.83	\$11.00	\$15.50	\$0.00	\$80.33
	12/01/2021	\$54.98	\$11.00	\$15.50	\$0.00	\$81.48

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

GENERATOR/LIGHTING PLANT/HEATERS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2018	\$31.90	\$11.00	\$15.50	\$0.00	\$58.40
	12/01/2018	\$32.68	\$11.00	\$15.50	\$0.00	\$59.18
	06/01/2019	\$33.43	\$11.00	\$15.50	\$0.00	\$59.93
	12/01/2019	\$34.22	\$11.00	\$15.50	\$0.00	\$60.72
	06/01/2020	\$34.97	\$11.00	\$15.50	\$0.00	\$61.47
	12/01/2020	\$35.75	\$11.00	\$15.50	\$0.00	\$62.25
	06/01/2021	\$36.50	\$11.00	\$15.50	\$0.00	\$63.00
	12/01/2021	\$37.29	\$11.00	\$15.50	\$0.00	\$63.79

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) <i>GLAZIERS LOCAL 1333</i>	06/01/2018	\$37.18	\$10.40	\$9.35	\$0.00	\$56.93
	06/01/2019	\$38.18	\$10.60	\$9.90	\$0.00	\$58.68
	06/01/2020	\$39.18	\$10.80	\$10.45	\$0.00	\$60.43

Apprentice - GLAZIER - Local 1333

Effective Date - 06/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.59	\$10.40	\$1.60	\$0.00	\$30.59
2	56	\$20.91	\$10.40	\$1.60	\$0.00	\$32.91
3	63	\$23.24	\$10.40	\$2.10	\$0.00	\$35.74
4	69	\$25.56	\$10.40	\$2.10	\$0.00	\$38.06
5	75	\$27.89	\$10.40	\$2.60	\$0.00	\$40.89
6	81	\$30.21	\$10.40	\$2.60	\$0.00	\$43.21
7	88	\$32.53	\$10.40	\$9.35	\$0.00	\$52.28
8	94	\$34.86	\$10.40	\$9.35	\$0.00	\$54.61

Effective Date - 06/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.09	\$10.60	\$1.80	\$0.00	\$31.49
2	56	\$21.48	\$10.60	\$1.80	\$0.00	\$33.88
3	63	\$23.86	\$10.60	\$2.40	\$0.00	\$36.86
4	69	\$26.25	\$10.60	\$2.40	\$0.00	\$39.25
5	75	\$28.64	\$10.60	\$2.90	\$0.00	\$42.14
6	81	\$31.02	\$10.60	\$2.90	\$0.00	\$44.52
7	88	\$33.41	\$10.60	\$9.90	\$0.00	\$53.91
8	94	\$35.79	\$10.60	\$9.90	\$0.00	\$56.29

Notes:

Apprentice to Journeyworker Ratio:1:3

HOISTING ENGINEER/CRANES/GRADALLS	06/01/2018	\$47.08	\$11.00	\$15.50	\$0.00	\$73.58
OPERATING ENGINEERS LOCAL 4	12/01/2018	\$48.23	\$11.00	\$15.50	\$0.00	\$74.73
	06/01/2019	\$49.33	\$11.00	\$15.50	\$0.00	\$75.83
	12/01/2019	\$50.48	\$11.00	\$15.50	\$0.00	\$76.98
	06/01/2020	\$51.58	\$11.00	\$15.50	\$0.00	\$78.08
	12/01/2020	\$52.73	\$11.00	\$15.50	\$0.00	\$79.23
	06/01/2021	\$53.83	\$11.00	\$15.50	\$0.00	\$80.33
	12/01/2021	\$54.98	\$11.00	\$15.50	\$0.00	\$81.48

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - OPERATING ENGINEERS - Local 4

Effective Date - 06/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$25.89	\$11.00	\$0.00	\$0.00	\$36.89
2	60	\$28.25	\$11.00	\$15.50	\$0.00	\$54.75
3	65	\$30.60	\$11.00	\$15.50	\$0.00	\$57.10
4	70	\$32.96	\$11.00	\$15.50	\$0.00	\$59.46
5	75	\$35.31	\$11.00	\$15.50	\$0.00	\$61.81
6	80	\$37.66	\$11.00	\$15.50	\$0.00	\$64.16
7	85	\$40.02	\$11.00	\$15.50	\$0.00	\$66.52
8	90	\$42.37	\$11.00	\$15.50	\$0.00	\$68.87

Effective Date - 12/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$26.53	\$11.00	\$0.00	\$0.00	\$37.53
2	60	\$28.94	\$11.00	\$15.50	\$0.00	\$55.44
3	65	\$31.35	\$11.00	\$15.50	\$0.00	\$57.85
4	70	\$33.76	\$11.00	\$15.50	\$0.00	\$60.26
5	75	\$36.17	\$11.00	\$15.50	\$0.00	\$62.67
6	80	\$38.58	\$11.00	\$15.50	\$0.00	\$65.08
7	85	\$41.00	\$11.00	\$15.50	\$0.00	\$67.50
8	90	\$43.41	\$11.00	\$15.50	\$0.00	\$69.91

Notes:

Apprentice to Journeyworker Ratio:1:6

HVAC (DUCTWORK) SHEETMETAL WORKERS LOCAL 17 - B	10/01/2018	\$35.21	\$12.20	\$16.55	\$1.92	\$65.88
	04/01/2019	\$35.71	\$12.20	\$16.55	\$1.92	\$66.38

For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (ELECTRICAL CONTROLS) ELECTRICIANS LOCAL 223	09/01/2018	\$41.03	\$9.65	\$12.74	\$0.00	\$63.42
	03/01/2019	\$41.64	\$9.90	\$13.15	\$0.00	\$64.69
	09/01/2019	\$42.26	\$10.15	\$13.54	\$0.00	\$65.95
	03/01/2020	\$42.87	\$10.40	\$13.94	\$0.00	\$67.21

For apprentice rates see "Apprentice- ELECTRICIAN"

HVAC (TESTING AND BALANCING - AIR) SHEETMETAL WORKERS LOCAL 17 - B	10/01/2018	\$35.21	\$12.20	\$16.55	\$1.92	\$65.88
	04/01/2019	\$35.71	\$12.20	\$16.55	\$1.92	\$66.38

For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (TESTING AND BALANCING - WATER) PLUMBERS & PIPEFITTERS LOCAL 51	09/01/2018	\$42.04	\$10.00	\$18.20	\$0.00	\$70.24
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For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

HVAC MECHANIC PLUMBERS & PIPEFITTERS LOCAL 51	09/01/2018	\$42.04	\$10.00	\$18.20	\$0.00	\$70.24
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For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HYDRAULIC DRILLS <i>LABORERS - ZONE 2</i>	06/01/2018	\$34.00	\$7.70	\$14.02	\$0.00	\$55.72
	12/01/2018	\$34.84	\$7.70	\$14.02	\$0.00	\$56.56
	06/01/2019	\$35.71	\$7.70	\$14.02	\$0.00	\$57.43
	12/01/2019	\$36.57	\$7.70	\$14.02	\$0.00	\$58.29
	06/01/2020	\$37.46	\$7.70	\$14.02	\$0.00	\$59.18
	12/01/2020	\$38.35	\$7.70	\$14.02	\$0.00	\$60.07
	06/01/2021	\$39.27	\$7.70	\$14.02	\$0.00	\$60.99
	12/01/2021	\$40.18	\$7.70	\$14.02	\$0.00	\$61.90
For apprentice rates see "Apprentice- LABORER"						
INSULATOR (PIPES & TANKS) <i>HEAT & FROST INSULATORS LOCAL 6 (BOSTON)</i>	09/01/2018	\$49.34	\$11.75	\$14.20	\$0.00	\$75.29
	09/01/2019	\$51.84	\$11.75	\$14.20	\$0.00	\$77.79

Apprentice - ASBESTOS INSULATOR (Pipes & Tanks) - Local 6 Boston

Effective Date - 09/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.67	\$11.75	\$10.45	\$0.00	\$46.87
2	60	\$29.60	\$11.75	\$11.20	\$0.00	\$52.55
3	70	\$34.54	\$11.75	\$11.95	\$0.00	\$58.24
4	80	\$39.47	\$11.75	\$12.70	\$0.00	\$63.92

Effective Date - 09/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.92	\$11.75	\$10.45	\$0.00	\$48.12
2	60	\$31.10	\$11.75	\$11.20	\$0.00	\$54.05
3	70	\$36.29	\$11.75	\$11.95	\$0.00	\$59.99
4	80	\$41.47	\$11.75	\$12.70	\$0.00	\$65.92

Notes:

Steps are 1 year

Apprentice to Journeyworker Ratio:1:4

IRONWORKER/WELDER <i>IRONWORKERS LOCAL 37</i>	09/16/2018	\$37.91	\$7.70	\$17.10	\$0.00	\$62.71
	03/16/2019	\$38.81	\$7.70	\$17.10	\$0.00	\$63.61
	09/16/2019	\$39.71	\$7.70	\$17.10	\$0.00	\$64.51
	03/16/2020	\$40.61	\$7.70	\$17.10	\$0.00	\$65.41
	09/16/2020	\$41.51	\$7.70	\$17.10	\$0.00	\$66.31
	03/16/2021	\$42.46	\$7.70	\$17.10	\$0.00	\$67.26

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - IRONWORKER - Local 37

Effective Date - 09/16/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	70	\$26.54	\$7.70	\$17.10	\$0.00	\$51.34
2	75	\$28.43	\$7.70	\$17.10	\$0.00	\$53.23
3	80	\$30.33	\$7.70	\$17.10	\$0.00	\$55.13
4	85	\$32.22	\$7.70	\$17.10	\$0.00	\$57.02
5	90	\$34.12	\$7.70	\$17.10	\$0.00	\$58.92
6	95	\$36.01	\$7.70	\$17.10	\$0.00	\$60.81

Notes:

Apprentice to Journeyworker Ratio:1:4

JACKHAMMER & PAVING BREAKER OPERATOR LABORERS - ZONE 2	06/01/2018	\$33.50	\$7.70	\$14.02	\$0.00	\$55.22
	12/01/2018	\$34.34	\$7.70	\$14.02	\$0.00	\$56.06
	06/01/2019	\$35.21	\$7.70	\$14.02	\$0.00	\$56.93
	12/01/2019	\$36.07	\$7.70	\$14.02	\$0.00	\$57.79
	06/01/2020	\$36.96	\$7.70	\$14.02	\$0.00	\$58.68
	12/01/2020	\$37.85	\$7.70	\$14.02	\$0.00	\$59.57
	06/01/2021	\$38.77	\$7.70	\$14.02	\$0.00	\$60.49
	12/01/2021	\$39.68	\$7.70	\$14.02	\$0.00	\$61.40

For apprentice rates see "Apprentice- LABORER"

LABORER LABORERS - ZONE 2	06/01/2018	\$33.25	\$7.70	\$14.02	\$0.00	\$54.97
	12/01/2018	\$34.09	\$7.70	\$14.02	\$0.00	\$55.81
	06/01/2019	\$34.96	\$7.70	\$14.02	\$0.00	\$56.68
	12/01/2019	\$35.82	\$7.70	\$14.02	\$0.00	\$57.54
	06/01/2020	\$36.71	\$7.70	\$14.02	\$0.00	\$58.43
	12/01/2020	\$37.60	\$7.70	\$14.02	\$0.00	\$59.32
	06/01/2021	\$38.52	\$7.70	\$14.02	\$0.00	\$60.24
	12/01/2021	\$39.43	\$7.70	\$14.02	\$0.00	\$61.15

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - LABORER - Zone 2

Effective Date - 06/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$19.95	\$7.70	\$14.02	\$0.00	\$41.67
2	70	\$23.28	\$7.70	\$14.02	\$0.00	\$45.00
3	80	\$26.60	\$7.70	\$14.02	\$0.00	\$48.32
4	90	\$29.93	\$7.70	\$14.02	\$0.00	\$51.65

Effective Date - 12/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$20.45	\$7.70	\$14.02	\$0.00	\$42.17
2	70	\$23.86	\$7.70	\$14.02	\$0.00	\$45.58
3	80	\$27.27	\$7.70	\$14.02	\$0.00	\$48.99
4	90	\$30.68	\$7.70	\$14.02	\$0.00	\$52.40

Notes:

Apprentice to Journeyworker Ratio:1:5

LABORER: CARPENTER TENDER LABORERS - ZONE 2	06/01/2018	\$33.25	\$7.70	\$14.02	\$0.00	\$54.97
	12/01/2018	\$34.09	\$7.70	\$14.02	\$0.00	\$55.81
	06/01/2019	\$34.96	\$7.70	\$14.02	\$0.00	\$56.68
	12/01/2019	\$35.82	\$7.70	\$14.02	\$0.00	\$57.54
	06/01/2020	\$36.71	\$7.70	\$14.02	\$0.00	\$58.43
	12/01/2020	\$37.60	\$7.70	\$14.02	\$0.00	\$59.32
	06/01/2021	\$38.52	\$7.70	\$14.02	\$0.00	\$60.24
	12/01/2021	\$39.43	\$7.70	\$14.02	\$0.00	\$61.15

For apprentice rates see "Apprentice- LABORER"

LABORER: CEMENT FINISHER TENDER LABORERS - ZONE 2	06/01/2018	\$33.25	\$7.70	\$14.02	\$0.00	\$54.97
	12/01/2018	\$34.09	\$7.70	\$14.02	\$0.00	\$55.81
	06/01/2019	\$34.96	\$7.70	\$14.02	\$0.00	\$56.68
	12/01/2019	\$35.82	\$7.70	\$14.02	\$0.00	\$57.54
	06/01/2020	\$36.71	\$7.70	\$14.02	\$0.00	\$58.43
	12/01/2020	\$37.60	\$7.70	\$14.02	\$0.00	\$59.32
	06/01/2021	\$38.52	\$7.70	\$14.02	\$0.00	\$60.24
	12/01/2021	\$39.43	\$7.70	\$14.02	\$0.00	\$61.15

For apprentice rates see "Apprentice- LABORER"

LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER LABORERS - ZONE 2	06/01/2018	\$33.45	\$7.70	\$13.97	\$0.00	\$55.12
	12/01/2018	\$34.29	\$7.70	\$13.97	\$0.00	\$55.96
	06/01/2019	\$35.16	\$7.70	\$13.97	\$0.00	\$56.83
	12/01/2019	\$36.02	\$7.70	\$13.97	\$0.00	\$57.69

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: MASON TENDER <i>LABORERS - ZONE 2</i>	06/01/2018	\$33.50	\$7.70	\$14.02	\$0.00	\$55.22
	12/01/2018	\$34.34	\$7.70	\$14.02	\$0.00	\$56.06
	06/01/2019	\$35.21	\$7.70	\$14.02	\$0.00	\$56.93
	12/01/2019	\$36.07	\$7.70	\$14.02	\$0.00	\$57.79
	06/01/2020	\$36.96	\$7.70	\$14.02	\$0.00	\$58.68
	12/01/2020	\$37.85	\$7.70	\$14.02	\$0.00	\$59.57
	06/01/2021	\$38.77	\$7.70	\$14.02	\$0.00	\$60.49
	12/01/2021	\$39.68	\$7.70	\$14.02	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER"						
LABORER: MULTI-TRADE TENDER <i>LABORERS - ZONE 2</i>	06/01/2018	\$33.25	\$7.70	\$14.02	\$0.00	\$54.97
	12/01/2018	\$34.09	\$7.70	\$14.02	\$0.00	\$55.81
	06/01/2019	\$34.96	\$7.70	\$14.02	\$0.00	\$56.68
	12/01/2019	\$35.82	\$7.70	\$14.02	\$0.00	\$57.54
	06/01/2020	\$36.71	\$7.70	\$14.02	\$0.00	\$58.43
	12/01/2020	\$37.60	\$7.70	\$14.02	\$0.00	\$59.32
	06/01/2021	\$38.52	\$7.70	\$14.02	\$0.00	\$60.24
	12/01/2021	\$39.43	\$7.70	\$14.02	\$0.00	\$61.15
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER <i>LABORERS - ZONE 2</i>	06/01/2018	\$33.25	\$7.70	\$14.02	\$0.00	\$54.97
	12/01/2018	\$34.09	\$7.70	\$14.02	\$0.00	\$55.81
	06/01/2019	\$34.96	\$7.70	\$14.02	\$0.00	\$56.68
	12/01/2019	\$35.82	\$7.70	\$14.02	\$0.00	\$57.54
	06/01/2020	\$36.71	\$7.70	\$14.02	\$0.00	\$58.43
	12/01/2020	\$37.60	\$7.70	\$14.02	\$0.00	\$59.32
	06/01/2021	\$38.52	\$7.70	\$14.02	\$0.00	\$60.24
	12/01/2021	\$39.43	\$7.70	\$14.02	\$0.00	\$61.15
This classification applies to all tree work associated with the removal of standing trees, and trimming and removal of branches and limbs when the work is not done for a utility company for the purpose of operation, maintenance or repair of utility company equipment. For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2018	\$33.50	\$7.70	\$14.02	\$0.00	\$55.22
	12/01/2018	\$34.34	\$7.70	\$14.02	\$0.00	\$56.06
	06/01/2019	\$35.21	\$7.70	\$14.02	\$0.00	\$56.93
	12/01/2019	\$36.07	\$7.70	\$14.02	\$0.00	\$57.79
	06/01/2020	\$36.96	\$7.70	\$14.02	\$0.00	\$58.68
	12/01/2020	\$37.85	\$7.70	\$14.02	\$0.00	\$59.57
	06/01/2021	\$38.77	\$7.70	\$14.02	\$0.00	\$60.49
	12/01/2021	\$39.68	\$7.70	\$14.02	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER"						
MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	08/01/2018	\$40.40	\$10.75	\$18.97	\$0.00	\$70.12
	02/01/2019	\$40.91	\$10.75	\$18.97	\$0.00	\$70.63
	08/01/2019	\$41.99	\$10.75	\$19.11	\$0.00	\$71.85
	02/01/2020	\$42.50	\$10.75	\$19.11	\$0.00	\$72.36
	08/01/2020	\$43.58	\$10.75	\$19.26	\$0.00	\$73.59
	02/01/2021	\$44.09	\$10.75	\$19.26	\$0.00	\$74.10
	08/01/2021	\$45.21	\$10.75	\$19.42	\$0.00	\$75.38
	02/01/2022	\$45.68	\$10.75	\$19.42	\$0.00	\$75.85

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - MARBLE & TILE FINISHER - Local 3 Marble & Tile

Effective Date - 08/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.20	\$10.75	\$18.97	\$0.00	\$49.92
2	60	\$24.24	\$10.75	\$18.97	\$0.00	\$53.96
3	70	\$28.28	\$10.75	\$18.97	\$0.00	\$58.00
4	80	\$32.32	\$10.75	\$18.97	\$0.00	\$62.04
5	90	\$36.36	\$10.75	\$18.97	\$0.00	\$66.08

Effective Date - 02/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.46	\$10.75	\$18.97	\$0.00	\$50.18
2	60	\$24.55	\$10.75	\$18.97	\$0.00	\$54.27
3	70	\$28.64	\$10.75	\$18.97	\$0.00	\$58.36
4	80	\$32.73	\$10.75	\$18.97	\$0.00	\$62.45
5	90	\$36.82	\$10.75	\$18.97	\$0.00	\$66.54

Notes:

Apprentice to Journeyworker Ratio:1:3

MARBLE MASONS, TILELAYERS & TERRAZZO MECH	08/01/2018	\$52.95	\$10.75	\$20.66	\$0.00	\$84.36
BRICKLAYERS LOCAL 3 - MARBLE & TILE	02/01/2019	\$53.57	\$10.75	\$20.66	\$0.00	\$84.98
	08/01/2019	\$54.92	\$10.75	\$20.80	\$0.00	\$86.47
	02/01/2020	\$55.55	\$10.75	\$20.80	\$0.00	\$87.10
	08/01/2020	\$56.90	\$10.75	\$20.95	\$0.00	\$88.60
	02/01/2021	\$57.54	\$10.75	\$20.95	\$0.00	\$89.24
	08/01/2021	\$58.94	\$10.75	\$21.11	\$0.00	\$90.80
	02/01/2022	\$59.51	\$10.75	\$21.11	\$0.00	\$91.37

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - MARBLE-TILE-TERRAZZO MECHANIC - Local 3 Marble & Tile

Effective Date - 08/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.48	\$10.75	\$20.66	\$0.00	\$57.89
2	60	\$31.77	\$10.75	\$20.66	\$0.00	\$63.18
3	70	\$37.07	\$10.75	\$20.66	\$0.00	\$68.48
4	80	\$42.36	\$10.75	\$20.66	\$0.00	\$73.77
5	90	\$47.66	\$10.75	\$20.66	\$0.00	\$79.07

Effective Date - 02/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.79	\$10.75	\$20.66	\$0.00	\$58.20
2	60	\$32.14	\$10.75	\$20.66	\$0.00	\$63.55
3	70	\$37.50	\$10.75	\$20.66	\$0.00	\$68.91
4	80	\$42.86	\$10.75	\$20.66	\$0.00	\$74.27
5	90	\$48.21	\$10.75	\$20.66	\$0.00	\$79.62

Notes:

Apprentice to Journeyworker Ratio:1:5

MECH. SWEEPER OPERATOR (ON CONST. SITES) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2018	\$46.61	\$11.00	\$15.50	\$0.00	\$73.11
	12/01/2018	\$47.75	\$11.00	\$15.50	\$0.00	\$74.25
	06/01/2019	\$48.84	\$11.00	\$15.50	\$0.00	\$75.34
	12/01/2019	\$49.98	\$11.00	\$15.50	\$0.00	\$76.48
	06/01/2020	\$51.06	\$11.00	\$15.50	\$0.00	\$77.56
	12/01/2020	\$52.20	\$11.00	\$15.50	\$0.00	\$78.70
	06/01/2021	\$53.29	\$11.00	\$15.50	\$0.00	\$79.79
	12/01/2021	\$54.43	\$11.00	\$15.50	\$0.00	\$80.93

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MECHANICS MAINTENANCE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2018	\$46.61	\$11.00	\$15.50	\$0.00	\$73.11
	12/01/2018	\$47.75	\$11.00	\$15.50	\$0.00	\$74.25
	06/01/2019	\$48.84	\$11.00	\$15.50	\$0.00	\$75.34
	12/01/2019	\$49.98	\$11.00	\$15.50	\$0.00	\$76.48
	06/01/2020	\$51.06	\$11.00	\$15.50	\$0.00	\$77.56
	12/01/2020	\$52.20	\$11.00	\$15.50	\$0.00	\$78.70
	06/01/2021	\$53.29	\$11.00	\$15.50	\$0.00	\$79.79
	12/01/2021	\$54.43	\$11.00	\$15.50	\$0.00	\$80.93

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MILLWRIGHT (Zone 2) <i>MILLWRIGHTS LOCAL 1121 - Zone 2</i>	10/01/2018	\$38.02	\$9.90	\$18.50	\$0.00	\$66.42
	04/01/2019	\$38.87	\$9.90	\$18.50	\$0.00	\$67.27

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - MILLWRIGHT - Local 1121 Zone 2

Effective Date - 10/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$20.91	\$9.90	\$5.31	\$0.00	\$36.12
2	65	\$24.71	\$9.90	\$15.13	\$0.00	\$49.74
3	75	\$28.52	\$9.90	\$16.10	\$0.00	\$54.52
4	85	\$32.32	\$9.90	\$17.06	\$0.00	\$59.28

Effective Date - 04/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$21.38	\$9.90	\$5.31	\$0.00	\$36.59
2	65	\$25.27	\$9.90	\$15.13	\$0.00	\$50.30
3	75	\$29.15	\$9.90	\$16.10	\$0.00	\$55.15
4	85	\$33.04	\$9.90	\$17.06	\$0.00	\$60.00

Notes:

Steps are 2,000 hours

Apprentice to Journeyworker Ratio:1:5

MORTAR MIXER LABORERS - ZONE 2	06/01/2018	\$33.50	\$7.70	\$14.02	\$0.00	\$55.22
	12/01/2018	\$34.34	\$7.70	\$14.02	\$0.00	\$56.06
	06/01/2019	\$35.21	\$7.70	\$14.02	\$0.00	\$56.93
	12/01/2019	\$36.07	\$7.70	\$14.02	\$0.00	\$57.79
	06/01/2020	\$36.96	\$7.70	\$14.02	\$0.00	\$58.68
	12/01/2020	\$37.85	\$7.70	\$14.02	\$0.00	\$59.57
	06/01/2021	\$38.77	\$7.70	\$14.02	\$0.00	\$60.49
	12/01/2021	\$39.68	\$7.70	\$14.02	\$0.00	\$61.40

For apprentice rates see "Apprentice- LABORER"

OILER (OTHER THAN TRUCK CRANES,GRADALLS) OPERATING ENGINEERS LOCAL 4	06/01/2018	\$23.14	\$11.00	\$15.50	\$0.00	\$49.64
	12/01/2018	\$23.71	\$11.00	\$15.50	\$0.00	\$50.21
	06/01/2019	\$24.26	\$11.00	\$15.50	\$0.00	\$50.76
	12/01/2019	\$24.83	\$11.00	\$15.50	\$0.00	\$51.33
	06/01/2020	\$25.38	\$11.00	\$15.50	\$0.00	\$51.88
	12/01/2020	\$25.95	\$11.00	\$15.50	\$0.00	\$52.45
	06/01/2021	\$26.50	\$11.00	\$15.50	\$0.00	\$53.00
	12/01/2021	\$27.08	\$11.00	\$15.50	\$0.00	\$53.58

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

OILER (TRUCK CRANES, GRADALLS) OPERATING ENGINEERS LOCAL 4	06/01/2018	\$27.40	\$11.00	\$15.50	\$0.00	\$53.90
	12/01/2018	\$28.07	\$11.00	\$15.50	\$0.00	\$54.57
	06/01/2019	\$28.72	\$11.00	\$15.50	\$0.00	\$55.22
	12/01/2019	\$29.39	\$11.00	\$15.50	\$0.00	\$55.89
	06/01/2020	\$30.04	\$11.00	\$15.50	\$0.00	\$56.54
	12/01/2020	\$30.72	\$11.00	\$15.50	\$0.00	\$57.22
	06/01/2021	\$31.36	\$11.00	\$15.50	\$0.00	\$57.86
	12/01/2021	\$32.04	\$11.00	\$15.50	\$0.00	\$58.54

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
OTHER POWER DRIVEN EQUIPMENT - CLASS II <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2018	\$46.61	\$11.00	\$15.50	\$0.00	\$73.11
	12/01/2018	\$47.75	\$11.00	\$15.50	\$0.00	\$74.25
	06/01/2019	\$48.84	\$11.00	\$15.50	\$0.00	\$75.34
	12/01/2019	\$49.98	\$11.00	\$15.50	\$0.00	\$76.48
	06/01/2020	\$51.06	\$11.00	\$15.50	\$0.00	\$77.56
	12/01/2020	\$52.20	\$11.00	\$15.50	\$0.00	\$78.70
	06/01/2021	\$53.29	\$11.00	\$15.50	\$0.00	\$79.79
	12/01/2021	\$54.43	\$11.00	\$15.50	\$0.00	\$80.93

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PAINTER (BRIDGES/TANKS) <i>PAINTERS LOCAL 35 - ZONE 2</i>	07/01/2018	\$50.01	\$8.15	\$20.15	\$0.00	\$78.31
	01/01/2019	\$50.36	\$8.15	\$20.85	\$0.00	\$79.36
	07/01/2019	\$51.46	\$8.15	\$20.85	\$0.00	\$80.46
	01/01/2020	\$52.56	\$8.15	\$20.85	\$0.00	\$81.56
	07/01/2020	\$53.66	\$8.15	\$20.85	\$0.00	\$82.66
	01/01/2021	\$54.76	\$8.15	\$20.85	\$0.00	\$83.76

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 07/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.01	\$8.15	\$0.00	\$0.00	\$33.16
2	55	\$27.51	\$8.15	\$5.34	\$0.00	\$41.00
3	60	\$30.01	\$8.15	\$5.82	\$0.00	\$43.98
4	65	\$32.51	\$8.15	\$6.31	\$0.00	\$46.97
5	70	\$35.01	\$8.15	\$17.24	\$0.00	\$60.40
6	75	\$37.51	\$8.15	\$17.73	\$0.00	\$63.39
7	80	\$40.01	\$8.15	\$18.21	\$0.00	\$66.37
8	90	\$45.01	\$8.15	\$19.18	\$0.00	\$72.34

Effective Date - 01/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.18	\$8.15	\$0.00	\$0.00	\$33.33
2	55	\$27.70	\$8.15	\$5.64	\$0.00	\$41.49
3	60	\$30.22	\$8.15	\$6.15	\$0.00	\$44.52
4	65	\$32.73	\$8.15	\$6.66	\$0.00	\$47.54
5	70	\$35.25	\$8.15	\$17.78	\$0.00	\$61.18
6	75	\$37.77	\$8.15	\$18.29	\$0.00	\$64.21
7	80	\$40.29	\$8.15	\$18.80	\$0.00	\$67.24
8	90	\$45.32	\$8.15	\$19.83	\$0.00	\$73.30

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, NEW) * * If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. <i>PAINTERS LOCAL 35 - ZONE 2</i>	07/01/2018	\$40.91	\$8.15	\$20.15	\$0.00	\$69.21
	01/01/2019	\$41.26	\$8.15	\$20.85	\$0.00	\$70.26
	07/01/2019	\$42.36	\$8.15	\$20.85	\$0.00	\$71.36
	01/01/2020	\$43.46	\$8.15	\$20.85	\$0.00	\$72.46
	07/01/2020	\$44.56	\$8.15	\$20.85	\$0.00	\$73.56
	01/01/2021	\$45.66	\$8.15	\$20.85	\$0.00	\$74.66

Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - New

Effective Date - 07/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.46	\$8.15	\$0.00	\$0.00	\$28.61
2	55	\$22.50	\$8.15	\$5.34	\$0.00	\$35.99
3	60	\$24.55	\$8.15	\$5.82	\$0.00	\$38.52
4	65	\$26.59	\$8.15	\$6.31	\$0.00	\$41.05
5	70	\$28.64	\$8.15	\$17.24	\$0.00	\$54.03
6	75	\$30.68	\$8.15	\$17.73	\$0.00	\$56.56
7	80	\$32.73	\$8.15	\$18.21	\$0.00	\$59.09
8	90	\$36.82	\$8.15	\$19.18	\$0.00	\$64.15

Effective Date - 01/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.63	\$8.15	\$0.00	\$0.00	\$28.78
2	55	\$22.69	\$8.15	\$5.64	\$0.00	\$36.48
3	60	\$24.76	\$8.15	\$6.15	\$0.00	\$39.06
4	65	\$26.82	\$8.15	\$6.66	\$0.00	\$41.63
5	70	\$28.88	\$8.15	\$17.78	\$0.00	\$54.81
6	75	\$30.95	\$8.15	\$18.29	\$0.00	\$57.39
7	80	\$33.01	\$8.15	\$18.80	\$0.00	\$59.96
8	90	\$37.13	\$8.15	\$19.83	\$0.00	\$65.11

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, REPAINT) <i>PAINTERS LOCAL 35 - ZONE 2</i>	07/01/2018	\$38.97	\$8.15	\$20.15	\$0.00	\$67.27
	01/01/2019	\$39.32	\$8.15	\$20.85	\$0.00	\$68.32
	07/01/2019	\$40.42	\$8.15	\$20.85	\$0.00	\$69.42
	01/01/2020	\$41.52	\$8.15	\$20.85	\$0.00	\$70.52
	07/01/2020	\$42.62	\$8.15	\$20.85	\$0.00	\$71.62
	01/01/2021	\$43.72	\$8.15	\$20.85	\$0.00	\$72.72

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - Repaint

Effective Date - 07/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.49	\$8.15	\$0.00	\$0.00	\$27.64
2	55	\$21.43	\$8.15	\$5.34	\$0.00	\$34.92
3	60	\$23.38	\$8.15	\$5.82	\$0.00	\$37.35
4	65	\$25.33	\$8.15	\$6.31	\$0.00	\$39.79
5	70	\$27.28	\$8.15	\$17.24	\$0.00	\$52.67
6	75	\$29.23	\$8.15	\$17.73	\$0.00	\$55.11
7	80	\$31.18	\$8.15	\$18.21	\$0.00	\$57.54
8	90	\$35.07	\$8.15	\$19.18	\$0.00	\$62.40

Effective Date - 01/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.66	\$8.15	\$0.00	\$0.00	\$27.81
2	55	\$21.63	\$8.15	\$5.64	\$0.00	\$35.42
3	60	\$23.59	\$8.15	\$6.15	\$0.00	\$37.89
4	65	\$25.56	\$8.15	\$6.66	\$0.00	\$40.37
5	70	\$27.52	\$8.15	\$17.78	\$0.00	\$53.45
6	75	\$29.49	\$8.15	\$18.29	\$0.00	\$55.93
7	80	\$31.46	\$8.15	\$18.80	\$0.00	\$58.41
8	90	\$35.39	\$8.15	\$19.83	\$0.00	\$63.37

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (TRAFFIC MARKINGS) LABORERS - ZONE 2	06/01/2018	\$33.25	\$7.70	\$14.02	\$0.00	\$54.97
	12/01/2018	\$34.09	\$7.70	\$14.02	\$0.00	\$55.81
	06/01/2019	\$34.96	\$7.70	\$14.02	\$0.00	\$56.68
	12/01/2019	\$35.82	\$7.70	\$14.02	\$0.00	\$57.54
	06/01/2020	\$36.71	\$7.70	\$14.02	\$0.00	\$58.43
	12/01/2020	\$37.60	\$7.70	\$14.02	\$0.00	\$59.32
	06/01/2021	\$38.52	\$7.70	\$14.02	\$0.00	\$60.24
	12/01/2021	\$39.43	\$7.70	\$14.02	\$0.00	\$61.15

For Apprentice rates see "Apprentice- LABORER"

PAINTER / TAPER (BRUSH, NEW) *	07/01/2018	\$39.51	\$8.15	\$20.15	\$0.00	\$67.81
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2	01/01/2019	\$39.86	\$8.15	\$20.85	\$0.00	\$68.86
	07/01/2019	\$40.96	\$8.15	\$20.85	\$0.00	\$69.96
	01/01/2020	\$42.06	\$8.15	\$20.85	\$0.00	\$71.06
	07/01/2020	\$43.16	\$8.15	\$20.85	\$0.00	\$72.16
	01/01/2021	\$44.25	\$8.15	\$20.85	\$0.00	\$73.25

Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW

Effective Date - 07/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.76	\$8.15	\$0.00	\$0.00	\$27.91
2	55	\$21.73	\$8.15	\$5.34	\$0.00	\$35.22
3	60	\$23.71	\$8.15	\$5.82	\$0.00	\$37.68
4	65	\$25.68	\$8.15	\$6.31	\$0.00	\$40.14
5	70	\$27.66	\$8.15	\$17.24	\$0.00	\$53.05
6	75	\$29.63	\$8.15	\$17.73	\$0.00	\$55.51
7	80	\$31.61	\$8.15	\$18.21	\$0.00	\$57.97
8	90	\$35.56	\$8.15	\$19.18	\$0.00	\$62.89

Effective Date - 01/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.93	\$8.15	\$0.00	\$0.00	\$28.08
2	55	\$21.92	\$8.15	\$5.64	\$0.00	\$35.71
3	60	\$23.92	\$8.15	\$6.15	\$0.00	\$38.22
4	65	\$25.91	\$8.15	\$6.66	\$0.00	\$40.72
5	70	\$27.90	\$8.15	\$17.78	\$0.00	\$53.83
6	75	\$29.90	\$8.15	\$18.29	\$0.00	\$56.34
7	80	\$31.89	\$8.15	\$18.80	\$0.00	\$58.84
8	90	\$35.87	\$8.15	\$19.83	\$0.00	\$63.85

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, REPAINT)	07/01/2018	\$37.57	\$8.15	\$20.15	\$0.00	\$65.87
PAINTERS LOCAL 35 - ZONE 2	01/01/2019	\$37.92	\$8.15	\$20.85	\$0.00	\$66.92
	07/01/2019	\$39.02	\$8.15	\$20.85	\$0.00	\$68.02
	01/01/2020	\$40.12	\$8.15	\$20.85	\$0.00	\$69.12
	07/01/2020	\$41.22	\$8.15	\$20.85	\$0.00	\$70.22
	01/01/2021	\$42.32	\$8.15	\$20.85	\$0.00	\$71.32

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT

Effective Date - 07/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.79	\$8.15	\$0.00	\$0.00	\$26.94
2	55	\$20.66	\$8.15	\$5.34	\$0.00	\$34.15
3	60	\$22.54	\$8.15	\$5.82	\$0.00	\$36.51
4	65	\$24.42	\$8.15	\$6.31	\$0.00	\$38.88
5	70	\$26.30	\$8.15	\$17.24	\$0.00	\$51.69
6	75	\$28.18	\$8.15	\$17.73	\$0.00	\$54.06
7	80	\$30.06	\$8.15	\$18.21	\$0.00	\$56.42
8	90	\$33.81	\$8.15	\$19.18	\$0.00	\$61.14

Effective Date - 01/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.96	\$8.15	\$0.00	\$0.00	\$27.11
2	55	\$20.86	\$8.15	\$5.64	\$0.00	\$34.65
3	60	\$22.75	\$8.15	\$6.15	\$0.00	\$37.05
4	65	\$24.65	\$8.15	\$6.66	\$0.00	\$39.46
5	70	\$26.54	\$8.15	\$17.78	\$0.00	\$52.47
6	75	\$28.44	\$8.15	\$18.29	\$0.00	\$54.88
7	80	\$30.34	\$8.15	\$18.80	\$0.00	\$57.29
8	90	\$34.13	\$8.15	\$19.83	\$0.00	\$62.11

Notes:
Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PANEL & PICKUP TRUCKS DRIVER <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2012	\$30.28	\$9.07	\$8.00	\$0.00	\$47.35
PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK) <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2018	\$42.93	\$9.90	\$21.15	\$0.00	\$73.98
For apprentice rates see "Apprentice- PILE DRIVER"	08/01/2019	\$44.61	\$9.90	\$21.15	\$0.00	\$75.66
PILE DRIVER <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2018	\$42.93	\$9.90	\$21.15	\$0.00	\$73.98
	08/01/2019	\$44.61	\$9.90	\$21.15	\$0.00	\$75.66

Apprentice - PILE DRIVER - Local 56 Zone 2

Effective Date - 08/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Notes: Apprentice wages shall be no less than the following Steps;
(Same as set in Zone 1)
1\$54.34/2\$58.99/3\$63.65/4\$65.98/5\$68.31/6\$68.31/7\$72.96/8\$72.96

Apprentice to Journeyworker Ratio:1:5

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PIPELAYER <i>LABORERS - ZONE 2</i>	06/01/2018	\$33.50	\$7.70	\$14.02	\$0.00	\$55.22
	12/01/2018	\$34.34	\$7.70	\$14.02	\$0.00	\$56.06
	06/01/2019	\$35.21	\$7.70	\$14.02	\$0.00	\$56.93
	12/01/2019	\$36.07	\$7.70	\$14.02	\$0.00	\$57.79
	06/01/2020	\$36.96	\$7.70	\$14.02	\$0.00	\$58.68
	12/01/2020	\$37.85	\$7.70	\$14.02	\$0.00	\$59.57
	06/01/2021	\$38.77	\$7.70	\$14.02	\$0.00	\$60.49
	12/01/2021	\$39.68	\$7.70	\$14.02	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER"						

PLUMBER & PIPEFITTER <i>PLUMBERS & PIPEFITTERS LOCAL 51</i>	09/01/2018	\$42.04	\$10.00	\$18.20	\$0.00	\$70.24
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Apprentice - PLUMBER/PIPEFITTER - Local 51

Effective Date - 09/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$16.82	\$10.00	\$2.50	\$0.00	\$29.32
2	50	\$21.02	\$10.00	\$2.50	\$0.00	\$33.52
3	60	\$25.22	\$10.00	\$7.85	\$0.00	\$43.07
4	70	\$29.43	\$10.00	\$12.56	\$0.00	\$51.99
5	80	\$33.63	\$10.00	\$15.70	\$0.00	\$59.33

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 & PIPEFITTERS LOCAL 51</i>	09/01/2018	\$42.04	\$10.00	\$18.20	\$0.00	\$70.24
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For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

PNEUMATIC DRILL/TOOL OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2018	\$33.50	\$7.70	\$14.02	\$0.00	\$55.22
	12/01/2018	\$34.34	\$7.70	\$14.02	\$0.00	\$56.06
	06/01/2019	\$35.21	\$7.70	\$14.02	\$0.00	\$56.93
	12/01/2019	\$36.07	\$7.70	\$14.02	\$0.00	\$57.79
	06/01/2020	\$36.96	\$7.70	\$14.02	\$0.00	\$58.68
	12/01/2020	\$37.85	\$7.70	\$14.02	\$0.00	\$59.57
	06/01/2021	\$38.77	\$7.70	\$14.02	\$0.00	\$60.49
	12/01/2021	\$39.68	\$7.70	\$14.02	\$0.00	\$61.40

For apprentice rates see "Apprentice- LABORER"

POWDERMAN & BLASTER <i>LABORERS - ZONE 2</i>	06/01/2018	\$34.25	\$7.70	\$14.02	\$0.00	\$55.97
	12/01/2018	\$35.09	\$7.70	\$14.02	\$0.00	\$56.81
	06/01/2019	\$35.96	\$7.70	\$14.02	\$0.00	\$57.68
	12/01/2019	\$36.82	\$7.70	\$14.02	\$0.00	\$58.54
	06/01/2020	\$37.71	\$7.70	\$14.02	\$0.00	\$59.43
	12/01/2020	\$38.60	\$7.70	\$14.02	\$0.00	\$60.32
	06/01/2021	\$39.52	\$7.70	\$14.02	\$0.00	\$61.24
	12/01/2021	\$40.43	\$7.70	\$14.02	\$0.00	\$62.15

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2018	\$47.08	\$11.00	\$15.50	\$0.00	\$73.58
	12/01/2018	\$48.23	\$11.00	\$15.50	\$0.00	\$74.73
	06/01/2019	\$49.33	\$11.00	\$15.50	\$0.00	\$75.83
	12/01/2019	\$50.48	\$11.00	\$15.50	\$0.00	\$76.98
	06/01/2020	\$51.58	\$11.00	\$15.50	\$0.00	\$78.08
	12/01/2020	\$52.73	\$11.00	\$15.50	\$0.00	\$79.23
	06/01/2021	\$53.83	\$11.00	\$15.50	\$0.00	\$80.33
	12/01/2021	\$54.98	\$11.00	\$15.50	\$0.00	\$81.48
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2018	\$47.08	\$11.00	\$15.50	\$0.00	\$73.58
	12/01/2018	\$48.23	\$11.00	\$15.50	\$0.00	\$74.73
	06/01/2019	\$49.33	\$11.00	\$15.50	\$0.00	\$75.83
	12/01/2019	\$50.48	\$11.00	\$15.50	\$0.00	\$76.98
	06/01/2020	\$51.58	\$11.00	\$15.50	\$0.00	\$78.08
	12/01/2020	\$52.73	\$11.00	\$15.50	\$0.00	\$79.23
	06/01/2021	\$53.83	\$11.00	\$15.50	\$0.00	\$80.33
	12/01/2021	\$54.98	\$11.00	\$15.50	\$0.00	\$81.48
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2018	\$31.90	\$11.00	\$15.50	\$0.00	\$58.40
	12/01/2018	\$32.68	\$11.00	\$15.50	\$0.00	\$59.18
	06/01/2019	\$33.43	\$11.00	\$15.50	\$0.00	\$59.93
	12/01/2019	\$34.22	\$11.00	\$15.50	\$0.00	\$60.72
	06/01/2020	\$34.97	\$11.00	\$15.50	\$0.00	\$61.47
	12/01/2020	\$35.75	\$11.00	\$15.50	\$0.00	\$62.25
	06/01/2021	\$36.50	\$11.00	\$15.50	\$0.00	\$63.00
	12/01/2021	\$37.29	\$11.00	\$15.50	\$0.00	\$63.79
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY-MIX CONCRETE DRIVER <i>TEAMSTERS LOCAL 59</i>	06/01/2008	\$19.00	\$5.10	\$4.21	\$0.00	\$28.31
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2018	\$46.61	\$11.00	\$15.50	\$0.00	\$73.11
	12/01/2018	\$47.75	\$11.00	\$15.50	\$0.00	\$74.25
	06/01/2019	\$48.84	\$11.00	\$15.50	\$0.00	\$75.34
	12/01/2019	\$49.98	\$11.00	\$15.50	\$0.00	\$76.48
	06/01/2020	\$51.06	\$11.00	\$15.50	\$0.00	\$77.56
	12/01/2020	\$52.20	\$11.00	\$15.50	\$0.00	\$78.70
	06/01/2021	\$53.29	\$11.00	\$15.50	\$0.00	\$79.79
	12/01/2021	\$54.43	\$11.00	\$15.50	\$0.00	\$80.93
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
RIDE-ON MOTORIZED BUGGY OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2018	\$33.50	\$7.70	\$14.02	\$0.00	\$55.22
	12/01/2018	\$34.34	\$7.70	\$14.02	\$0.00	\$56.06
	06/01/2019	\$35.21	\$7.70	\$14.02	\$0.00	\$56.93
	12/01/2019	\$36.07	\$7.70	\$14.02	\$0.00	\$57.79
	06/01/2020	\$36.96	\$7.70	\$14.02	\$0.00	\$58.68
	12/01/2020	\$37.85	\$7.70	\$14.02	\$0.00	\$59.57
	06/01/2021	\$38.77	\$7.70	\$14.02	\$0.00	\$60.49
	12/01/2021	\$39.68	\$7.70	\$14.02	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ROLLER/SPREADER/MULCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2018	\$46.61	\$11.00	\$15.50	\$0.00	\$73.11
	12/01/2018	\$47.75	\$11.00	\$15.50	\$0.00	\$74.25
	06/01/2019	\$48.84	\$11.00	\$15.50	\$0.00	\$75.34
	12/01/2019	\$49.98	\$11.00	\$15.50	\$0.00	\$76.48
	06/01/2020	\$51.06	\$11.00	\$15.50	\$0.00	\$77.56
	12/01/2020	\$52.20	\$11.00	\$15.50	\$0.00	\$78.70
	06/01/2021	\$53.29	\$11.00	\$15.50	\$0.00	\$79.79
	12/01/2021	\$54.43	\$11.00	\$15.50	\$0.00	\$80.93
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
ROOFER (Inc.Roofing Waterproofing &Roofing Damproofg) <i>ROOFERS LOCAL 33</i>	08/01/2018	\$42.36	\$11.35	\$15.90	\$0.00	\$69.61
	02/01/2019	\$43.51	\$11.35	\$15.90	\$0.00	\$70.76

Apprentice - ROOFER - Local 33

Effective Date - 08/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.18	\$11.35	\$3.69	\$0.00	\$36.22
2	60	\$25.42	\$11.35	\$15.90	\$0.00	\$52.67
3	65	\$27.53	\$11.35	\$15.90	\$0.00	\$54.78
4	75	\$31.77	\$11.35	\$15.90	\$0.00	\$59.02
5	85	\$36.01	\$11.35	\$15.90	\$0.00	\$63.26

Effective Date - 02/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.76	\$11.35	\$3.69	\$0.00	\$36.80
2	60	\$26.11	\$11.35	\$15.90	\$0.00	\$53.36
3	65	\$28.28	\$11.35	\$15.90	\$0.00	\$55.53
4	75	\$32.63	\$11.35	\$15.90	\$0.00	\$59.88
5	85	\$36.98	\$11.35	\$15.90	\$0.00	\$64.23

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>	08/01/2018	\$42.61	\$11.35	\$15.90	\$0.00	\$69.86
	02/01/2019	\$43.76	\$11.35	\$15.90	\$0.00	\$71.01
For apprentice rates see "Apprentice- ROOFER"						
SHEETMETAL WORKER <i>SHEETMETAL WORKERS LOCAL 17 - B</i>	10/01/2018	\$35.21	\$12.20	\$16.55	\$1.92	\$65.88
	04/01/2019	\$35.71	\$12.20	\$16.55	\$1.92	\$66.38

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - SHEET METAL WORKER - Local 17-B

Effective Date - 10/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$14.08	\$12.20	\$4.02	\$0.93	\$31.23
2	45	\$15.84	\$12.20	\$4.52	\$1.00	\$33.56
3	50	\$17.61	\$12.20	\$10.48	\$1.23	\$41.52
4	55	\$19.37	\$12.20	\$10.48	\$1.29	\$43.34
5	60	\$21.13	\$12.20	\$13.37	\$1.41	\$48.11
6	65	\$22.89	\$12.20	\$13.61	\$1.47	\$50.17
7	70	\$24.65	\$12.20	\$13.85	\$1.53	\$52.23
8	75	\$26.41	\$12.20	\$14.10	\$1.59	\$54.30
9	80	\$28.17	\$12.20	\$14.34	\$1.65	\$56.36
10	85	\$29.93	\$12.20	\$14.58	\$1.71	\$58.42

Effective Date - 04/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$14.28	\$12.20	\$4.02	\$0.93	\$31.43
2	45	\$16.07	\$12.20	\$4.52	\$1.00	\$33.79
3	50	\$17.86	\$12.20	\$10.48	\$1.23	\$41.77
4	55	\$19.64	\$12.20	\$10.48	\$1.29	\$43.61
5	60	\$21.43	\$12.20	\$13.52	\$1.41	\$48.56
6	65	\$23.21	\$12.20	\$13.78	\$1.47	\$50.66
7	70	\$25.00	\$12.20	\$14.03	\$1.53	\$52.76
8	75	\$26.78	\$12.20	\$14.28	\$1.59	\$54.85
9	80	\$28.57	\$12.20	\$14.54	\$1.66	\$56.97
10	85	\$30.35	\$12.20	\$14.79	\$1.71	\$59.05

Notes:

Apprentice to Journeyworker Ratio:1:3

SIGN ERECTOR PAINTERS LOCAL 35 - ZONE 2	06/01/2013	\$25.81	\$7.07	\$7.05	\$0.00	\$39.93
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Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - SIGN ERECTOR - Local 35 Zone 2

Effective Date - 06/01/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$12.91	\$7.07	\$0.00	\$0.00	\$19.98
2	55	\$14.20	\$7.07	\$2.45	\$0.00	\$23.72
3	60	\$15.49	\$7.07	\$2.45	\$0.00	\$25.01
4	65	\$16.78	\$7.07	\$2.45	\$0.00	\$26.30
5	70	\$18.07	\$7.07	\$7.05	\$0.00	\$32.19
6	75	\$19.36	\$7.07	\$7.05	\$0.00	\$33.48
7	80	\$20.65	\$7.07	\$7.05	\$0.00	\$34.77
8	85	\$21.94	\$7.07	\$7.05	\$0.00	\$36.06
9	90	\$23.23	\$7.07	\$7.05	\$0.00	\$37.35

Notes:
Steps are 4 mos.

Apprentice to Journeyworker Ratio:1:1

SPECIALIZED EARTH MOVING EQUIP < 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2016	\$32.44	\$10.91	\$10.89	\$0.00	\$54.24
SPECIALIZED EARTH MOVING EQUIP > 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2016	\$32.73	\$10.91	\$10.89	\$0.00	\$54.53
SPRINKLER FITTER <i>SPRINKLER FITTERS LOCAL 550 - (Section B) Zone 2</i>	10/01/2018	\$52.68	\$9.12	\$18.90	\$0.00	\$80.70
	01/01/2019	\$52.18	\$9.47	\$19.10	\$0.00	\$80.75
	03/01/2019	\$53.53	\$9.47	\$19.10	\$0.00	\$82.10
	10/01/2019	\$54.88	\$9.47	\$19.10	\$0.00	\$83.45
	03/01/2020	\$56.23	\$9.47	\$19.10	\$0.00	\$84.80
	10/01/2020	\$57.58	\$9.47	\$19.10	\$0.00	\$86.15
	03/01/2021	\$58.93	\$9.47	\$19.10	\$0.00	\$87.50

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - SPRINKLER FITTER - Local 550 (Section B) Zone 2

Effective Date - 10/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$18.44	\$9.12	\$8.90	\$0.00	\$36.46
2	40	\$21.07	\$9.12	\$8.90	\$0.00	\$39.09
3	45	\$23.71	\$9.12	\$8.90	\$0.00	\$41.73
4	50	\$26.34	\$9.12	\$8.90	\$0.00	\$44.36
5	55	\$28.97	\$9.12	\$8.90	\$0.00	\$46.99
6	60	\$31.61	\$9.12	\$10.40	\$0.00	\$51.13
7	65	\$34.24	\$9.12	\$10.40	\$0.00	\$53.76
8	70	\$36.88	\$9.12	\$10.40	\$0.00	\$56.40
9	75	\$39.51	\$9.12	\$10.40	\$0.00	\$59.03
10	80	\$42.14	\$9.12	\$10.40	\$0.00	\$61.66

Effective Date - 01/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$18.26	\$9.47	\$9.10	\$0.00	\$36.83
2	40	\$20.87	\$9.47	\$9.10	\$0.00	\$39.44
3	45	\$23.48	\$9.47	\$9.10	\$0.00	\$42.05
4	50	\$26.09	\$9.47	\$9.10	\$0.00	\$44.66
5	55	\$28.70	\$9.47	\$9.10	\$0.00	\$47.27
6	60	\$31.31	\$9.47	\$10.60	\$0.00	\$51.38
7	65	\$33.92	\$9.47	\$10.60	\$0.00	\$53.99
8	70	\$36.53	\$9.47	\$10.60	\$0.00	\$56.60
9	75	\$39.14	\$9.47	\$10.60	\$0.00	\$59.21
10	80	\$41.74	\$9.47	\$10.60	\$0.00	\$61.81

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

STEAM BOILER OPERATOR OPERATING ENGINEERS LOCAL 4	06/01/2018	\$46.61	\$11.00	\$15.50	\$0.00	\$73.11
	12/01/2018	\$47.75	\$11.00	\$15.50	\$0.00	\$74.25
	06/01/2019	\$48.84	\$11.00	\$15.50	\$0.00	\$75.34
	12/01/2019	\$49.98	\$11.00	\$15.50	\$0.00	\$76.48
	06/01/2020	\$51.06	\$11.00	\$15.50	\$0.00	\$77.56
	12/01/2020	\$52.20	\$11.00	\$15.50	\$0.00	\$78.70
	06/01/2021	\$53.29	\$11.00	\$15.50	\$0.00	\$79.79
	12/01/2021	\$54.43	\$11.00	\$15.50	\$0.00	\$80.93

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2018	\$46.61	\$11.00	\$15.50	\$0.00	\$73.11
	12/01/2018	\$47.75	\$11.00	\$15.50	\$0.00	\$74.25
	06/01/2019	\$48.84	\$11.00	\$15.50	\$0.00	\$75.34
	12/01/2019	\$49.98	\$11.00	\$15.50	\$0.00	\$76.48
	06/01/2020	\$51.06	\$11.00	\$15.50	\$0.00	\$77.56
	12/01/2020	\$52.20	\$11.00	\$15.50	\$0.00	\$78.70
	06/01/2021	\$53.29	\$11.00	\$15.50	\$0.00	\$79.79
	12/01/2021	\$54.43	\$11.00	\$15.50	\$0.00	\$80.93

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TELECOMMUNICATION TECHNICIAN <i>ELECTRICIANS LOCAL 223</i>	09/01/2018	\$34.76	\$9.65	\$10.81	\$0.00	\$55.22
	03/01/2019	\$35.25	\$9.90	\$11.14	\$0.00	\$56.29
	09/01/2019	\$35.78	\$10.15	\$11.45	\$0.00	\$57.38
	03/01/2020	\$36.27	\$10.40	\$11.78	\$0.00	\$58.45

Apprentice - TELECOMMUNICATION TECHNICIAN - Local 223

Effective Date - 09/01/2018

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
Steps are 750hrs
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 & TILE</i>	08/01/2018	\$51.85	\$10.75	\$20.66	\$0.00	\$83.26
	02/01/2019	\$52.49	\$10.75	\$20.66	\$0.00	\$83.90
	08/01/2019	\$53.84	\$10.75	\$20.80	\$0.00	\$85.39
	02/01/2020	\$54.48	\$10.75	\$20.80	\$0.00	\$86.03
	08/01/2020	\$55.83	\$10.75	\$20.95	\$0.00	\$87.53
	02/01/2021	\$56.47	\$10.75	\$20.95	\$0.00	\$88.17
	08/01/2021	\$57.87	\$10.75	\$21.11	\$0.00	\$89.73
	02/01/2022	\$58.46	\$10.75	\$21.11	\$0.00	\$90.32

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile

Effective Date - 08/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.93	\$10.75	\$20.03	\$0.00	\$56.71
2	60	\$31.11	\$10.75	\$20.03	\$0.00	\$61.89
3	70	\$36.30	\$10.75	\$20.03	\$0.00	\$67.08
4	80	\$41.48	\$10.75	\$20.03	\$0.00	\$72.26
5	90	\$46.67	\$10.75	\$20.03	\$0.00	\$77.45

Effective Date - 02/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.25	\$10.75	\$20.03	\$0.00	\$57.03
2	60	\$31.49	\$10.75	\$20.03	\$0.00	\$62.27
3	70	\$36.74	\$10.75	\$20.03	\$0.00	\$67.52
4	80	\$41.99	\$10.75	\$20.03	\$0.00	\$72.77
5	90	\$47.24	\$10.75	\$20.03	\$0.00	\$78.02

Notes:

Apprentice to Journeyworker Ratio:1:3

TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2018	\$39.35	\$7.70	\$15.40	\$0.00	\$62.45
	12/01/2018	\$40.30	\$7.70	\$15.40	\$0.00	\$63.40
	06/01/2019	\$41.30	\$7.70	\$15.40	\$0.00	\$64.40
	12/01/2019	\$42.30	\$7.70	\$15.40	\$0.00	\$65.40
	06/01/2020	\$43.29	\$7.70	\$15.40	\$0.00	\$66.39
	12/01/2020	\$44.27	\$7.70	\$15.40	\$0.00	\$67.37
	06/01/2021	\$45.29	\$7.70	\$15.40	\$0.00	\$68.39
	12/01/2021	\$46.30	\$7.70	\$15.40	\$0.00	\$69.40

For apprentice rates see "Apprentice- LABORER"

TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2018	\$38.07	\$7.70	\$15.40	\$0.00	\$61.17
	12/01/2018	\$39.02	\$7.70	\$15.40	\$0.00	\$62.12
	06/01/2019	\$40.02	\$7.70	\$15.40	\$0.00	\$63.12
	12/01/2019	\$41.02	\$7.70	\$15.40	\$0.00	\$64.12
	06/01/2020	\$42.01	\$7.70	\$15.40	\$0.00	\$65.11
	12/01/2020	\$42.99	\$7.70	\$15.40	\$0.00	\$66.09
	06/01/2021	\$44.01	\$7.70	\$15.40	\$0.00	\$67.11
	12/01/2021	\$45.02	\$7.70	\$15.40	\$0.00	\$68.12

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2018	\$37.95	\$7.70	\$15.40	\$0.00	\$61.05
	12/01/2018	\$38.90	\$7.70	\$15.40	\$0.00	\$62.00
	06/01/2019	\$39.90	\$7.70	\$15.40	\$0.00	\$63.00
	12/01/2019	\$40.90	\$7.70	\$15.40	\$0.00	\$64.00
	06/01/2020	\$41.89	\$7.70	\$15.40	\$0.00	\$64.99
	12/01/2020	\$42.87	\$7.70	\$15.40	\$0.00	\$65.97
	06/01/2021	\$43.89	\$7.70	\$15.40	\$0.00	\$66.99
	12/01/2021	\$44.90	\$7.70	\$15.40	\$0.00	\$68.00
For apprentice rates see "Apprentice- LABORER"						
TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2018	\$46.61	\$11.00	\$15.50	\$0.00	\$73.11
	12/01/2018	\$47.75	\$11.00	\$15.50	\$0.00	\$74.25
	06/01/2019	\$48.84	\$11.00	\$15.50	\$0.00	\$75.34
	12/01/2019	\$49.98	\$11.00	\$15.50	\$0.00	\$76.48
	06/01/2020	\$51.06	\$11.00	\$15.50	\$0.00	\$77.56
	12/01/2020	\$52.20	\$11.00	\$15.50	\$0.00	\$78.70
	06/01/2021	\$53.29	\$11.00	\$15.50	\$0.00	\$79.79
	12/01/2021	\$54.43	\$11.00	\$15.50	\$0.00	\$80.93
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2016	\$33.02	\$10.91	\$10.89	\$0.00	\$54.82
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	06/01/2018	\$50.23	\$7.70	\$15.80	\$0.00	\$73.73
	12/01/2018	\$51.18	\$7.70	\$15.80	\$0.00	\$74.68
	06/01/2019	\$52.18	\$7.70	\$15.80	\$0.00	\$75.68
	12/01/2019	\$53.18	\$7.70	\$15.80	\$0.00	\$76.68
	06/01/2020	\$54.17	\$7.70	\$15.80	\$0.00	\$77.67
	12/01/2020	\$55.15	\$7.70	\$15.80	\$0.00	\$78.65
	06/01/2021	\$56.17	\$7.70	\$15.80	\$0.00	\$79.67
	12/01/2021	\$57.18	\$7.70	\$15.80	\$0.00	\$80.68
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	06/01/2018	\$52.23	\$7.70	\$15.80	\$0.00	\$75.73
	12/01/2018	\$53.18	\$7.70	\$15.80	\$0.00	\$76.68
	06/01/2019	\$54.18	\$7.70	\$15.80	\$0.00	\$77.68
	12/01/2019	\$55.18	\$7.70	\$15.80	\$0.00	\$78.68
	06/01/2020	\$56.17	\$7.70	\$15.80	\$0.00	\$79.67
	12/01/2020	\$57.15	\$7.70	\$15.80	\$0.00	\$80.65
	06/01/2021	\$58.17	\$7.70	\$15.80	\$0.00	\$81.67
	12/01/2021	\$59.18	\$7.70	\$15.80	\$0.00	\$82.68
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	06/01/2018	\$42.30	\$7.70	\$15.80	\$0.00	\$65.80
	12/01/2018	\$43.25	\$7.70	\$15.80	\$0.00	\$66.75
	06/01/2019	\$44.25	\$7.70	\$15.80	\$0.00	\$67.75
	12/01/2019	\$45.25	\$7.70	\$15.80	\$0.00	\$68.75
	06/01/2020	\$46.24	\$7.70	\$15.80	\$0.00	\$69.74
	12/01/2020	\$47.22	\$7.70	\$15.80	\$0.00	\$70.72
	06/01/2021	\$48.24	\$7.70	\$15.80	\$0.00	\$71.74
	12/01/2021	\$49.25	\$7.70	\$15.80	\$0.00	\$72.75
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	06/01/2018	\$44.30	\$7.70	\$15.80	\$0.00	\$67.80
	12/01/2018	\$45.25	\$7.70	\$15.80	\$0.00	\$68.75
	06/01/2019	\$46.25	\$7.70	\$15.80	\$0.00	\$69.75
	12/01/2019	\$47.25	\$7.70	\$15.80	\$0.00	\$70.75
	06/01/2020	\$48.24	\$7.70	\$15.80	\$0.00	\$71.74
	12/01/2020	\$49.22	\$7.70	\$15.80	\$0.00	\$72.72
	06/01/2021	\$50.24	\$7.70	\$15.80	\$0.00	\$73.74
	12/01/2021	\$51.25	\$7.70	\$15.80	\$0.00	\$74.75
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2016	\$32.44	\$10.91	\$10.89	\$0.00	\$54.24
WAGON DRILL OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2018	\$33.50	\$7.70	\$14.02	\$0.00	\$55.22
	12/01/2018	\$34.34	\$7.70	\$14.02	\$0.00	\$56.06
	06/01/2019	\$35.21	\$7.70	\$14.02	\$0.00	\$56.93
	12/01/2019	\$36.07	\$7.70	\$14.02	\$0.00	\$57.79
	06/01/2020	\$36.96	\$7.70	\$14.02	\$0.00	\$58.68
	12/01/2020	\$37.85	\$7.70	\$14.02	\$0.00	\$59.57
	06/01/2021	\$38.77	\$7.70	\$14.02	\$0.00	\$60.49
	12/01/2021	\$39.68	\$7.70	\$14.02	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER"						
WASTE WATER PUMP OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2018	\$47.08	\$11.00	\$15.50	\$0.00	\$73.58
	12/01/2018	\$48.23	\$11.00	\$15.50	\$0.00	\$74.73
	06/01/2019	\$49.33	\$11.00	\$15.50	\$0.00	\$75.83
	12/01/2019	\$50.48	\$11.00	\$15.50	\$0.00	\$76.98
	06/01/2020	\$51.58	\$11.00	\$15.50	\$0.00	\$78.08
	12/01/2020	\$52.73	\$11.00	\$15.50	\$0.00	\$79.23
	06/01/2021	\$53.83	\$11.00	\$15.50	\$0.00	\$80.33
	12/01/2021	\$54.98	\$11.00	\$15.50	\$0.00	\$81.48
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER <i>PLUMBERS & PIPEFITTERS LOCAL 51</i>	09/01/2018	\$42.04	\$10.00	\$18.20	\$0.00	\$70.24
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						
Marine Drilling						
BLASTER <i>MARINE DRILLING</i>	01/01/2018	\$41.82	\$7.63	\$3.60	\$0.00	\$53.05
BOAT CAPTAIN <i>MARINE DRILLING</i>	01/01/2018	\$33.87	\$7.63	\$3.30	\$0.00	\$44.80
BOAT CAPTAIN / Over 1,000 hp <i>MARINE DRILLING</i>	01/01/2018	\$38.06	\$7.63	\$3.60	\$0.00	\$49.29
CORE DRILLER <i>MARINE DRILLING</i>	01/01/2018	\$31.43	\$7.63	\$2.90	\$0.00	\$41.96
CORE DRILLER HELPER <i>MARINE DRILLING</i>	01/01/2018	\$28.47	\$7.63	\$3.00	\$0.00	\$39.10
DRILLER <i>MARINE DRILLING</i>	01/01/2018	\$39.70	\$7.63	\$3.60	\$0.00	\$50.93
ENGINEER <i>MARINE DRILLING</i>	01/01/2018	\$39.69	\$7.63	\$3.50	\$0.00	\$50.82

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HELPER <i>MARINE DRILLING</i>	01/01/2018	\$34.24	\$7.63	\$3.00	\$0.00	\$44.87
MACHINIST <i>MARINE DRILLING</i>	01/01/2018	\$38.88	\$7.63	\$3.30	\$0.00	\$49.81
OILER - MARINE DRILLING <i>MARINE DRILLING</i>	01/01/2018	\$34.24	\$7.63	\$3.00	\$0.00	\$44.87
TUG DECKHAND <i>MARINE DRILLING</i>	01/01/2018	\$27.61	\$7.63	\$3.00	\$0.00	\$38.24
WELDER <i>MARINE DRILLING</i>	01/01/2018	\$38.88	\$7.63	\$3.30	\$0.00	\$49.81
Op Eng Marine (Dredging Work)						
BOAT OPERATOR <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$29.26	\$7.63	\$3.30	\$0.00	\$40.19
CERTIFIED WELDER <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$31.09	\$7.63	\$3.60	\$0.00	\$42.32
CHIEF WELDER/ CHIEF MATE <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$33.02	\$7.63	\$3.60	\$0.00	\$44.25
DERRICK / SPIDER / SPILLBARGE OPERATOR <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$33.02	\$7.63	\$3.60	\$0.00	\$44.25
DRAG BARGE OPERATOR / WELDER / MATE <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$30.24	\$7.63	\$3.30	\$0.00	\$41.17
ENGINEER / ELECTRICIAN <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$33.02	\$7.63	\$3.60	\$0.00	\$44.25
LICENSED BOAT OPERATOR <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$33.02	\$7.63	\$3.60	\$0.00	\$44.25
LICENSED TUG OPERATOR OVER 1000HP <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$38.18	\$7.63	\$3.60	\$0.00	\$49.41
MAINTENANCE ENGINEER <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$33.03	\$7.63	\$3.60	\$0.00	\$44.26
OILER - MARINE DIVISION <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$24.30	\$7.63	\$3.00	\$0.00	\$34.93
OPERATOR / LEVERMAN <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$38.18	\$7.63	\$3.60	\$0.00	\$49.41
RODMAN / SCOWMAN <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$24.30	\$7.63	\$3.00	\$0.00	\$34.93
SHOREMAN / DECKHAND <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$24.30	\$7.63	\$3.00	\$0.00	\$34.93
Outside Electrical - East						
CABLE TECHNICIAN (Power Zone) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$27.14	\$7.75	\$1.81	\$0.00	\$36.70
For apprentice rates see "Apprentice- LINEMAN"						
CABLEMAN (Underground Ducts & Cables) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$38.45	\$7.75	\$9.53	\$0.00	\$55.73
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN CDL <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$31.66	\$7.75	\$9.44	\$0.00	\$48.85
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN -Inexperienced (<2000 Hrs) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$24.88	\$7.75	\$1.75	\$0.00	\$34.38
For apprentice rates see "Apprentice- LINEMAN"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
EQUIPMENT OPERATOR (Class A CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$38.45	\$7.75	\$13.61	\$0.00	\$59.81
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class B CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$33.92	\$7.75	\$10.21	\$0.00	\$51.88
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$24.88	\$7.75	\$1.75	\$0.00	\$34.38
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN -Inexperienced (<2000 Hrs.) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$20.35	\$7.75	\$1.61	\$0.00	\$29.71
For apprentice rates see "Apprentice- LINEMAN"						
JOURNEYMAN LINEMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$45.23	\$7.75	\$16.61	\$0.00	\$69.59

Apprentice - LINEMAN (Outside Electrical) - East Local 104

Effective Date - 09/03/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$27.14	\$7.75	\$3.31	\$0.00	\$38.20
2	65	\$29.40	\$7.75	\$3.38	\$0.00	\$40.53
3	70	\$31.66	\$7.75	\$3.45	\$0.00	\$42.86
4	75	\$33.92	\$7.75	\$5.02	\$0.00	\$46.69
5	80	\$36.18	\$7.75	\$5.09	\$0.00	\$49.02
6	85	\$38.45	\$7.75	\$5.15	\$0.00	\$51.35
7	90	\$40.71	\$7.75	\$7.22	\$0.00	\$55.68

Notes:

Apprentice to Journeyworker Ratio:1:2

TELEDATA CABLE SPLICER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	02/05/2018	\$29.98	\$4.70	\$3.15	\$0.00	\$37.83
	02/04/2019	\$30.73	\$4.70	\$3.17	\$0.00	\$38.60
TELEDATA LINEMAN/EQUIPMENT OPERATOR <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	02/05/2018	\$28.22	\$4.70	\$3.10	\$0.00	\$36.02
	02/04/2019	\$28.93	\$4.70	\$3.14	\$0.00	\$36.77
TELEDATA WIREMAN/INSTALLER/TECHNICIAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	02/05/2018	\$28.22	\$4.70	\$3.10	\$0.00	\$36.02
	02/04/2019	\$28.93	\$4.70	\$3.14	\$0.00	\$36.77
TREE TRIMMER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/31/2016	\$18.51	\$3.55	\$0.00	\$0.00	\$22.06

This classification applies only to tree work done: (a) for a utility company, R.E.A. cooperative, or railroad or coal mining company, and (b) for the purpose of operating, maintaining, or repairing the utility company's equipment, and (c) by a person who is using hand or mechanical cutting methods and is not on the ground.

This classification does not apply to wholesale tree removal.

TREE TRIMMER GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/31/2016	\$16.32	\$3.55	\$0.00	\$0.00	\$19.87
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This classification applies only to tree work done: (a) for a utility company, R.E.A. cooperative, or railroad or coal mining company, and (b) for the purpose of operating, maintaining, or repairing the utility company's equipment, and (c) by a person who is using hand or mechanical cutting methods and is on the ground. This classification does not apply to wholesale tree removal.

Additional Apprentices Information:

Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the pre-determined hourly wage rate established by the Commissioner under the provisions of the M.G.L. c. 149, ss. 26-27D. Apprentices ratios are established by the Division of Apprenticeship Training pursuant to M.G.L. c. 23, ss. 11E-11L.

All apprentices must be registered with the Division of Apprenticeship Training in accordance with M.G.L. c. 23, ss. 11E-11L.

All steps are six months (1000 hours.)

Ratios are expressed in allowable number of apprentices to journeymen or fraction thereof, unless otherwise specified.

** Multiple ratios are listed in the comment field.

*** APP to JM; 1:1, 2:2, 2:3, 3:4, 4:4, 4:5, 4:6, 5:7, 6:7, 6:8, 6:9, 7:10, 8:10, 8:11, 8:12, 9:13, 10:13, 10:14, etc.

**** APP to JM; 1:1, 1:2, 2:3, 2:4, 3:5, 4:6, 4:7, 5:8, 6:9, 6:10, 7:11, 8:12, 8:13, 9:14, 10:15, 10:16, etc.